

DIN 8584

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June 9, 2009

North Carolina Department of Environment  
and Natural Resources  
Division of Waste Management  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646



Attention: Mr. Edward Mussler

Reference: Revised Operations Plan for Petroleum Hydrocarbon  
Contaminated Soils as Alternative Waste Cover  
CMS Landfill V, Concord, North Carolina  
Permit No. 13-04

Mr Mussler:

On behalf of BFI Waste Systems of North America, Inc., ERM NC, PC is submitting this letter and attached Revised Operations Plan regarding proposed modifications to the current use of petroleum hydrocarbon contaminated soils as alternative daily and intermediate cover at the CMS Landfill V Municipal Solid Waste Landfill Facility (Permit No. 13-04) in Concord, North Carolina. In summary, the operations plan is revised to include the sampling and analytical testing protocol from the "Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater, State of North Carolina Department of Environment and Natural Resources Division of Water Quality Groundwater Section, July 2000".

The submittal of this revised operations plan replaces the previously submitted revision dated March 4, 2009 submitted on behalf of BFI Waste Systems of North America, Inc. The previously submitted revised operation plan is withdrawn for consideration based on this submittal.

Mr. Edward Mussler - Division of Waste Management  
CMS Landfill V, TPH Soils as ADC  
June 9, 2009

If you should have any questions or require additional information concerning this submittal and attachments, please contact us at your convenience at (704) 541-8345.

Sincerely,

ERM NC, PC



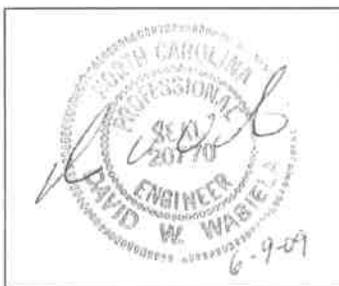
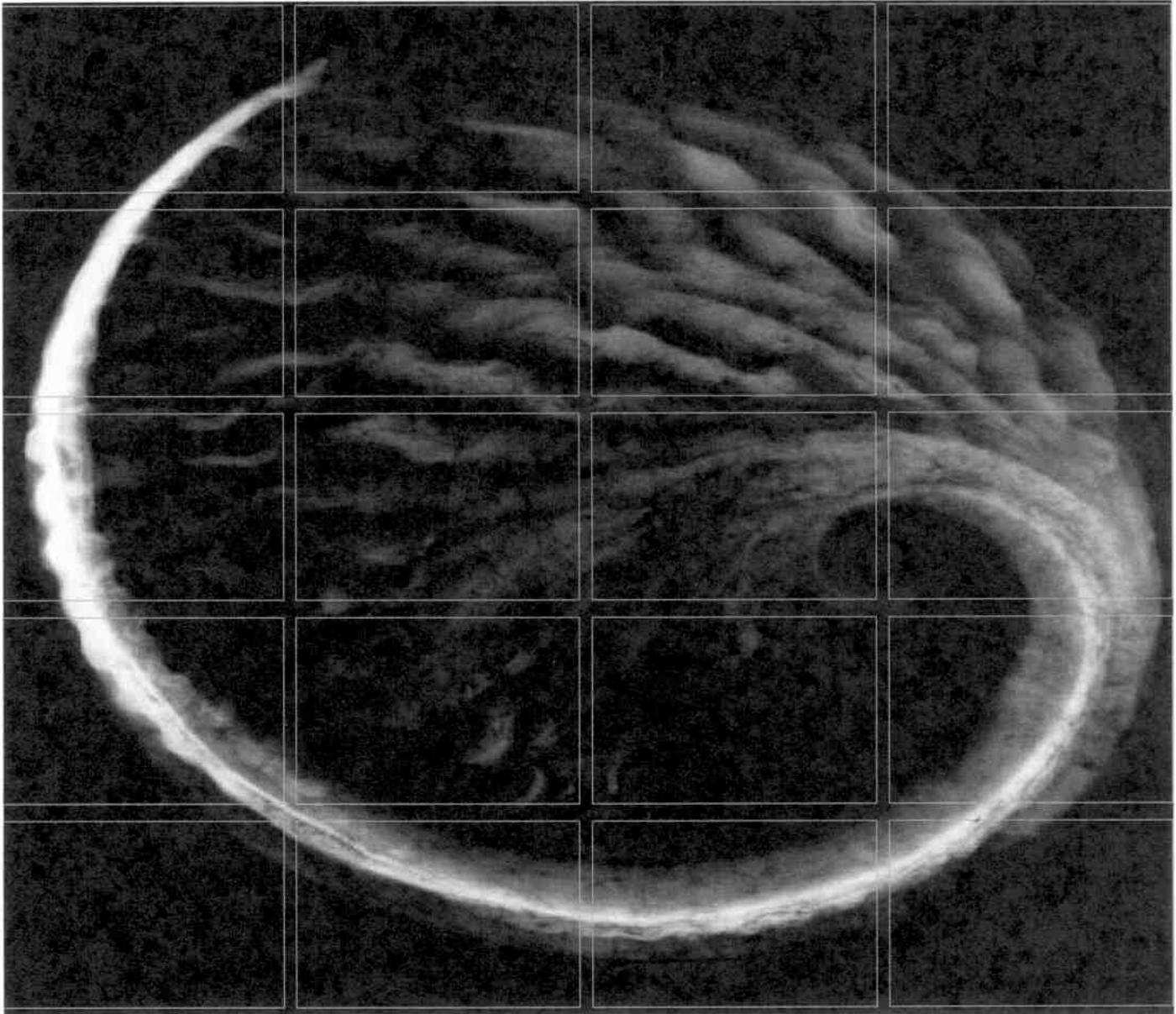
David W. Wasiela, P.E.  
Senior Project Engineer  
NC Registration 20770

