UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 21 1998

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

William R. Weissman
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Dear Mr. Weissman:

Thank you for your letter of May 11, 1998 and for meeting with us to discuss the Utility Solid Waste Activities Group's (USWAG's), Edison Electric Institute's (EEI's) and the American Gas Association's (AGA's) concerns regarding the effects the land disposal restrictions (LDR) treatment standards published on May 26, 1998 may have on cleanup of manufactured gas plant sites. Like you, we are interested in encouraging and facilitating cleanup of manufactured gas plant sites in a way that is both efficient, economical and protective of human health and the environment. Before addressing the specific concerns raised in your letter, we will review some of the general principles that govern application of RCRA to contaminated soil.

As you know, contaminated soil, of itself, is not hazardous waste and, generally, is not subject to regulation under RCRA. Contaminated soil can become subject to regulation under RCRA if the soil "contains" hazardous waste. EPA generally considers contaminated soil to contain hazardous waste: (1) when soil exhibits a characteristic of hazardous waste; and, (2) when soil is contaminated with hazardous constituents from listed hazardous waste above certain concentrations. 63 FR at 28617 (May 26, 1998).

If contaminated soil contains hazardous waste, then it is subject to all applicable RCRA requirements until the soil no longer contains hazardous waste (i.e., until the soil is decharacterized or, in the case of soil containing listed hazardous waste, until EPA or an authorized state determines that the soil no longer contains listed hazardous waste). In some circumstances, soil that no longer contains hazardous waste, while generally not subject to RCRA requirements, will remain subject to the land disposal restrictions. See 63 FR at 28618 (May 26, 1998) and other sources cited therein. This may be the case if contaminated soil from manufactured gas plants exhibits a hazardous characteristic when first generated (i.e., when first removed from the land) and is subsequently decharacterized. Note that if contaminated soil from manufactured gas plant sites does not exhibit a characteristic of hazardous waste or contain listed hazardous waste when first generated (i.e., when first removed from the land), then the soil is not subject to any RCRA requirements, including the land disposal restrictions. 63 FR 28618 (May

26, 1998).[1]

We understand that at some manufactured gas plant cleanup sites, soil is consolidated within an area of contamination prior to being removed from the land (i.e., generated). This practice, and the area of contamination policy generally, is not affected by the May 26, 1998 rulemaking. Contaminated soil may be consolidated within an area of contamination before it is removed from the land (i.e., generated); the determination as to whether the soil exhibits a characteristic of hazardous waste or contains listed hazardous waste may be made after such consolidation. The Agency's most recent guidance on the area of contamination policy is enclosed for your information.

We understand from our discussions that your concerns center around management of contaminated soil that exhibited a characteristic of hazardous waste when first generated but has subsequently been decharacterized. We will address two questions in this letter: (1) what are the Agency's rules and policies concerning land disposal of decharacterized wastes, including decharacterized contaminated soil and (2) when decharacterized contaminated soil remains subject to the land disposal restrictions, what requirements apply prior to land disposal.

1. What are the Agency's rules and policies concerning land disposal of decharacterized wastes, including decharacterized contaminated soil?

Decharacterized waste (and decharacterized contaminated soil) is not hazardous waste, and is generally not subject to the Subtitle C regulations. Nonetheless, as you are aware, under certain circumstances decharacterized wastes (and decharacterized contaminated soils) remain subject to LDR treatment requirements. See generally, Chemical Waste Management v. EPA, 976 F. 2d 2, 13-14 (D.C. Cir. 1992).

