

**April 12, 2004**

**Environmental Protection Agency  
Region 6  
Guidelines for Preparing Ready for Reuse Determinations**

**RCRA, Federal Facilities, FUDS, UST, TSCA and VCP Programs**

**I. Purpose**

The EPA's Land Revitalization Agenda<sup>1</sup> identifies a new, long-term measure of remedial progress, Ready for Reuse (RfR). The intent of the RfR Program is to make land revitalization and reuse an integral and unifying element of all EPA and State cleanup programs (RCRA, CERCLA, UST, TSCA, VCP, etc.) to better foster economic development and to return previously contaminated and underutilized, warehoused or abandoned properties back to productive use for the benefit of the environment, communities and business interests.

In its simplest form, RfR is a technical determination that recognizes when contamination at a property has been characterized and risk management activities have been taken to the extent that environmental conditions at the site are protective of human health and the environment based on its current use(s) or planned future use(s). The primary purpose of a RfR Determination is to document, in a straightforward manner, specific information about the current environmental conditions of a property (i.e., concentrations of contaminants present, location, and their associated risks), the work performed at the site to investigate and address risks, and to acknowledge that the facility, or portion(s) thereof, are ready for reuse.<sup>2</sup>

RfR is not intended to be a clean-closure approach. Rather, it encourages expedited investigations and cleanups to promote protective redevelopment opportunities. Depending on the intended future use of the property, RfR may indicate that corrective action at the site is completed. For example, if characterization and remediation have been performed to support an unrestricted land use, then no additional investigation and remediation would be necessary. Additionally, if the characterization and remediation have been performed to support an industrial/commercial land use, and necessary institutional controls and/or engineering controls are in place in order to

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<sup>1</sup> For additional information about EPA's Land Revitalization Agenda, please see [www.epa.gov/swerrims/landrevitalization](http://www.epa.gov/swerrims/landrevitalization).

<sup>2</sup> It is not mandatory, however, that the property be redeveloped or sold in order to obtain a Ready for Reuse Determination.

ensure the remedy remains protective, then no additional investigation/remediation would still be anticipated. In this case, though, if conditions at the site change, including environmental conditions, land use, site receptors, and remedy performance, it would be necessary to revisit the determination of suitability of reuse to ensure its continued protectiveness.

## **II. Background**

Contaminated (or perceived contaminated) properties often sit idle, abandoned, underutilized or warehoused because of the inherent disincentives to investigating and remediating sites (e.g., unrealistic remedial objectives, liability issues, lack of a formal mechanism that recognizes that environmental conditions are protective prior to achieving final cleanup requirements, etc.).

It has also been difficult to market and return properties to productive reuse, in many cases, due to a lack of information about the sites or difficulty in interpreting the available information. RfR seeks to encourage expedited investigation and remediation of sites and facilitate their reuse/redevelopment. Many properties that are low environmental risks are still stigmatized because they had historical contamination. The RfR concept was developed to aid redevelopment by making an affirmative statement that the environmental conditions of a property are protective of human health and the environment based on the current or planned future use(s), and by providing a “Plain English” summary of the relevant site investigation/cleanup activities and documents on which the RfR Determination is based.

The RfR Program acknowledges that, for most commercial/industrial facilities that have corrective action obligations, achieving cleanups to pre-industrial conditions or uses may not be practical (from either a technology or cost perspective), or even desirable given the intended use of the property.

Integral to the RfR program is the use of maximum flexibility and practical approaches to streamline site investigation and cleanups. These innovative approaches have resulted in achieving actual environmental results (i.e., stabilization and/or final remedy) much sooner than would have been achieved using conventional means. The concept calls for implementation of site-wide streamlined corrective action through a facility/ state/public partnership or team approach.

