OSWER POLICY DIRECTIVE NO. 9523.00-15

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

MAR 30 1988

MEMORANDUM

SUBJECT: Summary of Permit Assistance Team (PAT) Comments

FROM: Sylvia Lowrance, Director
Office of Solid Waste (WH-562)

TO: Hazardous Waste Management Division Directors
Regions I-X

Attached is the third in a series of periodic reports which summarizes major issues that PAT members have addressed in their reviews of specific Part B applications, permits and closure plans. (The first and second PAT summary reports were issued on March 14, 1986 (OSWER Policy Directive No. 9523.00-14) and March 30, 1987 (OSWER Policy Directive No. 9523.00-12), respectively.) These reports cover issues that are of generic national interest rather than strictly site-specific interest. The attached report includes reviews conducted by the Land Disposal PAT from September 1986 thru April 1987. In order to ensure that the report reflects current EPA policy and guidance, we obtained review comments from all divisions in OSW and from the Office of General Counsel.

We hope that the recommendations provided in this document will be helpful for permit writers encountering similar situations at other RCRA facilities. By sharing the PAT's suggestions from a few sites, we hope that permit decision-making will be somewhat easier and faster at many more sites nationally. We encourage you to distribute this report to your staff and State permit writers. To make that easier, I have enclosed multiple copies of the report.

Attachment A to the report lists the facility names, Regions, PAT coordinators, and dates for the reviews summarized in this report. Attachment B provides a list of guidance documents and directives used in preparing the PAT reviews. Attachment C provides information on user access to the Hydrologic Evaluation of Landfill Performance (HELP) Model. Attachment D is memorandum addressing the RCRA regulatory status of contaminated ground water.

If you have any questions, comments, or suggestions on the PAT Summary Report, please contact James Michael at FTS 382-2231.

Attachments

cc: RCRA Branch Chiefs, Regions I-X
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SUMMARY OF PERMIT ASSISTANCE TEAM (PAT) COMMENTS

Ground-water Monitoring

1) Well Development

An owner/operator indicated in his/her permit application that extracting the required well volumes by bailing prior to sampling, removed fine materials that were 'trapped during well installation'. This sample extraction that occured over a year of monitoring resulted in additional well development

Proper well development, as described in the RCRA Ground-Water Monitoring Technical Enforcement Guidance Document (TEGD) (Reference 11), requires that the wells be clay and silt free. Turbid ground water promotes biochemical activity and possible interference with ground-water sample quality. Turbidity readings over 5 nephelometric turbidity units (N.T.U.) may be grounds for rejecting samples from a monitoring well. TEGD provides a decision chart for turbid ground-water samples.

The quality of any monitoring data that was obtained from improperly developed wells is questionable.

2) Appropriate Well Construction Materials

Several facilities have used polyvinyl chloride (PVC) as monitoring well construction material in the saturated zone.

PVC is not an inert material and constituents such as phthalate and tetrahydrofuran in ground-water samples have been attributed to PVC well casing or pipe solvents. PVC materials can be used, however, in composite well construction where PVC or other non-inert material is used above the saturated zone while inert material are used in the saturated zone. The TEGD (Reference 11) provides a complete description of appropriate monitoring well construction materials.

When a facility has already installed wells with materials that do not meet the TEGD requirements, it is not necessary that the water monitoring system be replaced and the data discarded. A properly constructed and located comparison well can be installed and sampled. Comparison of data from the new well with the existing data will determine if constituents detected in the older wells, such as phthalate, are due to the PVC materials or to contamination of ground water from other sources.

3) Calculation of Purge Volume

A commonly encountered error in sampling procedures involves the calculation of the evacuation volume prior to sampling. The correct calculation should include the volume of water in the gravel pack as well as the volume of water in the casing. With a small diameter

casing (e.g. 2 inches), the actual boring may be much larger. The water in the gravel pack can represent a significant percentage of the well volume and should be removed in order to sample the aquifer correctly.

