

US EPA ARCHIVE DOCUMENT

DCN PH4P023
COMMENTS Beazer East
RESPONDER JLABIOSA
SUBJECT WOOD3
SUBJNUM 023

COMMENT B. The Proposed LDR for Hazardous Waste No. F034 Should Not Include Arsenic and Chromium as COCs. The proposed LDR for F034 includes arsenic and chromium as COCs. 60 Fed. Reg. 43682. Beazer believes that EPA's inclusion of these inorganic constituents in the F034 LDR is unnecessary and inappropriate. The F034 listing includes [w]astewaters, process residuals, preservatives, drippage and spent formulations from wood preserving processes generated at plants that used creosote formulations. 40 C.F.R. § 261.31 (emphasis added). In contrast, the hazardous waste listing for F035 includes [w]astewaters, process residuals, preservative drippage and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic and chromium. Although F034 wastes contain no metal COCs, EPA has included the arsenic and chromium constituents under the F034 LDR because creosote and copper chromium arsenate ("CCA") formulations sometimes have been used at the same wood treating sites. This rationale, however, is contrary to the Agency's regulations on waste categorization which provide that [f]or the purposes of compliance with 40 C.F.R. Part 268 . . . the generator must . . . determine whether the waste is identified in Subpart C of 40 C.F.R. Part 261 by either: (1) testing . . . ; or (2) applying knowledge of the hazard characteristic in light of the materials or processes used. 40 C.F.R. § 262.11(c). Regulated parties who actively operate wood treating plants or perform cleanups at wood treating sites are able to tell with substantial certainty whether CCA was used at the site. CCA is a substantially different formulation from either creosote or penta and it is not difficult to determine its presence in the field. When the generator has knowledge that CCA was used at the site, the wastes associated with the CCA process would be characterized as F035 and the LDRs for F035 would apply. 40 C.F.R. § 262.11(b). EPA has stated that the LDR parameters for each waste are to be those constituents proposed for regulation in the waste. 60 Fed. Reg. 43680, Col. 3. EPA followed this rule in proposing LDRs for F032 and F035, but not for F034. Arsenic and chromium were not constituents proposed for regulation in F034. 40 C.F.R. Part 261, Appendix VII. Thus, inclusion of these

materials as COCs for F034 is clearly contrary to EPA's methodology for selecting the LDR parameters and is arbitrary and capricious. RECOMMENDATION: Owners and operators, as well as regulated entities involved in wood treating site remediations, have extensive knowledge regarding the preservatives used at their sites. As such, it makes little sense to expend valuable resources to analyze for constituents that cannot be present as a result of the preserving process.

Beazer believes that generator knowledge of the current or past site operations is sufficient to satisfy Part 262 requirements and that the only result of adding the metal constituents to the F034 LDR will be the unnecessary analytical costs of proving what is already known. Beazer requests that EPA delete arsenic and chromium from the F034 LDR in the final rule.

RESPONSE

EPA is not persuaded by these comments. Arsenic and chromium are identified as hazardous constituents under the UTS and BDAT lists. EPA relies on these lists and other information to select hazardous constituents for regulation under the Land Disposal Restrictions (see Final BDAT Background Documents for Universal Standards (Volume A - Nonwastewaters and Volume B- Wasetwaters), July 1994, and Final BDAT Background Document for Quality Assurance / Quality Control Precedures and Methodology, October 23, 1991). Further, these constituents are also identified as hazardous constituents of concern supporting the listing of F034 (see 55 FR 50450), Listing Background Document for Wood Preserving Wastes, and Appendix VII, under 40 CFR 261). Simply put, EPA believes that treatment of these toxic metals, which are known to be present in these wastes in concentrations high enough to support listing, is necessary to minimize the threats posed by land disposal of these wastes. EPA is promulgating, therefore, UTS limits for arsenic and chromium (total) -as proposed.

