DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Skinner Landfill
West Chester, Butler County, Union Township, Ohio

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected final remedial action for the Skinner Landfill site in West Chester, Ohio, which was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document explains the factual and legal basis for selecting the final remedy for this site. The information supporting this final remedial action decision is contained in the administrative record for this site.

The State of Ohio concurs with the selected remedy.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

This remedy is the second and final of two operable units for this site. The first operable unit addressed immediate site concerns, through the construction of a fence around the contaminated area, and by offering an alternate supply of drinking water to the potentially affected users of groundwater. This final operable unit addresses potential future migration of site contaminants into the groundwater and will limit the potential for direct exposure of site contaminants to humans through source control measures.

The selected remedy includes the following:

- construction of a RCRA cap over the waste materials;
- interception, collection, and treatment of contaminated groundwater;
- diversion of upgradient groundwater flow;
- monitoring;
- institutional controls; and
- soil vapor extraction.

DECLARATION

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilized permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable.

Because this remedy will result in hazardous substances remaining on site above health-based levels, a review will be conducted within five years after the commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Valdas V. Adamkus
Regional Administrator
U.S. EPA, Region V

6/04/93
Date

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DECISION SUMMARY
SKINNER LANDFILL

SITE NAME, LOCATION, AND DESCRIPTION

The Skinner Landfill site is located in West Chester, an unincorporated area in Section 22 of Union Township, Butler County, Ohio (see Figure 4).

The Skinner site is comprised of approximately 78 acres of hilly terrain. The site is bordered on the east by Conrail railroad tracks. Land use in the immediate site vicinity includes business and residential uses to the west and crop farming to the north. Cincinnati-Dayton Road borders the site to the west. The East Fork of Mill Creek runs through the southern portion of the site. The Union Elementary school is located immediately across Cincinnati-Dayton road to the west of the site. Approximately 6800 people live within 1 mile of the site.

The site was used in the past for the mining of sand and gravel, and was operated for the landfilling of a wide variety of materials from approximately 1934 through 1990. Materials deposited at the site include demolition debris, household refuse, and a wide variety of chemical wastes. A low area in the center of the site, referred to as the waste lagoon, was used for the disposal of paint wastes, ink wastes, creosote, pesticides, and other chemical wastes (see Figure 1).

Elevations at the site range from a high of nearly 800 feet above Mean Sea Level to the northeast, sloping generally southwestward, to a low of 645 feet near the confluence of Skinner Creek and the East Fork of Mill Creek. The natural topography of the site is obscured by piles of solid waste materials.

Several geologic units which underlie the site are used locally as aquifers. Groundwater at the site is contained in either the glacial drift aquifer or the bedrock aquifer. The glacial drift ranges from zero to 40 feet thick on the site, and is composed of layers of sand and gravel, and layers of silty to clayey materials. The thickness, composition and permeability of these layers vary greatly over the site, and this greatly complicates the flow of groundwater on the site. Groundwater also flows through fractures in the bedrock at the site. Nearby wells drilled into the bedrock are used for the supply of drinking water.

Both Skinner Creek and the East Fork of Mill Creek are small, shallow streams with low flow water depths averaging less than 1 foot. Both of these streams flow to the southwest from the Skinner Landfill site, toward Mill Creek, which in turn flows into the Ohio River. A third on-site stream, Dump creek, borders the former dump on the east. Dump Creek is intermittent, and flows south into the East Fork of Mill Creek.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

In 1976, in response to a fire on the site and reports of observations of a black, oily liquid in a waste lagoon on the site, the Ohio EPA began an investigation of the Skinner Landfill. Before the Ohio EPA could complete this investigation, the Skinners covered the waste lagoon with a layer of demolition debris, thereby hindering the investigation. Albert Skinner, the site owner at the time, dissuaded the Ohio EPA from accessing the lagoon area by claiming that nerve gas, mustard gas, incendiary bombs, phosphorus, flame throwers, cyanide ash, and other explosive devices were buried at the landfill. This prompted the Ohio EPA to request the assistance of the U.S. Army. Albert Skinner, in the presence of Ohio EPA attorneys and the U.S. Army investigators, subsequently retracted his claims of the presence of ordnance. The U.S. Army and Ohio EPA then dug several trenches into the buried waste lagoon, and found black and orange liquids and a number of barrels of wastes. Subsequently, records searches have been performed by the U.S. Army, and have indicated that there is no evidence of munitions of any sort having been disposed of at the Skinner Landfill site.

In 1982, the U.S. EPA conducted a limited investigation of the site for the purpose of scoring the Skinner Landfill site for inclusion on the National Priorities List (NPL). This investigation showed that the groundwater southeast of the buried waste lagoon was contaminated with volatile organic compounds. The Skinner Landfill site was placed on the NPL in December, 1982.

In 1986, the U.S. EPA began a Phase I Remedial Investigation, with the sampling of ground water, surface water, and soils. A biological survey of the East Fork of Mill Creek and Skinner Creek was also performed.

In 1989, the U.S. EPA began its Phase II Remedial Investigation ("Phase II RI"), to further investigate the site groundwater, surface water, soils, and sediments. Overall, more than 400 samples from the site were analyzed in chemical laboratories. The Remedial Investigation resulted in the installation of 33 soil borings, and 39 groundwater monitoring wells.

In August 1990, through a legal proceeding, the Ohio EPA closed the site to all further landfilling activities.

The Phase II Remedial Investigation was completed in May, 1991. The Feasibility Study was completed in April, 1992.

The U.S. EPA completed a search for potentially responsible parties (PRPs) in April 1983. The results of that search were later supplemented by information requests

under CERCLA § 104(e), and by administrative depositions held on June 17, 1991. The present site owner, Mrs. Elsa Morgan-Skinner, produced a large quantity of site records at her deposition. As a result of this information, U.S. EPA has produced a list of PRPs for this site.

A unilateral administrative order (UAO) for the first operable unit at the site, which encompasses site fencing, connections to the Butler County public water system for potentially affected local users of groundwater, and groundwater monitoring, was issued to the PRPs for the site on December 9, 1992. Several PRPs organized as the Skinner Landfill PRP Group and expressed their intent to comply with the UAO, and have now performed the majority of the work required under this UAO. Several other PRPs stated that they would not comply with the UAO.

COMMUNITY PARTICIPATION

During the course of the investigation, many meetings were held with the community, with a local activist group, and with a coalition of community representatives.

A fact sheet outlining U.S. EPA's plans for the investigation of the Skinner Landfill site was distributed to the public in March of 1986.

A fact sheet describing the results of Phase I of the Remedial Investigation (RI) and plans for the Phase II RI was distributed to the public in April of 1987.

A fact sheet describing the results of the Phase II RI and plans for the Baseline Risk Assessment (RA) and Feasibility Study (FS) was distributed to the public in June of 1991. Representatives of the U.S. EPA and the Ohio EPA held a public meeting in West Chester, Ohio on June 20, 1991 to discuss the results of the Phase II RI and plans for future activities at the Skinner site.

A fact sheet describing the results of the Feasibility Study, presenting the U.S. EPA's preferred alternative for a comprehensive cleanup of the entire Skinner Landfill site, and commencing a public comment period was distributed to the public in April, 1992. A component of this cleanup plan was on-site incineration of approximately 17,000 cubic yards of lagoon wastes. A public meeting to discuss the proposed plan and to gather public comments was held on May 20, 1992. A second public meeting on this subject was held on July 29, 1992. An ancillary purpose of this second public meeting was to present to the public the results of an assessment of the risks posed by the on-site incineration option, which had been requested at the May 20, 1992 public meeting. However, the July 29, 1992 public meeting was disrupted by a local activist group to the point that the risk

assessment information could not be adequately conveyed to the public. The July 29, 1992 public meeting lasted from 7:00pm until 1:45am.

Subsequent to the second public meeting, and due to concerns expressed by members of the public and by elected officials, the U.S. EPA decided to alter its decision-making approach for this site. On August 7, 1992, U.S. EPA mailed an announcement to members of the public and issued a news release, indicating that:

1) U.S. EPA proposed to select an interim remedy for this site, including the fencing of the contaminated portion of the site and the provision of alternative potable water supply to potentially affected homes;

2) The comment period for fencing and alternate water supply would end on August 31, 1992;

3) The comment period for the remaining portions of the remedy would remain open until further notice, in order to address community concerns.

The comment period for the remaining portions of the remedy did not close until February 9, 1993; in total the public comment period was nearly ten months long.

A coalition of various West Chester community groups and residents was formed after the July 29, 1992 public meeting in order to discuss the Skinner Landfill cleanup and to meet with the U.S. EPA and Ohio EPA. This coalition includes representatives from the Township Trustees, the Chamber of Commerce, Citizens Lobby for Environmental Action Now (C.L.E.A.N), the Lakota School Board, the Old West Chester Merchants Association, the Union School PTA, the Home Builders Association, the Firefighters/Service Group, and a number of Township Residents. The U.S. EPA and Ohio EPA met with this coalition approximately every other week for a period of three months. Topics discussed before this coalition included:

- site history;
- description of Remedial Investigation results;
- applicability of RCRA regulations;
- applicable or relevant and appropriate requirements for the site remedy;
- viability of containment remedies;
- assessment of site risks;
- proposals for further studies;
- alternative remediation technologies for the lagoon wastes; and
- the remedy selection process.

The discussions held with the Coalition were highly productive and resulted in a high degree of open communication and consensus-building. As a result of these discussions, this Coalition issued a unanimous written recommendation that a

containment remedy be implemented at the Skinner site. This recommendation is available for public review in the Administrative Record.

On January 11, 1993, the U.S. EPA issued a Fact Sheet announcing that its preferred alternative had changed from Alternative 5 (which included incineration), to Alternative 3 (a containment remedy that does not include incineration), with the possible inclusion of soil vapor extraction. This Fact Sheet, along with a press release and newspaper advertisements, announced that the public comment period would end on February 9, 1993.

On January 20, 1993, a legal representative of the Potentially Responsible Parties (PRPs) requested an additional 30-day extension of the public comment period. This request was denied, because the public comment period had already been open for nearly ten months.

SCOPE AND ROLE OF THE OPERABLE UNIT WITHIN THE OVERALL SITE STRATEGY

The U.S. EPA has organized the remedial action at the Skinner site into two phases, or "operable units." The first operable unit was an interim action to protect human health from any potential immediate risks. This was achieved by fencing the contaminated portions of the site to limit site access, to prevent ingestion of or direct contact with contaminated soils. This Interim Action also includes the provision of an alternate potable water supply to potentially affected downgradient users of groundwater, and groundwater monitoring, to protect the potentially affected users of groundwater on and near to the site. The Record of Decision for the first Operable Unit Interim Action was signed by the U.S. EPA Regional Administrator on September 30, 1992. A Unilateral Administrative Order for the implementation of the first Operable Unit was issued to 20 Potentially Responsible Parties (PRPs) on December 9, 1992.

This remedy is the second and final of two operable units for this site. This final operable unit addresses potential future migration of site contaminants into the groundwater and will limit the potential for direct exposure of site contaminants to humans through source control measures.

SUMMARY OF SITE CHARACTERISTICS

The site consists of the following contaminant source areas, as shown in Figure 1:

- a former dump, which was used for the disposal of a wide variety of waste materials;

- a buried waste lagoon, which was used for the disposal of a wide variety of liquid wastes and sludges;
- an active metal scrap yard;
- several buried waste pits.

A considerable amount of scrap metal, auto bodies, railroad cars, and associated junk is scattered over the site. Several residences are located on the site, including one which is used for child care of several young children.

The site was studied in the course of a two-phased remedial investigation. The results of these investigations are summarized below.

THE FORMER DUMP

The former dump area was used for the disposal of a variety of wastes, including demolition debris, household refuse, and assorted scrap. Chemical wastes also appear to have been disposed of in this area. Aerial photographs taken during the operation of the dump show piles of drums in various areas of the dump. These drums, if present, are now buried underneath other types of debris. A well (GW-22) was installed near the center of the former dump during the Remedial Investigation. Boring log information from this well indicates that the depth of fill is approximately 15 feet in this location. Observations at the eastern edge of the former dump indicated a fill thickness of over 30 feet. The total volume of wastes within the former dump is estimated to be 120,000 cubic yards. Water samples collected from GW-22 during the Phase I RI indicate that the most concentrated groundwater contamination found on the site is in the area beneath the former dump. This well is now buried under demolition debris deposited on the site by the Skinners. Ground water contaminants detected in GW-22 include:

Contaminant	Concentration
Phenol	670 parts per billion (ppb)
2-methyl phenol	450 ppb
4-methyl phenol	350 ppb
Acetone	4800 ppb
1,2-dichloroethane	4500 ppb
Benzene	20,000 ppb
Chlorobenzene	140 ppb
Ethylbenzene	100 ppb
2-hexanone	740 ppb
Methylene chloride	2200 ppb
Toluene	530 ppb
Xylenes	300 ppb

THE BURIED WASTE LAGOON AREA

Prior to 1976, a low-lying area containing a pond was used for the disposal of chemical wastes. Waste haulers were allowed to dump liquid wastes and drums of solid or semi-solid wastes into the pond, and to stack the drums in an area near the pond. Site records and deposition testimony of waste haulers indicate that large quantities of chemical wastes were deposited in the waste lagoon. These wastes include creosote, paint wastes, ink wastes, and pesticides. Nearby residents at the time reported that the wastes in the lagoon were causing fires and chemical odors. The Skinners eventually buried the waste lagoon under a layer of demolition debris up to 40 feet thick, and the lagoon is now inaccessible to the public. The debris which has been placed over and around the waste lagoon consists of wood, plastic, metal, brick, wire, glass, paper and rubber. It is estimated that 59,000 cubic yards of debris overlies the waste lagoon. The total volume of materials which are contaminated due to the disposal of wastes in the lagoon was estimated in the RI/FS to be 107,000 cubic yards.

The total volume of lagoon waste materials which exceed a 10^{-4} risk level was estimated in the FS to be 17,000 cubic yards. During the course of the Remedial Investigation, 19 borings were installed in and around the buried waste lagoon in order to determine its composition and extent. Those borings which penetrated the waste lagoon itself encountered tarry materials, oily materials, and sticky, raspberry and turquoise colored liquids. A ground penetrating radar (GPR) survey of the lagoon area indicated the presence of a number of buried metallic objects which may be drums. Chemical analyses of samples of solid and semi-solid materials collected from borings drilled into the buried waste lagoon indicated the presence of a wide variety of chemical constituents. Maximum concentrations of some organic contaminants found in these samples follow:

Contaminant	Concentration
Toluene	31,000 parts per million (ppm)
Xylene	200 ppm
Ethylbenzene	98 ppm
1,1,2-trichloroethane	370 ppm
1,2-dichloropropane	340 ppm
Benzene	60 ppm
Naphthalene	610 ppm
2-methylnaphthalene	220 ppm
Phenanthrene	110 ppm
Bis(2-ethylhexyl)phthalate	150 ppm
Benzoic acid	1100 ppm
Fluoranthene	110 ppm
Pyrene	48 ppm

(continued)

Contaminant	Concentration
Hexachlorobenzene	480 ppm
Flourene	34 ppm
Phenol	26 ppm
Butylbenzylphthalate	25 ppm
1,3-dichlorobenzene	230 ppm
1,4-dichlorobenzene	180 ppm
Hexachlorobutadiene	68 ppm
Acenaphthene	7.9 ppm
Benzo(a)anthracene	15 ppm
Chrysene	17 ppm
Hexachlorocyclopentadiene	1100 ppm

Analysis of these same buried waste lagoon samples for pesticides indicated the presence of the following:

Contaminant	Concentration
Heptachlor	52 ppm
Endrin ketone	84 ppm
Gamma chlordane	44 ppm

The following metals were detected at concentrations considerably above background levels in the lagoon wastes:

Contaminant	Concentration
Antimony	23 ppm
Cadmium	56.9 ppm
Lead	4360 ppm
Silver	13 ppm
Thallium	1 ppm

Low levels of dioxins, furans, and PCBs were detected in some lagoon waste samples. The concentrations od dioxins ranged up to approximately 29 parts per trillion. PCB concentrations ranged up to 1.2 parts per million.

Two groundwater monitoring wells located downgradient to the southwest of the lagoon area (GW-20 and B-5) were found to be contaminated. The following are the maximum concentrations of selected organic contaminants found in samples collected from these wells:

Contaminant	Concentration
1,1,2,2-tetrachloroethylene	6 ppb
1,1,2-trichloroethane	56 ppb
1,1-dichloroethane	73 ppb
1,2-dichloroethane	180 ppb
1,2-dichloroethene	35 ppb
1,2-dichloropropane	370 ppb
Benzene	410 ppb
Chloroethane	50 ppb
Chloroform	85 ppb
Trichloroethene	71 ppb
Vinyl chloride	48 ppb
1,3-dichlorobenzene	13 ppb
1,4-dichlorobenzene	10 ppb
Benzoic acid	5 ppb
Bis(chloroethyl)ether	130 ppb
Naphthalene	14 ppb

Many of the contaminants which were found in the groundwater in these wells, which are located downgradient of the waste lagoon, were also found in the waste lagoon materials. Furthermore, several of the contaminants found in these wells were detected in the former dump area, which is upgradient of the buried waste lagoon. By contrast, groundwater collected upgradient of the former dump did not contain these contaminants. Therefore, it has been established that the contamination present in groundwater beneath and downgradient of the former dump and buried waste lagoon is attributable to the wastes present in the former dump and waste lagoon.

BURIED PITS AND OTHER CONTAMINATED SOILS

A low-lying area in the south-central portion of the site, to the east of the Skinner residence, was used for waste disposal (see Figure 1). Three borings were drilled in this area, and indicate that the fill materials are up to 18 feet thick. Analysis of solid materials taken from these borings indicated the presence of relatively low concentrations of acetone, methylene chloride, pyrene, fluoranthene, and benzo(b)fluoranthene (see Table 2-16). The volume of impacted soils in the buried pit is estimated to be 500 cubic yards.

Contaminated soils were also detected near wells GW-29 and GW-38. The volumes of contaminated soils in these areas are estimated to be 1000 and 1600 cubic yards, respectively.

METAL STORAGE AREA

The area immediately to the west of the former dump is occupied by an active scrap metal operation. A considerable volume of metal parts, motors, and structures is present in this area. Soil samples taken from this area indicated the presence of low levels of several organic contaminants, as would be expected in any metal scrap yard. Groundwater monitoring wells installed around the metal storage area indicate that this portion of the site is not a significant source of groundwater contamination.

SURFACE WATERS

There are three small ponds on or near the site. The Duck pond straddles the northern site boundary. The Diving Pond and Trilobite Pond are located immediately to the west of the metals storage area (see Figure 1).

The Skinner Landfill lies 1.5 miles east of the floodplain of Mill Creek, a major south-flowing tributary of the Ohio River. Skinner Creek and the East Fork of Mill Creek flow towards the southwest from the Skinner site into Mill Creek. Dump Creek borders the former dump to the east, and is partially covered with fill materials.

Samples of water and sediments taken from the ponds and creeks were collected and analyzed in the course of the Remedial Investigation. Results of these analyses indicate that contaminants are present in the creeks at insignificant levels, and only very low levels in the ponds. The creek and pond sediments are contaminated at low concentrations with volatile and semivolatile organic compounds (see Table 2-16).

Analysis of contaminated groundwater which is being discharged to the East fork of Mill Creek via leachate seeps indicates the presence of low concentrations of chloroform, trichloroethane, methylene chloride, benzene and acetone (see Table 2-16).

LEACHATE SEEPS

At several locations along the East Fork of Mill Creek to the south of the buried waste lagoon and former dump, contaminated groundwater discharges to the ground surface. These discharges are referred to as leachate seeps. Samples of

liquids from the leachate seeps were collected and analyzed by the U.S. EPA during the RI, and subsequently by the Ohio EPA. The maximum concentrations of these contaminants detected during these several rounds of sampling and analysis are listed below.

CONTAMINANT	CONCENTRATION
Benzene	26 parts per billion (ppb)
Chloroethane	2 ppb
1,1-dichloroethane	11 ppb
Bis(2-chloroethyl)ether	120 ppb
Hexachlorobutadiene	0.016 ppb

SITE GEOLOGY AND HYDROGEOLOGY

Subsurface materials at the Skinner Landfill are quite variable throughout the site. This variability affects the manner in which chemicals move through the ground. The unconsolidated glacial sediments that underlie the Skinner Landfill are a mixture of soil types ranging from clay-rich to gravel-rich soils, and are from zero to 40 feet thick. Soils under the northern and western parts of the buried waste lagoon consist of low-permeability silty clays. The soils underlying the southern and southeastern parts of the buried lagoon are more permeable silty sand and gravel deposits. Soil boring samples collected from the buried lagoon area show that the highest concentrations of organic chemicals underlie the southern part of the lagoon. The more permeable soils underlying this part of the lagoon may enable the chemicals to more readily migrate through the soil into the groundwater. Those chemicals, such as volatile and some semi-volatile organic compounds, are mobile and can be transported through permeable sand and gravel soils underlying parts of the buried lagoon. It is clear from the groundwater monitoring data that chemicals from the buried waste lagoon and former dump are moving through the soil and waste into the on-site groundwater.

Groundwater at the site is contained in either the glacial sediment aquifer or the bedrock aquifer. Groundwater flow at the Skinner site is complicated by the site geology, especially the extreme variability in the nature of the sediments that comprise the unconsolidated glacial materials underlying most of the site. The glacial deposits include a number of discontinuous zones of silty to clayey materials, and layers of sand and gravel. Depth of the water table on site varies from as shallow as 0-6 feet below the surface in the Skinner Creek valley to as deep as 30-40 feet below the ground surface immediately to the south of the buried lagoon. The porous and permeable sand and gravel deposits on site readily store and transmit groundwater, which may contribute to the migration of site contaminants. The low-permeability silty clays, as well as the underlying

interbedded shale-limestone bedrock, are poor transmitters and producers of groundwater, and thus limit the movement of groundwater and contaminants. Groundwater movement is restricted by site geology and topography in all directions except toward the southwest.

On-site aquifers discharge to the on-site streams, thereby providing a mechanism for transport of chemicals off-site. However, significant off-site migration of contaminants appears not to have occurred to date. Monitoring data indicate the presence of low concentrations of site-related chemicals in on-site ponds and very low levels in on-site streams.

SUMMARY OF SITE RISKS

Because the Skinner Landfill accepted a variety of wastes from 1934 until it was closed in 1990, numerous chemicals are present at the site. Following the RI, U.S. EPA conducted an evaluation to estimate the potential health or environmental problems that could result if the site was not remediated. This analysis is referred to as the Baseline Risk Assessment (RA). U.S EPA evaluated the health risks associated with 114 different contaminants. A list of these chemicals is attached as Table 2-16, and includes inorganic, volatile and semi-volatile organic chemicals, pesticides, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), dioxins and furans. Those contaminants contributing the most significantly to current and future site risks included: volatile organics, such as carbon tetrachloride, vinyl chloride, benzene, chloroform, dichloroethene and bis (2-chloroethyl) ether; pesticides, such as heptachlor, aldrin, dieldrin, chlordane, chlordene, and hexachlorobenzene; PCBs, specifically Arochlor 1254; and inorganics, such as arsenic and cobalt.

EXPOSURE PATHWAYS

The potential migration pathways for site contaminants include leaching from the soils to the ground water, movement of contaminated ground water to surface water and sediments, and volatilization of chemicals to air from water and soils. The air pathway is not considered significant for this site under present conditions. Sampling has indicated that concentrations of volatile chemicals in surface soils and water do not represent a significant source of concern for air. Additionally, the depth of contaminated soils in the waste lagoon limits the emission of these chemicals to air.

Currently, the only evidence of contaminants potentially leaving the site through groundwater migration is the detection of 5 ppb of ethylbenzene in monitoring well GW-24, which is located across the East Fork of Mill Creek from the buried lagoon (see Figure 1). The only potential off-site routes of migration for surface water and

surface water sediments are through the East Fork of Mill Creek and Skinner Creek. The leachate seeps which discharge into the East Fork of Mill Creek appear to originate from within the buried waste lagoon and the former dump and clearly indicate a pathway for off-site migration of contaminants.

The Risk Assessment showed that the potential routes of current and future exposure include: ingestion of and direct contact with contaminated soils; ingestion of affected groundwater; dermal contact with groundwater; inhalation of chemicals that volatilize from groundwater to air during showering; and, ingestion of and direct contact with surface water and sediments during recreational activities. Inhalation of fugitive dust and volatile chemicals was also evaluated qualitatively as a potential exposure route but did not warrant a quantitative assessment because emissions from surface soil would likely be low. This is because the most contaminated portion of the site, the buried waste lagoon, is covered by up to 40 feet of demolition debris and is not considered a source of air risk under the current conditions.

HUMAN HEALTH RISK

Human health risks at Superfund sites are typically assessed with respect to both carcinogenic and noncarcinogenic adverse effects of a chemical, under current and future exposure scenarios. The current and potentially exposed populations are occupational workers at the site, residents living on and near the site, and persons who may recreate in the area. Cancer risks from various exposure pathways are assumed to be additive. The Risk Assessment showed that currently none of the residents living, working, recreating, or attending school near the site are exposed to any site-related risks considered unacceptable by the U.S. EPA. Unacceptable risks are those that may result in one additional cancer case in 10,000 to 1,000,000 people (10^{-4} to 10^{-6}) exposed over a lifetime (70 years). However, the risks to persons currently living, working or recreating on the site are considered unacceptable in that they exceed one additional cancer case in 100 persons exposed over a lifetime.

The primary future potentially exposed populations are residential, recreational and occupational. The risks for the future potentially exposed residential population were assessed using both the assumptions that the waste lagoon was and was not developed for residential use. The future risks calculated for persons living, working, or recreating at the site were considered unacceptable in that they exceeded U.S. EPA's acceptable risk range. The risks using the assumption that the waste lagoon was not developed for future residential use were slightly lower, but still exceeded one in 1,000.

Non-cancer risks are evaluated with respect to a hazard quotient, which is the ratio of the level of exposure to an acceptable level. If the hazard quotient for an

exposed individual or group exceeds 1.0 for a particular chemical, there may be non-cancer health effects resulting from the exposure to that chemical. If the hazard index, which is the sum of the hazard quotients for all chemicals in a particular medium, exceeds 1.0 there may be a concern for potential health effects from exposure to that medium. The RA showed that the hazard indices at the Skinner site exceeded 1.0, suggesting that both current and future exposures to chemicals of concern on the site may result in excess noncancer risks to all populations.

ENVIRONMENTAL RISK

The potential future impacts of the site wastes on the East Fork of Mill Creek were estimated in the Risk Assessment. It was projected that, under the "No Action" scenario, surface water standards may be exceeded in the future in the East Fork of Mill Creek for the following compounds: benzene, carbon tetrachloride, chloroform, 1,1,2,2-tetrachloroethane, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, bis(2-chloroethyl)ether, phenol, aldrin, dieldrin, and Aroclor 1254.

The Ohio EPA Division of Water Quality, Planning, and Assessment (DWQPA) recently completed a biological and water quality study of the Mill Creek Basin. Sampling sites for the East Fork of Mill Creek included two areas which bracketed the Skinner Landfill site. Both sampling sites exhibited good habitat conditions. No impairment of the fish community was observed at the sampling location immediately downstream of the Skinner Landfill site. No violations of water quality standards were detected either upstream or downstream of the landfill.

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, and the environment.

DESCRIPTION OF ALTERNATIVES

The proposed plan for this site presented five alternatives. Remedial alternatives were assembled from applicable remedial technology process options and were initially evaluated for effectiveness, implementability, and cost. The alternatives meeting these criteria were then evaluated and compared to the nine criteria as required by the NCP. The first was a no action alternative, which is evaluated at all Superfund sites in order to assess the potential risk to the public if no cleanup was done. The no action alternative serves primarily as a point of comparison for other alternatives. The other four alternatives evaluated a range of source control

response options. Each of the options, excepting the "no action" alternative, included identical provisions for fencing and provision of an alternate potable water supply. Since the fencing and provision of an alternate potable water supply were addressed in the first operable unit interim action ROD, they are not included in the following descriptions of alternatives.

ALTERNATIVE 1 NO ACTION

The Superfund program requires that the "no action" alternative be considered at every site. Under this alternative, the U.S. EPA would take no action to control the site or to limit the potential migration of the wastes. There are no costs associated with the no action alternative.

ALTERNATIVE 2

- ***EXCAVATION AND ON-SITE INCINERATION OF BURIED WASTE LAGOON SOILS***
- ***MULTI-LAYERED CAPPING OF REMAINING WASTE MATERIALS***
- ***COLLECTION AND TREATMENT OF CONTAMINATED GROUNDWATER***
- ***DIVERSION OF UP-GRADIENT GROUNDWATER FLOW***
- ***DEED RESTRICTIONS***

Under this option, the waste materials in the buried waste lagoon which exceed the 10^{-4} risk level would be excavated and treated using an on-site incinerator. A mobile incinerator would be brought onto the site, and operated for approximately seven months in accordance with ARARs relating to RCRA Hazardous Waste incinerators. An estimated 17,000 cubic yards of lagoon waste materials would be incinerated. The resultant ash would be disposed of on-site in a lined cell and stabilized, if necessary. Treatability testing would be required in order to implement the design of the incinerator and for stabilization of the ash.

A multi-layered RCRA cap would be constructed over the area covered by the former dump and the buried waste lagoon. The cap would consist of the following layers, starting at the bottom:

- Immediately above the waste materials, a layer of permeable materials such as sand would be installed, if necessary, for the purpose of venting the gases which result from the decomposition of waste materials. It is possible that the existing cover materials would adequately perform this function, and that construction of a venting layer would not be necessary;
- A twenty-four inch thick layer of clay would be installed, and constructed in a manner which would achieve a maximum permeability of 10^{-7} cm/sec;
- A thirty mil thick flexible membrane would be installed over the clay layer;

- A drainage layer would be installed over the membrane. This can be achieved using six inches of sand with a geotextile fabric base, or by using various commercially available synthetic products;
- An intrusion barrier would overlie the drainage layer. This is intended to limit the possibility of intrusion into the waste materials by burrowing animals. This would typically be composed of six inches of cobbles and six inches of gravel;
- A twenty inch thick layer of soil would be installed on the top of the intrusion barrier;
- Vegetatation would be planted and maintained on the cap, in a manner so as to minimize the potential for erosion.

In order to prevent damage to the clay layer through frost penetration, the top of the clay layer would be at least 30 inches below the top surface of the cap.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, would be dug up and moved onto the area to be covered by the cap. The cap design would provide for the venting of gases from the waste materials.

Groundwater in the unconsolidated materials would be prevented from flowing onto the site from the upgradient direction. This may be achieved by installing a barrier wall, such as a slurry wall, vibrating beam, or grout curtain.

Contaminated groundwater which flows from the site toward the East Fork of Mill Creek would be intercepted, collected, treated and then discharged. Discharge options for the treated groundwater would be evaluated during the remedial design. The treated water would be required to meet ARARs (see Attachment 3)

The site would be monitored for migration of contaminants to groundwater and surface water. Site-specific groundwater trigger levels are given in Table 1 (attached).

Deed restrictions would be emplaced, which would limit the potential for activities which would tend to interfere with the performance of the remedy.

Capital Costs: $22,810,000
Annual O & M Costs: $382,000
Net Present Value Cost: $28,700,000

ALTERNATIVE 3

- ***CONSOLIDATION AND MULTI-LAYERED CAPPING OF WASTE MATERIALS***
- ***COLLECTION AND TREATMENT OF CONTAMINATED GROUNDWATER***
- ***DIVERSION OF UP-GRADIENT GROUNDWATER FLOW***
- ***DEED RESTRICTIONS***

A multi-layered RCRA cap would be constructed over the area covered by the former dump and the buried waste lagoon. The cap would consist of the following layers, starting at the bottom:

- Immediately above the waste materials, a layer of permeable materials such as sand would be installed, if necessary, for the purpose of venting the gases which result from the decomposition of waste materials. It is possible that the existing cover materials would adequately perform this function, and that construction of a venting layer would not be necessary;
- A twenty-four inch thick layer of clay would be installed, and constructed in a manner which would achieve a maximum permeability of 10^{-7} cm/sec;
- A thirty mil thick flexible membrane would be installed over the clay layer;
- A drainage layer would be installed over the membrane. This may be achieved using six inches of sand with a geotextile fabric base, or by using various commercially available synthetic products;
- An intrusion barrier would overlie the drainage layer. This is intended to limit the possibility of intrusion into the waste materials by burrowing animals. This would typically be composed of six inches of cobbles and six inches of gravel;
- A twenty inch thick layer of soil would be installed on the top of the intrusion barrier;
- Vegetatation would be planted and maintained on the cap, in a manner so as to minimize the potential for erosion.

In order to prevent damage to the clay layer through frost penetration, the top of the clay layer would be at least 30 inches below the top surface of the cap.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, would be dug up and moved onto the area to be covered by the cap. The cap design would provide for the venting of gases from the waste materials.

Groundwater in the unconsolidated materials would be prevented from flowing onto the site from the upgradient direction. This may be achieved by installing a barrier wall, such as a slurry wall, vibrating beam, or grout curtain.

Contaminated groundwater which flows from the site toward the East Fork of Mill Creek would be intercepted, collected, treated and then discharged. Discharge options for the treated groundwater would be evaluated during the remedial design. The treated water would be required to meet ARARs (see Attachment 3)

The site would be monitored for migration of contaminants to groundwater and surface water. Site-specific groundwater trigger levels are given in Table 1 (attached).

Deed restrictions would be emplaced, which would limit the potential for activities which would tend to interfere with the performance of the remedy.

The addition of soil vapor extraction in the area near to and underneath the buried waste lagoon to alternative three was suggested during the public comment period. This addition is discussed below.

Capital Costs: $9,619,000
Annual O & M Costs: $382,000
Net Present Value Cost: $15,500,000

SOIL VAPOR EXTRACTION

During the public comment period, it was suggested that extraction of the volatile organic vapors from the permeable materials surrounding the lagoon wastes be considered as an addition to alternative #3. Soil Vapor Extraction has previously been a component of Alternative 5 only; these costs are already included in Alternative 5. Soil vapor extraction is a technology whereby air containing organic vapors is pumped out of the ground. The air is then treated to meet air emission standards prior to release.

Capital Costs: $81,900
Annual O & M Costs: $15,000
Net Present Value Cost: $531,900

COSTS OF ALTERNATIVE 3 WITH THE INCLUSION OF SOIL VAPOR EXTRACTION

Capital Costs: $9,700,900
Annual O & M Costs: $397,000
Net Present Value Cost: $16,031,900

ALTERNATIVE 4

- ***CONSOLIDATION AND SINGLE-LAYERED CAPPING OF WASTE MATERIALS***
- ***COLLECTION AND TREATMENT OF CONTAMINATED GROUNDWATER***
- ***DIVERSION OF UP-GRADIENT GROUNDWATER FLOW***
- ***DEED RESTRICTIONS***

A single-layered cap would be constructed over the area covered by the former dump and the former waste lagoon. This would consist of the following layers, starting from the bottom:

- twenty four inches of clay;
- a thirty mil polymeric membrane;
- six inches of sand with a geotextile fabric base;
- a biotic barrier consisting of six inches of cobbles and six inches of gravel;
- a second geotextile layer;
- twenty inches of topsoil, and
- vegetation.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, would be dug up and moved onto the area to be covered by the cap.

