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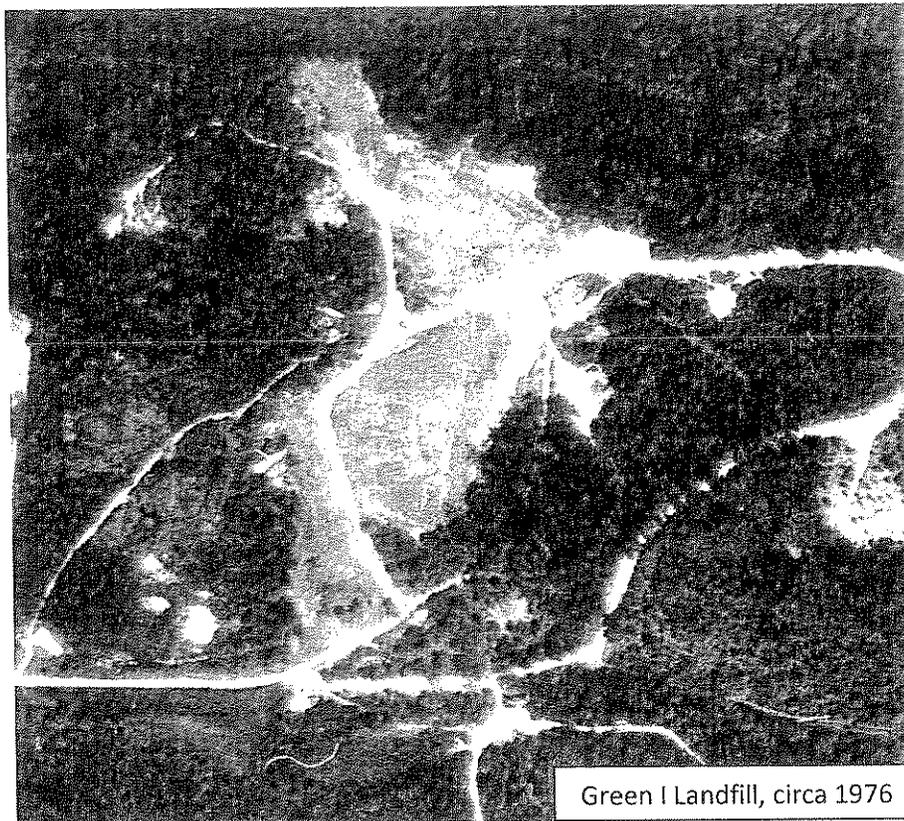
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Amended Decision Document

For the Remediation of Green I Landfill

Green Township, Hocking County, Ohio



Green I Landfill, circa 1976

Division of Environmental Response and Revitalization
Remedial Response Program
January 2015

I certify this to be a true and accurate copy of the
official documents as filed in the records of the Ohio
Environmental Protection Agency.

By *Sandy Cassiter* Date: 3-19-15

I verify this to be a true and accurate copy of the
original documents as filed in the records of the Ohio
Environmental Protection Agency.

By _____ Date _____

DECLARATION

SITE NAME AND LOCATION

Green I Landfill, Hunters Woods Road, Logan, Hocking County, Ohio

STATEMENT OF BASIS AND PURPOSE

This Amended Decision Document presents the selected remedial action for the Green I Landfill in Green Township (Logan), Hocking County, Ohio, chosen in accordance with the policies of the Ohio Environmental Protection Agency, statutes and regulations of the State of Ohio, and the National Contingency Plan, 40 CFR Part 300.

ASSESSMENT OF THE SITE

Actual and threatened releases of industrial waste, hazardous waste and other wastes at the site, if not addressed by implementing the remedial action selected in the Amended Decision Document, constitute a substantial threat to public health or safety and are causing or contributing to air or water pollution or soil contamination.

From 1970 to 1974, the Green I Landfill was the only local disposal facility near Logan, Ohio, and accepted household, municipal, and industrial wastes. A number of local manufacturing facilities disposed of approximately 4,600 drums of liquid industrial wastes, including polyols (an alcohol compound), isocyanates, alcohols, oils, waxes, paints, solvents, paint booth cleanings, broken glass, floor sweepings, glass batch and flue dust residues as well as furnace refractories. The landfill was closed, but not in full accordance with applicable Ohio environmental statutes and regulations in effect at the time. Contaminated leachate has been observed discharging from the landfill perimeter in violation of Ohio law.

DESCRIPTION OF THE SELECTED REMEDY

The major components of the selected remedial alternative include:

- Construction of a composite cap system that will include an impermeable flexible membrane liner, passive gas venting, a clay layer consisting of existing soils at the Site, a drainage layer, a protective layer and a vegetative cover;
- Collection and storage (or treatment) of leachate discharging from the nine seeps at the perimeter of the landfill to prevent direct contact with the leachate and prevent discharge to surface water;
- Development of a long-term operation and maintenance plan that will include periodic sampling of groundwater, inspection of the installed landfill cap system, and leachate collection activities; and

- Establishment of an environmental covenant on the landfill property to prohibit the use of groundwater for potable or agricultural uses, and to prohibit building or placement of any permanent, occupied structure on the landfill property.

STATUTORY DETERMINATIONS

The selected remedial action is protective of human health and the environment, complies with legally applicable state and federal requirements, is responsive to public participation and input and is cost-effective. The remedy uses permanent solutions and treatment technologies to the maximum extent practicable to reduce toxicity, mobility and volume of hazardous substances at the Site. The effectiveness of the remedy will be reviewed regularly.



Craig W. Butler, Director



Date

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AMENDED DECISION DOCUMENT
Green I Landfill
Green Township, Hocking County, Ohio

1.0 INTRODUCTION

1.1 Executive Summary

On September 20, 2002, The Goodyear Tire & Rubber Company (Goodyear) signed Director's Final Findings and Orders with the Ohio Environmental Protection Agency (Ohio EPA) to investigate and develop remedial alternatives for the Green I Landfill located in Green Township, Hocking County, Ohio (Site). The remedial investigation (RI) Report was approved in December 2005. Through the course of conducting the RI, Ohio EPA's understanding of the Green I Landfill has greatly increased. The lateral and vertical extents of the landfill have been defined, the seeps and groundwater have been sampled, and the various ways that people, animals, birds, plants and other species can be affected by the landfill have been studied. The feasibility study (FS) Report was approved in December 2007 and outlined various options for addressing the threats to public health, safety and the environment identified during the RI.

The 10.6 acre Site is irregularly shaped and has nine locations where water appears on the ground surface (seeps) after coming into contact with waste (leachate). The major health and environmental risks of this Site come from direct contact with waste materials in the landfill; direct contact or ingestion of leachate emanating from the landfill or sediments in the on-Site drainage ways receiving leachate; and direct contact or ingestion of contaminated soils at the Site. Contaminants from the Green I Landfill have been detected in shallow groundwater, but not in the deeper regional aquifer used by local residents as a source of potable water. Contaminants found at the Green I Landfill in concentrations which pose a threat to human health or the environment include: acetone, benzene, benzoic acid, carbazole, ethylbenzene, trichloroethene, 1,4-dichlorobenzene, polychlorinated biphenyls (PCBs), and vinyl chloride. The following metals were also detected at the Site in concentrations that exceed background (naturally occurring in the vicinity of the Site) concentrations or cleanup standards: arsenic, barium, cadmium, copper, lead, manganese, selenium, thallium, vanadium, and zinc.

A human health risk assessment and an ecological risk assessment were conducted at the Site. The results demonstrated that the existing contaminants in environmental media pose or potentially pose unacceptable risks and/or hazards to human and ecological receptors sufficient to trigger the need for remedial actions.

Ohio EPA has prepared this Amended Decision Document for the remediation of the Site. The original Preferred Plan was issued by Ohio EPA on February 9, 2010, followed by a Decision Document dated November 22, 2010. Goodyear appealed the Decision Document to the Environmental Review Appeals Commission (ERAC) on

December 21, 2010, and the General Electric Corporation (GE) later joined the appeal. Based on the review of available information, including the information provided by Goodyear on January 16, 2013, and on the Ohio EPA approval on July 2, 2012 of Goodyear's request for an exemption pursuant to Ohio Revised Code (ORC) 3734.02(G) to a number of landfill capping requirements, Ohio EPA has modified the selected remedial alternative included in the February 2010 Preferred Plan and November 2010 Decision Document.

This Amended Decision Document summarizes information on the range of remedial alternatives evaluated; identifies Ohio EPA's selected remedial alternative and explains the reasons for selection of the remedial alternative. The Amended Decision Document is based primarily on an Ohio EPA approved RI and FS prepared by Goodyear and additional information provided and evaluated by the Agency during the ERAC appeal.

1.2 Scope of the Selected Remedial Action

Ohio EPA's selected remedial alternative should yield a permanent solution for risks associated with the contaminated media at the Site. The expectations for the selected alternative include:

- Reduction of human health risks to within acceptable limits; protecting human health and the environment from exposure to contaminants of concern in the buried waste, soil, ground water and surface water that are above acceptable limits;
- Short and long-term protection of public health and the environment;
- Compliance with applicable regulations;
- Cost-effectiveness and limitation of expenses to what is necessary to achieve the selected alternative's expectations; and
- Development of an operation and maintenance (O&M) plan to ensure the long-term protectiveness of the preferred remedial action and monitoring systems.

The selected remedial alternative in this Amended Decision Document includes:

- Construction of a composite cap system that will include an impermeable flexible membrane liner, passive gas venting, a clay layer consisting of existing soils at the Site, a drainage layer, a protective layer and a vegetative cover;
- Collection and storage (or treatment) of leachate discharging from the nine seeps at the perimeter of the landfill to prevent direct contact and discharge to surface water;
- Development of a long-term operation and maintenance plan that will include periodic sampling of groundwater, inspection of the installed landfill cap system, and leachate collection activities; and
- Establishment of an environmental covenant on the landfill property to prohibit the use of groundwater for potable or agricultural uses, and to prohibit building or placement of any permanent, occupied structure on the landfill property.

Ohio EPA finds that these measures will protect public health and the environment by reducing risk to acceptable levels once the remedial action objectives have been achieved.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Site History

The Green I Landfill is located on Hunters Woods Road in Green Township, Hocking County, Ohio (see Figure 1) approximately one and three-quarters miles north of the City of Logan. From 1970 to 1974, the Green I Landfill was owned and operated by Lee and Evelyn Notestine. Richard Donahey assisted with operations. Later, Mr. Notestine and Mr. Donahey became business partners. In 1978, Mr. Notestine sold his interest to Mr. Donahey, who is now deceased. In 1979 the plat for the Hunters Woods Subdivision was filed in the Hocking County Recorder's Office. From 1975 to 1990, the landfill property was owned by Mr. Donahey, but the mortgage was held by Citizen's Bank of Hocking County. Approximately six of the 10.6 acres of the landfill were auctioned to private individuals in the fall of 1989, which led to the further development of the area.

The majority of the landfill, along with some additional acreage, was sold to Leslie Johnson on May 4, 1990 at a sheriff's auction. In 1991, Mr. Johnson subdivided the property into three sections and sold approximately 22 acres, which included most of the Green I Landfill, to Mr. Bill Hamby. Goodyear purchased the majority of property on which the landfill is situated during the Remedial Investigation.

The Green I Landfill was the only local disposal facility near Logan, Ohio, in the early 1970s and accepted household, municipal, and industrial wastes. Goodyear's local production facility disposed of approximately 4,600 drums of liquid industrial wastes (The Goodyear Tire & Rubber Company, Wolfe, D.L., 1983). These drummed wastes included polyols (an alcohol compound), isocyanates, alcohols, oils, waxes, paints, solvents, and paint booth cleanings. In addition, Goodyear also disposed of various solid wastes at the Green I Landfill. GE also disposed of solid wastes at the Green I Landfill. These wastes included broken glass, floor sweepings, glass batch and flue dust residues as well as furnace refractories (General Electric, Michael Lamanna, 1990).

The Green I Landfill design was approved by the Ohio Department of Health in 1970. At the time the Green I Landfill operated, it was regulated by the Hocking County Health Department. Records obtained from the Hocking County Health Department and subsequent inspections performed by Ohio EPA indicate that the landfill was never properly closed pursuant to the rules in effect in 1974. In 1983 U.S. EPA installed four monitoring wells at the Green I Landfill, and attributed the identified groundwater contamination to the landfill. Following the U.S. EPA investigation, Ohio EPA conducted a Preliminary Assessment and Green I Landfill was prioritized for additional investigation.

In 1990, additional soil and groundwater samples were collected by Ohio EPA, which confirmed the presence of various contaminants of concern. In November 1990, while attempting to reclaim an oil well, approximately 10 buried drums were exposed during

excavation activities at the Site. A black tar-like substance began to surface and sampling indicated that the material contained a variety of chemicals including polychlorinated biphenyls (PCBs). An emergency action was initiated involving U.S. EPA and Ohio EPA. During this emergency response action, approximately 100 drums and 370 tons of soil were removed from the Site and disposed of at a facility licensed and authorized to accept such waste. PCB contamination of soils remained following the removal action and a U.S. EPA contractor treated the PCB contaminated soils in place.

In 1991, Ohio EPA conducted a geophysical study of the Green I Landfill to determine the approximate limits of waste placement. A secondary objective of the geophysical study was to attempt to identify areas within the landfill waste where large amounts of metals were detectable in order to determine if additional mass drum disposal had occurred. In 1994, a U.S. EPA contractor (PRC Environmental Management) evaluated the Site for inclusion on the National Priorities List (NPL) due to the threat posed to human health and the environment. The U.S. EPA contractor affirmed the presence of contamination, but determined that the Green I Landfill did not meet the requirements for inclusion on U.S. EPA's NPL.

In an effort to monitor the safety of the groundwater used by local residents near Green I Landfill, Ohio EPA conducted periodic private water well sampling from 1985 through 2003. All of the private water wells sampled were drawing water from the regional Big Injun/Blackhand Sandstone aquifer. To date, samples collected from private water wells have not detected landfill contaminants. Public water is available in the area of Green I Landfill, however no service has been established on Hunters Woods Road. All residents in the area of the landfill utilize the regional aquifer for their potable water.

Based on their use of the Green I Landfill for disposal of hazardous substances, Goodyear and GE were identified as responsible parties at the Green I Landfill. Goodyear signed the Ohio EPA Director's Final Findings and Orders to conduct a Remedial Investigation and Feasibility Study in 2002. Several interim actions were initiated for the protection of public health, safety and the environment. These interim actions included the installation of fencing at the Green I Landfill surrounding nine springs of contaminated water ("seeps") and additional sampling and study of two private water wells on and adjacent to the Site. The completion of these activities resulted in the abandonment of one of the private water wells because of poor construction. The remaining private water well was determined to have been constructed in a manner that provides for a safe source of potable water. This was confirmed through several historic sampling events.

The RI Report was approved in December 2005. Through the course of conducting the RI, Ohio EPA's understanding of the Green I Landfill has been greatly increased. The lateral and vertical extents of the landfill have been defined, the seeps and groundwater have been sampled, and the various ways that people, animals, birds, plants and other species can be affected by the landfill have been studied. The FS Report was approved

in December 2007 and outlines various options for addressing the threats to public health, safety and the environment identified during the RI.

On February 9, 2010, Ohio EPA issued a Preferred Plan identifying the preferred alternative for the remediation of the Green I Landfill. A public meeting was held and public comments were received. Several comments received from local residents related to issues of traffic control and roadway access. While Ohio EPA understands the issues associated with the comments, Ohio EPA has no direct jurisdiction over a number of the issues raised. However, Ohio EPA will work with the responsible parties to address these comments to the extent practical during the planning and performance of the work.

On November 22, 2010, the Decision Document for the Remediation of the Green I Landfill was entered into the Director's Journal. On December 21, 2010, Goodyear filed a Notice of Appeal of the November 2010 Decision Document with the Environmental Review Appeals Commission (ERAC), and GE subsequently joined the appeal.

In the November 22, 2010 Decision Document, Ohio EPA selected a remedial alternative that followed the current regulatory capping requirements for a modern landfill. After filing its ERAC appeal, Goodyear submitted to Ohio EPA on September 12, 2011 a request for an exemption pursuant to ORC 3734.02(G) from certain landfill capping requirements. Upon review of the request for an exemption, Ohio EPA found that Goodyear made a technical demonstration that certain modifications to the capping requirements were technically equivalent and unlikely to adversely affect public health, safety or the environment. Accordingly, the Director of Ohio EPA approved Goodyear's exemption request on July 2, 2012. The exemption allows the following to occur as part of the remedy:

- Re-grade and use of existing soils that have been shown through testing to have the required permeability as the minimum 12-inch thick soil barrier;
- Construction of the cap using the existing soils at the Site without the requirement for re-compacting soils during construction and testing; and
- Elimination of the requirement for thirty (30) inches of soil cover for freeze/thaw protection.

In the context of the ERAC appeal negotiations, Ohio EPA was asked by Goodyear to reexamine the sample and lab data associated with the off-Site pond contamination. Goodyear provided additional information on January 16, 2013, to support the request. The screening concentrations used during the ecological risk assessment were based on the "Threshold Effects Concentration" or "TEC." Presently, U.S. EPA has adopted the use of "Probable Effects Concentration" or "PEC" for cleanup standards. The detected concentrations in pond sediments were above the TEC, but below the PEC. This Amended Decision Document reflects this new information, and based on the Agency's evaluation of this updated information, no remediation (no action) is required for the off-site pond.

2.2 Summary of the Remedial Investigation

The RI was conducted by Goodyear and included a number of tasks to identify the nature and extent of Site-related chemical contaminants. The investigation was conducted with oversight by Ohio EPA, and was approved in December 2005. The tasks included sampling of soil, ground water, surface water, and sediment. The data obtained from the investigation were used to conduct a baseline risk assessment (*i.e.*, an evaluation of the risks to humans and the environment posed by a site) and to determine the need to evaluate remedial alternatives. This Amended Decision Document contains only a summary of the RI and FS findings. For additional information, refer to the RI and FS Reports available for review at Ohio EPA's Southeast District Office and at the Logan-Hocking Library, both located in Logan, Ohio.

