



**US Army Corps
of Engineers
Buffalo District**

Final Record of Decision

**Authorized under the
Formerly Utilized Sites Remedial Action Program
(FUSRAP)**

**Painesville Site
Painesville, Ohio**

**Prepared by:
U.S. Army Corps of Engineers Buffalo District
Hazardous, Toxic, and Radiological Waste (HTRW)
Design District for Great Lakes and Ohio River Division**

Final - April 2006

I. DECLARATION FOR THE RECORD OF DECISION

I. DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Painesville Site
Painesville, Ohio

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the decision of the lead agency on the final Selected Remedy for the Painesville Site in Painesville, Ohio, which was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record file for this site, located at the USACE Public Information Center, 1776 Niagara Street, Buffalo, NY 14207; the Morley Library, 184 Phelps Street, Painesville, OH 44077; and the Fairport Public Library, 335 Vine Street, Fairport Harbor, OH 44077.

Comments on the Proposed Plan provided by the Ohio Environmental Protection Agency (Ohio EPA), the Ohio Department of Health (ODH), the site property owner, and the general public were evaluated and considered in selecting the final remedy. The State of Ohio does not concur with the soil cleanup goals stated in this Record of Decision. For this reason, the State of Ohio has reserved its opinion on the adequacy of the remedy pending review of the final status survey data once remediation is complete.

ASSESSMENT OF THE SITE

The response action selected in this Record of Decision is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

DESCRIPTION OF THE SELECTED REMEDY

Background on Remedy Selection

From 1942 to 1953, the Diamond Magnesium Company operated a magnesium production facility on the Painesville Site for the General Services Administration (GSA). Between 1952 and 1953, the Diamond Magnesium Company received approximately 1,650 tons of radiologically contaminated scrap steel from the Lake Ontario Ordnance Works, to be used in their production process. The scrap steel was consumed in the magnesium production process; however, it is believed that soils at the site were contaminated while the scrap steel was in storage, prior to use.

Under its authority to conduct the Formerly Utilized Sites Remedial Action Program (FUSRAP), the U.S. Army Corps of Engineers (USACE) conducted a Remedial Investigation and Feasibility Study (RI/FS) of the Painesville Site, which included a Baseline Risk Assessment (BRA). The Remedial Investigation determined the nature and extent of FUSRAP contamination, while the BRA evaluated the risks posed to human health and the environment from the FUSRAP contamination. The Feasibility Study developed and evaluated remedial action alternatives for the Painesville Site. In July 2005, USACE issued a Proposed Plan (PP) for public comment, describing the preferred remedial action alternative for cleanup of the Painesville Site.

USACE identified four FUSRAP eligible constituents of concern (COCs) in site soils that posed a risk to human health above acceptable U.S. Environmental Protection Agency (USEPA) guidelines: radium-226 and its decay products (Ra-226+D), thorium-230 (Th-230), thorium-232 and its decay products (Th-232+D), and total uranium (Total U). All four COCs pose risks above USEPA guidelines under an industrial use scenario, which has been identified as the reasonable future use scenario for the Painesville Site. Due to the fact that all but one of the buildings on the site have been demolished, and any industrial future use would likely require construction of new facilities, a construction worker receptor has been selected as the critical group upon which the soil cleanup goals were developed. The remedial action proposed in the Proposed Plan and selected in this ROD does not address other hazardous contaminants that may be present at the site but are not eligible for response under FUSRAP.

Selected Remedy

The remedy selected for the Painesville Site is referred to as Alternative 3, Excavation of Soils and Offsite Disposal, in the Proposed Plan issued on July 18, 2005. Implementation of the Selected Remedy will involve excavation of contaminated soils, offsite transportation, and disposal at an appropriate permitted/licensed disposal facility.

USACE has determined that the Nuclear Regulatory Commission (NRC) standards for decommissioning of licensed facilities found in 10 CFR 20.1402, and Ohio Administrative Code (OAC) 3701:1-38-22(B), are relevant and appropriate for cleanup of FUSRAP contamination in soils at the Painesville Site. OAC 3701:1-38-22(B) contains the same provisions as 10 CFR 20.1402.

In compliance with these standards, USACE will:

1. Excavate FUSRAP contaminated soils that exceed, excluding background, a Sum of Ratios (SOR) of 1, based on the wide area average Derived Concentration Guideline Levels (DCGL_w) presented in Table 1. In addition, the elevated measurement criteria (DCGL_{emc}) will be used to ensure no localized areas of elevated radioactivity will remain that could potentially produce an unacceptable risk. Verification of compliance with

soil cleanup goals will be demonstrated using surveys developed in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). This confirmation methodology will be developed and documented in the Final Status Survey Plan (FSSP) during the remedial design;

2. Remove and dispose off site all impacted soils excavated to achieve cleanup goals, as discussed in item 1 above, for FUSRAP COCs.

Table 1: COCs and Soil Cleanup Goals for the Painesville Site

COC	Background (pCi/g)	DCGL_w (pCi/g)^{a,b,c}	DCGL_{emc} (pCi/g)^{b,c}
Ra-226 ^d	1.42	9	12
Th-230	2.56	25	34
Th-232 ^e	1.53	6	8
Total U ^f	5.97 ^g	482	810

^a These cleanup goals represent activity levels above site background activity corresponding to 25 mrem/yr. These cleanup goals are equivalent to an incremental lifetime cancer risk of approximately 2E-05 for a construction worker (for each COC).

^b If a mixture of radionuclides is present, then the sum of ratios applies per MARSSIM. For example, using the DCGL_w values for soil, the following sum of ratios equation is obtained:

$$SOR = \frac{Ra-226}{9} + \frac{Th-230}{25} + \frac{Th-232}{6} + \frac{U-234+U-235+U-238}{482}$$

where SOR = sum of the ratios result
 Ra-226 = net Ra-226 soil concentrations
 Th-230 = net Th-230 soil concentrations
 Th-232 = net Th-232 soil concentrations
 U-234 = net U-234 soil concentrations
 U-235 = net U-235 soil concentrations
 U-238 = net U-238 soil concentrations

Net soil concentrations exclude background.

^c DCGL_w values developed over a 10,000 m² area. DCGL_{emc} values developed over a 100 m² area.

^d Ra-226 criteria includes Pb-210 contribution to dose.

^e Th-232 criteria includes Th-228 and Ra-228 contribution to dose.

^f Concentration represents the total uranium guideline.

^g Total uranium background is the sum of the background values for U-234, U-235 and U-238.

The Selected Remedy addresses the principal threat from FUSRAP COCs at the site by removing radioactively contaminated soil from the site that may pose a future threat to the health of persons at the site. Implementation of this remedy will meet the unrestricted release criteria as defined in the ARARs. The Selected Remedy only addresses FUSRAP eligible contamination, and does not address

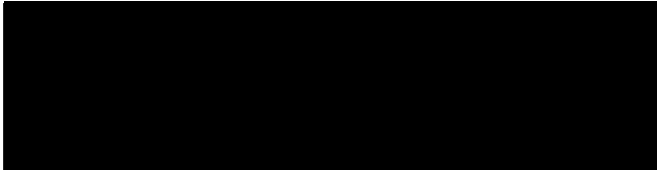
any other hazardous substances that may be present at the site. The determination of the need for and performance of response actions related to other releases of hazardous substances at this site are not within the authority of USACE under FUSRAP. It is the responsibility of other agencies and parties to undertake any other necessary response actions at the site.

The estimated present value cost of the Selected Remedy is \$9,000,000.

STATUTORY DETERMINATIONS

The Selected Remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions to the maximum extent practicable.

The remedy does not satisfy the statutory preference for treatment as a principal element of the remedy. The Feasibility Study evaluated currently available treatment technologies for the constituents addressed under this ROD, and found none that would be economically and technologically feasible at this time.



Brigadier General, Corps of Engineers
Commander
Great Lakes and Ohio River Division

7 April 06
Date

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ACRONYMS AND ABBREVIATIONS

AEC	Atomic Energy Commission
ALARA	As low as reasonably achievable
ANL	Argonne National Laboratory
ARAR	Applicable or relevant and appropriate requirement
bgs	Below ground surface
BNI	Bechtel National Incorporated
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COCs	Constituents of concern
cy	Cubic yards
DMC	Diamond Magnesium Company
DOE	Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
ERA	Ecological risk assessment
FS	Feasibility Study
FUSRAP	Formerly Utilized Sites Remedial Action Program
FSSP	Final Status Survey Plan
GSA	General Services Administration
HCl	Hydrochloric acid
HHRA	Human health risk assessment
LCPC	Lake County Planning Commission
LOOW	Lake Ontario Ordnance Works
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MED	Manhattan Engineering District
mrem/yr	millirem per year
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NRC	Nuclear Regulatory Commission
OAC	Ohio Administrative Code
ODNR	Ohio Department of Natural Resources
ODH	Ohio Department of Health
Ohio EPA	Ohio Environmental Protection Agency
ORNL	Oak Ridge National Laboratory
PP	Proposed Plan
PRG	Preliminary Remediation Goal
Ra-226	Radium-226
RAGS	Risk Assessment Guidance for Superfund
RAO	Remedial Action Objective
RESRAD	Residual Radiation
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision

SAIC	Science Applications International Corporation
SOR	Sum of ratios
TBC	To be considered
TEDE	Total effective dose equivalent
Th-230	Thorium-230
Th-232	Thorium-232
U-234	Uranium-234
U-235	Uranium-235
U-238	Uranium-238
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency

II. DECISION SUMMARY FOR THE RECORD OF DECISION

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1.0 SITE NAME, LOCATION AND DESCRIPTION

The Painesville Site is located in the Township of Painesville in Lake County, Ohio. Figure 1 shows the location of the site in relation to the surrounding area. The Painesville Site is being addressed by the U.S. Army Corps of Engineers (USACE), under its authority as lead agency to conduct the Formerly Utilized Sites Remedial Action Program (FUSRAP). FUSRAP was created by the Department of Energy (DOE) in the 1970's to identify, assess, and clean up sites with residual radioactive contamination resulting from the early years of the nation's atomic energy and weapons program. Management of FUSRAP was transferred from the Department of Energy to USACE in October 1997.

The Painesville Site is an approximately 30-acre former industrial facility. The Painesville Site was contaminated with radionuclides, including radium, uranium and thorium, during its operation as a magnesium production facility by a Federal Government contractor from 1942 to 1953. Process buildings, warehouses, office buildings, a chemical transfer facility, several above-ground storage tanks, and a railroad spur formerly covered the site, but have since been demolished. The current property owner is the Chemtura Corporation.

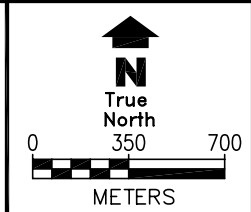
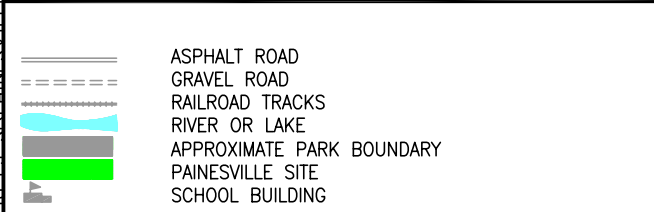
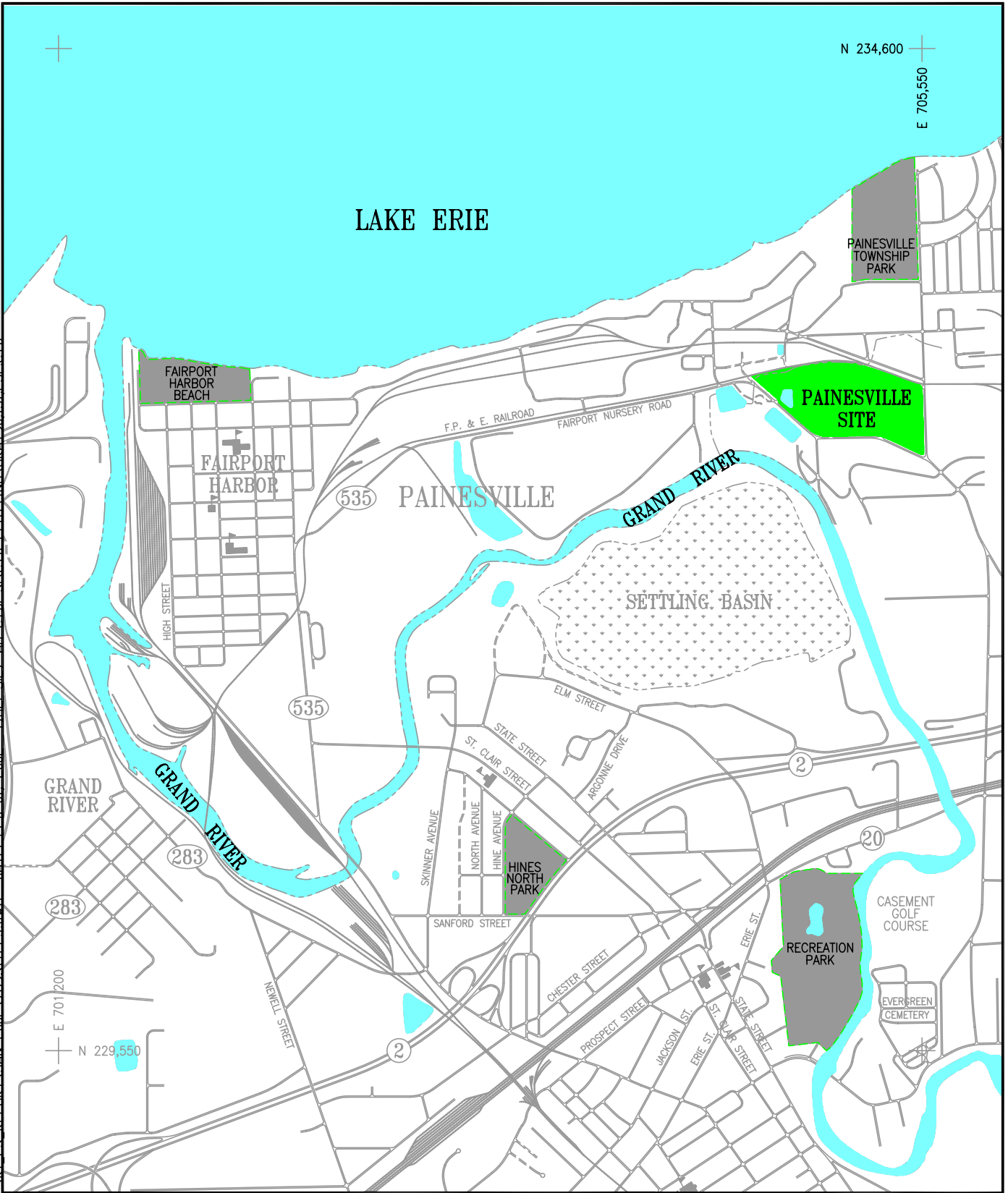


Figure 1: Painesville Site in Relation to the Surrounding Area

2.0 SITE HISTORY

2.1 History

In the early 1940s, the Defense Plant Corporation financed construction of a magnesium production facility in Painesville, Ohio, on property acquired by the Federal Government. In support of the World War II effort and later government operations, the Diamond Magnesium Company operated this facility from 1942 to 1953 for the General Services Administration (GSA). In 1963, the GSA sold the plant to the U.S. Rubber Company, which later became the Uniroyal Chemical Company (Uniroyal), then the Crompton Manufacturing Company, Inc., and is now the Chemtura Corporation (Chemtura). Uniroyal produced nitrile rubber, polyvinyl chloride (PVC) nitrile rubber, and various polymers at the site until it ceased operations in 1999. Uniroyal utilized several of the original Diamond Magnesium Company buildings for its operations, and also built new buildings on the site. Uniroyal constructed several landfills, impoundments and lagoons for waste disposal purposes on adjacent properties surrounding the site. Chemtura is currently conducting investigation and cleanup activities for chemicals at the site, and is in the process of capping the lagoons and landfills on the adjacent properties. Figure 2 shows the former Diamond Magnesium Company site plan, and Figure 3 shows the layout of the Painesville Site as it appeared during Uniroyal operations.

There is no known history of processing or production of radioactive materials at the Painesville Site. The radioactivity present at the site resulted from the use of scrap ferrous metal to scrub chlorine gas released during the magnesium production process. The GSA sought such scrap metal from the Atomic Energy Commission (AEC) inventories at the Lake Ontario Ordnance Works (LOOW) in Niagara Falls, New York. By the early 1950s, LOOW had accumulated significant quantities of scrap metal, in part because metal drums were used to ship and store residues from the processing of pitchblende ores. When the pitchblende residues were consolidated into a storage facility at LOOW, the emptied drums were cleaned for reuse or scrapped. These drums, which contained observable residues of pitchblende ores, were part of the scrap shipped to the Painesville Site (ORNL 1991). The radionuclides associated with the pitchblende residues (primarily radium, thorium and uranium) and their naturally occurring decay products are considered FUSRAP related.

Approximately 1,650 tons of scrap metal was shipped to the Painesville Site. These shipments occurred between July 1952 and April 1953. The scrap metal was delivered by railroad to the western side of the property where it was stored on the ground with no cover. Former employees indicated an additional delivery route was also present on the eastern side of the buildings, where scrap was moved from the west railroad siding to the east siding by sliding uncovered rail-sided wooden skids or sleds pulled by a tractor (Eddington 1996). In a recent interview with a former plant manager he indicated that scrap was off loaded

from both east and west spurs and was moved via rail car from one siding to another (Trumbel 2001). From the eastern side, the scrap metal was either immediately added to the hydrochloric acid (HCl) digester tanks or stored on the ground (ORNL 1990).

The scrap metal used to scrub chlorine gas was immersed into weak HCl for complete digestion. Liquid acid waste from the process was discharged directly into the Grand River until June 1952, at which time the discharge was redirected across the Grand River into a waste pond owned by the Diamond Alkali Company.

Because the constituents of concern (COCs) in the scrap metal were related to AEC activities, Oak Ridge National Laboratory (ORNL) conducted a preliminary and limited radiological survey in 1988 to determine whether the site met the current radiological guidelines. The findings from this survey indicated that residual radioactivity was present at the site above existing guidelines for unrestricted use (ORNL 1990, 1991). The principal radiological COCs were determined to be uranium-238 (U-238), radium-226 (Ra-226), thorium-230 (Th-230) and their naturally occurring decay products. Based on these initial surveys, the site was designated by the DOE as a FUSRAP site for further evaluation and remedial action, as appropriate (DOE 1992). As discussed earlier the authorization for remedial action at the site only includes FUSRAP related constituents.

2.2 Previous FUSRAP Activities

On October 10 and 11, 1988, ORNL performed a preliminary site evaluation of the Chemtura Corporation property. ORNL performed a gamma walkover survey over the study area and collected soil samples for radiological analysis. During the survey, information was obtained concerning other portions of the property, which would need to be addressed as part of future efforts (ORNL 1990).

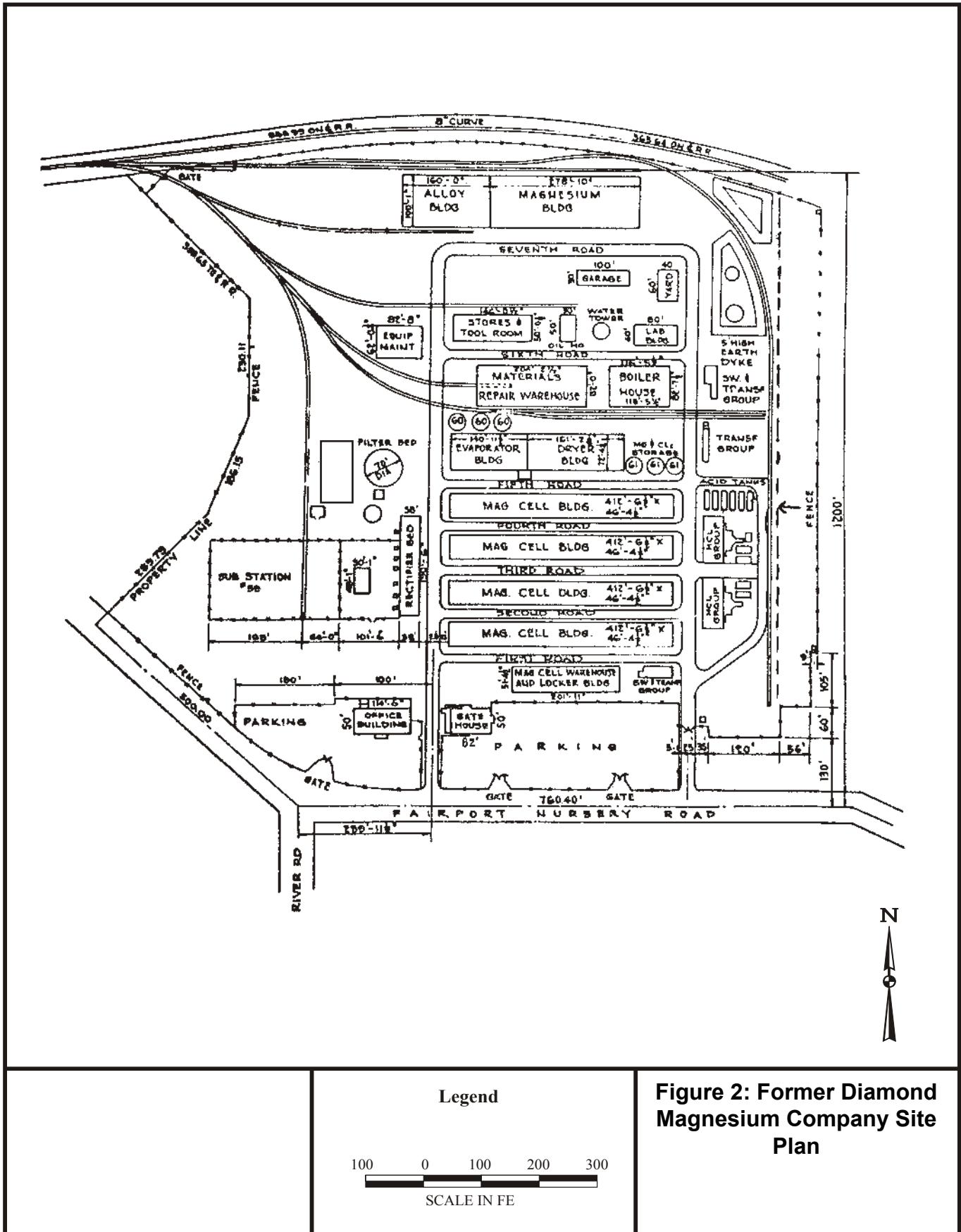
ORNL returned to the site in September 1990 to examine the property to the east (owned by Twin Rivers Technologies) adjacent to the railroad tracks, and to investigate areas that showed elevated gamma readings during the 1988 survey. The survey results (ORNL 1991) indicated that elevated concentrations of radionuclides were found in both surface and subsurface soil in excess of DOE guidelines for release of a property without radiological restrictions. The primary COCs were U-238, Th-230, and Ra-226 with activity levels as high as 76 pCi/g, 310 pCi/g, and 1,500 pCi/g, respectively.

In 1996, Bechtel National Incorporated (BNI), Science Applications International Corporation (SAIC) and Argonne National Laboratory (ANL), under contract to DOE, performed a detailed investigation of the Painesville Site area. This investigation included ambient air sampling, external gamma rate exposure measurements, building radiological surveys, gamma walkover surveys, groundwater sampling, surface geophysical surveys, surface water sampling,

sediment sampling, ecological sampling, and soil sampling. The results of this study are documented in the Characterization Report for the Painesville Site (USACE 1998a).

In 1998, the U.S. Army Corps of Engineers completed an Engineering Evaluation/Cost Analysis (EE/CA) to support a removal action at the site. The EE/CA developed cleanup goals and evaluated several alternatives for addressing the radiological contamination at the site. The selected alternative was documented in an Action Memorandum, and the removal action was then conducted in the fall of 1998. Slightly more than 1,300 cubic yards (cy) were removed before the project was suspended due to the onset of winter conditions, and the discovery that the extent of contamination was greater than anticipated in the Action Memorandum. During the removal action samples were collected from soil that remained in place in the excavated area after removal was completed. These samples indicated that radiological contamination above the cleanup goals still existed below the limit of excavation (USACE 1999).

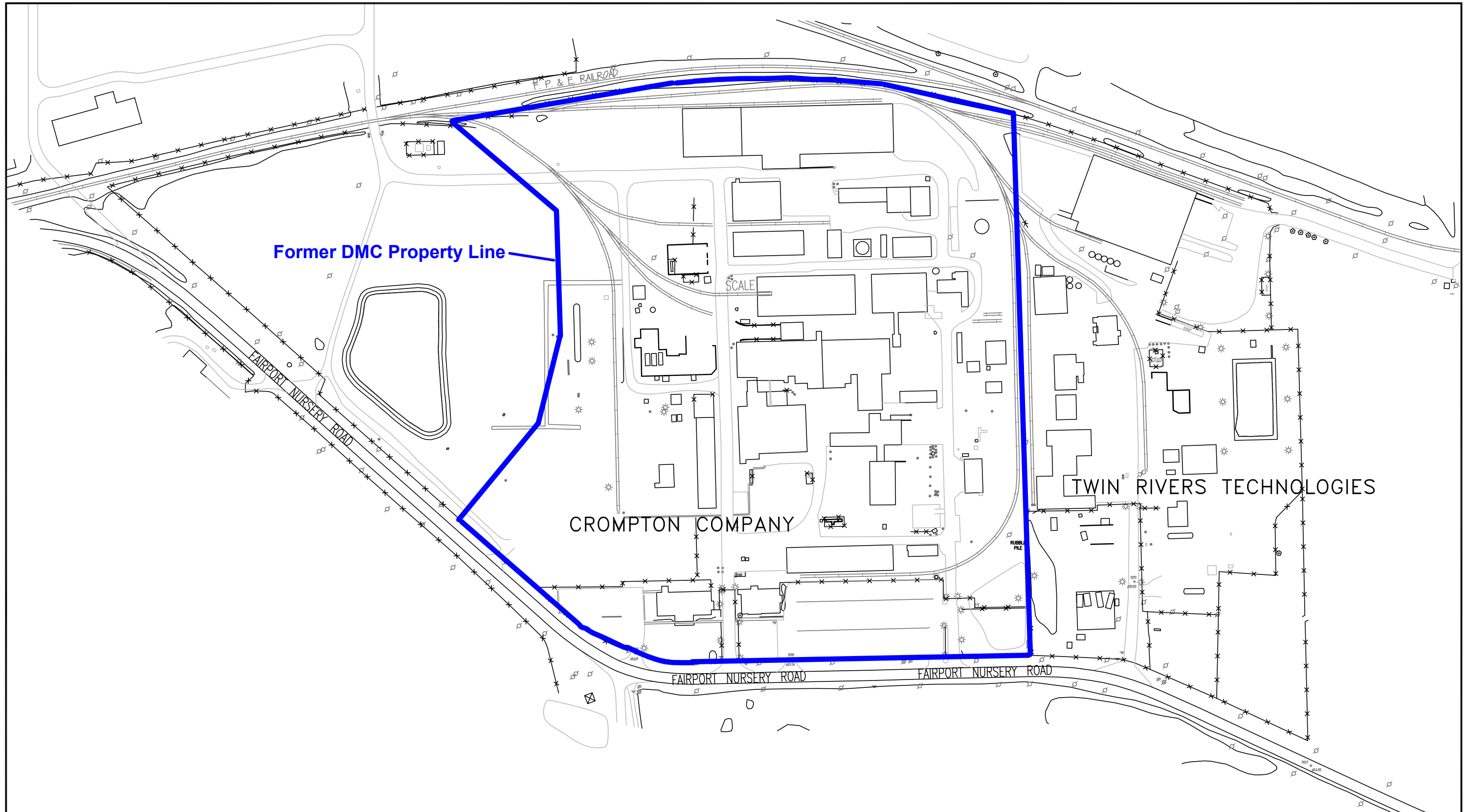
In May 2003, USACE completed a Remedial Investigation/Feasibility Study (RI/FS) of the Painesville Site (USACE 2003). The RI/FS collected additional data on the areas of concern, conducted a Baseline Risk Assessment, and developed and evaluated alternatives for addressing the site contamination. These alternatives included capping the contamination in place, and excavation and off-site disposal. In June 2005, USACE completed a Feasibility Study Addendum, which amended the cleanup goals and remedial alternatives first presented in the RI/FS.