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COMMENT C. The Proposed LDR for Hazardous Waste No. F035 Should

Not Include Vitrification. 1. Stabilization should be BDAT for F035. EPA is proposing that F035 be treated using vitrification to meet LDRs. Review of the ROD Summary reveals that slag vitrification has not been specified in any of the 37 wood treating site RODs evaluated by Versar. To Beazer's knowledge, only one facility in the United States -- Marine Shale Processors ("MSP") of Morgan City, Louisiana -- utilizes vitrification in a tested, full-scale process. MSP's future regulatory status, however, remains in question. Currently, MSP is appealing EPA's rejection of MSP's Part B interim status boiler and industrial furnace permit. Due to the uncertain nature of MSP's regulatory status and potential future lack of any other vitrification facility, vitrification is not an "available" or appropriate treatment technology. Vitrification was chosen for immobilization for arsenic presumably because conventional stabilization of arsenic can be somewhat problematic. As presented at the June 1995 AWMA National Meeting, studies by EPA's RREL on stabilization have shown that the variable solubility of arsenic in high and low pH ranges is easily overcome by treatability testing and proper pH control of the cement/lime mixture in the field. In this study, EPA successfully stabilized 13,000 cubic yards of arsenic soils using conventional stabilization techniques. Stabilization of arsenic wastes is much more controllable than thermal processes because arsenic has been shown to volatilize in high temperature atmospheres such as an incinerator or slag furnace. The treatment alternatives specified in the Proposed Rule will transfer arsenic to a vapor stream where it is not accounted for as closely. See Table 3-B, Data Requirements for Thermal Desorption, in EPA's Presumptive Remedies for Soil, Sediments, and Sludges at Wood Treating Sites Quick Fact Sheet (Draft-Nov. 1994) ("[v]olatile metals (As, Cd, Cr, Pb, Zn) vaporize and are difficult to remove from emissions.") The complexity of arsenic volatility is also noted in EPA's Summary of Generation, Disposal, and Treatment Practices for Wood Preserving Wastes F032, F034, and F035 (SAIC, May 1990). The SAIC document notes: "[b]ecause arsenic volatilizes at high temperatures,

incineration may not be an applicable treatment for F032 or F034 wastes contaminated with arsenic." The arsenic volatility process limitation is applicable to both vitrification and incineration and should be addressed by the EPA before the Proposed Rule is finalized. Moreover, vitrification technology is more complicated than portrayed in the Proposed Rule. Vitrification of arsenic wastes may require two additional treatment steps not specifically identified in the Proposed Rule. These additional steps are described in EPA's Vitrification Technologies for Treatment of Hazardous and Radioactive Waste Handbook (May 1992). The Vitrification Handbook notes: "[c]ertain waste feeds may require chemical or thermal pre-treatment to convert arsenic oxide to less volatile forms before vitrification..." Vitrification Handbook, p. 4-7. The Handbook explains that the process required is to convert the arsenic to a calcium oxide in another thermal process and then re-introduce the thermally treated mixture into the slag furnace. *Id.* This process is notably more complex than indicated in the Proposed Rule and further supports the use of the much less complex, conventional cementitious stabilization methods for arsenic wastes. Finally, EPA's Presumptive Remedy document does not acknowledge the use of vitrification as a candidate immobilization technique. Rather, it specifically identifies "cementitious materials, including Portland cement, fly ash/lime, and fly ash/kiln dust" as the solidification methods. RECOMMENDATION: EPA should propose stabilization as the BDAT for arsenic based on a lack of demonstrated and available "full-scale vitrification facilities". Stabilization of arsenic in wood treating wastes has been proven by EPA to be effective and has been previously selected by EPA as a presumptive technology for treating arsenic in F035 wastes. EPA should avoid the inevitable confusion that will arise in the field as a result of the conflicting programs and promulgate stabilization as BDAT for the F035 LDRs.

RESPONSE

EPA has stated in the preamble that vitrification represents BDAT for arsenic since the proposed UTS is based on the performance of slag vitrification on arsenic in mineral processing copper smelting dust. Also, EPA has indicated in the Phase 4 proposal that stabilization can also meet the proposed UTS limits for arsenic. (60 FR 43681 and 61 FR 2359) Because EPA is establishing a numerical limit under the 40 CFR 268.40, other treatment technologies capable of achieving the arsenic UTS limits, other treatment technologies capable of achieving the numerical

limits are not prohibited except for those that may constitute impermissible dilution or land disposal.