When decharacterized wastes (and decharacterized contaminated soils) remain subject to LDR treatment requirements (i.e., as explained above, when the soils exhibit a hazardous waste characteristic when removed from the land) they must meet applicable LDR treatment standards prior to land disposal, before they can be land disposed, (i.e., before they can be placed in a land disposal unit). RCRA 3004(k) defines land disposal to include, but not be limited to, any placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave. Furthermore, EPA has found, in other contexts, that open pits, flat or low walled concrete pads that do not effectively

[1] The exception to this general rule is soil contaminated by listed hazardous waste when the listed hazardous waste is land disposed after the effective date of applicable LDR treatment requirements without meeting such applicable requirements. In this case, the contaminated soil would be subject to land disposal restriction treatment requirements regardless of whether it "contained" hazardous waste when first removed from the land unless there is a finding that hazardous constituent levels are sufficiently low so that threats to human health and the environment posed by land disposal of the soil are minimized. See 63 FR at 28618 (May 26, 1998). As we understand the conditions at most manufactured gas plant cleanup sites, we believe this case will seldom be presented during manufactured gas plant cleanups because soil at manufactured gas plant sites is not typically contaminated by listed hazardous waste.

contain hazardous wastes and hazardous constituents may constitute land disposal. See the enclosed letter from Sylvia Lowrance, U.S. EPA to Richard Wasserstrom dated October 29, 1992. However, EPA's longstanding view is that placement in tanks, containers, and containment buildings is not land disposal. See, e.g., 57 FR 37211 (August 18, 1992) (establishing standards for containment buildings). EPA has established design and operating requirements for tanks, containers and containment buildings used to treat and store hazardous waste. Clearly, units used for treatment or storage of decharacterized contaminated soil which meet these requirements would not be considered land disposal units and may be used to treat or store decharacterized contaminated soil without the approval of EPA or an authorized state. However, since decharacterized contaminated soil is no longer subject to regulation as hazardous waste (except, potentially, for land disposal treatment requirements), treatment and storage units used to manage decharacterized contaminated soil are not hazardous waste management units and do not have to be designed or operated in accordance with RCRA Subtitle C hazardous waste regulations or receive hazardous waste permits. If decharacterized contaminated soil will be treated or stored in a unit which is not a tank, container, or containment building, EPA or an authorized state should make a site-specific determination as to whether or not placement of decharacterized contaminated soil in the unit constitutes land disposal. In making such determinations, in addition to the mandatory consideration of the definition of land disposal in section 3004(k), EPA will consider (and recommends that authorized states similarly consider) the relevant requirements established by the Agency for tanks, containers, and containment buildings and, if these requirements are modified, whether the treatment or storage unit will prevent or control unacceptable releases of decharacterized contaminated soil and hazardous constituents to the environment. These determinations should be made in the context of your on-going MGP site cleanups and should be included in the public notices which are typically part of cleanup processes. We recognize that determinations about containment units will likely be made predominantly by authorized states and that due to site- and waste-specific variability containment units will have to accommodate the variety of conditions that may be presented during cleanup of MGP sites.

2. When decharacterized contaminated soil remains subject to the land disposal restrictions, what requirements apply prior to land disposal ?

When decharacterized contaminated soil remains subject to the land disposal restrictions, three types of requirements apply. First, the soil must be treated to meet applicable land disposal treatment standards prior to land disposal. Second, as discussed above, prior to land disposal the soil must be treated or stored in an appropriate type of unit (i.e., a unit that is not a land disposal unit). Third, to ensure that applicable land disposal treatment standards are met, certain tracking, paperwork and other requirements must be met.

(a) Treatment to meet applicable land disposal treatment standards. As just noted above, like any other material subject to the land disposal restrictions, decharacterized soils from MGP cleanup sites must be treated to meet applicable land disposal restriction treatment standards prior to land disposal. In the case of contaminated soils subject to the land disposal

restrictions, generators may choose between meeting the universal treatment standard for the contaminating hazardous waste or meeting the alternative soil treatment standards. For decharacterized contaminated soils, meeting the universal treatment standard for the contaminating hazardous waste would require treatment of the formerly characteristic constituent and all underlying hazardous constituents to the universal treatment standards. Meeting the alternative soil treatment standards would require treatment of the formerly characteristic constituent and all underlying hazardous constituents to reduce constituent concentrations by 90 percent or to achieve ten times the universal treatment standard. Note that, as with any other material subject to the land disposal restrictions, contaminated soil may qualify for treatment variances under certain circumstances, see 40 CFR 268.44.

(b) Storage and treatment prior to land disposal. As discussed above, although decharacterized contaminated soil is not hazardous waste and, generally, is therefore not subject to RCRA Subtitle C requirements, because it remains subject to the land disposal restrictions, it must be stored and treated in appropriate units (i.e., units that are not land disposal units) until treatment standards are met.