Groundwater in the unconsolidated materials would be prevented from flowing onto the site from the upgradient direction. This may be achieved by installing a barrier wall, such as a slurry wall, vibrating beam, or grout curtain.

Contaminated groundwater which flows from the site toward the East Fork of Mill Creek would be intercepted, collected, treated and then discharged. Discharge options for the treated groundwater would be evaluated during the remedial design. The treated water would be required to meet ARARs (see Attachment 3)

The site would be monitored for migration of contaminants to groundwater and surface water. Site-specific groundwater trigger levels are given in Table 1 (attached).

Deed restrictions would be emplaced, which would limit the potential for activities which would tend to interfere with the performance of the remedy.

Capital Costs: $8,914,000
Annual O&M Costs: $382,000
Net Present Value Cost: $14,800,000

ALTERNATIVE 5

- ***EXCAVATION AND ON-SITE INCINERATION OF BURIED WASTE LAGOON SOILS***
- ***MULTI-LAYERED CAPPING OF REMAINING WASTE MATERIALS***
- ***COLLECTION AND TREATMENT OF CONTAMINATED GROUNDWATER***
- ***DIVERSION OF UP-GRADIENT GROUNDWATER FLOW***
- ***SOIL VAPOR EXTRACTION***
- ***DEED RESTRICTIONS***

Under this option, the waste materials in the buried waste lagoon which exceed the 10^{-4} risk level would be excavated and treated using an on-site incinerator. A mobile incinerator would be brought onto the site, and operated for approximately seven months in accordance with ARARs relating to RCRA Hazardous Waste incinerators. An estimated 17,000 cubic yards of lagoon waste materials would be incinerated. The resultant ash would be disposed of on-site in a lined cell and stabilized, if necessary. Treatability testing would be required in order to implement the design of the incinerator and for stabilization of the ash.

A multi-layered RCRA cap would be constructed over the area covered by the former dump and the buried waste lagoon. The cap would consist of the following layers, starting at the bottom:

- Immediately above the waste materials, a layer of permeable materials such as sand would be installed, if necessary, for the purpose of venting the gases which result from the decomposition of waste materials. It is possible that the existing cover materials would adequately perform this function, and that construction of a venting layer would not be necessary;
- A twenty-four inch thick layer of clay would be installed, and constructed in a manner which would achieve a maximum permeability of 10^{-7} cm/sec;
- A thirty mil thick flexible membrane would be installed over the clay layer;
- A drainage layer would be installed over the membrane. This may be achieved using six inches of sand with a geotextile fabric base, or by using various commercially available synthetic products;
- An intrusion barrier would overlie the drainage layer. This is intended to limit the possibility of intrusion into the waste materials by burrowing animals. This would typically be composed of six inches of cobbles and six inches of gravel;
- A twenty inch thick layer of soil would be installed on the top of the intrusion barrier;
- Vegetatation would be planted and maintained on the cap, in a manner so as to minimize the potential for erosion.

In order to prevent damage to the clay layer through frost penetration, the top of

the clay layer would be at least 30 inches below the top surface of the cap.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, would be dug up and moved onto the area to be covered by the cap. The cap design would provide for the venting of gases from the waste materials.

Groundwater in the unconsolidated materials would be prevented from flowing onto the site from the upgradient direction. This may be achieved by installing a barrier wall, such as a slurry wall, vibrating beam, or grout curtain.

Contaminated groundwater which flows from the site toward the East Fork of Mill Creek would be intercepted, collected, treated and then discharged. Discharge options for the treated groundwater would be evaluated during the remedial design. The treated water would be required to meet ARARs (see Attachment 3)

The site would be monitored for migration of contaminants to groundwater and surface water. Site-specific groundwater trigger levels are given in Table 1 (attached).

Deed restrictions would be emplaced, which would limit the potential for activities which would tend to interfere with the performance of the remedy.

Volatile organic vapors from the permeable soils in the area around the buried waste lagoon would be treated using Soil Vapor Extraction. Volatiles would be withdrawn from the ground and treated.

Capital Costs: $22,920,000
Annual O & M Costs: $397,000
Net Present Value Cost: $29,000,000

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The remedial alternatives developed during the Feasibility Study were evaluated by the U.S. EPA using the following nine criteria. The advantages and disadvantages of each alternative were then compared to determine which alternative provided the best balance among these nine criteria. These criteria are set forth in the National Contingency Plan, 40 CFR Part 300.430.

CRITERION 1: OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

***Overall Protection of Human Health and the Environment** addresses whether a remedy provides adequate protection and describes how risks through each pathway are eliminated, reduced or controlled through treatment, engineering controls or institutional controls.*

The cap and groundwater controls which are included in alternatives 2 through 5 provide protection of human health and the environment by reducing the potential for migration of contaminants away from the site. The multi-layered cap (Alternatives 2, 3 and 5) will provide a greater reduction of infiltration of water through the waste materials than would be provided by the single layered cap (Alternative 4), and therefore will provide a greater reduction in the potential for migration of contaminants away from the site. The cap, in conjunction with the fencing and deed restrictions, will effectively prevent people from physically contacting the wastes.

Incineration of the materials in the buried waste lagoon (Alternatives 2 and 5) would destroy the organic components of the lagoon wastes, and therefore eliminate any potential for future off-site migration of these materials. Additionally, the potential stabilization of the ash resulting from the incineration process would provide effective immobilization of any inorganic materials which remained.

However, it must be recognized that the lagoon wastes are only a portion of the contaminated materials which are present at the site. Under any alternative, all of the contaminated materials in the former dump will remain on-site. While incineration of the waste lagoon materials would eliminate the possibility of future migration of the organic lagoon wastes, it would not affect the large amount of remaining contaminated materials.

CRITERION 2: COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

***Compliance with Applicable or Relevant and Appropriate Requirements** addresses whether or not a remedy will meet all of the applicable or relevant and appropriate requirements (ARARs) or other environmental statutes and/or provide grounds for invoking a waiver.*

Applicable requirements are those cleanup standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal

or State environmental or facility siting law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental siting law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to this particular site. ARARs are divided into chemical specific, action specific, and location specific groups.

A State of Ohio facility siting law containing a facility-setback provision has been identified as a potential ARAR for alternatives 2 and 5. This law, found at Ohio Rev. Code Sec. 3734.05(D)(6)(g), has been referred to as the "2000-foot rule". The law prohibits, with various exceptions, the location of a new hazardous waste facility within 2000 feet of any residence, school, hospital, jail, or prison.

A waiver of this provision may have been required for the implementation of either of the alternatives which include incineration (alternatives 2 and 5), due to the specific administrative requirements of this provision. A waiver is not necessary for the location of a soil vapor extraction system within the setback zone, because such system is not a "hazardous waste facility" within the meaning of Ohio law.

CRITERION 3: LONG-TERM EFFECTIVENESS AND PERMANENCE

***Long-term Effectiveness and Permanence** refers to the ability of a remedy to maintain reliable protection of human health and the environment over time. This criterion includes the consideration of residual risk and the adequacy and reliability of controls.*

All of the alternatives, with the exception of the No Action alternative, are believed to result in minimal residual risk. All of the alternatives are designed to limit the potential for the future migration of contaminants off of the site.

Alternatives 2 and 5 would achieve permanent destruction of the most toxic and hazardous organic wastes within the buried waste lagoon through incineration.

Alternative 5 and alternative 3, as modified, provide for permanent removal and destruction of volatile organic compounds drawn from the permeable materials which underlie portions of the buried waste lagoon through soil vapor extraction.

The capping and groundwater controls which are components of alternatives 2 through 5 are considered to be effective over the long term for the minimization of contaminant migration and the prevention of surface exposure, but will require long-term maintenance and monitoring in order to retain their effectiveness.

Under any alternative, all of the contaminated materials in the former dump will remain on-site. While incineration of the waste lagoon materials would achieve permanent destruction of the organic wastes in the buried waste lagoon, it would not affect the large amount of remaining contaminated materials.

CRITERION 4: REDUCTION IN TOXICITY, MOBILITY OR VOLUME

***Reduction of Toxicity, Mobility or Volume** is the anticipated performance of the treatment technologies a remedy may employ.*

Reductions in the Toxicity of wastes on the site would be achieved through those alternatives which include incineration and/or treatment of materials removed through soil vapor extraction (Alternatives 2 and 5). Toxicity would be reduced by thermally destroying the organic waste materials.

All of the alternatives, with the exception of the No Action alternative, are believed to provide reductions in the mobility of the waste materials, through capping and control of contaminated groundwater. The options which include a multi-layered cap (numbers 2, 3, and 5) have a slight advantage over alternative 4, which relies on a single-layered cap. This is because the infiltration of precipitation through the waste materials would be reduced to a greater extent by a multi-layered cap than it would be by a single-layered cap.

Reduction in the Toxicity, Mobility and Volume of contaminants found in the groundwater will be achieved through treatment of contaminated groundwater.

The incineration alternatives would eliminate any potential for future mobility of the organic contaminants within the lagoon wastes, because these materials would be destroyed. The incineration alternatives would also

provide for reduction in the mobility of metals in the lagoon wastes, if the incinerator ash was stabilized.

Soil Vapor Extraction would provide for the removal of volatile organic contaminants from the area around the waste lagoon. These volatile compounds will then be collected and treated. This would provide for reduction in toxicity, mobility, and volume of volatile organic contaminants.

CRITERION 5: SHORT-TERM EFFECTIVENESS

***Short-term Effectiveness** refers to the period of time needed to complete the remedy and any adverse impact on human health and the environment that may be posed during the construction and implementation of the remedy.*

Alternatives 2 and 5 involve excavation and incineration of the buried waste lagoon materials. Short-term risks are associated with these portions of the remedial action. This is largely because of the presence of a large variety of contaminants within the waste lagoon, which could potentially be released to the environment during excavation. These releases could be mitigated to a large degree through engineering controls such as physical enclosures, or through application of liquids or foam to cover the exposed areas. Short-term risks associated with the incineration were projected to fall within the acceptable risk range.

Alternatives 2 through 5 include the excavation and movement of contaminated soils from outside of the area to be capped to the capped area. This is expected to result in minimal short-term risks. Some movement of materials within the area to be capped may also be required in order to maintain acceptable slopes. This movement will be conducted in a manner which will limit the disturbance of waste materials.

The remedial construction for the containment alternatives (Alternatives 3 and 4) is projected to last 1 to 2 years. The remedial construction for the alternatives which include incineration (Alternatives 2 and 5) is projected to last 3 to 4 years. Considerable administrative delays may have been encountered during the implementation of incineration at this site, thereby decreasing the short-term effectiveness.

CRITERION 6: IMPLEMENTABILITY

***Implementability** is the technical and administrative feasibility of a remedy, including the availability of goods and services needed to implement the chosen solution.*

All of the alternatives (except the No Action alternative) are composed of proven, off-the-shelf technologies, and are therefore considered technically implementable.

Practically, the administrative implementability of an incineration remedy for this site is poor. It appears likely that many years of administrative effort could be required before incineration would be implemented at this site. Intense community relations efforts would be required, and extensive legal challenges could reasonably be anticipated.

CRITERION 7: COST

***Cost** includes capital and operation and maintenance costs.*

The costs of the alternatives were calculated in the Feasibility Study, and are listed below:

ALTERNATIVE 1

No Cost

ALTERNATIVE 2

Capital Costs: $22,810,000
Annual O & M Costs: $382,000
Net Present Value Cost: $28,700,000

ALTERNATIVE 3

Capital Costs: $9,619,000
Annual O & M Costs: $382,000
Net Present Value Cost: $15,500,000

ALTERNATIVE 3 WITH SOIL VAPOR EXTRACTION

Capital Costs: $9,700,900
Annual O & M Costs: $397,000
Net Present Value Cost: $16,031,900

ALTERNATIVE 4

Capital Costs: $8,914,000
Annual O&M Costs: $382,000
Net Present Value Cost: $14,800,000

ALTERNATIVE 5

Capital Costs: $22,920,000
Annual O & M Costs: $397,000
Net Present Value Cost: $29,000,000

CRITERION 8: STATE ACCEPTANCE

***State Acceptance** indicates whether, based on its review of the RI/FS and Proposed Plan, the State of Ohio concurs, opposes, or has no comment on the preferred alternative.*

The State of Ohio concurs with the selected remedy.

CRITERION 9: COMMUNITY ACCEPTANCE

***Community Acceptance** is assessed in the Record of Decision following a review of the public comments received on the FS report and the Proposed Plan.*

The Skinner Landfill Coalition, representing a cross-section of the community, has recommended a containment remedy which closely parallels the selected alternative.

Many comments were made during the public comment period in opposition to incineration. Some commenters expressed support for incineration. The U.S. EPA continues to believe that incineration is a viable and effective technology which could be safely applied at the Skinner site. However, U.S. EPA does not believe that community acceptance of incineration can be

readily obtained at the Skinner site.

Public reaction to U.S. EPA's announcement of a shift in preference from incineration to containment was generally favorable. Community acceptance of the selected remedy appears to be strong.

SELECTED REMEDY: ALTERNATIVE 3 WITH THE INCLUSION OF SOIL VAPOR EXTRACTION

Capping

A multi-layered RCRA cap will be constructed over the area covered by the former dump and the buried waste lagoon. The minimum extent of this cap is shown in Figure 2. The purpose of this cap is to minimize the infiltration of water from precipitation through the contaminated waste materials. The cap will consist of the following layers, starting at the bottom:

- Immediately above the waste materials, a layer of permeable materials such as sand will be installed, if necessary, for the purpose of venting the gases which result from the decomposition of waste materials. It is possible that the existing cover materials will adequately perform this function, and that construction of a venting layer will not be necessary;
- A twenty-four inch thick layer of clay will be installed, and constructed in a manner which will achieve a maximum permeability of 10^{-7} cm/sec;
- A thirty mil thick flexible membrane will be installed over the clay layer;
- A drainage layer will be installed over the membrane. This may be achieved using six inches of sand with a geotextile fabric base, or by using various commercially available synthetic products;
- An intrusion barrier will overlie the drainage layer. This is intended to limit the possibility of intrusion into the waste materials by burrowing animals. This will typically be composed of six inches of cobbles and six inches of gravel;
- A twenty inch thick layer of soil will be installed on the top of the intrusion barrier;
- Vegetatation will be planted and maintained on the cap, in a manner so as to minimize the potential for erosion.

In order to prevent damage to the clay layer through frost penetration, the cap shall be constructed so that the top of the clay layer is at least 30 inches below the top surface of the cap.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, will be dug up and moved onto the area to be covered by the cap. The cap design will provide for the venting of gases from the waste materials.

The cap will be constructed so that the slope will not exceed 5% to the maximum extent practicable. However, this will not be possible in certain portions of the site, such as the eastern edge of the former dump, where there is a precipitous drop-off. In order to provide a structurally stable cap in these areas, it is anticipated that concrete retaining walls or similar structures will need to be constructed. It is possible that some waste materials will have to be moved in order to facilitate the construction of the cap. The cap shall be designed in a manner which will minimize the amount of contaminated waste materials to be moved. Any such movement will be conducted in such as manner so as to minimize the release of contaminants to the environment.

Contaminated soils and waste materials from the buried pit area which exceed the concentrations listed in Table 2 shall be excavated and placed under the cap. Soils in the areas near wells GW-29 and GW-38 (see Figure 1) shall be evaluated for potential consolidation under the cap. In the course of the remediation, it is possible that other contaminated areas which lie outside of the capped area will be encountered. Any such additional materials may be consolidated under the cap.

Downgradient groundwater control

Contaminated groundwater downgradient of the area to be capped will be intercepted, captured, and treated.

- *Interception of contaminated groundwater:* Contaminated groundwater is present downgradient of the area to be capped. Contaminated groundwater shall be defined as that which contains contaminant concentrations exceeding the values listed in Table 1. This contaminated groundwater shall be intercepted and captured. Conceptually, this may be achieved by installing an underground barrier wall and collection trench downgradient of the waste materials. Common barrier wall construction techniques include slurry walls, vibrating beams, and grout curtains. This interception may also be achieved through the pumping of groundwater extraction wells. The system shall be designed to assure that no groundwater which contains contaminants exceeding the site-specific groundwater trigger levels given in Table 1 (attached) is allowed to pass into or underneath the East Fork of Mill Creek.

- *Treatment of contaminated groundwater:* Contaminated groundwater from the site must be removed from the ground and treated prior to discharge. This may be achieved through the use of an on-site wastewater

treatment plant. The discharge must meet ARARs (see attachment A). Depending on the volumes of wastewater involved, it may be economical to transport the wastewater off-site for treatment in a permitted facility. In this case, the discharge will have to meet the limits of the facility's permit.

In the course of the design, it may be determined by U.S.EPA that the capture of contaminated groundwater from areas of the site other than immediately downgradient of the area to be capped will be necessary.

Upgradient groundwater control

Currently, groundwater flows into the site from upgradient and becomes contaminated as it flows through the site. Additionally, it appears that some contaminated waste materials are in contact with the groundwater, and are therefore causing contamination of the groundwater. Therefore, the flow of groundwater onto the site shall be controlled, as will the level of groundwater underneath the cap, so that contaminated materials are no longer in contact with the groundwater. One method to achieve this is by installing a barrier wall upgradient of the former dump and waste lagoon. There are several types of barrier walls, including slurry walls, vibrating beams, and grout curtains. It may be necessary to obtain an easement along the northern site boundary in order to install the cap and to implement the upgradient groundwater control. Installation of the cap may cause a sufficient depression of the water table beneath the cap, thereby fulfilling the function of upgradient groundwater control.

Soil Vapor Extraction

Soil Vapor Extraction (SVE) is a technology by which volatile organic vapors and air found in the pore spaces in the soil underground are extracted, and then treated before discharge to the atmosphere. The waste lagoon is underlain in some areas by a permeable, sandy material, from which it appears possible to extract volatile organic vapors. If feasible, such extraction will help to control the potential for migration of contaminants away from the waste lagoon.

As part of the design of this remedy, an investigation of the feasibility of conducting SVE in the area surrounding the buried waste lagoon will be performed. If U.S. EPA determines that this technology is implementable and effective based upon the results of this investigation, then it will be implemented.

Institutional Controls

This remedy includes institutional controls to limit the future use of all areas of the site where remedial construction has occurred. These areas will include the area covered by the cap, any barrier walls, water treatment systems, extraction wells,

etc. The restrictions must prevent the use of this portion of the site for any activity which will interfere with the performance of the remedy, or which will result in the exposure of contaminants to humans or the environment. Such activities include residential or recreational use, excavation, or construction of wells. U.S. EPA will seek to prevent all individuals from traversing the cap, once completed, sot that the cap will not be damaged. The U.S. EPA will seek deed restrictions from the site owner as a means to impose these limitations on the use of the property.

In the event that institutional controls cannot be implemented effectively, the U.S. EPA and Ohio EPA will consider additional actions as necessary to ensure that the remedy remains effective on a long-term basis.

Monitoring

Since a large volume of potentially mobile contaminants will be left on this site, routes by which contaminants will migrate through the ground must be monitored following construction of this remedy. This shall include monitoring of groundwater and surface waters, and monitoring for the potential migration of Dense, Non-Aqueous Phase Liquid (DNAPL) contamination from the site. DNAPLs are contaminants such as creosote which are denser than water and are not very soluble in water, and therefore tend to sink through the aquifer.

The performance of this monitoring will require that additional monitoring wells and other types of monitoring devices be installed as part of the remedial action. The groundwater shall be monitored to assure that the site does not cause exceedances of the Site-Specific Groundwater Trigger Levels given in Table 1. These site-specific trigger levels are drawn from the Baseline Risk Assessment. In addition, radiologic testing of groundwater and surface water and of any excavated soils or subsurface samples shall be included in the monitoring program, as a precaution. The surface waters shall be monitored to assure that ARARs are not violated. If the Site-Specific Groundwater Trigger Levels are exceeded in groundwater in downgradient monitoring wells, U.S. EPA and Ohio EPA will consider whether additional remedial activities are necessary to address groundwater conditions.

Extensive monitoring of all media will be required during the remedial design and remedial construction.

Additional Investigation

Further investigation of two areas of the site will be required as part of the pre-design investigations. The first is the northeast corner of the site, as shown in Figure 3. The northeast corner of the site is to be capped. Prior to capping, a

limited investigation will be performed in order to identify the types of materials which are buried in this area. It is possible that the extent of the cap will be increased based upon the results of this investigation. The second portion to be investigated is the area of the site which lies along Skinner Creek. Low-level contamination has been detected in the Skinners' residential well, which is located near to Skinner Creek. Sampling must be performed in order to determine the sources of groundwater contamination within the Skinner Creek valley. It is possible that this investigation may lead to the consolidation of additional contaminated soil materials under the cap, and/or additional groundwater monitoring, pumping and treatment.

Cost of the Selected Remedy

Capital Costs: $9,700,900
Annual O & M Costs: $397,000
Net Present Value Cost: $16,031,900

STATUTORY DETERMINATIONS

U.S. EPA's primary responsibility at Superfund sites is to undertake remedial actions that are protective of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences. These specify that when complete, the selected remedial action must comply with ARARs under Federal and State environmental laws, unless a statutory waiver is justified. The selected remedy must also be cost effective and utilize permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment that permanently and significantly reduces the toxicity, mobility or volume of hazardous substances, pollutants and contaminants. The following sections discuss how the selected remedy meets the statutory requirements and preferences, where applicable.

A. PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

The selected remedy provides for protection of human health and the environment by limiting the potential for migration of contaminants off of the site. This is achieved through capping, control of groundwater flow upgradient, soil vapor extraction, and collection and treatment of contaminated groundwater downgradient of the areas in which wastes were disposed.

The potential for direct exposure of the wastes to humans, or release into the environment, will be limited by the physical barrier of the cap, and through the

deed restrictions, which will limit inappropriate activities on the site.

The selected remedy is projected to reduce overall site risks to within the acceptable risk range for carcinogens (i.e. less than 10^{-6} excess cancer risk), and below the site-specific cleanup levels for non-carcinogens (i.e. a hazard index of less than one). The selected remedy poses no unacceptable short-term risks or cross-media impacts.

B. COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Applicable requirements are those cleanup standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental or facility siting law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental siting law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to this particular site. ARARs are divided into chemical specific, action specific, and location specific groups.

All ARARs will be met for the selected remedy. The RCRA Land Disposal Restrictions do not apply to this operable unit remedial action.

In implementing the selected remedy, the U.S. EPA and Ohio EPA have agreed to consider a number of procedures that are not legally binding. These are listed in Attachment 2 and Table 2.6.

ARARs for the selected remedy are identified in Table 3 and Attachment 2.

CHEMICAL SPECIFIC ARARs

The selected remedy will achieve compliance with chemical specific ARARs relating to the interception of contaminated groundwater downgradient of the buried waste lagoon and former dump. ARARs include Maximum Concentration Limits (MCLs) established pursuant to the Safe Drinking Water Act (SDWA), Ambient Water Quality Criteria, and State standards which give concentration limits for drinking water and surface waters. MCLs and State drinking water standards are applicable based on the possibility that groundwater beneath the site might eventually be used as a source of drinking water, and because the aquifers underlying the site

are used as sources of drinking water in the site vicinity. The other water quality standards and limits will be applicable in the event that treated groundwater will be discharged to surface waters, and because site groundwater naturally discharges into the on-site streams. These values are compiled for contaminants found at this site, and are listed in Table 1 as Site-Specific Groundwater Trigger Levels.

Federal and State ARARs relating to air emissions and the quality of ambient air will be met during and after construction of the remedy.

ACTION SPECIFIC ARARs

The systems for the treatment and discharge of groundwater and surface water run-off from the site will be operated in a manner which will prevent any violation of surface-water quality standards which apply to the East Fork of Mill Creek. Any discharges from the treatment system will meet Federal and State ARARs relating to discharges of contaminants to surface waters.

The cap shall be constructed in accordance with the requirements of RCRA Subtitle C, and with the specific requirements of the Ohio Solid Waste Rules. RCRA requirements will be met as appropriate for the treatment and storage of Hazardous Wastes. Most RCRA requirements are administered under the State of Ohio's implementing regulations. U.S. EPA does not have sufficient evidence to demonstrate that listed RCRA wastes were disposed of at the site. RCRA requirements therefore are not applicable to the site, except to the extent that new hazardous wastes (such as treatment residuals) are generated during the implementation of the remedy. However, the extensive chemical analysis which was performed on the site wastes indicates that several RCRA regulations, although not applicable, are relevant and appropriate to the selected remedy because they address problems or circumstances very similar to those encountered at this site. For instance, the cap which will be constructed on the site will conform with the requirements of RCRA Subtitle C, which contains capping requirements for a hazardous waste facility (as opposed to RCRA Subtitle D, which contains capping requirements for a solid waste facility).

LOCATION SPECIFIC ARARs

The selected remedy will address and comply with all location specific ARARs. Specifically, water use and quality limitations relating to the East Fork of Mill Creek will be met in the event that treated groundwater is discharged to these waters.

C. *COST-EFFECTIVENESS*

The U.S. EPA believes that the selected remedy is cost-effective in mitigating the risks posed by the site contaminants within a reasonable period of time. Section 300.430(f)(ii)(D) of the NCP requires U.S. EPA to evaluate cost-effectiveness by comparing all the alternatives which meet the threshold criterion; protection of human health and the environment, against three additional balancing criteria: long-term effectiveness and permanence; reduction of toxicity, mobility or volume; and short term effectiveness. The selected remedy provides the best overall balance of these criteria and provides for overall effectiveness in proportion to the cost. The incremental cost of incineration of the waste lagoon materials at this site is approximately $13,000,000. Current information indicates that the overall site risks would not be enhanced by the incineration of the lagoon wastes to a degree which would justify this large added cost, particularly given that the lagoon wastes are only a portion of the contaminated materials at the site. The estimated cost of the selected remedy is:

Capital Costs: $9,700,900
Annual O & M Costs: $397,000
Net Present Value Cost: $16,031,900

D. *UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATE TREATMENT TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE*

U.S.EPA believes that the selected remedy represents the maximum extent to which permanent solutions can be utilized in a cost effective manner to address potential migration of contaminants away from the Skinner Landfill site. The selected remedy provides the best balance of tradeoffs in terms of long-term effectiveness or permanence; reduction in toxicity, mobility or volume; short-term effectiveness; implementability; cost; and State and community acceptance. The criterion of long-term effectiveness and permanence is addressed by the installation of a multi-layered cap, and groundwater collection trenches. Soil Vapor Extraction, if feasible, will provide for permanent removal of organic vapors.

A detailed evaluation of the potential for application of alternate treatment technologies to the lagoon wastes was performed. The buried waste lagoon includes a wide variety of organic and inorganic waste materials, in a matrix that includes soils, garbage, and demolition debris. It was determined that no currently practicable alternate treatment technologies are applicable to these materials; the only options for the buried waste lagoon materials are incineration and containment. Soil Vapor Extraction (SVE) is an alternate treatment technology, and is to be applied in the permeable materials which underlie part of the buried

waste lagoon. This application of SVE is the maximum extent to which alternative treatment technologies can be practicably applied at this site.

None of the alternatives evaluated for this site would provide a totally permanent solution. Incineration would provide for permanent destruction of the organic components of the lagoon waste materials to the maximum extent practicable. However, incineration of the lagoon waste materials would only address a portion of the contaminated materials on the site. The most highly contaminated groundwater at the site was detected during Phase 1 of the Remedial Investigation upgradient of the lagoon. Incineration would not have addressed the source of these contaminants. Therefore, even if we were to incinerate the lagoon wastes, we would not be left with a "clean" site, by any means. Identical provisions for capping, groundwater control, collection, and treatment, soil vapor extraction, and institutional controls would be required whether or not incineration was chosen. Due to the large volume of contaminated materials which are present at this site, and the fact that the chemical contaminants are mixed with and buried under a wide variety of debris, the U.S. EPA believes that a no truly permanent solutions are presently practicable for the majority of the waste materials at this site.

The selected remedy does not utilize resource recovery technologies.

E. PREFERENCE FOR TREATMENT

The selected remedy satisfies, in part, the statutory preference for treatment as a principal element. Contaminated groundwater will be collected and treated. Vapors which are removed through soil vapor extraction will be treated prior to discharge to the atmosphere. The majority of the waste materials on the site, including the wastes in the buried waste lagoon and the former dump, will not be treated, but will be contained.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for this remedial action, as released to the public in April, 1992, stated that the U.S. EPA's preferred remedy was Alternative #5, which included on-site incineration of the contaminated materials from the waste lagoon using a transportable incinerator. Two public meetings were held, on May 20 and July 29, 1992, to discuss the Proposed Plan. A number of local citizens were opposed to incineration.

Subsequent to the second public meeting, and due to concerns expressed by members of the public and by elected officials, the U.S. EPA decided to alter its decision-making approach for this site. On August 7, 1992, U.S. EPA mailed an

announcement to members of the public and issued a news release, indicating that:

1) U.S. EPA proposed to select an interim remedy for this site, including the fencing of the contaminated portion of the site and the provision of alternative potable water supply to potentially affected homes;

2) The comment period for fencing and alternate water supply would end on August 31, 1992;

3) The comment period for the remaining portions of the remedy would remain open until further notice, in order to address community concerns.

The comment period for the remaining portions of the remedy did not close until February 9, 1993; in total the public comment period was nearly ten months long.

A coalition of various West Chester community groups and residents was formed after the July 29, 1992 public meeting in order to discuss the Skinner Landfill cleanup and to meet with the U.S. EPA and Ohio EPA. This coalition includes representatives from the Township Trustees, the Chamber of Commerce, Citizens Lobby for Environmental Action Now (C.L.E.A.N), the Lakota School Board, the Old West Chester Merchants Association, the Union School PTA, the Home Builders Association, the Firefighters/Service Group, and a number of Township Residents. The U.S. EPA and Ohio EPA met with this coalition approximately every other week for a period of three months. Topics discussed before this coalition included:

- site history;
- description of Remedial Investigation results;
- applicability of RCRA regulations;
- applicable or relevant and appropriate requirements for the site remedy;
- viability of containment remedies;
- assessment of site risks;
- proposals for further studies;
- alternative remediation technologies for the lagoon wastes; and
- the remedy selection process.

The discussions held with the Coalition were highly productive and resulted in a high degree of open communication and consensus-building. As a result of these discussions, this Coalition issued a unanimous written recommendation that a containment remedy be implemented at the Skinner site. This recommendation is available for public review in the Administrative Record.

On January 11, 1993, the U.S. EPA issued a Fact Sheet announcing that its preferred alternative had changed from Alternative 5 (which included incineration), to Alternative 3 (a containment remedy that does not include incineration), with

the possible inclusion of soil vapor extraction. This Fact Sheet, along with a press release and newspaper advertisements, announced that the public comment period would end on February 9, 1993.

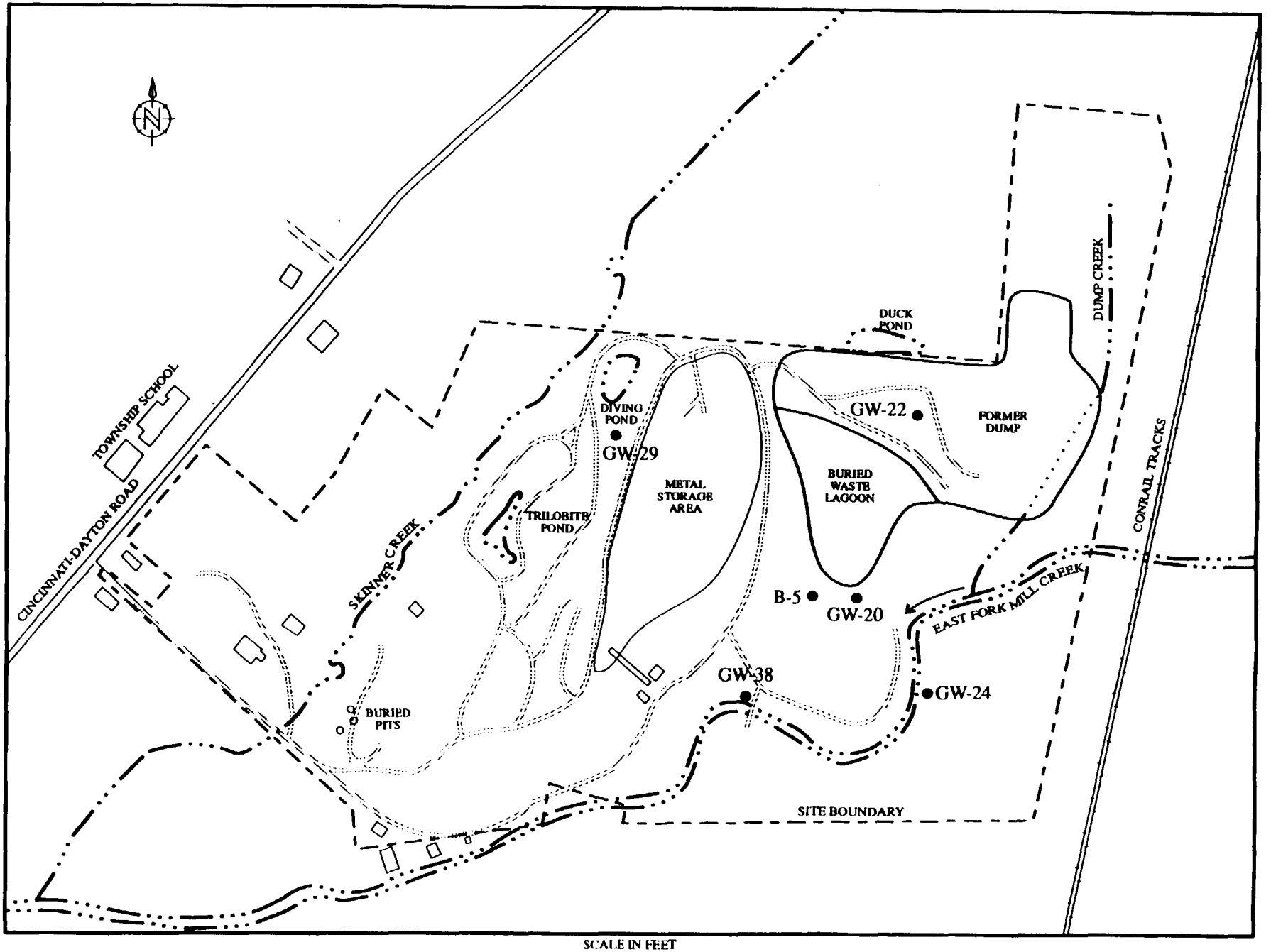
U.S. EPA has chosen not to incinerate the lagoon waste materials at this site. Part of the reason for this is because incineration of the lagoon waste materials would only address a portion of the contaminated materials on the site. The most highly contaminated groundwater at the site was detected during Phase 1 of the Remedial Investigation upgradient of the lagoon. Incineration would not have addressed the source of these contaminants. Therefore, even if we were to incinerate the lagoon wastes, we would not be left with a "clean" site, by any means. Identical provisions for capping, groundwater control, collection, and treatment, soil vapor extraction, and institutional controls would be required whether or not incineration was chosen. In the end, U.S. EPA judged that the long-term environmental gains which would have been associated with incineration were limited, and that the difficulties and costs associated with the implementation of incineration would be disproportionately high.