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COMMENTS Beazer East
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COMMENT 2. The UTS for F035 nonwastewaters should be based on leachate concentration. EPA has established vitrification as BDAT for arsenic and stabilization as BDAT for chromium. 60 Fed. Reg. 43681. EPA has proposed that each constituent proposed for regulation in F035 (arsenic and chromium) comply with its applicable UTS in the treatment standard table at 40 C.F.R. § 268.40 as a prerequisite for land disposal. 60 Fed. Reg. 43680. However, the UTSs for chromium and arsenic at 40 C.F.R. § 268.40 are designated as leachate levels, whereas, the UTS for chromium and arsenic in F035 as proposed are total concentrations. 60 Fed. Reg. 43682. Beazer's experience indicates that the proposed UTSs for chromium and arsenic cannot be achieved with the specified immobilization technologies. Immobilization technologies are not designed to reduce total concentrations of metals in the waste, so the F035 LDR as drafted, cannot be met. In studies by EPA's RREL/ORD, 13,000 cubic yards of arsenic soils at the Selma Wood Treater CERCLA site were successfully immobilized using conventional stabilization techniques. In the Selma site full scale stabilization study performed by EPA's RREL/ORD, leachable standards for the metal constituents were specified in the ROD in lieu of total concentration standards. Further, the study addressed the use of leach tests other than TCLP, such as Synthetic Precipitation Leachate Procedure ("SPLP") (pending SW846 Method 1312) and distilled water leach. Beazer supports the use of these more appropriate leach tests. EPA's RREL/ORD researchers have shown that the variable solubility of arsenic in high and low pH ranges is easily overcome by treatability testing and proper pH control of the cement/lime mixture in the field. The alternate leach tests noted above reduce the incentive of remediation contractors to create a less environmentally-sound stabilized mixture. The misguided incentive created by the TCLP test method is that by deliberately raising the pH of the stabilized waste, the contractor ensures that when the acid is added in the TCLP test, the resultant pH of the test material falls into the mid pH range where the arsenic is not water soluble. Thus, the stabilized waste passes the TCLP at the deliberately elevated pH

level. However, because the pH of the stabilized waste is elevated, it is now in the range of higher solubility in water. This pH management for stabilized arsenic wastes actually results in a waste that leaches more in a natural water environment than it does in the TCLP acid leach test. The alternate leach procedures discussed above would mitigate the incentive to manipulate the treatability testing and result in a more environmentally protective means of managing the waste.

RECOMMENDATION:

EPA must revise the UTSs for the metal constituents to a leachable standard for all metals. Further, Beazer recommends EPA consider the use of the SPLP or distilled water leach procedure in lieu of the TCLP method to ensure the stabilized material is truly not leachable in its final environment.

RESPONSE

The commenter is presumably referring to the proposed UTS for metal constituents in nonwastewater forms of F032, F034, and F035. EPA is promulgating UTS for these metals as proposed. As indicated in the preamble of this final rule and the Final BDAT Background document for F032, F034, and F035, compliance with the concentration of metals in nonwastewater forms shall be measured in leachate extracts of grab samples, as measured by the TCLP analyses. Since EPA is promulgating treatment limits, other treatment technologies are not prohibited except for those that may constitute impermissible dilution.

For wastewater forms of F032, F034, and F035, EPA is promulgating as proposed. Compliance is determined by measuring the prescribed concentrations for chromium and arsenic constituents in composite waste samples, as measured by total constituent analyses.

The commenter has also asked EPA to consider the use of the SPLP or distilled water leach procedure in lieu of the TCLP to ensure that the stabilized material is truly not leachable in its final disposal environment. This commenter's proposal is beyond the scope of the UTS promulgated today. In addition, EPA lacks data describing how equivalent or superior SPLP methods are over TCLP in identifying stabilized metals. As a result, the commenter should consider a rulemaking petition to the Administrator regarding such test method performance and its applicability to hazardous wastes ban from land disposal practices pursuant to the provisions in §§260.20 and 260.21.

DCN PH4P113
COMMENTS Chemical Manufacturers Association
RESPONDER JL
SUBJECT WOOD3
SUBJNUM 113
COMMENT

B. EPA should allow concentration-based as well as technology-based criteria to satisfy BDAT for metals in nonwastewater forms of F032, F034, and F035.