(c) Tracking, paperwork and other requirements. If decharacterized contaminated soil is stored, the storage prohibition of RCRA 3004(j) generally applies. This means that the decharacterized contaminated soil can only be stored for the purpose of accumulating necessary quantities of hazardous wastes to facilitate proper recovery, treatment, or disposal. See 40 CFR 268.50.

For decharacterized contaminated soil, the reporting and record keeping requirements of 40 CFR 268.9 apply. For example, if characteristic soil from an MGP cleanup is decharacterized at the site where it was generated, then sent off-site for further treatment to achieve LDR standards in a thermal desorption unit, the generator of the contaminated soil must complete a one-time notification and certification. The one-time notification and certification provides a description of the soil as initially generated, including applicable hazardous waste codes, treatability groups, and underlying hazardous constituents. It also provides information about the facility which will receive, and treat, the decharacterized soil. Thus, in this example the generator of the contaminated soil would identify the facility operating the thermal desorption unit. A copy of the one time notification and certification must be placed in the generator's files and sent to the appropriate EPA region or authorized state. These requirements create a tracking system so EPA and authorized states can determine that materials subject to the land disposal restrictions arrive at the right place and are appropriately treated prior to land disposal.

Furthermore, the dilution prohibition of 40 CFR 268.3 applies to the decharacterized contaminated soil until applicable LDR treatment standards are achieved. As you are aware, dilution is normally prohibited as a means of achieving the LDR treatment standards, including for characteristic (and decharacterized) wastes. See Chemical Waste Management v. EPA, 976 F. 2d 2, 15-19 (D.C. Cir. 1992).

We understand that often decharacterized contaminated soils from MGP cleanup sites are returned to the utility's power plant and mixed with coal or other combustibles prior to burning in a utility boiler. The Agency does not consider this process a form of impermissible dilution. Mixing MGP waste with coal or other combustibles results in a physical change to the waste stream that makes the waste more amenable to combustion (which, in addition to being a type of energy recovery, is a form of treatment that destroys or removes the hazardous constituents), and thus facilitates proper treatment.

In addition to mixing with coal or other combustibles, other types of mixing or treatment of decharacterized contaminated soil may be permissible prior to final treatment, provided that these processes produce chemical or physical changes and do not merely (1) dilute the hazardous constituents into a larger volume of waste so as to lower the constituent concentration or (2) release excessive amounts of hazardous constituents to the air. If mixing or other pre-treatment is necessary to facilitate proper treatment (e.g., destruction or removal, such as burning in a boiler) in meeting the treatment standards then dilution is permissible. See 51 FR 40592 (November 7, 1986) and 53 FR 30911 (August 16, 1988).

Note that, in some instances, burning decharacterized contaminated soil mixed with coal in a utility boiler may implicate the Bevill amendment. As you are aware, EPA's position is that wastes which are covered by the Bevill amendment are not subject to LDR requirements. 40 CFR 268.1(b); see also Horsehead Resource Development Co. v. Browner, 16 F. 3d 1246, 1260-61 (D.C. Cir. 1994) (upholding EPA's position). Consequently, if decharacterized contaminated soil is burned in utility boilers along with coal and the resulting combustion ash is within the scope of the Bevill amendment, LDR standards do not have to be met for that ash, nor would the decharacterized contaminated soils be considered to be a prohibited waste. In this case, the only reporting and recordkeeping requirement required is a one-time notice kept in the facility's records. See 40 CFR 268.7 (a)(7).

We appreciate your patience with the Agency in responding to your concerns. If you need further assistance, please contact Rita Chow of my staff at (703) 308-6158.

Sincerely,

Elizabeth A. Cotsworth
Acting Director
Office of Solid Waste

Enclosure (2)

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May 11, 1998

By Facsimile

Mr. Matthew Hale
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Dear Mr. Hale:

On behalf of the Utility Solid Waste Activities Group ("USWAG"), I would like to express our appreciation to you and your staff for agreeing to meet with representatives of utility companies that are engaged in assessment and remediation activities at former manufactured gas plant ("MGP") sites. In addition to USWAG company representatives, we will be joined by representatives of the Edison Electric Institute ("EEI") and the American Gas Association ("AGA").