Included with this Amended Decision Document are figures taken from the RI Report showing the sample locations where testing determined that contaminants exceeded project action levels. During the RI, the following activities were conducted:

- A total of 36 test pits were installed around the Green I Landfill to determine the lateral and vertical extent of wastes at the Site.
- To determine the concentration of metals in soils that have not been impacted by Site activities (*i.e.*, background concentrations), soil samples were collected from 15 soil sample locations outside the limits of the landfill (BSB-1 through BSB-15). Two composite soil samples were prepared from each of the 15 soil sample locations: one representative of a surface soil sample (0 to 4 feet below ground surface, "bgs") and another representative of a subsurface soil sample (4 to 4.5 feet bgs).
- Soil samples were collected from soil borings (SB-1, SB-2, and SB-3) and monitoring well borings (MW-2I, MW-4I, MW-5, MW-6, MW-6I, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, and MW-13) located outside the landfill limits. These samples were analyzed for volatile organic compounds (VOCs) (Method 8260B), semi-volatile organic compounds (SVOCs) (Method 8270C), and Target Analyte List (TAL) Metals (Methods 6010B and 7471A).
- The shallow and intermediate aquifers were evaluated for hydrogeologic properties using high-resolution borehole imaging and gamma logging. Monitoring wells MW-2I, MW-4I, MW-6I, and MW-6 were evaluated using this equipment.
- Groundwater samples were collected from the 11 newly installed monitoring wells (MW-2I, MW-4, MW-6, MW-6I, and MW-7 through MW-13) and the four existing monitoring wells (MW-1 through MW-4). Groundwater was analyzed for VOCs (Method 8260B), SVOCs (Method 8270C), and total and dissolved TAL Metals (Method 6010B and 7470A). Groundwater from monitoring well MW-8 was also analyzed for polychlorinated biphenyls (PCBs) (Method 8082).
- Surface soil and surface water samples were collected from a total of nine leachate seep locations (Seeps 1 through 8 and 5A). Four to five surface soil samples and one surface water sample were collected from each seep location. All samples were analyzed for VOCs (Method 8260B), SVOCs (Method 8270C), and TAL Metals (Method 6010B and 7470A). Select surface soil samples from Seeps 4, 5 5A and 8 were analyzed for PCBs (Method 8082).

- To determine the concentration of metals in sediments that have not been impacted by Site activities (i.e., background concentrations), 16 sediment samples from four locations (SD-1 through SD-4) were collected. One composite surface (0 to 0.5 feet bgs) sediment sample was collected from each of the 16 sample locations. The sediment samples were analyzed for TAL metals (Method 6010/7470), except beryllium and silver.
- Sediment samples were collected from four locations (SED-1 through SED-4) from 0 to 0.25 feet bgs along the ditch that runs through the Site. The samples were analyzed for VOCs, SVOCs, and metals.
- Three surface water samples (locations 1 through 3) and seven sediment samples (from locations 1 through 4) were collected from a small pond located down slope of Seeps 5 and 5A on property owned by Harold and Donna Phillips ("off-Site pond"). Ohio EPA gained access and samples were collected from the off-Site pond by the Ohio EPA (Goodyear could not obtain access to the property). Pond samples were analyzed for VOCs, SVOCs, TAL metals, and PCBs.

The nature and extent of contamination at the Green I Landfill in each environmental medium and the contaminants of concern attributable to the Site are described below in the following sections.

2.2.1 Soil Contamination

Background Soil Evaluation

To determine the concentration of metals in soils that have not been impacted by Site activities (i.e., background concentrations), soil samples were collected from 15 soil sample locations outside the limits of the landfill (BSB-1 through BSB-15). The sample locations were approved by Ohio EPA and collected from areas at a sufficient distance from the Green I Landfill. Sampling locations were limited to areas where Goodyear had access agreements.

Two composite soil samples were prepared from each of the 15 soil sample locations: one representative of a surface soil sample (0 to 4 feet bgs) and another representative of a subsurface soil sample (greater than 4 feet bgs). The composite surface soil samples were analyzed for TAL metals, except beryllium and silver which had not been detected in the preliminary assessments of the Site. The composite subsurface soil samples were analyzed for arsenic, iron, lead, and manganese. Soil background values were calculated according to Ohio EPA background calculation methodology (Ohio EPA, June 2004).

Landfill Perimeter Soil Evaluation

Soil samples were collected from soil borings (SB-1, SB-2, and SB-3) and monitoring well borings (MW-2I, MW-4I, MW-5, MW-6, MW-6I, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, and MW-13) located outside the landfill limits. These samples were analyzed for VOCs, SVOCs and TAL Metals. Results of these data are summarized in the RI Report (Table 3 and Figure 4).

Soil sampling results indicate that the soils outside the landfill limits are not impacted with VOCs or SVOCs above project action levels¹. The results of the soil sampling activities indicate that the soil outside the landfill limits contains concentrations of metals. Three metals (arsenic, iron, and manganese) have been detected at concentrations exceeding Preliminary Remediation Goals (PRGs) and above Site specific background concentrations. Arsenic exceeds PRGs (0.39 ppm) and/or background concentrations (11.025 ppm) in soil from SB-3 (4 to 6 feet), and MW-4I (4 to 6 feet), and MW-6I (6 to 8 feet). Concentrations ranged from 10.8 parts per million (ppm) to 18.1 ppm. Iron was detected exceeding PRGs (23,000 ppm – residential) and above background concentrations (30,850 ppm) in samples collected from borings MW-2I (0-2), and MW-2I 92-4). Concentrations of iron exceeding action levels and above background concentrations range from 37,900 ppm to 59,500 ppm. Manganese was detected in one soil sample from boring MW-2I (2-4) at a concentration of 4,840 ppm, which exceeds PRGs (1,800 ppm – residential) and background soil concentrations (1,327 ppm). Metals (iron, manganese, selenium, vanadium, and zinc) were also determined to exceed project action levels for ecological receptors at several locations outside of the landfill limits.

2.2.2 Ground Water

During the investigation, three ground water aquifers were investigated. On-Site monitoring wells were installed into the shallow and intermediate aquifers. Off-Site, Ohio EPA has sampled the deep, Blackhand Sandstone aquifer which supplies drinking (potable) water to local residents. Sample results from the intermediate aquifer indicate that Site related contaminants have not impacted this zone. Shallow aquifer sampling did, however, reveal impacts from Site-related contaminants. It should be noted that the vertical separation between the shallow and deep aquifers is greater than 250 feet with layers of relatively impermeable bedrock in between, which restricts the potential for downward migration of contaminants.

Borehole Imaging and Gamma Logging

The shallow and intermediate aquifers were evaluated for hydrogeologic properties using high-resolution borehole imaging and gamma logging. Monitoring wells MW-2I, MW-4I, MW-6I, and MW-6 were evaluated using this equipment. The gamma ray response was characteristic of the shale and siltstone (bedrock) formations encountered during drilling activities. The borehole imaging provided excellent resolution of the formations encountered, including bedding features and lithologic contacts. No fractures were observed in the data from the deeper wells. A fracture zone was observed in monitoring well MW-6 at approximately 40 feet bgs. This fracture zone is located in a siltstone/sandstone sequence. This zone was cased in the deeper wells, and was not

¹ A "project action level" is a concentration for a chemical of concern that has been determined by regulation or through a risk assessment to be protective of human health or ecological receptors. This concentration value could be based on a preliminary remediation goal ("PRG"); a drinking water maximum contaminant level ("MCL"); or a background concentration ("background").

observed in the deeper wells that were logged. The complete Geophysical Well Logging Report is included in the RI Report (Appendix E).

Groundwater

Groundwater samples were collected from the 11 newly installed monitoring wells (MW-21, MW-4, MW-6, MW-61, and MW-7 through MW-13) and the four existing monitoring wells (MW-1 through MW-4). Groundwater was analyzed for VOCs, SVOCs, and total and dissolved TAL Metals. Groundwater from monitoring well MW-8 was also analyzed for PCBs. Data from these samples are summarized in the RI Report (Table 4 and Figure 5). In June 2004, monitoring wells MW-2, MW-5, and MW-8 were resampled for arsenic and lead (total and dissolved).

Groundwater sampling data indicates that groundwater collected from the monitoring wells is not impacted with SVOCs or PCBs above project action levels. VOCs were detected in three wells (MW-1, MW-6, MW-12) at concentrations exceeding project action levels (MCLs and/or PRGs). Monitoring well, MW-1, located within the landfill limits contained concentrations of benzene (170 parts per billion (ppb)) and chloroform (26 J² ppb) which exceeded project action levels of 5 ppb and 0.17 ppb, respectively. Ethylbenzene (32 J ppb) was detected in MW-1 at concentrations below the MCL (700 ppb) but above the PRG (2.9 ppb). Vinyl chloride (1.4 ppb) was detected in monitoring well MW-6 in excess of PRGs (0.02 ppb) but not above the MCL (2.0 ppb). MW-6 is located outside the landfill on the east side about 200 feet north of Seeps 1 and 2. Benzene (0.47 J ppb) and vinyl chloride (1.8 ppb) were detected in excess of PRGs in monitoring well MW-12 but not above MCLs. MW-12 is located outside of the landfill on the south side, east of Seep 7. Concentrations of metals were detected in all wells, except MW-11, in excess of project action levels. Metals detected in groundwater above MCLs and/or PRGs include: aluminum, antimony, beryllium, cadmium, cobalt, iron, manganese, nickel, and thallium. Table 1 (pages 18-19) shows the project action levels for these metals.

2.2.3 Sediment

On-Site Ditch Sediments

Sediment samples were collected from four locations (SED-1 through SED-4) from 0 to 0.25 feet bgs along the ditch that runs through the Site. The samples were analyzed for VOCs, SVOCs, and metals. Results of sampling are provided in the RI Report (Table 7 and Figure 8). These analyses indicate that the sediment is not impacted by VOCs or SVOCs.

Arsenic and lead were detected in the sediment samples above project action levels and background concentrations. Arsenic was detected in all four samples above PRGs and background concentrations. Lead was detected in sample SED-3 at a

² A sample result marked with a "J" indicates an estimated value. This value is estimated because the contaminant was detected in the testing, but at a concentration lower than the chemist / analyst can assure the accuracy of the value ("below the method detection limit").

concentration of 838 mg/kg, which exceeds PRGs and background concentrations. Metals (arsenic, iron, lead, manganese, selenium, vanadium, and zinc) were also determined to exceed ecological criteria in several ditch sediment samples.

Off-Site Pond

A small pond is located down slope of Seeps 5 and 5A on an adjacent property, approximately 225 feet north of the landfill. The pond is approximately 60 feet by 80 feet (4,800 square feet) and at its deepest point is approximately four feet deep. This pond was constructed in the late 1970s or early 1980s for use as a temporary water storage area for use during the installation of an oil and gas well, which was never drilled. This man-made pond has limited vegetation and is a poor ecological habitat. Seven sediment samples (from locations 1 through 4) were collected from the off-Site pond by Ohio EPA personnel. Pond sediment samples were analyzed for VOCs, SVOCs, TAL metals, and PCBs. Lab results of sampling are provided in the RI Report (Table 9 and Figure 10).

Results of these analyses indicate that the sediment is not contaminated by VOCs or SVOCs above a level of concern. PCBs were reported in four of the seven samples submitted for analysis. PCBs were encountered at one sample location (Pond Sediment #4 – 0 to 0.5 feet) at a concentration (0.520 ppm) above the TEC. USEPA has adopted the use of a "Probable Effects Concentrations" for total PCBs of 0.676 ppm as a remediation goal based on ecological receptors. Further, the human health remediation goal for PCBs in soil based on a single chemical exposure and a residential scenario would be 2.2 ppm ($1E^{-5}$ excess lifetime cancer risk). The detected concentrations in the pond sediment do not exceed the levels of concern.

Arsenic was detected in each sample above the project action level. Concentrations of arsenic ranged from 23.5 ppm to 68.6 ppm. Iron was detected at each sample location above the project action level. Concentrations of iron ranged from 25,000 ppm to 60,800 ppm. In addition acetone is present at concentrations in the sediments exceeding ecological screening criteria. Benzoic acid and carbazole were detected at low concentrations and retained in the ecological risk assessment because no benchmark values are available for these low toxicity compounds. Although arsenic, iron, acetone, benzoic acid and carbazole were found in detectable concentrations, these compounds do not bioaccumulate and aquatic organisms will not likely be adversely affected.

2.2.4 Surface Water Contamination

At the off-Site pond, surface water samples were collected prior to sediment sample collection at each location. Samples were analyzed for VOCs, SVOCs, TAL metals (total and dissolved), and PCBs. Results of sampling are provided in the RI Report (Table 8 and Figure 9). Results of these analyses indicate that the surface water is not impacted by VOCs, SVOCs or metals (except for manganese, which exceeds ecological criteria) above project action levels. PCBs were encountered at all three sample locations at estimated concentrations above the project action levels. Concentrations of PCBs in surface water from the pond ranged from 0.65 J ppb to 0.88 J ppb. Additional

surface water samples were collected from the leachate seeps as described in the next section.

Although PCBs were detected in the pond surface water, the values were estimated near the detection limits and, given the low concentration of PCBs in the sediment, the likely source of the PCBs was suspended sediment in the samples.

2.2.5 Leachate

Surface soil and surface water samples were collected from a total of nine leachate seep locations (Seeps 1 through 8 and 5A). Four to five surface soil samples and one surface water sample were collected from each seep location. All samples were analyzed for VOCs, SVOCs and TAL Metals. Select surface soil samples from Seeps 4, 5, 5A and 8 were analyzed for PCBs. Surface water samples were analyzed for total and dissolved metals. Surface water samples from Seeps 5 and 5A were also analyzed for PCBs. Results of surface soil and surface water sampling are provided in the RI Report (Table 5 and Figure 6 for surface soil, Table 6 and Figure 7 for surface water).

Leachate Seep Surface Soil Background Samples

To determine the concentration of metals in sediments that have not been impacted by Site activities (i.e., background concentrations), 16 sediment samples were collected from four locations (SD-1 through SD-4). One composite surface (0 to 0.5 feet bgs) sediment sample was prepared from each of the 16 sample locations. The composite sediment samples were analyzed for TAL metals by Method 6010/7470, except beryllium and silver.

Sediment background values were calculated according to Ohio EPA Background Calculation Methodology (Ohio EPA, June 2004). The background sediment soil sample results are summarized in Table 11 of the RI Report. The calculated sediment background levels are summarized in Table 13 of the RI Report.

RI Samples

Results of the surface soil sampling at the leachate seeps indicate that the soils are not impacted with VOCs and SVOCs, except for bis(2-ethylhexyl)phthalate at location Seep 4, which exceeded ecological criteria. However, PCBs were detected above the screening level (0.220 ppm) in one sample from Seep 4 sample location S5 at 0.340 ppm. Arsenic was detected above the PRGs and background concentrations in all seep soil samples collected with the exception of Seep 5A sample location S2. The concentration of arsenic in samples ranged from 15.7 J to 1,400 J ppm. Iron was detected in all seep locations; however, several samples from Seeps 1, 3, 5A, and 7 did not contain concentrations of iron above action levels and above background concentrations. Samples collected from Seeps 5, 6, and 8 contained concentrations of manganese above project action levels and background concentrations. The concentration of manganese ranged from 1,800 J to 8,730 ppm. Thallium was detected in two samples (Seep 6 and 8) in concentrations exceeding project action levels and background concentrations. Metals (arsenic, barium, cadmium, iron, lead, manganese,

selenium, thallium, vanadium, and zinc) were also determined to exceed ecological criteria at several locations in seep soils/sediments.

Leachate Seep Surface Water Samples

Surface water samples were collected from nine leachate seep locations (Seeps 1 through 8 and 5A). Results of the surface water sampling indicate that PCBs were not detected in the samples collected from Seep 5 and 5A. However, water samples from the seeps are impacted with VOCs, SVOCs, and metals. Specifically, Seeps 1, 2, 3, and 8 contained concentrations of benzene above PRGs. Seep 1 contained concentrations of vinyl chloride (1.7 ppb) exceeding PRGs. Ethylbenzene, trichloroethene, and vinyl chloride were also detected above project action levels at Seep 8. The SVOC 1,4-Dichlorobenzene was also detected above action levels at Seep 8.

Several metals (arsenic, iron, lead, and manganese) were detected above MCLs and/or PRGs in the samples collected from all seep locations. Arsenic was detected above action levels in all surface water samples collected (filtered and nonfiltered) at concentrations ranging from 0.0065 B (dissolved) to 1.4 (total) ppm. Iron was detected above action levels in all samples except those collected from Seeps 2, 5A, 6, and 7. Dissolved iron was detected above project action levels from samples collected at Seeps 1 and 8. Concentrations of lead were detected above MCLs and/or PRGs in all surface water samples, except the sample collected from Seep 1. Manganese was detected above PRGs at a concentration of 3.2 J ppm in one sample collected from Seep 5. Metals (arsenic, copper, iron, lead, manganese, and zinc) were also determined to exceed ecological criteria in several seep water samples.

2.3 Interim or Removal Actions Completed to Date

Fencing

Two interim actions were initiated to protect public health, safety and the environment during the RI. The first interim action was to install fencing around each leachate seep area to restrict access to these areas. These fences were installed in the summer of 2003. During field activities, two additional seeps were located at the Site, for a total of nine seep locations (Seeps 1 through 8 and Seep 5A). Fencing was installed around all nine seep locations (Figure 2). The fencing at the Site was a minimum of six feet high with a minimum three-strand barbed wire at the top of the fence. Where appropriate, set backs of 25 feet from the edge of the seep were installed, unless there were physical constraints. A five-foot gate was also installed at each fence location to allow for inspection of the seep areas. These fences will remain in place until construction of the remedy.

Targeted Residential Well Sampling

In an effort to verify the safety of the regional aquifer for use by local residents, a second interim action was conducted. This second interim action involved sampling groundwater from two private water wells (Horn and Hamby residences) to determine if these wells had been impacted by historical Site operations. The locations of these

wells are shown on Figure 2. Water from the wells was analyzed for VOCs, SVOCs, and TAL metals (filtered and non-filtered).

On June 10, 2003, the private water wells located on the Hamby (now Goodyear property) and Horn properties were sampled in accordance with the Ohio EPA approved Source Control Interim Action (SCIA) Work Plan. Water samples were analyzed for VOCs, SVOCs, and TAL Metals.

The results of the June 2003 sampling indicated that VOCs, SVOCs, and thallium were detected in samples collected from the Horn well. After evaluating the data from the Horn well, it was determined that the well should be resampled to validate results. On August 18, 2003, groundwater samples were collected directly from the Horn water well head and submitted to the laboratory for VOC, SVOC, and total and dissolved metal analysis.

The August 2003 laboratory results for the Horn well indicated that thallium was not a COC, as it was not encountered above the method detection limit of 0.010 ppm. VOC data was unavailable due to an electrical outage at the laboratory. However, total lead (0.067 ppm) was detected in the samples collected from the Horn well above the MCL (0.015 ppm), and concentrations of dissolved lead were found to be below method detection limits. The water samples collected from the Horn well on August 18, 2003, were turbid and contained small amounts of sediment. The concentrations of total lead were most likely caused by the small amount of sediment in the groundwater samples; however, it was determined that the Horn well would be sampled again to confirm these results.

The Horn well was sampled again directly from the water well for VOC analysis on October 8, 2003. However, due to anomalies in the metals data collected from the October sampling event, the well was sampled again for total and dissolved metals on November 26, 2003. At this time, samples were collected at the well head and from a tap located outside the Horn residence. An additional sample was collected from the Horn well at the request of Ohio EPA on August 11, 2004, and the sample was analyzed for total and dissolved thallium. Purging was conducted from the tap, and sampling was conducted from the well head. Following evaluation of all of the data from the Horn well sampling, the groundwater was found to contain no contaminants from the Green I Landfill. The Horn well remains in service and provides water to two homes owned by Mr. Horn adjacent to the landfill on Hunters Ridge Road.