In the preamble, EPA indicates that for metal in nonwastewater forms of F032, F034, and F030, stabilization is BDAT for chromium (total), and that vitrification is BDAT for arsenic. Use of the word "is" and not the phrase standards "... are based on" implies that the Agency intends to allow only the use of these specific technologies to treat these constituents to levels below which these wastes may be land disposed. However, the regulatory language in the table at 268.40 indicates that the nonwastewater standards for arsenic and chromium are numerical standards. CMA has commented in the past that it generally favors concentration-based treatment standards for BDAT and that it supports the allowance of technology-based standards as an alternative to, and not as a replacement for, concentration-based standards. We maintain this position. Although the Agency and CMA may not currently be aware of technologies other than stabilization and vitrification that could be used to treat for chromium and arsenic in the wastes described above, we favor the flexibility afforded by a concentration-based standard which would allow any technology that can meet these levels as an alternative. CMA requests that the preamble language be modified to clarify that any technology that can meet the levels indicated in the table may be used.

In addition, EPA is proposing F032 wastewater and nonwastewater standards that would require meeting a concentration that does not exceed 1 ppb (or 1 ug/kg) for all the PCDD and PCDF homologue and isomer constituents proposed for regulation for F032 wastes. Even if a 1 ug/kg level is achievable for PCDD and for PCDF, analytical limitations may preclude UTS levels this low.

Normally when EPA sets treatment standards for a waste constituent, a procedure is followed in which both an "accuracy correction factor" and a "variability factor" are applied to the concentration of the constituent observed in the treatment data that supports the standard. See, Final Best Demonstrated Available Technology (BDAT) Background Document for Universal Treatment

Standards Volume A: Universal Treatment Standards for Wastewater Forms of Wastes, 52 (July 1994). The accuracy correction factor is used to account for analytical limitations in the available treatment performance data, and the variability factor is used to correct for variations in waste treatment, sampling, analytical techniques and procedures, and other factors that affect treatment performance.

However, we are not sure if EPA accounted for variability and accuracy in setting the universal treatment standards for nonwastewater forms of these organic wastes. We urge EPA to do so. As CMA has previously written in its July 9, 1993 comments on the May 24, 1993 Interim final rule on land disposal restrictions for ignitable and corrosive characteristic wastes whose treatment standards were vacated, organic wastestreams are not easily analyzed for constituents at very low concentrations. CMA reiterates its previous recommendation that EPA explicitly states that, given approved test methods, nondeductible levels of constituents are equivalent to zero concentration and should also be applied to the setting of UTS levels.

RESPONSE

The commenter raised four issues and EPA's responses to such comments follow below:

1. Clarification that EPA is setting numerical limits for the regulation of Arsenic and Chromium (total) in wastewater and nonwastewater forms of F032.

EPA is clarifying in today's final rule that EPA is promulgating UTS limits for the regulation of Arsenic and Chromium (total) in F032, F034, and F035. Since EPA is establishing UTS limits that are expressed as maximum concentrations of these metals allowed for land disposal, the use of any treatment technologies capable of meeting the UTS limits is not prohibited except for those that may constitute impermissible dilution.

2. "Analytical Difficulties" may preclude the establishment of UTS limits for F032.

EPA lacks data from the commenter to assess what kind of technical difficulties will be encountered during the analysis of F032 wastes.

After reviewing the characterization data of the Penta Group, the reported analytical difficulties, and F032 Characterization studies; EPA has concluded that the reported "difficulties" appear to represent more the unfamiliarity of chemists performing the chemical analyses with D/F

recommended test methods rather than real flaws in the test method. EPA believes further that the alleged "difficulties" can easily be overcome by routine laboratory clean-up procedures and the use of appropriate solvents and other laboratory calibration techniques. EPA has enhanced, therefore, the discussion of these recommended procedures and calibration techniques in the BDAT Background Document. *Also, see the Administrative Record supporting today's Phase 4 final rule for the technical document titled: Background Paper Addressing Technical Issues Related to Analysis of F032 Wood Preserving Wastes for Dioxins and Furans, dated June 19, 1996.*

3. EPA should correct the D/F limits for accuracy and variability.

Several commenters were correct in pointing it out that EPA did not correct the proposed UTS limits for D/F in F032 with accuracy and variability factors, as typically done in the calculation of treatment standards of other hazardous constituents prohibited from land disposal. EPA did not adjust the proposed UTS limits for D/F constituents, nor EPA is doing so in today's final rule, as explained below.