Legend



Figure 2: Former Diamond Magnesium Company Site Plan



Former DMC Property Line

CROMPTON COMPANY

TWIN RIVERS TECHNOLOGIES

SCALE








F.P. & E. RAILROAD

FAIRPORT NURSERY ROAD

FAIRPORT NURSERY ROAD

FAIRPORT NURSERY ROAD

RUBBLE PILE

-  BUILDING
-  FENCE LINE
-  TREELINE
-  RAILROAD GRADE
-  DIRT ROAD
-  POND BOUNDARY
-  UTILITY LIGHT POLE

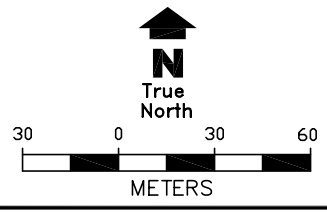


Figure 3: Painesville Site During Uniroyal Operations

3.0 COMMUNITY PARTICIPATION

Public input was encouraged to ensure that the remedy selected for the Painesville Site meets the needs of the local community in addition to being an effective solution to the problem. The administrative record file contains all of the documentation used to support the preferred alternative and is available at the following locations:

USACE FUSRAP Public Information Center
1776 Niagara Street
Buffalo, NY 14207

Fairport Public Library
335 Vine Street
Fairport Harbor, OH 44077

Morley Library
184 Phelps Street
Painesville, OH 44077

On July 18, 2005, a letter announcing the release of the Proposed Plan for Remediation of the Painesville Site was sent to 126 individuals on the site mailing list, including elected officials.

Legal advertisements announcing the availability of the Proposed Plan for public review and comment, and the July 26, 2005, public meeting, were placed in the following local newspapers; The Plain Dealer (Cleveland) - July 17 and 24, 2005; and The News Herald (Willoughby) - July 17 and 24, 2005.

The public meeting was held July 26, 2005, from 7:00 to 9:00 p.m. in the VFW Post 7754, 540 New Street, Fairport Harbor, Ohio. At the meeting USACE explained the history of the site, studies and investigations completed, areas of contamination, CERCLA evaluation criteria, the remedial alternatives, the preferred alternative, and the schedule. A stenographer was present at the meeting to record the proceedings and comments. Eleven members of the public requested the opportunity to speak at the meeting. Comments received at the public meeting and written comments received during the public comment period are responded to in Appendix A, the Responsiveness Summary. The meeting transcript is included as Attachment 1 in Appendix A.

4.0 SCOPE AND ROLE OF RESPONSE ACTION

This response action will address impacted soils at the Painesville Site. Under FUSRAP, USACE is authorized to remediate only those COCs originating from past Manhattan Engineer District (MED) or AEC activities in support of the nation's early atomic energy and weapons program. At the Painesville Site, these COCs include radioactive residuals only. Constituents not eligible for FUSRAP will not be remediated. However, any non-FUSRAP eligible constituents that are commingled with FUSRAP COCs will be properly addressed for worker safety and disposal requirements.

The scope of this response action specifically addresses the following FUSRAP COCs in site soils: radium-226 and its decay products, thorium-230, thorium-232 and its decay products, and total uranium. The response action detailed in this Record of Decision will be the final FUSRAP remedial action at the Painesville Site.

5.0 SITE CHARACTERISTICS

5.1 Site Description

The Painesville Site is located in Lake County, Ohio, approximately 1.5 miles north of the City of Painesville. The City of Painesville has a population of approximately 16,000 (LCPC 1990b). The area immediately surrounding the Painesville Site, as well as a large portion of the Painesville Township in Lake County, is zoned as a heavy industrial area. However, there are recreational and residential areas nearby. South of the Painesville Site, a vacant lot in the northern portion of the City of Painesville is in the city plan as a future recreational area or golf course (NPD 1993). Painesville Township Park borders Lake Erie and lies approximately one-half mile north of the site area. Although there are some tree nurseries nearby, there is no agriculture in the area.

The Painesville Site is approximately 30 acres in size and has very little topographic relief. The maximum elevation change across the site is less than 3 meters (m) (10 feet [ft]). The ground surface of the site is primarily covered with a mix of asphalt, concrete, and building rubble. Process buildings, warehouses, office buildings, a chemical transfer facility, several aboveground storage tanks, building rubble piles, and a railroad spur formerly covered the site (Figure 3). To date, all buildings save one have been demolished by the property owner.

There are no surface water features on the Painesville Site. Surface water features near the Painesville Site include the Grand River, located approximately 0.2 kilometers (km) (0.1 miles [mi]) southwest of the Fairport-Nursery Road, a waste pond (which was constructed subsequent to Diamond Magnesium Company activities) located between Fairport-Nursery Road and the Grand River, a waste pond on the Twin Rivers Technologies property, and Lake Erie, located approximately 2 km (1.2 mi) due north of the site. The Grand River empties into Lake Erie at Fairport Harbor, which is located 3 km (1.8 mi) west of the site.

An extensive storm water sewer drainage system is present on the site where the ground surface is primarily covered by concrete, asphalt, or is under roof. In these areas, surface water is quickly captured by the drainage system and ultimately discharged to the Grand River. Rainfall that does not result in runoff initially percolates through the upper few feet of fill material. The water accumulates at the upper surface of the natural soil, which is relatively impermeable due to its high clay content. Surface water runoff resulting from storm events is captured by the storm sewer system.

5.2 Geology and Hydrogeology

The geology of the Painesville Site is relatively simple. A blanket of fine-grained till with some localized fill on top overlies bedrock. The uppermost bedrock unit underlying the site is the Chagrin Shale Formation (Schmidt 1988). In this area

the Chagrin Shale is approximately 300m (1000 ft.) thick (USACE 1998a). Bedrock was not encountered in any of the boreholes, drilled to a maximum depth of 12 m (40 ft) during characterization.

The Ashtabula Till, a nonlithified till deposited in the late Woodfordian Age of the Wisconsin glacialiation during the Pleistocene Epoch, lies disconformably above the Chagrin Shale. The till was observed to have a high clay and silt content with a few sand- and gravel-sized, dark gray, shale fragments. Located above the native till at the site is a layer of disturbed/fill material, ranging from 0.0 to 6.2 m (0.0 to 20.5 ft) in thickness. The fill consists of a wide variety of material: disturbed native till, black coal slag and fly ash, white granular polyvinyl chloride, red bricks, concrete, sand and gravel, plastic, cloth, glass, and metal.

Elevation data collected from shallow piezometers and temporary monitoring wells suggest that perched groundwater occurs near the surface across much of the site, but is discontinuous and shallow. It appears that perched groundwater in the upper fill layer is pooling in topographic depressions on top of the natural clay formation. The results from drilling activities determined that the regional groundwater table is at a depth greater than 12 m (40 ft) below the ground surface. The perched groundwater observed in the piezometers and temporary monitoring wells is very cloudy to turbid in nature and does not represent a potential drinking water source.

Groundwater yields from the water table in the bedrock are usually only adequate for domestic use. Stout et al. (1943) report that the Chagrin Formation underlying the Painesville area yields little or no water. Sulfur water or brine is often encountered during deep drilling operations.

Lake Erie is the water source for the majority of the local population. Information supplied by Ohio EPA indicates that there are no domestic users of groundwater in the vicinity of the site.

5.3 Constituents of Concern

The Remedial Investigation/Feasibility Study identified site features, assessed the nature and extent of constituents, evaluated risks to human health and the environment, and developed remedial alternatives to address constituents associated with AEC-related activities at the Painesville Site. This Record of Decision discusses FUSRAP eligible constituents of concern. USACE has identified four FUSRAP eligible COCs at the Painesville Site: radium-226 (and its decay products), thorium-230, thorium-232 (and its decay products), and total uranium. Hereafter, references to COCs in this document will pertain to these FUSRAP constituents.

Radium is a naturally occurring element, found in small concentrations in soil, rocks, surface water, groundwater, plants and animals. Radium can be ingested or inhaled, and although much of the radium is excreted from the body, some of it

may remain in the bloodstream or lungs and be carried throughout the body. Radium also is a source of radon gas, and exposure to radon is known to cause bone and lung cancer.

Thorium is a naturally occurring element, found in soil, rocks, surface water, groundwater, and plants. Thorium can be ingested or inhaled, and can cause lung, pancreatic, and hematopoietic cancers. Thorium is also known to attach to the skeletal system and cause bone cancer.

Uranium is also a naturally occurring element, found naturally throughout the world in soils, geologic formations, water, animals and even some natural foods. As with the other COCs, uranium can be ingested or inhaled. The most prevalent human health concerns of uranium exposure occur through ingestion and can lead to bone cancer and kidney damage.

5.4 Impacted Soils

On-site soils were investigated, focusing on features known or believed to have been impacted by FUSRAP eligible COCs. Brief summaries of these features are provided below. Table 1 presents a summary from the 2003 Remedial Investigation of the minimum and maximum detected concentrations of the COCs in each area of concern. More detailed information is available in the Remedial Investigation/Feasibility Study (USACE 2003) and Feasibility Study Addendum (USACE 2005a).

The total volume of soil exceeding cleanup goals is estimated at up to 7,175 cubic yards (cy). This volume is based on the cleanup goals presented in Section 8.3 and Table 2. Figure 4 presents the extent of impacted soils to be excavated (USACE 2006).

Areas A and H:

Area A corresponds to the location where the radiologically contaminated scrap steel was apparently stored on the site prior to its use. Area A was also the area where the Removal Action was conducted in 1998. Radionuclides radium-226, thorium-230 and uranium-238 were the COCs most commonly detected above background in soil samples collected from this area. Area A is estimated to be 9,964 square feet in size, and extends to a maximum depth of 9 feet. The volume of contaminated soil in Area A is estimated to be 2,423 cy.

Area H is an extension of Area A, that was identified during soil sampling conducted in the fall of 2005. Area H is estimated to be 17,001 square feet in size, and extends to a maximum depth of 5 feet. The volume of contaminated soil in Area H is estimated to be 2,719 cy.

Area C:

Area C corresponds to the former location of the acid digester tanks, into which the radiologically contaminated scrap steel was immersed as part of the chlorine scrubbing process. Radionuclides radium-226, thorium-230 and uranium-238 were the COCs most commonly detected above background in soil samples collected from this area. It appears that Area C may extend slightly off-site onto the adjacent property to the east, owned by Twin Rivers Technologies. Area C is estimated to be 14,386 square feet in size, and extends to a maximum depth of 4 feet. The volume of contaminated soil in Area C is estimated to be 1,353 cy.

Areas B, D, F, and G:

Areas B, D and G were areas identified during the 1996 site-wide gamma walkover survey as having elevated levels of radioactivity. Subsequent soil sampling found levels of radium-226, thorium-230 and uranium-238 above background. Area B is estimated to be 1,958 square feet in size, and extends to a maximum depth of 2 feet. Area D is estimated to be 1,765 square feet in size, and extends to a maximum depth of 2 feet. Area G is estimated to be 775 square feet in size, and extends to a maximum depth of 1 foot. The contaminated soil volumes for Areas B, D and G are 143 cy, 128 cy, and 43 cy, respectively.

Area F was also initially identified during the 1996 site-wide gamma walkover survey. Additional soil sampling conducted in the fall of 2005 found FUSRAP material in Area F that exceeds the cleanup goals in this Record of Decision. Area F is estimated to be 1,302 square feet in size, and extends to a maximum depth of 4 feet. The volume of contaminated soil in Area F is estimated to be 226 cy.

Rubble Pile:

The Rubble Pile is located in the southeast corner of the site, and consists of soil and construction debris from the excavation of foundations in the vicinity of the former acid digesters. Radionuclides radium-226, thorium-230 and uranium-238 were the COCs most commonly detected above background in soil samples collected from this area. The contaminated area in the rubble pile is estimated to be 1,227 square feet in size, and extends to a maximum depth of 3 feet. The volume of contaminated soil in the Rubble Pile is estimated to be 140 cy.

Table 1: Constituents of Concern

COC	Area A		Area B		Area C		Area D		Area G		Rubble Pile	
	Min (pCi/g)	Max (pCi/g)	Min (pCi/g)	Max (pCi/g)	Min (pCi/g)	Max (pCi/g)	Min (pCi/g)	Max (pCi/g)	Min (pCi/g)	Max (pCi/g)	Min (pCi/g)	Max (pCi/g)
Ra-226	0.67	862	0.82	10.64	0.61	285.05	0.38	14.76	0.49	22.4	0.64	75.78
Th-230	0.65	422	1.16	10.47	1.03	311.8	1.58	20.7	0.97	13.5	1.22	79.04
Th-232	0.13	9.34	0.51	1.39	0.27	3	0.36	2.58	0.39	2.35	0.76	15.95
U-234	0.87	294.8	2.07	8.33	1.2	381.8	2.33	5.53	2.67	3.71	1.31	21.23
U-235	0.11	9.87	0.13	1.62	0.08	42.22	0.09	0.83	0.15	2.21	0.11	1.33
U-238	0.65	282.7	1.92	8.35	1.56	320.2	2.13	5.32	2	12.12	1.31	21.96











-  Soil above ROD cleanup levels
-  FUSRAP site boundary
-  Rubble pile
-  Former Uniroyal pond
-  Excavation limits of 1998 Removal Action
-  Building 400 (only remaining building on site)
-  Foundation slabs of former buildings
-  Buildings on adjacent property belonging to Twin Rivers Technologies

Figure 4: Contaminated Soil Footprint in Areas of Concern

6.0 CURRENT AND POTENTIAL FUTURE LAND USES

The Painesville Site is currently a vacant former industrial facility, owned by the Chemtura Corporation (formerly the Crompton Manufacturing Company, Inc.). The site formerly contained process buildings, warehouses, office buildings, a chemical transfer facility, several above-ground storage tanks, and a railroad spur. All buildings save one have since been demolished by the property owner. There are currently no concrete plans for redevelopment of the site.

The Painesville Site has been an industrial site since the early 1940s, and is currently zoned as industrial. The Painesville Site is surrounded by active and inactive industrial properties, including former industrial landfills to the west and north of the site. Soils at the site are poorly suited for agricultural purposes, as native soils are high in clay content, and a layer of miscellaneous fill exists over much of the site. Groundwater supplies at the site are low in quantity and of low quality for drinking purposes. Finally, the site property owner is conducting chemical cleanup activities at the site and adjacent properties, which include capping of landfills and lagoons surrounding the site, restricting potential future residential development or construction on these areas. Therefore, USACE has determined that the reasonable expected future site use of the Painesville Site is industrial.

Groundwater at the Painesville Site is not used as a drinking water source, as Lake Erie is the water source for the majority of the local population. Stout et al. (1943) report that the Chagrin Formation underlying the Painesville area yields little or no water. Sulfur water or brine is often encountered during deep drilling operations. Information supplied by Ohio EPA indicates that there are no domestic users of groundwater in the vicinity of the site.

7.0 SUMMARY OF SITE RISKS

The Baseline Risk Assessment (BRA) portion of the RI (USACE 2003) provides a quantitative estimate of potential risks to human health and the environment from radiological constituents at the Painesville Site. The purpose of the risk assessment was to determine the need for cleanup and provide a baseline to compare remedial alternatives. The human health risk assessment (HHRA) and the ecological risk assessment (ERA) were conducted according to the methodology presented by the EPA in the *Risk Assessment Guidance for Superfund* (RAGS) (EPA 1989) and other guidance documents. A brief summary of the radiological human health risks, as well as the ecological risks is provided herein.

The BRA only evaluated radiological constituents in soils, as the site characterization indicated that soil was the only media impacted by FUSRAP contaminants (USACE 2003). Each area of concern identified in the site characterization was evaluated as a separate unit. An industrial worker receptor was evaluated as the reasonably anticipated future land use, because the site was a former industrial facility, is currently zoned industrial, and is surrounded by active and inactive industrial properties. There was no information identified during the Remedial Investigation/Feasibility Study that would lead to a conclusion that the reasonable future land use should be changed from the current use of industrial.

7.1 Summary of Human Health Risk Assessment

The HHRA for radiological constituents utilized the RESidual RADiation (RESRAD) computer code Version 6.2. RESRAD, following the RAGS methodology, calculates the total excess cancer risk (i.e., the risk of persons developing cancer as the result of exposure to site contaminants) from radiological constituents to a particular receptor, for all applicable exposure pathways. Input parameters are selected to model a hypothetical human user of the site, or receptor, such as an industrial worker. Risk estimates were calculated covering a 1,000 year period, to be consistent with the applicable or relevant and appropriate requirements (ARARs) identified in Section 8.0 of this document. The maximum risk over this period was then compared to the acceptable risk range specified in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (EPA 1990) of 10^{-6} to 10^{-4} (or one in 1,000,000 to one in 10,000). Constituents of concern (COCs) were conservatively identified as those individual radionuclides that contribute a single-pathway risk greater than 10^{-6} .

Risk for the industrial worker was evaluated for exposure to surface soil (0-2 feet below ground surface (bgs)) through incidental soil ingestion, inhalation of dust, and direct gamma exposure. The BRA found that human health risks from the FUSRAP COCs on site are above the acceptable USEPA guidelines, so that further response action for the FUSRAP COCs is necessary and appropriate.

7.2 Summary of Ecological Risk Assessment

The screening ecological risk assessment showed that none of the organisms evaluated were at risk due to radionuclides regardless of habitat. When habitat considerations are added to the analysis, then the Painesville exposure units or habitat patches were found to have limited ecological attraction to wildlife because of small size and limited or no cover. In summary, most ecological resources at Painesville are rather limited, and there is no predicted risk from radionuclides.

7.3 Basis for Action

The response action selected in this Record of Decision is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

8.0 REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) specify the requirements that remedial alternatives must fulfill in order to protect human health and the environment from contaminants. Essentially, they provide the basis for identifying and evaluating remedial alternatives. The RAOs for the Painesville Site are intended to provide long-term protection of human health and the environment. In order to provide this protection, media-specific objectives that identify major contaminants and associated media-specific cleanup goals are developed. These objectives specify the COCs, the exposure routes and receptors, and an acceptable maximum contaminant level for the long-term protection of receptors.

8.1 Identification of Remedial Action Objectives

The results of the remedial investigation indicate that localized areas of soil at the Painesville Site are contaminated with radium, uranium and thorium at concentrations that present risk to current and potential future land users. The RAOs for the site have been developed to specify the requirements that the remedial action alternatives must fulfill to protect human health and the environment from exposure to contaminants identified at the site. The RAOs for protecting human and ecological receptors will consider both the contaminant concentrations and the exposure routes since protectiveness may be achieved by reducing exposure as well as by reducing contaminant levels.

The RAOs for the Painesville Site are as follows:

- To comply with the identified applicable or relevant and appropriate requirements (ARARs); 10 CFR 20.1402 and OAC 3701:1-38-22(B).
- To ensure protection of human health and the environment by reducing exposure by external gamma, inhalation and ingestion to the FUSRAP COCs (Ra-226, Th-230, Th-232, and total U) in site soils.
- To remediate the site soils so that the following site wide area average Derived Concentration Guideline Levels (DCGL_w), exclusive of background, are not exceeded: Ra-226 = 9 pCi/g, Th-230 = 25 pCi/g, Th-232 = 6 pCi/g, and Total U = 482 pCi/g.

The 1996 field effort reported on in the 1998 Characterization Report (USACE, 1998a) found no evidence of FUSRAP eligible contaminants in the sediments, surface water, or air of the Painesville Site. These media are therefore not addressed in the Proposed Plan or this Record of Decision. Groundwater was evaluated in the 2003 Remedial Investigation/Feasibility Study Report and found to be currently unimpacted, and protected from migration of radionuclides by the nature and thickness of the soils at the site. Therefore, groundwater is not addressed in this Record of Decision.

8.2 Applicable or Relevant and Appropriate Requirements

The identification and evaluation of ARARs is an integral part of the remedial process. Section 121 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) specifies that remedial actions for cleanup of hazardous substances must comply with requirements or standards under Federal or more stringent state environmental laws that are applicable or relevant and appropriate to the hazardous substances at a site. Protection of human health and the environment is presumed by complying with ARARs. The following sections discuss the ARARs for cleanup of the Painesville Site.

8.2.1 Introduction to ARARs

Section 121(d)(1) of CERCLA sets requirements with respect to any hazardous substance, pollutant, or contaminant that will remain on-site. Remedial actions must upon completion achieve a level or standard of control which at least attains legally applicable or relevant and appropriate standards, requirements, criteria, or limitations (ARARs) promulgated under Federal environmental law or any more stringent State environmental or facility siting law.

Identifying ARARs involves determining whether a requirement is applicable, and if it is not applicable, then whether a requirement is relevant and appropriate. Individual ARARs for each site must be identified on a site-specific basis. Factors to assist in identifying ARARs include the physical circumstances of the site, contaminants present, and characteristics of the remedial action.

Applicable requirements are defined as those standards, requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that are legally applicable to the hazardous substances, or pollutants or contaminants at the site. A law or regulation is applicable if the jurisdictional prerequisites of the law or regulation are satisfied.

Relevant and appropriate requirements are defined as those standards, requirements, criteria, or limitations promulgated under federal environmental or State environmental or facility siting laws that, while not applicable to a hazardous substance or pollutant or contaminant, are relevant and appropriate under the circumstances of the release or threatened release of the hazardous substance or pollutant or contaminant at the site.

State requirements are ARARs under CERCLA only if they are: (1) promulgated and of general applicability, (2) identified by the state in a timely manner, and (3) more stringent than federal standards.

Determining whether a rule is relevant and appropriate is a two-step process, which involves determining whether the rule is relevant, and, if so, whether it is appropriate. A requirement is relevant if it addresses problems or situations sufficiently similar to the circumstances of the release at the site. It is appropriate if it is well suited to the site.

CERCLA Section 121(e), 42 USC 9621(e), provides that no permit is required for the portion of any removal or remedial action conducted onsite. Although no permit is required, onsite actions must comply with substantive requirements that permits enforce, but not with related administrative and procedural requirements. That is, remedial actions conducted onsite do not require a permit but must be conducted in a manner consistent with permitted conditions as if a permit were required.

A third category of standards, requirements, criteria or limitations is the “To Be Considered” (TBC) category, which includes proposed rules and non-promulgated advisories or guidance issued by federal or state government that are not legally binding and do not have the status of potential ARARs. If no other standard is available for a situation to help determine the necessary level of cleanup for protection of health or the environment, a TBC may be included as guidance or justification for a standard used in the remediation, at the discretion of the lead agency.

The USACE has identified Title 10, Part 20, Section 1402, of the Code of Federal Regulations (10 CFR 20.1402), and Chapter 3701:1-38, Rule Number 22, Section B, of the Ohio Administrative Code (OAC 3701:1-38-22(B)) as ARARs for the Painesville Site.

8.2.2 Federal ARAR - 10 CFR 20.1402

The Painesville Site is contaminated with radioactive material that is the residuals of ore processing at another site that occurred prior to 1978, when Congress provided the NRC authority to regulate such materials. Generally, the regulations most applicable or relevant and appropriate to ore processing sites with these types of residual materials are 40 CFR 192 and 10 CFR 40, Appendix A. However, these regulations are not applicable or relevant and appropriate to the Painesville Site because ore processing did not occur on the Painesville Site. Rather, the residuals were inadvertently released on the site as a side effect of the storage and use in the magnesium production process of empty metal containers that had previously been used to transport the residuals. The radiological contamination at the site is from the containers, and not distributed from ore processing. Since the distribution of residuals is not similar to the distribution that would be expected at an ore processing facility, 40 CFR 192 and 10 CFR 40, Appendix A, are not applicable or relevant and appropriate to the site.

10 CFR 20, Subpart E is applicable to Nuclear Regulatory Commission (NRC) licensed facilities. The regulation establishes standards for the decommissioning of facilities licensed by the NRC to manage special nuclear, source, or byproduct material. The decommissioning standards establish criteria for license termination with unrestricted use (10 CFR 20.1402), license termination under restricted conditions (10 CFR 20.1403) and allow the submission of alternate

criteria for license termination (10 CFR 20.1404). Under 10 CFR 20.1402, a facility is considered to be acceptable for unrestricted use if residual radioactivity exceeding background results in a total effective dose equivalent (TEDE) that does not exceed 25 millirem (mrem) per year to the average member of the critical group, including groundwater sources of drinking water, and must further reduce residual radioactivity to as low as reasonably achievable (ALARA) levels. The critical group is "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances." Under 10 CFR 20.1403, a facility will be considered acceptable for restricted use if the levels of residual radioactivity are ALARA, there are legally enforceable land use controls that will assure the TEDE will not exceed 25 mrem per year and will not impose undue burdens on the local community, and if the land use controls fail the TEDE is ALARA but not more than 100 mrem per year. An alternative criteria is acceptable under 10 CFR 20.1404 if it is protective of public health and the environment and the dose from all man-made sources combined, except medical, would be no more than 100 mrem per year. The alternative criteria also must include land use controls and achieve ALARA levels.

The Painesville Site does not have an NRC license. Therefore, 10 CFR 20.1402 is not applicable to the site. However, USACE has identified 10 CFR 20.1402 as an ARAR because it is both relevant to and appropriate for the site. The regulation addresses situations sufficiently similar to the circumstances of the release at the Painesville Site and its use is appropriate to the circumstances of the release. The ore processing residuals from the empty metal containers have caused localized occurrences of uranium or thorium in concentrations that exceed the regulated source material concentration limitation, so that a source material license could have been required for the site if the possession had occurred when the material was subject to regulation. If the site had been licensed for the possession or processing of source material, its decommissioning would be subject to the license decommissioning standards in 10 CFR 20.1402. Additionally, the size and nature of the facilities, the media and the constituents of concern at the Painesville Site are generally the same or similar to those found at the sites subject to this regulation. Therefore, 10 CFR 20.1402 is relevant and appropriate for the Painesville Site.

