

MEMORANDUM OF INTEREST

TO: Board of County Commissioners

FROM: Rose Ann Sullivan, Environmental Health & Natural Resources Department

RE: Disposal of Smuggler Soil and Other Potentially Contaminated Soil Outside of the Landfill

DATE: July 11, 2006

The purpose of this Memorandum is to confirm that the Board is in agreement with the guidelines that Environmental Health & Natural Resources ("EH&NR") and Community Development propose to follow in instances where a developer desires to utilize soil from the Smuggler Superfund Site ("Smuggler"), or another potentially contaminated site, as fill in unincorporated Pitkin County.

Background

Soil tipping fees at the Pitkin County Landfill have risen over the last year. Additionally, the Landfill recently reinstated soil tipping fees for soils and other excavated material from Smuggler. As a result of these changes, large developments on Smuggler are looking for alternative locations to dispose of uncontaminated soil.¹ Fox Crossing, the first of these large developments, is interested in providing uncontaminated soil for use as a road base at a new development in Wingo Junction. Thus, there is an immediate need to provide developers with guidelines for alternative disposal of Smuggler soil in Pitkin County.

EH/NR and the Landfill contacted the Hazardous Materials and Waste Management Division of the Colorado Department of Public Health and Environment (the "Division") to clarify the regulatory requirements associated with disposal of soils and other excavated material from Smuggler. Staff then prepared a "protocol" for dealing with requests to transport material from Smuggler (or another potentially contaminated site) to a location other than the Pitkin County Landfill, or another licensed facility. This "protocol" was reviewed with the Division² and has resulted in the recommendations summarized below.

Analysis and Recommendations

- **Smuggler Institutional Controls:** The Smuggler Institutional Controls adopted by both the County and the City of Aspen require that soils or other material with lead concentrations of $\geq 1,000$ ppm that are removed from Smuggler must be disposed of at "a duly licensed and authorized facility," such as the Pitkin County Landfill. The County

¹ Under the Smuggler Institutional Controls, "uncontaminated soil" is soil containing lead concentrations of $< 1,000$ ppm.

² Both Staff and the Division were unsuccessful in obtaining specific input on a "protocol" from the U.S. EPA Region VIII Remedial Project Manager for Smuggler. A Memorandum summarizing staff's discussions with Division staff and the recommendations contained in this Memorandum of Interest has been forwarded to him.

tracks disposal of contaminated soil and other contaminated materials by a "*Smuggler Mountain Superfund Site Soil Removal Permit*" system. This disposal requirement and this tracking system will remain in place.

The Smuggler Institutional Controls also allow the respective jurisdictions to "require any person undertaking ... development within the Site to test any soil or material to establish its total lead (Pb) content for purposes of determining the application of [the Institutional Controls]." Such testing must utilize and adhere to protocols established or approved by the U.S. EPA. Under this authority, staff will permit a developer to conduct suitable sampling and testing of excavated materials, when necessary, to differentiate and segregate contaminated soils and other materials (which must be disposed of at the Pitkin County Landfill or another duly licensed facility) from uncontaminated soils and other materials (which are not subject to the Institutional Controls). Staff will require the developer to: (i) obtain staff review and approval of its sampling methodology, (ii) certify,³ in writing, that its sampling methodology and testing utilized and adhered to U.S. EPA established protocols, and (iii) provide staff with its analytical test results demonstrating a lead content of < 1,000 ppm.

• **Earthmoving Permits, Access Driveway Development Permits, Building Permits and Other Land Use Approvals:** Historically, the County has requested an environmental assessment of a site when the review of a permit application, or other land use review, "raised a red flag." Some permit applications, such as the current Earthmoving Permit, specifically require disclosure of the source of the fill covered by the permit.⁴ Due to the potential increase in disposal of soils from Smuggler outside of the Landfill, and developers' desire for certainty with respect to County requirements for disposal of such material, Community Development (with referrals to EH/NR and/or the Landfill, as appropriate) will follow the "protocol" summarized below in its permit reviews.