4) Appendix IX

In the July 9, 1987, Federal Register, EPA promulgated a new list for ground-water monitoring, Appendix IX to Part 264, which will replace the Appendix VIII monitoring requirement. Existing SW-846 methods are adequate for the compounds listed on Appendix IX. [See Reference 4 for the final Appendix IX list]

Appendix IX is a list of chemicals taken from Appendix VIII for which it is feasible to analyze in ground-water samples. In addition, Appendix IX contains 17 chemicals routinely monitored in the Superfund program.

5) Use of Accelerated Monitoring Schedules

A facility which was deficient in the ground-water monitoring section of their Part B Application was requested to improve their monitoring network by drilling more wells and developing them properly. Once these deficiencies are corrected, an accelerated ground-water monitoring schedule, sampling four times within four months, was recommended.

This recommendation, which was designed to bring a facility into compliance as soon as possible, is in accordance with the recommendations in the RCRA Ground-water Monitoring Compliance Order Guidance (Reference 10). When scheduling the accelerated monitoring, the facility could schedule one sampling event after a significant rainfall, the second event after a dry period and the remaining two events can be interspersed within the four month time frame. At the site in question, this sampling scheme should allow data representativ of the site to be obtained quickly. Note, however, that this type of an accelerated sampling scheme may not be appropriate for all facilities in all locations.

6) Maintenance of Ground-water Monitoring Networks

Ground-water monitoring networks that will be used during the life of the facility and its closure period, will need at least some maintenance in order to assure that representative samples are being obtained. Often the maintenance needed will be redevelopment of the monitoring well. The inital performance of a well should be determined and any significant changes over time may indicate the need for periodic redevelopment or a maintence assessment. In other cases, such as after severe damage by accidental or natural occurrences like flooding, well replacement may be warranted.

A contingency plan should be prepared by the facility addressing the proposed course of action should the integrity of the monitoring wells become damaged. The regulations (§264.310(b)(3)) clearly require the owner/operator of a landfill to maintain their monitoring well network during closure period. However, appropriate language should be included in the permit to make adequate maintenance of the system during the life of a unit and its closure period a permit condition. While not absolutely necessary for enforcement, further elaboration of the requirements will clarify the duties of owner/operator.

Landfill Design

1) Definition of Replacement Unit

A replacement unit, as defined in the preamble to the Final Codification Rule; Hazardous Waste Management System (50 FR 28706, July 15, 1985) is a "unit that is taken out of service and emptied by removing all or substantially all the waste from it" prior to being reused. A facility planned to dewater half of an interim status surface impoundment that is bisected by an underwater dike and to route all incoming waste to the southern portion. The northern section was scheduled to receive consolidated waste from several other impoundments and to close as a landfill. The northern section, however, meets the criteria of a 'replacement unit' since the deposition of the original waste material has stopped, substantial dewatering is planned and placement of waste from other units is to occur prior to closure.

Under §3015(b) of HSWA, facilities authorized to operate under §3005(e) shall be subject to the minimum technological requirements of 3004(o) for each replacement or lateral expansion of an existing landfill or surface impoundment. The north section must be retrofitted to satisfy these requirements before the deposition of the waste from other units can begin.

The southern unit, as an existing surface impoundment, becomes subject to the minimum technological requirements and must be retrofitted if it continues operation after November 8, 1988 per §3005(j), unless a waiver is obtained.

2) Double Liner Waiver Petitions

Another facility requested a waiver from the double liner requirement for a new unit based upon Section 3004(o)(2), which allows for an exemption to the double liner requirement if "alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as such liners or leachate collections systems".