10 CFR 20.1402, requires identification of the critical group when developing cleanup goals. The Painesville Site has been an industrial site since the early 1940s, and is currently zoned as industrial. The Painesville Site is surrounded by active and inactive industrial properties. Soils at the site are poorly suited for agricultural purposes, as native soils are high in clay content, and a layer of miscellaneous fill exists over much of the site. Groundwater supplies at the site are low in quantity and of low quality for drinking purposes. Finally, the site property owner, the Chemtura Corporation (formerly the Crompton Manufacturing Company, Inc.), is conducting chemical cleanup activities at the site and adjacent properties, which include capping of landfills and lagoons on adjacent properties

surrounding the site, restricting potential future residential development or construction on those areas. Therefore, the reasonable expected future site use of the Painesville Site is industrial.

The 2003 Remedial Investigation/Feasibility Study Report developed cleanup goals based on an average industrial worker as the critical group. The industrial worker was assumed to spend the majority of time on-site indoors, with limited exposure to the FUSRAP materials in site soils. Since that time, all of the buildings on the site save one have been demolished by the property owner, and any future industrial development or use will require construction of new facilities. Based on this, the 2005 Feasibility Study Addendum changed the critical group used to develop cleanup goals to a construction worker. The construction worker is assumed to spend his entire time on-site outdoors, with greater potential exposure to FUSRAP materials than the industrial worker, which results in more stringent cleanup goals.

8.2.3 State ARAR - OAC 3701:1-38-22(B)

A state standard that is promulgated, is identified by the state in a timely manner and is more stringent than federal requirements may be applicable or relevant and appropriate. In addition, the state must consistently apply, or demonstrate the intention to consistently apply, the promulgated requirement in similar circumstances at other remedial actions within the state.

OAC 3701:1-38-22 is a regulation that was promulgated by the State of Ohio to establish standards for the decommissioning of facilities licensed by the state to manage special nuclear, source, or byproduct material. The State of Ohio has the authority to promulgate and enforce such regulations based on an agreement with the NRC that allows the State to regulate such materials in the State of Ohio and the NRC to discontinue such regulation.

OAC 3701:1-38-22(B) adopts the same required standard for license termination with unrestricted use as 10 CFR 20.1402. A facility is considered to be acceptable for unrestricted use if residual radioactivity exceeding background results in a total effective dose equivalent (TEDE) that does not exceed 25 millirem (mrem) per year to the average member of the critical group, including groundwater sources of drinking water, and must further reduce residual radioactivity to as low as reasonably achievable (ALARA) levels. The critical group is defined in the same way as under 10 CFR 20.1402. However, unlike 10 CFR 20.1403, the regulation does not allow decommissioning with license termination for other than unrestricted use. Instead, under OAC 3701:1-38-22(E), if a site is decommissioned using alternate criteria, a decommissioning possession only license must be maintained on the site.

The Painesville Site is not licensed by the state. Therefore, OAC 3701:1-38-22(B) is not applicable. However, USACE has identified OAC 3701:1-38-22(B) as an ARAR because it is both relevant to and appropriate for the site, for the

same reasons that 10 CFR 20.1402, is relevant and appropriate. Because a construction worker has been identified as the average member of the critical group, and the cleanup goals have been developed to meet the criteria for unrestricted use for the construction worker, 10 CFR 20.1402 and OAC 3701:1-38-22(B) are functionally equivalent for the Painesville Site.

8.3 Selected Cleanup Goals

The Painesville Site will be remediated and closed in a manner consistent with guidance contained in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (EPA 2000). MARSSIM requires that dose or risk-based standards be converted into equivalent activity concentration values, known as Derived Concentration Guideline Levels (DCGLs). MARSSIM assumes that two types of DCGLs will be applied to a site, a $DCGL_w$ and a $DCGL_{emc}$. The $DCGL_w$ represents a wide area average value that must be attained. The $DCGL_{emc}$ refers to elevated area or "hot spot" criteria. $DCGL_{emc}$ requirements ensure that no localized areas will remain that potentially pose unacceptable risks.

Based on the ARAR analysis, a TEDE goal of 25 mrem/yr was assumed for the site with a construction worker considered as the average member of the critical group. The site-specific RESRAD model described in Section 7.1 was used to back-calculate equivalent $DCGL_w$ and $DCGL_{emc}$ requirements for each of the Painesville radiological COCs. The results from this calculation are contained in Table 2. The $DCGL_w$ requirements in Table 2 were derived assuming only one of the radionuclides is present above background levels. Since soils will potentially contain a mix of residual radionuclides once remediation is complete, a Sum of Ratios (SOR) calculation will be used to ensure that the total dose represented by the residual radionuclides is less than the 25 mrem/yr requirement.

The $DCGL_w$ requirements in Table 2 were used to develop the volume estimates for contaminated soils remaining at the Painesville Site (USACE 2006). A detailed Final Status Survey Plan (FSSP) will be developed prior to the initiation of remediation at the Painesville Site. The Final Status Survey Plan will contain the confirmation methodology that will be used to demonstrate compliance with $DCGL_w$ and $DCGL_{emc}$ requirements across the site once remediation is complete.

Table 2: COCs and Soil Cleanup Goals for the Painesville Site

COC	Background (pCi/g)	DCGL_w (pCi/g)^{a,b,c}	DCGL_{emc} (pCi/g)^{b,c}
Ra-226 ^d	1.42	9	12
Th-230	2.56	25	34
Th-232 ^e	1.53	6	8
Total U ^f	5.97 ^g	482	810

^a These cleanup goals represent activity levels above site background activity corresponding to 25 mrem/yr. These cleanup goals are equivalent to an incremental lifetime cancer risk of approximately 2E-05 for a construction worker (for each COC).

^b If a mixture of radionuclides is present, then the sum of ratios applies per MARSSIM. For example, using the DCGL_w values for soil, the following sum of ratios equation is obtained:

$$SOR = \frac{Ra-226}{9} + \frac{Th-230}{25} + \frac{Th-232}{6} + \frac{U-234+U-235+U-238}{482}$$

where SOR = sum of the ratios result
 Ra-226 = net Ra-226 soil concentrations
 Th-230 = net Th-230 soil concentrations
 Th-232 = net Th-232 soil concentrations
 U-234 = net U-234 soil concentrations
 U-235 = net U-235 soil concentrations
 U-238 = net U-238 soil concentrations

Net soil concentrations exclude background.

^c DCGL_w values developed over a 10,000 m² area. DCGL_{emc} values developed over a 100 m² area.

^d Ra-226 criteria includes Pb-210 contribution to dose.

^e Th-232 criteria includes Th-228 and Ra-228 contribution to dose.

^f Concentration represents the total uranium guideline.

^g Total uranium background is the sum of the background values for U-234, U-235 and U-238.

9.0 DESCRIPTION OF ALTERNATIVES

This section summarizes remedial alternatives developed in the Feasibility Study for the Painesville Site. The remedial alternatives were constructed by combining general response actions, technology types and process options. Remedial alternatives should assure adequate protection of human health and the environment, achieve RAOs, meet ARARs, and permanently and significantly reduce the volume, toxicity, and/or mobility of site-related contaminants.

The remedial alternatives presented in the Feasibility Study address soil contamination at the Painesville Site. The 2003 Remedial Investigation/Feasibility Study Report presented four remedial alternatives to address soil contamination at the Painesville Site. The 2005 Feasibility Study Addendum amended this to three remedial alternatives, for consideration in the Proposed Plan. The alternatives encompass a range of potential actions, and include:

- Alternative 1: No Action
- Alternative 2: Capping in Place
- Alternative 3: Excavation of Soils and Offsite Disposal

Alternative 1 is the no-action response required under the NCP. Alternative 2 utilizes containment technologies in combination with short-term monitoring. Long-term monitoring and maintenance will also be required for Alternative 2, to ensure the effectiveness of the cap. Alternative 3 utilizes removal technologies in combination with short-term monitoring.

9.1 Alternative 1: No Action

Under the no action alternative, no additional remedial action would be taken at the Painesville Site.

This alternative is included to provide a baseline for evaluation of other alternatives in accordance with the NCP and CERCLA requirements. The no action alternative is not considered an acceptable remedial alternative for the Painesville Site, as it does not assure protection of human health and the environment, and does not comply with applicable or relevant and appropriate requirements.

9.2 Alternative 2: Capping in Place

This alternative combines the installation of a protective cap with long-term environmental monitoring. Impacted soil exceeding the soil cleanup goals would be covered in-place by an appropriately designed cap. Any regular capping material would serve since the primary purpose is to block an exposure pathway (the Feasibility Study assumed a one-foot thick asphalt cap for cost estimating purposes). The cap(s) would function as a barrier to reduce potential radiation exposure to site workers and the public. In addition, the cap(s) would restrict the

migration of contaminants through dispersion and through transport by infiltrating rainwater. Inspections and maintenance of the cap(s) and environmental monitoring would continue following implementation of the remedial action to mitigate potential exposures in the long-term. In addition, the establishment of land use controls would likely be required, to ensure the protective cap is not disturbed at some time in the future.

9.3 Alternative 3: Excavation of Soils and Offsite Disposal

This alternative involves the excavation of impacted soil exceeding a construction worker SOR of 1, off-site transportation, and disposal of the soil at a commercial facility licensed and/or permitted to accept radiological waste. The estimated volume of soil to be excavated is 7,175 cy. Dust suppression and erosion control measures would be implemented as needed during the remedial action to protect the workers and minimize airborne migration of radionuclides. Site access restrictions and environmental monitoring (air and surface water) would be maintained throughout the remedial action. Excavated areas would be backfilled with clean fill and regarded to original site conditions. Following completion of the remedial action, the site would meet the requirements for unrestricted release, as defined in the ARARs.

10.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

Section 300.430 (e) of the NCP lists nine criteria by which each remedial alternative must be assessed. The acceptability and performance of each alternative against the criteria is evaluated individually so that relative strengths and weaknesses may be identified. Also, a comparative analysis among the alternatives is performed, to identify the advantages and disadvantages of each alternative relative to one another. Assessments against two of the criteria (Overall Protection of Human Health and the Environment and Compliance with Applicable or Relevant and Appropriate Requirements) relate directly to statutory findings and therefore are categorized as threshold criteria. The threshold criteria must be satisfied in order for an alternative to be eligible for selection. Five of the criteria (Long-term Effectiveness and Permanence, Reduction of Toxicity, Mobility, or Volume through Treatment, Short-term Effectiveness, Implementability, and Cost) represent the primary criteria upon which the analysis is based. These balancing criteria are used to weigh major tradeoffs among alternatives. In addition CERCLA Section 121 sets forth requirements for remedial action including the preference for treatment which reduces volume, toxicity or mobility. The remaining two criteria, state acceptance and community acceptance, are categorized as modifying criteria. The modifying criteria are evaluated following comments on the Proposed Plan and are addressed in the responsiveness summary of this Record of Decision (ROD). The nine criteria are briefly defined as follows:

- **Overall Protection of Human Health and the Environment** addresses whether or not a remedy provides adequate protection and describes how exposure to the hazardous substances released at the site is eliminated, reduced, or controlled through treatment, engineering controls, or land-use controls.
- **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 of Federal and State environmental statutes and/or provide grounds for invoking a waiver.
- **Long-term Effectiveness and Permanence** refers to the magnitude of residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time once the cleanup goals have been met.
- **Reduction of Toxicity, Mobility, or Volume through Treatment** is the anticipated performance of the treatment technologies that may be employed in a remedy.
- **Short-term Effectiveness** refers to the speed with which the remedy achieves protection, as well as the remedy's potential to create adverse impacts on human health and the environment that may result during the construction and implementation period.

- **Implementability** is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the chosen solution.
- **Cost** includes capital, and operation and maintenance costs.
- **State Acceptance** indicates whether, based on its review of the Remedial Investigation/Feasibility Study and Proposed Plan, the State concurs with, opposes, or has no comment on the preferred alternative.
- **Community Acceptance** is assessed following a review of the public comments received on the Proposed Plan.

This section of the ROD profiles the relative performance of each alternative against the nine criteria, noting how it compares to other options under consideration. The detailed analysis of alternatives can be found in the Remedial Investigation/Feasibility Study Report (USACE 2003). Table 3 presents a summary of the remedial alternative evaluation, and Table 4 presents a comparative analysis of the alternatives.

10.1 Overall Protection of Human Health and the Environment

Alternative 1 does not provide adequate protection of human health and the environment. The no action alternative does not include any actions and consequently is not expected to provide protection of human health and the environment against potential exposure to soil contaminated with radionuclides.

Alternative 2 provides good protection of human health and the environment, through the containment of soil contaminated with radionuclides and the reduction of exposure pathways. The alternative would provide shielding to reduce radiation exposures minimizing the potential risks to onsite workers and the public.

Alternative 3 provides the best protection of human health and the environment for the site because the impacted soil, that could cause a dose to the construction worker critical group exceeding the ARAR, would be removed from its present location and transported to an off-site facility for disposal. The selected disposal facility will be licensed/permitted to accept the material removed from the site.

10.2 Compliance with ARARs

Alternative 1, no action, would not comply with the ARARs identified by USACE to address FUSRAP contamination at the Painesville Site; 10 CFR 20.1402 and OAC 3701:1-38-22(B) (i.e., residual dose not to exceed 25 mrem/yr to the construction worker critical group).

Alternative 2, capping of contaminated soils in-place, would comply with ARARs. Impacted materials exceeding the cleanup goals would be capped, minimizing the exposure to the COCs in soil. This alternative would reduce the residual dose

below the guideline of 25 mrem/yr. The capped areas would require long-term monitoring and maintenance to ensure the protectiveness of the alternative.

Alternative 3, excavation and disposal, would comply with ARARs. Impacted materials exceeding the cleanup goals would be removed from Areas A, B, C, D, G, and the rubble pile and disposed of at a licensed and/or permitted off-site disposal facility. It is anticipated that this alternative would reduce the residual dose below the guideline of 25 mrem/yr for the construction worker critical group.

10.3 Long-Term Effectiveness and Permanence

Alternative 1 is not effective since no actions are implemented under this alternative.

Alternative 2 is effective in the long-term. This alternative would eliminate the exposure pathways to the contamination; however, the radionuclides would remain within the boundaries of the Painesville Site. After the completion of this alternative, long-term monitoring and maintenance would be required to protect the integrity of the cap.

Alternative 3 is also effective in the long-term. Impacted soil exceeding the soil cleanup criteria would be excavated and removed from the Painesville Site. At the completion of this alternative the soil within the site would contain radionuclide concentrations below the cleanup goals.

10.4 Reduction of Toxicity, Mobility or Volume through Treatment

The No Action alternative would have no effect on the toxicity, mobility, or volume of the contaminant.

None of the other alternatives use treatment to reduce toxicity, mobility or volume of the contaminants. Treatment technologies were considered in the Feasibility Study, however, they were screened out as either ineffective, difficult to implement, or not cost efficient for the contaminants at the Painesville Site.

10.5 Short-Term Effectiveness

Alternative 1 does not present any risk to the community, environment, or site workers during its implementation since no actions are associated with this alternative.

Alternative 2, (capping of contaminated soils in-place) requires minimal intrusive activities, therefore, no significant short-term risks to onsite workers, the community, or the environment would be expected during the implementation of this alternative. During site preparation and cap installation activities, risks to onsite workers from soil contaminated with radionuclides would be mitigated and addressed in a health and safety plan.

Environmental risks to onsite workers, the community, and the environment during the implementation of Alternative 3 may occur due to the operation of heavy equipment, on-site excavation, and construction activities. Disturbed areas would be more likely to experience wind and water erosion. These temporary effects could be minimized by limiting the area disturbed at any time during excavation operations and by employing good engineering practices (e.g., sediment barriers to minimize the amount of sediment leaving the work area and containment of surface water during storms). In addition, this alternative would create an added risk to the community due to the transportation of contaminated soil on public roads or on railroads. During remedial activities, engineering controls will be put in place during construction as required and environmental monitoring and surveillance activities will be maintained to ensure protectiveness, so that no member of the public will receive radiation doses from exposure to FUSRAP contaminants in excess of NRC regulations for dose to the general public.

With the exception of the long-term monitoring and maintenance component of Alternative 2, all alternatives are anticipated to take less than one year to implement.

10.6 Implementability

Alternative 1 would be the easiest to implement since it involves no remedial actions.

Alternative 2 would be moderately difficult to implement. The materials necessary to complete this alternative are readily available and vendors could be easily secured. In addition, no special construction or excavation techniques are required. However, there would be an administrative burden in performing the long-term inspection and maintenance of the cap and environmental monitoring that would be required to ensure protection of human health and the environment. Also, there may be administrative implementability issues with establishing land use controls on a privately owned site.

Alternative 3 would be the easiest to implement after Alternative 1. This alternative requires the use of common equipment, materials, and supplies. Excavation, compaction, grading, and revegetation equipment and vendors are readily available. In addition, no special construction or excavation techniques are required. No administrative feasibility issues are anticipated with respect to the commercial disposal of the impacted soil generated under this alternative. Alternative 3 does not require implementation of long-term maintenance and monitoring to ensure protectiveness, avoiding potential implementation issues that Alternative 2 may have.

10.7 Cost

Alternative 1 has no cost since it involves no remedial actions. Alternative 2 has the lowest estimated cost after Alternative 1, with a present worth cost of

\$2,606,000. Alternative 3 has the highest estimated cost, at a present worth cost of \$9,000,000. The disposal alternative assumes disposal at an appropriate disposal facility permitted/licensed to receive radiologically contaminated material.

10.8 State Acceptance

Comments on the Proposed Plan provided by the Ohio Environmental Protection Agency (Ohio EPA) and the Ohio Department of Health (ODH) were evaluated and considered in selecting the final remedy. The State of Ohio concurs with the proposed remedial alternative of excavation and off-site disposal, but has expressed reservations with the cleanup levels established in this Record of Decision. For this reason, the State of Ohio has reserved its final opinion on the adequacy of the remedy pending review of the final status survey data once remediation is complete. Written comments from Ohio EPA and the Ohio Department of Health, and USACE's responses to those comments, are included in Appendix A of this Record of Decision.

10.9 Community Acceptance

At the public meeting conducted on July 26, 2005, the public voiced support for the Selected Remedy over the other remedial alternatives evaluated. However, the public also voiced a preference for even more stringent cleanup levels. The details of comments at the public meeting for the project, written comments and USACE's responses to comments, are included in Appendix A of this Record of Decision.

Table 3: Summary of Remedial Alternative Evaluation

Criteria	Alternative 1: No Action	Alternative 2: Capping in Place	Alternative 3: Excavation and Disposal
Protection of Human Health and the Environment	Does not reduce risks to human health or the environment.	Provides protection of human health and the environment.	Provides protection of human health and the environment.
Compliance with ARARs	Does not satisfy ARARs.	Satisfies ARARs.	Satisfies ARARs.
Long-Term Effectiveness and Permanence	Does not provide long-term effectiveness or permanence.	Environmental monitoring and maintenance of the caps are required to provide long-term effectiveness.	Effective and permanent as soils above the cleanup goals are removed from the site.
Reduction of Toxicity, Mobility and/or Volume Through Treatment	Does not reduce contaminants' toxicity, mobility or volume.	No treatment.	No treatment.
Short-Term Effectiveness	No short-term risk to remedial workers, the community or the environment since no remedial actions are implemented.	Minimal risk to remedial workers. Negligible risk to community and environment due to limited intrusive activities.	Risk to workers would be mitigated through a health and safety plan. Risk to community and environment would be mitigated through engineering controls.
Implementability	There are no technical or administrative implementability issues.	Administrative implementability issues in establishing LUCs and long-term O&M.	There are no major implementability issues; services and materials are readily available.
Cost (Discounted 7%)	\$0	\$2,606,000	\$9,000,000
State Accept	Not Acceptable	Not Acceptable	Judgment Reserved
Community Accept	Not Acceptable	Not Acceptable	Acceptable

Table 4: Comparative Analysis of Remedial Alternatives

Criteria	Alternative 1: No Action	Alternative 2: Capping in Place	Alternative 3: Excavation and Disposal
Protection of Human Health and the Environment	No	Yes	Yes
Compliance with ARARs	No	Yes	Yes
Long-Term Effectiveness and Permanence	Low	High	High
Reduction of Toxicity, Mobility and/or Volume	Low	Low	Low
Short-Term Effectiveness	High	High	Medium
Implementability	High	Medium	High
Cost (Discounted 7%)	\$0	\$2,606,000	\$9,000,000
State Accept	Low	Low	Medium
Community Accept	Low	Low	Medium

11.0 SELECTED REMEDY

USACE has selected Alternative 3, Excavation of Soils and Offsite Disposal, to address FUSRAP contaminated soils at the Painesville Site. Of the alternatives considered in the Proposed Plan, Alternative 3 is considered to be the most protective in the long term, and is permanent because all soils with FUSRAP contamination exceeding the construction worker cleanup goals will be removed from the Painesville Site. Alternative 3 ensures compliance with the ARARs, since all of the materials exceeding the cleanup goals are removed from the Painesville Site.

Alternative 3 includes excavation of all FUSRAP contaminated soils that exceed, excluding background, a Sum of Ratios (SOR) of 1, based on the wide area average Derived Concentration Guideline Levels (DCGL_w) presented in Table 2. In addition, elevated measurement criteria (DCGL_{emc}) will be used to ensure no localized areas of elevated radioactivity will remain that could potentially produce an unacceptable risk. Verification of compliance with soil cleanup goals will be demonstrated using surveys developed in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). This confirmation methodology will be developed and documented in the Final Status Survey Plan (FSSP) during the remedial design.

Dust suppression and erosion control measures would be implemented as needed during the remedial action to protect the workers and minimize airborne migration of radionuclides. Site access restrictions and environmental monitoring (air and surface water) would be maintained throughout the remedial action. Excavated soils will be removed from the site and disposed of at an appropriately permitted/licensed facility. Excavated areas will be backfilled with clean material.

The estimated volume of soil to be excavated is 7,175 cy. The estimated present worth cost of the Selected Remedy is \$9,000,000. However, it should be noted that this is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

12.0 STATUTORY DETERMINATIONS

The Selected Remedy satisfies the statutory requirements of Section 121 of CERCLA as follows:

- The remedy must be protective of human health and the environment,
- The remedy must attain ARARs or define criteria for a waiver,
- The remedy must be cost effective, and
- The remedy must use permanent solutions and alternative treatment technologies to the maximum extent practicable.

The manner in which the Selected Remedy satisfies each of these requirements is discussed in the following sections.

12.1 Protection of Human Health and the Environment

Upon completion, the Selected Remedy for the Painesville Site will be protective of human health and the environment and meet cleanup criteria based on ARARs. During remedial activities, engineering controls will be put in place during construction as required and environmental monitoring and surveillance activities will be maintained to ensure protectiveness, so that no member of the public will receive radiation doses from exposure to FUSRAP contaminants in excess of NRC regulations for dose to the general public.

There are no short-term threats associated with the Selected Remedy that cannot be readily controlled and mitigated. In addition, no adverse cross-media impacts are expected from the remedy.

12.2 Attainment of ARARs

The Selected Remedy requires the removal of FUSRAP contaminated soil so the standards of the ARARs are met. The ARARs identified for the Painesville Site are discussed in Section 8.2 of this Record of Decision. Impacted soils will be excavated to achieve the cleanup goals presented in Table 2, which were developed to meet the requirement that the residual dose after cleanup not exceed 25 mrem/yr for the identified critical group, the construction worker. Following remediation, the site will meet the criteria for unrestricted release, as defined in the ARARs.

12.3 Cost Effectiveness

Cost effectiveness is an evaluation of whether the overall remedy cost is proportional to its effectiveness. The Selected Remedy must first meet the two CERCLA threshold criteria, and then should have the best balance of the five balancing criteria, including cost.

The Selected Remedy is effective for the long-term because risks are reduced to acceptable levels. Increased short-term risks to workers, the public, and the

environment may occur during implementation of the remedy, but these risks will be minimized by appropriate mitigative measures. While the present worth cost of the Selected Remedy is the greatest of those considered, it is most effective in ensuring the certainty of the remedy, as all contaminated soil exceeding the unrestricted release criteria will be removed from the site. The Selected Remedy avoids the administrative burden of performing long-term maintenance and environmental monitoring that would be required for the capping alternative. The Selected remedy also avoids the potential administrative difficulties in establishing land use controls that would likely be required for the capping alternative, to ensure the protective cap is not disturbed. The estimated present worth cost of the Selected Remedy is \$9,000,000. The Selected Remedy presents the best balance of the alternatives considered relative to its cost.

12.4 Utilization of Permanent Solutions and Alternative Treatment Technologies

The Selected Remedy for the Painesville Site provides a permanent solution for FUSRAP contamination present at the site. Following implementation of the remedy, the site will meet the criteria for unrestricted release, as defined in the ARARs.

None of the alternatives evaluated for the Painesville Site provide for treatment of the materials to be removed. The Feasibility Study evaluated currently available treatment technologies for the constituents addressed under this ROD, and found none that would be economically and technologically feasible at this time. The Selected Remedy includes offsite disposal, involving containment at the final disposal location, which will effectively achieve a reduction in mobility, however, no treatment is planned which will reduce the toxicity or volume of the disposed materials.

12.5 Five-Year Review Requirements

Because this remedy may result in hazardous substances, pollutants or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure for all potential uses of the site, a review will be conducted within five years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment. However, if after completion of the remedial action, hazardous substances, pollutants or contaminants remaining on-site are not above levels that allow for unlimited use and unrestricted exposure for all potential uses of the site, no five year reviews will be conducted.

13.0 DOCUMENTATION OF SIGNIFICANT CHANGES

Since completion of the Proposed Plan in July 2005, additional soil sampling was conducted at the Painesville Site, during the fall of 2005. The results from this soil sampling were used to prepare an updated contaminated soil volume estimate, based on the cleanup goals documented in this Record of Decision (USACE 2006). The total volume of contaminated soil requiring cleanup has increased from 4,075 cy to 7,175 cy; and the total estimated cost of Alternative 3: Excavation and Offsite Disposal, has increased from \$5,297,000 to \$9,000,000. These changes are reflected in the text of this Record of Decision.

The updated contaminated soil volumes and cost estimates do not change the soil cleanup goals, or the Selected Remedy, documented in this Record of Decision.

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APPENDIX A: RESPONSIVENESS SUMMARY

RESPONSIVENESS SUMMARY
 PROPOSED PLAN FOR REMEDIATION
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1.0 INTRODUCTION

On July 18, 2005, the Buffalo District, U.S. Army Corps of Engineers (USACE) issued a Proposed Plan for Remediation of the Painesville Formerly Utilized Sites Remedial Action Program (FUSRAP) Site in Painesville, Ohio. A public meeting was held on July 26, 2005, for USACE to present background information and its preferred remedy for the site. During the meeting, the public was invited to submit comments, which were accepted through August 22, 2005. This Responsiveness Summary addresses the comments received from the public during both the public meeting and the public comment period.