Results of laboratory analysis for the Hamby well indicated that the well was not impacted by VOCs, SVOCs, or metals (total or dissolved). Concentrations of acetone, bis (2-ethylhexyl) phthalate, and di-n-butyl phthalate were detected in the groundwater samples collected from the Hamby water supply well; however, acetone, bis (2-ethylhexyl) phthalate, and di-n-butyl phthalate are considered laboratory contaminants, as acetone was also detected in the trip blank, and bis (2-ethylhexyl) phthalate, and di-n-butyl phthalate are common laboratory contaminants. Concentrations of COCs detected in the Hamby well were below drinking water standards (MCLs). The Hamby

well was decommissioned on October 9, 2003, after Mr. Hamby decided that he would not use it as a water supply well.

2.4 Summary of Site Risks

A baseline risk assessment was conducted to evaluate current and potential future risks to human health and ecological receptors as the result of exposure to contaminants present at the Site. The results demonstrated that the existing contaminants in environmental media pose or potentially pose unacceptable risks and/or hazards to human and ecological receptors sufficient to trigger the need for remedial actions.

The conceptual Site model defines the physical and chemical setting of the Green I Landfill. This conceptual Site model (CSM) combines historical Site information with the data collected during the remedial investigation field activities. Based on the history of the Site and the results of Site investigations, the primary source of contamination is the landfill materials buried at the Site. Primary release mechanisms may include direct release, leaching, erosion, and precipitation and associated runoff. Secondary sources of contamination are impacted soil, leachate seeps, and groundwater migration.

The media directly affected by the landfill wastes buried at the Site are soil and groundwater. Surface runoff is considered a transport medium because precipitation from storm events may have generated episodic overland flow and carried contaminants of potential concern (COPCs) away from the waste areas. Groundwater is a transport medium of concern for COPCs where discharge to seeps may occur. Surface water (*i.e.*, the small off-site pond) may also be affected by the landfill wastes buried at the Site through surface runoff. Dust is considered a potential transport medium, because COPCs in soil may become entrained in fugitive dust.

Transport Pathways

Release mechanisms and transport pathways were evaluated during the RI on a media-by-media basis. Listed below are potential cross-media transfer mechanisms of COPCs:

- COPCs in subsurface soil leaching into groundwater underlying the Site.
- COPCs in surface soil migrating to leachate seeps and ditch sediment along the landfill through surface runoff.
- COPCs in groundwater transport to leachate seeps and ditch along the landfill through groundwater recharge.
- COPCs in surface soil and groundwater transport to the atmosphere via volatilization or fugitive dust emission.
- COPCs in pond sediment and surface water impacted through surface runoff.

Contaminant Migration

The RI results show that VOCs and metals were detected in shallow groundwater, and SVOCs and PCBs were not detected in any of the groundwater samples. The source of VOCs and metals may migrate to shallow groundwater through potential direct release to soil from wastes disposed at the Green I Landfill and further leaching to shallow

groundwater. The source of metals could also be part of the natural background. Both VOCs and metals could transport to a surface water body through seep or groundwater/surface water interphase. In addition, the VOCs could migrate to air through volatilization.

The groundwater and seep water analytical results show that benzene, ethylbenzene, vinyl chloride, arsenic, iron, lead and manganese were detected exceeding either MCLs or PRGs indicating that these chemicals are mobile and could be transported through seep water to a surface water body. Only chloroform, aluminum, antimony, beryllium, cadmium, cobalt, nickel, and thallium were detected in groundwater exceeding MCLs or PRGs. Trichloroethene and 1,4-dichlorobenzene were only detected in seep water, which indicate the potential for transport of these chemicals from wastes in the vadose zone to surface water.

PCBs were detected in seep sediment samples, pond surface water and pond sediment samples. However, PCBs were not detected in any of the soil from borings, groundwater, and seep water samples.

2.4.1 Risks to Human Health

A human health risk assessment for the Green I Landfill was prepared to evaluate potential adverse impacts to human health posed by COPCs in soil, ditch sediment, groundwater, pond sediment, and pond surface water outside of the landfill perimeter (limits of waste) based on data collected during the RI. When Site-specific data are not available, standard defaults were used for the assessment.

Potential adverse impacts to human health are posed by COPCs within the landfill perimeter based on previous investigation results. The risk assessment process combines information on opportunities for exposure to Site-related COPCs with information on their toxic characteristics to generate a quantitative estimate of risk.

Discussion of Risks to an Adult Living on the Site with No Remedial Action

The risk assessment results show that the total cancer risk and total hazard index resulting from exposure to COPCs in soil and groundwater for a current/future adult resident were calculated to be 2.7×10^{-5} . The chemical of concern for this receptor is arsenic detected in soil and the pathway of concern is soil incidental ingestion. The total hazard index is below the target hazard level of 1.

Discussion of Risks to a Child Living on the Site with No Remedial Action

The total cancer risk and total hazard index resulting from exposure to COPCs in soil and groundwater for a current/future child resident were calculated to be 5.3×10^{-5} and 5.1, respectively. Both the total cancer risk and the total hazard index exceeded the target cancer level of 1×10^{-5} , and the target hazard level of 1. The chemicals of concern for this receptor are arsenic and manganese detected in soil and the pathway of concern is soil incidental ingestion.

Lead was evaluated separately. The residential Region 9 Preliminary Remediation goal (PRG) of 400 ppm, based on a child residential scenario, was used to determine the potential risk of lead. The comparison results show that only one sample (ditch sediment sample location SED-3, lead concentration of 838 ppm) exceeds the PRG of 400 ppm. The lead concentrations detected in surface and subsurface soils are all below 400 ppm.

Based on the risk assessment results, the COPCs detected in soil may pose an unacceptable risk and hazard to human health under the current and future residential scenarios. COPC concentrations exceeding the Site-specific background levels are located in limited areas on the former Hamby (now Goodyear) and Hoag (Hunters Woods Subdivision Lot 3) properties. COPCs in the groundwater and pond sediment and surface water do not pose unacceptable risk to human health under the current and future residential or commercial scenarios.

2.4.2 Risks to Ecological Receptors

An Ecological Risk Assessment (ERA) was conducted as part of the RI of the Green I Landfill Site. The ERA was conducted in order to assess potential adverse effects to ecological receptors (non-human, non-domesticated species) at the Site, caused by exposure to chemicals of concern.

Specifically, a Level I scoping ERA determined that based on the history of disposal activities at the Green I Landfill Site and surrounding land use, the Green I Landfill Site has the potential to pose a risk to ecological receptors. Thus, a Level II ERA was conducted. The Level II ERA for the Green I Landfill includes a comparison of Site-specific data to screening benchmark values and the identification of relevant and complete exposure pathways between each source medium of concern and ecologically significant receptors for the potential ecological contaminants of concern.

For the chemicals that exceed the screening values and where a completed exposure pathway exists, a baseline ecological risk assessment was conducted (*i.e.*, Level III ERA). The approach for the Level III ERA consisted of the calculation of Hazard Quotients (HQs) using Site-specific exposure factors, chemical-specific and species-specific toxicity values and representative endpoint species. Upon completion of the ERA for the Green I Landfill Site, the following compounds in various media were determined to pose a potential risk to ecological receptors:

- Surface Soils: arsenic, barium, cadmium, iron, lead, manganese, selenium, thallium, vanadium, zinc, and bis(2-ethylhexyl)phthalate.

3.0 REMEDIAL ACTION OBJECTIVES

The FS was conducted by PARSONS on behalf of Goodyear to define and analyze appropriate remedial alternatives. The study was conducted with Ohio EPA oversight and was approved in December 2007. The RI and FS are the basis for the selection of the Ohio EPA's selected remedial alternative.

As part of the RI/FS process, remedial action objectives (RAOs) were developed in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), codified at 40 CFR Part 300 (1990), as amended, which was promulgated under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. §9601 et. seq., as amended, and U.S. EPA guidance. The RAOs are goals that a remedy should achieve in order to ensure the protection of human health and the environment. The goals are designed specifically to mitigate the potential adverse effects of Site contaminants present in the environmental media.

Preliminary Remediation Goals (PRGs) for the protection of human health were established using the acceptable excess lifetime cancer risk and non-cancer hazard goals identified in the DERR Technical Decision Compendium (TDC) document "Human Health Cumulative Carcinogenic Risk and Non-carcinogenic Hazard Goals for DERR Remedial Response and Federal Facility Oversight", dated April 26, 2004, and updated August 21, 2009. These goals are given as 1E-5 (*i.e.*, 1 in 100,000) excess lifetime cancer risk and a hazard index of 1, and were established using the default exposure parameters provided by U.S. EPA or Site-specific information. This TDC document can be found at the Ohio EPA's webpage:

<http://www.epa.ohio.gov/portals/30/rules/HH%20Cumulative%20Carc%20Risk%20and%20Non-Carc%20Hazard%20Goals.pdf>

The carcinogenic risk level refers to the increased likelihood that someone exposed to chemicals from the Site would develop cancer during his or her lifetime as compared with a person not exposed to the Site. For example, a 1 in 100,000 (equal to 1/100,000 or 1E-5) risk level means that if 100,000 people were chronically exposed to a carcinogen at the specified concentration, then there is a probability of one additional case of cancer in this population. Note that the risks refer only to the incremental risks created by exposure to the chemicals at the Site. They do not include the risks of cancer from other non-Site related factors to which people could be exposed in their lifetime (*e.g.*, smoking, poor diet). Non-carcinogenic hazards are generally expressed in terms of a hazard quotient (HQ) or index (HI), which combines the concentration of chemical exposures with the toxicity of the chemicals (quotient refers to the effects of an individual chemical whereas index refers to the combined effects of all chemicals). A hazard index of 1 represents the exposure at which no harmful effects are expected.

The Remedial Action Objectives (RAOs) detailed below in Table 1 for the Green I Landfill have been developed to address the pathways of exposure to contaminants of potential concern (COPCs) that were identified in the conceptual Site model and

evaluated in the human health and ecological risk assessments. Based on the results of the RI and FS, removal of the wastes from the property poses an unacceptable risk to local residents. Although the Site will continue to be a closed landfill into the foreseeable future, the Site is surrounded by residential properties and therefore, the RAOs have been designed to be protective of this use designation.

TABLE 1 – REMEDIAL ACTION OBJECTIVES			
PATHWAY	APPLICABLE COMPOUNDS	TARGET LEVEL ³	BASIS
Soils – Human Receptors (H1)			
Protect human health by eliminating exposure (i.e. direct contact, ingestion and inhalation) to soils with concentrations of chemicals of concern in excess of regulatory or risk based standards. This includes direct contact with the buried waste materials and leachate emanating from the Site.	Arsenic	11.025	Background
	Lead	400	Region 9 PRG ¹
	Manganese	1,326.75	Background
Leachate – Human Receptors (H2)			
Protect human health by eliminating exposure (i.e. direct contact, ingestion and inhalation) to leachate with concentrations of chemicals of concern in excess of regulatory or risk based standards.	Benzene	5	MCL
	Ethylbenzene	700	MCL
	Vinyl chloride	2	MCL
	Arsenic	0.010	MCL (ppm)
	Manganese	0.015	MCL (ppm)
Shallow Groundwater – Human Receptors (H3)			
Protect human health by eliminating exposure (i.e. ingestion) to shallow groundwater with concentrations of chemicals of concern in excess of regulatory or risk based standards.	Benzene	5	MCL
	1,4-DCB ⁵	75	MCL
	Chloroform	0.17	Region 9 PRG
	Ethylbenzene	700	MCL
	TCE ⁶	5	MCL
	Vinyl chloride	2	MCL
	Arsenic	0.010	MCL (ppm)
	Beryllium	0.004	MCL (ppm)
	Cadmium	0.005	MCL (ppm)
	Lead	0.015	MCL (ppm)
Thallium	0.002	MCL (ppm)	
Soils – Ecological Receptors (E1)			
Prevent direct contact with contaminated surface soils and consumption of contaminated food	Arsenic	11.025	Background
	Barium	100	HQ=1 (Robin) ²
	Cadmium	0.21	Background
	Iron	30,850	Background
	Lead	25	HQ=1 (Robin)
	Manganese	1,326.75	Background
	Selenium	0.4	HQ=1
	Thallium	1.1	Background
	Vanadium	26.85	Background
	Zinc	71.2	Background
	BEHP ⁴	0.05	HQ=1 (Robin)
1. USEPA Region 9 Preliminary Remediation Goal 2. HQ=1 for the most sensitive terrestrial receptor 3. Units of Measure: Surface Soils – ppm; Surface Water or Groundwater - ppb; Sediments – ppm. 4. BEHP = bis(2-ethylhexyl)phthalate 5. 1,4-Dichlorobenzene 6. Trichloroethene			

4.0 SUMMARY OF REMEDIAL ALTERNATIVES

A total of 18 remedial alternatives were considered in the FS. A brief description of the major features of each of the remedial alternatives follows. More detailed information about these alternatives can be found in the FS. For comparison a "No Action" alternative is included in each of the sets of remedial alternatives. This No Action alternative is the basis for comparison of the other options.

The following descriptions were taken from the approved Feasibility Study for the Site and were presented in the original February 2010 Preferred Plan. Ohio EPA's selected remedial alternative in this Amended Decision Document includes modifications based on the ORC 3734.02(G) Exemption approved on July 2, 2012, and Ohio EPA risk management decisions (*i.e.*, off-site pond surface water and sediments).

4.1 Landfill Capping Alternatives

4.1.1 General Description of Alternatives

- Alternative 1 No Action.
- Alternative 2 Soil Cover (1 foot) with Underlying Geotextile Fabric.
- Alternative 3 Soil Cover (2 feet).
- Alternative 4 Dual Layer Low Permeability Cap.
- Alternative 5 Single Layer Low Permeability Cap.
- Alternative 6 Single Layer Low Permeability Cap over Existing Soil Alternative.

Please note that Alternative 6 was included in the original February 2010 Preferred Plan as a contingent remedy for Alternatives 2 and 3. Alternative 6, as described in the original Preferred Plan, could only be implemented as a stand-alone remedy with the issuance of an exemption pursuant to ORC 3734.02(G). Given that an exemption has been approved by Ohio EPA, Alternative 6 is now considered a viable remedial option and is presented as one of the remedial alternatives in this Amended Decision Document.

A brief description of the individual alternatives is presented in the subsequent sections. All of the landfill cap alternatives listed above, except Alternative 1 (No Action), include the following components.

Landfill stability along slopes will be addressed as necessary. Costs for slope stabilization are incorporated into the costs associated with Landfill Capping Alternatives 2-6. The method of addressing slope instability will be determined as part of a pre-design investigation and evaluation. Unstable slope areas will be buttressed as necessary. It is anticipated that landfill waste will not be re-graded and relocated for slope stability improvement. Limited relocation of a small amount of landfill waste located on adjacent properties will be performed as necessary to consolidate all of the landfill waste within the limits of the property owned by Goodyear. Surface drainage will be controlled to divert as much runoff as possible away from the landfill. In addition,

surface drainage on the landfill will be controlled to minimize erosion potential. Roads and conveyances will be designed to access the landfill, but not reduce the effectiveness of the alternative.

Institutional controls (*i.e.*, land use restrictions) documented in an environmental covenant in accordance with Ohio's enactment of the *Uniform Environmental Covenants Act (UECA)*, Ohio Revised Code Section 5301.80 *et seq.* (effective December 20, 2004), will be recorded for the landfill property containing waste. The restrictions will prohibit the use of groundwater for potable and/or agricultural purposes. The restrictions will also prohibit building or placing any permanently occupied structures on the landfill proper.

Trench drains will be installed at the existing leachate seeps to control the seeps. Leachate collection and treatment options are presented in Section 4.4. The trench drains will be monitored during post closure inspections to determine if the seeps persist after placement of the landfill soil cover to determine the need for implementation of one of the leachate treatment alternatives 2 through 5.

The soil cover will be planted with a vegetative mix (*e.g.*, prairie mix) suitable for the Site. Gates will be installed at the access roads and fences extended approximately 20 feet on each side to limit access to the property. Warning signs will be installed around the landfill as deemed appropriate during remedial activities. Fencing around the entire landfill is not necessary to protect human health or the environment. The gates will comply with the requirement of OAC Rule 3745-27-11(H)(7) to block the access road from unauthorized entry to the Site.

One (1) additional intermediate zone monitoring well will be added to the existing monitoring well network on the south east side of the landfill to comply with the condition stated in the approval letter for the RI Report. This monitoring well network will be monitored in accordance with an approved groundwater monitoring plan to be developed as part of the landfill operation and maintenance (O&M) plan.

Any runoff from construction operations on the landfill will need to be diverted away from the pond or otherwise ensure that the water is not contaminated. The leachate trench drains will be installed at these seeps prior to cleanup of the seep drainage channels. Temporary measures to collect seep water generated during construction will be incorporated as part of the construction package.

4.1.2. Alternative 2 – Soil Cover (1 Foot) with Underlying Geotextile Fabric

With this alternative, a soil cover coupled with a geotextile fabric would be employed at the Site to encompass the impacted unconsolidated material. This design provides adequate soil cover for growth of a vegetative cover while the geotextile fabric prevents worms and other prey species from reaching the contaminated soil at the landfill. With this alternative, the Site would not require mowing. The establishment of trees and shrubs would also be desirable. Plans to plant trees (evergreens) at about the time of the five-year review are included in the O&M cost. The transport of approximately

19,600 cubic yards of clean cover soil to the Site would also be required. Approximately 130 rolls of geotextile fabric would also have to be transported to the Site.

4.1.3. Alternative 3 – Soil Cover (2 Feet)

With this alternative, a two foot thick soil cover would be employed at the Site to encompass the impacted unconsolidated material. No geotextile would be utilized with this alternative. The two foot cover is considered adequate on a risk basis to provide protection against direct contact with the contaminated soil at the landfill from worms and other prey species. With this alternative, the Site would not require mowing. The establishment of trees and shrubs would also be desirable. Plans to plant trees (evergreens) at about the time of the five-year review are included in the O&M cost. The transport of approximately 39,200 cubic yards of clean cover soil to the Site would be required.

4.1.4. Alternative 4 – Dual Layer Low Permeability Cap:

With this alternative, a dual layer low permeability cap would be employed at the Site to encompass the impacted unconsolidated material. The cap would include a gas collection layer placed over the entire impacted unconsolidated area. This could be constructed of sand or could be a geocomposite layer. A low permeability 18 inch thick recompacted clay layer (1×10^{-6} cm/sec) or a geosynthetic clay layer would then overlay the gas collection layer. A second low permeability layer (40 mil high-density polyethylene (HDPE) liner) would be installed overlying the clay layer. A drainage layer consisting of at least 12 inches of soil or an equivalent geosynthetic drainage layer (with associated geosynthetic fabric) would overlay the HDPE liner. A protection layer, at least 18 inches thick, would then cover the drainage layer followed by six inches of topsoil.

This Alternative would require the transport of the following materials to the Site:

- approximately 19,600 cubic yards of clean sand or 528,000 square feet geocomposite for a gas collection layer,
- approximately 29,400 cubic yards of clean clay (1×10^{-6} permeability) for a low permeability layer,
- approximately 29,400 cubic yards of clean soil for a protective cover soil layer,
- approximately 9,800 cubic yards of clean soil for a topsoil layer,
- approximately 130 rolls of geosynthetic material for a second low permeability layer, and
- approximately 130 rolls of geosynthetic drainage material (with associated geosynthetic fabric) for a drainage layer.