A handwritten signature in cursive script that reads "Thomas M. Wilson".

Thomas M. Wilson, P.G.  
Principal in Charge

Cc: Mr. Mike Gurley - Republic Services, Inc.

Atch: Revised Operations Plan



CMS Landfill V MSWLF, Permit No. 13-04

**Operations Plan for Use of Petroleum  
Hydrocarbon Contaminated Soils as  
Alternate Daily Cover**  
*Concord, North Carolina*

Revised June 2009

ERM NC, PC

**CMS Landfill V MSWLF, Permit No. 13-04**  
**Operations Plan for Use of Petroleum Hydrocarbon  
Contaminated Soils as Alternate Daily Cover**  
*Concord, North Carolina*

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I. **INTRODUCTION**

The CMS Landfill V facility in Concord, North Carolina is a regional solid waste disposal facility. The landfill disposes of municipal solid wastes from communities and industries throughout North Carolina. Currently, on-site and adjacent borrow area soils are utilized for daily and intermediate cover of the waste. In order to conserve these soils and to beneficially reuse petroleum contaminated soils with relatively low levels of Total Petroleum Hydrocarbons (TPH), an alternative daily and intermediate cover system will be utilized. This alternative system will utilize petroleum hydrocarbon contaminated soils in place of native on-site soils.

Since 2000, the facility has accepted petroleum hydrocarbon contaminated soils for use as alternative daily and intermediate cover in accordance with a NCDENR - Division of Waste Management approved operations plan. In accordance with this operations plan, monthly sampling and testing of leachate and stormwater quality is performed to monitor for potential impacts due to the use of TPH soils at the landfill. The monitoring data reveals no change in leachate or storm water characteristics due to the use of TPH soils when compared to base line characteristics prior to the year 2000.

II. **ACCEPTABLE ALTERNATIVE COVER SOILS**

Petroleum contaminated soils are generated at environmental cleanup sites, spill sites, and in conjunction with underground and above ground fuel tank removals. The sources of this soil material vary significantly in their levels of total petroleum hydrocarbons (TPH). For the alternative cover material, only those petroleum contaminated soils with TPH concentrations not exceeding the following limits (based on acceptability criteria outlined below) will be acceptable:

- 3,000 parts per million (ppm) TPH by EPA method 5030 for soils impacted with low boiling point petroleum hydrocarbons; such as gasoline, aviation fuel, and gasohol.
- 3,000 ppm TPH by EPA method 3550 for soils impacted with high boiling point petroleum hydrocarbons; such as kerosene, diesel, and mineral spirits.
- 3,000 ppm TPH by EPA method 9071 for soils impacted with heavy fuels, oils, and grease; such as #4, #5, and #6 fuel oils.
- 3,000 ppm of total BTEX by EPA method 8020. (If a soil is impacted with more than one type petroleum product, more than one method may be used to characterize TPH levels.)

Acceptability of contaminated soils for use as alternative daily cover will be based on the results of composite sampling as outlined and detailed within "Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater, State of North Carolina Department of Environment and Natural Resources Division of Water Quality Groundwater Section, July 2000". For example, a stockpile of contaminated soil will be divided into grids containing approximately 200 cubic yards of soil per grid. For each grid block, a composite sample result is derived by extracting six (6) primary samples at two locations within the grid at three (3) depth intervals. Acceptance of contaminated soils will be based solely on the analytical testing results of the composite samples.