The UTS treatment limits are based on combustion technologies that EPA believes will meet the proposed UTS limits for D/F in F032 as long as the combustion of F032 is conducted in a device that is well designed and well operated. EPA concluded in the Solvents and Dioxins rule that a six-nines Destruction and Removal Efficiency (DRE) combustion device can routinely achieve the promulgated limit (see January 18, 1986, 51 **FR** (1733-1735)). Based on the performance of a four-nines DRE rotary kiln incinerator burning F024, EPA believes that a four-nines DRE unit that is well designed and operated can also meet the promulgated UTS limits for D/F (see June 1, 1990, 55 **FR** (22580-22581)). Although none of the submitted comments or data appear to support the revisions to D/F limits proposed by the commenters, EPA may revisit this issue in a separate rulemaking if new data become available.

However, EPA points out to the commenter that EPA generally allows deviations from the promulgated treatment limits to concentration of up to one order of magnitude above the applicable treatment standard (i.e. the numerical UTS limit) prescribed in the 40 CFR 268.40, for the ashes arising from combustion devices. EPA refers to such treatment limits allowances as the analytical detection limit (compliance) alternative. Facilities seeking the disposal of such combustion ashes must satisfy the provisions in the 40 CFR 268.40 (d) (1) through (3) and 268.7 (b) (5) (iii). (Also, see June 1, 1990, 55 **FR** (22541-22542).)

EPA is promulgating treatment standards that set numerical limits for the regulation of Dioxin and Furan (D/F) hazardous constituents in F032. In response to comments from the Penta Task Force and the American Wood Preserving Institute, the EPA has also proposed and is promulgating in today's rule an alternative compliance treatment standard that sets combustion ("CMBST") as a treatment method for D/F constituents in F032.

The revised "CMBST" compliance alternative limits the availability of "CMBST" to

those combustion devices in compliance with applicable combustion standards in the 40 CFR 264 , Subpart O, or 40 CFR 266, Subpart H. F032 wastes combusted in combustion devices operating under 266 or 264 do not have to monitor the concentrations of D/F left behind in combustion residues. However, the facilities must meet UTS numerical limits applicable to each organic and metal constituent regulated in F032 as a prerequisite to land disposal.

It should be emphasized that facilities seeking the combustion of F032 in an incinerator regulated under a 265 Subpart O do not qualify for a "CMBST" treatment standard. F032 residues arising from 265 units must meet the applicable UTS numerical limits for each regulated D/F constituent as a prerequisite to land disposal.

4. Proposal that "nondetection limits" are equivalent to zero detection.

EPA believes the commenter is concerned that a detection limit in a treated waste above a UTS numerical limit may fail to meet the applicable treatment standard even if the targeted analyte is below the detection limit. EPA believes that a "nondetection limit" is not a feasible way to address this concern. EPA believes that a constituent shown below a particular targeted detection limit means that the constituent is either destroyed by the employed technology, masked in the waste residue due to matrix interferences, or it could be measured in concentrations below the targeted detection limit. As a result, it could be possible that the constituent of LDR concern is still above the applicable UTS limit should the targeted selection limit be above the UTS promulgated limit. Therefore, EPA believes that a facility could still be deemed in violation of the applicable limit if EPA detects such constituent above its UTS limit.

However, EPA points out to the commenter that EPA generally allows deviations from the promulgated treatment limits to concentration of up to one order of magnitude above the applicable treatment standard (i.e. the numerical UTS limit) prescribed in the 40 CFR 268.40, for the ashes arising from combustion devices. EPA refers to such treatment limits allowances as the analytical detection limit (compliance) alternative. Facilities seeking the disposal of such combustion ashes must satisfy the provisions in the 40 CFR 268.40 (d) (1) through (3) and 268.7 (b) (5) (iii). (Also, see June 1, 1990, 55 **FR** (22541-22542).) Another option available to the commenter is to verify if the waste of concern is different from the one supporting the UTS limit and seek from EPA a treatability variance pursuant to provisions in the 40 CFR 268.44.