4.1.5. Alternative 5 – Single Layer Low Permeability Cap

With this alternative, a single layer low permeability cap would be employed at the Site to encompass the impacted unconsolidated material. The cap would include a low permeability layer (40 mil high-density polyethylene (HDPE) liner) and passive gas venting. A drainage layer consisting of at least 12 inches of soil, an equivalent geosynthetic drainage layer (with associated geosynthetic fabric), or some other equivalent drainage layer design would overlay the HDPE liner. A protection cover soil

layer, at least 18 inches thick, would then cover the drainage layer followed by 6 inches of topsoil.

This Alternative would require the transport of the following materials to the Site:

- approximately 29,400 cubic yards of clean soil for a protective cover soil layer,
- approximately 9,800 cubic yards of clean soil for a topsoil layer,
- approximately 130 rolls of geosynthetic material for a low permeability layer, and
- approximately 130 rolls of geosynthetic drainage material (with associated geosynthetic fabric) for a drainage layer.

4.1.6 Alternative 6 – Single Layer Low Permeability Cap Over Existing Soil

Alternative 6, a single layer low permeability cap, was included in the original Preferred Plan to be employed at the Site as a contingent remedial alternative if either Alternative 2 or 3 was utilized and was unsuccessful. This alternative did not meet ARARs in the original Preferred Plan and could not be selected. With the issuance of the 02(G) exemption by Ohio EPA, a demonstration to the satisfaction of the director was made that this cap design will be technically equivalent and will not adversely affect public health, safety and the environment, based on the Site conditions. This Alternative, with the granting of the 02(G) exemption, now meets ARARs. Therefore, Alternative 6 is being carried forward in this Amended Decision Document as a viable remedial alternative.

The topsoil from the existing cover would be removed for reuse and the following cap barrier would be installed (same as in Alternative 5). The cap system would include passive gas vents and a low permeability layer (40 mil high-density polyethylene (HDPE) liner). A drainage layer consisting of at least 12 inches of soil, and equivalent geosynthetic drainage layer (with associated geosynthetic fabric), or some other equivalent drainage layer design would overlay the HDPE liner. A protection cover soil layer, at least 18 inches thick, would then cover the drainage layer followed by six (6) inches of topsoil.

This Alternative would require the transport of the following materials to the Site:

- approximately 29,400 cubic yards of clean soil for a protective cover soil layer, (if Alternative 3 was implemented, some of the protective cover soil may be used from soil removed from the existing cap depending on construction economics),
- approximately 9,800 cubic yards of clean soil for a topsoil layer (use existing soil to be removed and replaced),
- approximately 130 rolls of geosynthetic material for a low permeability layer, and
- approximately 130 rolls of geosynthetic drainage material (with associated geosynthetic fabric) for a drainage layer.

4.2 Off-Site Pond Surface Water

The following descriptions from the Feasibility Study Report are included for continuity between the original and this Amended Decision Document. However, based on information presented by Goodyear in their 2010 ERAC appeal, and an Ohio EPA review of the risks associated with the off-Site pond surface water, Ohio EPA has concluded that no action is necessary for the off-Site pond surface water.

4.2.1 General Description of Alternatives

Alternative 1 No Action.

Alternative 2 Pre-filtering, Carbon Adsorption, and Discharge to Surface.

Alternative 3 Pre-filtering, Carbon Adsorption, and Transport and Disposal at Local WWTP.

Alternative 4 Transport and Disposal at Treatment and Disposal Facility.

Alternatives 2 and 3 use the following similar components for the pre-filtering and carbon adsorption parts of the remedies:

The pre-filtering and carbon adsorption and treatment would be located on-Site and would be able to remediate the COCs in water at the current concentrations as well as the anticipated volume of water. At a minimum, two carbon vessels would be linked in series. Periodic testing would be conducted of the influent, in between the carbon vessels, and prior to discharge to the surface to ensure compliance with applicable standards. Testing would be conducted on the carbon media and filters to determine how to dispose of them properly. The RI found only PCBs, at levels just above the drinking water standards. The pre-filtering, carbon adsorption treatment system would remove PCBs and the system would be designed to meet state water quality standards for the surface water discharge.

The estimated volume of water to be treated is 250,000 gallons. Sizing of the pre-filters and the carbon filters would depend on the length of time to be taken to treat this water. This would be determined as part of the design.

4.2.2 Alternative 2 – Pre-Filtering, Carbon Adsorption, and Discharge to Surface

With this alternative, water contained within the confines of the off-Site pond would be evacuated and treated on-Site using carbon to adsorb COCs prior to discharge to the surface. The water would be pretreated using inline filters to remove suspended materials prior to entering the carbon treatment system. The suspended material filtration would prolong the active use of the carbon media and allow for sediment free discharge of water to the surface.

4.2.3 Alternative 3 – Pre-Filtering, Carbon Adsorption, and Transport and Disposal at Local WWTP

With this alternative, water contained within the confines of the off-Site pond would be evacuated and treated on-Site using carbon to adsorb COCs prior to transport and disposal at the local WWTP in Logan. The water would be pretreated using inline filters to remove suspended materials prior to entering the carbon treatment system. The suspended material filtration would prolong the active use of the carbon media and allow for sediment free water to be collected, transported, and discharged at the local WWTP. In order to transport the water, access to the pond for the transport vehicles would need to be created and maintained.

4.2.4 Alternative 4 – Transport and Disposal at Treatment and Disposal Facility

With this alternative, water contained within the confines of the off-Site pond would be evacuated and transported to an off-Site treatment and disposal facility (other than the local WWTP) for treatment and disposal without requiring pre-treatment.

Given the low concentrations of sediment and surface water contaminants, the limited size of the water body (~0.11 acres) and the elimination of future contaminant loadings to the pond (due to future landfill capping), Ohio EPA concludes that no further action with regard to the off-Site pond surface water or sediment is warranted.

4.3 Off-Site Pond Sediments

The following descriptions from the Feasibility Study Report are included for continuity between the original and this Amended Decision Document. However, based on information presented by Goodyear in their 2010 ERAC appeal, and an Ohio EPA review of the risks associated with the off-Site pond sediments, Ohio EPA has concluded that no action is necessary for the off-Site pond sediments.

4.3.1 General Description of Alternatives

- Alternative 1 No Action.
- Alternative 2 Treat Sediment *In Situ* and Leave In Place.
- Alternative 3 Dewater Sediment *In Situ* and Place Under Green I Landfill Cover.
- Alternative 4 Treat Sediment *In Situ*, Remove, Transport and Dispose at Sanitary Landfill.
- Alternative 5 Leave Sediment In Place, Dewater, Cover, and Eliminate Pond.

4.3.2 Alternative 2 – Treat Sediment In-Situ and Leave in Place

After the seeps are eliminated and the water in the pond is evacuated, the remaining sediment would be treated (solidified) in place using Portland cement and/or other fixing agents. The solidified material would be left in place and the Pond and surrounding area graded to eliminate the Pond and prevent the flow of surface water from the surrounding area to within the former Pond area.

Some pre-design testing would be required to determine the optimum solidification agent and mixing ratio. The optimum reagent to waste mix ratio is typically around 0.25

for contaminated soil. However, this ratio can vary anywhere from 0.1 to 2.0 depending on the contaminants present and the initial moisture content of the waste.

Post-treatment testing would consist of both chemical and physical tests. Required chemical testing often consists of performing the Toxicity Characteristic Leaching Procedure (TCLP) and chemically analyzing the extract. The physical parameters to be tested would be determined during remedial design and would likely include unconfined compressive strength. As there is only an estimated 600 cubic yards of sediment to be treated, only one (1) post-treatment test would be necessary to confirm the sediment is solidified in accordance with the design specifications.

4.3.3 Alternative 3 – Dewater Sediment In-Situ and Place Under Green I Landfill Cap

After evacuation of the water in the pond, the remaining sediment would be dewatered in place using drying agents. The material would then be excavated, transported to the Green I Landfill, and placed under the soil cover or cap. The Pond area could be graded to remain as a pond or re-graded to eliminate the containment of surface water.

4.3.4 Alternative 4 – Treat Sediment In-Situ, Remove, Transport and Dispose at Sanitary Landfill

With this alternative, after the seeps are eliminated and the water in the pond is evacuated, the remaining sediment would be treated (solidified) in place using Portland cement and/or other fixing agents. The materials would then be excavated and transported to the sanitary landfill for disposal. Alternatively, the sediment could be excavated, transported, and solidified at the sanitary landfill. This Alternative would require lined trucks to ensure that water does not seep out of the sediment onto the roadway during transport. The Pond area could be graded to remain as a pond or re-graded to eliminate the containment of surface water.

4.3.5 Alternative 5 – Leave Sediment In Place, Dewater, Cover, and Eliminate Pond

After the seeps are eliminated and the water in the pond is evacuated, the remaining sediment would be dewatered, left in place, and covered with a suitable soil material. The area would need to be regraded as necessary to provide for surface drainage to be re-routed away from the former pond. Pre-design testing may be required to determine if the sediment can be dried in a reasonable time period without the addition of drying agents to provide sufficient structural strength for placement of a suitable cover soil material.

Given the low concentrations of sediment and surface water contaminants, the limited size of the water body (~0.11 acres) and the elimination of future contaminant loadings to the pond (due to future landfill capping), Ohio EPA concludes that no further action with regard to the off-Site pond surface water and sediment is warranted.

4.4 Leachate Collection

4.4.1 General Description of Alternatives

Alternative 1 No Action.

Alternative 2 Collect Leachate and Treat On-Site in Constructed Wetlands.

Alternative 3 Collect Leachate and Subsurface Recharge within Landfill.

Alternative 4 Collect Leachate, Transport, and Dispose at Local WWTP.

Alternative 5 Collect Leachate, Transport and Dispose at Treatment and Disposal Facility

Alternative 6 Leachate Collection and Holding Tank System.

4.4.2 Alternative 2 – Collect Leachate and Treat On-Site in Constructed Wetlands

With this alternative, a leachate collection piping system connecting the leachate trench drains would be installed outside of the limits of the cap to transport the leachate to the constructed treatment wetland. The piping would be double walled to protect against leakage and would be either gravity or pumped as required (to be determined during design). The design flow for the leachate would be based on an evaluation of the amount of leachate seepage in the leachate trench drains. A pre-design study may be necessary to evaluate this flow.

The constructed treatment wetlands would be designed based on an analysis of the leachate in the trench drains. If any seeps that exist after construction of the cap resemble in constituency the nine leachate seeps sampled as part of the RI, the constructed treatment wetland would need to treat the water for VOCs, SVOCs, and metals in order to reduce the contaminant load to levels that would meet acceptable state water quality standards for surface water discharge. The configuration of the constructed treatment wetland and the selection of components included in the constructed treatment wetland would be determined during the design. The components of the constructed treatment wetland would need to be selected so that the discharge would be able to meet NPDES permit requirements.

4.4.3 Alternative 3 – Collect Leachate and Subsurface Recharge in Landfill

With this alternative, a leachate collection piping system connecting the leachate trench drains would be installed outside of the limits of the cap to transport the leachate to a holding tank from which the recharge system would pump the leachate into the waste below the cap. The piping would be double walled to protect against leakage and would be either gravity or pumped as required (to be determined during design). The design flow for the leachate would be based on an evaluation of the amount of leachate seepage in the leachate trench drains. A pre-design study may be necessary to evaluate this flow. The holding tank would be provided with double containment.

4.4.4 Alternative 4 – Collect Leachate, Transport, and Dispose at Local WWTP

With this alternative, a leachate collection piping system connecting the leachate trench drains would be installed outside of the limits of the cap to transport the leachate to the holding tank. An agreement would need to be made with the local WWTP and a

transport company for transport and disposal of the leachate. The piping would be double walled to protect against leakage and would be either gravity-fed or pumped as determined in design. The design flow for the leachate would be based on an evaluation of the amount of leachate seepage in the leachate trench drains. A pre-design study may be necessary to evaluate this flow, which would be used for sizing the piping, tanks and pumps. The holding tank would be provided with double containment.

4.4.5 Alternative 5 – Collect Leachate, Transport, and Dispose at Treatment and Disposal Facility

With this alternative, a collection system and the holding tanks would need to be designed and an agreement made with the TSD and a transport company.

4.4.6 Alternative 6 – Leachate Collection and Temporary Holding Tank System

With this alternative, as part of the cap construction, a leachate collection system with a holding tank would be installed to collect and contain the leachate for transport and disposal. If leachate production is significant and is not greatly reduced shortly after cap installation, one of the other leachate handling options may be implemented such as the installation of a constructed treatment wetland. Collection system and holding tank specifications would need to be established during design.

Ohio EPA anticipates that leachate generation rates would decrease significantly in the first five years following implementation of the selected remedy. A review of the leachate generation rates and analytical data would be conducted to determine the quality and quantity of the leachate and whether another leachate alternative should be considered.

5.0 COMPARISON AND EVALUATION OF ALTERNATIVES

5.1 Evaluation Criteria

In selecting a remedy for a contaminated site, Ohio EPA considers the following eight evaluation criteria as outlined in U.S. EPA's NCP promulgated under CERCLA (40 CFR 300.430):

1. Overall protection of human health and the environment - Remedial alternatives shall be evaluated to determine whether they can adequately protect human health and the environment, in both the short- and long-term, from unacceptable risks posed by hazardous substances, pollutants, or contaminants present at the site.
2. Compliance with all applicable or relevant and appropriate requirements (ARARs) - Remedial alternatives shall be evaluated to determine whether a remedy will meet all of the applicable or relevant and appropriate requirements of state and federal environmental laws.
3. Long-term effectiveness and permanence - Remedial alternatives shall be evaluated to determine the ability of a remedy to maintain reliable protection of human health and the environment over time once pollution has been abated and RAOs have been met. This includes assessment of the residual risks remaining from untreated wastes, and the adequacy and reliability of controls such as containment systems and institutional controls (*i.e.*, environmental covenant).
4. Reduction of toxicity, mobility, or volume through treatment - Remedial alternatives shall be evaluated to determine the degree to which recycling or treatment are employed to reduce toxicity, mobility, or volume, including how treatment is used to address the principal threats posed by the site.
5. Short-term effectiveness - Remedial alternatives shall be evaluated to determine the following: (1) short-term risks that might be posed to the community during implementation of an alternative; (2) potential impacts on workers during remedial action and the effectiveness and reliability of protective measures; (3) potential environmental impacts of the remedial action and the effectiveness and reliability of mitigative measures during implementation; and (4) time until protection is achieved.
6. Implementability - Remedial alternatives shall be evaluated to determine the ease or difficulty of implementation and shall include the following as appropriate: (1) technical difficulties and unknowns associated with the construction and operation of a technology, the reliability of the technology, ease of undertaking additional remedial actions, and the ability to monitor the effectiveness of the remedy; (2) administrative feasibility, including activities needed to coordinate with other offices and agencies and the ability and time required to obtain any

necessary approvals and permits from other agencies (for off-site actions); and (3) availability of services and materials, including the availability of adequate off-site treatment, storage capacity, and disposal capacity and services; the availability of necessary equipment and specialists, and provisions to ensure any necessary additional resources; the availability of services and materials; and the availability of prospective technologies.

7. Cost - Remedial alternatives shall evaluate costs and shall include the following: (1) capital costs, including both direct and indirect costs; (2) annual operation and maintenance costs (O&M); and (3) net present value of capital and O&M costs. The cost estimates include only the direct costs of implementing an alternative at the site and do not include other costs, such as damage to human health or the environment associated with an alternative. The cost estimates are based on figures provided by the Feasibility Study.
8. Community acceptance - Remedial alternatives shall be evaluated to determine which of their components interested persons in the community support, have reservations about, or oppose. This assessment was completed upon review of comments received during the public comment period on the 2013 Amended Preferred Plan.

Evaluation Criteria 1 and 2 are threshold criteria required for acceptance of an alternative that has accomplished the goal of protecting human health and the environment and has complied with the law. Any acceptable remedy must comply with both of these criteria. Evaluation Criteria 3 through 7 are the balancing criteria used to select the best remedial alternative(s) identified in the Amended Preferred Plan. Evaluation Criteria 8, community acceptance, is a modifying criterion that will be evaluated through public comments on the alternatives received during the comment period.

5.2 Analysis of Evaluation Criteria

This section examines how each of the evaluation criteria in Section 5.1 is applied to each of the remedial alternatives found in Section 4.0 and compares how the alternatives achieve the criteria.

5.2.1 Overall Protection of Human Health and the Environment

Evaluation of the overall protectiveness of the alternatives focused on whether each alternative achieves adequate protection of human health and the environment and identifies how site risks posed through each pathway being addressed are eliminated, reduced or controlled by the alternative. This evaluation also includes consideration of whether the alternative poses any unacceptable short-term or cross-media impacts.

Landfill Capping Alternatives

Alternative 6 - Single Layer Low Permeability Cap over Existing Soil Alternative: This alternative combines alternatives 2 or 3 with alternative 5. This alternative has been shown to be technically equivalent to Alternative 4, is able to be constructed, it takes advantage of low permeability soils that are already present at the Site, is cost effective and will be protective of human health and the environment. Alternative 6 would effectively address the concerns outlined in RAO H1 when constructed according to an Ohio EPA approved design.

Alternative 1 – No Action: This alternative would not provide additional protection of human health and the environment and would continue to allow direct contact with leachate and the potential for direct contact with waste materials. This alternative would not prevent or retard the infiltration of surface water or precipitation and thus would not prevent or reduce the generation of leachate.

Alternative 2 – Soil Cover (1 foot) with Underlying Geotextile Fabric: This alternative would provide some additional protection as a physical barrier is placed to prevent soil dwelling species and some burrowing animals from coming into contact with buried waste. This alternative would not prevent or retard the infiltration of surface water or precipitation and thus would not prevent or reduce the generation of leachate. This alternative, as described in the FS, would not require mowing and tree planting would be considered at the first Five Year Review. By not mowing, burrowing animal activity is more difficult to observe and the planting of trees in the cap may permit the unearthing of waste if a tree were to be uprooted.

Alternative 3 - Soil Cover (2 feet): This alternative is similar to the no action alternative in that it would rely on soil to become a barrier to prevent contact with waste materials. This alternative would not prevent or retard the infiltration of surface water or precipitation and thus would not prevent or reduce the generation of leachate. By not mowing, burrowing animal activity is more difficult to observe and the planting of trees in the cap may permit the unearthing of waste if a tree were to be uprooted.

Alternative 4 - Dual Layer Low Permeability Cap is the only alternative presented in the FS that would incorporate the use of compacted clay and a plastic liner, which would provide a solid physical barrier that would prevent contact by humans and other species with contaminated landfill materials. The combination of these two layers would provide the level of protection required for modern solid waste landfills. This alternative would provide two barriers (liner and clay) to prevent infiltration of surface water and precipitation which would reduce the amount of leachate production. FS Alternative 4 would effectively address the concerns outlined in RAO H1.

Alternative 5 - Single layer low permeability cap. This alternative significantly improves the level of protection of human health and the environment when compared with the no action alternative and soil only alternatives by virtue of the

addition of a plastic liner. This alternative is not as protective as Alternative 4 since the thickness of the cap is less and the potential for the plastic to leak is increased due to the absence of the clay layer.