Uncontaminated Soils and Other Material from Smuggler: A developer that desires to utilize fill material that has passed Institutional Controls testing for lead (as outlined above) will be required to further analyze the proposed fill material and support its County permit application with the following documentation:

i. A description of the sampling and testing methodology used on the fill material, an analysis of the test results, and a certification that U.S. EPA-established protocols were utilized and adhered to.

ii. A certification that: (a) under federal and state law, the fill material does not constitute a hazardous substance requiring disposal at a duly licensed and authorized receiving facility for hazardous waste, and (b) the fill material does not exceed the values for the "Metals and Inorganic Compounds" listed in the attached Table.⁵

³ It is staff's expectation that the "certifications" required under this Memorandum of Interest will be provided by a professional environmental consultant knowledgeable and experienced with respect to the requirements of federal and state law governing characterization of hazardous substances and hazardous waste management.

⁴ Staff is in the process of adding a similar disclosure requirement to its other permit applications.

⁵ The attached Table is derived from Table 1, "*Soil Cleanup Value Standards*," in the Division's "*Proposed Soil Remediation Objectives Policy Document*" (December 1997). Table 1 was

Potentially Contaminated Soils and Other Material from Other Abandoned Mine Sites, Sites Which Previously Stored Junked Vehicles, Oil or Gasoline Tanks, or Other Chemicals:

In those instances where a developer desires to utilize potentially contaminated fill material from another abandoned mine site, or other parcel which staff believes may contain hazardous substances, the developer will be required to analyze the proposed fill material and support its permit application with the following documentation:

i. For abandoned mine sites:

(a) The results of a Toxicity Characteristic Leaching Procedure ("TCLP") analysis of the fill material, demonstrating that the material passes the TCLP test with respect to all eight of the Resource Conservation and Recovery Act ("RCRA") metals.⁶

(b) A certification that, under federal and state law, the fill material does not constitute a hazardous substance requiring disposal at a duly licensed and authorized receiving facility for hazardous waste.

(c) A certification that (1) the fill material does not exceed the values for the "Metals and Inorganic Compounds" listed on the attached Table (supported by the actual test results), and (2) U.S. EPA-established protocols for sampling and testing were utilized and adhered to in determining this fact.

Depending upon the history of the site, staff may also require sampling and analysis for additional compounds listed on the attached Table.

ii. For other potentially contaminated sites:

(a) A certification that, under federal and state law, the fill material does not constitute a hazardous substance requiring disposal at a duly licensed and authorized receiving facility for hazardous waste.

designed to support a methodology for calculating soil remediation objectives. The levels of the various compounds in Table 1 "were established using conservative assumptions about contaminant migration in the subsurface and evaluating potential exposures through direct contact ... and migration to groundwater."

The Division's original Table 1 allows for higher levels of chemicals in both "Commercial" and "Industrial" areas. The attached Table utilizes the lower levels designated by the Division for "Residential/Unrestricted" land uses for *all* parcels in the County. Additionally, the Division's original Table 1 does not specify maximum concentration levels for some chemicals when there is a specific need to be protective of groundwater, and, in some instances, allows higher chemical concentrations than those associated with a designated land use. Staff is requiring that, at a minimum, the "Residential/Commercial/Industrial/Unrestricted Land Use" levels be utilized as threshold indicators for groundwater protection.

⁶ The TCLP test is designed to simulate leaching in a municipal landfill. The test identifies wastes which pose a threat to groundwater if improperly managed and uses a landfill situation as a "worst case scenario."

(b) A certification that (1) the fill material does not exceed the values for the relevant compounds listed on the attached Table (supported by the actual test results), and (2) U.S. EPA-established protocols for sampling and testing were utilized and adhered to in determining this fact. The "relevant compounds" must be determined, in consultation with staff, on a case by case basis (depending upon an analysis of the history of the site).

Sites in Proximity to Surface Waters, Groundwater, or Other Sensitive Environments: Potential soil contamination is only one factor to be considered in evaluating a permit application. Whether the fill is "uncontaminated" soil from Smuggler or from another potentially contaminated location, the site specific characteristics of the receiving parcel must also be evaluated. Thus, a developer may also be required to independently address any technical or regulatory concerns staff may have with placement of the fill in proximity to surface waters, ground water, or other sensitive environments (e.g., wetlands).