The preferred remedy for the Painesville Site to address soil impacted by past Atomic Energy Commission (AEC) related activities is Excavation and Offsite Disposal (Alternative 3). This alternative is considered to be the most protective of human health and the environment, and the most permanent and effective in the long term as impacted soils would be removed from the site and disposed of in an appropriately licensed and/or permitted disposal facility.

2.0 OVERVIEW OF PUBLIC INVOLVEMENT

On July 18, 2005, a letter announcing the release of the Proposed Plan for Remediation of the Painesville Site was sent to 126 individuals on the site mailing list, including elected officials.

Legal advertisements announcing the availability of the Proposed Plan for public review and comment, and the public meeting were placed in the following local newspapers; The Plain Dealer (Cleveland) - July 17 and 24, 2005; and The News Herald (Willoughby) - July 17 and 24, 2005.

The public meeting was held July 26, 2005, from 7:00 to 9:00 p.m. in the VFW Post 7754, 540 New Street, Fairport Harbor, Ohio. At the meeting USACE explained the history of the site, studies and investigations completed, areas of contamination, CERCLA evaluation criteria, the remedial alternatives, the preferred alternative, and the schedule. A stenographer was present at the meeting to record the proceedings and comments. Eleven members of the public requested the opportunity to speak at the meeting. Comments received at the public meeting and written comments received during the public comment period are addressed in Section 3. The meeting transcript is included as Attachment 1 in this Appendix, after the responses to comments.

3.0 RESPONSES TO COMMENTS

At the public meeting held July 26, 2005, eleven individuals provided comments on the Proposed Plan. Comments provided by individuals at the public meeting and USACE responses are addressed in Section 3.1 below. The full transcript of the public meeting is included as Attachment 1.

The written comments received during the public comment period are also included as attachments to the Responsiveness Summary. The USACE responses to the written comments are addressed in Section 3.2.

3.1 Responses to Public Meeting Comments

The following are responses to comments made during the public meeting held on July 26, 2005. A copy of the meeting transcript is included as Attachment 1.

3.1.1 [REDACTED], Ohio EPA (Meeting Transcript Pg 42)

Comment 1: "My name is [REDACTED]. I'm with the Ohio Environmental Protection Agency. I'm responsible for project oversight, basically overseeing the work the Army Corps has done, review work plans and we'll also be responsible for overseeing the cleanup.

What I want to do is on behalf of the Ohio EPA give you our prepared statement regarding this Proposed Plan.

The Ohio Environmental Protection Agency has been working with the Department of Energy and the U.S. Army Corps of Engineers for more than 10 years to investigate the radiological contamination left behind by the former Diamond Magnesium facility here in Painesville. Through this effort, Ohio EPA believes contamination has been adequately investigated and characterized allowing cleanup to move forward. The extensive characterization of the site was found to be necessary when after a 1998 removal action of a contaminated area was halted because of an unexpected increase in the scope of work.

Ohio EPA is here to provide our view of the Proposed Plan for finishing the cleanup of the site and hear your input from the local stakeholders regarding the Army Corps' proposal for addressing the remaining radiological contamination at the site.

At this point Ohio EPA has major differences of opinion about how the Army Corps is interpreting CERCLA, which is the superfund law, to develop the cleanup levels, risk calculations and institutional controls for this site. Officially the Army Corps is saying that they will cleanup the site but only to levels safe enough for future industrial use, which is restrictive release. This means that the future use of the now vacant property would be restricted to industrial use only.

The Army Corps based their cleanup plan on their self assessment of the foreseeable future use of the area and their determination that the reasonable expected future use of the site is industrial. By restricting the future use to an industrial use only status increases the amount of radiological contamination allowed to remain in place. Ohio EPA believes this assessment does not reflect local trends in the re-use of the former industrial land and that the future use should include a mix of residential and recreational uses.

All of these major issues are resolved if the Army Corps' removal of the contaminated soil achieves free release levels which are acceptable for any future use for the contamination at the site when they do their cleanup. This means that based on the assessment of the residual contamination the site is clean enough for anyone to use in any foreseeable way. The Army Corps is confident that they will reach free release status even though this is not the cleanup -- the goal of the proposed cleanup plan.

After reviewing their results of other sites, we agree that this is possible. Therefore, the path forward that the Ohio EPA is taking is to allow the cleanup to proceed as the Army Corps has proposed and hold off our final judgement of the success of the cleanup until the post-excavation certification results are received.

As in the past, Ohio EPA would have significant involvement in the oversight of the actual cleanup and in the development and review of the cleanup certification plans. Ohio EPA believes that this is the best option available for all parties by allowing the cleanup to start and avoid delays that could result in a loss of Federal funding.”

Response 1: The Ohio regulation for decommissioning of licensed sites, OAC 3701:1-38-22, states, "Decommissioning with license termination shall be limited to sites considered acceptable for unrestricted release where the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent to an average member of the critical group that does not exceed twenty-five millirem per year (25 mrem/yr), including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA)." The Ohio regulation defines the "critical group" as "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances." The Ohio decommissioning regulation is equivalent to the NRC decommissioning regulation, 10 CFR 20, Subpart E, which has been identified as an ARAR for the site. Neither the Ohio or the NRC regulation define the critical group beyond what has been stated above.

USACE has identified the reasonable future use of the site as industrial, and, based upon recent discussions and input from Ohio EPA, a construction worker as the critical group. This determination is based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay
5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the Corps of Engineers believes that a construction worker is reasonable for the critical group.

The cleanup proposed by USACE will result in a residual dose below 25 mrem/yr to the identified critical group, and therefore, according to the ARAR the site is considered acceptable for unrestricted release.

In addition, these cleanup levels are also protective of a recreational future site use, such as a park. The construction worker cleanup levels are more stringent than those based on a recreational user, because the construction worker is on site longer, and has more potential for contact with contaminated soil, than a recreational user does.

Comment 2: “There is also another issue that we are trying to resolve. Two areas within the current property boundary but outside the official FUSRAP areas have elevated radiological contamination present and will not be cleaned up under this Proposed Plan. Based on available information, the property owner unknowingly moved radiologically contaminated construction and demolition debris to other parts of their property and buried it in two landfills. The Army Corps has stated that this material legally cannot be addressed by the FUSRAP as they interpret their limitations on their program. This is a more difficult legal issue and I'm not sure that there is a quick resolution for this one. We will continue to work on this issue with appropriate parties.”

Response 2: Engineering Regulation (ER) 200-1-4, *Formerly Utilized Sites Remedial Action Program (FUSRAP) - Site Designation, Remediation Scope, and Recovering Costs*, defines the criteria for inclusion of properties in FUSRAP. Under ER 200-1-4, there must be some evidence of Federal Government liability, as defined under CERCLA, for contamination on the property, for it to be considered eligible for FUSRAP.

Liability under CERCLA is defined in Title 42, Chapter 103, Subchapter I, Section 9607 of the U.S. Code. In summary, a party is liable under CERCLA if they ever

owned or operated a facility, or disposed of or arranged for disposal of material at a facility. USACE has found no evidence that the Federal Government meets any of the criteria for CERCLA liability for the adjacent properties in question. Chemtura's predecessor, U.S. Rubber, purchased those properties from a private entity, and used them for their own disposal purposes. Therefore, the adjacent properties are not eligible for inclusion in FUSRAP.

3.1.2 Steve Helmer, ODH (Meeting Transcript Pg 47)

Comment 1: "Good evening. My name is Steve Helmer. I work with the Ohio Department of Health Bureau of Radiation Protection.

We had dinner tonight at the Harbor Town Point Bar and Grill and it was pretty good. A local gentleman recommended it to us. So I just want to say thank you. I feel very comfortable here in your town.

We have similar concerns and issues that the Ohio EPA have, but I can honestly say that all stakeholders have been working very well with each other to try and get to a common goal for the cleanup here, but really it's about four things that are at issue the Department of Health has concerns with, but there may be a path forward that can work, but we're going to have to hold back on our ultimate judgement until we see when the numbers come back.

But as Ohio EPA has stated, we're concerned with their Proposed Plan for finishing the cleanup because they only clean up the site for future industrial use with using restricted cleanup criteria for -- using a construction worker scenario.

In the State of Ohio we're only allowed to cleanup resident farms, which means if you live on the land, use the land property, you grow food, you eat on the property, you live there. It's an unrestricted release criteria. It's a very high standard. But a lot of Federal agencies across the country can use restricted release, but typically there is institutional controls that go with that. And that's another issue that we're having with this site, that they're going to go with restricted release for a construction worker but they leave out institutional controls which we believe should be there. So those are two concerns that the criteria doesn't really match Ohio's, but it's close; that they don't have institutional controls and we're not sure how they would make that work in the long-term."

Response 1: The Ohio regulation for decommissioning of licensed sites, OAC 3701:1-38-22, states, "Decommissioning with license termination shall be limited to sites considered acceptable for unrestricted release where the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent to an average member of the critical group that does not exceed twenty-five millirem per year (25 mrem/yr), including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA)." The Ohio regulation defines the "critical group" as "the group of individuals reasonably

expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances." The Ohio decommissioning regulation is equivalent to the NRC decommissioning regulation, 10 CFR 20, Subpart E, which has been identified as an ARAR for the site. Neither the Ohio or the NRC regulation define the critical group beyond what has been stated above.

USACE has identified the reasonable future use of the site as industrial, and, based upon recent discussions and input from Ohio EPA, a construction worker as the critical group. This determination is based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay
5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the Corps of Engineers believes that a construction worker is reasonable for the critical group

The cleanup proposed by USACE will result in a residual dose below 25 mrem/yr to the identified critical group, and therefore, according to the ARAR the site is considered acceptable for unrestricted release. Because the cleanup will meet the unrestricted release criteria of the ARAR, institutional or land use controls are not required for the Painesville Site.

In addition, these cleanup levels are also protective of a recreational future site use, such as a park. The construction worker cleanup levels are more stringent than those based on a recreational user, because the construction worker is on site longer, and has more potential for contact with contaminated soil, than a recreational user does.

Comment 2: "The third issue is this area outside the boundary that both Ohio EPA and ODH have concerns with that that's still there, and according to the Army Corps, it's beyond their immediate concern and that their recommendation for Crompton Corporation is go through the Department of Justice and I think we've asked that they get ahold of the DOE to see if there was a program out there for DOE to bridge the gap say from the FUSRAP initiative here and what's beyond the extension, the line that they showed there."

The concerns identified may be resolved if the Army Corps reaches unrestricted release criteria which is acceptable for any future use, not any restricted construction worker use, but any use, and that's what Ohio would prefer. It's on our laws in order to meet that. So in their proposal they're indicating that go they can get to those numbers because just by the mere cleaning up of soils you end up getting to those numbers, and so that remains to be seen.

So at this point in time both the Ohio EPA and the Department of Health are reserving our judgement on this matter. If Ohio's unrestricted release criteria is not met at the completion of the Army Corps' cleanup activities, then we may have to pursue licensing the company for long-term possession of radioactive materials until it does get cleaned up to an unrestricted release criteria.

The proposed path forward is to allow the cleanup to proceed. The Department of Health and I believe Ohio EPA are holding off final approval until the certification results are received.

So I think even though we don't agree on the initiatives going into this, if they can meet the unrestricted release at the end of the day, then I think, you know, all stakeholders will be satisfied with the cleanup. But I think it's important for the local people here to know that there are some reservations that the State of Ohio has with this cleanup initiative and we'll see how it progresses from here.”

Response 2: Engineering Regulation (ER) 200-1-4, *Formerly Utilized Sites Remedial Action Program (FUSRAP) - Site Designation, Remediation Scope, and Recovering Costs*, defines the criteria for inclusion of properties in FUSRAP. Under ER 200-1-4, there must be some evidence of Federal Government liability, as defined under CERCLA, for contamination on the property, for it to be considered eligible for FUSRAP.

Liability under CERCLA is defined in Title 42, Chapter 103, Subchapter I, Section 9607 of the U.S. Code. In summary, a party is liable under CERCLA if they ever owned or operated a facility, or disposed of or arranged for disposal of material at a facility. USACE has found no evidence that the Federal Government meets any of the criteria for CERCLA liability for the adjacent properties in question. Chemtura's predecessor, U.S. Rubber, purchased those properties from a private entity, and used them for their own disposal purposes. Therefore, the adjacent properties are not eligible for inclusion in FUSRAP.

3.1.3 [REDACTED], Chemtura Corporation (Meeting Transcript Pg 51)

Comment 1: “Hello, my name is [REDACTED] and I represent Chemtura Corporation, formerly Crompton Corporation, the parent company of the owner of the subject FUSRAP site, the former Diamond Magnesium plant in Painesville, Ohio.

We are currently remediating chemical contamination at the site as a result of its use as a rubber poly(vinyl fluoride) plant under the oversight of the Ohio Environmental Protection Agency. We have also been awaiting the remediation of the Federal Government's radiological contamination since it was first discovered by accident in the late 1980s.

We are encouraged and pleased that the U.S. Army Corps of Engineers heretofore, the Corps, has committed to a time frame that will remediate a portion of U.S. Government radiological contamination in 2006, but believe that the Corps' plan and commitment stops short of the ultimate goal, which is returning the site to full productive use for the community.

The Federal Government specifically brought radiologically contaminated scrap iron material to the magnesium production facility in the 1950s. The material was used to scrub hydrochloric acid produced during site operations. While useful for site operations, it also was an inexpensive source of the scrap iron. It was from a known contaminated stockpile stored by the Government from the country's Manhattan engineering district during the war effort, and an inexpensive way to dispose of the scrap in post war years. The radiation came to contaminant various areas of the plant and surrounding properties.

The property was then sold to the U.S. Rubber company, but no information was ever presented suggesting that there was still residual Government radiation left at the site. In the years since, this radiation appears to have been unknowingly spread around through the normal course of owning and operating an industrial site.

The Corps current remediation plan specifically avoids several of these areas because the Corps too narrowly interprets its responsibility and authority to clean up the Government's radiation legacy. We are confident that had the Government properly controlled the radiation it knew about when it brought the scrap to the site, the spread of the material would not have occurred and we would not be here today. The Government should accept clear responsibility for all radiation that is required to be cleaned up at or in the vicinity of the site.”

Response 1: Engineering Regulation (ER) 200-1-4, *Formerly Utilized Sites Remedial Action Program (FUSRAP) - Site Designation, Remediation Scope, and Recovering Costs*, defines the criteria for inclusion of properties in FUSRAP. Under ER 200-1-4, there must be some evidence of Federal Government liability, as defined under CERCLA, for contamination on the property, for it to be considered eligible for FUSRAP.

Liability under CERCLA is defined in Title 42, Chapter 103, Subchapter I, Section 9607 of the U.S. Code. In summary, a party is liable under CERCLA if they ever owned or operated a facility, or disposed of or arranged for disposal of material at a facility. USACE has found no evidence that the Federal Government meets any

of the criteria for CERCLA liability for the adjacent properties in question. Chemtura's predecessor, U.S. Rubber, purchased those properties from a private entity, and used them for their own disposal purposes. Therefore, the adjacent properties are not eligible for inclusion in FUSRAP.

Comment 2: "Additionally, the Ohio Department of Health which regulates radiation remediation in Ohio has strict standards governing the residual levels of radiation left at such sites undergoing cleanup, essentially requiring the radiation left to be protected for any site use long into the future.

The Corps disagrees with the strict level that Ohio has established for the site and asserts that a less vigorous cleanup is satisfactory. Chemtura believes that the residual radiation that is likely to be left at site by the Corps will not pose any actual risk to human health or the environment, but also recognizes that individual jurisdictions such as Ohio may employ standards they believe will guarantee the protection of its citizens into the future. This is particularly important as the site is adjacent to the ambitious Hemisphere Development project where a mixture of property uses are expected from residential to commercial and recreational.

The Corps should explicitly recognize the more strict Ohio standards for site remediation and should explicitly meet these local standards. This will ensure a win-win with the Government properly closing out a legacy of radiation and the return of an asset to the community.

Thank you for your consideration in this very important matter."

Response 2: The Ohio regulation for decommissioning of licensed sites, OAC 3701:1-38-22, states, "Decommissioning with license termination shall be limited to sites considered acceptable for unrestricted release where the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent to an average member of the critical group that does not exceed twenty-five millirem per year (25 mrem/yr), including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA)." The Ohio regulation defines the "critical group" as "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances." The Ohio decommissioning regulation is equivalent to the NRC decommissioning regulation, 10 CFR 20, Subpart E, which has been identified as an ARAR for the site. Neither the Ohio or the NRC regulation define the critical group beyond what has been stated above.

USACE has identified the reasonable future use of the site as industrial, and, based upon recent discussions and input from Ohio EPA, a construction worker as the critical group. This determination is based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay
5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the Corps of Engineers believes that a construction worker is reasonable for the critical group

The cleanup proposed by USACE will result in a residual dose below 25 mrem/yr to the identified critical group, and therefore, according to the ARAR the site is considered acceptable for unrestricted release.

3.1.4 [REDACTED], Twin Rivers Technologies (Meeting Transcript Pg 56)

Comment 1: "Thank you. My name is [REDACTED] and I'm the director of environmental safety for Twin River Technologies.

As Steve said, we own and operate the site adjacent to the FUSRAP site and we want to make written comments to ACOE for this project. However, while we support the preferred alternative for remediation, we feel that the area along our property line has not fully been investigated and has not been properly delineated and we feel that that has to be continued before the completion of the remediation project has been accepted."

Response 1: The Corps of Engineers intends to conduct additional sampling at the site in September and October 2005, to further refine the boundaries of contaminated soil, both horizontally and vertically.

Comment 2: "Also, should there be additional contamination found along the area, we feel that that should be remediation to a level that is at least protective of construction workers, but we feel that it would be more appropriate to go to background levels in the existing soils."

Response 2: The Ohio regulation for decommissioning of licensed sites, OAC 3701:1-38-22, states, "Decommissioning with license termination shall be limited to sites considered acceptable for unrestricted release where the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent to an average member of the critical group that does

not exceed twenty-five millirem per year (25 mrem/yr), including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA)." The Ohio regulation defines the "critical group" as "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances." The Ohio decommissioning regulation is equivalent to the NRC decommissioning regulation, 10 CFR 20, Subpart E, which has been identified as an ARAR for the site. Neither the Ohio or the NRC regulation define the critical group beyond what has been stated above.

USACE has identified the reasonable future use of the site as industrial, and, based upon recent discussions and input from Ohio EPA, a construction worker as the critical group. This determination is based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay
5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the Corps of Engineers believes that a construction worker is reasonable for the critical group

The cleanup proposed by USACE will result in a residual dose below 25 mrem/yr to the identified critical group, and therefore, according to the ARAR the site is considered acceptable for unrestricted release.

3.1.5 [REDACTED], Resident (Meeting Transcript Pg 58)

Comment: "My name is [REDACTED]. I'm a former park commissioner here of Lake Metroparks. I'm a Fairport councilman at this time and a resident of Fairport, Ohio. Also I grew up within six stone throws of that property and remember that property very well before it was turned into the magnesium plant when there would be fine little black Persian colts running around every spring and the people who owned that were the people that would go around doing all the thrashing for the farmers in that neighborhood. Also I remember when it was the finest fishing hole in the area.

I think our government owes Lake County and the residents around that area to clean this up to the best of their ability and get it back into shape so it's an economic value and it brings quality of life.

In my vision I travel every day up and down that road from my home to where I work in Perry, Ohio where we have a nursery, and I have visions all the time and dreams that you would get that back as good or better, because we had the best fishing hole on Grand River in the State of Ohio and we certainly need an economic boost here in Lake County.

Now, it's not very big, that little spot, but it could be a little pinch adding to the economic value. In my dream this could be a park that would fit in with Lake Metroparks like no other park. And one of my dreams is I've talked to [REDACTED] maybe some people cannot see it, but it would have the finest collection of nut trees, various nuts from all over the world, not people, trees in there, and also it would be a park, not just for the fishermen to come there, but they could bring their families and enjoy it as a family together. Right now anybody who wants to go to this fishing hole has to trespass on that property and it's about a mile long down there.

So I would hope that this initiative is taken and to expedite this cleanup as soon as possible because it's been many years since the war has been over and use for material for that war products.”

Response: The Corps of Engineers is proposing cleanup of the Painesville Site based on cleanup levels developed to be protective of a construction worker site use, based on an evaluation of the reasonable future use of the site. However, these cleanup levels are also protective of a recreational future site use, such as a park. The construction worker cleanup levels are more stringent than those based on a recreational user, because the construction worker is on site longer, and has more potential for contact with contaminated soil, than a recreational user does.

3.1.6 [REDACTED], Resident (Meeting Transcript Pg 60)

Comment: “My name is [REDACTED] and I sort of echo his stuff because I think all waterfront property should be public, not owned by any individual, unless it's a corporation like any -- like Diamond, but not individuals as such, only public.

Now the lakefront in Chicago, that's all public. You can't build houses or anything on it. And when Diamond had this property, people couldn't go there except when we were kids we swam there without clothes and everything, but then the insurance companies got into everything and they shut out the waterfront from the public. And we always fished along the Grand River when the docks were there they let us fish, but I think it was the insurance company that made it kind of tough for companies so they wouldn't let people fish or swim or anything, but I think it should be public.”

Response: The Painesville Site is not adjacent to any bodies of water, and has no significant water features on the site. In addition, the Painesville Site is not owned by the Federal Government, but rather by a private entity, Chemtura Corporation. The Corps of Engineers has no control over the disposition of the Painesville Site property.

3.1.7 [REDACTED], Resident (Meeting Transcript Pg 61, 63)

Comment 1: “My name is [REDACTED] and I'm a citizen of the area. Could there be some consideration given to exchanging this property for, say, another site like the County Fairgrounds in exchange for this property where development would be more readily conducive to many types of development, or possibly the Fairgrounds, a racetrack, you know, like where they have a casino or something along with this park where usually where people aren't actually living there for any extended period of time. But seems to me the Fairgrounds would be a fair exchange of value there.”

Response 1: The Painesville Site is not owned by the Federal Government, but rather by a private entity, Chemtura Corporation. The Corps of Engineers has no control over the disposition of the Painesville Site property.

Comment 2: “It's me again, [REDACTED]. I have another question about the life of this cleanup, in other words, the radioactivity. When you eliminate this thing is there any return or is it going to remain at that level that you clean it up to, you know what I'm saying.”

Response 2: Radionuclides undergo a natural decay process over time, and the cleanup goals have been developed to be protective of and take into account the radioactive decay over a 1,000 year period, in accordance with the ARARs.

Comment 3: “And is there any leaching of this containment that you're going to be putting over there to the soil to the adjoining areas or anything like that in that regard.”

Response 3: The Corps of Engineers is not proposing containment for any of the FUSRAP materials on the site. The preferred alternative in the Proposed Plan is excavation and offsite disposal (Alternative 3). All soils above the proposed cleanup levels will be removed from the site and disposed of at an appropriately licensed and permitted disposal facility.

3.1.8 [REDACTED], Resident (Meeting Transcript Pg 62)

Comment: “My name is [REDACTED], Painesville resident. And when they closed the chromate they said they were going to cap it with soil and in the paper it says you're going to cap this with soil, but I notice that there was a great line of trucks,

like a freight train going to CEI carrying fly ash to the chromate and it has mercury and other contaminants. Is that the same soil you're talking about to cap this area?"

Response: The preferred alternative in the Proposed Plan is excavation and offsite disposal of the contaminated soil (Alternative 3). A capping alternative was evaluated (Alternative 2), however, it was not selected as the preferred alternative, as excavation and offsite disposal is more protective of human health and the environment, and more effective in the long term.

3.1.9 [REDACTED], Resident (Meeting Transcript Pg 62)

Comment 1: "My name is [REDACTED]. I'm a resident of Fairport and in speaking to this property I'm not sure that all the comments are really that appropriate in that I'm not sure there's any significant body of water connected with this property directly. It doesn't go to the lake. It doesn't go to the river. But, nevertheless, it's in a significant location. And I do, like the previous organizations and state groups, feel that there ought to be a plan or alternative or a 3-B that talks about cleaning this up to any use levels. It seems only appropriate."

Response 1: The Ohio regulation for decommissioning of licensed sites, OAC 3701:1-38-22, states, "Decommissioning with license termination shall be limited to sites considered acceptable for unrestricted release where the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent to an average member of the critical group that does not exceed twenty-five millirem per year (25 mrem/yr), including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA)." The Ohio regulation defines the "critical group" as "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances." The Ohio decommissioning regulation is equivalent to the NRC decommissioning regulation, 10 CFR 20, Subpart E, which has been identified as an ARAR for the site. Neither the Ohio or the NRC regulation define the critical group beyond what has been stated above.

USACE has identified the reasonable future use of the site as industrial, and, based upon recent discussions and input from Ohio EPA, a construction worker as the critical group. This determination is based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay

5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the Corps of Engineers believes that a construction worker is reasonable for the critical group.

The cleanup proposed by USACE will result in a residual dose below 25 mrem/yr to the identified critical group, and therefore, according to the ARAR the site is considered acceptable for unrestricted release.

Comment 2: “And certainly seems appropriate to look into including those properties that are just off the previously designated site.”

Response 2: Engineering Regulation (ER) 200-1-4, *Formerly Utilized Sites Remedial Action Program (FUSRAP) - Site Designation, Remediation Scope, and Recovering Costs*, defines the criteria for inclusion of properties in FUSRAP. Under ER 200-1-4, there must be some evidence of Federal Government liability, as defined under CERCLA, for contamination on the property, for it to be considered eligible for FUSRAP.

Liability under CERCLA is defined in Title 42, Chapter 103, Subchapter I, Section 9607 of the U.S. Code. In summary, a party is liable under CERCLA if they ever owned or operated a facility, or disposed of or arranged for disposal of material at a facility. USACE has found no evidence that the Federal Government meets any of the criteria for CERCLA liability for the adjacent properties in question. Chemtura’s predecessor, U.S. Rubber, purchased those properties from a private entity, and used them for their own disposal purposes. Therefore, the adjacent properties are not eligible for inclusion in FUSRAP.

3.1.10 John Konrad, Resident (Meeting Transcript Pg 63)

Comment: “And then I'm reading from your brochure, this is the one with your Army Corps' symbol at the top. It reads, the Corps conducts its FUSRAP work in compliance with all appropriate Federal laws and regulations as well as state and local requirements.

Now, that doesn't sound like that's what's happening either, because we're hearing from Ohio EPA that what they're looking for, their requirements would be sufficient excavation that any use could be applicable to the property rather than just industrial use. So can you explain that inconsistency?”

Response: The State of Ohio regulation that governs the cleanup and decommissioning of licensed sites with radioactive contamination, OAC 3701:1-

38-22, states that for unrestricted release the cleanup must be protective of a member of the "critical group." The regulation does not state that the "critical group" is a resident farmer, as contended by the Ohio Department of Health, but merely as "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity." The Corps of Engineers does not believe that farming is a reasonable future use of the site, and, based on an evaluation of the site and surrounding property, has identified an industrial use as the reasonable future site use, and a construction worker as the critical group that is most likely to receive the greatest dose at the site. Therefore, the Corps of Engineers has developed the cleanup levels to be protective of a construction worker working at the site.