Leachate Collection and Management

Ohio EPA anticipates that leachate generation rates will decrease significantly in the first five years following implementation of the selected remedy. Therefore implementation of Alternative 6 (leachate collection and holding tank system) will be implemented until leachate volume and chemical analysis can be monitored following cap construction. A review of the leachate generation rates and analytical data will be conducted annually during the first five years to determine the quality and quantity of the leachate and whether a change to Alternative 2 (treatment wetlands), Alternative 4 (collection and disposal at WWTP) or Alternative 5 (collection and disposal at non-WWTP treatment facility) is appropriate. The final implementation of one of these alternatives is anticipated to eliminate the pathways described by RAO H1 and E1. Interim measures are anticipated to be protective of human health and the environment.

Alternative 6 – Leachate Collection and Holding Tank System: This alternative is a component of what would be required to implement Alternative 4 and Alternative 5, if either were selected. As presented in the FS, this alternative is a short-term alternative until leachate generation rates stabilized, an evaluation of the chemical makeup could be conducted, and one of the other alternatives could be implemented as a permanent solution. This alternative, when properly implemented and monitored, is considered protective of human health and the environment and is Ohio EPA's preferred alternative for leachate management.

Alternative 1 – No Action: This alternative would continue to allow leachate to be produced resulting in on-Site and off-site exposures to contaminants of concern.

Alternative 2 – Collect Leachate and Treat On-Site in Constructed Wetlands: This alternative may be viable at some point in the future; however, the implementation of this remedial alternative would require further consideration of the volume and quality of the leachate produced to determine if a seasonally active wetland would be a viable alternative for treating this wastewater. Some contaminants of concern, for example PCBs, may make this alternative technically impractical. In addition, an NPDES permit may be required before this remedy could be utilized. Until the design and basis for the design are better understood, this alternative is not viable as it may not be protective of human health and the environment.

Alternative 3 – Collect Leachate and Subsurface Recharge within Landfill: Since the Green I Landfill was constructed without a bottom liner and leachate collection system, this alternative is not appropriate. Recirculating leachate has been shown to increase decomposition in municipal solid waste landfills; however, these facilities were constructed in such a manner as to ensure the containment of the

leachate. This alternative would not be protective of human health and the environment.

Alternative 4 – Collect Leachate, Transport, and Dispose at Local WWTP: This alternative would provide for both capture and appropriate treatment of the leachate. Given the contaminants of concern, a municipal waste water treatment plant (WWTP) would likely be able to accept this leachate. Additional testing, post cap installation, would be required to determine the characteristics of the leachate. The WWTP would also need to agree to accept this material. This alternative could be protective of human health and the environment, depending on the quality of the leachate generated at the Green I Landfill.

Alternative 5 – Collect Leachate, Transport and Dispose at Treatment and Disposal Facility: This alternative would retain all of the benefits of Alternative 4, but would result in disposal of the leachate at a facility permitted to handle chemically contaminated water. This alternative would be protective of human health and the environment.

5.2.2 Compliance with ARARs

Landfill Capping Alternatives

Alternative 4 – Dual Layer Low Permeability Cap was the only alternative in the original Preferred Plan that, at that time, would have been fully compliant with the applicable, relevant and appropriate rules and laws (ARARs) for construction of a solid waste landfill cap in Ohio as described in the Ohio Administrative Code Rule 3745-27-08. Accordingly, Alternatives 1, 2, 3, 5 and 6, at the time the original Preferred Plan was issued, were not ARAR compliant. With the issuance of the 02(G) Exemption, Alternative 6 is a remedial alternative that is protective of human health and the environment.

Leachate Management Alternatives

All of the leachate management options, except Alternative 1 – No Action, would be ARAR compliant once the leachate was transported to an appropriate disposal facility. Alternative 2 – Treatment Wetlands, would be ARAR compliant if an NPDES permit was issued for the discharge to such treatment wetlands.

5.2.3 Long-Term Effectiveness and Permanence

The landfill capping alternatives were evaluated, in part, on their ability to divert or prevent infiltration of water into the waste in an effort to reduce the generation of leachate. All of the capping options presented in the FS would be permanent if properly maintained. However, Alternatives 4, 5 and 6 would incorporate a plastic liner component (e.g., 40 mil HDPE) which would provide the greatest measure of effectiveness and permanence. Alternative 6 also utilizes existing low permeability clay soils which would serve as a second layer of protection against infiltration. Capping of

the landfill will result in a long-term and eventually permanent solution for the leachate issues.

5.2.4 Reduction of Toxicity, Mobility or Volume by Treatment

Under Ohio EPA's preferred alternatives for landfill capping, no treatment or reduction in volume will occur. However, a reduction in the mobility of the contaminants found in the sediments and the landfill waste will be achieved through the construction of the single layer low permeability cap.

Through implementation of the preferred landfill cap alternative, Ohio EPA anticipates a significant reduction in annual leachate volume by preventing infiltration of surface water and precipitation. In addition, leachate that may be generated will be treated off-Site at either a treatment and disposal facility or a wastewater treatment plant until the first five year review is conducted, at which point leachate volume and quality can be evaluated. Following the evaluation, leachate volume and quality may allow for on-Site treatment through constructed wetlands.

5.2.5 Short-Term Effectiveness

With the exception of the no action alternative, all of the landfill capping alternatives (including Ohio EPA's preferred alternative) for the landfill cap would increase dust production in the short term due to construction activities. Construction activities which disturb the existing cap would have the potential to increase infiltration of surface water and increase erosion which could expose waste materials if not carefully monitored. However, the re-grading of low permeability soil layers would increase the density of the soil, reducing the potential for erosion. The installation of a flexible membrane liner would protect the underlying soils from erosion.

Following installation of the leachate collection system and holding tank(s), immediate gains in protectiveness would be realized as the leachate would no longer be releasing from the Site or available for direct contact exposure.

5.2.6 Implementability

All of Ohio EPA's preferred alternatives are constructible using readily available construction equipment and methods. The preferred leachate management system is constructible. The collected leachate will require chemical analysis in order to be taken off-Site for treatment at a POTW or industrial WWTP. No additional permits or waivers are anticipated to be needed for the implementation of any preferred alternative. The responsible party(ies) will need to develop and record the environmental covenant for the Site.

5.2.7 Cost

The cost estimates produced for all alternatives are discussed in each section and the cap system costs are also described in Table 2 found after Section 5.2.8. The costs of Ohio EPA's preferred alternatives are presented in the following text.

Preferred Landfill Capping Alternative

The cost for the pre-design investigation, design, and construction oversight are included with the construction costs. The cost of implementing landfill capping Alternative 6 is \$2,773,225. This also includes the cost for installation of the additional monitoring well required in the approval of the RI Report.

The cost estimate for O&M for 30 years based on a 7% interest rate is a present worth of \$1,020,000 for Alternative 6.

Preferred Leachate Collection and Management

The cost for this system is based on a leachate system to collect, convey, and hold 50,000 gallons. The estimated cost for installation of the leachate collection and the leachate storage system is \$506,000. Additional operation and maintenance costs may be incurred based on the amount of leachate requiring disposal. Since this cost is highly variable and dependent on the volume and chemical characteristics, the costs associated with leachate management have not been included for comparison; however, leachate disposal costs were estimated by GE and Goodyear in June 2013 at \$0.18 to \$0.25 per gallon produced.

5.2.8 Community Acceptance

Ohio EPA received comments from interested parties at the public meeting held February 12, 2014, at the Ohio EPA Southeast District Office and during the public comment period, which ended February 21, 2014. Those comments and Ohio EPA's responses are included in Section 8.0 (Responsiveness Summary) of this Amended Decision Document.

5.3 Summary of Evaluation Criteria

Table 2: Evaluation of Remedial Alternatives for the Green I Landfill Cap

Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
(1) Overall protection of human health and the environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(2) Compliance with ARARs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(3) Long term effectiveness and permanence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(4) Reduction of toxicity, mobility or volume through treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(5) Short term effectiveness	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(6) Implementability	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(7a) Capital Cost	---	\$2,073,000	\$2,448,000	\$4,036,000	\$3,467,000	\$2,773,225
(7b) O&M Cost (30 year)	---	\$666,000	\$666,000	\$1,020,000	\$1,020,000	\$1,020,000
(8) Community acceptance	<i>Community acceptance of the preferred alternatives will be evaluated after the public comment period.</i>					
<input checked="" type="checkbox"/> Fully meets criteria <input checked="" type="checkbox"/> Partially meets criteria <input type="checkbox"/> Does not meet criteria						

6.0 OHIO EPA'S SELECTED ALTERNATIVES

Ohio EPA's selected remedial alternative includes the construction of a single layer low permeability landfill cap (Alternative 6) along with passive gas vents and leachate collection piping, installed to direct leachate to a holding tank (Alternative 6).

The selected alternative for capping uses a plastic liner (40 mil HDPE) and low permeability clay soils already found at the Site to prevent infiltration of surface water and precipitation. The use of these technologies at Green I Landfill is appropriate for the long-term protection of human health and the environment, and meets ARARs³. The single layer cap design combined with the physical setting of this landfill is anticipated to significantly reduce the amount of leachate produced by Green I Landfill.

The estimated cost of \$2,773,225 for Alternative 6 was provided to Ohio EPA by Goodyear after the approval of the ORC 3734.02(G) Exemption.

Green I Landfill is located in a rural area with increasing residential development. The environmental covenant for the property will restrict groundwater usage and future development of the property and will be enforceable by Ohio EPA. This rural area is home to a variety of recreational uses including hunting and hiking. Property lines are not always clear to persons who are unfamiliar with the local area. Signage will be posted along the property border as part of this remedial action to deter trespassers from accessing this property.

When implemented, the preferred alternative selected by Ohio EPA will enable the long-term protection of groundwater and prevention of direct exposure to contaminants. The estimated total cost of the Ohio EPA selected preferred alternative is \$3,279,225.

Based on information presently available, it is Ohio EPA's current judgment that the selected remedial alternative best satisfies the criteria listed in Table 2 Evaluation of Site Remedial Alternatives. The elements of the selected remedial alternative are as follows:

6.1 Single Layer Low Permeability Cap Installation and O&M:

This component will include a 40 mil HDPE liner and low permeability clay soils to prevent infiltration of surface water from snowmelt, rain, etc., and will be designed to meet appropriate design standards for a landfill cap set out in Ohio EPA's rules and include passive gas vents, with the exception of those requirements that were exempted through the ORC 3734.02(G) exemption, which found that the alternative capping proposal was unlikely to affect human health, safety or the environment and would be as protective as a dual layer cap

³ The originally selected alternative (Alternative 4) is consistent with what is required to be constructed on a landfill closed today. The waste buried in a newly closed landfill will decompose and compact and the surface of the landfill will settle. Since Green I Landfill closed in 1974, settling of the landfill waste has already occurred. Therefore, the preferred remedy will allow for the permanent entombment of the waste and prevent infiltration.

at this Site. The actual thickness of the cap in this preferred alternative also establishes a protective barrier to further prevent contact with the waste material.

To provide for long-term operation and maintenance (O&M) of the cap and associated leachate collection activities, an O&M Plan will be developed for approval by Ohio EPA. The cap will be inspected on an annual basis following construction by Ohio EPA and any conditions that will affect the performance of the cap system will be corrected by the responsible parties. The implementation of this remedial action will eliminate the pathways described by RAO H1 and E1.

Performance Standard: The success of this cap will be evaluated after installation and an Ohio EPA inspection, following Ohio EPA's approval of the final design.

Performance Standard: Long-term O&M of the cap will be considered successful if Ohio EPA approves an O&M Plan and the cap passes periodic inspections by Ohio EPA.

6.2 Environmental Covenant:

A component of the remedy for Green I Landfill is the recording of an environmental covenant pursuant to ORC §§ 5301.80 to 5301.92. This environmental covenant, to be recorded in the Hocking County Recorder's Office, will place restrictions on the landfill properties which contain waste following the completion of the cap construction to prohibit the use of groundwater for potable and/or agriculture purposes. In addition, the restrictions will prohibit building or placing any permanently occupied structures on the landfill proper. Implementation of this environmental covenant will address RAO H1, H2 and H3.

Performance Standard: The environmental covenant element of the remedy will be considered successful when proof of recording of the environmental covenant in the Hocking County Recorder's Office is presented to Ohio EPA. Compliance with the environmental covenant will be further assessed during Ohio EPA's periodic inspections of the landfill.

6.3 Leachate Collection and Management:

The preferred alternative for leachate collection at the Green I Landfill involves the installation of a series of drains and piping that will collect and convey the leachate to holding tanks, subsequent to appropriate treatment and/or disposal. Collected leachate will be sampled and quantified over time in order to monitor the chemical characteristics and volume of the leachate. The leachate collection system will both eliminate the off-Site discharge of leachate and the direct contact of leachate by wildlife and trespassers.

The responsible party(ies) and Ohio EPA will also review the chemical analysis of the leachate to detect changes in concentrations or chemical constituents as a routine operation and maintenance activity. Ohio EPA's expectation is that the

leachate will become more concentrated as less surface water infiltration occurs. As stated in Section 6, Ohio EPA will determine the final leachate treatment method for Green I Landfill during the Five Year Review process, based on the quality and quantity of leachate generated. The implementation of this remedial action will eliminate the pathways described by RAO H2 and E1.

Performance Standard: This element of the remedy will be considered successful when a leachate management system is constructed and maintained to pass periodic inspections by Ohio EPA, documenting that all leachate is being contained.

7.0 Documentation of Significant Changes

Ohio EPA received comments on the Preferred Plan, but no significant changes have been made to the selected remedial alternative. The Agency's responses to the comments are provided in Section 8.0 (Responsiveness Summary).

8.0 Responsiveness Summary

A public meeting/hearing was held on February 12, 2014, to present the Agency's Amended Preferred Plan for the Site and to solicit public comment. Additionally, oral and written comments were accepted at this meeting and during the comment period which ended February 21, 2014.

Ohio EPA received comments at the public meeting/hearing and/or during the public comment period. A stenographic record of the public hearing portion of the meeting is attached. For those comments received by the Agency, a summation of each comment (in italics) followed by the Agency's response (in plain text) is presented below. Comments of a similar nature were combined in this summary.

Comment #1

Green I Landfill is now 40 years old and the metal drums disposed of in the landfill have likely corroded and released their contents and potentially created pockets of liquid wastes within the landfill. If, during remedy construction, these materials were disturbed and released to the surface, what actions will be taken to ensure public safety?

Response: As part of the remedial design an emergency action / contingency plan will be developed to address sudden, unplanned changes in conditions at the landfill that pose a risk to workers, the public or the environment.

Comment #2

What will be done for dust control for homes in the area? Could a barrier of trees be established?

Response: Dust control methods will be employed during construction. These methods typically include the use of water to suppress dust from construction equipment, limiting speeds, and other best management practices. These methods will be included in the remedial design. A barrier of trees between the landfill and adjacent properties will be considered as part of the design.

Comment #3

Some people are more sensitive to odors than others and migraines can be triggered by such odors. Will there be special case provision provided for people that have these needs if the need arises? (cost associated with relocation during the time period of the offensive odors)

Response: Excessive odors are not anticipated with this project. This concern is noted and will be discussed and addressed during the development of the emergency action / contingency plan.

Comment #4

The remedial investigation determined that water bearing zones near the elevation of the landfill have detectable amounts of contamination. There is concern about the long-term safety of the wells in the area and a desire to have wells that are not already cased abandoned and replacement wells drilled to current requirements.

Response: Ohio EPA will require periodic sampling of the existing ground water monitoring network during the operation and maintenance phase of the project. In addition, the responsible parties will be required to sample potable wells within 1,000 feet of the landfill prior to the start of construction, within 60 days of the completion of construction, and one year prior to the start of the five year review. In the event that future data demonstrate that contamination from the landfill threatens potable wells, an appropriate course of action will be determined.

Comment #5

Commenter expressed concern about the impact of the landfill on local property values.

Response: Ohio EPA is limited to specific criteria while preparing plans for clean-up activities, and cannot consider property value.

Comment #6

Commenter indicated that a source of borrow dirt could be made available to reduce the amount of truck traffic on Hunters Woods Road.

Response: The source of the borrow soils is an issue to be resolved by the responsible parties and their contractors.

Comment #7

Additional water from drainage of surface water from the landfill could create flooding on the lower portions of Hunters Woods Road.

Response: This concern is noted and drainage patterns will be reviewed during the design phase of the project. If practical, surface water will be managed to prevent additional flow to Hunters Woods Road.

Comment #8

What can be done to preserve the aesthetics currently provided by the tree covered landfill after installation of the cap?

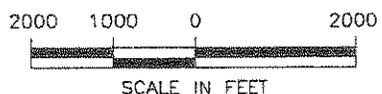
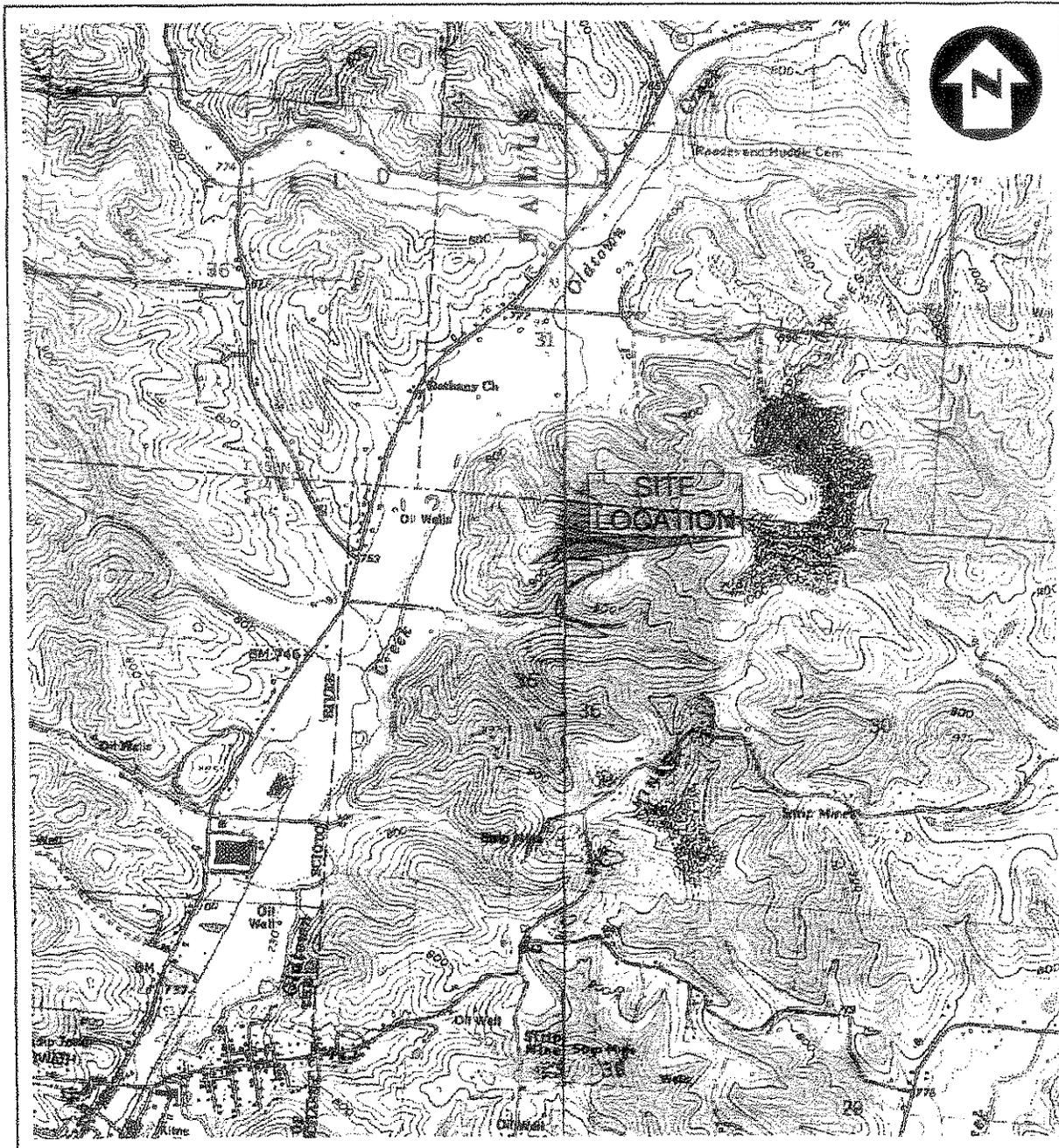
Response: This comment is noted and efforts will be made to achieve a suitable resolution within the constraints of acceptable landfill capping practices.