The strategy is a framework that promotes:

- Administrative flexibility
- Risk-based decision making

- Realistic land use and groundwater use considerations
- Development of a conceptual site model (updated with new information)
- Purpose-driven investigations where DQOs are developed to address risk management decisions
- Prioritization of risk at sites using risk screening tables (worst areas first)
- Remedy selection based on meeting the designated performance standards developed for the facility, and
- Remedy implementation and risk management activities balanced between remediation, engineering controls and institutional controls weighing factors such as implementability, cost and effectiveness

Key Aspects of the RfR Program include:

- Defines how “clean” is clean enough to support protective redevelopment
- Defines remedial goal(s), establishing realistic investigation and cleanup objectives
- Targets multiple reuse scenarios; can apply to an entire property or specific parcels
- Gives facilities a reason to move forward with investigations and remediation
- Promotes brownfields redevelopment, rather than greenspace use
- Provides comfort to prospective purchasers, lending institutions and the public regarding the cleanup and property reuse
- For many facilities, requires no additional investigation or cleanup unless there is a change to a different land use in the future
- Doesn’t require a property to be sold or transferred in order to receive an RfR Determination

### **III. Definition and Eligibility Criteria**

RfR Determinations are voluntary, and are available, under this guidance, for all sites (with the exception of Federal Superfund sites) with actual or perceived contamination that have been investigated and, where necessary, cleaned up such that conditions are protective of human health and the environment based on current or planned future use(s). A facility may be subject to a permit, compliance plan, order, or other formal or informal enforcement mechanism and still qualify for an RfR Determination.

An RfR Determination may be issued at any point during the remedial process (site investigation through final cleanup), so long as there is enough information to conclude that the property can support a specific use while being protective. An RfR Determination may be issued at a property where the use is unrestricted (i.e., residential) or restricted (i.e., commercial/industrial). An RfR Determination is not

intended to apply more stringent standards to ongoing cleanup activities. However, there could be situations where additional assessment information would be needed to confirm the property, or portion thereof, is RfR.

This RfR guidance has been developed within the framework of existing regulations. The document does not, however, substitute for State or Federal regulations, nor is it a regulation itself. Consequently, it does not impose legally binding requirements on Regulatory Authorities, the regulated community, or any other member of the public.

The Regulatory Authorities expressly reserve all rights and authorities to require future actions by owners or operators if new or additional information comes to light that materially impacts the RfR Determination, whether such information is known as of the date the Determination is issued, or is discovered in the future.

#### **Criteria for an RfR Determination:**

- Adequate characterization (tailored to the type of facility) to show protective concentrations of contaminants using an accurate conceptual site model and appropriate data quality objectives
- Risk screening or risk evaluation showing that the property will be protective based on its current and anticipated future use(s), evaluating realistic receptors and exposure scenarios
- Documentation that current and anticipated future land use(s) are consistent with cleanup objectives, including periodic land use monitoring and reporting, where necessary
- Where contaminants of concern are above an unrestricted use level, institutional controls should be implemented and layered where possible to identify any use restrictions on the property
- Public participation procedures should address the RfR Determination, existing State process is acceptable

#### **IV. Process**

Facilities desiring an RfR Determination should submit, in summary form, to their respective Regulatory Authority a written request with the following information:

- A description of the current and future land use(s) the site can support while remaining protective of human health and the environment
- A description of the property (or parcel of property) for which the RfR Determination is requested

- A map of the proposed RfR property (with legal description, if available)
- Completed Current Environmental Conditions Table listing all sites (including petroleum storage tank sites) subject to remediation and the following information for each site:
  - 1) Remedial action taken
  - 2) Residual chemicals of concern (COCs)
  - 3) Cleanup status
  - 4) Cleanup standards for COCs
  - 5) Institutional control(s)

Attachment A provides an example of the information that should be summarized in the Current Environmental Conditions Table.

- Chronology of events for each area investigated and/or cleaned up
- List of relevant documents (list as appropriate, including report title and date)

Examples:

Affected property assessment reports  
Remedial action plans  
Remedial action completion reports  
RCRA facility assessments  
RCRA facility investigations  
Corrective measures studies  
Corrective measure implementation reports  
Groundwater monitoring reports  
Closure reports  
Approval letters, etc.

More information pertaining to the EPA Region 6 Ready for Reuse Program, including examples of actual determinations issued, is available at [www.epa.gov/earth1r6/ready4reuse](http://www.epa.gov/earth1r6/ready4reuse). Questions may be directed to Ms. Jeanne Schulze at [schulze.jeanne@epa.gov](mailto:schulze.jeanne@epa.gov) or (214) 665-7254.