Soil Vapor Extraction (SVE) was added as a component of Alternative 3 in response to comments received from the Skinner Landfill Coalition, and from the PRPs.

U.S. EPA feels that the selected remedy will achieve the best balance in serving the needs of the environment, the community, and the future residents of West Chester.

RESPONSIVENESS SUMMARY

Appended to this ROD is the Responsiveness Summary which presents background information, describes community involvement and categorizes the public comments received during the public comment period and U.S. EPA's responses to the comments.



SCALE IN FEET
0 500 1000

FIGURE 1. SKINNER LANDFILL
WEST CHESTER, OHIO

LEGEND
● Selected well locations as referred to in text

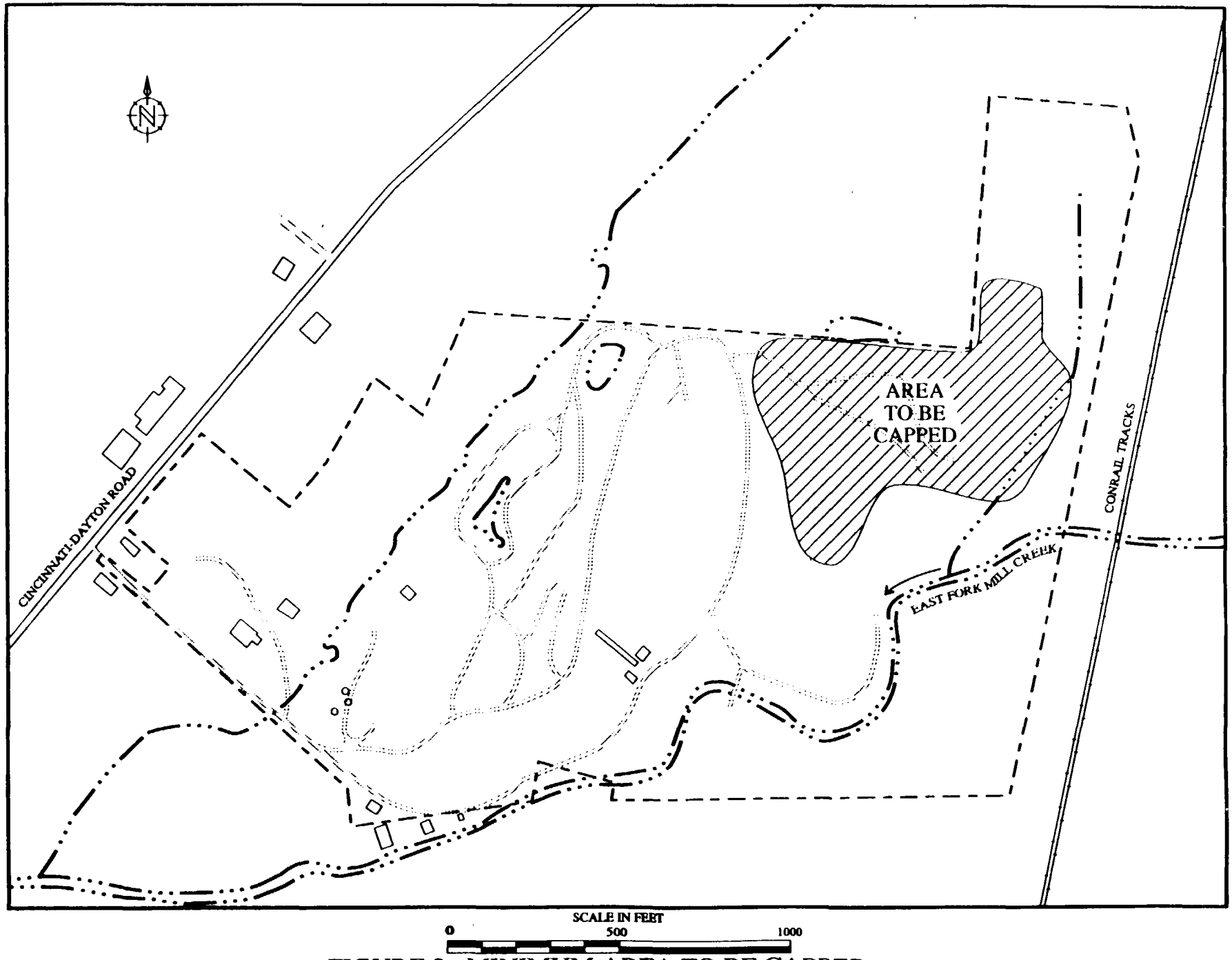


FIGURE 2. MINIMUM AREA TO BE CAPPED
SKINNER LANDFILL

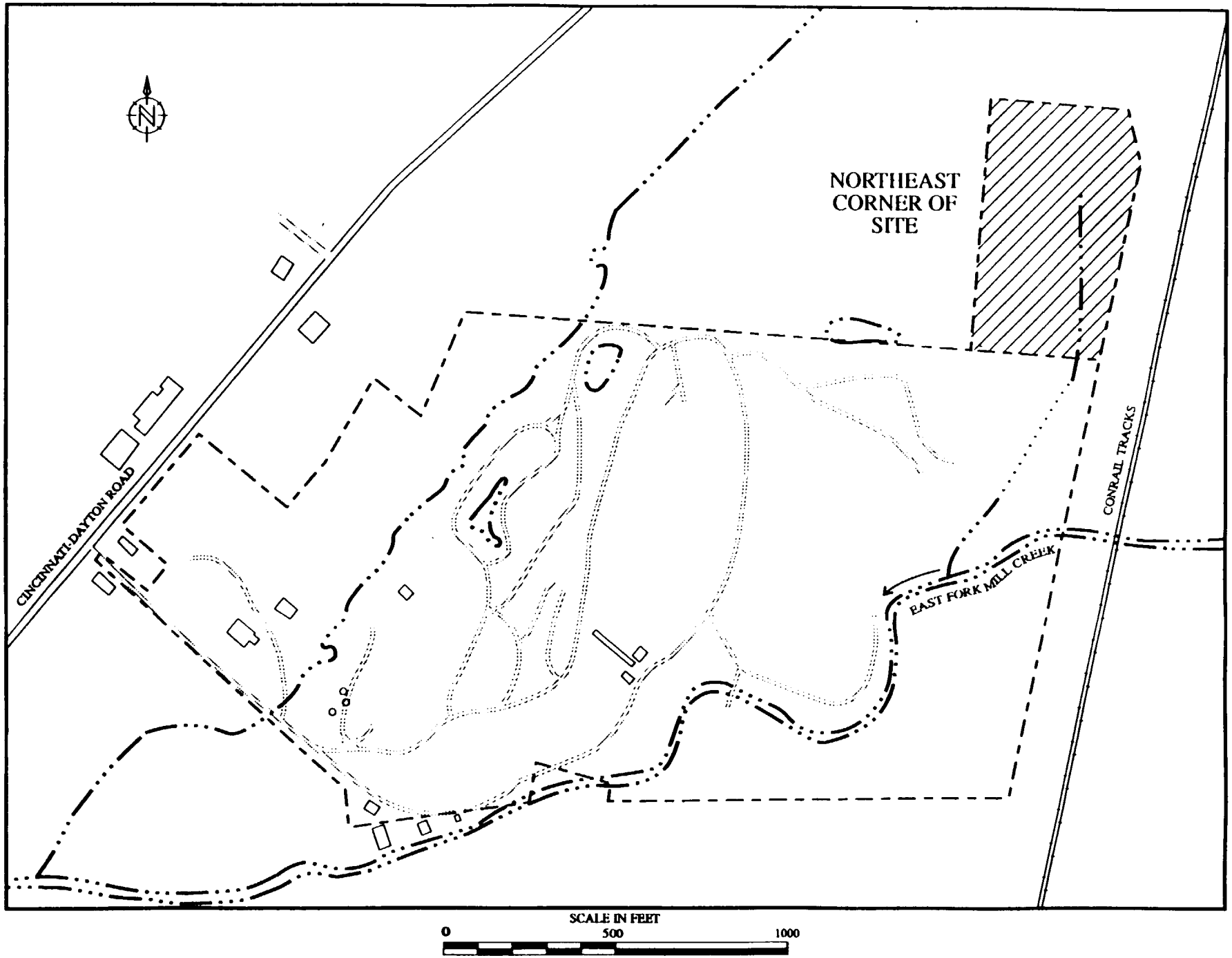
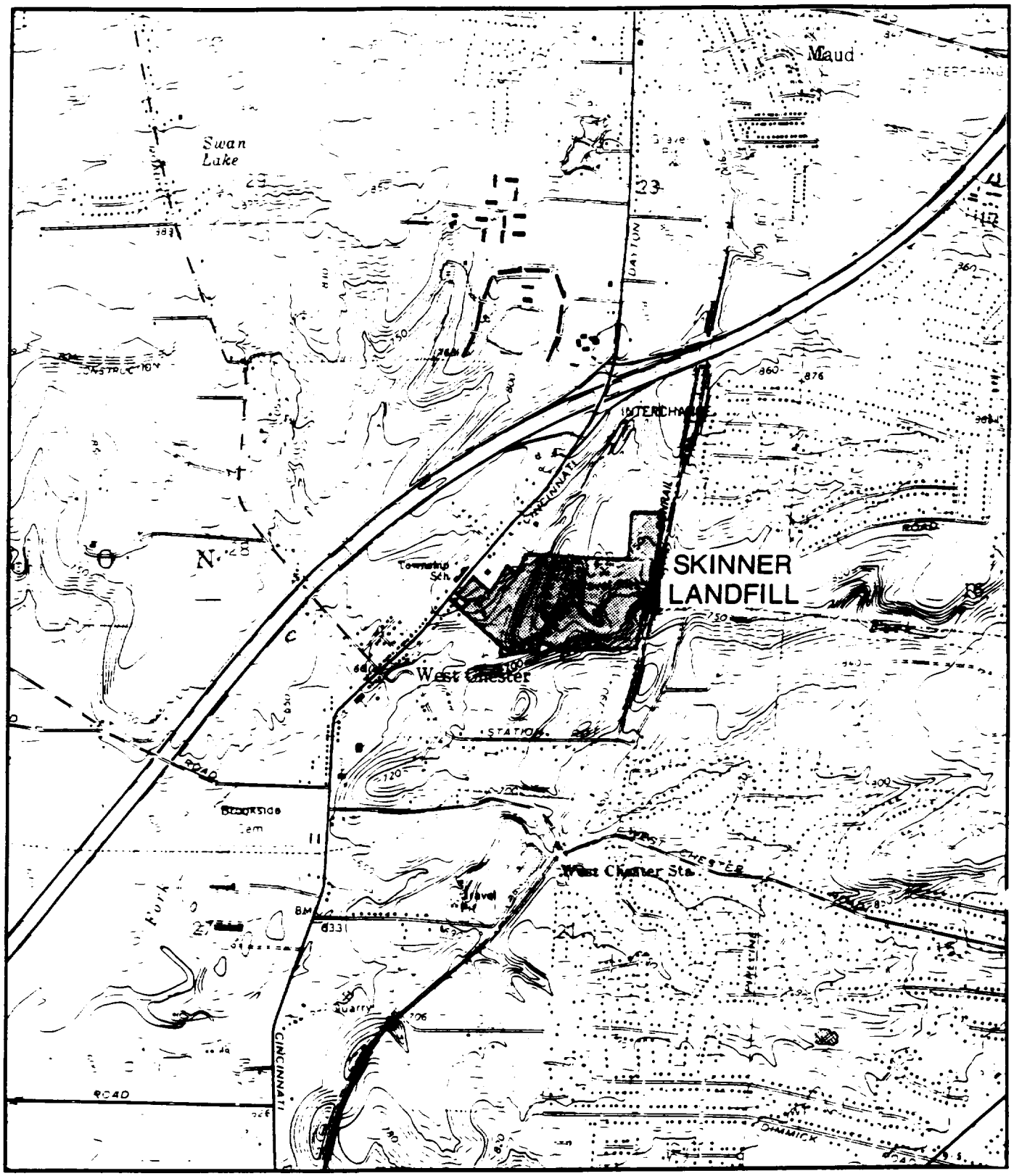


FIGURE 3. NORTHEAST CORNER OF SITE
SKINNER LANDFILL



USGS GLENDALE, OH QUADRANGLE, 1965, 1982.

SCALE IN FEET

0 1000 2000 3000 4000 5000

N

FIGURE 4. LOCATION MAP
SKINNER LANDFILL

Table 1
Skinner Landfill
Site-Specific Groundwater Trigger Levels

CONTAMINANT	*CONCENTRATION (MG/L)*
Antimony	0.03
Arsenic	0.005
Barium	1.0
Beryllium	0.004
Cadmium	0.0011
Chromium	0.011
Copper	0.012
Cyanide	0.0052
Iron	0.001
Lead	0.0032
Mercury	0.000012
Nickel	0.096
Selenium	0.005
Silver	0.00012
Thallium	0.04
Zinc	0.086
Benzene	0.005
2-Butanone	0.0071
Carbon Tetrachloride	0.005
Chlorobenzene	0.026
Chloroform	0.079
1,2-Dichloroethane	0.005
1,2-Dichloroethane(cis)	0.07
1,2-Dichloroethane(trans)	0.1
1,2-Dichloropropane	0.005
Ethylbenzene	0.062
Styrene	0.056
1,1,2,2-Tetrachloroethane	0.107
Tetrachloroethene	0.005
Toluene	1.0
1,1,1-Trichloroethane	0.088
1,1,2-Trichloroethene	0.418
Trichloroethene	0.005
Vinyl Chloride	0.002
Xylenes (total)	10.0

Skinner Landfill
Site-Specific Groundwater Trigger Levels
(Continued)

CONTAMINANT	*CONCENTRATION (MG/L)*
Acenaphthene	0.52
Benzo(a)anthracene	0.0001
Benzo(b)fluoranthene	0.0002
Benzo(j)fluoranthene	0.0002
Benzo(g,h,i)perylene	0.0031
Benzo(a)pyrene	0.0002
Bis(2-Chloroethyl)ether	0.0136
bis(2-Chloroisopropyl)ether	4.36
bis(ethylhexyl)phthalate	0.049
Butylbenzylphthalate	0.0084
Chrysene	0.0031
Dibenzo(a,h)anthracene	0.0031
1,2-Dichlorobenzene	0.011
1,2-Dichlorobenzene	0.6
1,4-Dichlorobenzene	0.075
2,4-Dimethylphenol	2.12
Dimethyl phthalate	0.073
Di-n-butyl phthalate	0.19
Fluoranthene	0.0089
Hexachloroethane	0.00099
Indeno(1,2,3-cd)Pyrene	0.0031
Isophorone	0.9
Naphthalene	0.044
Nitrobenzene	27.0
4-Nitrophenol	0.15
Phenol	0.37
1,2,4-Trichlorobenzene	0.077
Phenanthrene	0.0063

Table 2
Skinner Landfill
Remedial Response Levels
for Contaminated Soils

CONTAMINANT	*CONCENTRATION (MG/KG)*
Polychlorinated Biphenyls	0.160
Benzo(a)anthracene	0.330
Benzo(a)pyrene	0.100
Benzo(b)fluoranthene	0.330
Benzo(k)fluoranthene	0.330
Chrysene	0.330
Lead	500.0

TABLE 3
Applicable or Relevant and Appropriate Requirements (ARARs)
Skinner Landfill Site
Federal Requirements

Action	Requirement	Citation
Discharge of Water Treatment System Effluent	Discharge of effluent may not interfere with the attainment or mainteinance of water quality	Clean Water Act (CWA) Sec. 302, 33 U.S.C. Sec. 1312
	Discharge of effluent may not cause violation of Federally approved State water quality standards. These standards may be in addition to or more stringent than other federal standards under the CWA.	40 CFR 122.44
	Use of best available technology (BAT) economically achievable is required to control toxic and non-conventional pollutants. Use of	40 CFR 122(a)

TABLE 3
Applicable or Relevant and Appropriate Requirements (ARARs)
Skinner Landfill Site
Federal Requirements

Action	Requirement	Citation
Discharge of Water Treatment System Effluent (cont.)	the best conventional pollutant control technology (BCT) is required to control conventional pollutants. Technology-based limitations may be determined on a case-by case basis.	
	Discharge limitations must be established for all toxic pollutants that are or may be discharged at levels greater than those that can be achieved by technology-based standards.	40 CFR 112.44(e)
	Discharge must be monitored to include: .The mass of each pollutant .The volume of effluent	40 CFR 112.44(i)

TABLE 3
Applicable or Relevant and Appropriate Requirements (ARARs)
Skinner Landfill Site
Federal Requirements

Action	Requirement	Citation
Discharge of Water Treatment System Effluent (cont.)	.Frequency of discharge and other measurements as appropriate.	
	Approved test methods for waste constituents to be monitored must be followed. Detailed requirements for analytical procedures and quality controls are provided Monitor and report results as required (at least annually).	40 CFR 122.44(l)
	Comply with additional conditions such as:	40 CFR 122.41(l)
	.Duty to mitigate any adverse effects of any discharge. .Proper operation and maintenance of treatment systems.	
	Develop and implement a Best Management Practice (BMP) program and incorporate measures that prevent the release of toxic constituents to surface waters.	40 CFR 125.100 and 104

TABLE 3
Applicable or Relevant and Appropriate Requirements (ARARs)
Skinner Landfill Site
Federal Requirements

Action	Requirement	Citation
Discharge of Water Treatment System Effluent (cont.)	The BMP Program must: .Establish specific procedures for the control of toxic and hazardous pollutant spills. . Include a prediction of direction, rate of flow, and total quantity of toxi pollutants where experience indicates a reasonable potential for equipment failure. . Assure proper managment of solid and hazardous waste in accordance with regulations promulgated under RCRA. Sample preservation procedures, container materials, and maximum allowable holding times are prescribed.	40 CFR 136.1-136.4
Storm Water Discharge	Comply with substantive requirements of a NPDES permit for storm water discharge	40 CFR Parts 122, 123, 124 and Section 402(p) of the CWA.

TABLE 2.6

OTHER FEDERAL CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED

1. Federal Criteria, Advisories, and Procedures

- Health Effects Assessments (HEAs) and Proposed HEAs, ["Health Effects Assessment for (Specifi Chemicals), "ECAO, U.S. EPA, 1984].

- Reference Doses (RFDs), ("Verified Reference Doses of U.S. EPA," ECAO-CIN-475, January 1986). Se also Drinking Water Equivalent Levels (DWELs), a set of medium-specific drinking water level derived from RFDs. (See U.S. EPA Health Advisories, Office of Drinking Water, March 31, 1987)

- Carcinogen Potency Factors (CPFs) (e.g., Q1 Stars, Carcinogen Assessment Group [CAG] Values) (Table 11, "Health Assessment Document for Tetrachloroethylene (Perchloroethylene)" U.S. EPA OHEA/6008-82/005F, July 1985).

- Pesticide and Food additive tolerances and action levels. Note: Some tolerances and action level may pertain and should therefore be considered in certain situations.

- Waste Load allocation procedures, EPA Office of Water (40 CFR Part 125, 130).

- Federal Sole Source Aquifer requirements (See 52 FR 6873, March 5, 1987).

- Public health criteria on which the decision to list pollutants as hazardous under Section 112 o the Clean Air Act was based.

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual; Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

- Guidelines for Ground-Water Classification Under the U.S. EPA Ground-Water Protection Strategy
- Advisories issued by FWS and NWFS under the Fish and Wildlife Coordination Act.
- TSCA Compliance Program Policy, ("TSCA Enforcement Guidance Manual - Policy Compendium, "U.S. EPA OECM, OPTS, March, 1985).
- OSHA health and safety standards that may be used to protect public health (non-workplace).
- Health Advisories, EPA Office of Water.
- EPA Water Quality Advisories, EPA Office of Water, Criteria and Standards Division.

2. U.S. EPA RCRA Guidance Documents

- Interim Final Alternate Concentration Limit Guidance Part I: ACL Policy and Information Requirements (July, 1987).

  a. U.S. EPA's RCRA Design Guidelines

     (1) Surface Impoundments, Liners Systems, Final Cover and Freeboard Control.

     (2) Waste Pile Design - Liner Systems.

     (3) Land Treatment Units.

     (4) Landfill Design - Liner Systems and Final cover.

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual; Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

b. Permitting Guidance Manuals

(1) Permit Writer's Guidance Manual for Hazardous Waste Land Treatment, Storage and Disposal Facilities, Phase I; (February 15, 1985) EPA/530-SW-85-024.

(2) Permit Writer's Guidance Manual for Subpart F. (October 1983)

(3) Permit Applicant's Guidance Manual for the General Facility Standards. (October 15, 1983) EPA # OSW 00-00-968.

(4) Waste Analysis Plan Guidance Manual. (October 15, 1984) EPA/530-SW-84-012.

(5) Permit Writer's Guidance Manual for Hazardous Waste Tanks. (July 1983).

(6) Model Permit Application for Existing Incinerators. (1985)

(7) Guidance Manual for Evaluating Permit Applications for the Operation of Hazardous Waste Incinerator Units. (July 1983).

(8) A Guide for Preparing RCRA Permit Applications for Existing Storage Facilities. (January 15, 1982).

(9) Guidance Manual on closure and post-closure Interim Status Standards.

c. Technical Resources Documents (TRDs)

(1) Evaluating Cover Systems for Solid and Hazardous Waste. (September 1982) EPA OSW-00-00-867.

(2) Hydrologic Simulation of Solid Waste Disposal Sites. (November 1982) EPA OSW-00-00-868.

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual; Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

(3) Landfill and Surface Impoundment Performance Evaluation. (April 1983) EPA osw-00-00 869.

(4) Draft Minimal Technology Gui lines on Double Liner Systems for Landfills and Surfa Impoundments. (May 1985) PB 87151072-AS.

(5) Draft Minimal Technology Guidelines on Single Liner System for Landfills and Surfac Impoundments. (May 1985) PB 871173159.

(6) Management of Hazardous Waste Leachate. (September 1982) OSW-00-00-871.

(7) Guide to the Disposal of Chemically Stabilized and Solidified Waste. (1982) EPA/530-SW 872.

(8) Closure of Hazardous Waste Surface Impoundments. (September 1982) OSW-00-00-873.

(9) Hazardous Waste Land Treatment. (April 1983) OSW-00-00-874.

(10) Soil Properties, Classification, and Hydraulic Conductivity Testing. (March 1984) OSW 00-00-925M OSWER directive 9480.00-7D.

d. Test Methods for Evaluating Solid Waste

(1) Solid Waste Leaching Procedure Manual. (1984) OSW-00-00-924.

(2) Methods for the Prediction of Leachate Plume Migration and Mixing.

(3) Hydrologic Evaluation of Landfill Performance (HELP) Model, Volumes I and II (1984) EPA/530-SW-84-009 and EPA/530-SW-84-010.

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual: Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

(4) Hydrologic Simulation of Solid Waste Disposal Sites. (November 1982) EPA OSW-00-00-868.

(5) Procedures for Modelling Flow through Clay Liners to Determine Required Liner Thickness. (1984) EPA/530-SW-84-001 and OSWER directive 9480.00-9D.

(6) Test Methods for Evaluating Solid Wastes, third edition. (November 1986) SW-846.

(7) A Method for Determining the Compatibility of Hazardous Wastes. EPA/600-02-800-076.

(8) Guidance Manual on Hazardous Waste Compatibility.

3. U.S. EPA Office of Water Guidance Documents

a. Pretreatment Guidance Documents:

(1) 304(g) Guidance Document Revised Pretreatment Guidelines (3 Volumes).

(2) Guidance for POTW Pretreatment Program Manual (October 1983).

(3) Developing Requirements for Direct and Indirect Discharges of CERCLA Wastewater, Draft (1987).

(4) Domestic Sewage Exemption Study.

(5) Guidance for Implementing RCRA Permit by Rule Requirements at POTWs.

(6) Application of Correction Action Requirements at Publicly Owned Treatment Works.

(7) Draft Guidance Manual on the Development and Implementation of Local Discharg Limitations Under the Pretreatment Program (1987).

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual: Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

b. Water Quality Guidance Documents

(1) Ecological Evaluation of Proposed Discharge of Dredged Material into Ocean Wate (1977).

(2) Technical Support Manual: Waterbody Surveys and Assessments for Conducting Us Attainability Analyses (1983).

(3) Water-Related Environmental Fate of 129 Priority Pollutants (1979).

(4) Water Quality Standards Handbook (December 1983).

(5) Technical Support Document for Water Quality-based Toxic Control. (1983).

c. NPDES Guidance Documents

(1) NPDES Best Management Practices Guidances Manual (June 1981).

(2) Case studies on toxicity reduction evaluation (May 1983).

d. Ground Water/UIC Guidance Documents

(1) Designation of a USDW (No. 7.1, October 1979).

(2) Elements of aquifer identification (No. 7.2, October 1979).

(3) Interim Guidance Concerning Corrective Action for Primary and Continuous Release o Class I and IV Hazardous Waste Wells (No. 45, April 1986) requirements.

(4) Requirements applicable to wells injected into, through, or above an aquifer that ha been exempted pursuant to Section 146.104(b)(4). (No. 27, July 1981).

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual; Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

e. Ground-Water Protection Strategy (August 1984).

f. Clean Water Act Guidance Documents.

4. U.S. EPA Manuals from the Office of Research and Development

. State approval of water supply system additions or developments.

. State ground water withdrawal approvals.

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual: Draft Guidance.

TABLE 2-16
SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

Chemical	Soils		Ground Water	Surface Water				
	Waste Lagoon (mg/Kg)	Site-Wide (mg/Kg)	Unconsolidated and Bedrock Wells (mg/L)	Mill Creek (mg/L)	Skinner Creek (mg/L)	Dump Creek (mg/L)	Diving Pond (mg/L)	Trilobite Pond (mg/L)
Aluminum	- - -	- - -	0.017 - 55.6	- - -	- - -	- - -	- - -	1.02 - 4.61
Antimony	3.4 - 23	4.9 - 14.9	- - -	- - -	- - -	- - -	- - -	- - -
Arsenic	- - -	- - -	0.002 - 0.0612	- - -	- - -	- - -	- - -	- - -
Barium	- - -	- - -	0.003 - 5.95	0.0412 - 0.0683	- - -	- - -	- - -	0.0311 - 0.0438
Beryllium	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Cadmium	1.1 - 56.9	0.54 - 11	0.00053 - 0.064	- - -	- - -	- - -	0.0037 - 0.0058	- - -
Chromium	- - -	6.7 - 97	0.004 - 0.137	- - -	- - -	- - -	- - -	- - -
Cobalt	- - -	- - -	0.003 - 0.31	0.0056 - 0.0056	- - -	- - -	- - -	- - -
Copper	- - -	12 - 574	0.002 - 0.163	- - -	- - -	- - -	- - -	- - -
Lead	6.7 - 4360	3.7 - 1030	0.00282 - 0.54	- - -	- - -	- - -	- - -	- - -
Manganese	- - -	- - -	0.0104 - 18	- - -	0.0163 - 0.0715	- - -	- - -	- - -
Mercury	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Nickel	- - -	- - -	0.009 - 0.41	0.0078 - 0.0078	- - -	- - -	0.0059 - 0.0084	- - -
Silver	0.72 - 13	0.54 - 4.3	- - -	- - -	- - -	- - -	- - -	- - -
Thallium	0.24 - 1	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Tin	155 - 408	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Vanadium	- - -	- - -	0.0021 - 0.135	0.0098 - 0.0098	- - -	- - -	0.0072 - 0.0099	0.006 - 0.0104
Zinc	- - -	36.2 - 10200	0.001 - 1.33	- - -	- - -	- - -	- - -	- - -
Cyanide	2.6 - 43.6	0.84 - 1.8	0.011 - 0.0235	- - -	- - -	- - -	- - -	- - -
Vinyl Chloride	- - -	- - -	0.004 - 0.048	- - -	- - -	- - -	- - -	- - -
Chloroethane	- - -	- - -	0.017 - 0.052	- - -	- - -	- - -	- - -	- - -
Methylene Chloride	0.0064 - 5.3	0.0014 - 7.9	0.003 - 0.014	- - -	- - -	- - -	- - -	- - -
Acetone	0.014 - 140	0.0089 - 34	0.002 - 5.9	- - -	- - -	- - -	- - -	- - -
Carbon Disulfide	- - -	- - -	- - -	0.0003 - 0.0003	- - -	- - -	- - -	- - -
1,1 Dichloroethene	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1,1 Dichloroethane	- - -	- - -	0.001 - 0.082	- - -	- - -	- - -	- - -	- - -
1,2 Dichloroethene	- - -	- - -	0.005 - 4.5	- - -	- - -	- - -	- - -	- - -
Chloroform	0.02 - 33	- - -	0.001 - 0.085	- - -	- - -	- - -	- - -	- - -
1,2 Dichloroethane	0.003 - 210	- - -	0.005 - 0.18	- - -	- - -	- - -	- - -	- - -
2-Butanone	0.24 - 39	0.031 - 0.045	0.006 - 0.036	- - -	- - -	- - -	- - -	- - -
1,1,1 Trichloroethane	0.026 - 63	- - -	0.0026 - 0.012	- - -	- - -	- - -	- - -	- - -
Carbon Tetrachloride	0.041 - 160	- - -	0.003 - 0.0067	- - -	- - -	- - -	- - -	- - -
1,2 Dichloropropane	0.14 - 340	- - -	0.021 - 0.37	- - -	- - -	- - -	- - -	- - -
Trichloroethene	0.006 - 140	- - -	0.002 - 0.071	- - -	- - -	- - -	- - -	- - -
Bromochloromethane	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1,1,2 Trichloroethane	0.073 - 370	- - -	0.055 - 0.055	- - -	- - -	- - -	- - -	- - -
Benzene	0.007 - 60	0.00049 - 0.0022	0.001 - 20	- - -	- - -	- - -	- - -	- - -

TABLE 2-16
SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

Chemical	Soils		Ground Water	Surface Water				
	Waste Lagoon (mg/Kg)	Site-Wide (mg/Kg)	Unconsolidated and Bedrock Wells (mg/L)	Mill Creek (mg/L)	Skinner Creek (mg/L)	Dump Creek (mg/L)	Diving Pond (mg/L)	Trilobite Pond (mg/L)
4 Methyl 2-Pentanone	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
2 Hexanone	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Tetrachloroethene	0.049 - 44	0.0021 - 2.7	0.001 - 0.02	- - -	- - -	- - -	- - -	- - -
1,1,2,2-Tetrachloroethane	0.04 - 130	- - -	0.006 - 0.006	- - -	- - -	- - -	- - -	- - -
Toluene	0.001 - 31000	0.001 - 0.36	0.0013 - 3.1	- - -	- - -	- - -	- - -	- - -
Chlorobenzene	5 - 15	0.002 - 0.002	0.001 - 0.027	- - -	- - -	- - -	- - -	- - -
Ethylbenzene	0.0008 - 98	0.001 - 0.002	0.005 - 0.08	- - -	- - -	- - -	- - -	- - -
Xylene (total)	0.001 - 200	0.001 - 0.016	0.034 - 0.18	0.003 - 0.003	- - -	- - -	- - -	- - -
Phenol	0.48 - 26	- - -	0.002 - 0.67	0.0006 - 0.0089	0.003 - 0.003	- - -	0.0022 - 0.0022	0.001 - 0.001
bis(2-Chloroethyl)Ether	0.22 - 21	- - -	0.001 - 0.24	- - -	- - -	- - -	- - -	- - -
1,3-Dichlorobenzene	0.043 - 230	- - -	- - -	- - -	- - -	- - -	- - -	- - -
1,4-Dichlorobenzene	0.13 - 180	- - -	0.0035 - 0.011	- - -	- - -	- - -	- - -	- - -
Benzyl Alcohol	0.94 - 9.2	- - -	0.001 - 0.001	- - -	- - -	- - -	- - -	- - -
1,2-Dichlorobenzene	0.43 - 94	- - -	0.006 - 0.006	- - -	- - -	- - -	- - -	- - -
2 Methylphenol	0.17 - 7.8	- - -	0.45 - 0.45	- - -	- - -	- - -	- - -	- - -
bis(2 Chloroisopropyl)Ether	- - -	- - -	- - -	- - -	- - -	0.003 - 0.003	- - -	- - -
4 Methylphenol	0.57 - 26	0.11 - 0.14	0.14 - 0.35	- - -	- - -	- - -	- - -	- - -
Hexachloroethane	0.69 - 19	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Nitrobenzene	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Benzoic Acid	1.6 - 1100	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Naphthalene	0.11 - 610	0.22 - 0.22	0.00073 - 0.064	- - -	- - -	- - -	- - -	- - -
2 Methylnaphthalene	0.036 - 220	0.064 - 0.064	0.003 - 0.003	- - -	- - -	- - -	- - -	- - -
Dimethyl Phthalate	0.12 - 67	- - -	- - -	- - -	- - -	- - -	- - -	0.001 - 0.001
Acenaphthylene	1 - 41	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Acenaphthene	0.035 - 7.9	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Dibenzofuran	0.079 - 7	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Diethylphthalate	- - -	0.078 - 0.078	- - -	0.002 - 0.004	0.001 - 0.003	- - -	- - -	0.001 - 0.002
Fluorene	0.067 - 34	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pentachlorophenol	- - -	- - -	0.015 - 0.26	- - -	- - -	- - -	- - -	- - -
Phenanthrene	0.058 - 110	0.085 - 4.2	- - -	- - -	- - -	- - -	- - -	- - -
Anthracene	0.19 - 84	0.092 - 0.34	- - -	- - -	- - -	- - -	- - -	- - -
Di n-Butylphthalate	0.052 - 15	0.055 - 0.49	0.00061 - 0.003	0.0001 - 0.01	- - -	- - -	- - -	- - -
luoranthene	0.049 - 31	0.12 - 7.9	- - -	- - -	- - -	- - -	- - -	- - -
yrene	0.12 - 48	0.13 - 8.5	- - -	- - -	- - -	0.001 - 0.001	- - -	- - -
Butylbenzylphthalate	0.063 - 25	0.43 - 7	- - -	- - -	0.003 - 0.003	- - -	- - -	- - -
Benzo(a)Anthracene	0.43 - 15	0.069 - 4.34	- - -	- - -	- - -	- - -	- - -	- - -
Chrysene	0.56 - 17	0.06 - 5.56	- - -	- - -	- - -	- - -	- - -	- - -
bis(2-Ethylhexyl)Phthalate	0.053 - 150	0.045 - 12	0.001 - 0.012	0.0816 - 0.0816	0.1319 - 0.1319	- - -	0.0409 - 0.0409	- - -
Di n-Octyl Phthalate	3.9 - 10	0.07 - 0.96	- - -	0.0043 - 0.0043	0.0036 - 0.0036	- - -	- - -	- - -

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TABLE 2-16
SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