Only contaminated soils generated from within the facility's permitted service area will be accepted at the landfill. The facility shall not accept any soils contaminated with hazardous waste, chlorinated solvents, organic acids, tars or asphalt. The generator or contractor will sample all potential alternative cover materials to determine if the material is acceptable for use as an alternative daily cover (ADC). These results will be reviewed by the Landfill Operator and acceptability determined. Material that does not meet the aforementioned acceptance criteria shall not be accepted and utilized as an ADC.

III. **STORAGE OF THE ALTERNATIVE COVER MATERIAL**

Alternative cover soils with any level of petroleum contamination shall be stockpiled or stored within the limits of the lined cells of the facility. Petroleum hydrocarbon contaminated soils may not be stored at the facility for more than 45 days. Stockpiling of petroleum contaminated soils outside the limits of the lined cell is prohibited. Stockpiles shall be located away from traffic and operations areas. Stockpiles shall be covered by a tarp or maintained at an appropriate moisture content to prevent blowing of dust from the stockpiles. Earthen berms may be constructed around the stockpiles to prevent runoff from leaving the lined landfill footprint.

Soils being transported to the facility or awaiting transfer to the lined cell must be covered to prevent run-off due to precipitation.

IV. **USAGE OF THE ALTERNATIVE COVER MATERIAL**

The amount of Petroleum Contaminated soils accepted at the facility and used as ADC shall not exceed 10 percent of the permitted facility average monthly waste stream. Historically, the CMS Landfill V Facility requires daily cover amounts of approximately 15 to 20 percent of the waste stream. Petroleum Contaminated Soils can be used as Alternative Daily Cover only in areas or on intermediate slopes of the MSWLF cell which are within the confines of the base liner system. These soils will not be used on exterior side slopes of the MSWLF cell.

The Landfill Operator shall use special care to assure there is no operational difficulty caused by the usage of this material. In order to accomplish this, all personnel handling the material, either in the cell or being transported to the site, shall be trained in proper handling of the alternative daily cover.

## V. FACILITY MONITORING

In order to assess the impact of petroleum contaminated soils usage as alternative daily cover, the following sampling and analysis will be performed during the demonstration:

1. Leachate - Liquids collected in the lined landfill shall be analyzed on a monthly basis for TPH and BTEX. Samples will be collected at the manhole nearest to the cell receiving alternative daily cover.
2. Stormwater - Stormwater in the sediment basins hydraulically downgradient of alternative cover soil use shall be analyzed on a monthly basis for TPH and BTEX.
3. Air Quality - Once per quarter, a hand held photo ionization detector will be used to monitor the air quality in the area where alternative daily cover soils are stockpiled or placed. The detector will be “set-up” for detection of Benzene to detect the presence of airborne volatiles. The detection “action level” will be 10 ppm at which point placement of alternative daily cover will terminate until monitoring indicates that the air quality is within acceptable limits (less than 10 ppm Benzene). If the “action level” is met or exceeded, the landfill manager will be contacted immediately and all work shall cease.

Prior to use of any of the proposed contaminated soils as cover material, a baseline sampling of the leachate and affected sediment basin(s) will be performed for comparison to on-going monitoring.

VI. **RECORD KEEPING**

Records shall be maintained by the Landfill Operator on the following:

1. Manifests of incoming petroleum contaminated soils.
2. Waste profile forms for incoming petroleum contaminated soils with TPH on all materials (provided by generator).
3. Results of leachate analysis for TPH.
4. Results of stormwater analysis for TPH
5. Total amount of Petroleum Contaminated Soil received
6. Total amount of Waste received
7. Total amount of Petroleum Contaminated Soil used as ADC

VII. **TRAINING**

All employees handling petroleum contaminated soils shall be trained in:

1. Methods to utilize the petroleum contaminated soils as alternative daily cover.
2. Methods to store petroleum contaminated soils in the lined cells.
3. Methods to contain petroleum contaminated soils.
4. Record keeping
5. Health and safety concerns

VIII. **REGULATORY AUTHORITY**

The regulatory authority which permitted the landfill facility is:

NC Department of Environment & Natural Resources  
Division of Waste Management  
1646 Mail Service Center  
Raleigh, NC 27699-1646  
Phone No. (919) 508-8400

IX. **FACILITY OPERATOR**

The facility operator is:

BFI Waste Systems of North America, Inc.  
CMS Landfill V  
5105 Morehead Road  
Concord, NC 28025  
Phone No. (704) 782-2004