

# LANDFILL - NEW CELL CONSTRUCTION

Lanchester Landfill  
Area E Cell 2A  
Narvon, PA 17555

**OWNER:**

Chester County Solid Waste  
Authority

**PROJECT TYPE:**

New Cell Construction

**ENGINEER:**

SCS Engineers

**HARDEN GROUPS**

**ROLE:**

General Contractor



**HIGHLIGHTS OF WORK PERFORMED**

New 9 acre cell constructed on existing capped landfill, including demolition, erosion and sedimentation controls, existing liner system removal, 49,000cy of soil excavation, 6,000cy of waste excavation and relocation, 18,000 tons of clay sub-base, leachate collection and detection system, liner system and protective cover, stormwater measures and drainage channel installation.



# LANDFILL – NEW CELL CONSTRUCTION

## PHASE 10 – EASTERN SANITARY LANDFILL

Baltimore County, MD

### OWNER:

Baltimore County, MD  
Department of Public  
Works

### PROJECT TYPE:

New Cell Construction

### ENGINEER:

AECOM

### HARNDEN GROUPS

**ROLE:** General Contractor



### HIGHLIGHTS OF WORK PERFORMED:

Construction of a 19.1 acre cell including erosion control, 78,000 CY of excavation, cell floor preparation, geosynthetic clay liner, geomembrane, sump pumping system, wet wells, electrical system, 1,200 LF of 6"x10" dual containment force main, geotextiles, aggregate drainage layer, protective soil cover material, rain cover, and the installation of litter control fence.



# LANDFILL – NEW CELL CONSTRUCTION

**CELL 7 – SECCRA**

WEST GROVE, PA

**OWNER:**

SOUTHEASTERN  
CHESTER COUNTY  
REFUSE AUTHORITY

**PROJECT TYPE:**

New Cell  
Construction

**ENGINEER:**

BAI GROUP

**HARDEN GROUPS  
ROLE:**

General Contractor



**HIGHLIGHTS OF WORK PERFORMED:**

Construction of a 12.7 acre cell including excavation, 24" thick 10-7 clay subbase, geomembrane liner, leachate collection aggregate, protective cover soil, 1,725 LF of 2"x4" dual containment HDPE pipe, 2,000 LF of 4"x8" dual containment HDPE pipe, 1,700 LF 6" HDPE pipe, and 2,925 LF of 3" HDPE pipe.



# LANDFILL – NEW CELL CONSTRUCTION

## AREA D – CELL 2 CONSTRUCTION

HONEY BROOK, PA

### OWNER:

CHESTER COUNTY  
SOLID WASTE  
AUTHORITY

### PROJECT TYPE:

New Cell Construction

### ENGINEER:

ARM GROUP INC.

### HARDEN GROUPS ROLE:

General Contractor

### HIGHLIGHTS OF WORK PERFORMED:

Construction of a new 9 acre cell partially constructed on existing capped landfill, including clearing and grubbing, demolition, erosion and sedimentation controls, existing liner system removal, excavation and subgrade preparation, geogrid reinforcement, 110,000 CY of earthwork, 27,000 CY low permeability soil,  $10^{-7}$  clay subbase installation, 60-mil HDPE liner, 20 mil PVC cover, geocomposite, geosynthetic clay liner, 16 oz geotextile, 18" protective cover, litter fence, access road, guide rails, leachate collection system and risers, pump system, controls, and electric.



# LANDFILL – CLOSURE

**Frey Farms Landfill 2020 Cap  
Conestoga, PA**

**OWNER:**

Lancaster County Solid Waste  
Authority

**PROJECT TYPE:**

Cell Closure

**ENGINEER:**

ARM GROUP INC.

**HARDEN GROUPS  
ROLE:**

General Contractor



**HIGHLIGHTS OF WORK PERFORMED:**

Construction of a 12.2 acre landfill capping system including the removal of 6.1 acres of an existing liner system, 35,000cy of cover soil excavation, screening and excavation of 65,000cy of soil. Excavation of 4,000cy of municipal solid waste, 4,700 LF of LFG surface collectors, Lateral piping, access roads and E&S control.



