



Project Application Profile

Project: Clio Landfill and Coal Strip Mine in Litvinov, Czech Republic
Contractor: NWCC (New Waste Concepts – Czech)
A new, to be formed, company
Engineer: None Involved in this Demonstration
Product Used: ConCover 180 on MSW; and
ConCover SW with SS 40 on Coal Fields
Date: September 29th, 2004

Clio Municipal Solid Waste Landfill – Litvinov, Czech Republic

A group of Czech Businessmen including a Czech company known as GLASS.PO, spol.,s.r.o., and representatives of New Waste Concepts from the USA, performed a preliminary application of two (2) of six (6) of NWC's spectrum of cover materials at the Clio Landfill in Litvinov. The Demonstration included the application of ConCover 180 on the surface of the solid waste working face (see below). The objective of covering the area which had not been covered by soil, was so that it could be compared to the soil coverage (to the right below) both in cover and durability. In this part of the demonstration, NWC's ConCover 180, its second most durable material, was used.



The application on the municipal solid waste area was also to demonstrate the ease of blending the material, the ease of operation of the Italian made CAPS (ConCover All Purpose Sprayer) application machinery, and the ease of application of the ConCover line of products. This demonstration application did not focus on total coverage of the municipal solid waste as this would have required spraying the waste surface from two



different directions to eliminate the shadowing caused by spraying a ConCover 180 product from only one direction. The weather was overcast with slight rain occurring for brief periods of time. Four units (4) of ConCover 180 were mixed with 757 liters of water in the CAPS machine and allowed to blend for 15 minutes. The 757 liters of water filled the CAPS machine to less than $\frac{1}{4}$ of its capacity of 3100 liter. 4 units of ConCover 180 is 12 bags of ConCover 'A' chemical bags and 4 bags of

paper mulch. Once blended the material, because of its foaming capability expanded in the tank to the equivalent of 2500 liters. The truck with the CAPS machine was driven to the working face and the product (shown above left) was applied in about 5 minutes.

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Approximately 400 square meters was covered as was measured by a digital laser measuring device brought by New Waste Concepts of the USA. The material, because it is reactive in nature, dries and sets in about 90 minutes. The material was only sprayed from below the working face. If it is desired to eliminate shadowing (see definition of shadowing at the bottom of this Project Profile), caused by spraying from only one side, the CAPS machine could be moved to above the working face and sprayed from the other direction.



CLIO LANDFILL – COAL STRIP MINE

An additional demonstration of the application of **ConCover 180 with SuperSeal 40** was made in the coal strip mine area of the landfill. The object was to evaluate the coverage of the ConCover SW with SuperSeal and again the durability of the product for erosion control purposes. The process involved was to reload the CAPS machine with 1137 liters of water. Three (3) units of **ConCover SW** and one-half of a 30 lb bag of **SuperSeal 40** was

added to that blend. The mixture was agitated in the CAPS machine for about 15 minutes and then the CAPS machine was transported to the working face. Again the weather was cloudy, with winds in about the 15 knot range. Application was done in about 15 minutes and could have been completed in a



quicker fashion had the driver and applicator been able to better communicate. Again, the area covered was approximately 400 square meters. Coverage was excellent even with the high wind conditions. This application, however, was not applied in a manner to ensure long term durability and success in preventing water from eroding the soil under the **ConCover SW**. For erosion control purposes the material should be applied in a layer process that mirrors how roof tiles are laid down. In other words, one should use the hose, or if using a truck or front end loader as the way to move the machine, the applicator must begin at the top of the hill and work backwards and move up the hill as

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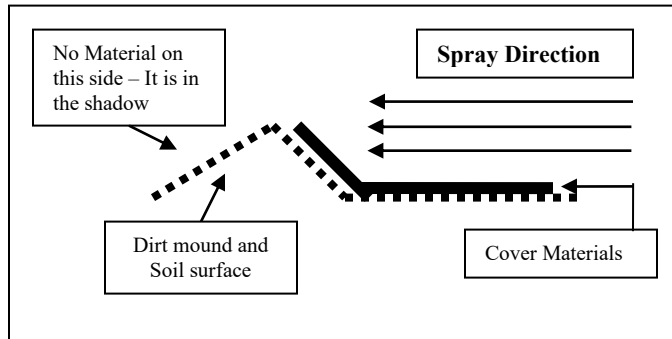
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the product is applied. This will assure there is no shadowing on the uphill side of the application.

Shadowing Defined: Shadowing is defined as the effect of coverage that occurs when a product is applied from only one direction. As you can see below in the drawing, the side



opposite the direction from which the spray is being applied, will not be covered. When applying any of the ConCover line of ConCover products for erosion control purposes, you cannot have any shadowing on the up hill side of any pieces of dirt, mounds or ridges. This will only create an opening for water to enter and get under and erode

the soil under the cover material. The effect of doing this is the equivalent of laying roof tiles from the top of the down to the eaves. Thus, the rule for applying the spectrum of cover materials for erosion control purposes is to make sure the is applied like applying roof tile from the lowest point on the hill, going up hill as you apply new product. For municipal solid waste, shadowing can be eliminated by spraying from two opposite directions.

CONCLUSIONS:

1. Since this application was merely a demonstration of two of the products of New Waste Concepts – Czech, a more defined application trail period should be pursued to achieve the following objectives:
 - a. Establish agreement with or refine the following test objectives:
 - i. Evaluate the acceptability of workers with this process
 - ii. Evaluate whether the material can control all of the environmental targets that soil is to achieve: (a) control blowing paper and plastic litter, (b) Help in controlling odors, (c) assist in controlling fires at a landfill, and (d) control vectors {animals, birds and insects} from entering the waste.
 - iii. Evaluate the durability of the product in rain events
 - iv. Develop protocols for blending, applying the waste products
2. Evaluate costs of machine maintenance and operational cost issues to confirm or disaffirm NWCC projected costs.

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