Chemical	Soils		Ground Water	Surface Water				
	Waste Lagoon (mg/Kg)	Site-Wide (mg/Kg)	Unconsolidated and Bedrock Wells (mg/L)	Mill Creek (mg/L)	Skinner Creek (mg/L)	Dump Creek (mg/L)	Diving Pond (mg/L)	Trilobite Pond (mg/L)
enzo(b)Fluoranthene	0.55 - 7	0.22 - 6.17	- - -	- - -	- - -	- - -	- - -	- - -
enzo(k)Fluoranthene	0.29 - 5	0.05 - 0.76	- - -	- - -	- - -	- - -	- - -	- - -
enzo(a)Pyrene	0.38 - 10	0.062 - 5.6	- - -	- - -	- - -	- - -	- - -	- - -
ndeno(1,2,3-cd)Pyrene	0.2 - 3.4	0.29 - 1.5	- - -	- - -	- - -	- - -	- - -	- - -
ibenzo(a,h)Anthracene	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
enzo(g,h,i)Perylene	0.16 - 4.1	0.31 - 1.7	- - -	- - -	- - -	- - -	- - -	- - -
ta BHC	0.0077 - 0.0096	- - -	- - -	- - -	- - -	- - -	- - -	- - -
eptachlor	0.0082 - 52	- - -	- - -	- - -	- - -	- - -	- - -	- - -
drin	0.64 - 11	- - -	0.0005 - 0.0005	- - -	- - -	- - -	- - -	- - -
ldrin	1.7 - 1.9	- - -	0.00013 - 0.00013	- - -	- - -	- - -	- - -	- - -
DDE	- - -	0.044 - 0.044	- - -	- - -	- - -	- - -	- - -	- - -
drin	- - -	0.61 - 0.65	- - -	- - -	- - -	- - -	- - -	- - -
DDD	0.079 - 0.079	0.01 - 0.11	- - -	- - -	- - -	- - -	- - -	- - -
DDT	0.055 - 0.055	0.013 - 0.097	0.00006 - 0.00009	- - -	- - -	- - -	- - -	- - -
drin ketone	0.045 - 84	- - -	- - -	- - -	- - -	- - -	- - -	- - -
ha Chlordane	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
mma Chlordane	1.8 - 44	- - -	- - -	- - -	- - -	- - -	- - -	- - -
clor 1248	0.55 - 0.78	- - -	- - -	- - -	- - -	- - -	- - -	- - -
clor 1254	- - -	0.14 - 980	0.0002 - 0.0002	- - -	- - -	- - -	- - -	- - -
clor 1260	0.46 - 1.2	- - -	- - -	- - -	- - -	- - -	- - -	- - -
xachlorobenzene	0.00093 - 1800	0.073 - 23	0.00002 - 0.00024	- - -	- - -	- - -	0.000033 - 0.000033	- - -
xachlorocylopentadiene	0.17 - 4300	- - -	- - -	- - -	- - -	- - -	- - -	- - -
xachlorobutadiene	0.0012 - 260	0.0017 - 0.0041	0.000015 - 0.000087	- - -	- - -	- - -	0.000008 - 0.000008	2.9E-06 - 0.000011
tachlorocyclopentene	0.83 - 23000	- - -	- - -	- - -	- - -	- - -	- - -	- - -
ptachloronorborene	0.0015 - 2500	0.0011 - 0.0027	0.000052 - 0.00011	- - -	- - -	- - -	- - -	- - -
lordene	0.0011 - 1200	- - -	- - -	- - -	- - -	- - -	- - -	- - -
7,8 TCDD	2.76E-05 - 2.94E-05	- - -	- - -	- - -	- - -	- - -	- - -	- - -
al TETRA CDD	2.76E-05 - 0.00014	- - -	- - -	- - -	- - -	- - -	- - -	- - -
al PENTA CDD	8E-07 - 0.000173	- - -	- - -	- - -	- - -	- - -	- - -	- - -
al HEXA CDD	1.96E-05 - 0.000189	- - -	- - -	- - -	- - -	- - -	- - -	- - -
HEPTA CDD	0.000105 - 0.000309	0.000001 - 0.000205	- - -	- - -	- - -	- - -	- - -	- - -
al OCTA CDD	0.003165 - 0.003165	0.000192 - 0.000192	- - -	- - -	- - -	- - -	- - -	- - -
8 TCDF	9.6E-06 - 0.000022	0.000008 - 0.000008	- - -	- - -	- - -	- - -	- - -	- - -
al TETRA CDF	7.4E-06 - 0.002305	0.000008 - 0.000008	- - -	- - -	- - -	- - -	- - -	- - -
al PENTA CDF	1.03E-05 - 0.002157	- - -	- - -	- - -	- - -	- - -	- - -	- - -
al HEXA CDF	7.17E-05 - 0.005469	- - -	- - -	- - -	- - -	- - -	- - -	- - -
al HEPTA CDF	0.000104 - 0.003731	- - -	- - -	- - -	- - -	- - -	- - -	- - -
al OCTA CDF	0.000019 - 0.015109	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Not Detected

TABLE 2-16
SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

Chemical	Sediments					
	Mill Creek (mg/Kg)	Skinner Creek (mg/Kg)	Dump Creek (mg/Kg)	Duck Pond (mg/Kg)	Diving Pond (mg/Kg)	Trilobite Pond (mg/Kg)
Aluminum	- - -	8860 - 15900	- - -	18600 - 24900	13300 - 15300	32300 - 42700
Antimony	- - -	- - -	- - -	- - -	- - -	- - -
Arsenic	- - -				- - -	- - -
Barium	- - -		- - -	136 - 209	- - -	- - -
Beryllium	- - -	- -	- -	- - -	- - -	1.6 - 2.3
Cadmium	- - -	- - -	- - -	- - -	- - -	- - -
Chromium	- - -	- - -	- - -	21.3 - 29.7	17.8 - 26.8	37.8 - 46.4
Cobalt	- - -	- - -	- - -	15.7 - 18.7	- - -	19.4 - 21.6
Copper	- - -	-	- - -	21.1 - 29.3	- - -	18.6 - 22.7
Lead	10 - 43	21 - 139	- - -	- - -	196 - 511	- - -
Manganese	- - -	- - -	- - -	- - -	- - -	- - -
Mercury	0.12 - 0.13	- -	- - -	- - -	- - -	- - -
Nickel	- - -	- - -	- - -	19.9 - 24	- - -	34.1 - 39.3
Silver	- - -	- - -	- - -	- - -	- - -	- - -
Thallium	- - -	- - -	- - -	0.42 - 0.61	- - -	- - -
Tin	- - -	40 - 52	37 - 37	- - -	47 - 47	- - -
Vanadium	- - -	18 - 32.3	- - -	38.7 - 54.6	- - -	56.1 - 73.3
Zinc	- - -	- - -	- - -	- - -	80.7 - 131	- - -
Cyanide	- - -	- - -	- - -	- - -	- - -	- - -
Vinyl Chloride	- - -	- - -	- - -	- - -	- - -	- - -
Chloroethane	- - -	- - -	- - -	- - -	- - -	- - -
Methylene Chloride	- - -	- - -	0.968 - 0.968	- - -	- - -	- - -
Acetone	0.007 - 0.016	0.023 - 0.062	0.074 - 0.31	- - -	- - -	- - -
Carbon Disulfide	0.0009 - 0.0014	- -	- - -	- - -	- - -	- - -
1,1-Dichloroethene	- - -	-	- -	- - -	0.0299 - 0.0299	- - -
1,1-Dichloroethane	- - -	- - -	- - -	-	- - -	- - -
1,2-Dichloroethene	- - -	0.083 - 0.083	- - -		- - -	- - -
Chloroform	- -		- - -	- -	- - -	- - -
1,2-Dichloroethane	- -		-	- - -	- - -	- - -
2-Butanone	- - -	- -	- - -	- - -	0.005 - 0.011	- - -
1,1,1-Trichloroethane	- - -	-	- - -	-	- - -	- - -
Carbon Tetrachloride	- - -	- -	- -	- - -	- - -	- - -
1,2-Dichloropropane	- - -	- - -	- - -	- - -	- - -	- - -
Trichloroethene	- - -	0.02 - 0.02	- - -		0.0016 - 0.0016	- - -
Dibromochloromethane	- - -	- - -	- - -	-	- - -	- - -
1,1,2-Trichloroethane	- - -	- - -	- - -	- - -	- - -	- - -
Benzene	- - -	- - -	- - -	- - -	0.0403 - 0.0403	- - -

TABLE 2-16
SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

Chemical	Sediments					
	Mill Creek (mg/Kg)	Skinner Creek (mg/Kg)	Dump Creek (mg/Kg)	Duck Pond (mg/Kg)	Diving Pond (mg/Kg)	Trilobite Pond (mg/Kg)
4-Methyl-2-Pentanone	0.0013 - 0.0016	0.0049 - 0.0049	- - -	- - -	- - -	- - -
2-Hexanone	- - -	0.0051 - 0.0051	- - -	- - -	- - -	- - -
Tetrachloroethene	- - -	- - -	- - -	- - -	- - -	- - -
1,1,2,2-Tetrachloroethane	- - -	0.002 - 0.002	- - -	- - -	- - -	- - -
Toluene	- - -	- - -	- - -	- - -	- - -	- - -
Chlorobenzene	- - -	- - -	- - -	- - -	- - -	- - -
Ethylbenzene	- - -	- - -	- - -	- - -	0.074 - 0.074	- - -
Xylene (total)	- - -	- - -	- - -	- - -	0.008 - 0.261	- - -
Phenol	0.055 - 0.1397	- - -	- - -	- - -	- - -	- - -
bis(2-Chloroethyl)Ether	- - -	- - -	- - -	- - -	- - -	- - -
1,3-Dichlorobenzene	- - -	- - -	- - -	- - -	- - -	- - -
1,4-Dichlorobenzene	- - -	- - -	- - -	- - -	- - -	- - -
Benzyl Alcohol	- - -	- - -	- - -	- - -	- - -	- - -
1,2-Dichlorobenzene	- - -	- - -	- - -	- - -	- - -	- - -
2-Methylphenol	- - -	- - -	- - -	- - -	- - -	- - -
bis(2-Chloroisopropyl)Ether	- - -	- - -	- - -	- - -	- - -	- - -
4-Methylphenol	0.0165 - 1.5542	0.0105 - 0.0191	- - -	- - -	- - -	- - -
Hexachloroethane	- - -	- - -	- - -	- - -	- - -	- - -
Nitrobenzene	- - -	0.0042 - 0.0042	- - -	- - -	- - -	- - -
Benzoic Acid	- - -	- - -	- - -	- - -	- - -	- - -
Naphthalene	0.022 - 0.38	0.0166 - 0.0648	0.18 - 0.18	- - -	0.1341 - 0.14	- - -
2-Methylnaphthalene	0.002 - 0.045	0.0235 - 0.1007	0.12 - 0.16	- - -	0.18 - 0.49	- - -
Dimethyl Phthalate	- - -	- - -	- - -	- - -	- - -	- - -
Acenaphthylene	0.0184 - 0.12	- - -	- - -	- - -	- - -	- - -
Acenaphthene	0.4 - 0.4	0.14 - 0.14	- - -	- - -	0.13 - 0.16	- - -
Dibenzofuran	0.042 - 0.28	0.0073 - 0.13	0.15 - 0.15	- - -	- - -	- - -
Diethylphthalate	0.0335 - 0.0517	0.021 - 0.0283	- - -	- - -	- - -	- - -
Fluorene	0.0271 - 0.39	0.008 - 0.22	0.22 - 0.22	- - -	0.1 - 0.14	- - -
Pentachlorophenol	- - -	- - -	- - -	- - -	- - -	- - -
Phenanthrene	0.0905 - 2.9	0.0151 - 1.8	0.152 - 2	- - -	0.12 - 0.59	- - -
Anthracene	0.047 - 0.58	0.014 - 0.31	0.51 - 0.51	- - -	- - -	- - -
Di-n-Butylphthalate	- - -	0.073 - 0.16	0.071 - 0.071	- - -	- - -	- - -
Fluoranthene	0.11 - 3.3	0.0313 - 2.5	0.13 - 1.9	- - -	0.12 - 0.14	- - -
Pyrene	0.089 - 3.2	0.0217 - 1.5	0.134 - 1.9	- - -	0.18 - 0.6907	- - -
Butylbenzylphthalate	- - -	- - -	- - -	- - -	- - -	- - -
Benzo(a)Anthracene	0.0476 - 1.6	0.0876 - 0.68	0.124 - 0.83	- - -	0.099 - 0.1	- - -
Chrysene	0.0602 - 1.9	0.056 - 0.69	0.12 - 0.88	- - -	0.11 - 0.14	- - -
bis(2-Ethylhexyl)Phthalate	0.043 - 0.18	- -	0.033 - 0.57	0.08 - 0.08	0.1341 - 0.1341	0.26 - 0.26
Di-n-Octyl Phthalate	- - -	- - -	- - -	- - -	- - -	- - -

TABLE 2-16
SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

Chemical	Sediments					
	Mill Creek (mg/Kg)	Skinner Creek (mg/Kg)	Dump Creek (mg/Kg)	Duck Pond (mg/Kg)	Diving Pond (mg/Kg)	Trilobite Pond (mg/Kg)
Benzo(b)Fluoranthene	0.0366 - 1.7	0.0116 - 0.51	0.103 - 1.1	- - -	0.1341 - 0.16	- - -
Benzo(k)Fluoranthene	0.0375 - 1.2	0.0146 - 0.51	0.079 - 0.16	- - -	- - -	- - -
Benzo(a)Pyrene	0.069 - 1.4	0.0084 - 0.33	0.125 - 0.74	- - -	- - -	- - -
Indeno(1,2,3-cd)Pyrene	0.099 - 0.61	0.0394 - 0.26	0.059 - 0.059	- - -	- - -	- - -
Dibenzo(a,h)Anthracene	0.055 - 0.13	- - -	- - -	- - -	- - -	- - -
Benzo(g,h,i)Perylene	0.078 - 0.51	0.048 - 0.21	0.055 - 0.055	- - -	- - -	- - -
beta-BHC	0.028 - 0.028	- - -	- - -	- - -	- - -	- - -
Heptachlor	- - -	- - -	- - -	- - -	- - -	- - -
Aldrin	- - -	- - -	- - -	- - -	- - -	- - -
Dieldrin	- - -	- - -	- - -	- - -	- - -	- - -
4,4'-DDE	- - -	- - -	- - -	- - -	- - -	- - -
Endrin	- - -	- - -	- - -	- - -	- - -	- - -
4,4'-DDD	0.0038 - 0.0038	- - -	- - -	- - -	- - -	- - -
4,4'-DDT	- - -	- - -	- - -	- - -	- - -	- - -
Endrin ketone	- - -	- - -	- - -	- - -	- - -	- - -
alpha-Chlordane	0.0042 - 0.0042	- - -	- - -	- - -	- - -	- - -
gamma-Chlordane	- - -	- - -	- - -	- - -	- - -	- - -
Aroclor-1248	- - -	- - -	- - -	- - -	- - -	- - -
Aroclor-1254	0.16 - 0.16	- - -	- - -	- - -	0.2 - 0.29	- - -
Aroclor-1260	- - -	0.01143 - 0.02985	- - -	- - -	0.25 - 0.44219	- - -
Hexachlorobenzene	0.0029 - 0.016	0.003 - 0.003	- - -	0.0032 - 0.0032	0.0049 - 0.0072	- - -
Hexachlorocylopentadiene	- - -	0.052 - 0.067	- - -	- - -	- - -	- - -
Hexachlorobutadiene	0.0019 - 0.0019	0.0021 - 0.027	0.0025 - 0.0025	- - -	0.0023 - 0.0034	- - -
Octachlorocyclopentene	0.012 - 0.012	- - -	- - -	- - -	- - -	- - -
Heptachloronorborene	- - -	0.0012 - 0.029	- - -	0.0017 - 0.0025	0.0027 - 0.0037	0.0017 - 0.0017
Chlordene	0.0013 - 0.0034	0.0013 - 0.0049	- - -	0.00161 - 0.00161	- - -	- - -
2,3,7,8-TCDD	- - -	- - -	- - -	- - -	- - -	- - -
Total TETRA CDD	- - -	- - -	- - -	- - -	- - -	- - -
Total PENTA CDD	- - -	- - -	- - -	- - -	- - -	- - -
Total HEXA CDD	- - -	- - -	- - -	- - -	- - -	- - -
Total HEPTA CDD	- - -	- - -	- - -	- - -	- - -	- - -
Total OCTA CDD	- - -	- - -	- - -	- - -	- - -	- - -
2,3,7,8-TCDF	- - -	- - -	- - -	- - -	- - -	- - -
Total TETRA CDF	- - -	- - -	- - -	- - -	- - -	- - -
Total PENTA CDF	- - -	- - -	- - -	- - -	- - -	- - -
Total HEXA CDF	- - -	- - -	- - -	- - -	- - -	- - -
Total HEPTA CDF	- - -	- - -	- - -	- - -	- - -	- - -
Total OCTA CDF	- - -	- - -	- - -	- - -	- - -	- - -

- - - Not Detected

ATTACHMENT 1
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REMEDIAL ACTION

ADMINISTRATIVE RECORD

(Index and Documents)

for the

SKINNER LANDFILL SITE

REMEDIAL ACTION

WEST CHESTER, OHIO

FEBRUARY 1992

United States Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, IL 60604

INTRODUCTION

These documents comprise the Administrative Record for the Skinner Landfill Superfund Site-Remedial Action. An index of the documents in the Administrative Record is located at the front of the first volume along with an acronym index and an index of guidance documents used by EPA Agency Staff in selecting a response action at the site.

The Administrative Record is also available for public review at United States Environmental Protection Agency, 77 West Jackson Blvd. 7th Floor, Chicago, Illinois, 60604. Questions concerning the Administrative Record should be addressed to the EPA Administrative Record Coordinator.

The Administrative Record is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).

Skinner Landfill Superfund Site
West Chester, Ohio
Administrative Record

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	209	89/07/00	Work Plan for the Remedial Investigation and Feasibility Study of the Skinner Landfill site	EDI Engineering and Science	USEPA	Reports/Studies	99
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FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBE
			Skinner Landfill				
	4	90/03/26	Letter re: Response to proposal to complete a draft feasibility study for the Skinner Landfill site	Bonnie Bowker, OEPA	Fred Bartman, USEPA	Correspondence	106
	14	90/05/07	Letter re: WWES development of recommended criteria for selecting the residential wells most appropriate for sampling on the Skinner Landfill project	Craig VanderBerge, WW Engineering & Science	Fred Bartman, USEPA	Correspondence	107
	2	90/05/09	Letter re: Response to letter of 4/5/90 which requests information regarding the Skinner Landfill Superfund site	Richard Shank, Ohio-EPA	Honorable John Glenn	Correspondence	108
	1	90/06/15	Letter re: New Ohio EPA Site Coordinator for the Skinner Landfill	Mark Leher, OEPA	Fred Bartman, USEPA	Correspondence	109
	61	91/04/02	Letter re: Request for State ARARs for the Skinner Landfill Site	Fred Bartman, USEPA	Mark Leher, OEPA	Correspondence	1
	448	91/05/00	Phase II Remedial Investigation for the Skinner Landfill site	WW Engineering & Science	USEPA	Reports/Studies	111
	489	91/05/00	Appendices for the Phase II Remedial Investigation of the Skinner Landfill Site	WW Engineering & Science	USEPA	Reports/Studies	112
	468	91/06/00	Baseline Risk	WW Engineering &	USEPA	Reports/Studies	113

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FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBE
			Assessment for the Skinner Landfill Site	Science			

REMEDIAL ACTION ADMINISTRATIVE RECORD

(Index and Documents)

for the

SKINNER LANDFILL SITE UPDATE NO. 1

WEST CHESTER, OHIO

JULY 1992

United States Environmental Protection Agency
Region V
77 West Jackson Boulevard
Chicago, IL 60604

INTRODUCTION

These documents comprise the Administrative Record for the **Skinner Landfill Site - Update No. 1.** An index of the documents in the Administrative Record is located at the front of the first volume along with an acronym index and an index of guidance documents used by EPA Agency Staff in selecting a response action at the site.

The Administrative Record is also available for public review at United States Environmental Protection Agency, 77 W. Jackson Blvd, Chicago, IL 60604. Questions concerning the Administrative Record should be addressed to the EPA Administrative Record Coordinator.

The Administrative Record is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).

Skinner Landfill Site - Update No. 1
Remedial Action
Administrative Record

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	24	00/00/00	8.0 Ordnance Disposal Plan, Summit Equipment Site	International Technology Corporation	USEPA	Reports/Studies	1
	10	00/00/00	Ohio Revised Code		USEPA	Reports/Studies	2
	15	00/00/00	1991 Thermal Remediation Industry Contractor Survey	Focus Environmental, Inc.	USEPA	Reports/Studies	3
	24	00/00/00	Proposed Plan for the Skinner Landfill Site	USEPA		Reports/Studies	4
	28	00/00/00	Remediation (Clean-up) of contaminated Uncontrolled Superfund Dumpsites By Incineration and Other Popular Technologies	USEPA/ Focus Environmental, Inc.	USEPA	Reports/Studies	5
	12	76/04/21	Industrial Waste Investigation Industrial Liquid Waste Disposal	Industrial Liquid Waste Disposal	Ned Williams, OEPA	Reports/Studies	6
	4	76/05/20	Minutes of meeting held at Sheriff Robert R. Walton's Office on May 20, 1976 at 3:10 p.m.	Mary Kucer	USEPA	Meeting Notes	7
	4	90/09/00	Engineering Bulletin Mobile/Transportable Incineration Treatment	USEPA		Reports/Studies	8
	3	90/11/01	Notice of Lien Under	USEPA	Elsa Skinner	Correspondence	9

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			the Superfund Amendments and Reauthorization Act of 1986				
	6	91/06/00	Fact Sheet re: Skinner Landfill Phase II Remedial Investigation	USEPA		Fact Sheets	10
	49	91/06/17	Deposition of Elsa Skinner	Britton & Associates	USEPA	Reports/Studies	11
	1	91/06/17	Public Voucher For Advertising	USEPA		Other	12
	31	91/06/18	Deposition of Charles Ringel	Britton & Associates	USEPA	Reports/Studies	13
	43	91/06/18	Deposition of Michael Countryman	Britton & Associates	USEPA	Reports/Studies	14
	39	91/06/19	Deposition of Ray Skinner	Britton & Associates	USEPA	Reports/Studies	15
	4	91/06/20	USEPA and OEPA Invite the public to a informational public meeting	USEPA/OEPA	Public	Press Release	16
	2	91/07/30	Letter re: Formal request for a 6-month extension of the comment period that is scheduled for the Skinner Landfill Site	Lisa Whitacre, CLEAN	Sheila Sullivan, USEPA	Correspondence	17
	2	91/08/09	Skinner Landfill: Estimated Quantity of Drums	Christopher Miron/ Craig VandenBerge, WW Engineering & Science, Inc.	Sheila Sullivan, USEPA	Correspondence	18

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	12	91/09/16	Letter re: Request for extension on USEPA's comments period for Superfund Site	Honorable John Boehner, House of Representatives	Sheila Sullivan, USEPA	Correspondence	19
	8	91/10/00	Engineering Bulletin Control of Air Emissions From Materials Handing During Remediation	USEPA	Various	Reports/Studies	20
	1	91/10/24	Letter re: Request of Union Township assistance in installing Superfund warning signs	Fred Bartman, USEPA	Bitsy Schaffner	Correspondence	21
	9	92/01/00	Estimating Potential for Occurrence of DNAPL at Superfund Sites	USEPA		Reports/Studies	22
	9	92/01/28	Letter re: Status of the Health Assessment being conducted for the Skinner Landfill	Tracy Shelley, Dept. of Health	Gina Weber, USEPA	Correspondence	23
	18	92/02/00	Guidance To ATSDR Health Assessors Public Health Overview Of Incineration As A Means To Destroy Hazardous Waste	U.S. Department of Health and Human Service	USEPA	Reports/Studies	24
	2	92/04/10	Memorandum re: Follow-up on Skinner Landfill Dioxin/ Dibenzofuran Data	John F. Estenik, OEPA	Mark Lehar	Memorandum	25

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	1	92/04/21	USEPA Announces A 30-Day Public Comment Period Which Will Conclude On May 27, 1992 for the Completion of Investigation and Evaluation of Cleanup Alternative for the Skinner Landfill Site	USEPA	Public	Press Release	26
	10	92/04/21	USEPA Completes Investigation and Evaluation of Cleanup Alternatives for the Skinner Landfill Site	USEPA	Public	Press Release	27
	27	92/05/01	Union Elementary School Sampling Event Skinner Landfill	Mark Lehar, OEPA	Thomas Hayden, Union Sch.	Reports/Studies	28
	1	92/05/01	Letter re: Site coordinator change - Skinner Landfill	Mark Lehar, OEPA	Sheila Sullivan	Correspondence	29
	3	92/05/07	Letter re: Request for 60-day extension of public comment period on the Proposed Plan for the Skinner Landfill Site	Laura Ringenbach, Taft, Stettinus & Hollister	Sheila Sullivan, USEPA	Correspondence	30
	95	92/05/20	Public Hearing Skinner Landfill Superfund Site Transcript of Proceedings	USEPA		Meeting Notes	31
	11	92/06/02	Memorandum re: 1976 report	Chuck Twing, U.S. Army Corps	USEPA	Memorandum	32

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	5	92/06/22	Letter re: Skinner Landfill - Union Township, Butler County	David Gully, Union Township	Eric Kauffman, U.S. Army	Correspondence	33

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1	05/23/78			Deposition of John C. Skinner in Case No. CV77-08-0679. State of Ohio vs. Albert Skinner & Mrs. Albert Skinner	38
2	08/04/78			Deposition of Albert Skinner in Case No. CV77-08-0679. State of Ohio vs. Albert Skinner, & Mrs. Skinner, The Skinner Landfill	25
3	07/27/92	Martin, R., Dept. of the Army	Kawecki, J., U.S. EPA	Response to Request on Possible Chemical Warfare Agents in Landfill	2
4	08/07/92	Glass, J., Army Corps of Engineers	Boehner, J., Congressman	Response to Inquiry re: Possibility of Dept. of Defense Ordnance Disposal in the Landfill	6
5	08/28/92	Dyas, C., Attorney	Sullivan, S. & Allen, C., U.S. EPA	Cover Letter and Comments for the Administrative Record	14
6	08/31/92	Butler, L., O.L.E.A.N.	Allen, C., U.S. EPA	Comments & Questions on Fencing & Alternate Water Supply	3

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DOC#	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	09/30/92	Adamkus, V., U.S. EPA		Record of Decision and Responsiveness Summary	21
2	12/09/92	Muno, W., U.S. EPA	PRP's	Administrative Order (with Attachments)	89

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1	00/00/00	Residents of Butler County	U.S. EPA	Signatures of Butler County Residents Who Are Against the Burning of Toxic Wastes and Will Consider Alternative Cleanup Methods	2
2	10/00/90	Hart Engineers Midwest, Inc.	U.S. EPA	Community Notification Plan, RI/FS, Appendix B for Cardington Road Landfill	64
3	01/00/92	U.S. EPA	U.S. EPA	Fact Sheet: "Estimation of Air Impacts for Soil Vapor Extraction (SVE) Systems"	4
4	01/00/92	Ferr, R., U.S. EPA	U.S. EPA	Reference Fact Sheet: "Estimating Potential for Occurence of DNAPL at Superfund Sites"	9
5	05/04/92	Citizens	U.S. EPA	Letters Dated 5/4/92 to 2/4/93 From various Citizens re: Comments on the Alternative Cleanup Methods, the Incinerator and Other Issues Regarding the Cleanup of Skinner Landfill	77
6	05/08/92	Whitacre, L., CLEAN, Inc.	Sullivan, S., U.S. EPA	Letter re: Formal Request for an Extension to the Public Comment Period Ending on May 27, 1992	1
7	06/09/92	Union Township Trustees	U.S. EPA	Comments and Recommendations on the Proposed Plan for the Cleanup of the Skinner Landfill	130
8	08/00/92	Skinner Landfill PRP Group	U.S. EPA	Comments to the U.S. EPA's Interim Remedy, To Be Included in the Administrative Record	17
9	09/24/92	Sully, D., Union Township	Vander Kloot, J., U.S. EPA	Letter re: the Township Administrative Office Becoming a Second Repository	1
10	10/09/92	Mattox, J., U.S. EPA	Vander Kloot, J., U.S. EPA	Technical Support Branch's Evaluation of Alternative Treatment Technologies	13
11	11/19/92	Hall, C., U.S. EPA	Vander Kloot, J., U.S. EPA	Memorandum re: Inhalation Risk Calculations for Proposed Mobile Incinerator at Skinner Landfill	131

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12	11/23/92	Lindenschmidt, D., West Chester Coalition	Vander Kloot, J., U.S. EPA	Letter re: the Coalition's Recommendations for Cleanup	2
13	12/00/92	U.S. EPA	Public	Fact Sheet: "U.S. EPA Re Evaluates Cleanup Alternatives for the Skinner Landfill Site"	10
14	02/09/93	Ringenbach, L., Skinner Landfill PRP Group	Allen, C., U.S. EPA	PRP Group's Public Comments on the U.S. EPA's December 1992 Fact Sheet for Skinner Landfill	1380
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1	06/17/92	Citizens	U.S. EPA	Letters Dated 6/17/92 to 1/19/93 From Various Citizens re: Comments on the Alternative Cleanup Methods, the Incinerator and Other Issues Regarding the Cleanup of Skinner Landfill	29
[illegible]	29/92	U.S. EPA	Recipients	Video(1) and Audio(4) Tapes From 7/29/92 Public Meeting	0
3	00/00/93	U.S. EPA	Recipients	Record of Decision (Pending)	0

ATTACHMENT 2
STATE POLICY/GUIDANCE DOCUMENTS FOR TBC TABLE

1. ARARs, Final, Ohio EPA, Division of Emergency and Remedial Response, DERR-00-RR-001, July 12, 1991.

2. Guidelines and Specifications for Preparing Quality Assurance Project Plans, Final, Ohio EPA, Division of Emergency and Remedial Response, DERR-00-RR-008, March 5, 1990.

3. How Clean is Clean, Final, Ohio EPA, Division of Emergency and Remedial Response, Final, DERR-00-RR-009, July 26, 1991.

4. Background Guidance, Final, Attachment to DERR-00-RR-009, July 26, 1991.

5. Site Safety Plan Review Program, Final, Ohio EPA, Division of Emergency and Remedial Response, DERR-00-RR-015, May 1, 1990.

6. Best Available Treatment Technologies (BATT) for Remedial Response Program Sites, Final, Ohio EPA, Division of Emergency and Remedial Response, DERR-00-RR-016, October 23, 1992.

7. Procedures for Evaluation of Response Action Alternatives and Remedy Selection for Remedial Response Program Sites, Final, Ohio EPA, Division of Emergency and Remedial Response, DERR-00-RR-019, October 23, 1992.

8. Guidance on the Definition for Aquifer and Aquifer System, Interim Final, Ohio EPA, Division of Drinking and Ground Waters, DG0205.100, January 25, 1991.

9. Significant Zone of Saturation [OAC 3745-27-01(RR)], Final, Ohio EPA, Division of Drinking and Ground Waters, GD0303.110, August 5, 1991.

10. Review of Ground Water Sampling and Analysis Plans, Final, Ohio EPA, Division of Drinking and Ground Waters, PP0303.200, October 3, 1990.

11. Guidance on Solid Waste Siting Criteria: Sole Source Aquifer [OAC 3745-27-07(B)(5)], Final, Ohio EPA, Division of Drinking and Ground Waters, GD0202.101, May 6, 1991.

12. Guidance on Solid Waste Siting Criteria: Minimum Distance from a Public Water Supply Well [OAC 3745-27-07(B)(4)], Final, Ohio EPA, Division of Drinking and Ground Waters, GD0202.105, August 5, 1991.

13. Review of Ground Water Quality Assessment Plans, Final, Ohio EPA, Division of Drinking and Ground Waters, PP0303.300, October 3, 1990.

14. Guidance on Solid Waste Siting Criteria: 100 gpm Aquifer [OAC 3745-27-07(B)(9), Final, Ohio EPA, Division of Drinking and Ground Waters, GD0202.102, October 8, 1991.

15. Guidance on Solid Waste Siting Criteria: Minimum Isolation Distances to Wells and Developed Springs, Final, Ohio EPA, Division of Drinking and Ground Waters, GD0202.103, October 8, 1991.

16. Guidance on Solid Waste Siting Criteria: Material Acceptable to the Director [OAC 3745-27-07(B)(15), Final, Ohio EPA, Division of Drinking and Ground Waters, GD0202.104, October 8, 1991.

17. NPDES Existing Effluent Quality, Policy 1.02, Ohio EPA, Division of Water Pollution Control, February 22, 1989.

18. NPDES Small Dischargers, Policy 1.03, Ohio EPA, Division of Water Pollution Control, February 22, 1989.

19. NPDES Application Requirements, Policy 1.10, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

20. NPDES Monitoring Frequency, Policy 1.12, Ohio EPA, Division of Water Pollution Control, January 20, 1989.

21. NPDES Wastewater Treatment Plant Operator Certification, Policy 1.13, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

22. NPDES Upstream/Downstream Sampling, Policy 1.14, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

23. NPDES Permit Limits When Calculated Limits Are Below Detection, Policy 1.15, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

24. NPDES Tiered Permits, Policy 1.16, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

25. NPDES Permit Transfers, Policy 1.19, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

26. NPDES Sampling Frequencies for Industrial Dischargers, Policy 1.20, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

27. NPDES Discharge of Petroleum Liquids Resulting from Corrective Actions and Closure of Petroleum Underground Storage Tanks, Policy 1.21, Ohio EPA, Division of Water Pollution Control, October 2, 1989.

28. Permits to Install - Procedures for Submittal of Plans for Pretreatment Facilities, Policy 2.02, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

29. Permits to Install - Holding Tank Installation, Policy 2.03, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

30. Permits to Install - Professional Engineer Requirement, Policy 2.04, Ohio EPA, Division of Water Pollution Control, October 7, 1988.

31. Permits to Install - Installation of Surge Tanks, Policy 2.06, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

32. Enforcement Management System, Policy 3.01, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

33. Verified Complaint Procedures, Policy 3.03, Ohio EPA, Divison of Water Pollution Control, May 18, 1989.

34. Quarterly Noncompliance Reports, Policy 3.04, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

35. Design Criteria: Sewage Collection, Treatment, and Disposal, Policy 4.01, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

36. Design Criteria: Isolation Requirements, Policy 4.02, Ohio EPA, Division of Water Pollution Control, January 25, 1989.

37. Design Criteria: Experimental Systems, Policy 4.03, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

38. Design Criteria: Small Diameter Gravity Sewers, Policy 4.06, Ohio EPA, Division of Water Pollution Control, October 1, 1988.

39. Design Criteria: Non-toxic Fly Ash, Bottom Ash, and Foundary Ash, Policy 4.07, Ohio EPA, Division of Water Pollution Control, February 24, 1989.