# LANDFILL – CLOSURE

**Millersville Landfill MLRRF Cell  
567 Replacement Cap  
Severn, MD**

**OWNER:**

Anne Arundel County

**PROJECT TYPE:**

Cell Closure

**ENGINEER:**

SCS Engineers

**HARDEN GROUPS**

**ROLE:**

General Contractor



**HIGHLIGHTS OF WORK PERFORMED:**

Installation of a 6 acre 40-mil geomembrane liner cap on top of the existing settled closure. 51,000cy of excavation. Raise cap elevation and extend existing LFG wells to meet new grades. Install new HDPE LFG pipe headers and laterals. Pond clean out and restoration. Cell 567 Terrace regrade and down-chute repair for erosion and sediment control.



# LANDFILL - CLOSURE

**Millersville Landfill  
MLFRRF, Cell 8 Closure  
Severn, MD**

**OWNER:**

Anne Arundel County

**PROJECT TYPE:**

Cell Closure

**ENGINEER:**

Geosyntec/ Arm Group

**HARDEN GROUPS  
ROLE:**

General Contractor



**HIGHLIGHTS OF WORK PERFORMED:**

Construction of 58 acre landfill closure including geomembrane liner, 1,500/VF of LFG extraction wells, 20,000/LF of 4" though 14" HDPE LFG pipe, condensate knock out and lift stations, electrical work, flare station modifications, SCADA System, 440/LF of RCP culverts and precast box culverts, 10,000/CY of waste excavation and relocation, 330,000/CY of excavation, sheet piling, and 1,400/LF of grouted rip rap channels



# LANDFILL - CLOSURE

## Midshore 1 Landfill Final Closure

Easton, MD

### OWNER:

Maryland Environmental Services

### PROJECT TYPE:

Cell Closure

### ENGINEER:

Geosyntec.

### HARDEN GROUPS ROLE:

General Contractor



### HIGHLIGHTS OF WORK PERFORMED:

Construction of a 70 acre exposed geomembrane cap at the Midshore 1 Regional Solid Waste Facility. This is the first exposed geomembrane cap permitted in Maryland. Our work included 16 vertical LFG extraction wells, 6,450 LF of SDR-17 HDPE pipe, 70 acres (89,000CY) of sub grade preparation, 30 acres (96,000CY) of former borrow area grading, 36" through 54" diameter storm water culverts and headwalls, 60 mil textured geomembrane liner (3,050,000 SF) with earth anchors, 8,500 LF of perimeter channel, fabric formed concrete downchutes and channels.





# LANDFILL - CLOSURE

## HERNWOOD LANDFILL CLOSURE

BALTIMORE COUNTY, MD

### OWNER:

BALTIMORE  
COUNTY DEPARTMENT OF  
PUBLIC WORKS

### PROJECT TYPE:

Cell Closure

### ENGINEER:

EA Engineering

### HARDEN GROUPS ROLE:

General Contractor



### HIGHLIGHTS OF WORK PERFORMED:

Closure of an existing 72 acre landfill, the work included clearing and grubbing, 400,000 CY of earthwork, gabion and reno mattress, rip-rap channels, super silt fence, wetland and stream rehabilitation, gravel and paved roads. The Geomembrane closure cap, covering 68 acres, required installation of soil sub base layer, 40 mil LLDPE geomembrane, geocomposite, PVC pipe underdrain system, 24" soil cover, vegetative stabilization, construction of 5,215 LF of 10' – 15' deep gas migration control trenches, LFG extraction wells, abandonment of existing leachate lines and ground water monitoring wells, excavation and off-site disposal of 25,000 CY of municipal solid waste.



# LANDFILL – GAS COLLECTION SYSTEMS

Millersville Landfill – Sub Cell 8.8

Millersville, MD

**OWNER:**

Anne Arundel County

**PROJECT TYPE:**

Gas Collection System

**ENGINEER:**

SCS Engineers

**HARDEN GROUP'S ROLE:**

General Contractor



**HIGHLIGHTS OF WORK PERFORMED:**

Our project at the Millersville landfill included the installation and construction of 560 VF of LFG extraction wells, 4,340 LF of horizontal LFG collectors & leachate collection system piping and tie-ins, condensate drains, 4" to 10" LFG piping, CMP road crossing/pipe casing, connection to existing condensate drain and site restoration.



# LANDFILL – GAS COLLECTION SYSTEMS

## Quarantine Road Landfill

Baltimore, MD

### OWNER:

City of Baltimore

### PROJECT TYPE:

Gas Collection  
System

### ENGINEER:

SCS Engineers

### HARDEN GROUPS ROLE:

General Contractor

### HIGHLIGHTS OF WORK PREFORMED:



Our project at Quarantine Road Landfill included installation of a landfill gas flare station, installation of 3,300 VF of LFG extraction wells, 12,250 LF of 6" to 14" HDPE header and collection piping, relocation and disposal of municipal solid waste, construction and installation of LFG wellheads and control valves, 80,000 CY of earthwork, reinforced concrete, chain link fence, and site restoration.