3.1.11 [REDACTED], Resident (Meeting Transcript Pg 70)

Comment: "I'm [REDACTED] and I'm a citizen. And you have Twin Rivers on one side, Chemtura on the other side. And Chemtura, we don't know exactly what their plans are. I don't know, which way are they going to go, are they going to go to the residential side or go on the industrial side. I'm not sure. And if you clean it up to the best of your ability, then they can go either way and you're okay."

Response: The law governing FUSRAP cleanups, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that the reasonable future use of a site be considered in developing remediation alternatives to address site contamination. USACE has identified the reasonable future use of the site as industrial, and, based upon recent discussions and input from Ohio EPA, a construction worker as the critical group. This determination is based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay
5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the Corps of Engineers believes that a construction worker is reasonable for the critical group.

3.2 Responses to Written Comments

The following are responses to comments received outside of the public meeting comments recorded in the transcript and addressed above. The comments are

summarized in the sections that follow, and the full comments are given in the indicated attachments.

3.2.1 [REDACTED], Resident

[REDACTED] submitted comments in an e-mail to USACE dated July 19, 2005. A copy of that e-mail is included as Attachment 2.

Summary of Comments: I live close to the site and am appalled that someone thinks this land is usable for homes, a winery, etc. I know that area used to glow in the dark from processes. Please do not be casual in your clean up. I don't want to see another Love Canal so close to home. Thank you.

Response: The Corps of Engineers is not proposing a specific future use of the Painesville Site, as the site is not owned by the Federal Government but rather by a private entity, and the Corps of Engineers has no control over the disposition of the property. The Corps of Engineers is proposing a cleanup of the site to levels that are based on an evaluation of the reasonable future use of the site, which the Corps of Engineers has identified as an industrial use, and has developed the cleanup to be protective of a construction worker that may build facilities on an industrial site.

3.2.2 [REDACTED], Resident

[REDACTED] submitted comments in a letter to USACE dated July 26, 2005. A copy of the letter is included as Attachment 3.

Summary of Comments: I support the selection of Alternative 3 (Excavation and Offsite Disposal) over Alternative 2 (Capping in Place).

Response: The Corps of Engineers agrees and has selected Alternative 3 as the preferred alternative to address site contamination, as it is more protective of human health and more effective in the long term than Alternative 2.

3.2.3 [REDACTED] Resident

[REDACTED] submitted comments on a Feedback Card at the public meeting. A copy of the Feedback Card is included as Attachment 4.

Comment 1: Where is contaminated soil going?

Response 1: The final disposal location will be selected as the remediation work plans are developed, however, it will be an appropriately permitted and/or licensed facility outside of the State of Ohio, as there are no such facilities within the state.

Comment 2: What is the Linde Site being used for now?

Response 2: The Linde Site, cited as an example in the public presentation of the levels of cleanup being attained by the Corps of Engineers during previous cleanups, is currently an active industrial facility.

Comment 3: How long will it take for the cleanup?

Response 3: The Corps of Engineers will begin preparing the remediation work plans in October 2005, and they are scheduled to be complete in six months. Following completion of the work plans, the site cleanup field work is anticipated to take seven months to complete.

3.2.4 Anonymous

An anonymous person submitted comments on a Feedback Card at the public meeting. A copy of the Feedback Card is included as Attachment 5.

Summary of Comments: Are the proposed costs intended for the state and/or local government; because if Diamond Magnesium was aiding the U.S. Government then the U.S. Government should be paying.

Response: The cleanup of FUSRAP contamination detailed in the Proposed Plan will be paid for by the Federal Government, with funding procured for implementation of FUSRAP.

3.2.5 [REDACTED], Resident

[REDACTED] submitted comments on a Feedback Card mailed to USACE on August 4, 2005. A copy of the Feedback Card is included as Attachment 6.

Summary of Comments: Cleanup should allow any use of the site rather than limiting it to industrial use.

Response: The law governing FUSRAP cleanups, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that the reasonable future use of a site be considered in developing remediation alternatives to address site contamination. The Corps of Engineers has identified an industrial use as the reasonable future use of the site, and the critical group as the construction worker, based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay

5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the Corps of Engineers believes that a construction worker is reasonable for the critical group.

3.2.6 [REDACTED], Twin Rivers Technologies

[REDACTED] submitted comments in a letter to USACE dated August 4, 2005. A copy of the letter is included as Attachment 7.

Comment 1: The full extent of contamination has not been identified.

Response 1: The Corps of Engineers intends to conduct additional sampling at the site in September and October 2005, to further refine the boundaries of contaminated soil, both horizontally and vertically.

Comment 2: The proposed cleanup should be to background levels of contamination.

Response 2: Cleanup to background levels is not necessary, as USACE has identified an ARAR that is relevant and appropriate to the cleanup at the Painesville Site, and ARARs are presumed to be protective of human health and the environment. The identified ARAR states that the cleanup must ensure that the residual dose, **in excess of background radiation levels**, to the critical group must not exceed 25 mrem/yr. The Corps of Engineers has identified an industrial use as the reasonable future use of the site, and the critical group as the construction worker, based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay
5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the

Corps of Engineers believes that a construction worker is reasonable for the critical group.

The cleanup proposed by USACE will result in a residual dose below 25 mrem/yr to the identified critical group, and therefore, according to the ARAR the site is considered acceptable for unrestricted release.

Comment 3: The Corps of Engineers should work with Twin Rivers Technologies to minimize the impact on Twin Rivers Technologies' operations, including the methane gas line, adjacent rail spur, and health and safety of the workers.

Response 3: The Corps of Engineers has made the anticipated remediation contractor aware of the potential impact to the methane line and rail spur, and the remediation work plans will address these issues. Dust control will be implemented during remediation activities to ensure there are no airborne releases of FUSRAP material from the site. Perimeter air monitoring around the excavation areas and the site itself will be conducted to monitor for any airborne releases.

3.2.7 [REDACTED], Lake County Health District

[REDACTED] submitted comments in a letter to USACE dated August 15, 2005. A copy of the letter is included as Attachment 8.

Comment 1: How will the potential redevelopment of nearby former industrial properties for residential or recreational use affect the Proposed Plan?

Response 1: The potential redevelopment of nearby former industrial properties will not affect the Proposed Plan for the Painesville Site. The Corps of Engineers has identified an industrial use as the reasonable future use of the site, and the critical group as the construction worker, based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay
5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the

Corps of Engineers believes that a construction worker is reasonable for the critical group.

Comment 2: What risks did the site pose to former Uniroyal employees and what are the risks to employees on the adjacent Twin Rivers Technologies property?

Response 2: As part of the Remedial Investigation Report, a Baseline Risk Assessment was completed, which evaluated the potential health risks to users of the site from the FUSRAP contamination. The Baseline Risk Assessment concluded that risks for an industrial worker receptor on the Painesville Site were above acceptable U.S. Environmental Protection Agency guidelines, and therefore some action was required to address the contamination. Risks to users of the adjacent Twin Rivers Technologies property were not evaluated, but they would be less than risks to users of the Painesville Site itself, as there is less potential for exposure.

Comment 3: Given the history of the previous removal action that was halted because more contamination was found than expected, what assurances does the public have that the current planned remediation will address the entire extent of contamination in this attempt?

Response 3: Following the previous removal action, a Remedial Investigation, which included additional site sampling, was conducted to determine the extent of contamination at the site. Additional sampling will be conducted in the fall of 2005 to further refine the contaminated soil volume estimates. The FUSRAP remedial action will address all FUSRAP contamination on the site above the cleanup goals that are proposed in the Proposed Plan and will be documented in the Record of Decision. The cleanup will not be complete and the site cannot be closed out and removed from FUSRAP until the cleanup levels documented in the Record of Decision are met.

Comment 4: Has the storm water sewer discharge to the Grand River been surveyed for radiological contamination?

Response 4: During sampling conducted in 1996 by the Department of Energy, and documented in the 1998 Site Characterization Report, sampling was conducted in the storm water sewer lines, at the outfalls, and in the Grand River. No elevated levels of radioactivity were found that required further action.

Comment 5: Does the total excess cancer risk represent the additive risk from each radionuclide present at each area?

Response 5: Yes, the total excess cancer risk represents the additive risk from all of the FUSRAP-related radionuclides present in each area.

Comment 6: Has USACE contacted the Ohio EPA concerning the potential hazardous wastes that may be commingled with radiological waste?

Response 6: The Corps of Engineers is coordinating the FUSRAP cleanup effort with Ohio EPA, as well as with the site property owner, Chemtura. The Corps of Engineers is aware of the potential for other chemical constituents to be commingled with the FUSRAP contamination, and will collect samples prior to and during remediation to determine the extent of commingling, for waste disposal purposes. The Corps of Engineers intends to excavate and dispose of all soil with FUSRAP contamination above the proposed cleanup levels, even if other constituents are commingled with the FUSRAP material.

Comment 7: What type of environmental and engineering controls will be implemented to minimize risk to the public, the site workers, the Twin Rivers employees and the environment during remediation, including dust and storm water control?

Response 7: Dust control will be implemented during remediation activities to ensure there are no airborne releases of FUSRAP material from the site. Perimeter air monitoring around the excavation areas and the site itself will be conducted to monitor for any airborne releases.

3.2.8 [REDACTED] Ohio Environmental Protection Agency

[REDACTED] submitted comments in a letter to USACE dated August 22, 2005. A copy of the letter is included as Attachment 9.

Comment 1: What steps did the Federal Government take to control and contain the radiological contamination at the site following the 1988 investigation by the Oak Ridge National Laboratory? Does the Federal Government have some responsibility for the assessment and cleanup of all radiological contamination at the site and surrounding properties regardless of how it came to be placed there?

Response 1: Since the site was designated into FUSRAP in 1992, the Federal Government has provided information on the FUSRAP contamination to the property owner, as the FUSRAP site investigations have been conducted in preparation for site remediation. At the request of the property owner, the Federal Government has also physically demarcated the boundaries of the areas of concern on the site. The Federal Government does not own the Painesville Site, and under FUSRAP has no regulatory authority over the property owner or their actions on the site. All FUSRAP actions taken at the site must have the

permission of the property owner. The Federal Government has provided information on the FUSRAP contamination to the property owner in the hope that the property owner will temper their actions to minimize the impact on the known areas of concern.

Engineering Regulation (ER) 200-1-4, *Formerly Utilized Sites Remedial Action Program (FUSRAP) - Site Designation, Remediation Scope, and Recovering Costs*, defines the criteria for inclusion of properties in FUSRAP. Under ER 200-1-4, there must be some evidence of Federal Government liability, as defined under CERCLA, for contamination on the property, for it to be considered eligible for FUSRAP. Liability under CERCLA is defined in Title 42, Chapter 103, Subchapter I, Section 9607 of the U.S. Code. In summary, a party is liable under CERCLA if they ever owned or operated a facility, or disposed of or arranged for disposal of material at a facility. The proposed cleanup addresses all areas that are eligible to be addressed under FUSRAP.

Comment 2: Describe the differences in ORNL's meaning of "unrestricted release" versus USACE meaning of "unrestricted release."

Response 2: The Corps of Engineers is the lead federal agency in implementing FUSRAP, and it is not relevant how the Oak Ridge National Laboratory defined "unrestricted release" in the past. The Applicable or Relevant and Appropriate Requirements (ARARs) identified for the site, that govern the development of the cleanup goals, both state that a site is acceptable for unrestricted release if the residual radioactivity after cleanup results in a dose to the critical group not to exceed 25 mrem/yr. The ARARs define the critical group as the "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances." Based on an evaluation of the reasonable future use of the site, the Corps of Engineers has identified a construction worker receptor as the critical group, and the proposed cleanup goals will result in dose that does not exceed 25 mrem/yr to the construction worker. Therefore the proposed cleanup meets the criteria for unrestricted release in the ARARs.

Comment 3: Does USACE's definition of "unrestricted release" for this project mean that the FUSRAP area upon completion of the cleanup will be safe for industrial use but not safe enough for all other possible uses?

Response 3: The Corps of Engineers is following the definition of unrestricted release contained in the identified Applicable or Relevant and Appropriate Requirements (ARARs). The ARARs identified for the site both state that a site is acceptable for unrestricted release if the residual radioactivity after cleanup results in a dose to the critical group not to exceed 25 mrem/yr. The ARARs define the critical group as the "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of

circumstances.” The Corps of Engineers has identified a construction worker as the critical group and developed cleanup goals so that the residual dose will not exceed 25 mrem/yr to that critical group. Thus the proposed cleanup meets the definition of unrestricted release for the identified critical group.

Comment 4: Why does the preferred alternative, based on an industrial future use scenario, in the current Proposed Plan not include land use controls, when a similar alternative in an earlier draft Proposed Plan did include land use controls?

Response 4: The early draft Proposed Plan was based on an incorrect interpretation of the Applicable or Relevant and Appropriate Requirements (ARARs) identified for the site. The ARARs identified for the site both state that a site is acceptable for unrestricted release if the residual radioactivity after cleanup results in a dose to the critical group not to exceed 25 mrem/yr. The ARARs define the critical group as the “the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.” Based on an evaluation of the reasonable future use of the site, the Corps of Engineers has identified a construction worker receptor as the critical group, and the proposed cleanup goals will result in dose that does not exceed 25 mrem/yr to the construction worker. Therefore the proposed cleanup meets the criteria for unrestricted release in the ARARs, and land use controls are not required.

Comment 5: Describe the administrative or other controls that USACE will use to ensure the anticipated future use is adhered to.

Response 5: The Applicable or Relevant and Appropriate Requirements (ARARs) identified for the site both state that a site is acceptable for unrestricted release if the residual radioactivity after cleanup results in a dose to the critical group not to exceed 25 mrem/yr. The ARARs define the critical group as the “the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.” Based on an evaluation of the reasonable future use of the site, the Corps of Engineers has identified a construction worker receptor as the critical group, and the proposed cleanup goals will result in dose that does not exceed 25 mrem/yr to the construction worker. Therefore the proposed cleanup meets the criteria for unrestricted release in the ARARs, and land use controls are not required.

Comment 6: The Proposed Plan should include a figure showing the contaminated soil footprints for soils exceeded both the construction worker cleanup levels and subsistence farmer cleanup levels.

Response 6: The Proposed Plan is intended to convey information related to the selection of the Preferred Alternative from those that comply with the identified reasonable future use scenario. Inclusion of material related to cleanup levels for other scenarios is not relevant.

Comment 7: The Proposed Plan should include a figure showing all areas with radioactivity above background.

Response 7: The Proposed Plan presents the required information to support selection of the Preferred Alternative from the remedial alternatives developed, based on the identified cleanup goals and reasonable future use scenario.

Comment 8: Is there a depth limit for the excavation of contaminated soil, and what is it based on?

Response 8: There is no pre-set depth limit for the proposed excavation of contaminated soil. All soil, surface and subsurface, that exceed the cleanup levels specified in the Record of Decision will be excavated and sent offsite for disposal.

Comment 9: Section 8.1 of the Proposed Plan should be revised to insert the phrase “of the proposed alternatives” after the phrase “Alternative 3 provides the best protection...”

Response 9: Section 8.0 of the Proposed Plan, Evaluation of Remedial Alternatives, states that the evaluation is a comparison of the relative performance of the alternatives. No change of the Proposed Plan is necessary.

3.2.9 [REDACTED], Chemtura

[REDACTED] submitted comments in a letter to USACE dated August 22, 2005. A copy of the letter is included as Attachment 10.

Comment 1: Chemtura would like the Corps of Engineers to address the potential for natural migration via storm-water flow of contaminants from the Painesville Site to Chemtura property south of the site and the Grand River.

Response 1: Surface water runoff on the site is collected by a system of storm sewers, and discharged to the Grand River. During sampling conducted in 1996 by the Department of Energy, and documented in the 1998 Site Characterization Report, sampling was conducted in the storm water sewer lines, at the outfalls, and in the Grand River. No elevated levels of radioactivity were found that required further action. Also, previous gamma walkover surveys of the site did not find elevated radioactivity in surface soils extending outward from the known

areas of concern, which would be present if surface water flow was carrying contamination south of the site.

Comment 2: The Corps of Engineers should add an additional remedial alternative that would allow for unlimited future use of the site.

Response 2: The law governing FUSRAP cleanups, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that the reasonable future use of a site be considered in developing remediation alternatives to address site contamination. The Corps of Engineers has identified an industrial use as the reasonable future use of the site, and the critical group as the construction worker, based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay
5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the Corps of Engineers believes that a construction worker is reasonable for the critical group.

If additional evidence that supports a reasonable future use of the site other than industrial becomes available, then USACE will reevaluate the proposed cleanup to determine if it is protective of that future use.

Comment 3: Chemtura requests that the Corps of Engineers and Department of Energy discuss a potential mechanism for addressing possible radioactive material on adjacent properties not part of the Painesville Site.

Response 3: Engineering Regulation (ER) 200-1-4, *Formerly Utilized Sites Remedial Action Program (FUSRAP) - Site Designation, Remediation Scope, and Recovering Costs*, defines the criteria for inclusion of properties in FUSRAP. Under ER 200-1-4, there must be some evidence of Federal Government liability, as defined under CERCLA, for contamination on the property, for it to be considered eligible for FUSRAP.

Liability under CERCLA is defined in Title 42, Chapter 103, Subchapter I, Section 9607 of the U.S. Code. In summary, a party is liable under CERCLA if they ever

owned or operated a facility, or disposed of or arranged for disposal of material at a facility. USACE has found no evidence that the Federal Government meets any of the criteria for CERCLA liability for the adjacent properties in question. Chemtura's predecessor, U.S. Rubber, purchased those properties from a private entity, and used them for their own disposal purposes. Therefore, the adjacent properties are not eligible for inclusion in FUSRAP.

3.2.10 [REDACTED], Ohio Department of Health

[REDACTED] submitted comments in a letter to USACE dated August 21, 2005. A copy of the letter is included as Attachment 11.

Comment 1: How has redevelopment of nearby properties for residential use impacted the determination of the future use of the site?

Response 1: The potential redevelopment of nearby properties for residential use has not impacted the determination of the future use of the site. The Corps of Engineers has identified an industrial use as the reasonable future use of the site, and the critical group as the construction worker, based on the following factors:

1. The site is currently zoned as a commercial/industrial property
2. Adjacent Chemtura properties to the north, west and south contain former landfills that are being capped in place, restricting future development on those properties and making a residential use unlikely
3. Adjacent property to the east contains an industrial facility
4. Soils at the site are not conducive to agricultural purposes, being composed primarily of fill and clay
5. Site groundwater is insufficient in quantity and poor in quality to serve as a drinking water source
6. Currently there are no concrete plans to redevelop the property for residential use
7. Because all of the existing buildings on the site have been demolished, and some construction would be likely for a future industrial use, the Corps of Engineers believes that a construction worker is reasonable for the critical group.

Comment 2: What mechanism does the Corps have for implementing land use controls to restrict the site use to industrial?

Response 2: The Applicable or Relevant and Appropriate Requirements (ARARs) identified for the site both state that a site is acceptable for unrestricted release if the residual radioactivity after cleanup results in a dose to the critical group not to exceed 25 mrem/yr. The ARARs define the critical group as the "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances." Based on an

evaluation of the reasonable future use of the site, the Corps of Engineers has identified a construction worker receptor as the critical group, and the proposed cleanup goals will result in dose that does not exceed 25 mrem/yr to the construction worker. Therefore the proposed cleanup meets the criteria for unrestricted release in the ARARs, and land use controls are not required.

Comment 3: Are the cleanup goals for the site the stated DCGLs or the anticipated residuals?

Response 3: The cleanup goals for the site are the site wide area average Derived Concentration Guideline Levels (DCGL_w) stated in the Record of Decision. In addition, elevated area criteria (DCGL_{emc}) will be developed to ensure that no localized areas of elevated radioactivity remain that could potentially pose unacceptable risks.

Comment 4: In MARSSIM final status surveys, the status of the survey unit (pass or fail) is determined by the use of the weighted DCGL along with other parameters dependent upon the DCGL.

Response 4: Comment acknowledged. The Corps of Engineers will conduct a final status survey in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), as has been done on cleanups at other FUSRAP sites.

Comment 5: Will the levels of residual radioactivity after excavation be demonstrated within the framework of MARSSIM?

Response 5: Yes, a final status survey will be performed for the site to determine the residual levels of FUSRAP materials after cleanup, in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM).

Comment 6: What level of contamination would result in excavation of areas that have levels below the DCGLs but significantly above background levels?

Response 6: The Corps of Engineers does not anticipate that portions of the site outside of the known areas of concern will have levels of FUSRAP materials significantly above background. However, under the Record of Decision, areas with a sum of ratios less than one, based on the DCGL_w values, would not require excavation and cleanup.

ATTACHMENT 1: PUBLIC MEETING TRANSCRIPT

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IC MEETING

In the Matter of:
U.S. ARMY CORPS OF ENGINEERS
PROPOSED PLAN FOR THE PAINESVILLE
FUSRAP SITE

- - - - -

Meeting held by Lieutenant [REDACTED]

[REDACTED] at VFW Post 7754,
540 New Street, Fairport Harbor, Ohio, on
Tuesday, July 26, 2005, at 7:00 p.m.

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1 [REDACTED]
2 Good evening and welcome to the public
3 comment meeting on the Proposed Plan for
4 the remediation Painesville FUSRAP site.

5 [REDACTED]
6 [REDACTED] commander of the Buffalo
7 District, United States Army Corps of
8 Engineers. Before I get into this
9 briefing, before we get into this
10 briefing I would like to introduce you
11 to the members of the team that are
12 here from the Corps of Engineers.

13 First, [REDACTED], he's the
14 program manager for FUSRAP sites in the
15 Buffalo district area. [REDACTED]
16 [REDACTED] is our project manager for this
17 site, the Painesville site. [REDACTED]
18 -- [REDACTED] sorry -- S [REDACTED] There
19 I got it right on the third try. I
20 apologize. He's our project engineer for
21 this site. [REDACTED], he's our health
22 physicist. [REDACTED] is our risk
23 assessor for this site. And [REDACTED]
24 [REDACTED] is our chief counsel. She's also
25 the acting deputy district engineer for

1 Buffalo district right now. And miss
2 [REDACTED], she's assisting with
3 our outreach activities for Painesville.

4 First -- well, back up a second.
5 Let me just give you a little
6 explanation of what we can keep using --
7 the Army using acronyms, so I'm going to
8 use a couple acronyms, but I'm going to
9 explain what they are. For some of you,
10 you know what they are. Others, this
11 will be the first time.

12 FUSRAP stands for the Formerly
13 Utilized Site Remedial Action Program.
14 It was initiated in 1974 to investigate
15 cleanup sites contaminated by the
16 Nations Early Atomic Energy and Weapons
17 programs. The Corps of Engineers has
18 been managing the program since October
19 1997. And the Buffalo direct, the
20 district I command, has numerous sites
21 in Ohio and New York and Pennsylvania
22 that we're actively investigating and
23 cleaning up.

24 Before I go to the next slide,
25 two other folks I want to introduce to

1 you. [REDACTED]. He's from our
2 headquarters in Cincinnati in the Lakes
3 and Rivers Division. He handles the
4 FUSRAP program up there. And [REDACTED]
5 [REDACTED] I'm sorry. Say again. Got
6 it. He is our acting chief of military
7 programs at the division level. So we
8 thank them for being here.

9 Now, please. Two fold purpose for
10 the meeting today. First, we wanted to
11 present the Proposed Plan for
12 remediation at the Painesville site. The
13 Proposed Plan describes the preferred
14 alternative for cleaning up the FUSRAP
15 contamination on the Painesville site.
16 Second, and probably more important, is
17 we want to obtain public input into the
18 decision-making process. Your comments
19 will be recorded and we will respond to
20 each of them.

21 Next slide, please.

22 Here is the agenda. Obviously
23 I've got the welcome and introduction
24 and I'll turn over to [REDACTED] right
25 back here. He'll handle the bulk of the

1 briefing. And, of course, the comments.
2 I just mentioned they will come from you
3 and they will be recorded and we will
4 answer each of them formally.

5 Now, after that's done, after
6 there's no more formal comments, we can
7 close the meeting and our folks, our
8 staff, my staff will stay here to talk
9 informally with any one of you about
10 anything you want to talk about.

11 Next slide, please.

12 Again, I explained what FUSRAP
13 was. I'm going to tell you our three
14 main commissions obviously is to protect
15 -- the first one, protect human health
16 and the environment by investigating and
17 cleaning up radioactive contamination on
18 the FUSRAP sites. The second is we'll
19 execute the Painesville project in the
20 most safe, efficient and effective
21 manner.

22 This is a point I'll talk about
23 a little bit later, but it's important
24 to us. We run numerous sites and we
25 have a very impressive safety record

1 both on-site with our workers and off
2 site in the community. So we're very
3 proud of that, and we're going to bring
4 that to this project here.

5 And the third part of our mission
6 is we must comply with the Comprehensive
7 Environmental Response Compensation and
8 Liability Act, CERCLA. I'll explain
9 CERCLA in a little while, but that is
10 our umbrella that we work under and
11 that's what tells us how to do things.

12 Next slide, please.

13 I told you we're pretty proud of
14 our experience. We do a pretty good job.
15 We're managing apparently 14 sites in
16 New York, Pennsylvania and Ohio. Proven
17 record, we have been doing this since
18 1997. We've had a lot of success. The
19 safety record, the record I mentioned,
20 both on the job site, our contractors do
21 a good job, our folks do a good job,
22 and we protect those folks as well as
23 the people in the surrounding
24 communities.

25 We bring an experienced

1 multi-disciplinary team. What I mean be
2 that is we've got a little bit of
3 expertise in everything and what we
4 don't, we can reach back to the Corps
5 of Engineers and other places and get
6 it. So we've got folks like
7 environmental engineers, health
8 physicists, risk assessors, chemists,
9 and construction managers. We basically
10 can reach back if we don't have that
11 skill and get any skill we need for any
12 particular site.

13 Our contractors are chosen for
14 their expertise in dealing with
15 radiological cleanup. So we've got guys
16 that are specialized and not just your
17 average contractor off the street. And
18 the last one, very important, past and
19 ongoing clean-ups that we've performed,
20 the Buffalo district have managed at
21 other sites in New York have achieved
22 cleanup levels that are well below the
23 goals. So we actually cleanup better
24 than we had planned to. So that's a
25 good thing to know about the way we do

1 business.

2 Next slide, please.

3 I told you I would talk about
4 CERCLA in just a little bit. For some
5 of you -- this slide always hurts me
6 because there is too much on it, but
7 it's the process, the law that we follow
8 when we clean up these sites. When we
9 got handed -- what's important, when we
10 got handed this site in I guess it
11 would have been about 97, the Department
12 of Energy was at this phase, remedial
13 investigation. We did some work in 98,
14 removed some 1,300 cubic yards of soil
15 from the site and then we came back and
16 we've completed -- since 2003 we've
17 completed the remedial investigation. So
18 we've completed this and we've completed
19 this.

20 The remedial investigation
21 basically looks at the site, figures out
22 what the problems are specifically to
23 that site, what kind of contamination it
24 is and where it is, et cetera.
25 Feasibility study gives courses of

1 action for cleaning it up, different
2 methods or methodologies for cleaning it
3 up.