40. Design Criteria: Waste Pickle Liquor Disposal, Policy 4.08, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

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41. Design Criteria: Septage Disposal, Policy 4.11, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

42. Design Criteria: Filter Sand Testing and Approval, Policy 4.13, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

43. Design Criteria: Lift Station Overflows, Policy 4.15, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

44. Design Criteria: Hydrogeologic Evaluations on Surface Impoundment Sites, Policy 4.17, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

45. Pretreatment: Adding/Deleting Program, Policy 5.01, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

46. Pretreatment: Approved Program Modification, Policy 5.02, Ohio EPA, Division of Water Pollution Control, February 22, 1989.

47. Public Records Inspection Policy, Policy 6.02, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

48. Fees, Policy 6.04, Ohio EPA, Division of Water Pollution Control, August 1, 1988.

ATTACHMENT 3
STATE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)

SKINNER LANDFILL BUTLER COUNTY

REVISED CODE SECTION	PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3704.05	A-I	PROHIBITS VIOLATION OF AIR POLLUTION CONTROL RULES	PROHIBITS EMISSION OF AN AIR CONTAMINANT IN VIOLATION SEC. 3704 OR ANY RULES, PERMIT, ORDER OR VARIANCE ISSUED PURSUANT TO THAT SECTION OF THE ORC.	MAY PERTAIN TO ANY SITE WHERE EMISSIONS OF AN AIR CONTAMINANT OCCURS EITHER AS A PRE-EXISTING CONDITION OF THE SITE OR AS A RESULT OF REMEDIAL ACTIVITIES. SHOULD BE CONSIDERED FOR VIRTUALLY ALL SITES.	CHEMICAL ACTION
3714.13		DEMOLITION DEBRIS FACILITIES - VIOLATIONS PROHIBITED	PROHIBITS VIOLATIONS OF ANY SECTION OF CHAPTER 3714 CONCERNING ONSTRUCTION AND DEMOLITION DEBRIS DISPOSAL FACILITIES OR ANY RULE OR ORDER ISSUED PURSUANT TO IT. DISPOSAL OF ASBESTOS IS SPECIFICALLY PROHIBITED WITHOUT AUTHORIZATION.	PERTAINS TO CONSTRUCTION AND DEMOLITION DEBRIS FACILITIES WHERE HAZARDOUS WASTE OR HAZARDOUS CONSTITUENTS HAVE COME TO BE LOCATED. CONSIDER FOR SITES WHERE REMEDIAL ACTION WILL INCLUDEDEMOLITION OF STRUCTURES OR ASBESTOS HAS COME TO BE LOCATED.	ACTION
3734.02	(G)	EXEMPTIONS TO SOLID & HAZ. WASTE T/S/D REQUIREMENTS	PROVIDES AUTHORITY AND CONDITIONS BY WHICH THE DIRECTOR MAY EXEMPT ANY PERSON FROM PERMITTING OR OTHER REQUIREMENTS GOVERNING THE GENERATION, STORAGE, TREATMENT, TRANSPORT OR DISPOSAL OF SOLID OR HAZARDOUS WASTE.	PERTAINS TO ANY SITE AT WHICH SOLID OR HAZARDOUS WASTE HAS COME TO BE LOCATED.	ACTION
3734.02.7	A,B	HANDLING LOW-LEVEL RADIOACTIVE WASTE PROHIBITED	A) PROHIBITS COMMINGLING LOW LEVEL RADIOACTIVE WASTE WITH ANY TYPE OF SOLID WASTE, HAZARDOUS WASTE, OR INFECTIOUS WASTE. B) NO OWNER OR OPERATOR OF A SOLID, INFECTIOUS OR HAZARDOUS WASTE FACILITY SHALL ACCEPT FOR TRANSFER, STORAGE, TREATMENT OR DISPOSAL OF ANY RADIOACTIVE WASTE.	PERTAINS TO ALL SITES AT WHICH LOW LEVEL RADIOACTIVE WASTE HAS COME TO BE LOCATED.	CHEMICAL ACTION
3734.03		PROHIBITS OPEN DUMPING OR BURNING	PROHIBITS OPEN BURNING OR OPEN DUMPING OF SOLID WASTE OR TREATED OR UNTREATED INFECTIOUS WASTE.	PERTAINS TO ANY SITE AT WHICH SOLID WASTE HAS COME TO BE LOCATED OR WILL BE GENERATED DURING A REMEDIAL ACTION.	ACTION LOCATION
3734.04.1	A,C,D,G	EXPLOSIVE GAS MONITORING	REQUIRES EXPLOSIVE GAS MONITORING PLANS FOR SANITARY LANDFILLS AND PROVIDES AUTHORITY TO THE DIRECTOR OF OHIO EPA TO ORDER AN OWNER OR OPERATOR OF A FACILITY TO IMPLEMENT AN EXPLOSIVE GAS MONITORING AND REPORTING PLAN	PERTAINS TO ALL SANITARY LANDFILLS EXCEPT FOR THOSE THAT DISPOSED OF NONPUTRESCIBLE WASTES.	LOCATION ACTION
3767.13		PROHIBITION OF NUISANCES	PROHIBITS NOXIOUS EXHALATIONS OR SMELLS AND THE OBSTRUCTION OF WATERWAYS.	PERTAINS TO ANY SITE THAT MAY HAVE NOXIOUS SMELLS OR MAY OBSTRUCT WATERWAYS.	ACTION CHEMICAL
3767.14		PROHIBITION OF NUISANCES	PROHIBITION AGAINST THROWING REFUSE, OIL, OR FILTH INTO LAKES, STREAMS, OR DRAINS.	PERTAINS TO ALL SITES LOCATED ADJACENT TO LAKES, STREAMS, OR DRAINS	ACTION CHEMICAL

SKINNER LANDFILL BUTLER COUNTY

REVISED CODE SECTION	PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
6111.04		ACTS OF POLLUTION PROHIBITED	POLLUTION OF WATERS OF THE STATE IS PROHIBITED.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED ON-SITE GROUND OR SURFACE WATER OR WILL HAVE A DISCHARGE TO ON-SITE SURFACE OR GROUND WATER.	ACTION
6111.04.2		RULES REQUIRING COMPLIANCE WITH NATIONAL EFFLUENT STDS	ESTABLISHES REGULATIONS REQUIRING COMPLIANCE WITH NATIONAL EFFLUENT STANDARDS.	PERTAINS TO ANY SITE WHICH WILL HAVE A PIONT SOURCE DISCHARGE.	ACTION
6111.07	A,C	WATER POLLUTION CONTROL REQUIREMENTS - DUTY TO COMPLY	PROHIBITS FAILURE TO COMPLY WITH REQUIREMENTS OF SECTIONS 6111.01 TO 6111.08 OR ANY RULES, PERMIT OR ORDER ISSUED UNDER THOSE SECTIONS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND WATER OR SURFACE WATER OR WILL HAVE A DISCHARGE TO ON-SITE SURFACE OR GROUND WATER.	ACTION

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-1-03		ANALYTICAL AND COLLECTION PROCEDURES	SPECIFIES ANALYTICAL METHODS AND COLLECTION PROCEDURES FOR SURFACE WATER DISCHARGES.	PERTAINS TO BOTH DISCHARGES TO SURFACE WATERS AS A RESULT OF REMEDIATION AND ANY ON-SITE SURFACE WATERS AFFECTED BY SITE CONDITIONS.	ACTION
3745-1-04	A,,B,C,D,E	THE "FIVE FREEDOMS" FOR SURFACE WATER	ALL SURFACE WATERS OF THE STATE SHALL BE FREE FROM: A) OBJECTIONÁL SUSPENDED SOLIDS. B)FLOATING DEBRIS, OIL AND SCUM. C) MATERIALS THAT CREATE A NUISANCE. D) TOXIC, HARMFUL OR LETHAL SUBSTANCES. E) NUTRIENTS THAT CREATE NUISANCE GROWTH	PERTAINS TO BOTH DISCHARGES TO SURFACE WATERS AS A RESULT OF REMEDIATION AND ANY ON-SITE SURFACE WATERS AFFECTED BY SITE CONDITIONS.	CHEMICAL
3745-1-05	A,B,C	ANTIDEGRADATION POLICY FOR SURFACE WATER	PREVENTS DEGRADATION OF SURFACE WATER QUALITY BELOW DESIGNATED USE OR EXISTING WATER QUALITY. EXISTING INSTREAM USES SHALL BE MAINTAINED AND PROTECTED. THE MOST STRINGENT CONTROLS FOR TREATMENT SHALL BE REQUIRED BY THE DIRECTOR TO BE EMPLOYED FOR ALL NEW AND EXISTING POINT SOURCE DISCHARGES. PREVENTS ANY DEGRADATION OF "STATE RESOURCE WATERS".	REQUIRES THAT BEST AVAILABLE TECHNOLOGY (BAT) BE USED TO TREAT SURFACE WATER DISHARGES. DWQPA USES THIS RULE TO SET STANDARDS WHEN EXISTING WATER QUALITY IS BETTER THAN THE DESIGNATED USE.	CHEMICAL
3745-1-06	A,B	MIXING ZONES FOR SURFACE WATER	(A) PRESENTS THE CRITERIA FOR ESTABLISHING NON-THERMAL MIXING ZONES FOR POINT SOURCE DISCHARGES (B) PRESENTS THE CRITERIA FOR ESTABLISHING THERMAL MIXING ZONES FOR POINT SOURCE DISCHARGES	APPLIED AS A TERM OF DISCHARGE PERMIT TO INSTALL (PTI).	CHEMICAL
3745-1-07	C	WATER QUALITY CRITERIA	ESTABLISHES WATER QUALITY CRITERIA FOR POLLUTANTS WHICH DO NOT HAVE SPECIFIC NUMERICAL OR NARRATIVE CRITERIA IDENTIFIED IN TABLES 7-1 THROUGH 7-15 OF THIS RULE.	PERTAINS TO BOTH DISCHARGES TO SURFACE WATERS AS A RESULT OF REMEDIAL ACTION AND ANY SURFACE WATERS AFFECTED BY SITE CONDITIONS.	CHEMICAL ACTION
3745-1-17		WATER USE DES FOR SW OHIO TRIB	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE SOUTHWEST OHIO TRIBUTARIESR BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS.	ACTION LOCATION
3745-1-30		WATER USE DES FOR MILL CREEK	ESTABLISHES WATER USE DESIGNATIONS FOR STREAM SEGMENTS WITHIN THE MILL CREEK BASIN.	PERTINENT IF STREAM OR STREAM SEGMENT IS ON-SITE AND IS EITHER AFFECTED BY SITE CONDITIONS OF IF REMEDY INCLUDES DIRECT DISCHARGE. USED BY DWQPA TO ESTABLISH WASTE LOAD ALLOCATIONS.	ACTION LOCATION
3745-15-06	A1,A2	MALFUNCTION & MAINTENANCE OF AIR POLL CONTROL EQUIPMENT	ESTABLISHES SCHEDULED MAINTENANCE AND SPECIFIES WHEN POLLUTION SOURCE MUST BE SHUT DOWN DURING MAINTENANCE.	PERTAINS TO ANY SITE WHICH UTILIZES OR WILL UTILIZE AIR POLLUTION CONTROL EQUIPMENT ON-SITE.	ACTION

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3745-15-07	A	AIR POLLUTION NUISANCES PROHIBITED	DEFINES AIR POLLUTION NUISANCE AS AS THE EMISSION OR ESCAPE INTO THE AIR FROM ANY SOURCE(S) OF SMOKE, ASHES, DUST, DIRT, GRIME, ACIDS, FUMES, GASES, VAPORS, ODORS AND COMBINATIONS OF THE ABOVE THAT ENDANGER HEALTH, SAFETY OR WELFARE OF THE PUBLIC OR CAUSE PERSONAL INJURY OR PROPERTY DAMAGE. SUCH NUISANCES ARE PROHIBITED.	PERTAINS TO ANY SITE WHICH CAUSES, OR MAY REASONABLY CAUSE, AIR POLLUTION NUISANCES. CONSIDER FOR SITES THAT WILL UNDERGO EXCAVATION, DEMOLISION, CAP INSTALLATION, METHANE PRODUCTION, CLEARING AND GRUBBING, WATER TREATMENT, INCINERATION AND WASTE FUEL RECOVERY.	ACTION
3745-16-02	B,C	STACK HEIGHT REQUIREMENTS	ESTABLISHES ALLOWABLE STACK HEIGHT FOR AIR CONTAMINANT SOURCES BASED ON GOOD ENGINEERING PRACTICE.	PERTAINS TO ANY SITE THAT HAS OR WILL HAVE AN AIR CONTAMINANT SOURCE ON-SITE (PARTICULATE, DUST, FUMES, GAS, MIST, SMOKE, VAPOR, ODORS) EMITTED FROM A STACK. CONSIDER FOR REMEDIES INCORPORATING INCINERATION, WASTE FUEL RECOVERY AND WASTEWATER TREATMENT.	ACTION
3745-17-02	A,B,C	PARTICULATE AMBIENT AIR QUALITY STANDARDS	ESTABLISHES SPECIFIC STANDARDS FOR TOTAL SUSPENDED PARTICULATES.	PERTAINS TO ANY SITE THAT MAY EMIT MEASURABLE QUANTITIES OF PARTICULATE MATTER (BOTH STACK AND FUGITIVE). CONSIDER FOR SITES THAT WILL UNDERGO EXCAVATION, DEMOLITION, CAP INSTALLATION, CLEARING AND GRUBBING, INCINERATION AND WASTE FUEL RECOVERY.	CHEMICAL
3745-17-05		PARTICULATE NON-DEGRADATION POLICY	DEGRADATION OF AIR QUALITY IN ANY AREA WHERE AIR QUALITY IS BETTER THAN REQUIRED BY 3745-17-02 IS PROHIBITED.	PERTAINS TO SITES IN CERTAIN LOCATIONS THAT MAY EMIT OR ALLOW THE ESCAPE OF PARTICULATES (BOTH STACK AND FUGITIVE). CONSIDER FOR SITES THAT WILL UNDERGO EXCAVATION, DEMOLITION, CAP INSTALLATION, CLEARING AND GRUBBING, INCINERATION.	CHEMICAL LOCATION
3745-17-08	A1,A2,B,D	EMISSION RESTRICTIONS FOR FUGITIVE DUST	ALL EMISSIONS OF FUGITIVE DUST SHALL BE CONTROLLED.	PERTAINS TO SITES WHICH MAY HAVE FUGITIVE EMISSIONS (NON-STACK) OF DUST. CONSIDER FOR SITES THAT WILL UNDERGO GRADING, LOADING OPERATIONS, DEMOLITION, CLEARING AND GRUBBING AND CONSTRUCTION.	ACTION
3745-20-06	A,B	STANDARD FOR ACTIVE ASBESTOS WASTE DISPOSAL SITES	ESTABLISHES OPERATING STANDARDS FOR AN ACTIVE ASBESTOS WASTE DISPOSAL SITES	PERTAINS TO SITES WHERE ASBESTOS HAS COME TO BE LOCATED AND MUST BE CONSOLIDATED ON-SITE. CONSIDER FOR LANDFILLS WHERE WASTES WILL BE EXCAVATED AND RE-DEPOSITED ON-SITE.	CHEMICAL ACTION
3745-20-07	A,B,C	STANDARD FOR INACTIVE ASBESTOS WASTE DISPOSAL SITES	ESTABLISHES EMISSIONS AND MAINTENANCE STANDARDS FOR INACTIVE ASBESTOS WASTE DISPOSAL SITES.	PERTAINS TO SITES WHERE ASBESTOS HAS COME TO BE LOCATED. CONSIDER FOR LANDFILLS WITH INADEQUATE COVER OR WHERE WASTES WILL CONSOLIDATED.	CHEMICAL LOCATION
3745-21-02	A,B,C	AMBIENT AIR QUALITY STANDARDS AND GUIDELINES	ESTABLISHES SPECIFIC AIR QUALITY STANDARDS FOR CARBON MONOXIDE, OZONE AND AND NON-METHANE HYDROCARBONS.	PERTAINS TO ANY SITE WHICH WILL EMIT CARBON OXIDES, OZONE OR NON-METHANE HYDROCARBONS. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	CHEMICAL ACTION

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-21-03	B,C,D	METHODS OF AMBIENT AIR QUALITY MEASUREMENT	SPECIFIES MEASUREMENT METHODS TO DETERMINE AMBIENT AIR QUALITY FOR THE FOLLOWING CONSTITUENTS: CARBON MONOXIDE, OZONE AND NON-METHANE HYDROCARBONS.	PERTAINS TO ANY SITE WHICH WILL EMIT CARBON MONOXIDE, OZONE OR NON-METHANE HYDROCARBONS. CONSIDER FOR FOR SITES WHERE TREATMENT SYSTEMS WILL RESULT IN AIR EMISSIONS.	CHEMICAL ACTION
3745-21-05		NON-DEGRADATION POLICY	PROHIBITS SIGNIFICANT AND AVOIDABLE DETERIORATION OF AIR QUALITY.	PERTAINS TO ANY SITE WHICH WILL EMIT CARBON OXIDES, CARBON OXIDES, AND NON-METHANE HYDROCARBONS. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	ACTION
3745-21-07	A,B,G,I,J	ORGANIC MATERIALS EMISSION CONTROL: STATIONARY SOURCES	REQUIRES CONTROL OF EMISSIONS OF ORGANIC MATERIALS FROM STATIONARY SOURCES. REQUIRES BEST AVAILABLE TECHNOLOGY.	PERTAINS TO ANY SITE WHICH IS EMITTING OR WILL EMIT ORGANIC MATERIAL. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT (AIR STRIPPING), INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	ACTION CHEMICAL
3745-21-08	A-E	CARBON MONOXIDE EMISSION CONTROL: STATIONARY SOURCES	REQUIRES ANY STATIONARY SOURCE OF CARBON MONOXIDE TO MINIMIZE EMISIONS BY THE USE OF BEST AVAILABLE CONTROL TECHNOLOGIES AND OPERATING PRACTICES IN ACCORDANCE WITH BEST CURRENT TECHNOLOGY.	PERTAINS TO ANY SITE WHICH IS EMITTING OR WILL EMIT CARBON MONOXIDE. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	ACTION CHEMICAL
3745-21-09		VOC EMISSIONS CONTROL: STATIONARY SOURCES	ESTABLISHES LIMITATIONS FOR EMISSIONS OF VOLATILE ORGANIC COMPOUNDS FROM STATIONARY SOURCES.		ACTION
3745-23-01		NITROGEN DIOXIDE AMBIENT AIR QUALITY STANDARDS	ESTABLISHES A MAXIMUM AMBIENT AIR QUALITY STANDARD FOR NITROGEN DIOXIDE.	PERTAINS TO ANY SITE WHICH IS EMITTING OR WILL EMIT NITROGEN DIOXIDE. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	CHEMICAL ACTION
3745-23-02	A,B	MEASUREMENT METHODS FOR NITROGEN DIOXIDE	SPECIFIES METHODS OF MEASUREMENT FOR NITROGEN DIOXIDE TO DETERMINE AMBIENT AIR QUALITY.	PERTAINS TO ANY SITE WHICH WILL EMIT NITRIGEN DIOXIDE. CONSIDER FOR SITES WHERE TREATMENT SYSTEMS MAY RESULT IN NITROGEN DIOXIDE EMISSIONS, ESP. THERMAL TREATMENT SYSTEMS.	ACTION CHEMICAL
3745-23-04		NITROGEN DIOXIDE NONDEGRADATION POLICY	PROHIBITS THE SIGNIFICANT AND AVOIDABLE DETERIORATION OF AIR QUALITY BY THE RELEASE OF NITROGEN DIOXIDE EMISSIONS.	PERTAINS TO ANY SITE WHICH IS EMITTING OR WILL EMIT NITROGEN DIOXIDE. CONSIDER FOR SITES THAT WILL UNDERGO WATER TREATMENT, INCINERATION AND FUEL BURNING (WASTE FUEL RECOVERY).	ACTION CHEMICAL
3745-23-06		NITROGEN OXIDES EMISSION CONTROLS: STATIONARY SOURCE	REQUIRES THAT ALL STATIONARY SOURCES OF NITROGEN OXIDE MINIMIZE EMISSIONS BY THE USE OF THE LATEST AVAILABLE CONTROL TECHNIQUES AND OPERATING PRACTICES IN ACCORDANCE WITH BEST CURRENT TECHNOLOGY. ESTABLISHES LIMIT FOR NITROGEN OXIDE EMISSIONS FROM COMBUSTION.	PERTAINS TO ANY SITE WHICH WILL EMIT NITROGEN OXIDES. CONSIDER FOR SITES WHERE TREATMENT SYSTEMS WILL RESULT IN NITROGEN OXIDE EMISSIONS, ESP. THERMAL TREATMENT.	ACTION CHEMICAL

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3745-25-03		EMISSION CONTROL ACTION PROGRAMS	REQUIRES PREPARATION FOR AIR POLLUTION ALERTS, WARNINGS AND EMERGENCIES.	PERTAINS TO ANY SITE WHICH IS EMITTING OR MAY EMIT AIR CONTAMINANTS.	ACTION
3745-27-03	B	EXEMPTIONS TO SOLID WASTE REGULATIONS	DEFINES EXEMPTIONS TO SOLID WASTE REGULATIONS AND ESTABLISHES LIMITATIONS ON TEMPORARY STORAGE OF PUTRESCIBLE WASTE OR ANY SOLID WASTE WHICH CAUSES A NUISANCE OR HEALTH HAZARD. STORAGE OF PUTRESCIBLE WASTE BEYOND SEVEN DAYS IS CONSIDERED OPEN DUMPING.	PERTAINS TO ANY SITE AT WHICH SOLID WASTE WILL BE MANAGED. CONSIDER ESPECIALLY FOR OLD LANDFILLS WHERE SOLID WASTE MAY BE EXCAVATED AND/OR CONSOLIDATED.	ACTION
3745-27-06	B,C	REQUIRED TECHNICAL INFORMATION FOR SANITARY LANDFILLS	SPECIFIES THE MINIMUM TECHNICAL INFORMATION REQUIRED OF A SOLID WASTE PERMIT TO INSTALL INCLUDED ARE A HYDROGEOLOGIC INVESTIGATION REPORT, LEACHATE PRODUCTION AND MIGRATION INFORMATION, SURFACE WATER DISCHARGE INFORMATION, DESIGN CALCULATIONS, PLAN DRAWINGS.	THIS PARAGRAPH PRESENTS SUBSTANTIVE REQUIREMENTS OF A SOLID WASTE PERMIT TO INSTALL. PERTAINS TO ANY NEW SOLID WASTE DISPOSAL FACILITY CREATED ON-SITE AND EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS . ALSO PERTAINS TO EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED PER SOLID WASTE RULES . THIS RULE ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.	ACTION
3745-27-07	A,B	LOCATION CRITERIA FOR SOLID WASTE DISPOSAL PERMIT	SPECIFIES LOCATIONS IN WHICH SOLID WASTE LANDFILLS ARE NOT TO BE SITED. INCLUDES FLOODPLAINS, SAND OR GRAVEL PITS, LIMESTONE OR SANDSTONE QUARRIES, AREAS ABOVE SOLE SOURCE AQUIFERS, WETLANDS, ETC.	THIS RULE PREVENTS THE ESTABLISHMENT OF NEW SOLID WASTE LANDFILLS AND EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS IN CERTAIN UNFAVORABLE LOCATIONS. ALSO MAY PROHIBIT THE LEAVING OF WASTE IN-PLACE IN CERTAIN UNFAVORABLE LOCATIONS.	LOCATION
3745-27-08	C,D-H	CONSTRUCTION SPECIFICATIONS FOR SANITARY LANDFILLS	SPECIFIES THE MINIMUM REQUIREMENTS FOR THE SOIL/CLAY LAYERS, GRANULAR DRAINAGE LAYER, GEOSYNTHETICS, LEACHATE MANAGEMENT SYSTEM, GAS MONITORING SYSTEM, ETC. ALSO ESTABLISHES CONSTRUCTION REQUIREMENTS FOR FACILITIES TO BE LOCATED IN GEOLOGICALLY UNFAVORABLE AREAS.	PERTAINS TO ANY NEW SOLID WASTE DISPOSAL FACILITY CREATED ON-SITE AND ANY EXPANSIONS TO EXISTING SOLID WASTE LANDFILLS. PORTIONS ALSO PERTAIN TO AREAS OF CONTAMINATION THAT ARE CAPPED PER SOLID WASTE RULES. MAY SERVE AS SITING CRITERIA.	ACTION
3745-27-09	F	SANITARY LANDFILL OPERATIONS - DAILY COVER	INCLUDES REQUIREMENTS FOR DAILY COVER, INTERMEDIATE COVER FOR TEMPORARILY INACTIVE AREAS AND FINAL COVER FOR AREAS AT FINAL ELEVATIONS.	PERTAINS TO "NEW" SOLID WASTE DISPOSAL FACILITIES TO BE CREATED ON-SITE AND EXISTING FACILITIES TO BE EXPANDED DURING REMEDIATION	ACTION
3745-27-09	N	SANITARY LANDFILL OPERATIONS - SURFACE WATER	SURFACE WATER MUST BE DIVERTED FROM AREAS WHERE SOLID WASTE IS BEING, OR HAS BEEN, DEPOSITED.		ACTION
3745-27-09	O	SANITARY LANDFILL OPERATIONS - LEACHATE	REQUIRES REPAIR OF LEACHATE OUTBREAKS; COLLECTION AND TREATMENT OF LEACHATE ON THE SURFACE OF THE LANDFILL; AND ACTIONS TO MINIMIZE, CONTROL OR ELIMINATE CONDITIONS CAUSING LEACHATE OUTBREAKS.		ACTION
3745-27-10	B,C,D	SANITARY LANDFILL - GROUND WATER MONITORING	GROUND WATER MONITORING PROGRAM MUST BE ESTABLISHED FOR ALL SANITARY LANDFILL FACILITIES. THE SYSTEM MUST CONSIST OF A SUFFICIENT NUMBER OF WELLS THAT ARE LOCATED SO THAT SAMPLES INDICATE BOTH UPGRADIENT (BACKGROUND) AND DOWNGRADIENT WATER SAMPLES. THE	PERTAINS TO ANY NEW SOLID WASTE FACILITY AND ANY EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS ON-SITE. ALSO MAY PERTAIN TO EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED IN-PLACE PER THE SOLID WASTE RULES.	ACTION

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			SYSTEM MUST BE DESIGNED PER THE MINIMUM REQUIREMENTS SPECIFIED IN THIS RULE. THE SAMPLING AND ANALYSIS PROCEDURES USED MUST COMPLY WITH THIS RULE.		
3745-27-11	A,B,G	FINAL CLOSURE OF SANITARY LANDFILL FACILITIES	SPECIFIES THE MINIMUM INFORMATION NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF CLOSURE METHODS FOR SOLID WASTE LANDFILLS. SPECIFIES ACCEPTABLE CAP DESIGN; SOIL BARRIER LAYER, GRANULAR DRAINAGE LAYER, SOIL AND VEGETATIVE LAYER.	SUBSTANTIVE REQUIREMENTS PERTAIN TO ANY NEW SOLID WASTE LANDFILLS CREATED ON-SITE, ANY EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS ON-SITE AND ANY EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED IN-PLACE PER THE SOLID WASTE RULES.	ACTION
3745-27-12	A,B,D,E,MN	SANITARY LANDFILL - EXPLOSIVE GAS MONITORING	ESTABLISHES WHEN AN EXPLOSIVE GAS MONITORING PLAN IS REQUIRED FOR SOLID WASTE LANDFILLS. SPECIFIES THE MINIMUM INFORMATION REQUIRED IN SUCH A PLAN, INCLUDING DETAILED ENGINEERING PLANS, SPECIFICATIONS, INFORMATION ON GAS GENERATION POTENTIAL, SAMPLING AND MONITORING PROCEDURES, ETC. MANDATES WHEN REPAIRS MUST BE MADE TO AN EXPLOSIVE GAS MONITORING SYSTEM. THIS RULE ONLY APPLIES TO LADFILLS WHICH RECEIVED "PUTRESCIBLE" SOLID WASTES.	PERTAINS TO ANY SITE WHICH HAS HAD OR WILL HAVE PUTRESCIBLE SOLID WASTES PLACED ON-SITE AND WHICH HAS A RESIDENCE OR OTHER OCCUPIED STRUCTURE LOCATED WITHIN 1000 FEET OF THE EMPLACED SOLID WASTE.	ACTION LOCATION
3745-27-12	I, J	EXPLOSIVE GAS MONITORING FOR SANITARY LANDFILLS	IDENTIFIES PARAMETERS AND SCHEDULE FOR EXPLOSIVE GAS MONITORING	PERTAINS TO ANY DISPOSAL SITE WHERE EXPLOSIVE GAS GENERATION AND MIGRATION MAY BE A THREAT.	ACTION CHEMICAL
3745-27-13	C	DISTURBANCES WHERE HAZ OR SOLID WASTE FAC WAS OPERATED	REQUIRES THAT A DETAILED PLAN BE PROVIDED TO DESCRIBE HOW ANY PROPOSED FILLING, GRADING, EXCAVATING, BUILDING, DRILLING OR MINING ON LAND WHERE A HAZARDOUS WASTE FACILITY OR SOLID WASTE FACILITY WAS OPERATED WILL BE ACCOMPLISHED. THIS INFORMATION MUST DEMONSTRATE THAT THE PROPOSED ACTIVITIES WILL NOT CREATE A NUISANCE OR ADVERSELY AFFECT THE PUBLIC HEALTH OR THE ENVIRONMENT. SPECIAL TERMS TO CONDUCT SUCH ACTIVITIES MAY BE IMPOSED BY THE DIRECTOR TO PROTECT THE PUBLIC AND THE ENVIRONMENT.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS OR SOLID WASTE HAS BEEN MANAGED, EITHER INTENTIONALLY OR OTHERWISE. DOES NOT PERTAIN TO AREAS THAT HAVE HAD ONE-TIME LEAKS OR SPILLS.	ACTION LOCATION
3745-27-14	A	POST-CLOSURE CARE OF SANITARY LANDFILL FACILITIES	SPECIFIES THE REQUIRED POST-CLOSURE CARE FOR SOLID WASTE FACILITIES. INCLUDES CONTINUING OPERATION OF LEACHATE AND SURFACE WATER MANAGEMENT SYSTEMS, MAINTENANCE OF THE CAP SYSTEM AND GROUND WATER MONITORING.	SUBSTANTIVE REQUIREMENTS PERTAIN TO ANY NEWLY CREATED SOLID WASTE LANDFILLS ON-SITE, ANY EXPANSIONS OF EXISTING SOLID WASTE LANDFILLS ON-SITE AND ANY EXISTING AREAS OF CONTAMINATION THAT ARE CAPPED PER THE SOLID WASTE RULES.	ACTION
3745-31-05		WATER/AIR PERMIT CRITERIA FOR DECISION BY THE DIRECTOR	A PERMIT TO INSTALL (PTI) OR PLANS MUST DEMONSTRATE BEST AVAILABLE TECHNOLOGY (BAT) AND SHALL NOT INTERFER WITH OR PREVENT THE ATTAINMENT OR MAINTENANCE OF APPLICABLE AMBIENT AIR QUALITY STANDARDS.	PERTAINS TO ANY SITE THAT WILL DISHARGE TO ON-SITE SURFACE WATER OR WILL EMIT CONTAMINANTS INTO THE AIR.	ACTION
3745-32-05		WATER QUALITY CRITERIA FOR DECISION BY THE DIRECTOR	SPECIFIES SUBSTANTIVE CRITERIA FOR SECTION 401 WATER QUALITY CRITERIA FOR DREDGING, FILLING, OBSTRUCTIONG OR ALTERING WATERS OF THE STATE.	PERTAINS TO ANY SITE THAT HAS OR WILL AFFECT WATERS OF THE STATE.	ACTION

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3745-50-44	A	PERMIT INFO REQUIRED FOR ALL HAZ WASTE FACILITIES	ESTABLISHES THE SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE FACILITY COMPLIANCE. INCLUDES INFORMATION SUCH AS FACILITY DESCRIPTION, WASTE CHARACTERISTICS, EQUIPMENT DESCRIPTIONS, CONTINGENCY PLAN, FACILITY LOCATION, TOPOGRAPHIC MAP, ETC.	PERTAINS TO ANY SITE WHICH WILL HAVE TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTE OCCURRING ON-SITE OR HAS EXISTING AREAS OF HAZARDOUS WASTE CONTAMINATION ON-SITE THAT WILL BE CAPPED IN-PLACE. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.	ACTION
3745-50-44	B	PERMIT INFO REQ FOR ALL HAZ WASTE LAND DISP FACILITIES	ESTABLISHES THE SUBSTANTIVE HAZARDOUS WASTE LAND DISPOSAL PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUATE PROTECTION OF THE GROUND WATER. INCLUDES INFORMATION SUCH AS GROUND WATER MONITORING DATA, INFORMATION ON INTERCONNECTED AQUIFERS, PLUME(S) OF CONTAMINATION, PLANS AND REPORTS ON GROUND WATER MONITORING PROGRAM, ETC.	PERTAINS TO ANY FACILITY/SITE WHICH WILL HAVE HAZARDOUS WASTE DISPOSED OF ON-SITE OR HAS EXISTING AREAS OF HAZARDOUS WASTE CONTAMINATION ON-SITE THAT WILL BE CAPPED IN-PLACE. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.	ACTION
3745-50-44	C1	ADD'L PERMIT INFO: HAZ WASTE STORAGE IN CONTAINERS	ESTABLISHES THE SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF CONTAINER STORAGE. INCLUDES INFORMATION SUCH AS DESCRIPTION OF CONTAINMENT SYSTEM, DETAILED DRAWINGS, ETC. SEE OAC 3745-55-70 THROUGH 3745-55-78 FOR ADDITIONAL CONTAINER REQUIREMENTS.	PERTAINS TO ANY SITE AT WHICH STORAGE OF HAZARDOUS WASTE ON-SITE WILL OCCUR IN CONTAINERS. CONSIDER FOR WASTES AND CONTAMINATED SOILS THAT ARE STORED PRIOR TO TREATMENT OR DISPOSAL. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-55-70 THROUGH 3745-55-78, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.	ACTION
3745-50-44	C4	ADD'L PERMIT INFO: HAZ WASTE STOR/TREAT IN WASTE PILES	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF SURFACE IMPOUNDMENTS USED TO TREAT OR STORE HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC. SEE OAC 3745-56-20 THROUGH 3745-56-33 FOR ADDITIONAL SURFACE IMPOUNDMENT REQUIREMENTS.	PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE STORED OR TREATED IN SURFACE IMPOUNDMENTS. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-56-20 THROUGH 3745-56-33, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.	ACTION
3745-50-44	C6	ADD'L PERMIT INFO: ENVIRONMENTAL PERFORMANCE STANDARDS	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS, AND UNDERGROUND INJECTION WELLS USED TO TREAT, STORE OR DISPOSE OF HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC. SEE OAC 3745-57-01 ADDITIONAL REQUIREMENTS.	PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE OR HAS BEEN STORED, TREATED OR DISPOSED OF IN SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS OR UNDERGROUND INJECTION WELLS . THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-57-01 ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.	ACTION
374' 0-44	C7	ADD'L PERMIT INFO: HAZ WASTE DISPOSAL IN LANDFILLS	ESTABLISHES SUBSTANTIVE HAZARDOUS WASTE PERMIT REQUIREMENTS NECESSARY FOR OHIO EPA TO DETERMINE ADEQUACY OF LANDFILLS USED FOR DISPOSAL OF HAZARDOUS WASTE. INCLUDES INFORMATION SUCH AS WASTE CHARACTERISTICS, DETAILED DESIGN PLANS AND REPORTS, CONTROL OF RUN-ON AND RUN-OFF, CLOSURE INFORMATION, ETC.. SEE OAC 3745-57-02 THROUGH 3745-57-18 FOR ADDITIONAL LANDFILL REQUIREMENTS.	PERTAINS TO SITE AT WHICH HAZARDOUS WASTE WILL BE OR HAVE BEEN DISPOSED OF IN LANDFILLS. THIS, ALONG WITH OTHER PARAGRAPHS OF THIS RULE AND OAC 3745-57-02 THROUGH 3745-57-18, ESTABLISHES THE MINIMUM INFORMATION REQUIRED DURING THE REMEDIAL DESIGN STAGE.	ACTION