# LANDFILL – GAS TO ENERGY SYSTEMS

## Landfill Gas Heaters - Prince William County Landfill

Manassas, VA.

### OWNER:

County of

Prince Williams VA.

### PROJECT TYPE:

LFGTE

### ENGINEER:

Solid Waste Services  
LLC.

### HARDEN GROUPS ROLE:

General Contractor



### HIGHLIGHTS OF WORK PERFORMED:

Harnden Group's work included Construction of a landfill gas transmission and compression facility, along with the installation of LFG fired low intensity heaters in the landfill maintenance facility utilizing the treated landfill gas. The work also included installation of 7,000 LF of 6" HDPE LFG pipe, isolation valves, road boring, LFG dehydration compression system, LFG blower station, landfill gas fired low intensity unitary heaters, stainless steel piping, and electrical.



# LANDFILL – GAS TO ENERGY SYSTEMS

**AMERESCO  
MECHANICAL/ELECTRICAL**

**QUARANTINE ROAD  
LANDFILL**

Baltimore, MD

**OWNER:**

Ameresco

**PROJECT TYPE:**

LFGTE

**ENGINEER:**

Ameresco

**HARDEN GROUPS ROLE:**

Sub Contractor



## **HIGHLIGHTS OF WORK PERFORMED:**

Our project at Quarantine Road landfill in Baltimore, MD, included the construction of an LFG compression, dehydration and transmission facility to provide LFG to the United States Coast Guard yard's renewable energy center. During construction Harnden Group installed stainless steel interconnecting pipe, one candlestick flare, HDPE header piping, electrical interconnections, and concrete foundations.



# LANDFILL – GAS TO ENERGY SYSTEMS

## Gas Blower/Flare Station Modifications

Egg Harbor Township, NJ

### OWNER:

Atlantic County Utilities  
Authority Landfill

### PROJECT TYPE:

LFGTE

### ENGINEER:

SCS Engineers

### HARDEN GROUPS ROLE:

General Contractor



### HIGHLIGHTS OF WORK PERFORMED:

For the Atlantic County utilities Authority Harnden Group installed a new LFG delivery system while maintaining continuous delivery of LFG to the gas to energy facility. The Project also included construction of a blower/flare station including 5 blowers, 2 flares (1,800 SCFM Flare and 3,000 SCFM Enclosed Flare), 24" HDPE pipe, 24" stainless steel pipe, and the construction of a control building. The construction of the control building included concrete and electrical work, system integration of the Owner-supplied John Zink and Parnel flare stacks, Gardner Denver blowers, and contractor furnished instrumentation and controls.

# LANDFILL – GAS FLARE SYSTEM

## Enclosed Flare Station Relocation

Narvon, PA

### OWNER:

Chester County Solid Waste Authority

### PROJECT TYPE:

Flare Station

### ENGINEER:

SCS Engineers

### HARDEN GROUPS ROLE:

General Contractor



### HIGHLIGHTS OF WORK PERFORMED:

Our project for the Chester County Solid Authority included the installation of a 4,500 SCFM enclosed blower/flare station, disassemble and transport flare to new location, recondition flare including sand blasting and paint, install new blowers, VFD's , flame arrestor, louvers, stainless steel pipe, condensate drains, concrete pad and foundations, control panel, electric and system integration. The project also includes the demolition of a 3,000 SCFM flare.

# LANDFILL – GAS FLARE SYSTEM

**Alliance Landfill – LFGTE  
Facility Pipeline**

Taylor, PA

**OWNER:**

Waste Management Inc.

**PROJECT TYPE:**

Enclosed Flare System  
Construction

**ENGINEER:**

LaSalle Associates Inc.

**HARDEN GROUPS  
ROLE:**

General Contractor



**HIGHLIGHTS OF WORK PERFORMED:**

Our project at the Alliance Landfill included construction of a new landfill gas transmission and compression facility, one (1) 6,000 SCFM enclosed flare, one (1) 3,300 SCFM enclosed flare, and one (1) 500 SCFM open flare. The project also included a condensate pump station and knock-out, valve vault, 4,000 LF of dual containment HDPE, 24" HDPE LFG header pipe, and site excavation.