4 And the Proposed Plan, that's
5 where we are today, is what the
6 preferred plan for cleaning it up is.
7 It's those courses of action that are
8 found feasibility study that we're going
9 to propose a plan today that we would
10 like to pursue. But obviously we're here
11 for public comment, so the Proposed Plan
12 doesn't turn into anything until all of
13 those comments are considered.

14 When all those comments are
15 addressed or considered, the next thing
16 is we'll prepare -- we'll begin to
17 prepare a record of decision which is a
18 record of decision. It says this is how
19 we're going to clean the site up or
20 what's going to happen to clean the
21 site.

22 And the next is the remedial
23 design which is the specifics of how
24 it's done. And then remedial action,
25 which is the actual turning dirt, taking

1 away dirty dirt, cleaning up dirty dirt,
2 that type of work. So the actual works
3 of remediation and action, that's
4 anticipated next year, so 06. And then
5 project completion should be shortly
6 thereafter.

7 I don't see anybody asleep yet.
8 That's good.

9 Next slide, please.

10 Now I'm going to turn this over
11 here to [REDACTED] This slide is up here
12 for a reason. This is important for me
13 to emphasize that your public comment is
14 important. This is, you know, the one
15 official time you get -- anyone who is
16 here, anyone who wanted to be here could
17 give us comments that go on the record
18 officially and then, again, we have to
19 formally respond to those.

20 So you have the opportunity
21 tonight after Steve gives you a little
22 overview to talk about your concerns or
23 your issues and then if somebody missed
24 the boat or they weren't here, they can
25 send us their written comments. And

1 [REDACTED] will talk about that I believe
2 also.

3 Those comments are important.
4 Why? Because the second bullet; the
5 final decision has not been made until
6 all of those things have been addressed.
7 So I thank you for coming and I'm going
8 to turn it over to S [REDACTED] so he can
9 get into a little bit more specifics.

10 [REDACTED] Thank you, sir.

11 Good evening. As the Colonel
12 mentioned, we are here to present the
13 proposed cleanup for the Painesville
14 site.

15 Next slide.

16 We're going to start off with a
17 little bit of site history, background.
18 This is an aerial photo of the
19 Painesville site taken in the 1950s. At
20 this time period the site was a
21 magnesium production facility operated
22 by a company called Diamond Magnesium
23 Company and they operated, they produced
24 magnesium under contract with the
25 Federal Government in support of the

1 World War II and Korean War efforts.
2 Just as a point of reference,
3 I'll explain a little bit more about
4 this in the history, the arrows here on
5 the aerial photo are pointing to a large
6 pile of scrap steel on the site, a
7 storage pile of scrap steel which
8 Diamond Magnesium used in the magnesium
9 production process. And I'll explain why
10 that is important when I get a couple
11 slides down when I talk about the site
12 history.

13 Next slide.

14 This is a current picture of the
15 Painesville site. The current site
16 conditions, all the buildings that you
17 saw in the previous picture, except for
18 one is still remaining, an office
19 building, have been since removed. All
20 the railroad squares on-site have been
21 removed as well. And current site
22 conditions, there's still roads in
23 existence, slab, building slabs from the
24 former buildings and some building
25 debris which I mentioned.

1 Next slide.

2 I'll talk a little bit about the
3 history of the site. In the early 1940s
4 magnesium production began at the site.
5 Diamond Magnesium Company operated a
6 facility under contract of the Federal
7 Government. They started the facility in
8 production in the 1940s in support of
9 World War II effort and continued
10 through 1945. They had a shutdown at the
11 site until the early 1950s when they
12 restarted magnesium production.

13 They produced magnesium from 1951
14 to about 1953 when they again closed the
15 site. The site was declared surplus in
16 1963 and sold by the General Services
17 Administration.

18 The scrap metal that I mentioned
19 on the first aerial photo, as part of
20 the magnesium production process Diamond
21 Magnesium needed a large source of scrap
22 metal. They needed a large source of
23 scrap steel. At that time in the early
24 1950s the Federal Government as part of
25 the work being done by Atomic Energy

1 Commission had a storage area up in New
2 York State called the Lake Ontario
3 Ordinance Works. At that storage area
4 they had stored a large quantity of
5 scrap steel that had been used to hold
6 residues from processing of radioactive
7 materials.

8 The government sent the scrap
9 steel from Lake Ontario Ordinance Works
10 down to Diamond Magnesium because the
11 Diamond Magnesium was operating under
12 contract of the government and the
13 government knew that Diamond Magnesium
14 needed scrap steel. The scrap steel, it
15 turns out, had slight radioactive
16 contamination on it because it had been
17 used -- primarily it was barrels that
18 had been used to store residues from
19 production in processing of radioactive
20 materials.

21 Scrap steel was stored on the
22 site as you saw in the picture in open
23 storage piles, and it appears that while
24 it was stored on the site some of the
25 residues washed off from the scrap steel

1 and into the soils at the site. And
2 that is why we have radioactive
3 contamination that is covered under the
4 FUSRAP program at the site.

5 As I mentioned, 1963 the site was
6 sold by the General Services
7 Administration to a company called U.S.
8 Rubber. U.S. Rubber subsequently became
9 Uniroyal Chemical Company and operated a
10 chemical facility at the site for a
11 number of years.

12 In 1974 the Formally Utilized
13 Sites Remedial Action Program was
14 created to address sites contaminated
15 with radioactivity as part of the
16 Nations Atomic Energy and Weapons
17 program. At that time it was under
18 administration of the Department of
19 Energy.

20 In 1980 the law that the Colonel
21 mention, the CERCLA, the Comprehensive
22 Environmental Response Compensation and
23 Liability Act was passed, and that is
24 the law we are required to follow when
25 we investigate and clean up all FUSRAP

1 sites we're involved in.

2 1992 was when the Painesville
3 site, formally the Diamond Magnesium
4 Company site, was designated into our
5 program by the Department of Energy.
6 This followed a couple of investigations
7 that the Department of Energy had done
8 where they found elevated radioactivity
9 at the site and deemed it appropriate to
10 include in the FUSRAP program because of
11 the history and how the radioactive
12 material came to the site from the Lake
13 Ontario Ordinance Works.

14 In 1997 the Army Corps of
15 Engineers was designated the remediation
16 agents to get involved in the clean-ups.
17 That's how we got involved in the
18 Painesville site.

19 As the Colonel mentioned, we took
20 over during the investigation phase,
21 however, we did conduct a removal action
22 at the site in 1998 to remove
23 approximately 1,500 cubic yards of
24 contaminated material. However, that was
25 not all of the contamination at the

1 site, so we continued with our remedial
2 investigation to determine the remaining
3 material at the site and also completed
4 our feasibility study which looked at
5 alternatives to address the
6 contamination at the site, and that was
7 completed in 2003.

8 Next, please.

9 I'll talk a little bit about the
10 contamination at the site, the extent of
11 it and the cleanup that we're proposing.

12 The site itself is inactive. As
13 we mentioned, all of the buildings have
14 been demolished. The property owner is
15 in the process of doing work at the
16 site preparing it for a future sale.
17 However, since it's not currently in use
18 and the site -- and because there's no
19 one on the site, there's no current
20 immediate threat to human health. It
21 also does not pose a threat to anyone
22 off site because there are no releases
23 of material from the site itself.

24 Our remedial investigation did
25 find elevated levels of radionuclides,

1 primarily radium, uranium and thorium.
2 As part of the remedial investigation we
3 always conduct what is known as a
4 baseline risk analysis. And what that
5 does is it evaluates the level of
6 contamination at the site and it
7 computes the -- evaluates the risk from
8 that contamination to someone on the
9 site for a variety of uses.

10 And one use we evaluated because
11 the site had been an industrial site and
12 was an industrial area was a risk to
13 what is known as an industrial worker,
14 and we define that as someone who works
15 on the site 8 hours a day for
16 approximately 250 days a year, primarily
17 indoors. And our risk analysis found
18 that for an industrial worker on the
19 site there were risks that were above
20 the acceptable United States
21 Environmental Protection Agency
22 guidelines. And what that basically told
23 us is that if the site is going to be
24 used for industrial use, some action
25 needs to be taken to reduce the risk

1 and clean up the site.

2 Next slide.

3 I just want to show a figure of
4 the site and I'll explain it a little
5 bit here. North is towards the top of
6 the slide. Fairport Nursery Road where
7 the site is located is down here. The
8 boundaries of the site based on the
9 boundaries of the old Diamond Magnesium
10 Company is the orange line there. The
11 gray areas are where the former
12 buildings were that have since been
13 demolished. The black down here is the
14 current building that's left on the
15 site, the office building. These blue
16 buildings over here are adjacent
17 property. Twin Rivers Technologies has a
18 facility there. It's a little hard to
19 see, but there is a green outline here.
20 That is the area where we removed the
21 contaminated material earlier in 1998 as
22 part of our removal action. The other
23 areas outlined in purple are the areas
24 we found material that is above the
25 cleanup goals, which I will be talking

1 about later.

2 The extent of sampling at the
3 site, soil sampling, ground water
4 sampling and sampling with
5 instrumentation that measured
6 radioactivity coming from the soils at
7 the site. And these are the areas we
8 found that are above the cleanup goals
9 we are proposing.

10 Next slide, please.

11 In developing cleanup
12 alternatives for a site you have to look
13 at what laws and regulations are out
14 there that would address the type of
15 contamination you're dealing with or the
16 type of site you're dealing with. These
17 are known as applicable or relevant
18 appropriate requirements and we
19 identified two for the Painesville
20 FUSRAP site. One is a Federal regulation
21 titled Code of -- Code of Federal
22 Regulations, Part 20, which covers
23 decommissioning and cleanup of
24 radioactively contaminated sites. And we
25 also found a state regulation, a state

1 requirement as part of the Ohio
2 Administrative Code which is Ohio's
3 version of the Federal regulation, and
4 those are the two regulations we are
5 following in developing cleanup goals
6 for the site.

7 Next slide, please.

8 Presented here are the cleanup
9 goals we are proposing for our cleanup
10 at the site. As I mentioned earlier,
11 you'll see a new term here called a
12 construction worker. As I mentioned
13 earlier, when we did our baseline risk
14 assessment we evaluated what is known as
15 an industrial worker to determine what
16 the risk is to an industrial worker. As
17 I mentioned, an industrial worker is
18 someone who is considered to be on-site
19 8 hours a day for a whole work year and
20 most of that time, most of that 8 hours
21 being spent inside. So they do not have
22 as great a chance of contact with
23 radioactive material on the site because
24 radioactive material is in soils and
25 they're spending most of their time

1 inside. They're not coming in contact
2 with the soils.

3 Because the buildings on-site
4 have been removed and any future
5 development of the site is going to
6 require construction of some sort and
7 based on that and input from Ohio EPA
8 and the Ohio Department of Health, we
9 developed our cleanup goals to be a
10 little more stringent than those that
11 would be protective of the industrial
12 worker, and we developed them to be
13 protective of a construction worker
14 on-site. And this is someone who, again,
15 works on-site 8 hours a day for a full
16 work year, however, their work is
17 entirely outdoors during that time
18 frame. So they have a much higher chance
19 of contacting the radioactive material
20 on the site, and this leads to having
21 lower cleanup, more stringent cleanup
22 goals to be protective because of their
23 greater chance of contacting the
24 material.

25 Just some of the things on the

1 slide here. As I mentioned, we have four
2 contaminants of concern at the site,
3 plus their natural decay products. We
4 have radium, two isotopes of thorium,
5 and we have uranium.

6 And just showing the maximum
7 amount we detected at the site. The
8 notation there, pCi/g, that's actually
9 picocurie per gram. That is a measure
10 of the concentration of radioactivity in
11 the soil and that's how -- that is when
12 we do sampling for radioactivity, those
13 are the units we measure when we
14 determine how much is in site soils.

15 As you can see there the
16 industrial worker goals are here. You
17 can see the more stringent goals that we
18 are proposing on the construction worker
19 cleanup scenario.

20 And because we have a mix of
21 radionuclides, radioactive materials at
22 the site, we have to account for that
23 when we are doing our cleanup.

24 These numbers here are actually
25 the numbers you would cleanup to if you

1 only had each of these individually, but
2 because we have a mix, that lowers the
3 cleanup levels that you are allowed to
4 have the site. So the actual results
5 after we're done cleaning up for each of
6 those will be lower than what's stated
7 there.

8 Next slide, please.

9 As the Colonel mentioned earlier,
10 I just wanted to present a comparison
11 here to another site where we've done
12 work. This is the Linde FUSRAP site in
13 the town of Tonawanda, New York. It's a
14 similar site to Painesville. It's an
15 industrial facility. It's currently an
16 inactive industrial facility, but it
17 does have a residential area surrounding
18 it and it had a greater level of
19 contamination than Painesville, because
20 at the Linde site it did the actual
21 processing of radioactive materials,
22 whereas at Painesville the material that
23 came to the site was the leftover
24 residues that were on the scrap steel.

25 You can see the cleanup goals for

1 Linde are actually a little higher than
2 what we're doing at Painesville;
3 however, based on the way we conduct the
4 work and, as I mentioned, because we are
5 working with a mixture of radionuclides
6 we anticipated that we would be able to
7 get to a lower level when we were done.
8 And when we were completing the areas of
9 cleanup at Linde we've actually gotten
10 to an actual level that is much lower
11 than the stated cleanup goals.

12 Again, these are all
13 concentrations of soil, material in
14 soil, picocuries per gram. And this is
15 something not just seen at Linde, but
16 all of the other sites we've cleaned up
17 at in New York, and we expect the same
18 type of trend for the Painesville site
19 as well where we'll end up with actual
20 residuals left that are lower than our
21 stated cleanup goals.

22 Next slide, please.

23 Now I want to talk about the
24 alternatives that we developed for
25 cleanup of the site before I get into

1 our preferred alternative that we are
2 proposing. The first alternative is one
3 that is always evaluated whenever you
4 are conducting a cleanup under CERCLA
5 and that is the no action alternative.
6 It's intended as a baseline for
7 comparison of the other alternatives.
8 Under no action no action is taken at
9 the site. The site is left as-is. As I
10 mentioned, it's a baseline, and the cost
11 for the no action alternative is, not
12 surprisingly, zero.

13 Next slide, please.

14 The second alternative we
15 evaluated was capping of soils. Under
16 this alternative all soils at the
17 cleanup levels would be capped or
18 covered in place with a protective layer
19 of material. This could be a soil or
20 asphalt or concrete, but it's basically
21 a material that is placed over the areas
22 of contamination so you're creating a
23 barrier between the material and the
24 soil and anyone using the site so they
25 do not come in contact with the

1 contaminated material.

2 There are some issues for this
3 type of alternative in that it requires
4 long-term, maintenance for the cap, to
5 make sure the cap isn't breached. That
6 is the only way you can ensure
7 protection of anyone on the site is that
8 you keep the cap intact. So there are
9 long-term maintenance and other controls
10 needed. In our evaluation we evaluated a
11 long-term maintenance to 1,000 years
12 even and we came up with a cost of just
13 over \$2.6 million for this alternative.

14 Next slide.

15 The third alternative we
16 evaluated was excavation and disposal of
17 the soil. All the soil above our
18 construction worker cleanup goals would
19 be excavated, removed from the site and
20 disposed of at a licensed permitted
21 facility outside the State of Ohio.
22 We've currently estimated that's going
23 to be a little over 4,000 cubic yards
24 of material we would remove from the
25 site, at a cost of a little over 5.3

1 million.

2 Next slide, please.

3 Now, once we develop alternatives
4 in the feasibility study, under CERCLA
5 we're required to evaluate them against
6 each other to find the preferred
7 alternative for cleanup at the site.

8 These are the nine criteria that are
9 required under CERCLA to evaluate each
10 of the alternatives. They're divided in
11 three areas; threshold, balancing and
12 modifying criteria.

13 The threshold criteria are the
14 basic yes, no, go, no-go criteria that
15 must be met in order for an alternative
16 to be carried forward, to be considered
17 a viable alternative for the site. If a
18 particular alternative doesn't meet
19 either of these criteria, it cannot be a
20 viable alternative. And these are
21 protection of human health and the
22 environment in compliance with all laws
23 and regulations or the applicable or
24 relevant appropriate requirements, which
25 I mentioned on the earlier slide.

1 Once an alternative makes it past
2 the threshold of criteria, they're
3 evaluated with balancing criteria. These
4 are the main criteria used in the
5 selection of the preferred alternative.
6 And I'll just run through them quickly.

7 Long-term effectiveness and
8 permanence. That evaluates whether an
9 alternative is permanent and long-term
10 or whether it needs long-term
11 maintenance or any controls in order to
12 ensure it's protective. And it takes
13 into account any potential risk
14 remaining after the site is cleaned up.

15 Short-term effectiveness and
16 environmental impacts. That evaluates
17 what are the actual risks from
18 implementing the cleanup. Any cleanup
19 you attempt will have some inherent risk
20 in itself and this evaluates potential
21 risks from implementing the cleanup to
22 the local community, to the workers
23 carrying out the cleanup, looks at any
24 impacts on the environment from the
25 cleanup and the total duration of the

1 cleanup.

2 The next is reduction in
3 toxicity, mobility or volume through
4 treatment. This is basically looking at
5 are you treating the contamination in
6 any way, will you be reducing that
7 toxicity, will you be reducing its
8 harmfulness or destroying the
9 contamination or are you just containing
10 the contamination, for example. Are you
11 reducing its mobility or are you
12 reducing its volume so there is not as
13 much material that requires cleanup.

14 Next is implementability. This
15 looks at the any issues in construction
16 or reliability of the alternative and
17 whether there are any administrative
18 issues in implementing an alternative.

19 Cost is the final balancing
20 criteria, and that's looking at total
21 cost of the project for construction and
22 maintenance and comparing those between
23 the alternatives.

24 The last area of criteria are
25 modifying criteria, and these are state

1 and community acceptance. This is
2 basically what we're evaluating as part
3 of the public comment period here. This
4 is where we take comments from the
5 state, from the community, respond to
6 those comments and see if there's
7 anything in those comments that could
8 impact the preferred alternative
9 selected.

10 Next slide.

11 This is just a summary table of
12 the comparison we did between the
13 alternatives. I'll just point out some
14 of the highlight on here.

15 We have the alternatives listed
16 up here; the criteria here. The first
17 two are our official criteria, as I
18 mentioned. You can see the no action
19 alternative does not meet either of the
20 threshold criteria, so for the site this
21 is really not a viable alternative;
22 however, we do still include it as our
23 baseline for comparison and that's why
24 you can see it carried forward in the
25 modifying criteria or in the balancing

1 criteria.

2 Some of the other highlights
3 you'll notice that the one area, the
4 treatment to reduce toxicity, mobility
5 and volume, none of the alternatives
6 incorporate actual treatment of the
7 material. They're either containing it
8 by capping it in place or removing it
9 and sending it to a appropriate disposal
10 landfill, but they do not actually treat
11 the material itself. They just reduce
12 the contact to it.

13 Long-term effectiveness.
14 Excavation at the highest rating in
15 long-term effectiveness. That's because
16 with excavation it's more of a permanent
17 solution because we're removing the soil
18 over the cleanup goals from the site and
19 it does not require maintenance of a cap
20 or maintaining controls to ensure a cap
21 is not breached to ensure protection of
22 health and the environment. So that's
23 why it's rated higher than capping.

24 Excavation, however, does have a
25 lower short-term effectiveness than

1 capping, you can see here. That's
2 because with the excavation alternative
3 there is a slightly more risk in
4 implementing that. Capping you're merely
5 covering over the material and leaving
6 it in place. In excavation you're
7 disturbing the soil as you excavate it
8 and it does lead to potentials for
9 releasing of dust or as you transport
10 the site there is some potential for
11 release of material as you transport it,
12 and that's why it has a slightly lower
13 short-term effectiveness. However,
14 based on the work we've done to date we
15 implement several controls to combat
16 those risks in transport and excavation.

17 And just one more thing. Cost is
18 fairly obvious in comparison.

19 Implementability, excavation is
20 slightly higher in implementability.

21 Both capping and excavation, those are
22 pretty much tried and true alternatives.
23 We have a lot of experience in both
24 areas, both types of cleanup
25 alternatives, capping of material and

1 excavating and disposing of it. However,
2 there are some more issues with
3 implementing capping as far as setting
4 up the long-term maintenance, setting up
5 the long-term controls for ensuring the
6 cap is protected, and that's why it is
7 slightly lower in implementability than
8 the excavation.

9 We evaluated those balancing
10 criteria and the threshold criteria. The
11 modified criteria are evaluated after
12 the public comment period of the
13 Proposed Plan is closed and we've
14 received and responded to all of the
15 comments.

16 But based upon these criteria --
17 next slide -- our preferred alternative
18 for cleaning up the site is alternative
19 3, excavation and offsite disposal. We
20 feel it's most effective of human health
21 and the environment, most effective in
22 the long-term. We don't have the issue
23 with any exposure or potential contact
24 to the material from the cap being
25 breached. We don't have long-term

1 maintenance issues for the capping
2 alternative. It is more permanent
3 because the soil is actually removed
4 from the site and disposed of in an
5 appropriate facility.

6 Next slide.

7 I just wanted to cover the
8 schedule briefly. Right now we've
9 released Proposed Plan, we've initiated
10 the public comment period which runs
11 through August 22. I'll talk a little
12 bit more about comments in a couple of
13 slides. Once we close the comment period
14 and evaluate the comments and respond to
15 them, we'll prepare the record of
16 decision which documents the final
17 cleanup selected for the site. Right now
18 we're looking at releasing that in
19 February of 06. We're scheduled to
20 begin remediation next summer and
21 complete it next fall, 2006.

22 Next slide, please.

23 As I mentioned, there will be
24 brief information on the cleanup and how
25 it's conducted. We're scheduled to begin

1 it in 2006. We'll be excavating
2 material and shipping it out of state to
3 an appropriate disposal facility. We
4 collect data, samples during and after
5 excavation to ensure that cleanup is
6 complete and coordinate that sampling
7 activity with the State of Ohio to
8 ensure that we've met our cleanup goals.

9 And we will hold an informational
10 meeting before the cleanup work begins,
11 likely in the spring of 2006, providing
12 more detail on the actual cleanup
13 process.

14 We'll be entering the remedial
15 design phase where we will develop the
16 details of how we're going to cleanup
17 the site and we'll share those with you
18 when they're completed before we begin
19 the actual field work.

20 Next slide.

21 As I mentioned, safety is a very
22 important priority for us. It's our
23 number one priority in conducting these
24 types of cleanups. We strictly adhere
25 to all the OSHA regulations and we have

1 our own Corps of Engineers safety
2 manual. We also implement an
3 environmental monitoring program during
4 the cleanup to ensure that there are no
5 releases from the site as we're
6 conducting the cleanup. We have controls
7 to control any dust from the
8 excavations. We put air monitoring
9 around the perimeter of the site to make
10 sure nothing is leaving the site. We
11 collect water runoff of any rain water
12 or water we use in the compression in
13 our excavations, treat it as needed
14 before we dispose of it.

15 Next slide, please.

16 I want to wrap up the technical
17 portion of the presentation here and
18 we'll open it up to comments in just a
19 minute. I just want to leave you with a
20 couple of things.

21 As I mentioned, our preferred
22 alternative for the site is excavation
23 and offsite disposal. It is explained a
24 little more in detail in our Proposed
25 Plan which is available for public

1 review. Also, there are guidelines for
2 the removal from the site, those are the
3 appropriate facilities outside the State
4 of Ohio.

5 Again, we feel this alternative
6 is the most protective of human health
7 and environment, most effective in the
8 long-term of the alternatives considered
9 and we'll conduct the cleanup in a safe,
10 methodical and controlled manner.

11 Next slide, please.

12 We are going to open up the
13 comment period now and go to the next
14 slide. Before we do, just a couple of
15 ground rules. These are basically to
16 ensure that we accurately record your
17 comments and we accurately -- we get a
18 chance for everyone that wants to make a
19 comment to be heard.

20 We would like one person to speak
21 at a time. We do have a microphone
22 which we will bring around to you if
23 you would like to make a comment. We
24 would like you to state your name and
25 your affiliation when you make your

1 comment so that we can record it and we
2 can make sure we get responses recorded
3 appropriately.

4 As I mentioned, we'll have a
5 microphone which we'll be bringing
6 around. We would like to limit everyone
7 to 5 minutes. That's to ensure that
8 everyone does get a chance to make a
9 comment. If there's time after people
10 have had made an initial comment and
11 they would like to make another one, we
12 can go back to you, but your initial
13 comment we would like to limit to 5
14 minutes so we can make it through
15 everyone.

16 We do have, as I mentioned, a
17 formal comment period where we want to
18 make sure we get everyone's comments. We
19 have someone recording these proceedings
20 and we will prepare a response package
21 to all of your comments following the
22 completion of the public comment period.

23 Once all of the comments have
24 been recorded, we'll close the official
25 part of the meeting where we record the

1 comments, however, the Lieutenant
2 Colonel Touchette mentioned that our
3 team will still be here after the formal
4 period is done. We'll probably be up
5 here or by the information in the back
6 and we can answer any questions you have
7 or any discussions you want to have.

8 Next slide.

9 As I mentioned, if you don't want
10 to make a comment here or for people
11 that have not been able to make it to
12 this meeting, we also accept written
13 comments, and they can be mailed to the
14 address shown here or E-mailed at our
15 address shown here. We accept them up to
16 the public comment period deadline of
17 August 22. That's the 30 day public
18 review period. And we will also respond
19 to all of these comments as we will to
20 your verbal comments after that 30 day
21 review period is completed.

22 Next slide.

23 Just showing here basically that,
24 again, we will have a formal response to
25 all of the verbal and written comments

1 that we receive. We'll make that
2 response after the public comment period
3 is ended. We'll make it available for
4 anyone who wants to view it. It will be
5 part of the official record for the site
6 and it's available at the same location
7 as the Proposed Plan and the other
8 documents in our administrative record,
9 two of the local libraries, Morley
10 Public Library in Painesville and
11 Fairport Public Library in Fairport
12 Harbor, as well as at our office. And
13 we also have a website which we can
14 make available to you as well where we
15 will have information.

16 With that I would like to thank
17 you for listening to our presentation
18 and we would like to open up the
19 comment period. [REDACTED] will be
20 bringing around the microphone.

21 We do have some representatives
22 here from the State that would like to
23 make a comment and we'll start with them
24 and then we'll open up the floor to
25 anyone else who wants to make a comment.

1 From the Ohio Environmental
2 Protection Agency we have [REDACTED]
3 and [REDACTED] who we are involved
4 with, we coordinate with the Ohio
5 Environmental Protection Agency in our
6 work on the site and the documents we
7 prepare for the site and they would like
8 to make a comment, I believe.

9 [REDACTED]
10 [REDACTED]: My name is [REDACTED]
11 [REDACTED]. I'm with the Ohio Environmental
12 Protection Agency. I'm responsible for
13 project oversight, basically overseeing
14 the work the Army Corps has done, review
15 work plans and we'll also be responsible
16 for overseeing the cleanup.