Comment #9

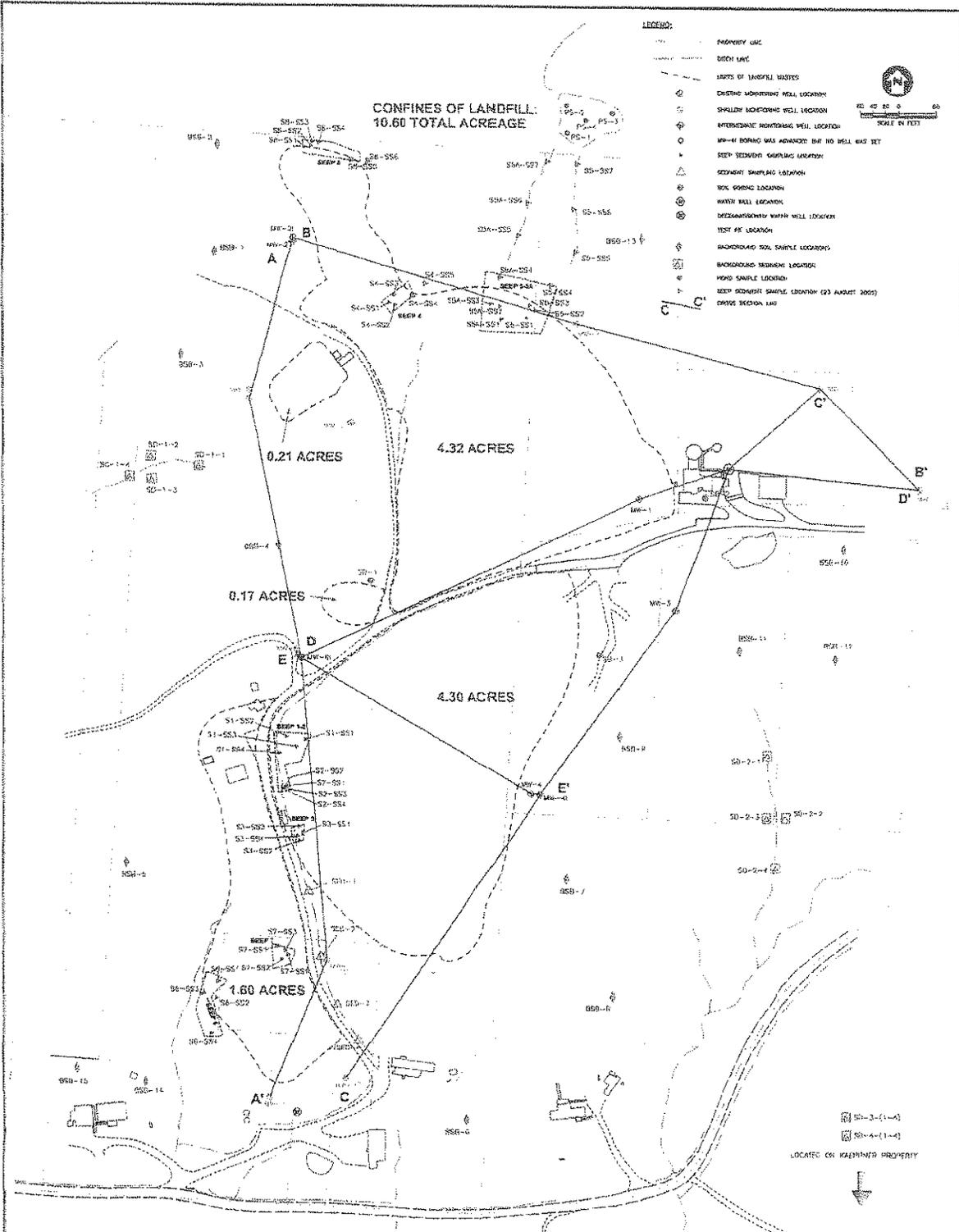
What will be done to ensure the public roads are maintained or repaired if damaged by the heavy trucks bringing materials into the Site.

Response: During the public meeting a township trustee advised that there is a road use and repair agreement that will need to be signed prior to construction. This agreement will ensure damage to the road is corrected after construction is completed.

All written comments received are available for review at Ohio EPA's Southeast District Office located at 2195 East Front Street, Logan, Ohio, and at the site's public repository, the Logan-Hocking Public Library in Logan.



THE GOODYEAR TIRE & RUBBER CO.	
FIGURE 1	
GREEN I LANDFILL HOCKING CO., OHIO	SITE LOCATION MAP
PARSONS 19101 VILLAVIEW ROAD, CLEVELAND, OH 44119, PHONE: 216-486-9005	



2 1 2	THE GOODWILL TRUST & TRUSTEE COMPANY OWNER & LANDFILL	GOODWILL COLUMBIANA COUNTY, OHIO	PARSONS CONSULTING GROUP (216) 444-4000	Issue Certificate	Job No. 222222-02000 Checked: [] Drawn: [] Checked: [] Approved: [] Date: 11/22/07	[] SW-3-(1-A) [] SW-4-(1-A) LOCATED ON KADENBERG PROPERTY
	SITE PLAN					

VOC/SVOC CONCENTRATIONS at p.p.m.

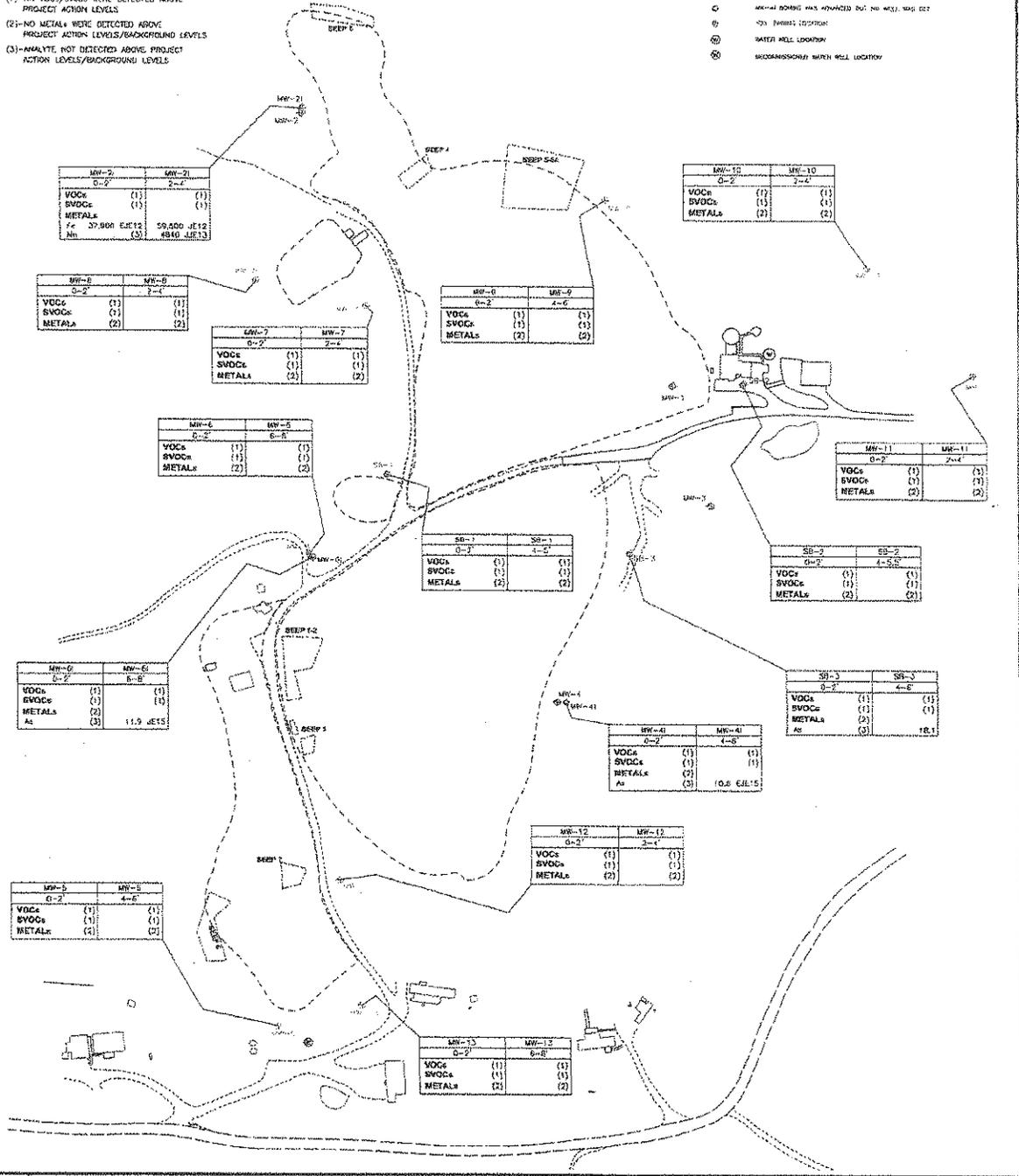
SAMPLE ID	
SAMPLE DEPTH	
VOCs	
SVOCs	
METALS (ppm)	
Pb	Arsenic
Fe	Cu
Mn	Manganese

ND-COMPOUND DETECTED BELOW METHOD DETECTION LIMITS
 (1)-NO VOCs/SVOCs WERE DETECTED ABOVE PROJECT ACTION LEVELS
 (2)-NO METALS WERE DETECTED ABOVE PROJECT ACTION LEVELS/BACKGROUND LEVELS
 (3)-ANALYTE NOT DETECTED ABOVE PROJECT ACTION LEVELS/BACKGROUND LEVELS

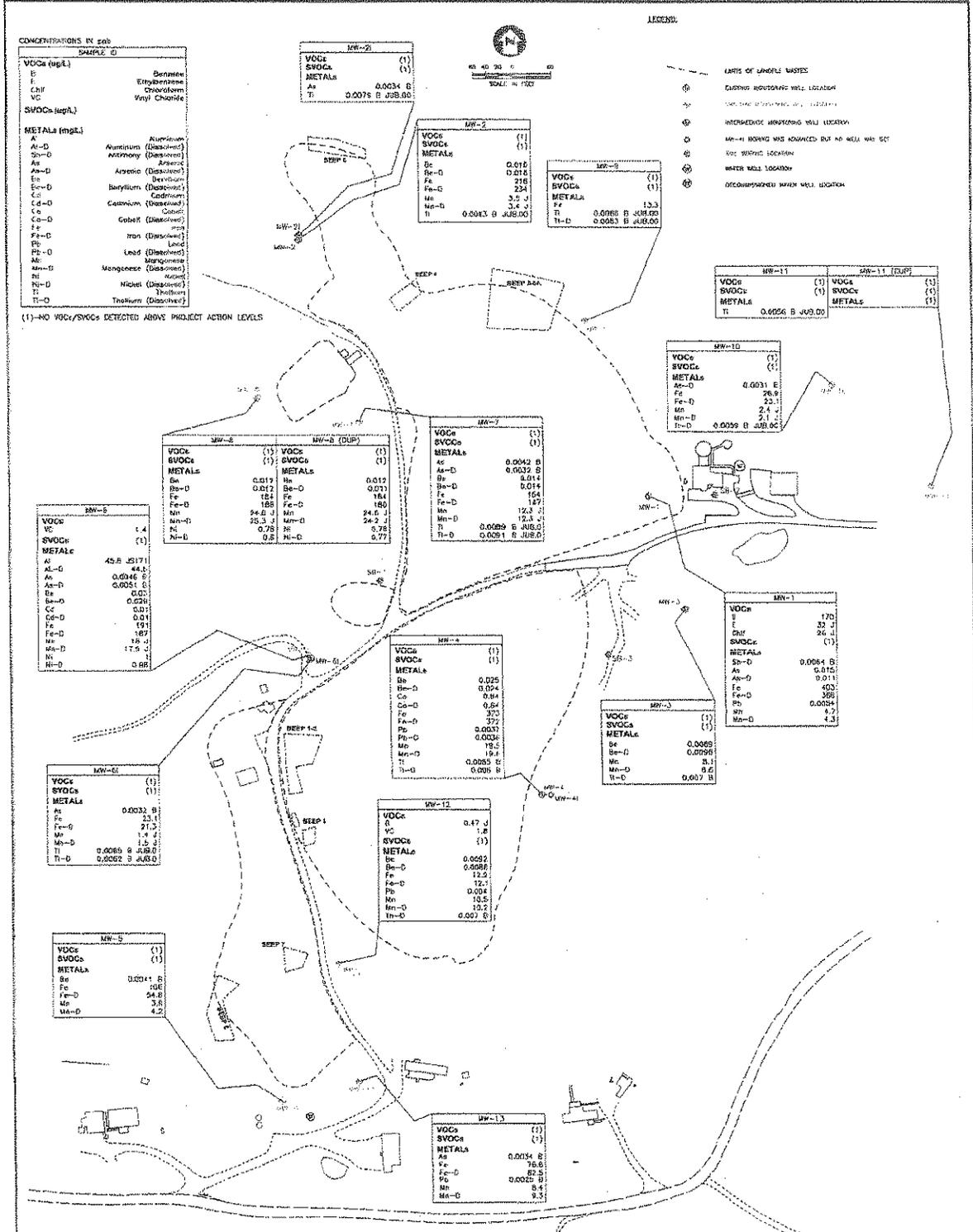


LEGEND

- BOUNDS OF LANDFILL WASTES
- ⊕ EXISTING MONITORING WELL LOCATION
- ⊙ PROPOSED MONITORING WELL LOCATION
- ⊙ INTERFERING MONITORING WELL LOCATION
- ⊙ MONITORING WAS ADVANCED BUT NO WELL WAS SET
- ⊙ NEW BOREHOLE LOCATION
- ⊙ WATER WELL LOCATION
- ⊙ RECOMMISSIONED WATER WELL LOCATION

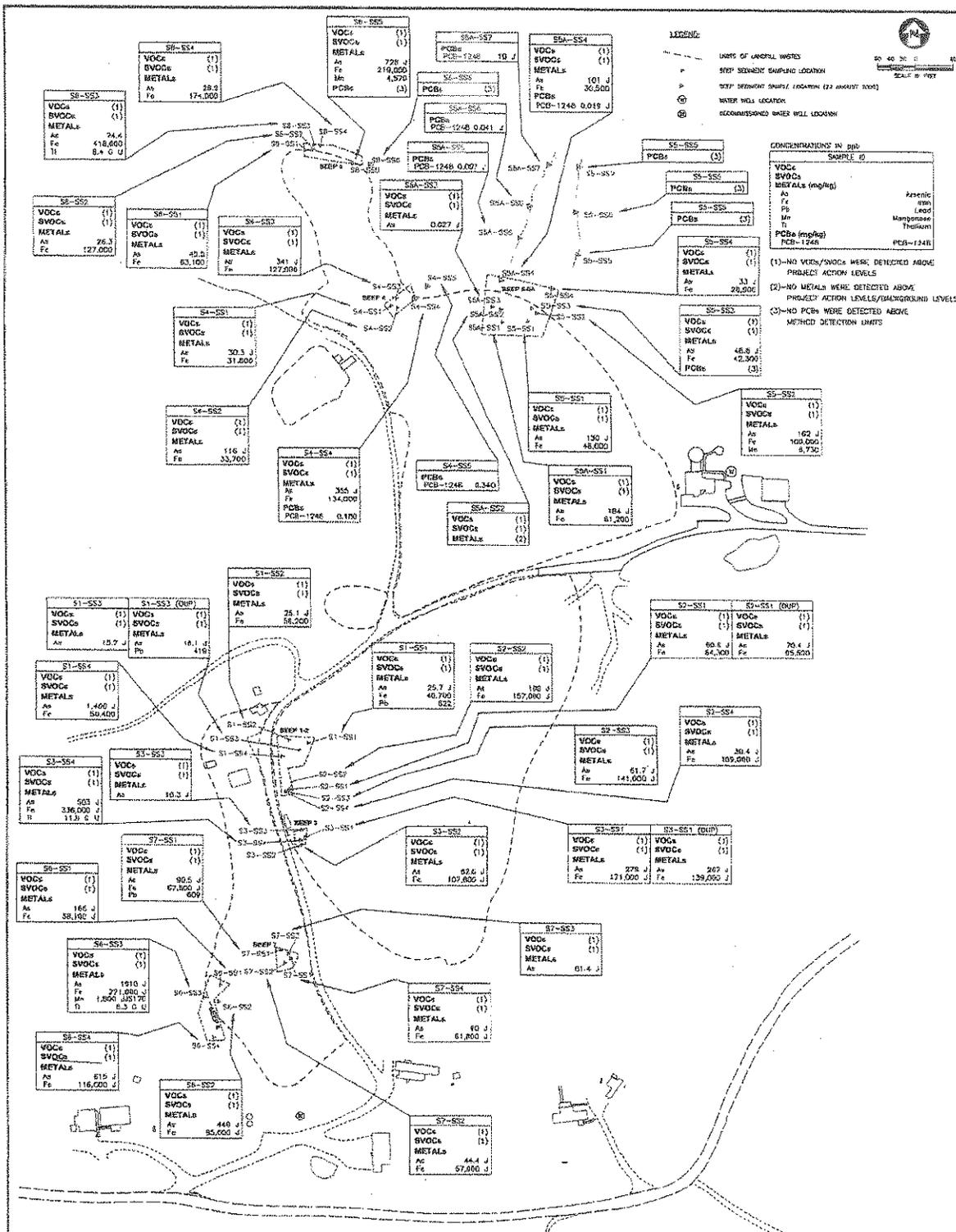


THE GEORGE WALK & BESSER COMPANY OWNER / LANDFILL	8000 WEST HUNTING COUNTRY, OHIO	PARTICIPANTS: Cleveland, Ohio (214) 448-9000	Job No. 22102621000	Design	_____
				Drawn	_____
SOIL RESULTS ABOVE PROJECT ACTION LEVELS/BACKGROUND CONCENTRATIONS				Checked	_____
				Reviewed	_____
Date: 11/22/05				By	_____