The proposed bottom liner design is a 2-ft layer of compacted material with 5 x 10-6 cm/sec permeability. This bottom liner design is substandard because it does not meet the requirement of section 264.221(c) (3-foot layer of recompacted clay of at least 1 x 10-7 cm/sec permeability). Since the design does not meet the requirements of §264.221(c), location characteristics or operating practices must compensate for the deficiency, as allowed under §264.221(d). This unit is to receive wet sludges and an unusually large amount of leachate is expected. The owner/operator did not present any operational reason to grant the petition. Similarly, the location of the unit would not prevent migration of hazardous constituents to the ground water because ground water is typically near or at the surface. Therefore, the PAT saw no compelling evidence that hydrogeologic conditions would favor a variance.

Since this alternate double liner design did not satisfy the §264.221(d) criteria for preventing migration to ground water at least as effectively as a double liner system under §264.221(c), and location characteristics and operational practices did not compensate for the liner design, the PAT recommended that the petition for a double liner waiver not be granted.

3) Determination of Equivalent Liner Design

The PAT reviewed a proposed double liner design in order to verify that it meets the general minimum technology requirement set forth in Section 3004(o)(1)(A)(i). The liner design was compared to the interim statutory design found in Section 3004(o)(5)(B) of HSWA and codified in §264.301(c).

The comparison was conducted on a layer by layer basis. The proposed primary leachate collection system, the top liner and the secondary leachate collection system for the facility were either identical or exceeded the Agency's recommended specifications for the interim statutory design. The secondary liner system, however, varies significantly from the interim statutory design which may be satisfied by at least 3 feet of 10-7 cm/sec compacted clay or other natural material. The proposed bottom liner will consist of an 80 mil high density polyethylene (HDPE) liner to be installed immediately over an existing ethylene propylene rubber (EPDM) liner and an existing leak detection system. Before installation of the bottom liner, the EPDM liner will be cleaned and the seams tested for leaks. The HDPE liner will form a compression fit over the existing liner and its seams will be constructed perpendicular to the existing liner's seams.

The interim statutory design requires that a bottom liner be designed, operated and constructed to prevent the migration of any constituent through such a liner during the operating and post-closure monitoring period (§3004(o)(5)(B)). The PAT concluded that a carefully constructed redundant FML bottom liner should

result in a liner that controls migration as well as, or better than, 3 feet of 1 x 10-7 cm/sec clay. As long as waste/liner compatibility is clearly demonstrated, a system constructed of the proposed components was determined to be equivalent to the interim statutory design.

4) Calculation of Leachate Volume for Collection System Design

An engineer for a facility designed the leachate collection system for their new landfill based upon leachate volume estimated from calculations using Moore's Equation (see Permit Writers' Guidance Manual for Hazardous Waste Land Treatment, Storage and Disposal Facilities, Reference 7). While the use of this equation is acceptable, the equation best applies to a long term steady-state impingement rate and not to short-term storm events. In order to most accurately consider variations in rainfall data such as storm events, the HELP (Hydrologic Evaluation of Landfill Performance) model is preferred. This model is available to any engineer or technically trained individual for evaluating the design of leachate collection systems. See Attachment C for information on obtaining the user guide and software package.

5) Cap Design Modifications

A facility proposed several modifications to their cap design specifically to reduce erosion potential. The soil layer was increased from two feet to three feet. The increased soil depth, plus the presence of a drainage layer and geotextile material, mitigates the impacts of frost action.

The facility also proposed to use roughened HDPE membrane as the synthetic liner over the clay layer in order to reduce the potential for sliding. The friction angle between the roughened membrane and the clay is 29 degrees, a significant increase over the friction angle between a smooth membrane and the clay layer. A potential problem with the use of roughened HDPE membrane is its limited commercial availability at this time.

Anchor trenches have also been proposed to tie down the liner, filter and drainage layer material for the purpose of increasing slope stability. The trenches act as drainage conduits as well, increasing the efficiency of the drainage system.

6) Use of a Test Plot to Support an Alternate Cover Design

A facility proposed a cap design that is significantly different from the recommended design criteria specified in the July 1982 Draft Guidance Document: Landfill Design--Liner Systems and Final Cover (Reference 2).