DCN PH4P039
COMMENTS AWPI
RESPONDER JL
SUBJECT WOOD3
SUBJNUM 039

COMMENT EPA is proposing to apply Universal Treatment Standards (UTSs) to wood preserving wastes (F032, F034, and F035). AWPI submits the following comments with respect to the proposed treatment standards: PROPOSED LDR FOR F034 Each constituent that EPA is proposing for regulation in F032, F034, and F035 must comply with its applicable UTS in the treatment standard table at 40 CFR 268.40, as a prerequisite for land disposal. Arsenic and chromium were not constituents proposed for regulation in F034. Testing for arsenic and chromium would be justified only if CCA was used at a facility. COMMENT: The proposed LDR for F034 should not include arsenic and chromium as constituents of concern.

RESPONSE

The commenter is asking EPA to withdraw the proposed UTS limits for D/F in F032 or to promulgate “incineration” as an alternative compliance treatment standard for D/F constituents in F032. Based on F032 characterization data from the Penta Group, EPA has determined that it is technically feasible to co-promulgate an alternative treatment standard of combustion (“CMBST”) and EPA has done so in today's final rule. (see EPA’s preamble in today’s final rule, and the Final BDAT Background Document for F032, F034, and F035). Also, EPA is promulgating UTS limits for D/F in F032, as proposed. The commenter also raised several comments seeking EPA’s withdrawal of the proposed UTS limits for D/F in F032 and for metal constituents in F034. EPA is addressing each of these comments below.

The commenter believes that EPA’s proposed limits for chromium and arsenic in F034 are in error. The commenter points out that EPA has not proposed the regulation of chromium and arsenic in F034. EPA is unclear what exactly this statement means since the proposed preamble and the BDAT Background Document clearly identifies these two metal constituents as proposed hazardous constituents for regulation in nonwastewater and wastewater forms of F034. The commenter also adds that these constituents should only be regulated if F034 is generated from a vessel that also generates F035.

EPA is not persuaded by these comments. Arsenic and chromium are identified as hazardous constituents under the UTS and BDAT lists. EPA relies on these lists and other information to select hazardous constituents for regulation under the Land Disposal Restrictions (see Final BDAT Background Documents for Universal Standards (Volume A - Nonwastewaters and Volume B- Wastewaters), July 1994, and Final BDAT Background Document for Quality

Assurance / Quality Control Procedures and Methodology, October 23, 1991). Further, these constituents are also identified as hazardous constituents of concern supporting the listing of F034 (see Listing Background Document for Wood Preserving Wastes, and Appendix 7 under 40 CFR 261). It is necessary to treat these toxic metals in order to adequately minimize the threats posed by land disposal of these wastes. EPA is promulgating, therefore, UTS limits for arsenic and chromium (total) as proposed.

DCN PH4P039
COMMENTS AWPI
RESPONDER JL
SUBJECT WOOD3
SUBJNUM 039

COMMENT PROPOSED LDRs FOR F035 AWPI is puzzled at EPA's selection of vitrification as BDAT for arsenic. The Agency has recognized the potential for arsenic to volatilize at high temperatures. COMMENT: EPA should explain why it disregards this potential problem before recommending vitrification for arsenic wastes. The Agency should also explain why it disregards stabilization when EPA has successfully used this technology for arsenic at a wood treating site. AWPI is unaware of a single full-scale vitrification facility and requests that the EPA identify the source for commercial vitrification.

RESPONSE

The commenter is “puzzled” at “EPA’s selection of vitrification as BDAT for arsenic.” The EPA is not recommending the use of vitrification of arsenic to meet the promulgated UTS limits. EPA has stated in the preamble that vitrification represents BDAT for arsenic since the proposed UTS is based on the performance of slag vitrification on arsenic in mineral processing copper smelting dust. EPA also notes that the potential for air emission from such slag vitrification studies were minimized by first converting arsenite to arsenate trioxide (see BDAT Background Document for Arsenic/ Selenium Wastes, 1990). In addition, EPA has indicated in the Phase 4 proposal that stabilization can also meet the proposed UTS limits for arsenic constituents (see Final BDAT Background Document and final rule's preamble discussion). Since EPA is establishing a concentration based number for the regulation of arsenic in F034, other treatment technologies are not prohibited.