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-51-05	A-J	REQ. FOR CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS	SPECIFIES REQUIREMENTS FOR CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS OF HAZARDOUS WASTE. PROVIDES RELIEF FROM MANY OF THE HAZARDOUS WASTE REGULATIONS.	CONSIDER FOR SITES WHERE THE QUANTITY OF HAZARDOUS WASTE GENERATED BY AN ON-SITE ACTION WILL BE LESS THAN 100 KG PER MONTH. MONTHLY LIMIT FOR ACUTE HAZARDOUS WASTE IS ONE (1) KG.	ACTION CHEMICAL
3745-51-06	A,B,C(1)	REQUIREMENTS FOR RECYCLED MATERIALS	DEFINES RECYCLED HAZARDOUS WASTES AND ESTABLISHES SPECIFIC EXEMPTIONS FOR THESE WASTES FROM THE HAZARDOUS WASTE REGULATIONS.	PERTAINS TO ANY SITE AT WHICH RECYCLING OF HAZARDOUS WASTES MAY TAKE PLACE. CONSIDER FOR SITES AT WHICH THE FOLLOWING MATERIALS ARE PRESENT: INDUSTRIAL ETHYL ALCOHOL USED BATTERIES USED OIL SCRAP METAL PETROLEUM PRODUCTS K087 COAL AND COKE TAR SLUDGE	ACTION CHEMICAL
3745-51-07	A,B	RESIDUES OF HAZ WASTES IN EMPTY CONTAINERS	EXEMPTS THE RESIDUES OF HAZARDOUS WASTES FROM EMPTY CONTAINERS FROM THE HAZARDOUS WASTE REGULATIONS. PROVIDES SPECIFIC DEFINITIONS FOR THESE RESIDUES.	PERTAINS TO ANY ALTERNATIVE THAT INCORPORATES STORAGE OF HAZARDOUS WASTE ON-SITE IN CONTAINERS.	ACTION
3745-52-11	A-D	EVALUATION OF WASTES	ANY PERSON GENERATING A WASTE MUST DETERMINE IF THAT WASTE IS A HAZARDOUS WASTE (EITHER THROUGH LISTING OR BY CHARACTERISTIC).	PERTAINS TO SITES AT WHICH WASTES OF ANY TYPE (BOTH SOLID AND HAZARDOUS) ARE LOCATED.	CHEMICAL ACTION
3745-52-30		HAZARDOUS WASTE PACKAGING	REQUIRES A GENERATOR TO PACKAGE HAZARDOUS WASTE IN ACCORDANCE WITH U.S. DOT REGULATIONS FOR TRANSPORTATION OFF-SITE.	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE WILL BE GENERATED BY ON-SITE ACTIVITIES AND SHIPPED OFF-SITE FOR TREAMENT AND/OR DISPOSAL.	CHEMICAL ACTION
3745-52-31		HAZARDOUS WASTE LABELING	REQUIRES PACKAGES OF HAZARDOUS WASTE TO BE LABELLED IN ACCORDANCE WITH U.S.DOT REGULATIONS FOR OFF-SITE TRANSPORTATION.	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE WILL BE GENERATED BY ON-SITE ACTIVITIES AND SHIPPED OFF-SITE FOR TREATMENT AND/OR DISPOSAL.	CHEMICAL ACTION
3745-52-32		HAZARDOUS WASTE MARKING	SPECIFIES LANGUAGE FOR MARKING PACKAGES OF HAZARDOUS WASTE PRIOR TO OFF-SITE TRANSPORTATION	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE WILL BE GENERATED BY ON-SITE ACTIVITIES AND SHIPPED OFF-SITE FOR TREATMENT AND/OR DISPOSAL.	CHEMICAL ACTION
3745-52-33		HAZARDOUS WASTE PLACARDING	GENERATOR SHALL PLACARD HAZARDOUS WASTE PRIOR TO OFF-SITE TRANSPORTATION.	PERTAINS TO ANY SITE WHERE HAZARDOUS WASTE WILL BE GENERATED BY ON-SITE ACTIVITIES AND SHIPPED OFF-SITE FOR TREATMENT AND/OR DISPOSAL.	CHEMICAL ACTION
3745-54-13	A	GENERAL ANALYSIS OF HAZARDOUS WASTE	PRIOR TO ANY TREATMENT, STORAGE OR DISPOSAL OF HAZARDOUS WASTES, A REPRESENTATIVE SAMPLE OF THE WASTE MUST BE CHEMICALLY AND PHYSICALLY ANAYZED.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	CHEMICAL

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3745-54-14	A,B,C	SECURITY FOR HAZARDOUS WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST BE SECURED SO THAT UNAUTHORIZED AND UNKNOWING ENTRY ARE MINIMIZED OR PROHIBITED.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-54-15	A,C	INSPECTION REQUIREMENTS FOR HAZARDOUS WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST BE INSPECTED REGULARLY TO DETECT MALFUNCTIONS, DETERIORATIONS, OPERATIONAL ERRORS AND DISCHARGES. ANY MALFUNCTIONS OR DETERIORATIONS DETECTED SHALL BE REMEDIED EXPEDITIOUSLY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-54-17	A,B,C	REQ FOR IGNITABLE,REACTIVE OR INCOMPATABLE HAZ WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN TO PREVENT ACCIDENTAL IGNITION OR REACTION OF IGNITABLE, REACTIVE OR INCOMPATIBLE WASTES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY REACTIVE, IGNITABLE OR INCOMPATIBLE WASTES ARE PRESENT.	ACTION LOCATION
3745-54-31		DESIGN & OPERATION OF HAZARDOUS WASTE FACILITIES	HAZARDOUS WASTE FACILITIES MUST BE DESIGNED, CONSTRUCTED, MAINTAINED AND OPERATED TO MINIMIZE THE POSSIBILITY OF FIRE, EXPLOSION OR UNPLANNED RELEASE OF HAZARDOUS WASTE OR HAZARDOUS CONSTITUENTS TO THE AIR, SOIL OR SURFACE WATER WHICH COULD THREATEN HUMAN HEALTH OR THE ENVIRONMENT.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-54-32	A,B,C,D	REQUIRED EQUIPMENT FOR HAZARDOUS WASTE FACILITIES	ALL HAZARDOUS WASTE FACILITIES MUST BE EQUIPPED WITH EMERGENCY EQUIPMENT, SUCH AS AN ALARM SYSTEM, FIRE CONTROL EQUIPMENT AND A TELEPHONE OR RADIO.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-54-33		TESTING & MAINTENANCE OF EQUIPMENT; HAZ WASTE FACILTIES	ALL HAZARDOUS WASTE FACILITIES MUST TEST AND MAINTAIN EMERGENCY EQUIPMENT TO ASSURE PROPER OPERATION.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-54-34		ACCESS TO COMMUNICATIONS OR ALARM SYSTEM; HAZ WASTE FAC	WHENEVER HAZARDOUS WASTE IS BEING HANDLED, ALL PERSONNEL INVOLVED SHALL HAVE IMMEDIATE ACCESS TO AN INTERNAL ALARM OR EMERGENCY COMMUNICATION DEVICE.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-54-35		REQUIRED AISLE SPACE AT HAZ WASTE FACILITIES	ADEQUATE AISLE SPACE SHALL BE MAINTAINED TO ALLOW UNOBSTRUCTED MOVEMENT OF PERSONNEL, FIRE EQUIPMENT, SPILL CONTROL EQUIPMENT AND DECONTAMINATION EQUIPMENT INTO ANY AREA OF THE FACILITY OPERATION IN THE EVENT OF AN EMERGENCY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF). CONSIDER FOR SITES WHERE WASTES WILL BE STORED IN CONTAINERS.	ACTION
3745-54-37	A,B	ARRANGEMENTS/ AGREEMENTS WITH LOCAL AUTHORITIES	ARRANGEMENTS OR AGREEMENTS WITH LOCAL AUTHORITIES, SUCH AS POLICE, FIRE DEPARTMENT AND EMERGENCY RESPONSE TEAMS MUST BE MADE. IF LOCAL AUTHORITIES WILL NOT COOPERATE, DOCUMENTATION OF THAT NON-COOPERATION SHOULD BE PROVIDED.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION

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3745-54-53	A,B	COPIES OF CONTINGENCY PLAN; HAZARDOUS WASTE FACILITIES	COPIES OF THE CONTINGENCY PLAN REQUIRED BY 3745-54-50 MUST BE MAINTAINED AT THE FACILITY AND SUBMITTED TO ALL LOCAL POLICE DEPARTMENTS, FIRE DEPARTMENTS, HOSPITALS LOCAL EMERGENCY RESPONSE TEAMS AND THE OHIO EPA.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF)	ACTION
3745-54-54	A	AMENDMENT OF CONTINGENCY PLAN; HAZ WASTE FACILITIES	THE CONTINGENCY PLAN MUST BE AMENDED IF IT FAILS IN AN EMERGENCY, THE FACILITY CHANGES (IN ITS DESIGN, CONSTRUCTION, MAINTENANCE OR OPERATION), THE LIST OF EMERGENCY COORDINATORS CHANGE OR THE LIST OF EMERGENCY EQUIPMENT.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-54-55		EMERGENCY COORDINATOR; HAZARDOUS WASTE FACILITIES	AT ALL TIMES THERE SHOULD BE AT LEAST ONE EMPLOYEE EITHER ON THE PREMISES OR ON CALL TO COORDINATE ALL EMERGENCY REPSONSE MEASURES.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-54-56	A-I	EMERGENCY PROCEDURES; HAZARDOUS WASTE FACILITIES	SPECIFIES THE PROCEDURES TO BE FOLLOWED IN THE EVENT OF AN EMERGENCY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN DISPOSED OF).	ACTION
3745-54-92		GROUND WATER PROTECTION STANDARD; HAZ WASTE FACILITIES	COMPLIANCE MUST BE ATTAINED WITH THE CONDITIONS SPECIFIED IN THE PERMIT TO ENSURE THAT HAZARDOUS CONSTIUENTS (SEE 3745-54-93) DO NOT EXCEED THE PROMULGATED LIMITS (SEE 3745-54-94).	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION CHEMICAL
3745-54-93	A,B	HAZARDOUS CONSTITUENTS IN GROUND WATER; HAZ WASTE FAC	REQUIRES THAT PERMIT SPECIFY HAZARDOUS CONSITIUENTS TO WHICH THE GROUND WATER PROTECTION STANDARD OF 3745-54-92 APPLIES. HAZARDOUS CONSTITUENTS ARE CONSTITUENTS IDENTIFIED IN THE APPENDIX OF THIS RULE THAT HAVE BEEN DETECTED IN GROUND WATER IN THE UPPERMOST AQUIFER UNDERLYING THE UNIT(S) AND ARE REASONABLY EXPECTED TO BE IN OR DERIVED FROM WASTE CONTAINED IN THE UNIT(S).	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	CHEMICAL
3745-54-95	A,B	POINT OF COMPLIANCE FOR GROUND WATER; HAZ WASTE FACIL	ESTABLISHES POINT OF COMPILANCE AT VERTICAL SURFACE LOCATED AT THE HYDRAULICALLY DOWNGRADIENT LIMIT OF THE WASTE MANAGEMENT AREA THAT EXTENDS DOWN INTO THE UPPERMOST AQUIFER UNDERLYING THE UNIT(S).	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION CHEMICAL
3745-54-96	A,B,C	COMPLIANCE PERIOD FOR GROUND WATER; HAZ WASTE FACIL	A COMPLIANCE PERIOD DURING WHICH THE GROUND WATER PROTECTION STANDARDS APPLY WILL BE SPECIFIED IN THE PERMIT. RULE REQUIRES THAT THE COMPLIANCE PERIOD FOR A FACILITY UNDERGOING A CORRECTIVE ACTION PROGRAM WILL EXTEND UNTIL IT CAN BE DEMONSTRATED THAT THE GROUND WATER PROTECTION STANDARD OF OAC 3745-54-92 HAS NOT BEEN EXCEEDED FOR A PERIOD OF THREE CONSECUTIVE YEARS.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION CHEMICAL

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3745-54-97	A-H	GEN GROUND WATER MONITORING REQUIREMENTS; HAZ WASTE FAC	PRESENTS GENERAL GROUND WATER MONITORING PROGRAM REQUIREMENTS. INCLUDES NUMBER, LOCATION AND DEPTH OF WELLS, CASING REQUIREMENTS, SAMPLING AND ANALYSIS PROCEDURES, ETC.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION CHEMICAL
3745-54-99	A-J	GROUND WATER COMPLIANCE MONITORING PROG; HAZ WASTE FAC	PRESENTS REQUIREMENTS OF GROUND WATER COMPLIANCE MONITORING PROGRAM.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE BEEN DETECTED. THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION CHEMICAL
3745-55-01	A-F	GROUND WATER CORRECTIVE ACTION PROGRAM; HAZ WASTE FAC	PRESENTS THE REQUIREMENTS OF A GROUND WATER CORRECTIVE ACTION PROGRAM THAT PREVENTS HAZARDOUS CONSTITUENTS FROM EXCEEDING THEIR RESPECTIVE CONCENTRATION LIMITS AT THE COMPLIANCE POINT BY EITHER REMOVAL OR TREATMENT OF THESE HAZARDOUS CONSTITUENTS.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS, LANDFILLS) AT WHICH HAZARDOUS CONSTITUENTS HAVE BEEN DETECTED. THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION CHEMICAL
3745-55-11	A,B,C	GENERAL CLOSURE PERFORMANCE STANDARD; HAZ WASTE FACIL	REQUIRES THAT ALL HAZARDOUS WASTE FACILITIES BE CLOSED IN A MANNER THAT MINIMIZES THE NEED FOR FURTHER MAINTENANCE, CONTROLS, MINIMIZES, ELIMINATES OR PREVENTS POST-CLOSURE ESCAPE OF HAZARDOUS WASTE, HAZARDOUS CONSTITUENTS, LEACHATE, CONTAMINATED RUN-OFF OR HAZARDOUS WASTE DECOMPOSITION PRODUCTS TO THE GROUND OR SURFACE WATER OR THE ATMOSPHERE.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN TREATED, STORED OR DISPOSED OF).	ACTION
3745-55-12	B	CONTENT OF CLOSURE PLAN; HAZ WASTE FACILITIES	SPECIFIES THE MINIMUM INFORMATION REQUIRED IN A CLOSURE PLAN FOR OHIO EPA TO DETERMINE THE ADEQUACY OF THE PLAN.	SUBSTANTIVE REQUIREMENTS PERTAIN TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN TREATED, STORED OR DISPOSED OF).	ACTION
3745-55-14		DISPOSAL/ DECON OF EQUIPMENT, STRUCTURES & SOILS	REQUIRES THAT ALL CONTAMINATED EQUIPMENT, STRUCTURES AND SOILS BE PROPERLY DISPOSED OF OR DECONTAMINATED. REMOVAL OF HAZARDOUS WASTES OR CONSTITUENTS FROM A UNIT MAY CONSTITUTE GENERATION OF HAZARDOUS WASTES.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE IS TO BE TREATED, STORED OR DISPOSED OF (OR HAS BEEN TREATED, STORED OR DISPOSED OF).	ACTION
3745-55-17	B	POST-CLOSURE CARE AND USE OF PROPERTY	SPECIFIES THE POST-CLOSURE CARE REQUIREMENTS, INCLUDING MAINTENANCE, MONITORING AND POST-CLOSURE USE OF PROPERTY.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (LANDFILLS AND SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS AND TANKS THAT MEET REQUIREMENTS OF LANDFILLS AFTER CLOSURE). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-55-18	B	POST-CLOSURE PLAN	PRESENTS THE INFORMATION NECESSARY FOR OHIO EPA TO DETERMINE THE ADEQUACY OF A POST-CLOSURE PLAN.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (LANDFILLS AND SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS AND TANKS THAT MEET REQUIREMENTS OF LANDFILLS AFTER CLOSURE). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION

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3745-55-19	B	NOTICE TO LOCAL LAND AUTHORITY	REQUIRES THAT A RECORD OF THE TYPE, LOCATION AND QUANTITY OF HAZARDOUS WASTES DISPOSED OF IN EACH UNIT BE SUBMITTED TO THE LOCAL LAND AUTHORITY AND THE DIRECTOR OF THE OHIO EPA. ALSO REQUIRES THAT A NOTATION TO THE DEED TO THE FACILITY PROPERTY BE MADE INDICATING THAT THE LAND WAS USED TO MANAGE HAZARDOUS WASTES AND THAT CERTAIN USE RESTRICTIONS MAY APPLY TO THE PROPERTY.	PERTAINS TO ALL SITES WITH LAND-BASED HAZARDOUS WASTE UNITS (LANDFILLS AND SURFACE IMPOUNDMENTS, WASTE PILES, LAND TREATMENT UNITS AND TANKS THAT MEET REQUIREMENTS OF LANDFILLS AFTER CLOSURE). THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-55-71		CONDITION OF CONTAINERS	CONTAINERS HOLDING HAZARDOUS WASTE MUST BE MAINTAINED IN GOOD CONDITION (NO RUST OR STRUCTURAL DEFECTS).	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-55-72		COMPATIBILITY OF WASTE WITH CONTAINERS	HAZARDOUS WASTES PLACED IN CONTAINER MUST NOT REACT WITH THE CONTAINER MATERIAL OR LINER MATERIAL.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-55-73		MANAGEMENT OF CONTAINERS	CONTAINERS HOLDING HAZARDOUS WASTE MUST BE CLOSED (EXCEPT TO ADD OR REMOVE WASTE) AND MUST NOT BE HANDLED IN A MANNER THAT MAY RUPTURE THE CONTAINER OR CAUSE IT TO LEAK.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-55-74		CONTAINER INSPECTIONS	REQUIRES AT LEAST WEEKLY INSPECTIONS OF CONTAINER STORAGE AREAS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-55-75	A,B,C,D	CONTAINER STORAGE AREA CONTAINMENT SYSTEM	REQUIRES THAT CONTAINER STORAGE AREAS HAVE A CONTAINMENT SYSTEM AND SPECIFIES THE MINIMUM REQUIREMENTS OF SUCH A SYSTEM.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-55-76		CONTAINER REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN TO PREVENT ACCIDENTAL IGNITION OR REACTION OF IGNITABLE OR REACTIVE WASTES THAT WILL BE STORED IN CONTAINERS.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY REACTIVE OR IGNITABLE WASTES THAT ARE STORED, OR ARE TO BE STORED, IN CONTAINERS.	ACTION CHEMICAL
3745-55-77	A,B,C	CONTAINER REQUIREMENTS FOR INCOMPATIBLE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH INCOMPATIBLE WASTES.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY INCOMPATIBLE WASTES ARE PRESENT.	ACTION CHEMICAL
3745-55-78		CONTAINER CLOSURE REQUIREMENTS	SPECIFIES CLOSURE REQUIREMENTS FOR CONTAINERS AND CONTAINMENT SYSTEM.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE STORED IN CONTAINERS.	ACTION
3745-55-92	A-G	DESIGN & INSTALLATION OF NEW TANK SYSTEMS OR COMPONENTS	REQUIRES A SECONDARY CONTAINMENT SYSTEM FOR TANKS AND ASSESSMENT TO DETERMINE TANK INTEGRITY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	ACTION

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3745-55-93	A-G,I	CONTAINMENT AND DETECTION OF RELEASES FOR TANK SYSTEMS	REQUIRES SECONDARY CONTAINMENT AND LEAK DETECTION SYSTEMS FOR TANKS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	ACTION
3745-55-94	A,B,C	GENERAL OPERATING REQUIREMENTS FOR TANK SYSTEMS	SPECIFIES GENERAL OPERATING REQUIREMENTS FOR TANK SYSTEMS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	ACTION
3745-55-95	A-D	INSPECTIONS OF TANK SYSTEMS	REQUIRES INSPECTIONS AT LEAST ONCE EACH OPERATING DAY.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	ACTION
3745-55-96	A,B,C,E	RESPONSE TO LEAKS OR SPILLS OF TANK SYSTEMS	REQUIRES THAT UNFIT TANKS BE REMOVED FROM USE AND FURTHER RELEASES BE PREVENTED.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	ACTION
3745-55-97	A,B	CLOSURE AND POST-CLOSURE CARE FOR TANK SYSTEMS	SPECIFIES CLOSURE AND POST-CLOSURE REQUIREMENTS FOR TANK SYSTEMS.	PERTAINS TO ANY SITE AT WHICH HAZARDOUS WASTE WILL BE EITHER STORED OR TREATED IN TANKS.	ACTION
3745-55-98		TANK REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN TO PREVENT ACCIDENTAL IGNITION OR REACTION OF IGNITABLE OR REACTIVE WASTES THAT ARE TREATED OR STORED IN TANKS.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY REACTIVE OR IGNITABLE WASTES ARE STORED OR TREATED (OR TO BE STORED OR TREATED) IN EXISTING TANKS.	ACTION
3745-55-99	A,B	TANK REQUIREMENTS FOR INCOMPATIBLE WASTES	PRESENTS GENERAL PRECAUTIONS TO BE TAKEN WHEN DEALING WITH POTENTAILLY INCOMPATIBLE WASTES THAT ARE STORED OR TREATED IN TANKS.	PERTAINS TO ANY SITE AT WHICH POTENTIALLY INCOMPATIBLE WASTES ARE STORED OR TREATED (OR TO BE STORED OR TREATED) IN TANKS.	ACTION
3745-57-01	A-D	ENVIRONMENTAL PERFORMANCE STANDARDS; LAND-BASED UNITS	SPECIFIES LOCATION, DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE AND CLOSURE REQUIREMENTS FOR LANDFILLS, WASTE PILES, SURFACE IMPOUNDMENTS AND UNDERGROUND INJECTION WELLS.	PERTAINS TO ALL SITES THAT EITHER HAVE OR WILL HAVE AT LEAST ONE OF THE FOLLOWING UNITS ON-SITE: LANDFILLS, WASTE PILES, SURFACE IMPOUNDMENTS, LAND TREATMENT FACILITIES AND UNDERGROUND INJECTION WELLS (THIS INCLUDES EXISTING LAND-BASED AREAS OF CONTAMINATION).	ACTION
3745-57-03	A-I	LANDFILL DESIGN AND OPERATING REQUIREMENTS	PRESENTS DESIGN AND OPERATING REQUIREMENTS FOR LANDFILLS. INCLUDES LINER, LEACHATE COLLECTION AND REMOVAL, RUN-ON/RUN-OFF CONTROL, ETC.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE ALSO PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-57-05	A,B	MONITORING AND INSPECTIONS OF LANDFILLS	REQUIRES INSPECTION OF LANDFILLS DURING CONSTRUCTION OR INSTALLATION AND OPERATION.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION

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3745-57-10	A,B	LANDFILL CLOSURE AND POST-CLOSURE CARE	SPECIFIES CLOSURE AND POST-CLOSURE REQUIREMENTS FOR HAZARDOUS WASTE LANDFILLS. INCLUDES FINAL COVER AND MAINTENANCE.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED. THIS RULE PERTAINS TO EXISTING LAND-BASED AREAS OF CONTAMINATION.	ACTION
3745-57-12	A,B	LANDFILL REQUIREMENTS FOR IGNITABLE/REACTIVE WASTES	PROHIBITS THE DISPOSAL OF IGNITABLE OR REACTIVE WASTE IN A LANDFILL, UNLESS THE WASTE IS TREATED, RENDERED OR MIXED SO THAT THE RESULTANT MATERIAL NO LONGER MEETS THE DEFINITION OF IGNITABLE OR REACTIVE WASTE.	PERTAINS TO ALL SITES AT WHICH POTENTIALLY IGNITABLE OR REACTIVE HAZARDOUS WASTE MAY BE LANDFILLED.	ACTION CHEMICAL
3745-57-13		LANDFILL REQUIREMENTS FOR INCOMPATIBLE WASTES	PROHIBITS THE DISPOSAL OF INCOMPATIBLE WASTE IN THE SAME CELL OF A LANDFILL.	PERTAINS TO ALL SITES AT WHICH POTENTIALLY INCOMPATIBLE HAZARDOUS WASTE MAY BE LANDFILLED.	ACTION CHEMICAL
3745-57-14	A-D	LANDFILL REQUIREMENTS FOR BULK & CONTAINERIZED LIQUIDS	THE PLACEMENT OF BULK OR NON-CONTAINERIZED LIQUID HAZARDOUS WASTE OR HAZARDOUS WASTES CONTAINING FREE LIQUIDS (WHETHER OR NOT ABSORBANTS HAVE BEEN ADDED) IN ANY LANDFILL IS PROHIBITED.	PERTAINS TO ALL SITES AT WHICH A LIQUID HAZARDOUS WASTE OR HAZARDOUS WASTE CONTAINING FREE LIQUIDS ARE CONSIDERED FOR LANDFILLING.	ACTION
3745-57-15	A,B	LANDFILL REQUIREMENTS FOR CONTAINERS	UNLESS THEY ARE VERY SMALL, CONTAINERS MUST EITHER BE AT LEAST 90% FULL WHEN PLACED IN THE LANDFILL OR CRUSHED/SHREDDED PRIOR TO PLACEMENT IN THE LANDFILL.	PERTAINS TO ALL SITES AT WHICH A HAZARDOUS WASTE LANDFILL WILL EITHER BE LOCATED OR AN EXISTING LANDFILL WILL BE EXPANDED AND CONTAINERS ARE TO BE DISPOSED OF IN THE LANDFILL.	ACTION
3745-58-70	A,B	REQUIREMENTS FOR RECLAIMING SPENT LEAD ACID BATTERIES	SPECIFIES REQUIREMENTS FOR PERSONS WHO RECLAIM SPENT LEAD ACID BATTERIES AND FOR PERSONS WHO GENERATE, STORE, TRANSPORT OR COLLECT THEM BUT DO NOT RECLAIM THEM.	PERTAINS TO ANY SITE AT WHICH THERE ARE SPENT LEAD ACID BATTERIES WHICH MAY BE RECLAIMED ON-SITE OR OFF-SITE.	ACTION
3745-81-11	A,B	MAXIMUM CONTAMINANT LEVELS FOR INORGANIC CHEMICALS	PRESENTS MAXIMUM CONTAMINANT LEVELS FOR INORGANICS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-12	A,B,C	MAXIMUM CONTAMINANT LEVELS FOR ORGANIC CHEMICALS	PRESENTS MCLS FOR ORGANICS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-13	A,B	MAXIMUM CONTAMINANT LEVELS FOR TURBIDITY	PRESENTS MCLS FOR TURBIDITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-81-14	A-E	MAXIMUM MICROBIOLOGICAL CONTAMINANT LEVELS	PRESENTS MCLS FOR MICROBIOLOGICAL CONTAMINANTS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-15	A,B	MAX CONTAMINANT LEVELS FOR RADIUM 226,228,GROSS ALPHAS	PRESENTS MCLS FOR RADIUM-226, RADIUM-228 AND GROSS ALPHA PARTICLE ACTIVITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-16	A,B	MAX CONTAM LEVELS FOR BETA PARTICLE & PHOTON RADIOACTIV	PRESENTS MCLS FOR BETA PARTICLE AND PHOTON RADIOACTIVITY FROM MAN-MADE RADIONUCLIDES.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-21	A,B	MICROBIOLOGICAL CONTAMINANT SAMPLING & ANALYTICAL REQ	PRESENTS SAMPLING AND ANALYTICAL REQUIREMENTS FOR MICROBIOLOGICAL CONTAMINANTS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-22	A,B	TUBIDITY CONTAMINANT SAMPLING & ANALYTICAL REQUIREMENTS	PRESENTS SAMPLING AND ANALYTICAL REQUIREMENTS FOR TURBIDITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-23	A,E	INORGANIC CONTAMINANT MONITORING REQUIREMNENTS	PRESENTS MONITORING REQUIREMENTS FOR INORGANIC CONTAMINANTS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-24	A-E	ORGANIC CONTAMINANT MONITORING REQUIREMENTS	PRESENTS MONITORING REQUIREMENTS FOR ORGANIC CONTAMINANTS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-25	A-D	ANALYTICAL METHODS FOR RADIOACTIVITY	PRESENTS ANALYTICAL METHODS FOR RADIOACTIVITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-26	A,B,C	MONITORING FREQUENCY FOR RADIOACTIVITY	PRESENTS MONITORING REQIREMENTS FOR RADIOACTIVITY.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-81-27	A-E	ANALYTICAL TECHNIQUES	PRESENTS GENERAL ANALYTICAL TECHNIQUES FOR MCLS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-40	A,B,C	REQUIREMENTS FOR A VARIANCE FROM MCLS	PROVIDES CRITERIA BY WHICH DIRECTOR MAY GRANT VARIANCE FROM MCLS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-81-46		ALTERNATIVE TREATMENT TECHNIQUE VARIANCE	ALLOWS FOR THE USE OF ALTERNATIVE TREATMENT TECHNIQUES TO ATTAIN MCLS.	PERTAINS TO ANY SITE WHICH HAS CONTAMINATED GROUND OR SURFACE WATER THAT IS EITHER BEING USED, OR HAS THE POTENTIAL FOR USE, AS A DRINKING WATER SOURCE.	CHEMICAL
3745-9-04	A,B	LOCATION/SITING OF NEW GW WELLS	MANDATES THAT GROUND WATER WELLS BE: A) LOCATED AND MAINTAINED SO AS TO PREVENT CONTAMINANTS FROM ENTERING WELL. B) LOCATED SO AS TO BE ACCESSIBLE FOR CLEANING AND MAINTENANCE.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	LOCATION ACTION
3745-9-05	A1,B-H	CONSTRUCTION OF NEW GW WELLS	SPECIFIES MINIMUM CONSTRUCTION REQUIREMENTS FOR NEW GROUND WATER WELLS IN REGARDS TO CASING MATERIAL, CASING DEPTH, POTABLE WATER, ANNULAR SPACES, USE OF DRIVE SHOE, OPENINGS TO ALLOW WATER ENTRY, CONTAMINANT ENTRY.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION
3745-9-06	A,B,D,E	CASING REQUIREMENTS FOR NEW GW WELLS	ESTABLISHES SPECIFIC REQUIREMENTS FOR WELL CASINGS, SUCH AS SUITABLE MATERIAL, DIAMETERS AND CONDITION.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION
3745-9-07	A-F	SURFACE DESIGN OF NEW GW WELLS	ESTABLISHES SPECIFIC SURFACE DESIGN REQUIREMENTS, SUCH AS HEIGHT ABOVE GROUND, WELL VENTS, WELL PUMPS, ETC.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION
3745-9-08	A,C	START-UP & OPERATION OF GW WELLS	REQUIRE DISINFECION OF NEW WELLS AND USE OF POTABLE WATER FOR PRIMING PUMPS.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION
3745-9-09	A-C,D1,E-G	MAINTENANCE & OPERATION OF GW WELLS	ESTABLISHES SPECIFIC MAINTENANCE AND MODIFICATION REQUIREMENTS FOR CASING, PUMP AND WELLS IN GENERAL.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975. WOULD PERTAIN DURING THE FS IF NEW WELLS ARE CONSTRUCTED FOR TREATABILITY STUDIES.	ACTION

ADMINIS. CODE SECTION	PERTINENT PARAGRAPH	TITLE OR SUBJECT OF REGULATION	DESCRIPTION OF REGULATION	APPLICATION OF REGULATION	ARAR TYPE
3745-9-10	A,B,C	ABANDONMENT OF TEST HOLES & GW WELLS	FOLLOWING COMPLETION OF USE, WELLS AND TEST HOLES SHALL BE COMPLETELY FILLED WITH GROUT OR SIMILAR MATERIAL OR SHALL BE MAINTAINED IN COMPLIANCE OF ALL REGULATIONS.	PERTAINS TO ALL GROUND WATER WELLS ON THE SITE THAT EITHER WILL BE INSTALLED OR HAVE BEEN INSTALLED SINCE FEB. 15, 1975.	ACTION
3745-9-11		USE OF WELLS FOR DISPOSAL	NO PERSON SHALL USE ANY WELL TO INJECT OR REINJECT ANY SUBSTANCE INTO THE GROUND WITHOUT NECESSARY PERMITS.	MAY PERTAIN TO SYSTEMS THAT ENTAIL INJECTION OR REINJECTION OF FLUID INTO THE GROUND. CONSIDER FOR IN-SITU BIOREMEDIATION, SOIL FLUSHING AND GROUND WATER PLUME CONTAINMENT.	ACTION

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SKINNER LANDFILL
RESPONSIVENESS SUMMARY FOR THE
RECORD OF DECISION

OVERVIEW

During the course of the investigation, many meetings were held with the community, with a local activist group, and with a coalition of community representatives.

A fact sheet outlining U.S. EPA's plans for the investigation of the Skinner Landfill site was distributed to the public in March of 1986.

A fact sheet describing the results of Phase I of the Remedial Investigation (RI) and plans for Phase II of the RI was distributed to the public in April of 1987.

A fact sheet describing the results of Phase II of the RI and plans for the Baseline Risk Assessment (RA) and Feasibility Study (FS) was distributed to the public in June of 1991. Representatives of the U.S. EPA and the Ohio EPA held a public meeting in West Chester, Ohio on June 20, 1991 to discuss the results of the Phase II RI and plans for future activities at the Skinner site.

A fact sheet describing the results of the Feasibility Study, and presenting the U.S. EPA's preferred alternative for a comprehensive cleanup of the entire Skinner Landfill site was distributed to the public in April, 1992. A component of this cleanup plan was on-site incineration of approximately 17,000 cubic yards of lagoon wastes. A public meeting to discuss the proposed plan and to gather public comments was held on May 20, 1992. A second public meeting on this subject was held on July 29, 1992. An ancillary purpose of this second public meeting was to present to the public the results of an assessment of the risks posed by the on-site incineration option, which had been requested at the May 20, 1992 public meeting. However, this meeting was disrupted by a local activist group to the point that the risk assessment information was not adequately conveyed to the public. The July 29, 1992 public meeting lasted from 7:00pm until 1:45am.