The final cover, based upon the guidance, should have two or more feet of "soil capable of sustaining plant species". The facility proposed that the cap will be comprised of 24 inches of compacted Ponce clay, 18 inches of compacted caliche and 6 inches of vegetated, uncompacted caliche. Caliche is a limestone deposit that is found in arid regions. This soil, when in contact with moisture could harden like concrete and may not sustain vegetative growth. The proposed plant specie, weeping lovegrass, is not indigenous to the area and has roots up to 18 inches in length, which is longer than the 6 inch vegetative layer could support.
The best alternative for this facility would be to redesign their cap to conform to the specifications in the guidance. However, they can use cap components which differ from the recommended design if the facility constructs a test plot in order to demonstrate that the proposed material will support a vegetative cover.

7) Potential for HDPE Failure

An engineering report prepared for a landfill liner design indicated that the material to be used as a sub-base under an HPDE liner showed differential settlement of up to 1.5 feet over a horizontal distance of 2 feet.

The engineering report assumed that the HDPE membrane could tolerate such settlement, but research has shown that HDPE liners usually fail along a narrow area. Stretching a localized imperfection, such as a shallow scratch, over the 1.5 feet differential settlement could result in a hole in the liner.

The facility should prepare a stable base under the HPDE liner as required in §264.301 (a)(1)(ii).

Land Treatment Units

1) Waste Characterization/Waste Analysis Plan

A petroleum refinery is undertaking a land treatment demonstration but has not adequately characterized its waste. A waste analysis plan prepared according to the requirements of §264.271(b) and 264.272(c)(1)(i) must include testing for Appendix VIII constituents that are reasonably expected to be in or derived from the waste. The waste analysis plan for refinery wastes should include testing for the EPA approved subset of Appendix VIII constituents found in petroleum wastes (e.g., the "Skinner List"). The Permit Guidance Manual on Hazardous Waste Land Treatment Demonstrations (Reference 5) should be referred to for a complete discussion on the development of waste analysis plans. Appendix D in reference 5 provides a copy of the list of Appendix VIII constituents that may be found in petroleum wastes.

2) Demonstration of Land Treatability

A facility based its land treatment demonstration on the degradation of the oily fraction of the wastes and on the immobilization of lead and chromium in the soil. They did not account for the treatment of any other Appendix VIII constituents detected in their waste. This same facility only conducted the feasibility test program using leachate column tests. These tests will provide information on the loading rate of the soil, but will not be able to determine the site/soil assimilative capacity.

Section 264.272 requires that the owner/operator must demonstrate that hazardous constituents in the waste can be completely degraded, transformed or immobilized in the treatment zone. A properly conducted demonstration should evaluate all the processes involved in a land treatment unit including degradation, transformation and immobilization. A toxicity study, which identifies toxic loading rates and evaluates the impact of the wastes on indigenous soil microorganisms, should be conducted. A transformation/detoxification study, which is also a necessary part of the demonstration, should provide information on the decrease in toxicity of the waste/soil mix to soil microorganisms over time. Reference 5 provides complete information on the components of a good land treatment demonstration.

3) Control of Soil Moisture

A saturated land treatment unit is unable to accept sludge with a high quantity of water since these conditions would promote anaerobic conditions in the treatment zone. These conditions would lead to a decrease in microbial degradation of organics and the migration of run-off containing large amounts of hazardous constituents. An owner/operator at a facility where saturation of the unit is possibile, even during a portion of the year, should conduct studies to measure and control soil moisture. A water balance for the facility that accounts for seasonal changes should be part of such a study.

4) Selection of Principal Hazardous Constituents (PHC)

PHCs are defined in §264.278(a)(2) as "hazardous constituents contained in the wastes to be applied at the unit that are the most difficult to treat, considering the combined effects of degradation, transformation and immobilization". Therefore, the PHC for any land treatment unit can only be selected after the completion of an adequately designed land treatment demonstration (see previous item 2). PHCs are those hazardous constituents that have the lowest site/soil assimilative capacity. Constituents selected should also have a low to moderate vapor pressure so they will not volatilize from the waste shortly after application. The criteria for the selection of PHCs is covered in Reference 5.