BOCC ACTION: None required, unless the Board is not in accord with the proposed guidelines.

Attachment

Ccs: Lance Clarke, Assistant Director, Pitkin County Community Development
Tony Fusaro, Chief Building Official, Pitkin County
John Ely, County Attorney
Brian Pettet, Director of Pitkin County Public Works
Lee Cassin, Director of City of Aspen Environmental Health
Chris Hoofnagle, Solid Waste Operations Manager, Pitkin County Landfill

Table: Soil Value Standards [mg/kg] (6)

Chemical	CAS	Residential/ Commercial/ Industrial/ Unrestricted		Soil Concentration Protective of Groundwater (4)	Leachate Reference Concentration
		[mg/kg]	Notes		
Volatile Organic Compounds					
Benzene	71-43-2	0.60	c	0.17	NA
Carbon Tetrachloride	56-23-25	0.23	c	0.925	NA
1,1-Dichloroethane	75-34-3	546.80	nc	16.5	NA
1,1-Dichloroethylene	75-35-4	0.05	c	12.0	NA
Ethylbenzene	100-41-4	1,000	5,nc	104.3	NA
Pentachlorophenol	87-86-5	0.51	c	0.045	NA
Tetrachloroethylene	127-18-4	2.02	c	1.875	NA
Toluene	108-88-3	667.85	nc	85	NA
1,1,1-Trichloroethane	71-55-6	797.19	nc	62.5	NA
Trichloroethylene	79-01-6	2.99	c	0.675	NA
Vinyl chloride	75-01-4	0.02	c	7.0	NA
Semi-Volatile Organic Compounds					
Naphthalene	91-20-3	289.1	nc	51.4	NA
Phenol	108-95-2	1,000	5,nc	23.675	NA
Xylene (total)	1330-20-7	1,000	5,nc	1,000	NA
Pesticides/PCBs					
DDT	50-29-3	0.58	c	1,000	NA
Dieldrin	60-57-1	0.01	c	1,000	NA
PCBs	1336-36-3	0.07	c	1,000	NA
-Aroclor 1016	126-74-112	2.99	nc	1,000	NA
-Aroclor 1254	110-97-691	0.63	nc	1,000	NA
Metals and Inorganic Compounds					
Arsenic	7440-38-2	78.0	c, 7	NA (Use 78.0)	?
Cadmium and compounds	7440-43-9	99.5	nc	NA (Use 99.5)	0.11
Chromium (VI)	7440-47-3	53.94	nc	NA (Use 53.94)	2.2
Copper and compounds	7440-50-8	2,570	nc	NA (Use 2,570)	22
Lead	7439-92-1	400	nc,3	NA (Use 400)	1.1
Mercury (inorganic)	7439-97-6	17.66	nc	NA (Use 17.66)	0.044

NOTES:

c - Standard based on carcinogenic risk.

nc - Standard based on noncarcinogenic risk.

NA - Not Applicable: use of this Table to select soil remediation objectives under Tier 2 (as described in the CDPHE's "Proposed Soil Remediation Objectives Policy Document" (Dec. 1997)) does not allow for the calculation of a soil concentration under this column.

1. For total chromium
2. Includes residential areas, playgrounds, parks and other public areas, as well as industrial and commercial sites.
3. EPA, July 14, 1994 "Revised Interim Soil Lead Guidance for CERCLA Site and RCRA Corrective Action Facilities," OSWER Directive 9355.4-12.
4. To be utilized when there may be direct contact with surface or groundwater resources. (Most restrictive standard to be used+A11.)
5. Upper Concentration Limit
6. Derived from Table 1, "Soil Cleanup Value Standards," of the CDPHE's "Proposed Soil Remediation Objectives Policy Document" (Dec. 1997).
7. Higher Arsenic level utilized than in the CDPHE's Table 1 (reflecting higher natural background levels), based upon the recommendation of CDPHE staff in a June 21, 2006 conference call.