THE GOODBYER TIRE & REPAIR COMPANY 10000 1st STREET GOSHEN, IN 46526	GOSHEN HUNTERDON COUNTY, INDIANA	ANALYSIS BY: GOSHEN, IND. (716) 486-4900	Date: 11/20/00
			Description:

NO.	DATE	DESCRIPTION



THE GOODFRIEND TIRE & RUBBER COMPANY ORDER # 1000000000	OWNER HOOKERS COUNTY, OHIO	PARSONS CONSULTING ENGINEERS	DATE 11/27/02
LEACHATE DEEP SURFACE SOIL RESULTS ABOVE PROJECT ACTION LEVELS/BACKGROUND CONCENTRATIONS			



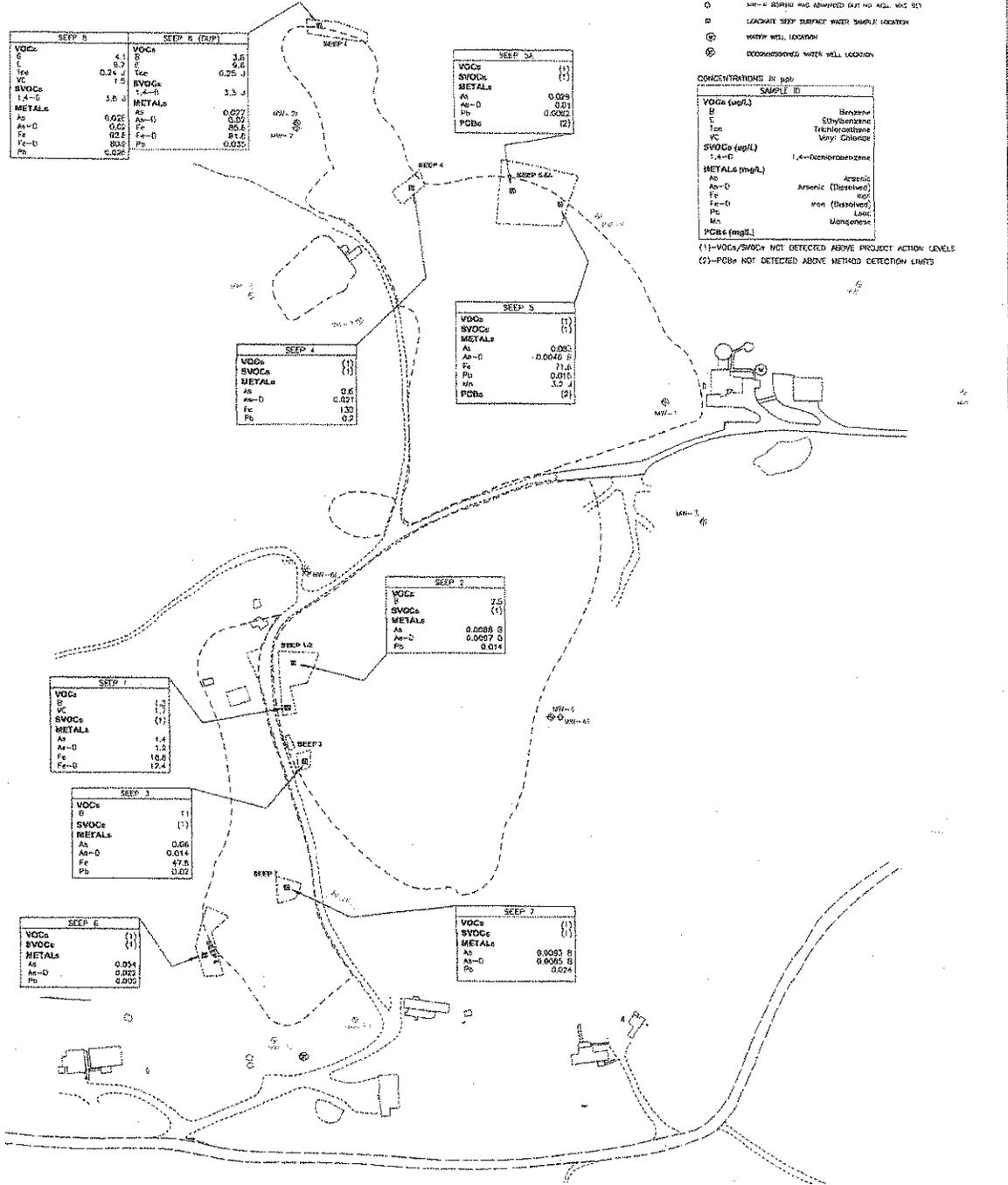
LEGEND

- ⊕ LIMITS OF LANDFILL WASTES
- ⊕ EXISTING MONITORING WELL LOCATION
- ⊕ PROPOSED MONITORING WELL LOCATION
- ⊕ INTERMITTENT MONITORING WELL LOCATION
- ⊕ NEW - 4" BOREHOLE AND ABANDONED DIRT HO. WELL. NOT SET
- ⊕ LEACHATE SEEP SURFACE WATER SAMPLE LOCATION
- ⊕ WASTY WELL LOCATION
- ⊕ DISCONTINUED WATER WELL LOCATION

CONCENTRATIONS IN ppb

SAMPLE ID	
VOCs (mg/L)	Benzene
E	Styrene
T	Trihalobenzenes
TC	Trichloroethene
SVOCs (ppb)	Very: Chloroform
1,4-D	1,4-Dichlorobenzene
METALS (mg/L)	As Arsenic
As	As-D (Dissolved)
As-D	Cd Cadmium
Fe	Fe-D (Dissolved)
Fe-D	Mn Manganese
Mn	Pb Lead
Pb	
PCBs (mg/L)	

(1) - VOCs/SVOCs NOT DETECTED ABOVE PROJECT ACTION LEVELS
 (2) - PCBs NOT DETECTED ABOVE METHOD DETECTION LIMITS



SEEP 5		SEEP 8 (RIP)	
VOCs	4.1	VOCs	3.6
E	0.7	E	0.6
TC	0.24	TC	0.25
SVOCs	1.5	SVOCs	
1,4-D	1.0	1,4-D	1.3
METALS		METALS	
As	0.02	As	0.027
As-D	0.01	As-D	0.01
Fe	12.1	Fe	85.6
Fe-D	0.02	Fe-D	0.12
Pb	0.02	Pb	0.02

SEEP 3A	
VOCs	(1)
SVOCs	(1)
METALS	
As	0.029
As-D	0.01
Pb	0.002
PCBs	(2)

SEEP 5	
VOCs	(1)
SVOCs	(1)
METALS	
As	0.002
As-D	0.004
Fe	71.6
Fe-D	0.016
Mn	3.2
PCBs	(2)

SEEP 4	
VOCs	(1)
SVOCs	(1)
METALS	
As	0.6
As-D	0.021
Fe	132
Pb	0.2

SEEP 2	
VOCs	2.5
SVOCs	(1)
METALS	
As	0.008
As-D	0.007
Pb	0.014

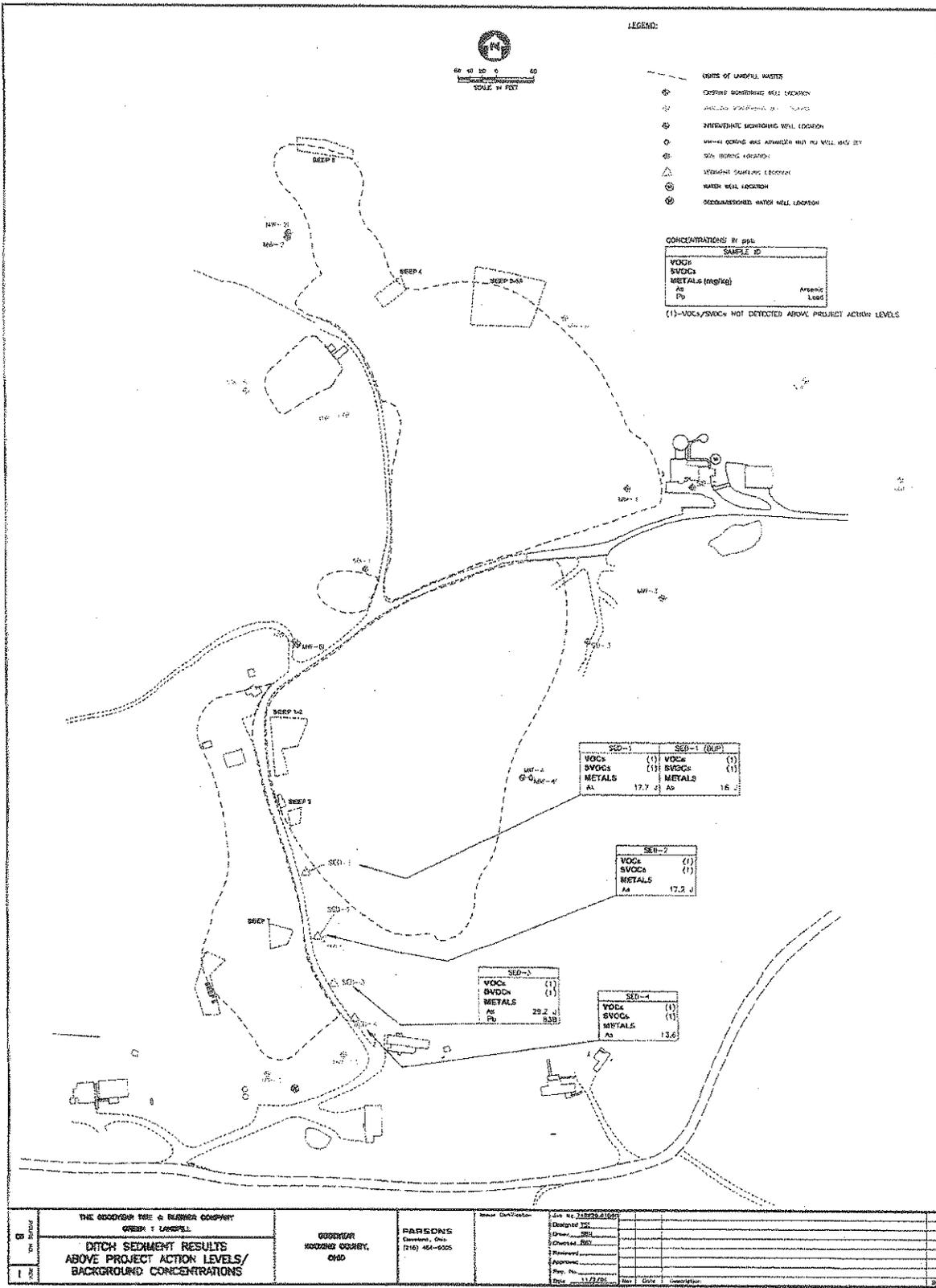
SEEP 1	
VOCs	1.2
E	1.7
TC	(1)
SVOCs	(1)
METALS	
As	1.4
As-D	1.2
Fe	10.8
Fe-D	12.4

SEEP 3	
VOCs	(1)
SVOCs	(1)
METALS	
As	0.66
As-D	0.014
Fe	47.8
Pb	0.02

SEEP 6	
VOCs	(1)
SVOCs	(1)
METALS	
As	0.034
As-D	0.022
Pb	0.002

SEEP 7	
VOCs	(1)
SVOCs	(1)
METALS	
As	0.003
As-D	0.005
Pb	0.024

THE GOODWIN TIRE & RUBBER COMPANY GREEN I LANDFILL LEACHATE SEEP SURFACE WATER RESULTS ABOVE PROJECT ACTION LEVELS	GOODWIN GOODWIN COUNTY, ORO	PARSONS CONSULTANTS, INC. 2145 NE 66th	Well Description: _____ Date: 11/2/03	Job No. 200209-0000 Designer: _____ Checker: _____ Date: 11/2/03
	Title: _____ Date: _____ Description: _____			



SED-5	SED-1 (WUP)
VOCs (1)	VOCs (1)
SVOCs (1)	SVOCs (1)
METALS (1)	METALS (1)
As 17.7	As 16

SED-2
VOCs (1)
SVOCs (1)
METALS (1)
As 17.2

SED-3
VOCs (1)
SVOCs (1)
METALS (1)
As 29.2
Pb 8.8

SED-4
VOCs (1)
SVOCs (1)
METALS (1)
As 13.6

THE GOODWIN THE O. BURNER COMPANY GREEN T LAGOON	GOODWIN WOODROW COUNTY, OHIO	PARSONS Cleveland, Ohio (216) 454-9305	Job No. 243220-11005
			Drawn by: JBL Checked by: JBL Approved: _____ Date: 11/2/04
DITCH SEDIMENT RESULTS ABOVE PROJECT ACTION LEVELS/BACKGROUND CONCENTRATIONS			Date: 11/2/04

ATTACHMENT A: GLOSSARY OF TERMS

Adsorb	The adhesion in an extremely thin layer of molecules (as of gases, solutes, or liquids) to the surfaces of solid bodies or liquids with which they are in contact
Aquifer	An underground geological formation capable of holding and yielding water.
ARARs	Applicable or relevant and appropriate requirements. Those statutes and rules which strictly apply to remedial activities at the site, or those statutes and rules whose requirements would help achieve the remedial goals for the site.
Baseline Risk Assessment	An evaluation of the risks to humans and the environment posed by a site.
Bioconcentrate	The net result of the uptake, distribution, and elimination of a substance in an organism due to water-borne exposure, whereas bioaccumulation includes all routes of exposure (i.e. air, water, soil, food).
Carcinogen	A chemical that causes cancer.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq. A federal law that regulates cleanup of hazardous substances sites under the U.S. EPA Superfund Program.
Contaminants of Concern (COCs)	Chemicals identified at the site which are present in concentrations that may be harmful to human health or the environment.
Decision Document	A statement issued by the Ohio EPA giving the Director's selected remedy for a site and the reasons for its selection.
Ecological Receptor	Animals or plant life exposed or potentially exposed to chemicals released from a site.
Environmental Covenant	A servitude arising under an environmental response project that imposes activity and use limitations and that meets the requirements established in section 5301.82 of the Revised Code.
Exposure Pathway	Route by which a chemical is transported from the site to a human or ecological receptor.
Feasibility Study	A study conducted to ensure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to a decision-maker and an appropriate remedy selected.
Final Cleanup Levels	Final cleanup levels are identified in the Decision Document along with the RAOs and performance standards.

Hazardous Substance	A chemical that may cause harm to humans or the environment.
Hazardous Waste	A waste product, listed or defined by the RCRA, which may cause harm to humans or the environment.
Human Receptor	A person or population exposed to chemicals released from a site.
Hydrolyze	To decompose by reacting with water.
Leachate	Water contaminated by contact with wastes.
LOE Contractor	Level of Effort Contractor. A person or organization retained by the Ohio EPA to assist in the investigation, evaluation or remediation of a site.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in a public drinking water supply. The level is established by U.S. EPA and incorporated into OAC 3745-81-11 and 3745-81-12.
NCP	National Oil and Hazardous Substances Pollution Contingency Plan, codified at 40 C.F.R. Part 300 (1990), as amended. A framework for remediation of hazardous substance sites specified in CERCLA.
O&M	Operation and Maintenance. Long-term measures taken at a site, after the initial remedial actions, to assure that a remedy remains protective of human health and the environment.
PAHs	Polycyclic aromatic hydrocarbons. Class of semi-volatile chemicals including multiple six-carbon rings. Often found as residue from coal-based chemical processes.
PCBs	Polychlorinated biphenyls. An oily chemical typically used in electrical equipment.
Performance Standard	Measures by which Ohio EPA can determine if RAOs have been met.
Preferred Plan	The plan that evaluates the preferred remedial alternative chosen by Ohio EPA to remediate the site in a manner that best satisfies the evaluation criteria.
Preliminary Remediation Goal (PRG)	Initial clean-up goals that (1) are protective of human health and the environment and (2) comply with ARARs. They are developed early in the process (scoping) based on readily available information and are modified to reflect the results of the baseline risk assessment (termed site-specific PRGs at this point in time). They are also used during the analysis of remedial alternatives in the remedial investigation/feasibility study (RI/FS).
Probable Effects Concentration (PEC)	A concentration above which adverse effects to sediment associated organisms are expected to occur more often than not.
Project Action Level	A concentration for a contaminant of concern that has been determined by regulation or through a risk

	assessment to be protective of human health or ecological receptors. This concentration value could be based on a preliminary remediation goal ("PRG"); a drinking water maximum contaminant level ("MCL"); or a background concentration ("background").
RCRA	Resource Conservation and Recovery Act of 1976 codified at 42 U.S.C. Section 6901 et seq. (1988), as amended. A federal law that regulates the handling of hazardous wastes.
Remedial Action Objectives (RAOs)	Specific goals of the remedy for reducing risks posed by the site.
Remedial Investigation	A study conducted to collect information necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives.
Responsiveness Summary	A summary of all comments received concerning the Preferred Plan and Ohio EPA's response to all issues raised in those comments.
Threshold Effects Concentration (TEC)	A concentration below which adverse effects to sediment associated organisms are not expected to occur.
Vadose (or vadose zone)	the layer of soil extending from the ground surface to groundwater
Water Quality Criteria	Chemical, physical and biological standards that define whether a body of surface water is unacceptably contaminated. These standards are intended to ensure that a body of water is safe for fishing, swimming and as a drinking water source. These standards can be found in Chapter 3745-1 of the Ohio Administrative Code

Attachment B: Public Comments Received

This is in reference to the Green landfill 1 that was operated between the years of 1970 to 1974

With todays date being Jan. 23, 2014 the Green landfill 1 would be 40 years old,

The corrosion factors of buried steel are 20-200 microns per year depending on the PH of the soil. Using a factor of 40 microns per year, times 40 years would equal 1600 microns of total corrosion over that time. If a steel drum is 18ga or 1/16" +/-, converted to microns would be around 1540 microns.

With that said then most likely any material dumped in drums no longer has any structural integrity remaining and could be creating pockets of liquid material. If equipment is run over these areas, there could be a chance the equipment would break through the over burden and bring this material to the surface. If this was to happen what emergence action plan will you have in place to address this issue should it arise?

Most of the homes in this area lay east of the said landfill and prevailing winds will carry odors and dust in the direction of these homes.

Some people are more hyper sensitive to odors then others and migraines can be triggered by such odors. Will there be special case provision provided for people that have these kind of needs if the need arises? (cost associated with relocation during the time period of the offensive odors)

It is widely known from geotechnical data reviewed that clays and bedrock do have a porosity factor depending on the strata you are working with. Cracks and separation are often found vertically and horizontally in bedrock formations. Being that some of the higher aquifers are already contaminated it would stand to reason that the downward or lateral migration would continue.

Some of the residence on Hunters woods rd purchased our American dream before the real estate disclosure laws were in effect. My wife and I was 22 and 25 years old when we purchased this property and had no idea or was we told about a landfill in the area.

FHA and HUD or any government back loans will not longer finance homes on Hunters Woods Rd . Local banks also are being very particular about giving loans for homes like this.