5) Permitting of Land Treatment Units

After several years of an on-going land treatment demonstration, a facility still has not proven that their unit can degrade, transform and immobilize the hazardous constituents in their waste. A satisfactory land treatment demonstration will require more effort, time and a large investment by the applicant.

The land ban restrictions for the 'California List' or 'first third' waste constituents will affect most of the current land treated wastes. Due to the potentially short life of certain land treatment units, the owner/operators of units that have not demonstrated satisfactory treatment should be requested to consider closure of their land treatment unit. As stated in OSWER Policy Directive 9486.00-2 (Reference 6), any Part B deficiencies should be addressed quickly. Only one Notice of Deficiency should be necessary for the applicant to submit a complete application. If they are unable to quickly correct the deficiencies, the Region should consider permit denial.

6) Presence of High Water Table in Limited Areas of Unit

During a land treatment demonstration, a land treatment unit was observed to have two central areas that had a seasonal high water table within 3 feet of the treatment zone. The facility proposed to use a pumping system to lower the water table.

While the treatment zone in any land treatment unit, per §264.271 (c)(2), must be at least 3 feet above the seasonal high water table, a costly pumping system is not the only alternative to achieve this standard. The facility may clean up the areas with a high water table and discontinue their use for the treatment of waste. Clean up entails the removal of soil from these areas and placement of the soil in the active treatment unit. New soil should be replaced in these areas and the areas should be fenced off. In effect, this land treatment unit could be operated as two smaller units separated by the high water table areas.

7) Issuance of an Immediate Full-Scale Facility Permit

A facility with an existing interim status land treatment unit submitted a carefully prepared, complete land treatment demonstration as part of their permit application. The demonstration addressed all the requirements of Subpart M - Land Treatment, identified all the potential problems encountered at the unit and provided measures that will be implemented to correct these problems. Because the demonstration addressed all Agency requirements, the issuance of a full operating permit was recommended instead of a two-phase permit.

Permit Issuance

1) Joint Permitting by EPA and a State

Facilities located in a State which has been authorized for the RCRA 'base program', but not the HSWA provisions, may currently be issued joint State and Federal permits which together constitute the "RCRA permit". The State prepares the portion of the permit covering non-HSWA matters. EPA should incorporate the HSWA provisions into the State issued permit or, if necessary, EPA may issue a separate permit for HSWA requirements. In instances where a new facility has a joint permit, the permittee must be informed that construction cannot begin until both the State permit and the EPA HSWA permit are issued (either jointly or separately).

2) Use of HSWA Omnibus Provision to Incorporate Land Disposal Restrictions in Permits

A Region prepared a draft permit in which they used the 'omnibus provision' (§3005(c)(3)) to incorporate proposed land disposal restrictions as a permit condition. The 'omnibus provision', as stated in the preamble to the December 1, 1987 final codification rule (52 FR 45788) gives EPA the authority to impose permit conditions above and beyond existing regulatory requirements if the current requirements are inadequate to protect human health and the environment.

The self-implementing HSWA provisions, such as the land disposal restrictions, supersede the §270.4 provision (i.e., "permit as a shield") which states that compliance with a RCRA permit constitutes compliance with Subtitle C. Therefore, the land disposal restrictions apply regardless of whether or not they are included in the permit. OSWER Policy Directive No. 9522.00-1 (Reference 3) clarifies the self-implementing requirements of HSWA.

To simplify enforcement and to clarify the duties of the owner/operator, however, the PAT recommends that permits issued after land ban or other self-implementing HSWA regulations incorporate the requirements of those regulations, as they apply to the specific facility. In the case under discussion, since the restrictions rule was only proposed at the time, the PAT recommended that the permit not contain specific conditions for these restrictions due to the likelihood of changes in the rule.