As you know, electric and gas utility companies have actively worked with their States and EPA Regions for some years to address contamination that may have resulted from MGP operations that occurred many years ago. Because of changes in EPA regulatory policies since 1990, some of the remediation wastes generated at MGP sites have recently become subject to RCRA Subtitle C regulation. Land disposal restrictions ("LDRs") will become applicable to these wastes when the LDR Phase IV rule recently signed by the Administrator becomes effective later this summer.

In anticipation of that rule, utility companies have carefully analyzed the effect of EPA's LDR rules and guidance on various management options for MGP remediation waste. They have sought to assure themselves that the options they will employ when the LDRs become effective are consistent with RCRA requirements and are both environmentally protective and cost-effective. Because of the significant interests at stake, the Agency's guidance on the consistency of these options with EPA LDR rules and policies would be of great benefit to companies engaged in managing these wastes.

PIPER & MARBURY LLP

To facilitate the discussion at our meeting on May 13, I am attaching a paper we have prepared setting forth a series of management options for MGP remediation waste at various stages of remediation activities. In all cases, the examples involve waste (including media and debris) that exhibited a hazardous characteristic at the point of generation but is being decharacterized. The treatment options contemplated in these examples are either co-burning with coal in an off-site power plant coal-fired boiler or combustion in a thermal desorption device located either at the remediation site or at an off-site treatment facility. Other treatment options may also be appropriate in specific cases, but the management options on which we seek the Agency's guidance all involve activities that precede thermal treatment.

We thank you for setting aside the time to assist us in our efforts to achieve a full understanding of the requirements of the LDR program as they may affect remediation activities at MGP sites.

Sincerely,

William R. Weissman

Enclosure

MANUFACTURED GAS PLANT REMEDIATION WASTE MANAGEMENT STRATEGIES AFTER THE LDRs BECOME APPLICABLE

Many electric and gas utility companies are actively evaluating and, where appropriate, remediating contamination at historic manufactured gas plant ("MGP") sites under existing federal or state programs. Many of these sites will generate remediation waste that exhibits a hazardous characteristic (generally, coal tar wastes that exhibit the hazardous characteristic for benzene). Such remediation waste is expected to become subject to the land disposal restrictions ("LDRs") when the Phase IV LDR rule is promulgated and implemented.

Unlike many industries that manage remediation wastes at the remediation site, electric and gas utilities often remediate MGP sites that they no longer own and therefore need to manage any excavated remediation waste at other locations, such as utility power plants. In addition, the remediation sites are often located on small tracts of property in downtown or residential portions of older cities. The size and location of these sites make it necessary to transport this waste to other temporary or fixed locations where any necessary treatment can be accomplished without disrupting the local community surrounding the remediation site.

This document describes a range of strategies for managing the MGP remediation waste prior to treatment. Although numerous treatment options are feasible for such wastes, we are describing in this paper management strategies associated with two treatment options: (1) combustion in an off-site power plant coal-fired boiler, or (2) thermal desorption (either at the remediation site, where possible, or at an off-site treatment facility). The question is whether utilities may employ these strategies once the Phase IV LDR rules become effective.

I. On-Site Management Practices

For the reasons discussed above, remediation waste generated during MGP remediations typically cannot be treated on-site to comply with LDR or other treatment standards. To facilitate management of the remediation waste prior to such treatment, those wastes that exhibit a hazardous waste characteristic would be decharacterized at the remediation site in a 90-day accumulation unit. The waste usually would then be transported to an off-site treatment facility. The on-site management of these decharacterized wastes is described below.

A. Screening

To facilitate management of the MGP remediation waste prior to ultimate treatment, the waste must be screened and/or crushed to remove oversized debris, break-up soil clods, etc. Such screening and crushing may take place as part of the

decharacterization process and/or after decharacterization during on-site or off-site management prior to treatment.