Attachments:

- A - Current Environmental Conditions Table
- B - Sample RfR Certificate of Recognition
- C - Sample RfR Determination Letter

**Attachment A**  
**Example - Current Environmental Conditions<sup>a</sup> Table**  
**for a Texas Facility**

Site Name/ Site No.	Remedial Action Taken	Residual Contaminants of Concern (COCs)	Cleanup Status	Cleanup Standard	Institutional Control(s) (Type/Purpose /Location)
East Tank Farm Area/ SWMU #14	Dig and Haul - all soils removed for offsite disposal	Lead - 325 ppm Chromium VI - 5 ppm Arsenic - 5 ppm	NFA for soil remediation dated January 1, 2002	In soils: Lead > 400 ppm, Chromium VI > 50 ppm, Arsenic > 25 ppm was removed. The site was closed under State Risk Reduction Standard (RRS) No.2 <sup>b</sup>	Deed notice filed with Bexar County Clerk to restrict use of property for residential purposes. <sup>c</sup>
	Hydraulic containment system installed for groundwater control	Lead - 100 ppm Arsenic - 2 ppm	Ongoing groundwater pump and treat	[Specify MCL concentrations for lead, arsenic]	City of Austin Ord. No. 224, restricting installation of drinking water wells.
(Example for Petroleum Substances:)					
Facilities 110, 160, 706, 930, 1102, 1150, and 1189; the former UST at Bldg 606	Demolished	None	NFA	Minimal releases. Sites not considered to have a potential for hazards from contamination.	N/A
The motor gasoline (MOGAS) tank spill in the golf course area.	Soil excavation and offsite disposal	Benzene - 5ppm	NFA	Benzene > 50 ppm was removed	N/A

<sup>a</sup> Based on documents supplied by [insert facility name].

<sup>b</sup> In order to attain RRS No. 2, all industrial solid waste and municipal hazardous waste and waste residues must be removed or decontaminated to health based standards and criteria. Contaminants allowed to remain in place in media of concern (i.e. soil, ground water, surface water, air) must not exceed the health based cleanup levels as specified in 30 TAC §335.556.

<sup>c</sup> TCEQ deed certification filed pursuant to 30 TAC 335.560 in TCEQ facility files.







Attachment C  
Sample RfR Determination  
Letter



July 29, 2003

Miriam Lonon, Ph.D.  
Manager, Environmental Health and Safety  
University of Arkansas  
Physical Plant Department  
521 S. Razorback Road  
Fayetteville, AR 72701

Dear Dr. Lonon:

The Arkansas Department of Environmental Quality (ADEQ) and United States Environmental Protection Agency (EPA) Region 6 together have determined that the former University of Arkansas Gregg Site ("Gregg Site") is Ready for Reuse. A Ready for Reuse Determination is an acknowledgment that environmental conditions on the property are protective of human health and the environment based on its current and anticipated future use.

The former Gregg Site (the "Property") is located on land previously owned by the University in Johnson, Washington County, Arkansas, north of the City of Fayetteville. The Property consists of approximately ½ acre in the southwest corner of a 100-acre tract described as the SW ¼, NE ¼, and NW ¼ of Section 28, T17N and R30W. Although no longer in use by the University, the site had historically been used as a research station for seismology. Accounts by retired University staff indicated that containers of laboratory chemicals had been buried in shallow pits or trenches on the Property in the late-1960's or early 1970's. The quantities and contents of the containers were unknown and were not documented at the time of disposal. In September 2000, the University installed an 8-foot chain link fence to control unauthorized access to the site.

In the spring of 2000, the University voluntarily initiated and implemented an investigation to delineate the location of trenches and identify potential environmental impacts. Preliminary investigations consisted of non-invasive surface geophysical methods to detect potential disposal areas. The results of the geophysical survey are presented in the report titled, *Surface Geophysics Investigation of the University of Arkansas Gregg Site Chemical Waste Landfill, June 2000*. Additional investigations were conducted based on the results of the initial geophysical survey and are presented in the report titled, *Source Delineation and Impact Evaluation (at) the University of Arkansas Gregg Site, November 2000*. The investigations identified four geophysical anomalies that were further investigated and determined to contain waste materials, including potentially hazardous substances.