3) Editing of Permit Content prior to Issuance

Several Regions have prepared draft permits with unedited portions of the permit application appended to the permit. Unedited attachments may not correspond with the wording in the body of the permit and some sections may be contradictory or confuse requirements in the permit. Permit conditions need to be precise.

Appending Part B sections that are not relevant to the permit may mean that any operational changes affecting subjects within those sections, however insignificant, may require a permit modification. The PAT recommends that all portions of the permit be reviewed for "applicability, importance clarity."

4) Permit Language

A permit prepared for a container storage area stated that the permittee can "store a maximum of 600 drums in the container storage area". Because the permit is an enforceable document, the permit language must be precise. This statement implies that the only containers to be stored at this facility will be drums. The language should reflect all the types of containers to be stored at this site.

5) Methods for Establishing Background

The use of the minimum detection limit (MDL) to establish background as a ground-water protection standard is an acceptable method. However, the permit should reference the appropriate analytical methods in SW-846 (Reference 13) and specify target detection limits. The new list of Appendix IX to Part 264 includes suggested methods and practical quantification limits (See Reference 4).

6) Permit Condition for Corrective Action Site Investigation

A facility has several abandoned waste disposal ponds (SWMUs) from a previous owner. Based on the results of the RCRA Facility Assessment, the units to be evaluated in the facility's RCRA Facility Investigation (RFI) should be specified as a permit condition.

Any components required in the RFI, such as the characterization of the nature and extent of contamination, the definition of pathways for migration, the identification of areas threatened by releases and the evaluation of interim measures, should also be specified in the permit. The draft document, RCRA Facility Investigation (RFI) Guidance, July 1987 (Reference 9) should be consulted.

A site investigation could identify a release that does not require immediate remedial measures because it is not currently a threat to human health or the environment, but has the potential to become a threat in the future. Corrective actions under §3004(u) should not be limited to releases that already pose a threat. The monitoring of such a release for a reasonable period of time would be an appropriate permit condition.

Corrective Action

1) Location of the Point of Compliance Wells
Under Subpart F, once ground-water contamination is detected from any regulated unit, the owner/operator is required to establish a

ground-water protection standard as described in §264.92. The point of compliance (POC) must be established directly downgradient of the regulated unit(s).

For corrective action programs under HSWA, however, specific monitoring wells, which were installed as part of the site investigation, may be designated as POC wells. The POC wells for non-regulated solid waste management units should be identified in the HSWA portion of the permit.

2) Treatment Requirements for Ground Water Removed During Corrective Action

Permits including corrective action conditions for ground-water treatment programs must not only include pumping and removal requirements but must specify treatment standards or methods of handling contaminated ground water. Although ground water itself is not a hazardous waste, ground water that contains hazardous waste leachate must be managed as if it were hazardous waste since the leachate is subject to regulation under Subtitle C. Once the ground water is treated such that it no longer contains a hazardous waste, the water is no longer subject to Subtitle C regulation. See the memorandum from OSW to Region IV, "RCRA Regulatory Status of Contaminated Ground Water", November 13, 1986 (Attachment D).

3) Selection of Appropriate Treatment Technologies.

A facility proposed a corrective action program where contaminated ground water was treated by air stripping. One of the organic contaminants, methyl isobutyl ketone (MIBK), is extremely soluble in water and may not readily volatilize from aqueous solutions.

The degree to which a contaminant leaves the water phase and enters the air phase is dependent on the design of the system employed and on a combination of physiochemical characteristics. A substance's solubility in water and its vapor pressure are key factors for determining whether a substance is amenable to air stripping. MIBK tends to remain in the water phase instead of being released into the air phase. Therefore, MIBK may not be a good candidate for removal from ground water by the air stripping method presented by the owner/operator.