In 1974 I'm sure everyone thought that what they did at Green Landfill 1 was the thing to do but clearly it was not. I'm also sure that in 2014 everyone feels we are doing the right thing.

The deeper wells do not show any signs of contaminations and I would hope that we don't wait until they do!

With some of the moneys that are being saved with the new plan how about considering casing the drinking water wells of the residence that are not already cased.

Now is the time, for the right long term fix, Hocking County now draws as many people as Yellow stone national park does, the moneys generated from tourism are a major part of the employment and tax base in Hocking county and a toxic contamination of an aquifer would be a media feeding frenzy. Mike Mouser

1 INDEX TO WITNESSES

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3	WITNESS	PAGE
4	LAURA LYON	6
5	LARRY A. HORN, JR.	8
6	TIM BLAIR	9
7	MICHAEL MOUSER	10
8	WILLIAM KAEPFNER	11

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1 Wednesday Evening Session

2 February 12, 2014

3 - - -

4 MS. FINKELSTEIN: The purpose of this public
5 hearing is to accept comments on the official record
6 regarding the amended cleanup plan for the 10.6-acre
7 Green 1 Landfill site near Logan on Hunters Woods Road
8 in Green Township.

9 Ohio EPA published a public notice to
10 announce the hearing and public comment period
11 regarding the project in newspapers in the area. This
12 notice was issued in Ohio EPA's Weekly Review, which is
13 a publication that lists, by county, all Agency
14 activities and actions taking place in the State of
15 Ohio.

16 Written and oral comments received as part of
17 the official record are reviewed by Ohio EPA prior to a
18 final action of the Director. To be included in the
19 official record, written comments must be received by
20 Ohio EPA by the close of business on February 21st,
21 2014. Comments received after this date may be
22 considered as time and circumstances permit, but will
23 not be part of the official record for this hearing.

24 Written comments can be filed with me tonight

1 or submitted to Ohio EPA, P.O. Box 1040 -- Well, it's
2 best to submit them to the address on the agenda that
3 brings them here, correct, Mike?

4 MR. MOUSER: So the ones I emailed are still
5 part of it?

6 MR. SHERRON: Yes, I have those.

7 MS. FINKELSTEIN: The specific instructions
8 for the address for the comments can be found on the
9 agenda for this hearing.

10 It is important for you to know that all
11 comments received in writing at the Agency, all written
12 comments given to me tonight, and all verbal comments
13 given here tonight are given the same consideration.

14 I ask that all exhibits, including written
15 speeches, maps, photographs, overheads, and any other
16 physical evidence referred to in your testimony be
17 submitted to me tonight as part of the official record.
18 If you chose not to submit the information, Ohio EPA
19 cannot ensure the accuracy of your testimony.

20 A court reporter is here to make a
21 stenographic record of tonight's proceedings.

22 Questions and comments made at the public
23 hearing will be responded to in a document known as a
24 responsiveness summary.

1 The Director, after taking into consideration
2 the recommendations of the program staff and comments
3 presented by the public, may issue or deny the permit.

4 Once a final decision is made by the
5 Director, the final decision along with the
6 responsiveness summary will be communicated to the
7 applicant, all persons who have submitted comments and
8 all persons who present testimony at tonight's hearing.

9 Final actions of the Director are appealable
10 to the Environmental Review Appeals Commission, also
11 known as ERAC. The board is separate from Ohio EPA
12 and reviews cases in accordance with Ohio's
13 environmental laws and rules. Any ERAC decision is
14 appealable to the Franklin County Court of Appeals.
15 Any order of the Court of Appeals is appealable to the
16 Supreme Court of Ohio.

17 If you do wish to present testimony at this
18 hearing tonight and have not already completed a blue
19 card, please do so at this time and return it to me or
20 Mike. The cards are available at the registration
21 table.

22 Each individual may testify only once and
23 speak for five minutes, so I do ask that you use your
24 time wisely and that you are respectful of others

1 some sort be it pine trees, some kind of trees that we
2 would negotiate, to keep out noise and at least to
3 keep -- even if it's not fresh trees to keep a layer of
4 trees of some sort that they don't tear down, and we
5 can deal with it.

6 At the last one of these I volunteered that
7 we would be willing to sell our land and use it as a
8 drive-thru. I'm no longer interested in that due to
9 the fact we have built a new house, so I am retracting
10 that from the last time.

11 But, however, we do have a dirt source if
12 that would be a possibility and that would alleviate --
13 if the dirt would be deemed as possible and we could
14 use it and then we wouldn't have to go out of the road.

15 So, I would make sure all the wells get
16 tested, and I wouldn't mind an encased well. That
17 would be very nice to take away that having to worry
18 about being contaminated.

19 And the other thing would be the fact that we
20 need to watch the drainage on the road. It's a big
21 concern being that road floods three times a year at
22 least, or it floods three places of the road when it
23 floods, already, and any additional water coming down
24 from that landfill from the cap will create more

1 flooding. And our trustees have given us the largest
2 tiles, which have done a better job. But adding to
3 that water level because of that cap, the liner will
4 not do us any favors. We need to make the water go a
5 different direction. That's it.

6 MS. FINKELSTEIN. Thank you.

7 And Diane is asking that you come a little
8 closer. There's noise above our heads. It's important
9 that she hears you so she gets your testimony properly.

10 Mr. Horn.

11

12 MR. HORN: Larry A. Horn, Jr. L-A-R-R-Y A.
13 H-O-R-N, J-R.

14 Like Laura I'm concerned for something
15 that -- I moved into the woods so I don't want to look
16 at a fence and a flat pasture. I am wondering what's
17 going to happen with the material if needed to be
18 brought in or the bad stuff needs to be taken out so
19 the road is kept and passable for the next 40, 50 years
20 while I'm there, I guess.

21 I really had no questions. I was just
22 wondering, you know, was there money allotted, how soon
23 they're going to get started, seeing whether or not the
24 wells are going to be sampled, and seeing whether or

1 not we could all be notified in black and white for the
2 next meeting or in the future.

3 MR. SHERRON: So, Larry, just so I can
4 clarify what your beginning question and comment was.
5 You're not so worried about the loads that are being
6 brought in or out, just how that's going to impact the
7 traffic?

8 MR. HORN: And the road.

9 MR. SHERRON: And the road condition?

10 MR. HORN: Right. And the 15-ton bridge.

11 MR. SHERRON: Okay.

12 MR. HORN: Thank you.

13 MS. FINKELSTEIN: Thank you.

14 Randy Findlay.

15 MR. FINDLAY: Pass.

16 MS. FINKELSTEIN: Tim Blair.

17 - - -

18 MR. BLAIR: I'm Tim Blair, Green Township
19 Trustee. T-I-M B-L-A-I-R.

20 My main concern was the road and what is
21 going to happen with the road.

22 As far as the Township is concerned, we don't
23 want to put a lot of money in the road repairing it and
24 doing things to it and then have big trucks come back

1 in and tear it all up immediately right afterwards. So
2 we need to be kept in the loop to know when if
3 construction is going to happen, and we need to make
4 sure that the construction people are aware that we do
5 have a road repair agreement they have to sign before
6 they can take their trucks on our road. That
7 guarantees us that they will repair it.

8 And as far as Larry's concern about the
9 15-ton bridge, I talked to the county engineer about
10 it. There is no weight restrictions whatsoever on that
11 bridge, and he said it will haul any legal load that
12 comes across. I have been underneath the bridge and I
13 don't think so. But that's what our county engineer
14 says.

15 MS. FINKELSTEIN: Thank you, Mr. Blair.

16 And Mr. Mouser.

17 - - -

18 MR. MOUSER: My name is Mike Mouser. I would
19 like to see the remediation --

20 MS. FINKELSTEIN: Would you spell your name
21 for the record.

22 MR. MOUSER: M-O-U-S-E-R.

23 I would like to see the remediation agreement
24 address the potable water for the residents of Hunters

1 Woods Road.

2 I'm sure in 1974 they thought the fix of the
3 landfill was the correct thing to do. And I know now
4 that you think that the migration between the 100-foot
5 wells and 300-foot wells is not feasible, but a more
6 positive solution would be I would think a better
7 remedy then to wait to see if it migrates laterally
8 into the other aquifers.

9 MS. FINKELSTEIN: We have now heard from
10 anyone who's turned in a blue card. Is there anyone
11 else who would like to provide testimony tonight?

12 MR. KAEPNER: Yes.

13 MS. FINKELSTEIN: If you would come up.

14

15 MR. KAEPNER: Yes. William Kaepner,
16 K-A-E-P-P-N-E-R.

17 Being a property owner on Hunters Woods Road
18 and my daughter's house being there, I have never
19 seen -- During the initial phases there was going to be
20 test wells done north, south, east and west to see how
21 far the migrations were or are. I have never been
22 informed of any test wells on the south side of Hunters
23 Woods Road in that area at all, so -- and that
24 watershed that comes up Hunters Woods Road flows north

1 to south across Hunters Woods Road and up the valley.
2 So, as I said, I never seen any test wells on the south
3 side of Hunters Woods Road.

4 There was also questions at the first couple
5 steps that they were going to be requesting properties
6 to park equipment on and stuff and there has never been
7 any follow-up to that, if they still have that. If you
8 still have that as a request from neighboring land
9 owners with folks who have flat ground for the
10 construction.

11 MR. SHERRON: So, Bill, are you offering a
12 staging area?

13 MR. KAEPNER: The initial stuff that came
14 out was a little more Draconian in request. We do have
15 flat land. There's other folks who have flat land
16 closer.

17 My primary interest is the wells; the water
18 quality. Secondary, is there going to be requirements
19 for staging areas.

20 MR. SHERRON: Again --

21 MR. KAEPNER: Obviously you can't answer the
22 question. But I'm wondering about staging areas.

23 My primary request is well samples on the
24 south side of Hunters Woods Road, because I've never

1 received anything.

2 MR. SHERRON: Okay.

3 MR. KAEPFNER: So that's about it, really.

4 MS. FINKELSTEIN: Thank you.

5 MR. KAEPFNER: Thank you.

6 MS. FINKELSTEIN: Was there anyone else who
7 wanted to present testimony tonight?

8 All right. If there are no further requests
9 to present testimony -- one more chance -- we will go
10 ahead and end the hearing.

11 Remember, written comments will be accepted
12 through the close of business on February 21st. Again,
13 these can be sent to the address on the agenda.

14 This does conclude today's hearing. Thank
15 you for your testimony, cooperation and participation
16 in Ohio EPA's decision-making process. The time is now
17 7:03 and this hearing is adjourned.

18 - - -

19 Thereupon, the hearing was adjourned at
20 7:03 p.m., on Wednesday, February 12, 2014.

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CERTIFICATE

- - -

I do hereby certify that the foregoing is a true and correct transcript of the proceedings taken by me in this matter before the Ohio EPA, on Wednesday, February 12, 2014.

DIANE L. SCHAD,
COURT REPORTER.

- - -

Attachment C: R.C. 3734.02(G) Exemption

BEFORE THE

OHIO ENVIRONMENTAL PROTECTION AGENCY

In the matter of:

The Goodyear Tire & Rubber Company
1144 East Market Street
Akron, Ohio 44316

Director's Final
Findings and Orders

Respondent.

For the Site known as:

Green I Landfill Site
Hunters Woods Road
Green Township, Hocking County, Ohio

I. JURISDICTION

These Director's Final Findings and Orders ("Orders") are issued to The Goodyear Tire & Rubber Company ("Goodyear"), pursuant to the authority vested in the Director of Ohio EPA under Ohio Revised Code ("ORC") § 3734.02(G) and Ohio Administrative Code ("OAC") Rule 3745-27-03(B).

II. PARTIES BOUND

These Orders shall apply to and be binding upon Goodyear and its successors in interest liable under Ohio law. No change in ownership of Goodyear or of the Green I Landfill shall in any way alter Goodyear's obligations under these Orders.

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By Donna Lassiter Date: 7-2-12

III. DEFINITIONS

Unless otherwise expressly provided herein, all terms used in these Orders shall have the same meaning as defined in ORC Chapter 3734.

IV. FINDINGS

The Director of Ohio EPA has determined the following findings:

1. The Green I Landfill Site ("Site") is located in Section 36, Green Township, Hocking County, Ohio, off Hunters Woods Road (Township Road 358). The Site encompasses approximately 18 acres, including the Green I Landfill, and is surrounded by residential properties.
2. The Green I Landfill operated from July 1970 to July 1974, when the landfill ceased acceptance of waste. Goodyear is the current owner of the Site.
3. During its operation, the Green I Landfill accepted "industrial waste" and/or "other waste" as defined in ORC § 6111.01(C) and (D), and/or "hazardous wastes" as defined in ORC § 3734.01(J), and/or "hazardous substances" as defined in § 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. 9601(14).. Wastes disposed of at the Site included municipal waste and drummed materials, including: polyols, isocyanates, alcohols, oils, waxes, paints, hydrocarbon solvents, washer cleaner sludge, and paint booth sludge. Goodyear stated the company disposed of 4,605 drums of liquid waste and 94,268 cubic yards of miscellaneous solid waste at the Green I Landfill between July 1970 and June 1974.
4. In November 1983, Ohio EPA conducted a preliminary assessment at the Site. Laboratory analysis of ground water samples collected from the Site indicated levels of Volatile Organic Compounds (VOCs) in excess of Maximum Contaminant Levels (MCLs). In August 1994, Ohio EPA prepared a Site inspection report for U.S. EPA. The report summarized ground water sampling results, which indicated the presence of phenol, benzoic acid, 4-methylphenol, benzene, arsenic, barium, beryllium, chromium, lead, nickel and cyanide. U.S. EPA completed a removal action in November 1991 after drums near the surface of the ground were accidentally uncovered at a portion of the Site and a black sludge oil material containing polychlorinated biphenyls (PCBs) seeped from the ground.
5. In March 2000, additional sampling conducted by Ohio EPA revealed VOC and heavy metal contamination in several seeps on the Site.

6. On September 20, 2002, Goodyear agreed to an administrative order with Ohio EPA to investigate contaminants at the Site by conducting a Remedial Investigation (RI) to define the nature and extent of contamination at the Site, and a Feasibility Study (FS) to develop and evaluate remedial alternative(s) for cleanup of the Site.
7. Ohio EPA approved the RI Report on December 20, 2005, and approved the FS Report on December 14, 2007.
8. On February 9, 2010, Ohio EPA notified the public of its Preferred Plan for remediation of the Site and solicited public comments. On November 19, 2010, the Director of Ohio EPA issued a Decision Document, which selected the remedy for the Site. Included in the selected remedial alternative (Alternative 5 in the Decision Document) was the requirement for the construction of a dual layer, low permeability landfill cap, pursuant to Ohio Administrative Code ("OAC") rule 3745-27-08, on the Green I Landfill.
9. Respondent Goodyear appealed the Decision Document to the Environmental Review Appeals Commission (ERAC) on December 22, 2010.
10. On September 15, 2011, Goodyear submitted a request for an exemption, pursuant to ORC 3734.02(G), from several of the requirements, OAC Rules 3745-27-08(D)(21) and (26), associated with the construction of a dual layer, low permeability cap on the Green I Landfill. More specifically:
 - a) OAC rule 3745-27-08(D)(21)(a)(i) requires that the re-compacted soil barrier layer in the composite cap system be at least eighteen (18) inches thick, or include a geosynthetic clay liner that complies with paragraph (D)(9) of the rule with an engineered sub-base, constructed in accordance with paragraph (D)(22) of the rule. Goodyear requested an exemption from the requirement to construct an eighteen-inch thick soil barrier in order to allow the use of existing soil cover as the soil barrier.
 - b) OAC rule 3745-27-08(D)(21)(g)(i-iv) requires that the re-compacted soil barrier layer in the composite cap system be constructed in lifts and to certain specifications, and be compacted to certain specifications. Goodyear requested an exemption from these requirements as the re-graded existing soil cover would be used for the soil barrier. A re-compacted soil barrier would not be placed on the landfill; therefore, adherence to the specifications in (D)(21)(g)(i-iv) is not warranted.

- c) OAC rule 3745-27-08(D)(21)(h) requires that the re-compacted soil barrier layer in the composite cap system be adequately protected from damage due to desiccation, freeze/thaw cycles, wet/dry cycles, and the intrusion of objects during construction of the cap system. OAC rule 3745-27-08(D)(21)(i) requires quality control testing of the constructed lifts be performed to determine the density and moisture content according to certain specifications. Goodyear requested an exemption from these requirements as the re-graded existing soil cover would be used for the soil barrier. As an alternative, Goodyear would develop construction quality controls, for Ohio EPA approval, during remedial design.
 - d) OAC rule 3745-27-08(D)(26)(b) requires that cap protection layers be a minimum of thirty (30) inches thick for the facilities located in the area of the Green I Landfill. Goodyear requested an exemption from this requirement, as the average soil temperatures in the area of Green I Landfill do not warrant a thirty-inch thick cap protection layer for freeze protection.
- 11. An alternative cover system for the Green I Landfill, as described in Goodyear's September 15, 2011 exemption request, and for the reasons explained herein, would result in a degree of protectiveness at least equal to that of the requirements in OAC rule 3745-27-08(D).
 - 12. For the reasons summarized above, the Director has determined that issuance of an exemption to allow the proposed alternative cap system, as further described in the September 15, 2011 exemption request, is expected to provide an adequate physical barrier between the waste mass and direct contact, and is unlikely to adversely affect the public health or safety or the environment.

V. ORDERS

The Director hereby issues the following Orders:

- 1. Pursuant to ORC § 3734.02(G) and OAC Rule 3745-27-03(B), Goodyear is hereby exempted from the requirements in OAC rules 3745-27-08(D)(21) and (26), as described in the Findings above, for the cap system at the Green I Landfill, provided that Goodyear implements the other components of the remedy selected in the Decision Document for the Site.
- 2. Nothing in these Orders shall be construed to authorize any waiver from the requirements of any applicable federal or state laws or regulations except as specified herein. These Orders shall not be interpreted to release Goodyear

from responsibility under ORC chapters 3704, 3734 or 6111, the Federal Clean Water Act, the Resource Conservation and Recovery Act, or the Comprehensive Environmental Response, Compensation and Liability Act, or from other applicable requirements for remedying conditions resulting from any release of contaminants to the environment.

VI. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to these Orders shall be undertaken in accordance with the requirements of all applicable local, state and federal laws and regulations. These Orders do not waive or compromise the applicability and enforcement of any other statutes or regulations applicable to Goodyear, any other person, firm, partnership or corporation, and/or the Site.

VII. RESERVATION OF RIGHTS

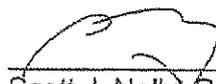
Nothing contained herein shall be construed to prevent Ohio EPA from exercising its lawful authority to require Goodyear to perform additional activities pursuant to ORC Chapters 3734 or 6111 or any other applicable law in the future. Nothing herein shall restrict the right of Goodyear to raise any administrative, legal, or equitable claim or defense with respect to such further actions that Ohio EPA may seek to require of Goodyear.

VIII. EFFECTIVE DATE

The effective date of these Orders shall be the date these Orders are entered into the Journal of the Director of Ohio EPA.

IT IS SO ORDERED:

OHIO ENVIRONMENTAL PROTECTION AGENCY



Scott J. Nally, Director

JUL 02 2012
Date