Subsequent to the second public meeting, and due to concerns expressed by members of the public and by elected officials, the U.S. EPA decided to alter its decisionmaking approach for this site. On August 7, 1992, U.S. EPA mailed an announcement to members of the public and issued a news release, which indicated that:

1) U.S. EPA proposed to select an interim remedy for this site, which included the fencing of the contaminated portion of the site and the

provision of an alternative water supply to potentially affected homes;

2) The comment period for fencing and alternate water supply would end on August 31, 1992;

3) The comment period for the remaining portions of the remedy would remain open until further notice, in order to address community concerns.

The comment period for the remaining portions of the remedy did not close until February 9, 1993, a period of almost ten months.

A coalition of various West Chester community groups and residents was formed after the July 29, 1992 public meeting in order to discuss the Skinner Landfill cleanup and to meet with the U.S. EPA and Ohio EPA. This coalition includes representatives from the Township Trustees, the Chamber of Commerce, Citizens' Lobby for Environmental Action Now (CLEAN), the School Board, the Old West Chester Merchants Association, the Union School PTA, the Home Builders Association, and a number of Township Residents. The U.S. EPA and Ohio EPA met with this coalition every other week for a period of three months. Topics discussed before this coalition include:

- site history;
- description of Remedial Investigation results;
- applicability of RCRA regulations;
- the "2000-foot rule";
- viability of containment remedies;
- assessment of site risks;
- proposals for further studies;
- alternative remediation technologies for the lagoon wastes; and
- the remedy selection process.

The discussions held with the Coalition were highly productive, and resulted in a high degree of open communication and consensus-building. As a result of these discussions, this Coalition issued a written unanimous recommendation that a containment remedy be implemented at the Skinner site. This recommendation is available for public review in the Administrative Record.

On January 11, 1993, the U.S. EPA issued a Fact Sheet announcing that the preferred alternative had changed from Alternative 5 (which included incineration), to Alternative 3 (a containment remedy that does not include incineration), with the possible inclusion of soil vapor extraction. This Fact Sheet, along with a press release and newspaper advertisements, announced that the public comment period would end on February 9, 1993.

On January 20, 1992, a legal representative of the Potentially Responsible Parties

(PRPs) requested an additional 30-day extension of the public comment period. This request was denied.

RESPONSES TO COMMENTS

A large number of comments were received after release of the proposed plan, and during the public comment period, which lasted almost ten months. These comments are responded to below. Some of the comments are quoted directly, and others are paraphrased for clarity and brevity.

Several general subjects were raised repeatedly in public comments, and are addressed below as general responses, rather than repeating the response for each comment.

THE "2000-FOOT" RULE

A number of commenters expressed opposition to incineration based upon the fact that construction of an incinerator would require the waiver of Ohio Administrative Code 3734.05(d)(6)(g). In the comments, this rule was described as a rule "forbidding incineration within 2000 feet of a school".

RESPONSE

The U.S. EPA and Ohio EPA have stated that, in order to operate an incinerator at this site, a waiver of OAC 3734.05(d)(6)(g) could be required. The reason that a waiver might be required is legal, not technical. The U.S. EPA believes that the incinerator would have been able to meet the technical requirements of this rule by demonstrating that this incinerator would not pose a substantial danger to the local residents and school children. However, the U.S. EPA would not meet the specific administrative requirement that applications be reviewed by the Ohio Hazardous Waste Facility Board; such review is not required for Superfund sites.

An incomplete and inaccurate description of this rule has been presented to the public through several routes. This rule has been repeatedly described as "forbidding incineration within 2000 feet of a school". This is incorrect. The law does not mention incineration, nor does it forbid incineration within 2000 feet of a school. The pertinent portion of the rule is quoted below:

> *(6) The board shall not approve an application for a hazardous waste facility installation and operation permit unless it finds and determines as follows:*

(g) That the active areas within a new hazardous waste facility where acute hazardous waste as listed in 40 C.F. R. 261.33 (e), as amended, or organic waste that is toxic and is listed under 40 C.F.R. 261, as emended, is being stored, treated, or disposed of and where the aggregate of the storage design capacity and the disposal design capacity of all hazardous waste in those areas is greater than two hundred and fifty thousand gallons, are not located or operated within any of the following:
(i) Two thousand feet of any residence, school, hospital, jail, or prison;
(ii) any naturally occurring wetland;
(iii) Any flood hazard area if the applicant cannot show that the facility will be designated, constructed, operated, and maintained to prevent washout by a one hundred-year flood or that procedures will be in effect to remove the waste before flood waters can reach it.

Division (D)(6)(g) of this section does not apply to the facility of any applicant who demonstrates to the board that the limitations specified in that division are not necessary because of the nature or volume of the waste and the manner of management applied, the facility will impose no substantial danger to the health and safety of persons occupying the structures listed in division (D)(6)(g)(i) of this section, and the facility is to be located or operated in an area where the proposed hazardous waste activities will not be incompatible with existing land uses in the area.

Significantly, the second paragraph of the rule above provides for the opportunity for the applicant to make a demonstration that the activity will not pose a substantial danger to the occupants of the residence, school, hospital, etc. If the applicant can make this demonstration, it may be allowed to site a facility (such as an incinerator), within 2000 feet of a school, residence, etc. No law which provides for such a demonstration could accurately be described as "forbidding incineration within 2000 feet of a school". If incineration had been selected, U.S. EPA would have had to make the demonstration described in the second paragraph of the rule, as stated above. A similar demonstration would been required under the RCRA Hazardous Waste Incineration regulations, and also under Section 121(d)(4) of CERCLA. Incineration would not have proceeded without such a demonstration.

The effects of this rule are not limited to incinerators. Rather, it would apply

to any cleanup alternative which involves the on-site treatment, storage, or disposal of hazardous wastes. If alternative treatment technologies had been applicable to this site, U.S. EPA would have had to waive this rule in order to apply these technologies. Therefore, if this law was interpreted as has been proposed by some commenters, EPA would be prevented from cleaning up those Superfund sites which most require cleanup, i.e. those which are located within 2000 feet of a residence, school, hospital, etc.

RUMORS OF ORDNANCE

A number of commenters expressed the concern that there might be military ordnance buried at the site, and that these could explode during the site cleanup.

RESPONSE

The issue of the rumored munitions at the Skinner site was the subject of an intense investigation on the part of the U.S. EPA. U.S. EPA assigned a civil investigator to this investigation and followed up on many rumors. Additionally, U.S. EPA requested that the U.S. Army perform records searches to determine whether ordnance was ever brought to the Skinner site. Similar requests were made to the U.S. Army by David Gully, Union Township Administrator, and U.S. Representative John Boehner. U.S. EPA presented the results of these investigations to the public at length at the July 29, 1992 public meeting, and to the Skinner Landfill Coalition.

The local rumors all seem to lead back to someone who had spoken to John or Al Skinner. None of the reports involved first-hand knowledge or observations. John and Al Skinner appear to have used the claim of the presence of ordnance on the site as a means of keeping investigators from going on to the site. In 1976, Al Skinner told Ohio EPA investigators that nerve gas, mustard gas, bombs, and other explosives were buried at the site. This caused Ohio EPA to withdraw from the site and to seek the help of the U.S. Army. Al Skinner later retracted this claim before Ohio EPA lawyers and U.S. Army investigators. During depositions, both Al and John Skinner testified under oath that there is no ordnance buried at the site.

A search of Army records has turned up no indication of the transport or disposal of ordnance at the Skinner site. Furthermore, searches of records relating to the nearby Sharonville and Kings Mill arsenals has indicated that no chemical ordnance was ever brought to, or stored at, these facilities.

U.S. EPA has followed up on all of the rumors that we have been told of involving munitions. All have been baseless; none have involved useful, first-hand information. U.S. EPA believes that it has adequately addressed this issue and does not plan to conduct any further investigation of rumors involving munitions at this site.

However, while the rumors have not produced any evidence, U.S. EPA feels that it is prudent to exercise caution during any excavation on the site. The U.S. Army Corps of Engineers will have control over any excavation activities which are conducted at the site. Army Ordnance Specialists, or ordnance contractors, will be available as needed to supervise any excavation.

RCRA WASTE CLASSIFICATION

Several commenters asked whether the lagoon wastes are RCRA Hazardous Wastes, and whether the incineration and handling of the lagoon wastes would be performed in compliance with RCRA Hazardous Waste regulations.

RESPONSE

The U.S. EPA determined that the RCRA Hazardous Waste regulations are relevant and appropriate requirements for the incineration and handling of the lagoon wastes. This means that the extremely stringent RCRA incineration regulations would have been followed in the construction, operation, and monitoring of the incinerator, and in the handling of the associated feed and waste materials.

The lagoon wastes were tested for a wide range of chemical constituents during the performance of the Remedial Investigation. The results of this testing show that a wide range of organic and inorganic constituents are present in the waste at very high concentrations. It is upon this information, that the U.S. EPA based its determination that the RCRA regulations are relevant and appropriate to the lagoon wastes.

Several specific, but limited, tests are available which would definitively classify the lagoon wastes as RCRA Hazardous Wastes. These tests were not performed during the investigation. Such testing is not necessary in order for the U.S. EPA to make a determination that the RCRA Regulations are Relevant and Appropriate to a particular action. Rather, much broader, more informative tests were performed, in order to fulfill the

purposes of the RI/FS, i.e. the characterization of the site and evaluation of cleanup methods.

COMMENTS FROM THE MAY 20, 1992 PUBLIC MEETING

COMMENT

You don't really know what is in the waste fill, but you are proposing to burn it.

RESPONSE

A considerable amount of testing of the lagoon materials was performed during the Remedial Investigation. 18 borings were drilled into and through the waste lagoon area. Samples of waste from these borings were analyzed for a wide range of chemical parameters. These results are given in the Remedial Investigation. The analyses indicate that there are a wide variety of contaminants in the waste lagoon which can be destroyed through incineration.

COMMENT

Are you going to test the waste before you burn it?

RESPONSE

Yes, if incineration had been chosen, we would have performed additional tests on the materials prior to incineration.

COMMENT

A lot of these things become more toxic after you burn them. You are going to take ash that is more toxic than what you put in to the incinerator, and you are going to bury it.

RESPONSE

This is incorrect. At this site, the feed materials, or the materials which would have been burned in the incinerator, included a wide range of organic

contaminants. Some of these materials have been described as black, raspberry, and turquoise colored ooze. Many of these materials are quite toxic.

What is emitted from the stack of an incinerator is a very, very small fraction of what goes in. During incineration, organic contaminants are destroyed. The result is ash, which contains non-combustible residues. The ash was to have been buried on-site. This ash would have been stabilized, if it had been determined that metals could have been solubilized out of the ash at above a threshold concentration.

The toxicity of the by-products of incineration (the ash and the stack emissions) would be minuscule in comparison to the toxicity of the feed materials.

COMMENT

The excavation could pose a hazard to school children.

RESPONSE

The risks during excavation could have been effectively managed through engineering controls, such as the construction of a temporary building over the open excavation, with provision for treatment of any emissions.

COMMENT

What happens if you hit something that might explode during the excavation?

RESPONSE

The lagoon will not be excavated, under the selected remedy. However, any excavation which will occur on the site will be performed under the supervision of the Army Corps of Engineers, who will provide ordnance expertise. A contingency plan for emergency responders will be incorporated as part of the design.

COMMENT

The site is not much of a hazard to the residents at present, according to the

Endangerment Assessment. It should be left in place. This highest priority should be the health and safety of the current residents of this community.

RESPONSE

The health and safety of current residents, and the level of present hazards, are extremely important considerations. But the short term effectiveness of the remedy is not the only valid concern. This site contains contaminants which will still be a problem for our great grandchildren. We have to be concerned about the long-term effects of our actions and not only about our current level of comfort.

COMMENT

There are differences in the remedies, but not enough to justify incineration.

RESPONSE

In selecting a containment remedy, U.S. EPA has concurred with this comment.

COMMENT

Who is going to be doing this work? We have several contractors that we don't trust.

RESPONSE

All contractors will be carefully screened by U.S. EPA and Ohio EPA. No remedial action contractors have been selected. This will be done after completion of the Remedial Design.

COMMENT

An early draft of the risk assessment for excavation should be released to the public.

RESPONSE

Normally, only final documents which are deemed to be accurate representations of the situation are released to the public.

COMMENT

Ohio imports hazardous waste. Waste from Ohio should have priority at in-state hazardous waste facilities.

RESPONSE

Unfortunately, the U.S. EPA would have to obtain off-site incineration capacity on the open market, just like a private company. U.S. EPA cannot force in-state facilities to accept this waste in preference to out-of-state wastes.

COMMENT.

The incinerator should have at least two scrubbing devices.

RESPONSE

There would probably have been at least two types of emission control devices on the incinerator.

COMMENT

If we incinerate, we will have airborne particles in the air. Where is this stuff going to go?

RESPONSE

Please refer to the draft risk assessment for incineration, which is contained in the Administrative Record. Airborne particles resulting from incineration do not present a significant risk.

COMMENT

There aren't enough inspectors.

RESPONSE

Those who oversee the remedial action at this site will be assigned

specifically to this project. U.S. EPA anticipates no shortage in personnel for oversight of this project.

COMMENT

The kids at the Union School should be moved.

RESPONSE

Current information indicates that this action is not necessary. The remediation will be monitored carefully, to assure that the school children are not impacted.

COMMENT

Short-term heavy doses from an accidental fire or explosions should be the concern, more so than long-term impacts. Option 3 should be selected.

RESPONSE

Alternative 3 was selected.

COMMENT

When will city water be provided?

RESPONSE

During April and May, 1993.

COMMENT

All of the decisions are made beforehand. You don't listen to us. The purpose of a public meeting is merely to make us feel like you are listening to us. We don't trust you.

RESPONSE

The actions of the U.S. EPA subsequent to these public meetings should nullify this concern. We have gone to extraordinary lengths to respond to

community concerns relating to this site.

COMMENT

If you incinerate the lagoon waste, it's going to be better because you're going to be removing a major source of the problem; and instead of your childrens' children having to worry about some ground water getting out of the landfill. Incineration is the best alternative.

RESPONSE

This is the major justification for incineration.

COMMENT

Please give us more opportunity to comment.

RESPONSE

The decision for this site was delayed for nearly ten months so that community concerns could be addressed. U.S. EPA feels that this was a constructive, open, and successful process.

COMMENT

The potential dangers to those who respond to potential emergencies at the site need to be considered and evaluated.

RESPONSE

A contingency plan will be developed as part of the remedial design. The pertinent local responders will be included in the planning process.

COMMENT

Action should be taken quickly at this site. No matter how much study is done, they won't have all the answers at this site. The contaminants could move into the groundwater while we are trying to get ironclad answers to all of the questions. There are some people here who will not trust EPA in any case. There is no way to guarantee to the people in this room that there is

100 percent safety. The waste ought to be gotten out of there for the good of the community.

RESPONSE

The U.S. EPA agrees with this rationale. We believe that the selected remedy will satisfy this concern. The individual who made this comment became a member of the West Chester Coalition for the Skinner Landfill Cleanup, and took part in a lengthy, constructive dialogue which resulted in a consensus that a containment remedy would be recommended for this site.

WRITTEN COMMENTS ON THE PROPOSED PLAN

COMMENT

One commenter from the vicinity of the WTI incinerator in East Liverpool, Ohio wrote to express opposition to off-site incineration of Skinner Landfill wastes at the WTI incinerator.

RESPONSE

Off-site incineration has not been an option at this site. Incineration of the Skinner wastes at the WTI incinerator was never considered.

COMMENT

I believe it is an absolute requirement to proceed with alternative 5. With the current growth of the area and the future potential, we must take all available precautions to protect the people, especially the children who will prosper here. The price is cheap when compared to the consequences.

RESPONSE

This is a valid position. Unfortunately, there are no clear-cut right and wrong answers on this site. It would be possible for a hazardous waste professional to evaluate the information at this site and to arrive at a preference for incineration. It would be equally possible for this person to

arrive at a preference for containment.

In selecting containment, U.S. EPA is expressing the opinion that containment is very likely to work. If it is found not to work in the future, we will take appropriate action.

COMMENT

We moved to West Chester in 1978 and have watched the population grow from 10,000 to 40,000. This, in itself, has placed tremendous pressure on water conservation. Despite the new construction of at least three nearby county water tanks, we have been under restricted water use for about five years.

Any option that allows for the future possibility of contamination getting into the ground water is very short term thinking. Even at added cost, this leaching must be minimized.

RESPONSE

The selected remedy is designed to protect the groundwater, through capping, collection and treatment of contaminated groundwater, and control of groundwater flow. In addition, extensive monitoring will be performed to assure that contaminants are not escaping from the site.

COMMENT

One commenter supported alternative #3, and asked what action will be taken against the Skinners and the other PRPs.

RESPONSE

Alternative 3 was selected, as modified with the addition of soil vapor extraction. The Skinners and a list of 20 PRPs have been notified of their liability. The PRPs have formed a coalition to respond to the EPA on this site, and have agreed to perform the Operable Unit 1, Interim Action remedy.

COMMENT

Do whatever it takes to eliminate this terrible Skinner Landfill.

RESPONSE

Action is to be taken per the requirements of this Record of Decision.

COMMENT

I do not agree with CLEAN, which wants to permanently leave dangerous substances in the ground at this site and hope that they can't migrate in the future. I support incineration and/or permanent removal of wastes.

RESPONSE

This is a valid position. Unfortunately, there are no clear-cut right and wrong answers on this site. It would be possible for a hazardous waste professional to evaluate the information at this site and to arrive at a preference for incineration. It would be equally possible for this person to arrive at a preference for containment.

In selecting containment, U.S. EPA is expressing the opinion that containment is very likely to work. If it is found not to work in the future, we will take appropriate action.

COMMENT

One commenter asked that U.S. EPA list out the Applicable or Relevant and Appropriate Requirements that will be met by the selected remedy.

RESPONSE

The ARARs for the selected remedy are included as an attachment to the Record of Decision.

COMMENT

I support Alternative 3, because it does not involve major excavation or incineration, due to the potential for exposure to children.

RESPONSE

Alternative 3 was selected, as modified with the addition of soil vapor extraction.

COMMENT

The dump isn't hurting anyone now. Use the money to educate our children or to help the hungry and homeless.

RESPONSE

This is not feasible. The Superfund monies are designated by Congress specifically for the cleanup of waste sites. Action must be taken at this site to address potential future migration of contaminants away from the site. Given what is known about the site and the contaminants which are present, the selected remedy is a necessary and appropriate action.

COMMENT

Any school or classroom should not be located anywhere near a Superfund cleanup site, regardless of the method of cleanup chosen. The school should be moved. I am opposed to incineration. A comprehensive health study of the area needs to be done.

RESPONSE

A health assessment was conducted by the Ohio Department of Health, and a draft of this document was released to the public for review on February 8, 1993.

Current information does not indicate that the School needs to be moved. The remediation will be monitored carefully, to assure that the school children are not impacted.

COMMENT

The Skinner landfill should have been regulated better in the first place. EPA should contain the waste somewhere off-site until commercial incinerator capacity is available. The "2000-foot rule" should be followed.

RESPONSE

Ohio EPA and the Ohio Attorney General, and local citizens of West Chester,

have tried a number of times over the last 20 years to get this site cleaned up through legal proceedings. These were eventually successful in having the dump shut down.

Off-site storage of the wastes was not considered as a viable alternative. This would necessarily involve excavating the waste materials twice. Siting of the waste storage area would undoubtedly prove to be difficult. All of the trucks would have to be loaded and unloaded twice. All of these factors conspire to make this an unappealing alternative.

COMMENT

I am opposed to incineration. Incineration is burning 10% of the lagoon wastes and leaving the other 90%. I am concerned about lead dust. No real thought went into the incineration risk assessment.

RESPONSE

U.S. EPA spent a considerable amount of time trying to determine the derivation of this number. It appears that the problem is as follows: The Remedial Investigation estimated that the total volume of lagoon wastes is 107,000 cubic yards (cy). The volume proposed to be incinerated was 17,000 cy. This is because it was decided that only those materials which pose a risk above 10^{-4} would be incinerated. This means that only the most concentrated materials (the ooze) would be dug up and incinerated. While the materials to be incinerated would be only a portion of the total volume of lagoon wastes, it would contain the greatest amount of the hazardous substances.

U.S. EPA devoted a considerable amount of time and resources to the evaluation of the prospective risks posed by the incinerator. Unfortunately, disruptive participants at the July 29th public meeting did not allow U.S. EPA to completely explain the incinerator risk assessment.

The draft incinerator risk assessment indicates that projected lead dust emission levels would not have caused health concerns.

COMMENT

One resident wrote expressing concern about the quality of her well water. The analysis of samples taken July 7, 1992 had been ruined by the

laboratory. She wants residents to be hooked up to the public water supply. She was upset that CLEAN had been allowed to bring in a speaker who was allowed to speak before the general public had a chance to ask their questions.

RESPONSE

This resident's well water was resampled and no contaminants were detected. The hook-up of residents (including this individual's house) within the potentially affected area to the County water supply, per the Interim Action Record of Decision, will occur during April and May, 1993.

COMMENT

Please reconsider the choice of incineration. I am concerned about Dioxins and Furans. I recommended that EPA: 1) identify all contents of the dump; 2) fence and patrol the dump area, and 3) delay all other action until you have done this.

RESPONSE

Extensive testing of the materials within the buried waste lagoon was performed during the Remedial Investigation. U.S. EPA conducted numerous test borings and excavated trenches to characterize the wastes. Additionally, sampling of water from below the dump was performed. Enough information has been collected on the site to make a remedy decision.

Fencing of the former dump is part of the Interim Action Record of Decision. The fence has been installed. No on-site security will be provided, however.

The decision for this site was delayed for nearly ten months so that community concerns could be addressed. U.S. EPA feels that this was a constructive, open, and successful process.

COMMENT

I oppose incineration. I am concerned about malfunctions or accidents. Please consider an alternative other than the five which were presented.

RESPONSE

The design of a hazardous waste incinerator such as the one which was proposed for this site includes waste feed cut-offs and air pollution control devices which are designed to protect the community from the potential for malfunctions or accidents. In any case, incineration was not selected.

The U.S. EPA went to considerable effort in an attempt to develop an alternative to the basic options which were considered: incineration and containment. Unfortunately, the heterogeneous nature of the lagoon wastes at this site render any alternative treatment technologies inapplicable at this site. The only viable remedies for this site are incineration and containment.

COMMENT

I support incineration. Incineration is the best long-term solution to the problem. EPA has an obligation to pursue a remediation plan that is best for the environment even if it isn't the most popular plan. Destroying the toxics makes more sense than just covering them with a cap.

RESPONSE

U.S. EPA has chosen not to incinerate the lagoon waste materials at this site. Part of the reason for this is because incineration of the lagoon waste materials would only address a portion of the contaminated materials on the site. The most highly contaminated groundwater at the site was detected during Phase 1 of the Remedial Investigation upgradient of the lagoon. Incineration would not have addressed the source of these contaminants.

COMMENT

The Skinner dump should be left alone. It is not hurting anyone. Digging it up will just make it worse.

RESPONSE

The Skinner dump may not be hurting anyone now, but potential future migration of contaminants is a concern. Therefore the selected remedy is a necessary action.

COMMENT

More investigation of munitions and radioactive waste should be performed. The incinerator could cause the withholding of Federal highway funds. Has EPA considered the impact the scrubber waters would have on the local sewage treatment plant? EPA has not presented enough information to justify the waiver of the "2000-foot rule". Has EPA considered ingestion in its risk assessment?

Incineration is unacceptable.

RESPONSE

See general response regarding ordnance, above.

There is no indication that radioactive materials were brought to this site. During the drilling of the wells and test borings, radioactivity was monitored as a safety precaution. No readings above background were detected. The Ohio EPA walked over the site with a geiger counter, and did not detect anything.

The disposition of scrubber waters could have been addressed in a number of ways, including on-site treatment or transportation to the local sewage treatment plant. As it is now, there will be no incinerator, and therefore no scrubber.

See general response regarding "2000-foot rule" above.

Yes, ingestion was evaluated in the Baseline Risk Assessment.

COMMENT

Although Ohio Law prohibits siting a commercial hazardous waste incinerator within 2000 feet of homes and schools, U.S. EPA stated that they can ignore this law and do as they please.

RESPONSE

This comment misstates both the prohibition contained in the "2000-foot rule" and the U.S. EPA's intent regarding the proposed waiver of this law. Please see "2000-foot rule" discussion above.

COMMENT

Incineration expert Dr. Paul Connett showed us that EPA had mislead us as to the toxicity of dioxin to humans.

RESPONSE

The U.S. EPA has not misled the public as to the toxicity of dioxins to humans; it has released the most up-to-date information as it is developed. The scientific community very rarely is in uniform agreement on any subject. Paul Connett used this tendency, along with the fact that the state of knowledge is advancing, to claim that the U.S. EPA is misleading the public. This is unfair and incorrect.

COMMENT

There has been no assessment made of the current health of the community.

RESPONSE

This assessment has been performed by the Ohio Department of Public Health. A draft of this Public Health Assessment was released for public comment on February 8, 1993. U.S. EPA's role is to assess the potential impacts which would result if the site were not cleaned up, and to develop appropriate cleanup methods based upon this evaluation.

COMMENT

EPA has not characterized the waste at Skinner as "hazardous". This characterization must be made if we are to have the protection afforded by the Resource Conservation and Recovery Act (RCRA), which has stringent requirements about what must and what must not be done in dealing with the contamination. Lisa Whitacre and many other residents demanded to know why the designation has not been made, and EPA repeatedly refused to answer the question.

It appears that EPA does not want to designate the waste as hazardous because they intend to incinerate the waste and then return the undestroyed heavy metals and incinerator ash to the landfill, which would not be consistent with the RCRA requirements.

RESPONSE

The U.S. EPA responded to this question at the July 29th meeting, and at a meeting with the Skinner Landfill Coalition. U.S. EPA indicated that the lagoon wastes will be treated as RCRA Hazardous wastes, and that the RCRA requirements are relevant and appropriate to incineration at this site. Incineration would have been conducted in compliance with the stringent RCRA incinerator standards, as U.S. EPA stated at the July 29th meeting.

Please refer to the "RCRA Hazardous Waste" discussion above.

COMMENT

EPA intends to incinerate just 10% of the waste on site.

RESPONSE

U.S. EPA spent a considerable amount of time trying to determine how this number was derived. It appears that the problem is as follows:
The Remedial Investigation estimated that the total volume of lagoon wastes is 107,000 cubic yards (cy). The volume proposed to be incinerated was 17,000 cy. This is because it was decided that only those materials which pose a risk above 10^{-4} would be incinerated. This means that only the most concentrated materials (the ooze) would be dug up and incinerated. While the materials to be incinerated would be only a portion of the total volume of lagoon wastes, it would contain the greatest amount of the hazardous substances.

It is true, however that incineration would address only a portion of the site wastes. This, among other factors, has led to the selection of the containment remedy set forth in this Record of Decision.

COMMENT

We are afraid that EPA will decide to incinerate the whole site, after the incinerator is built.

RESPONSE

This was never EPA's intention. In addition, incineration was not selected as a remedy at this site.

COMMENT

There has been no assessment of the risks in the event that the hazardous waste incinerator at Skinner does not work perfectly.

RESPONSE

An assessment of the risks in the event of incinerator failure was not completed since incineration was not selected as a remedy.

COMMENT

We want you to go back and come up with some other alternative.

RESPONSE

In the course of the meetings with the Skinner Landfill Coalition, the U.S. EPA presented an evaluation of alternative treatment technologies which may be applicable to the Skinner Landfill lagoon wastes. The conclusion was that there are really only two options for this site: incineration and containment. There are no other viable technologies for destruction of the lagoon wastes.

COMMENT

One commenter expressed embarrassment at the behavior of "a certain specific group" at the July 29, 1992 public meeting, and stated that some people who came to receive information were unable to obtain that information because of the rudeness of others. He expressed support for what was to become the Skinner Landfill Coalition, and for the attainment of a resolution that is acceptable to all.

Response

The U.S. EPA worked extensively with the Skinner Landfill Coalition, and believes that the selected remedy is acceptable to a broad section of the community.

COMMENT

Once this incinerator begins operating, it will become a permanent facility.

RESPONSE

This would not have happened. Mobile incinerators such as the one which was proposed for this site are not permitted for permanent use. In addition, incineration was not selected as a remedy.

COMMENT

In addition to those comments responded to individually above, 13 commenters wrote brief comments which expressed opposition to on-site incineration. Many of these comments cited the proximity of the Union Elementary School and the "2000-foot rule" as part of the reason for their opposition.

RESPONSE

The U.S. EPA continues to believe that incineration is a viable technology which could be applied safely at the Skinner site. Incineration has been successfully implemented at a number of sites nationwide. However, U.S. EPA has taken the public opposition to incineration at the Skinner site into consideration, along with other factors, in its selection of a remedy which does not include incineration.

COMMENT

A petition in opposition to incineration, containing 48 signatures, was submitted.

RESPONSE

The EPA has taken the opposition to incineration into account, along with other factors, in its decision not to pursue incineration at this site.

COMMENT

The City of Mason encourages U.S. EPA to comply with all ARARs. Please be thorough in your research and evaluate the outcomes of all the alternatives before selecting one.

RESPONSE

All ARARs are to be complied with in this selected remedy. U.S. EPA believes that it has been diligent in pursuing and evaluating the outcomes of all alternatives.

COMMENT

The OSU Student Environmental Action Coalition expressed the following concerns:

1) Incineration would violate the "2000 foot rule";
2) The Ohio Department of Health is performing a study determining the effects that incineration will have on the public. The results of this should be included in the Feasibility Study; and
3) An in-depth munitions study should be completed and included in the FS.

RESPONSE

See the general responses regarding the "2000-foot rule" and the ordnance concerns. The study performed by the Ohio Department of Health has been completed and was released for public comment on February 8, 1993. The conclusions of this report do not change the Feasibility Study or the remedy.

COMMENTS OF UNION TOWNSHIP

COMMENT

U.S. EPA should provide answers to the questions which were raised in the May 20, 1992 meeting in the form of a supplemental report to be disseminated to the public, and then hold another community meeting.

RESPONSE

A second public meeting was held on July 29, 1992 to address the concerns raised in the May 20, 1992 meeting.

COMMENT

The Proposed Plan contained a detailed analysis only of Alternative 5. A detailed analysis of the other alternatives should be made available to the public.

RESPONSE

A detailed analysis of each alternative was presented to the public as part of the Feasibility Study.

COMMENT

The U.S. EPA should publish a gantt chart of the project schedule.

RESPONSE

A schedule will be developed as part of the design.

COMMENT

U.S. EPA and the Agency for Toxic Substances and Disease Registry (ATSDR) should work together. U.S. EPA should delay its decision until the ATSDR has completed its health assessment.

RESPONSE

The ATSDR health assessment, performed by the Ohio Department of Health, was released to the public in draft form on February 8, 1993. The conclusions of this study recommend actions which are consistent with those to be taken in the Operable Unit 1 and Operable Unit 2 Records of Decision for this site.

COMMENT

Regulations should be followed without waiver.

RESPONSE

See general response regarding "2000-foot rule", above.

COMMENT

What will be required form the local government regarding safety, security, and emergency services? Which of these services will be provided by USEPA? What is expected of the local fire and EMS? Will the clean-up contractor have a response team on site? If our personnel are exposed, who will pay for blood work-ups and long term monitoring, if necessary? If material is removed from the site, who will handle a leak or spill off-site? How will notification proceed in the case of an incident? If a cave-in occurs on-site, who will perform personnel extrication? Who will provide protective equipment and training for local authorities who require access to the site?

RESPONSE

As part of the remedial planning for this site, the U.S. EPA will develop, in coordination with the pertinent local government entities, a detailed emergency planning and contingency plan which will outline the duties, responsibilities, contingencies, and planned responses relating to emergency situations. The above mentioned issues will be addressed as part of this emergency planning and contingency plan.

COMMENT

What has been done to investigate the possible presence of ordnance? What contingencies exist to deal with ordnance if it exists?

RESPONSE

See general response regarding ordnance, above.

COMMENT

Will U.S. EPA meet at some point with local officials to discuss these concerns and to develop training routines and contingency and response plans that address these issues?

RESPONSE

Yes. Development of safety and contingency plans will be conducted in cooperation with local officials.

COMMENT

The site should be fenced and posted.

RESPONSE

The site has been fenced and posted as part of the Interim Action operable unit.

COMMENT

Alternate water supply should be provided to those in proximity to the site

RESPONSE

This has been performed as part of the Interim Action operable unit.

PRP COMMENTS ON THE PROPOSED PLAN

A coalition of Potentially Responsible Parties submitted lengthy combined technical/legal comments on September 21, 1992. These are addressed below.

COMMENT

Incineration is no more permanent than containment.

RESPONSE

This is incorrect. Incineration would provide for permanent destruction of organic lagoon waste materials. Containment provides only for a reduction in the potential for migration of these materials. Therefore incineration provides for a more permanent solution than containment.

COMMENT

On-site incineration can not meet the location-specific ARAR of the State of Ohio's hazardous waste facility siting requirements. Section 3734.05(D)(6)(g))i) of the Ohio Solid and Hazardous Waste Disposal Law states that "(t)he [hazardous waste facility] board shall not approve an application for a hazardous waste facility installation and operation permit unless it finds and determines the : .. the active areas within the new hazardous waste facility ... are not located or operated within ... (t)wo thousand feet of any residence, school, hospital, jail or prison".

RESPONSE

The PRP Group has omitted significant portions of the pertinent regulation. The full pertinent portion of the regulation states:

(6) The board shall not approve an application for a hazardous waste facility installation and operation permit unless it finds and determines as follows:

> *(g) That the active areas within a new hazardous waste facility where acute hazardous waste as listed in 40 C.F. R. 261.33 (e), as amended, or organic waste that is toxic and is listed under 40 C.F.R. 261, as emended, is being stored, treated, or disposed of and where the aggregate of the storage design capacity and the disposal design capacity of all hazardous waste in those areas is greater than two hundred and fifty thousand gallons, are not located or operated within any of the following:*
> *(i) Two thousand feet of any residence, school, hospital, jail, or prison;*
> *(ii) any naturally occurring wetland;*
> *(iii) Any flood hazard area if the applicant cannot show that the facility will be designated, constructed, operated, and maintained to prevent washout by a one hundred-year flood or that procedures will be in effect to remove the waste before flood waters can reach it.*

Division (D)(6)(g) of this section does not apply to the facility of any applicant who demonstrates to the board that the limitations specified in that division are not necessary because of the nature or volume of the waste and the manner of management applied, the facility will impose no substantial danger to the health and safety of persons occupying the structures listed in division (D)(6)(g)(i) of this section, and the facility is to be located or operated in an area where the proposed hazardous waste activities will not be incompatible with existing land uses in the area.

The second paragraph above provides for the opportunity to demonstrate that the facility will pose no substantial danger to the health and safety of persons occupying those structures.

See the "2000-foot rule" discussion, above.

COMMENT

The magnitude of the short-term risks involved in incineration were not fully addressed.

RESPONSE

A draft assessment of the risks associated with incineration has been written, and has been placed in the Administrative Record. This risk assessment has not been finalized, due to U.S. EPA's shift in preference from incineration to containment.

COMMENT

Cost-effectiveness should have been considered in selection of a preferred alternative. If U.S. EPA's containment alternatives did not sufficiently meet the objective of treating on-site soils, a less costly alternative that combined containment with limited treatment of impacted soils should have been developed as part of the Feasibility Study.