Any proposed technology that is approved as part of the corrective measures at a facility must be based upon the type of contaminants found, the level of contamination, and the technology's ability to meet the treatment standard.

4) Evaluation Air Emissions from Treatment Units

Some treatment technologies do not destroy contaminants but remove them from one medium, such as ground water, and then release them into a second medium, such as air. Air emissions from treatment units,

particularly those resulting from air stripping and other air release technologies, should be considered by the permit writer before approvi a corrective action plan. The owner/operator should be required to determine stack emission rate estimates as well as perform dispersion modeling in order to determine if air emission controls are necessary.

While volatile organics released to the air via air stripping are not hazardous waste, releases of hazardous constituents to the air from hazardous waste management or solid waste management units are subject to corrective action authorities. The permit (or a 3008(h) order) shc address contamination of both the ground water and the air resulting from waste management at the facility as necessary to protect human health and the environment.

5) Use of Field Studies in Approving Emerging Technologies

A facility proposed to clean up contaminated soil with an in-situ bio-reclamation technology. When a facility proposes to use an emerging technology, such as insitu treatment, which depends upon site specific conditions, it is best to require a pilot scale field study which is separate from any laboratory test. Experience at Superfund sites has shown that methods that work well in the laboratory may not work well in the field. The reverse may also be true. In lieu of any specific Agency guidance, the PAT will be able to provide assistance when evaluating the results of field studies.

6) Verification Monitoring

Until HSWA corrective action policy on monitoring is established, ground-water monitoring to verify that the ground-water protection standards determined for hazardous constituents released from SWMUs have been achieved under a HSWA corrective action should be similar to existing monitoring requirements for compliance with ground-water protection standards at regulated units. This monitoring should include quarterly sampling and analysis of the POC wells for all the contaminants specified in the ground-water protection standard. Flexibility, however, can be included in the HSWA corrective action permit. After the first few years, for example, a different monitoring schememay be appropriate.

The permit may also include requirements for monitoring of Appendix IX constituents "reasonably expected to be in or derived from the waste" in the SWMUs. The frequency of such monitoring (e.g., annually) should be included in the permit.

7) Termination of HSWA Corrective Action Programs

Corrective action programs for releases from regulated units can be terminated when the ground-water protection standard has not been exceeded for three consecutive years (§264.100(f)). This approach can also be applied in HSWA corrective action permits. The HSWA permit, however, may also include a technical feasibility clause. When the maximum possible reduction of contaminants from the ground water has been achieved and the media (ground water) protection

standard is still being exceeded, further use of that technology may not be required. At that point, if no other technology or combination of technologies will achieve any additional reduction in contaminant levels, the corrective action program could be terminated.

Miscellaneous Topics

Disposal of Non-hazardous Waste in RCRA Regulated Units Waiver Request for Liquid in Landfill Restrictions

A facility wished to dispose of non-hazardous dredge material in a landfill that was undergoing closure after the loss of interim status. The facility sought a waiver under §3004(c)(3), contending that there is no alternative disposal site and that the liquid condition of the dredge material will not present a risk of contamination to any underground source of drinking water.

The owner/operator did not meet the requirement of §3004(c)(3)(A) which requires the demonstration that no reasonably available alternative exists other than placement in their closing landfill. The facility based their contention of no available alternatives on the refusal of neighboring states to accept the dredge material without dewatering. The facility did not adequately investigate all alternatives, such as the deposition of dredge material in a sanitary landfill, which is considered to be an available alternative based upon the Statutory Interpretative Guidance of April 1986 (Reference 12).

The determination of 'reasonably available' also involves technical and engineering considerations. A dewatering option was never thoroughly evaluated. If the dredge material could be dewatered to pass the Paint Filter Liquids Test, the restriction in §3004(c) would not apply. The disposal of nonhazardous waste in a landfill that has lost interim status, however, is discouraged by Agency policy. As stated in Gene Lucero's memorandum of December 20, 1985 (Reference 1), the receipt of non-hazardous waste is acceptable only if it does not delay closure.