On-site screening would be conducted within the area of contamination. See National Contingency Plan, 55 Fed. Reg. 8666, 8759 (March 8, 1990); Letter from M. Shapiro, EPA, to N. Nosenchuck, NYSDEC, dated March 25, 1996. Oversize debris would be segregated and removed to a staging pile or debris area. Material that meets the acceptance criteria of the treatment facility would be accumulated near the screening plant prior to being transferred to a staging area. The rejected material (except coarse reject and large debris) may be re-screened and/or crushed to enable all of the decharacterized remediation waste to be processed into a form suitable for treatment.

B. Temporary Staging Piles

After screening, temporary storage of the decharacterized remediation waste would be necessary to facilitate transportation to an off-site treatment location or, where practicable, to accumulate sufficient quantities for on-site treatment. Such short-term storage would typically last a few weeks, but, for operational reasons, may continue for several months.

At some remediation sites, the decharacterized waste would be placed on a staging pile within the area of contamination. The staging pile would be covered by prevent precipitation infiltration, which would also minimize wind and vapor losses. The staging pile would remain covered unless additional soil is being added for storage or removed for treatment.

At other locations, companies may place the decharacterized waste on a plastic liner that is surrounded by a raised berm. A layer of clean soil or sand would be placed over the liner to protect it from damage from the equipment used to transport the remediation waste (e.g., front end loaders, back hoes, etc.). In addition, the decharacterized remediation waste placed in the unit would be covered by a plastic cover to prevent precipitation infiltration and minimize wind and vapor losses.

C. On-Site Treatment

As explained above, on-site treatment is not a feasible option at most MGP sites because the electric utility company no longer owns the site and/or the site is too small or is located in a downtown or highly developed area. Decharacterized remediation wastes from such sites therefore are transported off-site for treatment (discussed below).

For companies that can conduct treatment on-site, a sufficient quantity of decharacterized waste would have to be collected prior to thermal desorption. The waste would be conveyed from a temporary staging pile directly into a thermal desorber's feed hopper. Using this technology, volatile and semi-volatile compounds

would be physically separated from the remediation waste by heating the waste to volatilize any organic constituents, which would subsequently be collected as liquid or destroyed in an afterburner.

Following treatment, grab samples would be taken of the residues to ensure compliance with the applicable treatment standards. Subject to the approval of the appropriate regulatory agency, the treated soil may be returned to the area of contamination to be used as clean backfill or hauled to an off-site location where such fill is acceptable.

D. Air Monitoring

Ambient air monitoring would be initiated prior to excavation activities to establish background conditions. The air monitoring would continue through the on-site activities until the remediation waste has been transported off-site for treatment or treated on-site. The air monitoring activities may include fence line and work zone concentration measurements to ensure protection of the surrounding communities and periodic time-averaged air samples for laboratory analysis to confirm lack of significant air releases.

II. Off-Site Management Practices

As discussed above, decharacterized remediation waste generated from MGP sites typically are transported either to (1) an electric utility company for combustion in a coal-fired utility boiler, or (2) for thermal desorption at an off-site treatment facility. Each of these options is discussed below.

A. MGP Co-Burning Option

The MGP co-burning strategy was developed in 1993 by the Edison Electric Institute, in consultation with EPA, to facilitate the remediation of MGP sites. The co-burning option involves burning decharacterized MGP remediation waste with coal in a utility boiler. The residues from such combustion would meet the definition of wastes from the "combustion of coal or other fossil fuels" and hence fall within the Bevill exemption from Subtitle C of RCRA. RCRA § 3001(b)(3)(A)(i); 40 C.F.R. § 261.4(b)(4). As such, the residues would not be subject to LDR compliance prior to land disposal. See Horsehead Resources Development v. Browner, 16 F.3d 1246, 1261 (D.C. Cir.), cert. denied, 513 U.S. 816 (1994). Nevertheless, utility boiler co-burning is a highly effective treatment option that achieves benefits similar to those achieved by treatment technologies designed to meet LDR treatment standards.

Each stage of the co-burning process is discussed below.