17 What I want to do is on behalf
18 of the Ohio EPA give you our prepared
19 statement regarding this Proposed Plan.

20 The Ohio Environmental Protection
21 Agency has been working with the
22 Department of Energy and the U.S. Army
23 Corps of Engineers for more than 10
24 years to investigate the radiological
25 contamination left behind by the former

1 Diamond Magnesium facility here in
2 Painesville. Through this effort, Ohio
3 EPA believes contamination has been
4 adequately investigated and
5 characterized allowing cleanup to move
6 forward. The extensive characterization
7 of the site was found to be necessary
8 when after a 1998 removal action of a
9 contaminated area was halted because of
10 an unexpected increase in the scope of
11 work.

12 Ohio EPA is here to provide our
13 view of the Proposed Plan for finishing
14 the cleanup of the site and hear your
15 input from the local stakeholders
16 regarding the Army Corps' proposal for
17 addressing the remaining radiological
18 contamination at the site.

19 At this point Ohio EPA has major
20 differences of opinion about how the
21 Army Corps is interpreting CERCLA, which
22 is the superfund law, to develop the
23 cleanup levels, risk calculations and
24 institutional controls for this site.
25 Officially the Army Corps is saying that

1 they will cleanup the site but only to
2 levels safe enough for future industrial
3 use, which is restrictive release. This
4 means that the future use of the now
5 vacant property would be restricted to
6 industrial use only.

7 The Army Corps based their
8 cleanup plan on their self assessment of
9 the foreseeable future use of the area
10 and their determination that the
11 reasonable expected future use of the
12 site is industrial. By restricting the
13 future use to an industrial use only
14 status increases the amount of
15 radiological contamination allowed to
16 remain in place. Ohio EPA believes this
17 assessment does not reflect local trends
18 in the re-use of the former industrial
19 land and that the future use should
20 include a mix of residential and
21 recreational uses.

22 All of these major issues are
23 resolved if the Army Corps' removal of
24 the contaminated soil achieves free
25 release levels which are acceptable for

1 any future use for the contamination at
2 the site when they do their cleanup.
3 This means that based on the assessment
4 of the residual contamination the site
5 is clean enough for anyone to use in
6 any foreseeable way. The Army Corps is
7 confident that they will reach free
8 release status even though this is not
9 the cleanup -- the goal of the proposed
10 cleanup plan.

11 After reviewing their results of
12 other sites, we agree that this is
13 possible. Therefore, the path forward
14 that the Ohio EPA is taking is to allow
15 the cleanup to proceed as the Army Corps
16 has proposed and hold off our final
17 judgement of the success of the cleanup
18 until the post-excavation certification
19 results are received.

20 As in the past, Ohio EPA would
21 have significant involvement in the
22 oversight of the actual cleanup and in
23 the development and review of the
24 cleanup certification plans. Ohio EPA
25 believes that this is the best option

1 available for all parties by allowing
2 the cleanup to start and avoid delays
3 that could result in a loss of Federal
4 funding.

5 There is also another issue that
6 we are trying to resolve. Two areas
7 within the current property boundary but
8 outside the official FUSRAP areas have
9 elevated radiological contamination
10 present and will not be cleaned up under
11 this Proposed Plan. Based on available
12 information, the property owner
13 unknowingly moved radiologically
14 contaminated construction and demolition
15 debris to other parts of their property
16 and buried it in two landfills. The Army
17 Corps has stated that this material
18 legally cannot be addressed by the
19 FUSRAP as they interpret their
20 limitations on their program. This is a
21 more difficult legal issue and I'm not
22 sure that there is a quick resolution
23 for this one. We will continue to work
24 on this issue with appropriate parties.

25 I appreciate your time.Thank you.

1 ██████████: Thank you, ██████████
2 We also have some representatives
3 from the Ohio Department of Health here,
4 which is another agency that we work
5 with in investigating cleanups of FUSRAP
6 in Ohio.

7 ██████████ is here as well
8 as ██████████ from the Ohio
9 Department of Health and ██████████ is
10 going to make a comment as well.

11 ██████████ Good evening. My
12 name is ██████████. I work with the
13 Ohio Department of Health Bureau of
14 Radiation Protection.

15 We had dinner tonight at the
16 Harbor Town Point Bar and Grill and it
17 was pretty good. A local gentleman
18 recommended it to us. So I just want to
19 say thank you. I feel very comfortable
20 here in your town.

21 We have similar concerns and
22 issues that the Ohio EPA have, but I
23 can honestly say that all stakeholders
24 have been working very well with each
25 other to try and get to a common goal

1 for the cleanup here, but really it's
2 about four things that are at issue the
3 Department of Health has concerns with,
4 but there may be a path forward that
5 can work, but we're going to have to
6 hold back on our ultimate judgement
7 until we see when the numbers come back.

8 But as Ohio EPA has stated, we're
9 concerned with their Proposed Plan for
10 finishing the cleanup because they only
11 clean up the site for future industrial
12 use with using restricted cleanup
13 criteria for -- using a construction
14 worker scenario.

15 In the State of Ohio we're only
16 allowed to cleanup resident farms, which
17 means if you live on the land, use the
18 land property, you grow food, you eat on
19 the property, you live there. It's an
20 unrestricted release criteria. It's a
21 very high standard. But a lot of Federal
22 agencies across the country can use
23 restricted release, but typically there
24 is institutional controls that go with
25 that. And that's another issue that

1 we're having with this site, that
2 they're going to go with restricted
3 release for a construction worker but
4 they leave out institutional controls
5 which we believe should be there. So
6 those are two concerns that the criteria
7 doesn't really match Ohio's, but it's
8 close; that they don't have
9 institutional controls and we're not
10 sure how they would make that work in
11 the long-term.

12 The third issue is this area
13 outside the boundary that both Ohio EPA
14 and ODH have concerns with that that's
15 still there, and according to the Army
16 Corps, it's beyond their immediate
17 concern and that their recommendation
18 for Crompton Corporation is go through
19 the Department of Justice and I think
20 we've asked that they get ahold of the
21 DOE to see if there was a program out
22 there for DOE to bridge the gap say
23 from the FUSRAP initiative here and
24 what's beyond the extension, the line
25 that they showed there.

1 The concerns identified may be
2 resolved if the Army Corps reaches
3 unrestricted release criteria which is
4 acceptable for any future use, not any
5 restricted construction worker use, but
6 any use, and that's what Ohio would
7 prefer. It's on our laws in order to
8 meet that. So in their proposal they're
9 indicating that go they can get to those
10 numbers because just by the mere
11 cleaning up of soils you end up getting
12 to those numbers, and so that remains to
13 be seen.

14 So at this point in time both
15 the Ohio EPA and the Department of
16 Health are reserving our judgement on
17 this matter. If Ohio's unrestricted
18 release criteria is not met at the
19 completion of the Army Corps' cleanup
20 activities, then we may have to pursue
21 licensing the company for long-term
22 possession of radioactive materials
23 until it does get cleaned up to an
24 unrestricted release criteria.

25 The proposed path forward is to

1 allow the cleanup to proceed. The
2 Department of Health and I believe Ohio
3 EPA are holding off final approval until
4 the certification results are received.

5 So I think even though we don't
6 agree on the initiatives going into
7 this, if they can meet the unrestricted
8 release at the end of the day, then I
9 think, you know, all stakeholders will
10 be satisfied with the cleanup. But I
11 think it's important for the local
12 people here to know that there are some
13 reservations that the State of Ohio has
14 with this cleanup initiative and we'll
15 see how it progresses from here.

16 ██████████: Thank you, Steve.

17 We do also have a representative
18 here from the property owner, Chemtura
19 Corporation, ██████████ that asked
20 to make a comment as well.

21 ██████████: Good evening. My
22 name is ██████████ and I represent
23 Chemtura Corporation, the former
24 Crompton Corporation, who is the current
25 property owner of the currently

1 designated FUSRAP site and several
2 adjacent parcels which are not currently
3 part of the FUSRAP site. I'm going to
4 be reading a prepared statement, so this
5 may be a little dry and I'm not
6 speaking to the audience. I'll be
7 actually reading from the form, so
8 please don't take that as neglect.

9 Hello, my name is [REDACTED]
10 and I represent Chemtura Corporation,
11 formerly Crompton corporation, the
12 parent company of the owner of the
13 subject FUSRAP site, the former Diamond
14 Magnesium plant in Painesville, Ohio.

15 We are currently remediating
16 chemical contamination at the site as a
17 result of its use as a (ck) rubber
18 polylanylfluoride plant under the
19 oversight of the Ohio Environmental
20 Protection Agency. We have also been
21 awaiting the remediation of the Federal
22 Government's radiological contamination
23 since it was first discovered by
24 accident in the late 1980s.

25 We are encouraged and pleased

1 that the U.S. Army Corps of Engineers
2 heretofore, the Corps, has committed to
3 a time frame that will remediate a
4 portion of U.S. Government radiological
5 contamination in 2006, but believe that
6 the Corps' plan and commitment stops
7 short of the ultimate goal, which is
8 returning the site to full productive
9 use for the community.

10 The Federal Government
11 specifically brought radiologically
12 contaminated scrap iron material to the
13 magnesium production facility in the
14 1950s. The material was used to scrub
15 hydrochloric acid produced during site
16 operations. While useful for site
17 operations, it also was an inexpensive
18 source of the scrap iron. It was from
19 a known contaminated stockpile stored by
20 the Government from the country's
21 Manhattan engineering district during
22 the war effort, and an inexpensive way
23 to dispose of the scrap in post war
24 years. The radiation came to contaminant
25 various areas of the plant and

1 surrounding properties.

2 The property was then sold to the
3 U.S. Rubber company, but no information
4 was ever presented suggesting that there
5 was still residual Government radiation
6 left at the site. In the years since,
7 this radiation appears to have been
8 unknowingly spread around through the
9 normal course of owning and operating an
10 industrial site.

11 The Corps current remediation
12 plan specifically avoids several of
13 these areas because the Corps too
14 narrowly interprets its responsibility
15 and authority to clean up the
16 Government's radiation legacy. We are
17 confident that had the Government
18 properly controlled the radiation it
19 knew about when it brought the scrap to
20 the site, the spread of the material
21 would not have occurred and we would not
22 be here today. The Government should
23 accept clear responsibility for all
24 radiation that is required to be cleaned
25 up at or in the vicinity of the site.

1 Additionally, the Ohio Department
2 of Health which regulates radiation
3 remediation in Ohio has strict standards
4 governing the residual levels of
5 radiation left at such sites undergoing
6 cleanup, essentially requiring the
7 radiation left to be protected for any
8 site use long into the future.

9 The Corps disagrees with the
10 strict level that Ohio has established
11 for the site and asserts that a less
12 vigorous cleanup is satisfactory.
13 Chemtura believes that the residual
14 radiation that is likely to be left at
15 site by the Corps will not pose any
16 actual risk to human health or the
17 environment, but also recognizes that
18 individual jurisdictions such as Ohio
19 may employ standards they believe will
20 guarantee the protection of its citizens
21 into the future. This is particularly
22 important as the site is adjacent to the
23 ambitious Hemisphere Development project
24 where a mixture of property uses are
25 expected from residential to commercial

1 and recreational.

2 The Corps should explicitly
3 recognize the more strict Ohio standards
4 for site remediation and should
5 explicitly meet these local standards.
6 This will ensure a win-win with the
7 Government properly closing out a legacy
8 of radiation and the return of an asset
9 to the community.

10 Thank you for your consideration
11 in this very important matter.

12 ██████████: Thank you, ██████████

13 We also have a representative
14 from the adjacent property owner, Twin
15 River Technologies, ██████████ is
16 here as well as ██████████, and ██████.
17 ██████████ would like to make a comment.

18 ██████████: Thank you. My name
19 is ██████████ and I'm the director of
20 environmental safety for Twin River
21 Technologies.

22 As ██████████ said, we own and operate
23 the site adjacent to the FUSRAP site and
24 we want to make written comments to ACOE
25 for this project. However, while we

1 support the preferred alternative for
2 remediation, we feel that the area along
3 our property line has not fully been
4 investigated and has not been properly
5 delineated and we feel that that has to
6 be continued before the completion of
7 the remediation project has been
8 accepted. Also, should there be
9 additional contamination found along the
10 area, we feel that that should be
11 remediation to a level that is at least
12 protective of construction workers, but
13 we feel that it would be more
14 appropriate to go to background levels
15 in the existing soils.

16 Thank you.

17 [REDACTED]: Thank you, [REDACTED]

18 We'll now open the floor for any
19 other comments. I'll give the mike to
20 [REDACTED] and she will come around
21 to anyone that would like to make a
22 comment. I would just remind you to
23 please state your name and speak into
24 the mike so that we can have our
25 recorder accurately record your comment.

1 Would anybody like to make a
2 comment at this time? Yes, sir.
3 ██████████: Thank you. My name
4 is ██████████. I'm a former park
5 commissioner here of Lake Metroparks.
6 I'm a Fairport councilman at this time
7 and a resident of Fairport, Ohio. Also I
8 grew up within six stone throws of that
9 property and remember that property very
10 well before it was turned into the
11 magnesium plant when there would be fine
12 little black Persian colts running
13 around every spring and the people who
14 owned that were the people that would go
15 around doing all the thrashing for the
16 farmers in that neighborhood. Also I
17 remember when it was the finest fishing
18 hole in the area.

19 I think our government owes Lake
20 County and the residents around that
21 area to clean this up to the best of
22 their ability and get it back into shape
23 so it's an economic value and it brings
24 quality of life.

25 In my vision I travel every day

1 up and down that road from my home to
2 where I work in Perry, Ohio where we
3 have a nursery, and I have visions all
4 the time and dreams that you would get
5 that back as good or better, because we
6 had the best fishing hole on Grand River
7 in the State of Ohio and we certainly
8 need an economic boost here in Lake
9 County.

10 Now, it's not very big, that
11 little spot, but it could be a little
12 pinch adding to the economic value. In
13 my dream this could be a park that
14 would fit in with Lake Metroparks like
15 no other park. And one of my dreams is
16 I've talked to [REDACTED], maybe some people
17 cannot see it, but it would have the
18 finest collection of nut trees, various
19 nuts from all over the world, not
20 people, trees in there, and also it
21 would be a park, not just for the
22 fishermen to come there, but they could
23 bring their families and enjoy it as a
24 family together. Right now anybody who
25 wants to go to this fishing hole has to

1 trespass on that property and it's about
2 a mile long down there.

3 So I would hope that this
4 initiative is taken and to expedite this
5 cleanup as soon as possible because it's
6 been many years since the war has been
7 over and use for material for that war
8 products.

9 Thank you very much.

10 ██████████: Thank you, sir.

11 Anyone else like to make a
12 comment?

13 ██████████ My name is ██████████
14 ██████████ and I sort of echo his stuff
15 because I think all waterfront property
16 should be public, not owned by any
17 individual, unless it's a corporation
18 like any -- like Diamond, but not
19 individuals as such, only public.

20 Now the lakefront in Chicago,
21 that's all public. You can't build
22 houses or anything on it. And when
23 Diamond had this property, people
24 couldn't go there except when we were
25 kids we swam there without clothes and

1 everything, but then the insurance
2 companies got into everything and they
3 shut out the waterfront from the public.
4 And we always fished along the Grand
5 River when the docks were there they let
6 us fish, but I think it was the
7 insurance company that made it kind of
8 tough for companies so they wouldn't let
9 people fish or swim or anything, but I
10 think it should be public.

11 [REDACTED]: My name is [REDACTED]
12 and I'm a citizen of the area.

13 Could there be some consideration
14 given to exchanging this property for,
15 say, another site like the County
16 Fairgrounds in exchange for this
17 property where development would be more
18 readily conducive to many types of
19 development, or possibly the
20 Fairgrounds, a racetrack, you know, like
21 where they have a casino or something
22 along with this park where usually where
23 people aren't actually living there for
24 any extended period of time. But seems
25 to me the Fairgrounds would be a fair

1 exchange of value there.

2 [REDACTED]: My name is [REDACTED]
3 [REDACTED] Painesville resident. And when
4 they closed the chromate they said they
5 were going to cap it with soil and in
6 the paper it says you're going to cap
7 this with soil, but I notice that there
8 was a great line of trucks, like a
9 freight train going to CEI carrying fly
10 ash to the chromate and it has mercury
11 and other contaminants. Is that the same
12 soil you're talking about to cap this
13 area?

14 [REDACTED]: Any other comments?

15 [REDACTED]: My name is [REDACTED]
16 [REDACTED] I'm a resident of Fairport
17 and in speaking to this property I'm not
18 sure that all the comments are really
19 that appropriate in that I'm not sure
20 there's any significant body of water
21 connected with this property directly.
22 It doesn't go to the lake. It doesn't
23 go to the river. But, nevertheless, it's
24 in a significant location. And I do,
25 like the previous organizations and

1 state groups, feel that there ought to
2 be a plan or alternative or a 3-B that
3 talks about cleaning this up to any use
4 levels. It seems only appropriate. And
5 certainly seems appropriate to look into
6 including those properties that are just
7 off the previously designated site.
8 That's it.

9 [REDACTED]: Okay. Thank you.

10 Anyone else that would like to
11 make -- you have a follow up?

12 [REDACTED]: It's me again, [REDACTED]
13 [REDACTED] I have another question about
14 the life of this cleanup, in other
15 words, the radioactivity. When you
16 eliminate this thing is there any return
17 or is it going to remain at that level
18 that you clean it up to, you know what
19 I'm saying. And is there any leaching of
20 this containment that you're going to be
21 putting over there to the soil to the
22 adjoining areas or anything like that in
23 that regard.

24 [REDACTED]: Yes, sir.

25 [REDACTED]: My name is [REDACTED]

1 [REDACTED] and I'm a resident of the area,
2 and first of all, I'm not sure if I
3 have a comment. I guess I have a few
4 things I need some clarification.

5 First of all, on your map in
6 your display up above on the slide
7 you're showing proposed areas of
8 excavation with the -- I guess the
9 violet colored lines and those are shown
10 outside the boundary. And someone, I
11 think it was the folks from the EPA,
12 said, well, that's not going to happen.
13 So what is the truth? Is that going to
14 be excavated or not? It's shown on the
15 map as being excavated.

16 [REDACTED] Let me just clarify
17 that. I will just clarify that quickly.

18 The areas that are shown out
19 behind in as you said in violet, those
20 are the areas we intend to excavate and
21 clean up. The one area that does extend
22 a little bit off the boundary but it is
23 a continuation of an area of concern
24 that we are cleaning up, because it's a
25 continuation, we will address that.

1 There is another area that is not
2 shown on the map that is off site of
3 the map, and that is the area that has
4 been referred to by Ohio and that would
5 not fall under our authority to address
6 and that is off site just to the west
7 of what's shown on our figure. But the
8 areas of the map, as a point of
9 clarification, those will be the areas
10 we excavate.

11 ██████████: Okay. Thank you.

12 And those designated areas seem
13 to be scattered across the site. But
14 earlier in your presentation you showed
15 us it looked like an aerial photograph
16 of a couple arrows pointing out a
17 stockpile. Your statement was that
18 radioactive material leached out of that
19 pile and that was the reason why there's
20 still radioactive material on-site, but
21 that isn't consistent with all of the
22 areas you have shown in violet, so how
23 -- can you explain the inconsistency?

24 ██████████ Again I'll address
25 that as just a point of clarification.

1 The area of the stockpile is this
2 area here, That is called area A. That
3 is the main area of contamination where
4 the stockpile was. However, we do know
5 that the material was actually used and
6 was stockpiled in a smaller location on
7 the site across in area C. This area
8 here is where the steel was used and
9 also there was a smaller stockpile
10 there. And then just with transporting
11 material from one end of the site to
12 the other, that's where we believe the
13 other areas of contamination came as
14 well. Also this year down here, that's
15 some material that Uniroyal had passed
16 and moved from here down to there.

17 ██████████: Activity after the
18 stockpiling?

19 ██████████: Some during and some
20 after as well.

21 ██████████: And then I'm reading
22 from your brochure, this is the one with
23 your Army Corps' symbol at the top. It
24 reads, the Corps conducts its FUSRAP
25 work in compliance with all appropriate

1 Federal laws and regulations as well as
2 state and local requirements.

3 Now, that doesn't sound like
4 that's what's happening either, because
5 we're hearing from Ohio EPA that what
6 they're looking for, their requirements
7 would be sufficient excavation that any
8 use could be applicable to the property
9 rather than just industrial use. So can
10 you explain that inconsistency?

11 [REDACTED]: And that is
12 something I will reserve that
13 explanation for the response comments,
14 you know, in the formal response
15 comments. We do have the comment from
16 Ohio, from the other parties, and we
17 will respond appropriately. We will
18 respond to that comment. It is an
19 issue we are continually working with
20 the State of Ohio, but the full response
21 will be at the response time which will
22 be available for everyone.

23 [REDACTED]: And I just have one
24 last comment. Maybe it's inappropriate
25 to bring up here, but a question I'm

1 going to have is to EPA. They feel
2 that your plan is not sufficient and
3 they're saying, well, we're going to
4 hold off until after you're done and see
5 what happens. I mean, that doesn't seem
6 like a very good plan. I mean, if you
7 think it should be cleaned up to the
8 level -- to a certain level, why
9 wouldn't you try to get the plan
10 adjusted to achieve that? And I don't
11 know if Ohio EPA wants to respond to
12 that, but I hope we could get an answer
13 to that.

14 [REDACTED]: Yeah. We can allow
15 Ohio to respond to that.

16 [REDACTED] My name is [REDACTED]
17 [REDACTED]. I work for Ohio EPA. [REDACTED] and
18 I work together with a lot of other
19 people in this room on this project.

20 I think what we talked about
21 tonight, the path forward we talked
22 about tonight is that -- and the Corps
23 has shown some data from some previous
24 clean ups that actually do get to the
25 goals that we're proposing, and what

1 we're saying is we're going to hold off
2 and wait until that happens. And we'll
3 be involved in the certification process
4 and make sure that those goals are met
5 and then we'll say, yes, they met the
6 goals or, no, there's still issues that
7 need to be resolved.

8 But we think there is a good
9 change. If we didn't think there was
10 any chance, then we would stand up and
11 say that tonight. Looking at the Corps'
12 data and knowing the site pretty well,
13 we think there's a good chance that this
14 cleanup is going to actually get where
15 we need to be and a lot of the issues
16 that we talked about tonight, the
17 concerns we have are no longer concerns
18 at that point.

19 ██████████ Why not make that a
20 part of the plan?

21 ██████████: Because the
22 relationship that we have with the Corps
23 of Engineers is not one that we can
24 actually force them to do things. It's
25 basically one where they have to work

1 with the State and work with the
2 community to get results. This is one
3 that allows -- the path forward allows
4 the cleanup to move forward.

5 The other alternative is we could
6 go to dispute resolution, we could go to
7 some sort of Court issues, we could lose
8 Federal funding for the cleanup, and
9 there's a lot of other downsides to
10 that. So we would like to see; process
11 move forward and in the fall of 2006
12 we'll know whether we were successful or
13 not and we can fight those issues at
14 that point as well.

15 ██████████: Thank you for
16 responding and thank you for the
17 opportunity to comment.

18 ██████████: I'm ██████████ and
19 I'm a citizen. And you have Twin Rivers
20 on one side, Chemtura on the other side.
21 And Chemtura, we don't know exactly what
22 their plans are. I don't know, which way
23 are they going to go, are they going to
24 go to the residential side or go on the
25 industrial side. I'm not sure. And if

1 you clean it up to the best of your
2 ability, then they can go either way and
3 you're okay.

4 [REDACTED]: Thank you.

5 [REDACTED]: Just for point of
6 clarification as well, Chemtura really
7 is at a point where we're undecided. We
8 really need to put both remediation
9 plans, the chemical and the radiation,
10 forward before we can make a clear
11 market evaluation on what will be the
12 best and highest use for both portions
13 of the property, the former plant which
14 you see on the FUSRAP diagram, as well
15 as the significant portion which abuts
16 the Grand River south of Fairport
17 Nursery Road. So we really are
18 undecided, uncommitted at the site and
19 we will be evaluating various types of
20 factors, areas of development and market
21 opportunities what the highest and best
22 use of the property is.

23 [REDACTED]: Thank you, [REDACTED]

24 Would anyone else like to make a
25 comment for the record?

1 As I mentioned, we'll be here,
2 we'll stick around afterwards as well to
3 discuss anything you would like and we
4 do have the opportunity for comments.
5 Bob, actually if you go back one slide
6 in case anyone didn't get the
7 information to send the written
8 comments, there's the mailing address
9 and the E-mail address.

10 But I guess would anyone else
11 like to make a verbal comment at this
12 time? If not, I thank you very much for
13 coming out and attending our public
14 meeting.

15 Thank you for signing in as well.
16 We do have a mailing list which you can
17 be put on. If you would like to
18 receive future mailings on this project
19 or other FUSRAP projects, you can
20 mention that to [REDACTED] on your
21 way out, put a notation by your name on
22 the sign-up list.

23 With that we will conclude the
24 meeting and I thank you again for your
25 time coming out.

1 CERTIFICATE

2 .

3 State of Ohio) SS.:

4 County of Lake)

5 I, [REDACTED] a Notary
6 Public within and for the State of Ohio,
7 duly commissioned and qualified, do
8 hereby certify that the within named
9 witness, was duly sworn to testify the
10 truth, the whole truth and nothing but
11 the truth in the cause aforesaid; that
12 the testimony then given by the witness
13 was by me reduced to stenotypy in the
14 presence of said witness; afterwards
15 transcribed, and that the foregoing is a
16 true and correct transcription of the
17 testimony so given by the witness.

18 I do further certify that this
19 deposition was taken at the time and
20 place in the foregoing caption
21 specified.

22 I do further certify that I am
23 not a relative, counsel or attorney for
24 either party, or otherwise interested in
25 the event of this action.

1 I am not, nor is the court
2 reporting firm with which I am
3 affiliated, under a contract as defined
4 in Civil Rule 28 (D).

5 IN WITNESS WHEREOF, I have
6 hereunto set my hand this day of
7 , 2005.

8 .
9 .
10 .
11 .

12 ██████████, Notary Public
13 within and for the State of Ohio

14 .
15 .
16 .
17 .

18 My commission expires October 31, 2006.

19 .
20 .
21 .
22 .
23 .
24 .
25 .

ATTACHMENT 2: [REDACTED] COMMENTS

LRB

From: [REDACTED]
Sent: Tuesday, July 19, 2005 7:42 AM
To: Fusrap, LRB
Subject: Painesville Site

I live close to this site and am appalled that someone thinks this land is usable for homes, a winery, etc. I know that area used to glow in the dark from processes. Please do not be casual in your clean up. I don't want to see another Love Canal so close to home. Thank you.

8/31/2005

ATTACHMENT 3: [REDACTED] COMMENTS

July 26, 2005

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara St.
Buffalo, NY 14207-3199

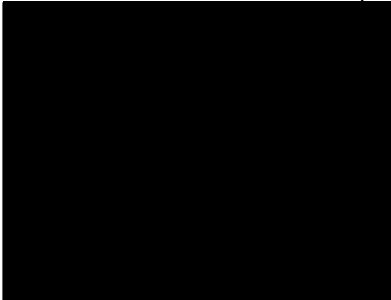
Attn: CELRB-PM-F

Re: Comments: Painesville, Ohio FUSRAP

Although Alternate 3 is over twice the cost of Alternate 2, I am in agreement with USACE for off-site disposal.