Criteria for the Referral of Facilities to the Agency for Toxic Substances and Disease Registry (ATSDR) under §3019

Three facilities, each in different Regions, have ground-water contamination that has migrated off-site. Releases at two of these facilities have contaminated residential wells. At the third facility while direct exposure to contaminated ground water has not been documented, public concern about potential exposure is extreme. Due to the history of contamination at these sites, the off-site migration, and the proximity of the public, the assistance of the Agency for Toxic Substances and Disease Registry (ATSDR) is warranted.

These sites were referred to ATSDR for a "health consultation". A health consultation by the ATSDR enables a Region to determine what information should be gathered (e.g., during a RCRA Facility Investigation) to allow the ATSDR to undertake a more detailed

health assessment at a later date. This consultation could address releases from all land disposal units (e.g. SWMUs) with off-site migration, not just regulated units. See Reference 8 for details on the 3019 process.

Attachment A

PAT Reviews Included in this Summary

Facility	Region	PAT Coordinator	Review Date
American Cyanamid	II	Chris Rhyne	January 1987
Ashland Chemical Co.	V	Janette Hansen	January 1987
B.F. Goodrich	IV	Robert Kayser	November 1986
Dow Chemical	V	Robert Kayser	March 1987
Fondessy Landfill	V	Chris Rhyne	November 1986
G.E. Waterford	I	Chris Rhyne Mark Salee	December 1986
Highway 36	VIII	Dave Eberly Janette Hansen	November 1986
International Paper Co.	IV	Janette Hansen Robert Kayser	March 1987
IT Corporation	V	Chris Rhyne	January 1987
Lion Oil	IV	Nestor Aviles Amy Mills	February 1987
McDonnell-Douglas	VI	Janette Hansen	September 1986
Mills Services	II	Robert Kayser	February 1987
Ross Incineration Services	V	Chris Rhyne	March 1987
Shell Oil	X	Nestor Aviles	February 1987
United Technologies/ Hamilton Standard Site	I	Robert Kayser	April 1987
Union Carbide	II	Dave Eberly	April 1987
U.S. Pollution Control, Inc.	VI	Janette Hansen	February 1987
U. S. Steel	V	Dave Eberly	March 1987

Attachment B

List of Guidance Used in Preparing the PAT Reviews

1. "Accepting Nonhazardous Wastes After Losing Interim Status", Memorandum Gene Lucero, December 20, 1985.

2. Draft Guidance Document: Landfill Design--Liner Systems and Final Cover, (Chapter E only), July 1982.

3. Effect of Land Disposal Restrictions on Permits, Effective Date 9/15/86, Directive No. 9522.00-1.

4. Federal Register, vol 52, 25942.

5. Permit Guidance Manual on Hazardous Waste Land Treatment Demonstrations, July 1986.

6. Permitting of Land Treatment Units: EPA Policy and Guidance Manual on Land Treatment Demonstration, Effective Date 9/17/86, Directive 9486.00-2.

7. Permit Writer's Guidance Manual for Hazardous Waste Land Treatment, Storage and Disposal Facilities, October 1983.

8. Procedural Guidance for Reviewing Exposure Information under RCRA Section 3019, September 1986, Directive No. 9523.00-2A.

9. RCRA Facility Investigation (RFI) Guidance, Draft, April 1987.

10. RCRA Ground-water Monitoring Compliance Order Guidance, August 1985.

11. RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, September 1986, NTIS No. PB87-107751.

12. Statutory Interpretative Guidance of April 1986, April 1986.

13. Test Methods for Evaluating Solid Waste, SW-846, March 1987.

Attachment C

Access to HELP Model User Guide and Software

User Guides

Hydrologic Evaluation of Landfill Performance, Vol. I NTIS PB85-100-840

Hydrologic Evaluation of Landfill Performance, Vol. II NTIS PB85-100-832

Software

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