1. Short-Term Storage Prior to Combustion

The decharacterized remediation waste must be stored for periods ranging from a few weeks to several months, depending on the volume of waste being generated at the remediation site, the amount of preconditioning/screening required prior to treatment, and other operational considerations. Depending on the facility, there are several potential storage options, discussed below.

a. Concrete Containment Units

Under this option, the decharacterized waste would be unloaded onto a concrete containment yard for storage prior to treatment. The containment yard would be constructed of sealed reinforced concrete. Around the perimeter of the containment yard would be a one-foot minimum height curb with one-foot high access ramps. The concrete containment unit would collect and control any surface water run-on and/or precipitation run-off, which would be discharged under an NPDES permit, hauled off-site to a permitted disposal facility (such as a POTW) or sprayed on the coal as tempering water to achieve proper moisture content for combustion. The storage yard would be designed to contain a minimum of a 24 hour, 10 year precipitation event. The capacity of such a storage facility could reach 10,000 tons.

The remediation waste in the unit would be covered to prevent precipitation infiltration, which also would minimize wind and vapor losses. The waste would remain covered except when additional waste is being added for storage or removed for treatment. In addition, commercially available technologies for dust and odor suppression (such as industrial dust controls and/or water) would be used as necessary.

b. Lined Containment Units

Another option would be to unload the decharacterized waste into a lined containment unit for short-term storage prior to treatment. The lined containment unit would be constructed of bermed earthen materials with a raised bermed dike and a compatible impermeable liner. A layer of clean soil or sand would be placed over the liner to protect it from damage from the equipment used to transport the remediation waste (e.g., front end loaders, back hoes, etc.). The capacity of such a storage facility could reach 10,000 tons.

Like concrete units, lined containment units would collect and control any surface water run-on and/or precipitation run-off, which would be discharged under an NPDES permit, hauled off-site to a permitted facility or used as tempering water. The storage yard would be designed to contain a minimum of a 24 hour, 10 year precipitation event. Further, the lined containment units also would be covered and, when necessary, would implement dust and odor controls.

c. **Placement of Decharacterized Waste on Coal Pile and Management of Mixture as Fuel Source**

For facilities with limited space, another option would be to place the decharacterized remediation waste directly on the existing coal pile. The remediation waste would be a mere fraction of the volume of material in the coal pile. From this point on, the coal/decharacterized waste mixture would be managed as a fuel source. As the coal pile is consumed, any potential contamination would be captured in the coal (since MGP coal tar constituents adsorb to coal) and burned in the utility boiler. In addition, any run-off from the coal would be collected in the storm water collection system and discharged under the facility's NPDES permit, hauled off-site to a permitted facility or used as tempering water.

2. **Preconditioning/Screening**

The decharacterized MGP waste may need to be preconditioned to make it acceptable to an electric power station's coal handling system and boilers. Preconditioning consists of crushing, screening and/or shredding the decharacterized waste and any oversize debris and, on occasion, additional blending of soils to address high moisture content. This process would be conducted within the boundaries of the storage facility units described in Section II.A.1.

3. **Blending with Coal and Co-Burning in a Utility Boiler**

The final step in the MGP co-burning option involves blending the decharacterized MGP remediation waste with coal and feeding the fuel mixture into the utility boiler. Each facility would blend the coal/remediation waste mixture according to a prescribed ratio appropriate for its boiler. For operational reasons, the mixture typically would consist of greater than ninety percent coal. However, the manner in which the remediation waste would be blended with the coal and fed into the boiler would depend on the configuration of the power plant system and would vary at each facility.

Some utilities would blend the remediation waste into the coal when loading the decharacterized waste/coal mixture into a feed hopper where it enters the coal handling system. Other companies would conduct blending near a fuel reclaim grate area prior to entering the boiler feed system. Still other facilities may use conveyors to transport the decharacterized remediation waste directly from the containment yard to coal bunkers, where the material would be blended with coal and fed to the boiler. Although the operational details at each plant may vary, each facility implementing the MGP co-burning option would manage the coal/decharacterized waste mixture as a fuel source.

B. **Thermal Desorption Option**

As discussed above, most MGP sites are not able to conduct on-site thermal desorption because the electric utility company no longer owns the site and/or the site is too small