The Diamond Alkali Waste Lake Hazardous Waste Site located to the south was capped on-site and has not been monitored adequately for potential exposure or environmental risks. Problems associated with improper containment has been reported at this site.

I support Alternate 3 and feel Alternates 2 and 3 should be excluded from any consideration. Thank you.



ATTACHMENT 4:



Optional:

If you have further comments about today's event, or any remaining questions that were not specifically addressed, please note them here. We will post responses to our website within one month. Please provide your name and address below so that we can mail a personal response to you.

WHERE IS CONTAMINATED SOIL GOING? WHAT STATE? WHAT SITE?
WHAT IS KIND SITE BEING USED FOR NOW?
HOW LONG WILL IT TAKE FOR CLEANUP? WEEKS?

Check here if you would like to be added to our mailing list.

Thank you for your input!



US Army Corps
of Engineers®
Buffalo District

ATTACHMENT 5: ANONYMOUS COMMENTS

Optional:

If you have further comments about today's event, or any remaining questions that were not specifically addressed, please note them here. We will post responses to our website within one month. Please provide your name and address below so that we can mail a personal response to you.

unsure if the proposed costs were general numbers or proposals for
the state and/or local government / community ...
because if Diamond Magnesium was aiding the ~~gov~~ US Government
during wartime (with the Manhattan Project) clean-up should be on
the US Government's dime

Name: _____ Phone: _____

Address: _____ Email Address _____

City/State/Zip: _____

Check here if you would like to be added to our mailing list.

Thank you for your input!



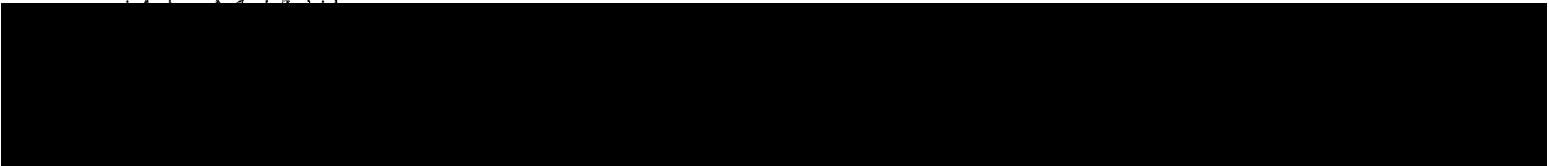
US Army Corps
of Engineers
Buffalo District

ATTACHMENT 6: [REDACTED] COMMENTS

Optional:

If you have further comments about today's event, or any remaining questions that were not specifically addressed, please note them here. We will post responses to our website within one month. Please provide your name and address below so that we can mail a personal response to you.

IT IS REQUESTED THAT ALL EFFORTS
BE MADE TO ALLOW ANY USE OF THIS
LAND RATHER THAN LIMITED TO INDUSTRIAL
USE. PLEASE DO YOUR BEST WITH THIS GOAL



Check here if you would like to be added to our mailing list.

Thank you for your input!



**US Army Corps
of Engineers®**
Buffalo District

**ATTACHMENT 7: [REDACTED] COMMENTS (TWIN RIVERS
TECHNOLOGIES)**



780 Washington Street
Quincy, MA 02169
(617) 472-9200
(617) 472-5460 fax
www.twinriverstechnologies.com

August 4, 2005

U. S. Army Corps of Engineers
Buffalo District
FUSRAP Information Center
1776 Niagara Street
Buffalo, NY 14207

RE: Twin Rivers Technologies Painesville Comments for the Final Proposed Plan for Remediation of the Painesville FUSRAP Site

Dear Sirs or Madams:

Twin Rivers Technologies Painesville, ("TRTP"), is pleased to submit comments for the Final Proposed Plan for Remediation, ("Plan"), of the Painesville Site, ("Site"), under the Formerly Utilized Sites Remedial Action Program, ("FUSRAP"). TRTP is the only direct and active abutter to the Site and is located due east of the Site at 697 Hardy Road, Painesville, OH 44077. In principle, TRTP supports the cleanup efforts that have been proposed by the U. S. Army Corps of Engineers, ("ACOE"), in the Plan for its actions on the Site in its selection of Alternative 3 (Plan, Part 7.3). TRTP agrees that the Site should be remediated to the highest possible standards to protect the community, worker exposure, and all sensitive environmental receivers.

However, TRTP believes the Plan fails to adequately identify the full extent of contamination or identify remedial actions for those areas should contamination be identified. This is very concerning to TRTP since the Plan has also failed to address long term off-Site health and safety impacts for industrial workers that are currently exposed to soils with varying levels of contamination well above background contaminant levels. Additionally the Plan does not take into consideration the possible impacts to existing businesses that could result from the proposed use restrictions identified in the Plan.

TRTP has granted the ACOE a Right of Entry (April 2005) and a Right of Entry Extension (July 2005) to allow for additional soils testing. Until this testing and an accurate delineation is completed the approval of the Plan made. It should be noted that the delineation of the contaminated area identified in the Plan, specifically in Area C, has been reduced to include only those areas which have levels of contamination over ten (10) times background and requires use restrictions to be placed on the Site's future use. In the May 2003 RI/FS, the impact area included areas exhibiting one to two (1-2) times background levels which included property owned and operated by TRTP. By accurately assessing the extent of off-site contaminant levels a full scope of remediation may be made.

Should off-Site contamination be found, TRTP agrees that the Site that the boundaries of the Site should be extended to include remedial efforts that would result in the highest possible standards to protect the community, worker exposure, and all sensitive environmental receivers. It is also TRTP's belief that ACOE should work with TRTP to minimize any operational impact that the remediation may have on the TRTP's business and that all off-Site contamination should be restored to background levels to avoid these issues. Operational impacts could include: First, the excavation could interrupt methane gas feed line that supplies fuel to the TRTP boilers. Second, the excavation activities will require the removal of the rail spike affecting railcar storage and shutdown the loading stations along the TRTP property boundary, thus jeopardizing TRTP operations. Third, such excavation may also delay the extension of that rail spike and limit future business expansion planned at the TRTP property. Lastly, TRTP employees actively work adjacent to the remediation site. Health testing and monitoring should be conducted to insure no adverse effects of the work affect these employees.

If you need additional information or would like to discuss these issues in more detail please contact me at [REDACTED] Thank you for your assistance.

Best regards,

Twin Rivers Technologies

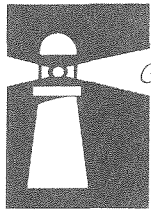
[REDACTED]

Director of Environmental Safety Systems

Cc: [REDACTED] President TRT
[REDACTED] Vice President Operations TRT
[REDACTED] Director of Operations -- TRP
[REDACTED] Environmental Manager -- TRP
[REDACTED] -- Supervisor, Bureau of Radiation Protection
[REDACTED] -- Chief, Office of Federal Facilities Oversight

**ATTACHMENT 8: [REDACTED] COMMENTS (LAKE COUNTY
GENERAL HEALTH DISTRICT)**

LAKE
COUNTY



Guiding Your Health

**GENERAL
HEALTH
DISTRICT**

August 15, 2005

U.S. Army Corps of Engineers
Buffalo District
FUSRAP Information Center
1776 Niagara St.
Buffalo, NY 14207

Re: Comments regarding the Final Proposed Plan for Remediation of the Painesville Site, Fairport Nursery Rd., Painesville, Ohio

Dear Sir or Madam:

The Lake County General Health District would like to take this opportunity to comment on the above referenced plan. Our comments are as follows:

- 1) Throughout the document the report references a "likely continued industrial use." Please be advised that the Painesville Works Site is adjacent to this site. The Painesville Works Site is a hazardous waste site currently in the feasibility and preferred plan stage for several operable units. The Ohio EPA Proposed Preferred Plans make reference to the potential for residential and recreational end uses on several operable units. There have been significant changes since the completion of the USACE RIFS in 2003. The Lake County General Health District strongly suggests that USACE contact [REDACTED], Ohio EPA site coordinator of the Painesville Works Site at 330-425-9171. In addition it would be advisable to contact Hemisphere Corporation at 216-464-4105, the redevelopment company also involved with that site. If the adjacent Painesville Works Site has areas of residential end use, how will this affect the USACE proposed remediation plan? Will the risk assessment be re-evaluated?
- 2) The Oak Ridge National Laboratory radiological surveys of 1988, 1990 and 1991 indicated the residual radioactivity present at the site was above guidelines for unrestricted use. What risks did and does the site pose for the former Uniroyal employees and what are the risks to the Lonza now Twin Rivers employees?
- 3) The plan references the removal of approximately 1,300 cubic yards of radiologically contaminated soil based on an Action memorandum (1998). The project was suspended due to the discovery that the extent of contamination was greater than anticipated in the Action Memorandum. The Action Memorandum was based on the Characterization Report completed by Bechtel National, Argonne National and Science Applications International. It is rather disconcerting that the USACE selected an alternative from what should have been an extensive, thorough survey that was either inaccurate or was underestimated. What assurances does the public have that the planned remediation will thoroughly address the extent of the contamination in this attempt?

33 Mill Street
Painesville, Ohio 44077

Painesville: (440) 350-2543
Cleveland: (440) 918-2543
Madison: (440) 298-3334/Ext. 2543
Fax: (440) 350-2548
www.lcghd.org

[REDACTED]
Health Commissioner

- 4) The plan references the extensive storm water drainage system present on site. Please be advised that the drainage system on the Painesville site is connected to the storm water drainage system from Twin Rivers. Although much of the site is still covered with concrete and asphalt, all the buildings have been demolished except the main office building. To our knowledge, the storm drain system is open to the elements and none of the physical components of the storm water system have been sealed. Also be aware that Twin Rivers also discharges non-contact process cooling water to that storm water discharge system. Has the storm water discharge to the Grand River been surveyed for radiological contamination? If not, then it should be.
- 5) In the Human Health Risk Assessment summary there is a reference to total excess cancer risk. Does this risk represent the additive risk from each radionuclide present at each area?
- 6) There is reference in the scope and role section of the plan that the remediation will only address constituents of concern related to Atomic Energy Commission activities. Has USACE contacted the Ohio EPA concerning the potential hazardous wastes that may be commingled with the radiological waste? The Ohio EPA site coordinator for this hazardous waste site at the current time is Kurt Kollar.
- 7) The plan on page 31 clearly indicates that with the implementation of Alternative 3, there will be environmental risks to on-site workers, the community and the environment. Does the term environmental risk translate to a human health risk? Specifically, what type of environmental and engineering controls will be implemented to minimize risk to the public, the site workers, the Twin Rivers employees and the environment during the remediation? How much radiological contamination can be expected in the dust and storm water? How will dust control and storm water be handled at the site during remediation?

In closing, the Health District staff would like to meet the USACE representatives responsible for the oversight of this site to discuss the specifics of the remediation well in advance of the beginning of the project. We want a clear understanding of the process and sufficient knowledge to handle questions from the public once remediation begins. Please take these comments and questions into consideration as we look forward to your response. Please contact me at [REDACTED] [REDACTED] to schedule a meeting in the near future.

Sincerely,
Lake County General Health District

[REDACTED]
Supervisor of Liquid/Solid Waste & Water Supply Programs

Cc/ [REDACTED], USACE
Painesville Township Trustees
[REDACTED], Ohio EPA, Northeast District Office
[REDACTED], Ohio EPA, Northeast District Office

ATTACHMENT 9: [REDACTED] COMMENTS (OHIO EPA)



State of Ohio Environmental Protection Agency

Northeast District Office

2110 East Aurora Road
Twinsburg, OH 44087-1924

TELE: (330) 963-1200 FAX: (330) 487-0769
www.epa.state.oh.us

[REDACTED], Governor
[REDACTED], Governor
[REDACTED], Director

August 22, 2005

RE: PROPOSED PLAN COMMENTS
PAINESVILLE FUSRAP
LAKE COUNTY, OHIO

[REDACTED]
U.S. Army Corps of Engineers - Buffalo District
ATTN: CELRB-TD-EE
1776 Niagara Street
Buffalo, NY 14207-3199

[REDACTED]:

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the "Final Proposed Plan for Remediation," (Plan) dated July 2005 submitted by the U.S. Army Corps of Engineers (USACE) for the former Diamond Magnesium Site, located in Painesville, Ohio. The document presents the USACE's preferred alternative for the cleanup of radiological contamination present at the FUSRAP site. The preferred alternative involves the excavation of impacted soil exceeding a construction worker sum of ratio (SOR) of 1, off-site transportation, and disposal of the soil at a commercial facility licensed and/or permitted to accept radiological waste.

Ohio EPA's prepared statement at the July 23, 2005 public meeting for the Plan stands. Ohio EPA opposes the Plan but has publically announced that the path forward that Ohio EPA is taking is to allow the cleanup to proceed pending all comments received on the Plan. Ohio EPA will hold off our final judgement of the success of the cleanup until the post excavation certification results are received. A copy of the statement made by Ohio EPA at the public meeting is included as an enclosure to this document.

Ohio EPA comments regarding the preferred alternative are presented below.

1. Page 4, 4th paragraph: The Plan states that based on the Oak Ridge National Laboratory findings from a 1988 investigation, the site exceeded existing guidelines for unrestricted use (ORNL 1990, 1991 *Directive, Regulations, and Standards* document). Please provide the steps the federal government or its authorized representatives implemented to control and contain the radiological contamination known to be present at the site following the 1988 investigation and answer the following questions. Did the federal government or its representatives inform the subsequent property owners of the presence of the radiological contamination in a manner and time frame that would have prevented or limited the spread of the radiological contamination to surrounding areas? Does the federal government have some responsibility for the assessment and cleanup, if needed, of all radiological contamination associated with the pitchblend ores brought to the site regardless of how they came to be placed?

2. Page 4, 4th paragraph: Please describe the differences in ORNL's meaning of "unrestricted use" (ORNL 190,1991) versus USACE meaning of "unrestricted release" as stated on page 27, last line.
3. Page 27, last line: Does USACE's definition of "unrestricted release" for this project mean that the FUSRAP area upon completion of clean up activities will be safe for industrial use but not safe enough for anyone to use in all other foreseeable ways? If the answer is yes, then is this not a restriction of future use?
4. In May, 2003, the USACE issued a draft Proposed Plan which was later retracted. The document included a proposed alternative similar to this preferred alternative which was based on an industrial use. The proposed alternative acknowledged that "*following completion of the remedial action, the site would be released for industrial use. Land use controls limiting the site to industrial uses would need to be imposed.*" The preferred alternative is based on an industrial use restriction yet the Plan states that "*following completion of the remedial action, the site would meet the requirements for unrestricted release.*" Please explain why the two alternatives are based on the same future industrial use scenario but the preferred alternative fails to acknowledge the need for land use controls.
5. Please describe the administrative or other mechanism USACE will use to ensure the anticipated future use is adhered to for the duration of the time necessary. Ohio EPA recommends that a "Land Use Control Plan" be developed for managing, maintaining, and ensuring that institutional controls and restrictions for the FUSRAP area are protective for future users, since the site is being restricted to a specific use.
6. Figure 5: The Figure presents the approximate boundary for areas to undergo excavation in accordance with the preferred alternative. The May 2003 Proposed Plan included a figure (Figure 7) which depicted the approximate boundary of areas exceeding a SOR greater than 1 for subsistence farmer and areas exceeding a SOR greater than 1 for an industrial use. USACE's asserts that the cleanup of the areas identified on Figure 5 may result in levels meeting the State of Ohio's "free-release" criteria specified in Ohio Administrative Code 3701:1-38-22. It is not clear if all areas that have contamination with a SOR greater than 1 for a subsistence farmer contain an area within that footprint that will be subject to excavation under the Plan. If an area exceeds the SOR of 1 for a subsistence farmer but does not exceed the SOR of 1 for a construction worker identifier, then the area would not be subject to any type of remedial action under this preferred alternative, thus that area would remain above the State's free release standard. The Plan should include a figure similar to Figure 5, but include the contaminated soil footprint for areas exceeding the SOR of 1 for a subsistence farmer and the soil above the construction worker cleanup levels.
7. The Plan does include a figure showing all areas of radiological contamination above background that is attributable to federal government activities. In order to understand the full nature and extent of the radiological contamination this information should be presented in the Plan since it is not presented in other site documents.

8. Page 12, Section 3.4: The Plan provides an estimated volume of soil to be excavated. Figure 5 references the surficial area of the targeted areas. The Plan states on page 18, 1st paragraph that the risk to the industrial worker was evaluated from exposure to surface soils (i.e., 0 - 2 feet below ground surface.) Does this depth serve as the point of compliance to limit the depth of the excavations? Page 34, Section 9.0 of the Plan states that all on-site soils exceeding the construction worker cleanup goals will be excavated for proper disposal. Does this mean there is no depth restriction for the excavation? The Plan will need to include information on what criteria will be used to determine the point of compliance for the depth of excavation. A construction worker would be exposed to soil much deeper than two feet during routine construction work. How does the Plan account for exposure to soils and depth? If a "not to exceed depth" is to be used and the residual contamination exceeds the construction worker cleanup goal beyond that depth what will be done about the remaining residual contamination? What is the "not to exceed depth" and what is it based on?
9. Page 29, Section 8.1, 3rd paragraph: The Plan should be revised to insert the phrase "of the proposed alternatives" after the phrase "Alternative 3 provides the best protection..." The statement is misleading because the **best** protection of human health and the environment would involve the cleanup of residual radiological contamination to levels than would result in a SOR less than 1 for a subsistence farmer identifier.

If you have any questions concerning this matter, please contact me at [REDACTED]

[REDACTED]
Site Coordinator
Division of Emergency and Remedial Response

[REDACTED]
enclosure

cc: [REDACTED], Ohio EPA, OFFO, SWDO
[REDACTED], Ohio EPA, DERR, NEDO
[REDACTED], Ohio Dept. of Health
[REDACTED], Chemtura Corp.
[REDACTED], Twin Rivers Technologies

Good evening,

The Ohio Environmental Protection Agency (Ohio EPA) has been working with the Department of Energy and U.S. Army Corps of Engineers (Army Corps) for more than 10 years to investigate the radiological contamination left behind by the former Diamond Magnesium facility here in Painesville. Through this effort, Ohio EPA believes that the contamination has been adequately investigated and characterized allowing the cleanup to move forward. The extensive characterization of the site was found to be necessary when after a 1998 removal action of a contaminated area was halted because of an unexpected increase in the scope of the work.

Ohio EPA is here to provide our view of the Proposed Plan for finishing the cleanup of this site and to hear input from local stakeholders regarding the Army Corps' proposal for addressing the remaining radiological contamination at the site. At this point, Ohio EPA has major differences of opinion about how the Army Corps is interpreting CERCLA (Superfund law) to develop cleanup levels, risk calculations and institutional controls for the site. Officially, the Army Corps is saying that they **will** clean up the site **but** only to levels safe enough for future industrial use (i.e., restrictive release.) This means that the future use of the now vacant property would be restricted to industrial use only. The Army Corps based their cleanup plan on their self assessment of the foreseeable future use of the area and their determination that the reasonable expected future use of the site is industrial. By restricting the future use to an industrial use only status increases the amount of radiological contamination allowed to remain in-place. Ohio EPA believes this assessment does not reflect local trends in the re-use of former industrial land and that the future use should include a mix of residential and recreational uses.

All of these major issues are resolved if the Army Corps' removal of the contaminated soil achieves "free release levels" (acceptable for any future use) for the contamination at the site when they do the cleanup. This means that based on the assessment of the residual contamination, the site is clean enough for anyone to use in any foreseeable way. The Army Corps is confident that they will reach free release status even though this is not the goal of this proposed cleanup plan. After reviewing their results at other sites, we agree that this is possible. Therefore, the path forward that Ohio EPA is taking is to allow the cleanup to proceed as the Army Corps has proposed and hold off our final judgement of the success of the cleanup until the post excavation certification results are received. As in the past, Ohio EPA would have significant involvement in the oversight of the actual cleanup and in the development and review of the cleanup certification plans. Ohio EPA believes that this is the best option available for all parties by allowing the cleanup to start and avoid delays that could result in the loss of federal funding.

There is also another issue that we are trying to resolve. Two areas within the current property boundary but outside of the official Formerly Utilized Sites Remedial Action Program (FUSRAP) site boundary have elevated radiological contamination present and will not be cleaned up under this proposed plan. Based on available information, the property owner unknowingly moved radiological contaminated construction and demolition debris to other parts of their property and buried it in two landfills. The Army Corps has stated that this material legally cannot be addressed by FUSRAP as they interpret the limitations on their program. This is a more difficult legal issue and I'm not sure there is a quick resolution for this one. We will continue to work on this issue with appropriate parties.

Thank you for your time.

ATTACHMENT 10: [REDACTED] COMMENTS (CHEMTURA)



Great Lakes Chemical Corporation
A Chemtura Company
One Great Lakes Boulevard
West Lafayette, IN 47906

August 22, 2005

[REDACTED]
[REDACTED]
www.chemtura.com

CERTIFIED MAIL / RETURN RECEIPT
REQUESTED # 7003-3110-0001-4454-1042

[REDACTED]
U.S. Army Corps of Engineers
Buffalo District
FUSRAP Information Center
1776 Niagara Street
Buffalo, NY 14207

**RE: 30 Day Public Comment Period
USACE Painesville FUSRAP Site
Submission of Comments by Crompton Manufacturing Company, Inc.**

[REDACTED]

We would like to take this opportunity to provide written comments beyond those that were verbally presented by our [REDACTED] at the July 26 public meeting. [REDACTED] followed up by forwarding to you (by email on Thu 7/28/2005 6:51 AM) a written version of the statement he read at the meeting.

We have the following additional comments:

(1) It is understood that radioactive contamination on the north parcel resulted from the importation onto the site of scrap steel that had radioactive residues. It is further understood that the mechanism of soil contamination resulted from (a) the incomplete removal of the residually contaminated scrap steel from the site, and (b) the radioactive residues from the scrap steel having been "shed" from the scrap steel and on to the soil. Conceivably, because the scrap was stored outdoors the latter mechanism had a component involving the washing of the residual radioactively contaminated particles from the scrap steel onto and into the soil. Thus storm-water would have been the media by which radioactive contamination would have been spread to certain areas of the site. As a result, it is likely that storm-water flow (by sheet-flow, and either point-source or non-point-source discharge) had historically spread contamination to soil and sediments within the south parcel, the Grand River, and Lake Erie.

We do not believe that the Corps site assessment to the south or beyond is complete (similar to Twin River Technology's concerns to the East). As such, there is a likelihood for un-assessed radioactive contamination to be present on

the southern parcel, in the Grand River sediments, and at the River's discharge to Lake Erie.

At a minimum, we would like for the Corps to document (a) the thoroughness of the Remedial Investigation on all parcels of our property and (b) why the spreading of radioactive contamination resulting from natural processes is limited to just the northern parcel and furthermore to just within the smaller confines of the former investigations within the northern parcel.

(2) Because of the proximity of the Hemisphere Development Brownfield project to the west, it is believed that future highest and best end use of this property may not be industrial. On the contrary, industrial use is likely to be shunned by future neighbors to the west. Property values are expected to increase at a rapid rate in the coming few years and it is highly unlikely that future neighbor investors, owners, and tenants will accept or approve new industrial construction on the neighboring land (namely the northern and southern parcels).

Furthermore, with the ubiquitous decline of the US manufacturing industry, it is highly unlikely that "new" manufacturing construction will occupy this land in the future. To confine future site use to industrial, rather than commercial, recreational or mixed use, limits highly any future productive and/or likely use of the land.

Productive use of the land would conceivably include productivity from a tax-base stand-point from complimentary or competitive land uses adjacent to the Hemisphere project. Limiting future site use would be denying some level of tax income (i.e., even if only mixed use, recreational, or non-residential) to the local, county, and state governments.

As a result, we believe that the Corps needs to put forth an additional remedial alternative that was not presented. The additional alternative is one in which the site is returned to and meets free release standards. It is believed that the incremental cost difference for the federal government to clean up to the highest standard will be small in comparison to the return in benefits to the surrounding environment, community, and business stakeholders, and the financial standing of the site.

(3) The Corps has stated that it is legally not authorized and thus cannot address potential Manhattan Engineering District (MED) related radioactive material that originated at the former government contractor site, if it was even unknowingly moved by another party to property that was neither owned or operated by the government contractor. It states that it cannot designate such a property as either within the FUSRAP site boundary, or as a "vicinity property" under the rules of the FUSRAP site designation manual. Chemtura does not agree with the Corps that such a site is precluded from remediation as either part of the FUSRAP site itself, or as a vicinity property; We believe that the 1992 DOE

**ATTACHMENT 11: [REDACTED] COMMENTS (OHIO
DEPARTMENT OF HEALTH)**

August 21, 2005

[REDACTED]
USACE
1776 Niagara Street
Buffalo, NY 14207-3199

Dear [REDACTED]:

The Ohio Department of Health has completed its review of the U.S. ARMY CORPS of ENGINEERS document entitled "FINAL PROPOSED PLAN for REMEDIATION ". The plan details the scope of remediation of the former DIAMOND MAGNESIUM SITE located in Painesville, Ohio, and outlines the preferred alternative as well as the rationalization for the selection.

After review of the document ODH would like to submit the following comments. The plan references other documents such as the 2003 Remedial Investigation/Feasibility Study (RI/FS) Report and the 2005 Feasibility Study Addendum. The comments below make reference to these documents as well.

Comment 1: The determination of the future use of the site seems to be predicated solely on the past use of the property. However recent construction suggests that property in the area is moving toward a residential use! In fact, several condominiums have already been constructed near the site boundary. How has this development impacted your determination of the future use of the site (Residential vs. Industrial)?

Comment 2: As you know the Industrial Use scenario would require the imposition of restrictions and implementation of controls to ensure that the land use is restricted to industrial use. What mechanism do you have for implementing such controls?

Comment 3: It has been stated in the past that even though the established Derived Concentration Guidelines (DCGL's) are high, that after excavation the concentration of residual radioactivity would meet free release criteria. In fact, it has been stated that your cleanup goals are at or near background levels. In the table you are now representing DCGL's as cleanup goals. Which are they?

Comment 4: In MARSSIM type final surveys, the determination of the status of the survey unit (i.e. DID IT PASS OR FAIL) is determined by the use of the value of the weighted DCGL along with other parameters dependent upon the DCGL.

Comment 5: The map that is attached to the report delineates areas of excavation within the site boundary. These areas are so classified by virtue of the fact that they contain radioactivity above the published DCGL's. However, after excavation, you maintain that residual radioactivity will be close to background levels for the contaminant, Will this be demonstrated within the framework of MARSSIM?

Comment 6: Our most important concern is areas within the site boundary that have levels of contamination below the DCGL's but are significantly above background level. What magnitude of contamination must exist for these levels to be deemed harmful which would result in their excavation?

Regards:

████████████████████