RESPONSE

Cost-effectiveness is considered as part of the remedy selection process. However, the U.S. EPA must give highest priority to the effectiveness of the

remedy, before considering the trade-offs in terms of cost.

The U.S. EPA has performed a detailed screening of remedial alternatives twice for this site, once during the performance of the Feasibility Study, and again during the Public comment period, for the benefit of the Skinner Landfill Coalition. Both screenings brought U.S. EPA to the same conclusion: we can either contain the lagoon wastes, or incinerate them. There are no other viable technologies for clean-up of the lagoon wastes at this site.

COMMENT

In addition to organic and inorganic chemicals, nerve gas, mustard gas, incendiary bombs, phosphorus, flame throwers, cyanide ash, and explosive gases were reportedly buried at the site, and there may be methane gas and biohazards (i.e., pathogenic microbial agents) present at the landfill.

RESPONSE

See general discussion of ordnance issues, above.

While methane gas is likely to be present at the site, this possibility was discussed and evaluated in the RI/FS, and a gas collection system is included in the cap specifications. There has been no indication of the presence of pathogenic microbial agents at this site, and there is no reason to believe that such agents would be alive at present, after over 15 years of burial. The PRPs raised this concern with no supporting documentation.

COMMENT

The proposed plan does not fully address the impacts associated with excavation of the buried waste lagoon.

RESPONSE

The Feasibility Study includes an evaluation of the public health risks associated with the excavation of the buried waste lagoon. This evaluation was performed assuming that no engineering controls would be used to limit the potential releases. In reality, however, it would be possible to control emissions during excavation by constructing a building over the open excavation, and treating the emissions. This is a viable technology which has been performed at a number of other sites nationwide.

COMMENT

An appropriate remedy (which combines features of several U.S. EPA alternatives) would consist of the following elements: 1) a cap over the buried lagoon and active landfill areas; 2) soil vapor extraction in the soils beneath the buried lagoon, if feasible; 3) groundwater collection and treatment at the downgradient side of the potential source areas, if necessary; and 4) institutional controls (fencing, deed restrictions, and extension of public water supply).

RESPONSE

What the PRPs have proposed is very similar to alternative 3, with the addition of several qualifications and soil vapor extraction. The selected remedy includes some aspects of the PRPs' proposal. Alternative 3 was selected, with the inclusion of Soil Vapor Extraction.

COMMENT

The groundwater data for the site simply do not show the presence of contamination attributable to the buried lagoon material or the landfill area. No consistent contamination was found in the groundwater.

RESPONSE

The U.S. EPA strongly disagrees. The pattern of contamination that has been observed at the Skinner site is consistent with U.S. EPA's knowledge of the site history. Historical evidence indicates that chemical wastes were stored or disposed of in a haphazard manner at the site, and that many, many different chemicals were disposed of at the site. Therefore it is not surprising that different contaminants are being detected from one monitoring well to the next.

The fact that there were a wide variety of contaminants detected in monitoring wells at the site indicates that the site, i.e. the former dump and the buried lagoon area, is causing groundwater contamination. The fact that many of the contaminants which were found in the lagoon wastes were also found in the groundwater also strongly indicates that the contaminants in the groundwater originate within the site wastes.

The buried lagoon and the former dump contain a wide variety of potentially mobile chemical contaminants. Groundwater contaminated with a number

of these same chemical constituents was found downgradient of the lagoon, and underneath the former dump. There are no other sources of groundwater contamination in the site vicinity. The upgradient groundwater wells were uncontaminated. Therefore, these groundwater contaminants must originate from the site.

COMMENT

Given the setting of the buried lagoon materials at the site (above the water table and below 20 feet of demolition debris), this lack of mobility means that there is no mechanism for exposing individuals or organisms to these materials, and the lack of exposure means that there is no risk to human health and the environment.

RESPONSE

The U.S. EPA disagrees. Site related contaminants have migrated into the groundwater, and are presently being discharged at low concentrations into the East Fork of Mill Creek. This constitutes a mechanism for exposure of these materials to humans and the environment. Given the demonstrated migration of these materials into the groundwater and streams, there is a potential for future exposure to humans and the environment.

COMMENT

Analytical data for groundwater samples also show that even the more volatile organic compounds (VOCs) are not migrating away from the buried lagoon.

RESPONSE

On the contrary, numerous volatile organic compounds were found in the monitoring wells. These contaminants must have migrated. Otherwise, their presence could not have been detected in the downgradient monitoring wells.

COMMENT

During the drilling of the waste lagoon borings, materials may have been carried down along with the augers, causing the samples taken from below the waste lagoon to be contaminated.

RESPONSE

The samples were taken using a split-spoon sampler. Before the auger is advanced in the soil, a split-spoon sample is collected. Consequently, the split-spoon obtains a soil sample which has not been disturbed by the auger. Collecting soil samples in this manner ensures that the augering process does not contaminate the soil samples.

COMMENT

Soil Vapor measurements were made using three different instruments.

RESPONSE

While it is true that the various types of field soil vapor testing instruments are sensitive to different types of contaminants, each will give a general indication of the level of organic contamination which is present. These instruments were not intended to perform the same function as the laboratory analysis which was performed on over 400 samples from this site. They are intended as field screening tools, and provide information which is useful in the overall characterization of the site.

The PRPs have proposed to use either of two different instruments for analyzing vapors during the interim action at this site.

COMMENT

A sample from location SS-07, which contained 980 ppm of PCBs, should not have been included in the evaluation of direct contact risk, because it appears to have been buried since the sample was taken.

RESPONSE

The risks associated with the site still warrant a remedial action regardless of whether or not sample location SS-07 is included in the risk assessment.

COMMENT

The residential exposure scenario for direct contact with surface soils is improper methodology, and is incorrect for this site.

RESPONSE

The residential exposure scenario results in the highest risk numbers. In this case, the baseline risk assessment assumed that no action was taken on the site, and that the site was used for residential purposes in the future. This evaluation is performed in order to determine what could happen in the future if the site were uncontrolled. This is a standard procedure which has been performed at many Superfund sites, and is considered a proper methodology.

COMMENT

The PRPs referred to an internal EPA Memorandum dated February 26, 1992 regarding assessment of risks.

RESPONSE

The Baseline Risk Assessment was finalized in 1990. This memo applies to risk assessment performed after the date of the memo.

COMMENT

If there are up to 7000 drums in the lagoon area, at least one of the waste borings drilled through this part of the lagoon should have encountered drums.

RESPONSE

A geophysical survey of the lagoon area was conducted prior to the installation of the lagoon borings. This information was utilized in the selection of waste lagoon boring locations. Boring location were chosen so as not to encounter buried drums.

COMMENT

The waste materials within the waste lagoon are not accessible.

RESPONSE

The materials in the waste lagoon are definitely accessible. This was demonstrated in 1976 when the U.S. Army and the Ohio EPA used a backhoe to dig a trench into the waste lagoon materials.

COMMENT

The waste lagoon does not constitute a principle threat. The wastes are not highly mobile because they have not moved significantly in the last 15 years.

RESPONSE

The wastes in the lagoon are highly toxic and have the potential for high mobility. Past behavior of the contaminants can give us some indication as to the likelihood of future migration. However, there is always an element of uncertainty in making such predictions. The presence of a considerable volume of highly toxic materials which have the potential for high mobility continues to constitute a principal threat.

COMMENT

Incineration will not meet the objective of reducing contaminant mobility, toxicity, and volume, because incineration would actually increase the volume of waste materials due to the need for stabilization.

RESPONSE

The criterion (one of the nine criteria which are used for evaluating alternatives) is actually Reduction of Toxicity, Mobility <u>or</u> Volume. While it is possible that the volume of materials would be increased, incineration would achieve significant reductions in toxicity and mobility of contaminants, thereby satisfying this criterion.

COMMENT

The incineration alternatives involve landfilling of the residual ash which means that re-evaluation of the site will still be required every five years.

RESPONSE

Under any of the alternatives, hazardous substances will remain on site, and a re-evaluation of the remedy's protectiveness will be required by law at least every five years.

COMMENT

Risks from the excavation of the waste lagoon could proceed through a number of pathways other than through volatilization.

RESPONSE

Excavation of lagoon wastes is not part of the selected remedy for the site, but was a component of alternatives 2 and 5. All of these pathways could be addressed through engineered controls, such as constructing a building over the excavation area, and treating the emissions.

COMMENT

Excavation of the waste lagoon could take longer then projected due to unexpected conditions.

RESPONSE

This is true.

COMMENT

U.S. EPA has assumed that the bulk of the excavation work will be performed with minimal health and safety protection using conventional excavation techniques. However, due to the diverse and heterogeneous nature of the waste, this assumption could be unrealistic.

RESPONSE

These assumptions were part of a "conservative" assessment of risks. If a conservative assessment of risks shows that there is a risk to workers, then the workers will wear protective equipment. The U.S. EPA would not suggest that the lagoon be excavated by workers without the proper level of personal protection.

COMMENT

The RI/FS did not provide the data needed to identify the most appropriate incineration technology, if any, and its associated operational constraints. These include the anticipated ash characteristics, cohesiveness, stickiness, and liquid content.

RESPONSE

The purpose of a Feasibility Study is to determine the feasibility of cleaning of the site using a range of technologies. The operational parameters are determined during design.

COMMENT

On site incineration of hazardous waste sites has not gained wide acceptance due to the inherent problems in siting, permitting, constructing, and operating incineration systems.

RESPONSE

This is incorrect. Incineration of hazardous wastes has been applied successfully at a number of Superfund sites.

COMMENT

Limiting incineration to the summer months would not be practical.

RESPONSE

This is probably true, when the cost of the project is taken into account.

COMMENT

There is a general shortage of off-site incinerator capacity. It would be difficult to secure adequate off-site capacity of the Skinner wastes and to schedule for the timely removal, transportation, and disposal of waste and soil. In addition, off-site incineration is expensive.

RESPONSE

U.S. EPA agrees.

COMMENT

The PRPs submitted a number of comments relating to the difficulty of obtaining permits.

RESPONSE

Permits are not required for on-site work pertaining to the cleanup of a Superfund site. Instead, the substantive requirements of the permit must be met. This results in a substantial reduction in delays.

COMMENT

Stockpiling of soils prior to incineration could increase the risks.

RESPONSE

Stockpiling of wastes prior to incineration at Superfund sites is often conducted inside a specially constructed containment building, which provides for treatment of emissions. This would help to mitigate these risks.

COMMENT

Odorous substances can produce psychological responses which were not considered during the selection of the remedial alternatives.

RESPONSE

U.S. EPA agrees that odorous substances can produce psychological responses. However, the potential for the production of odorous substances is inherent in each of the remedial alternatives for this site; in each case, U.S. EPA would have to address the potential impacts of implementing the remedy on the local community.

COMMENT

The PRPs provided a brief cost analysis of incineration, which projected a cost of $88.5 million dollars, vs. the $29 million of EPA's cost estimate.

RESPONSE

The PRPs did not provide the documentation which would be necessary in order to evaluate their cost figures.

COMMENT

The PRPs stated that the remedy should be implemented using performance standards.

RESPONSE

A performance-based remedy which identifies specific performance standards has been delineated in this record of decision, as much as is possible.

COMMENT

The PRPs oppose the blanket requirement for interception of groundwater downgradient of the site, citing a lack of need for "multiple remedial components that are redundant". They suggested interception of contaminated groundwater only "if contaminants are located in the groundwater".

RESPONSE

The selected remedy requires the interception, collection and treatment contaminated groundwater downgradient of the site. There is not a blanket requirement for collection of all groundwater downgradient of the site.

JULY 29, 1992 PUBLIC MEETING

A second public meeting regarding the proposed plan was held on July 29, 1992. A number of comments and issues were raised at this meeting, which lasted from 7:00pm to 1:45am. During the course of the evening, many of the comments and

issues which were raised by the public were answered. Additionally, many of the concerns and questions raised at the July 29th Public Meeting are addressed elsewhere in this responsiveness summary. However, due to the tempestuous nature of this particular meeting, U.S. EPA did not have the opportunity to answer a number of questions which were raised about the proposed incineration process. These are addressed below.

COMMENT

The calculation of Destruction Removal Efficiency (DRE) is misleading because it does not include Products of Incomplete Combustion (PICs) or metals.

RESPONSE

While it is true that products of incomplete combustion (PICs) do not enter into the calculation of the Destruction and Removal Efficiency (DRE) for an incinerator, U.S. EPA disagrees with the statement that the DRE is "misleading", because the PICs and metals are items which are measured separately from the DRE.

U.S. EPA's hazardous waste incineration regulations define DRE as a net waste-input mass rate versus stack-output mass rate comparison which U.S. EPA and virtually all of the technical community feel best defines how well certain toxic organics called "POHCs" (Principal Organic Hazardous Constituents), in the feed material are destroyed and/or removed by the incineration system.

Those toxic compounds or fractions thereof that are not destroyed, but are removed and become part of the ash and/or residue streams exiting the incinerator. These compounds must still be safely dealt with in some manner, such as stabilization.

Over the past 15 or 20 years during EPA's extensive involvement in the field of incineration, the DRE parameter has served as a very useful measure of how well incinerators perform, as well as being an equitable and reliable regulatory enforcement tool.

Products of Incomplete Combustion (PICs) are complex organic compounds which can be generated under certain unfavorable combustion conditions. Should the types and amounts of PICs in the stack gas from a particular incinerator be deemed of interest from a health risk or standpoint, a properly designed sampling and analysis effort would be necessary to identify and

quantify the PICs. PICs are typically of low-concentration, are usually present as multiple and unusual compounds. Therefore, the work of sampling and analyzing PICs becomes an expensive and time-consuming endeavor that can exceed the cost of a DRE assessment.

Measurement of PICs is in fact frequently required and included during trial burn operations when DRE and other performance parameters including particulate and acid gas emission control are being determined. More often than not, a complete incineration performance evaluation includes both DRE and PIC analyses.

In addition, other measurement data from what are know as continuous emission monitors or "CEMs" are also recorded. These parameters include: oxygen, carbon monoxide, carbon dioxide, and total hydrocarbons, etc. Such CEM data readings and records are made during a trial burn as well as routinely thereafter during routine, day-to-day operation.

COMMENT

One comment was received alleging that the "El Dorado" incinerator stack emission "must be very toxic" based on the commenter's "speaking with citizens".

RESPONSE

By the "El Dorado" incinerator, it is assumed that the commenter probably refers to the large "ENSCO" commercial, PCB-permitted, stationary incinerator located in El Dorado, Arkansas. It is one of several PCB treatment and disposal facilities in the Southwestern U.S. area under the strict regulatory control and permitting responsibility of EPA's Region VI office located in Dallas, Texas. While it is true that one segment of the population in that area is, or at least was very concerned about the environmental and health risk issues about that facility in earlier years, U.S. EPA is not aware of any case where the concerns proved true or valid in the ten or more years that the plant has been in operation.

COMMENT

If you mix polyethylene and PVC together and burn them in the laboratory, they will use up all of the oxygen, and then products of incomplete combustion (PICs) will result.

RESPONSE

Burning in an incinerator such as the one which was proposed for the Skinner site is very different from the laboratory experiment described by this commenter. Incinerators are operated with an excess of oxygen, so that the gases which are generated are able to burn. Incinerator operating parameters are monitored to assure that the proper oxygen levels are maintained. Whatever gases do not burn in the primary combustion chamber are passed on to the afterburner, where they are destroyed at high temperature. The experiment described by the commenter included neither an excess of oxygen nor an afterburner.

COMMENT

Before incinerating, you must have baseline health data. Otherwise, when you are sick afterward, the EPA will tell you that your health effects are due to the landfill, and not from the incinerator.

RESPONSE

Baseline health data has been gathered and published for this site by the Ohio Department of Health. This was released to the public in draft form on February 8, 1993.

COMMENT

The EPA has not gone out to gather the opinions of the people who live around these incinerators.

RESPONSE

The U.S. EPA has been conducting a study of the opinions and attitudes of the people who live in the vicinity of several Illinois Superfund sites where incineration has been completed. The studies are not yet complete, but the public reactions were generally quite positive.

COMMENT

One commenter stated that "when the dump stack is open, metals can go right out into the air".

RESPONSE

Many incinerator designs include an emergency vent opening, commonly referred to as a "dump stack". Short-term, higher emissions of toxic metals can occur during an emergency vent opening event because the vent designs typically bypass the pollution control system (wet scrubber, etc.). One vent design [the I.T. Corporation's design] exhausts from a point beyond the primary chamber, though that unit employs an extra burner at the base of the vent stack.

It is U.S. EPA's goal to try to allow emergency vent operations only on a very infrequent basis, e.g., once a month or less. Generally, the "events " as they are called, are quite short in duration (typically 15 to 30 minutes), and hazardous waste feed is always stopped immediately (waste feed cut-off). Using an emergency vent system to handle an unforseen major upset, such as the failure of a scrubber cooling water pump, prevents incidents such as fires or ruptures of the pollution control system.

U.S. EPA has begun to study and try to determine the emissions and health risk issues surrounding the issue of emergency vent stacks by conducting tests in pilot-scale incinerators. The pilot work thus far has indicated that the net volume or mass increase in emissions is quite small.

COMMENT

Drum shredding operations can result in explosions.

RESPONSE

Drum shredding operations are typically run under an inert atmosphere, to minimize the potential for fires and explosions.

COMMENT

Solidification is not dependable. There is a site in Warsaw, England, where supposedly solidified materials had the consistency of pudding. Rocks thrown out onto the solidified materials would slowly sink.

RESPONSE

Solidification of incinerator ash has been performed successfully at a large number of sites nationwide, resulting in an inert mass.

Stabilization at this site would have been performed only after the performance of pilot-scale tests, in which the formulation of the stabilization materials would have been adjusted until a solid, stable result was obtained, and it was demonstrated that the mobility of the remaining contaminants, such as metals, was reduced to negligible levels.

Confirmation tests would have been performed on the materials which were stabilized during the actual implementation of the remedy, to assure that the stabilization was minimizing the mobility of the various remaining metals.

COMMENT

Stabilization is ineffectual, because lime increases the solubility of lead.

RESPONSE

The solubility (and therefore the mobility), of lead compounds can be higher at excessively high and excessively low pH levels (i.e. in acidic or basic conditions). Lime can increase the pH of a solution. Therefore if stabilization were performed with the addition of an extreme excess of lime, the mobility of lead could potentially be increased. However, this concern is easily addressed by stabilizing the materials at a relatively neutral pH. By maintaining a relatively neutral pH, incinerator ash materials containing lead can be, and have been, stabilized with great success.

COMMENT

The by-products of incineration are more toxic that what goes into the incinerator.

RESPONSE

This is incorrect. At this site, the feed materials, or the materials which would be burned in the incinerator, included a wide range of organic contaminants, including materials described as black, raspberry, and turquoise colored ooze. Many of these materials are quite toxic.

What is emitted from the stack of an incinerator is a very small fraction of what goes in. During incineration, the majority of organic contaminants are destroyed. The result is ash, which contains non-combustible residues. These residues would have been stabilized, if it had been determined that metals could have been solubilized out of the ash at a level above a

threshold concentration.

The toxicity of the by-products of incineration (the ash and the stack emissions) would be minuscule in comparison to the toxicity of the feed materials.

COMMENT

EPA should evacuate the people who live around this site, and shut down the school.

RESPONSE

Current information evaluated by U.S. EPA in the Baseline Risk Assessment indicates that the Skinner Landfill presently poses no significant hazard to the people who live around the site, or to the students in the school. This conclusion has been borne out by the Draft Health Assessment produced by the Ohio Department of Health. There is therefore no plan to evacuate the local residents, or to shut down the school. U.S. EPA will monitor conditions during the site cleanup to assure that the local residents and school children aren't impacted.

COMMENT

EPA should put the materials in a concrete bunker, and wait until another technology is available.

RESPONSE

The major portion of the hazards to the public which would be incurred through remediation of this site, if Alternative 5 had been chosen, would have resulted from the excavation of the buried waste lagoon. Particularly, emissions of volatile organic compounds to the atmosphere would have tended to increase.

In order to emplace the materials in a concrete bunker, it would be necessary to excavate the lagoon waste materials. Then, if another technology became available in the future, it would be necessary to excavate and handle the materials a second time, thus doubling the resultant emissions.

Additionally, U.S. EPA feels that it would not be responsible to set up a

long-term storage facility at this site based upon the assumption that some unknown remediation method would be found at an unspecified date in the future. A viable technology for the remediation of the lagoon wastes (incineration) is presently available.

For these reasons, the U.S. EPA does not feel that storage of the waste in a bunker is a viable solution to the problems at this site.

COMMENT

What if a bomb goes off in the incinerator?

RESPONSE

Incineration and excavation are not components of the selected remedy. However, a bomb would have been detected during excavation, and would not have been fed into the incinerator. No object as large as a bomb would be placed into a hazardous waste incinerator such as was proposed for this site. Before being fed into the incinerator, materials are first treated or broken up until they meet a specified particle size. Materials to be fed into the incinerator which was proposed for this site would have first been broken up to a size of less than 1 inch.

COMMENT

The Risk Assessment should evaluate the exposure of people to Dioxins through the milk from dairy cows.

RESPONSE

This concern is inapplicable to the situation in West Chester, due to the lack of dairy herds in the site vicinity.

COMMENT

There is no allowance for upsets in the design of the incinerator.

RESPONSE

Incineration was not chosen. However, any incineration system which meets U.S. EPA's requirements incorporates quite an elaborate level of

operational monitoring systems. These systems sense upsets and facilitate taking quick, corrective actions by sensing that some parameter is changing and approaching the end of its prescribed range or limit. Most times, the operators are alerted and can correct typical deviations from the norm.

An equipment redundance design philosophy, which is part of any well-designed incinerator, often helps to avoid major upsets or shutdowns by having standby equipment in the event of failure of equipment such as a pump or valve, etc. Many have stand-by diesel generators to supply electric power as well in the event of a power failure.

Also, keep in mind that an upset is allowed to go only just so far, into or just beyond some permit limit; then the incinerator shuts down automatically and the waste feed is cut off.

COMMENT

Does EPA know of a well-designed, well operated incinerator?

RESPONSE

Yes, there are over 150 stationary hazardous waste incinerators in the U.S., and 40 or more mobile or transportable incinerators; all are as carefully designed, permitted, operated, and monitored as is humanly and reasonably possible. EPA's regulatory and research programs and industry's experience have made possible tremendous increases in reliability and reductions in emissions and increases in safety and control over the past 15 to 20 years.

COMMENT

There is no instrument for constant monitoring of metals in the stack emissions, only during the test burn.

RESPONSE

It is true that no continuous, "real-time" stack monitor has yet been developed to monitor metals emissions. Several researchers are currently working on developing a laser device for this purpose. It is hoped that results may be forthcoming in a few years, perhaps within 5 or 10 years.

Meanwhile, sampling, measuring, and monitoring the metals in the wastes being incinerated, and limiting the metals input based upon what the trial

burn data for metals must be relied upon.

COMMENT

The EPA should have evaluated using the plasma arc to clean up these materials.

RESPONSE

The plasma arc is a form of incineration.

Plasma Arc incineration was evaluated and determined to be inappropriate for the wastes at this site. The primary combustion chamber in a rotary kiln incinerator, such as was proposed for this site, operates at approximately 1200°F. This results is a relatively low amount of volatilization of metals. The plasma arc, however, operates at up to 3000°F. This high temperature would result in volatilization of almost all of the metals in the waste. Therefore, the designers of the incineration system would need to design a system which would remove most of the metals present in the waste from the stack emissions.

PUBLIC COMMENTS ON THE U.S. EPA'S SHIFT IN PREFERENCE FROM ALTERNATIVE 5 TO ALTERNATIVE 3

COMMENT

I can't see that capping will do much good since the lagoon will still be left in the ground. The groundwater must be contaminated. What about the health of the children at Union School?

RESPONSE

The containment remedy is designed to limit the potential for migration of contaminants to the groundwater by reducing the infiltration of water through the wastes, through soil vapor extraction, by capturing and treating contaminated groundwater, and through extensive monitoring. It is not anticipated that the selected remedy will pose a hazard to the children at Union School. Extensive monitoring will take place during any site activities to assure that the health of on-site workers and nearby residents and school children is not jeopardized.

COMMENT

Soil Vapor Extraction should be part of the selected remedy. Dual extraction and/or horizontal extraction wells should be investigated during the design phase. Options to slurry walls should be evaluated. In-situ stabilization of the lagoon was not evaluated.

RESPONSE

Soil Vapor extraction is part of the selected remedy. The methods mentioned in this comment will be evaluated during the design phase. In-situ stabilization of the lagoon was evaluated in the Feasibility study during the screening of remedial technologies, and during a thorough investigation of remedial technologies which was performed by U.S. EPA for the Skinner Landfill Coalition. These evaluations indicated that stabilization of the lagoon wastes is not practical. This is due to the extremely difficult waste matrix, which includes demolition debris and assorted metallic objects, and due to the broad mix of chemicals which are present within the wastes.

COMMENT

I support alternative #3.

RESPONSE

Alternative 3 was selected, with the inclusion of soil vapor extraction (SVE).

COMMENT

I support the decision not to incinerate. We must be sure that continued monitoring takes place at regular intervals and that the data is recorded and published for the community to examine.

RESPONSE

Continued monitoring, and provision of the monitoring results to the public, will be a part of the remedy.

COMMENT

I support Alternative #3. Please include SVE. An evacuation plan for Union Elementary School should be prepared.

RESPONSE

Alternative 3 was selected, with the inclusion of SVE. Emergency procedures will be evaluated and developed in cooperation with the pertinent local entities.

PRP COMMENTS ON THE U.S. EPA'S SHIFT IN PREFERENCE FROM ALTERNATIVE 5 TO ALTERNATIVE 3

On February 9, 1993, the PRPs submitted 93 pages of comments on the U.S. EPA's 6-page December, 1992 Fact Sheet. Many of these comments reiterate issues which have been responded to above.

The PRPs interpreted the Fact Sheet as describing a "contingent" remedy, in which incineration would be included as a fallback position in the Record of Decision. This was an incorrect interpretation; it was never U.S. EPA's intention to include a contingency for incineration in this Record of Decision. Whenever Hazardous Substances are left on a Superfund site, U.S. EPA is required to conduct a review of the site at least once every five years in order to determine whether the remedy continues to be protective of human health and the environment. If, in the future, the site remedy was determined to be not protective of human health and the environment, the Five-Year Review of the performance of this remedy would have the potential to result in a re-evaluation of the remedy, and potentially for the implementation of additional remedial measures.

Based upon the assumption that a contingency remedy was being contemplated, the PRPs submitted many comments in opposition to Alternative 5, in addition to the approximately 50 pages of comments which they had submitted in opposition to Alternative 5 on September 21, 1992. Alternative 5 was not selected, nor was a contingency for incineration included in the ROD.

The PRPs carried their opposition to incineration to the point of demanding that U.S. EPA rule out any possibility of incineration at this site in the future. In suggesting that the U.S. EPA rule out any future consideration of incineration, even if the containment remedy is found to be ineffective in the future, the PRPs are suggesting that U.S. EPA should abandon the only technology which is presently

available which can effectively treat the lagoon wastes. The U.S. EPA will not rule out the potential for incineration in the future. To do so would be to rule out the only known viable technology for the cleanup of the lagoon wastes.

COMMENT

The PRPs attorneys submitted a large number of comments expressing opposition to Alternative 5, to incineration, and to a "contingent remedy".

RESPONSE

The U.S. EPA did not select Alternative 5 or incineration for this site.

The U.S. EPA has not selected a contingent remedy for this site. The U.S. EPA never proposed a contingent remedy for this site. However, U.S. EPA stated that the ongoing review of the effectiveness of the remedy, through five-year reviews, could result in a re-evaluation of the need for excavation and incineration. Such review is required at every Superfund site where Hazardous Substances remain on-site.

COMMENT

After fifteen years of uncontrolled infiltration of precipitation through the clayey soils, the studies indicate that no or little migration has occurred.

RESPONSE

A wide range of contaminants were detected in the site monitoring wells. Many of these same contaminants were detected in the site wastes, and were not detected in the upgradient groundwater. Therefore migration of contaminants from the site wastes to the groundwater has occurred.

COMMENT

The Group strongly supports U.S. EPA's thoughtful decision to select a capping remedy rather than excavation and incineration.

RESPONSE

The U.S. EPA appreciates the PRPs' support of this decision.

COMMENT

The PRPs proposed a phased approach, starting with installation of the cap and monitoring of the groundwater. Then, an "engineering evaluation" would be performed to determine whether the other aspects of the remedy are necessary.

RESPONSE

The U.S. EPA will consider a phased approach to implementation. This may allow the design and construction of the cap to proceed while the additional site studies related to characterization of groundwater and soil gas conditions are being conducted. The "engineering evaluation" will relate to how the various aspects of the remedy will be implemented, not whether they will be implemented.

COMMENT

The Soil Vapor Extraction, if feasible, would permanently remove contaminants that have the potential for migrating to the groundwater, thus eliminating or greatly minimizing the need for groundwater treatment.

RESPONSE

The U.S.EPA believes that it is highly unlikely that the operation of soil vapor extraction at this site would eliminate the need for groundwater treatment. Soil Vapor Extraction is only proposed for the permeable materials which surround the buried waste lagoon. There are contaminated materials elsewhere on the site, within the former dump, which will continue to pose a hazard to the groundwater. It is also possible that contaminants will continue to leach from the buried waste lagoon to some degree after installation of the cap. Some of these contaminants may not be captured by a soil vapor extraction system.

COMMENT

The PRPs expressed opposition to the capping of the former dump area, stating that no samples have been taken of the material in the "active landfill", and concluding that a requirement for capping of this area would be arbitrary and capricious (pages 22-23).

RESPONSE

Groundwater samples collected from within the former dump (GW-22) were found to be the most contaminated water samples which were analyzed in the course of the site investigations. The former dump is believed to be hydrologically upgradient of the buried waste lagoon, so it appears that these contaminants originate from within the former dump, and not from the buried waste lagoon. Given what is known about the former dump and the site operations, the remedy must address the former dump area as a part of this site cleanup. The containment remedy, as selected in the Record of Decision, includes capping of the former dump area.

COMMENT

"In selecting Alternative 5 as the Contingent Remedy, the Agency seriously misapplied the statutory preference for reduction in Volume, Toxicity or Mobility of Hazardous Substances. Although lip service is paid to the unambiguous language preferring a reduction in toxicity, mobility <u>or</u> volume, in actuality the FS and Propose Plan impermissibly seek a reduction of all three criteria to justify the remedy selection."

RESPONSE

This comment contradicts the PRPs' comments of September 21, 1992, in which they demanded that our remedy meet all three of these criteria. To quote their previous comment: "Incineration will not meet the objective of reducing contaminant mobility, toxicity, <u>and</u> volume, because incineration would actually increase the volume of waste materials due to the need for stabilization" (emphasis added).

The FS and Proposed Plan do not seek a reduction in all three criteria, as a careful reading of the text of each will indicate. Please also refer to the discussion of this criterion in the Feasibility Study.

COMMENT

The PRPs stated that the boundaries of the site have not been sufficiently defined, and that the area to be capped should be limited to areas of known contamination.

RESPONSE

The boundaries of the site, and the minimum area to be capped, are indicated clearly in the Record of Decision. In order to maintain proper slopes, it may be necessary to extend the cap beyond these boundaries. This comment may relate to Figure 5.3 of the Feasibility Study, which indicates the potential extent of a cap designed to cover the areas of known contamination and to maintain maximum slope requirements.

COMMENT

The PRPs submitted their own lengthy discussion of the alternatives as they relate to the nine criteria.

RESPONSE

For the U.S. EPA positions regarding each of the nine criteria, please refer to the nine criteria discussion in the Record of Decision.

COMMENT

The lagoon waste materials are not "wastes"; they were referred to as "soils" in the FS.

RESPONSE

Subsurface materials are commonly referred to as "soils". However, during the waste lagoon investigation, borings encountered highly contaminated solids, and what was described as sticky, black, raspberry and turquoise colored liquids. These are clearly wastes.

COMMENT

During the July 29, 1992 public meeting, the U.S. EPA did not dispute the community's observation that incineration would treat only 10-20% of all the waste at the Skinner Landfill

RESPONSE

The PRPs have inaccurately described the community concern. The concern

which was expressed was that incineration would only treat 10% of the lagoon wastes. U.S. EPA did dispute this observation at the public meeting. Please see response on page 17 for a full discussion of this issue.

COMMENT

U.S. EPA failed to include a comparative assessment of the risks of the alternatives.

RESPONSE

A qualitative assessment of the risks of the alternatives was included in the Feasibility Study, Section 5.0.

COMMENT

"It is ironic that U.S.EPA proposes a Contingent Remedy that will open a currently closed pathway of exposure by excavating the buried lagoon and thereby dramatically increase (according to U.S. EPA's own calculations) the carcinogenic and non-carcinogenic risks."

RESPONSE

U.S. EPA has not proposed a Contingent Remedy that includes excavation of the buried lagoon.

U.S. EPA calculations do not show a "dramatic" increase in carcinogenic and non-carcinogenic risks to the nearby residents. The risks were projected to be within the acceptable range.

COMMENT

To the extent excavation and incineration are contemplated as the contingent Remedy, they are not acceptable to the community, ... and should be disregarded as options.

RESPONSE

The U.S. EPA never proposed a contingent remedy. However, we did state that the ongoing review of the effectiveness of the remedy, through five-year reviews, could result in a re-evaluation of the need for excavation and

incineration.

The community has, in the written statement of the West Chester Coalition for the Skinner Landfill Cleanup, expressed their support for something closely resembling a contingent remedy: "Emergency plans shall be prepared for the treatment of on-site wastes in the event of failure of the proposed containment system" (letter, Nov.23, 1992). However, U.S. EPA feels that the five-year review process will provide sufficient safeguards to the public and the environment over the long term; a contingent remedy was not selected for this site.

COMMENT

No record of the Jul, 29, 1992 Public Meeting has been placed in the Administrative Record.

RESPONSE

The video and audio tapes recorded during the July 29, 1992 public meeting were placed in the Information Repository during August, 1992. It has come to our attention that the U.S. EPA video and audio tapes were removed from the information repository by unknown parties and were replaced by a copy of the videotape generated by CLEAN. This problem has been corrected.

COMMENT

"In view of the fierce--and legitimate--opposition of the local community to the unacceptable risks and exposures posed by excavation and incineration at this Site, as well as the threat of citizen suits and legal challenges throughout the remedial design and implementation phase if U.S. EPA were to revert to incineration as a remedial option, a responsible and meaningful incorporation of citizen concerns into the decision-making process required EPA to permanently and unconditionally abandon excavation and incineration in favor of the simpler, safer, and technically appropriate containment and capping remedy."

RESPONSE

In suggesting that the U.S. EPA rule out any future consideration of incineration, even if the containment remedy is found to be ineffective in the future, the PRPs are suggesting that we abandon the only technology which

is presently available which can effectively treat the lagoon wastes. The U.S. EPA will not rule out the potential for incineration in the future. To do so would be to rule out the only known viable technology for the cleanup of the lagoon wastes.