On November 1, 2001, the University and ADEQ negotiated a *Consent Administrative*



*Order (CAO)* for voluntary cleanup of the areas identified in previous investigations. The *CAO* required the University to submit a *Remediation Plan* to ADEQ for concurrence prior to implementing work. The University submitted the *Remediation Plan, March 2002*, to fulfill this requirement. ADEQ approved the *Remediation Plan* on May 21, 2002, and proposed its approval in the *Draft Remedial Action Decision Document (RADD) for Corrective Action*. The public comment period on the *Draft RADD* began on May 23, 2002, and ended on June 24, 2002. ADEQ prepared a Responsiveness Summary of all comments received and determined that no changes to the draft RADD were warranted based on the comments submitted. The *RADD* became final on June 24, 2002.

The University implemented the *Remediation Plan* between July and September 2002, and submitted a *Closure Report* to ADEQ on March 12, 2003. ADEQ subsequently approved the *Closure Report* in a “no further remedial action” letter dated April 29, 2003. With this Ready for Reuse Determination, ADEQ and EPA Region 6 agree that the University of Arkansas has successfully completed its investigation and remediation pursuant to the *Remediation Plan*. The Ready for Reuse Determination, which affirms that environmental conditions at the Property are protective of human health and the environment based on its current and anticipated future use as a residential development, is based on a review of the following documents: *Remediation Plan*, dated March 2002; final *RADD*, dated June 24, 2002, and *Closure Report*, dated March 12, 2003 (collectively, the “Documentation”). Information concerning the current environmental conditions of the Property (i.e., concentrations of contaminants present and their associated risks) and risk management activities conducted to ensure protectiveness are summarized in the *Closure Report*. Copies of the Documentation may be obtained from EPA Region 6, ADEQ, or the University of Arkansas at the addresses provided in Enclosure 1 to this letter.

The “Remedy” implemented at the Gregg Site consisted of removal and off-site disposal of over 300 glass containers and contaminated soils. The excavated area was backfilled, regraded to match original site grades, and restored to greenspace. The Documentation demonstrates that residual concentrations of contaminants do not present an unacceptable risk to human health or the environment based on risk-based cleanup levels established by EPA and given the current and reasonably expected future residential use of the Property. As discussed in Enclosure 2, EPA and ADEQ have determined that the remediation of the Property has been performed to residential or more conservative standards, and that no additional institutional controls are necessary in order to ensure the long-term protectiveness of the Remedy. The area is currently zoned residential.

If conditions at the site change, including environmental conditions, land use, site receptors, and remedy performance, it will be necessary to revisit this determination of suitability for reuse to ensure its continuing protectiveness. The undersigned expressly reserves all rights and authorities to require future action by owners or operators if new or additional information comes to light that materially impacts this Ready for Reuse Determination, whether such information is known as of this date, or is discovered in the future.

Congratulations on this most noteworthy accomplishment!

Sincerely yours,

Marcus C. Devine  
Director  
Arkansas Department of Environmental Quality

Richard E. Greene  
Regional Administrator  
EPA Region 6

Enclosures

**ENCLOSURE 1**  
**AGENCY CONTACTS**

For copies of the Documentation referenced in the Ready for Reuse Determination, please contact:

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All media inquiries should be directed to the EPA Region 6 Office of External Affairs at (214) 665-2200, or the ADEQ Customer Service Division at (501) 682-0923.

## **ENCLOSURE 2**

### **INSTITUTIONAL CONTROLS**

EPA and ADEQ have determined that the cleanup of the Property has been successfully performed and meets the remedial objectives established in the *RADD*, dated June 24, 2002, and that no additional remedial activities are needed to be protective of human health. The remedial standards outlined in the *RADD* were: U.S. EPA Region 6 Human Health Screening Levels for residential exposure, groundwater protection criteria at a dilution attenuation factor (DAF) of 20, and site background concentrations for metals.

This determination is based on a review of the *Closure Report* for the Gregg Site (March 12, 2003) submitted by University of Arkansas, Fayetteville. Soil verification sampling from the area showed that several metals in soils were detected above soil screening levels, but were below concentrations that are naturally occurring in area soils. Metals in soils are generally not removed when they are present below naturally occurring concentrations. 1,1,2,2 tetrachloroethane was found in soils from one sample above the groundwater protection standard. However, after running a Synthetic Precipitation Leaching Procedure (SPLP) extraction, it was non-detectable in the extraction liquid. 1,1,2,2 tetrachloroethane was not detected in any groundwater samples collected from the site, which indicates that the concentration in the soil is protective of human health and the environment. Hence, no property use restrictions or institutional controls (e.g., a Deed Notice) are necessary.