THE COST OF IGNORANCE: Available Tools

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The following Article is based on comments given by Laura Malone at "Saving the Deal: Avoiding and Minimizing Environmental Liability in Corporate and Real Estate Transactions," a continuing legal education seminar. The information contained below is a summary of information available through the Arizona Department of Environmental Quality ("ADEQ") at http://www.azdeq.gov/ and from various ADEQ documents.

INTRODUCTION

Those of you in the environmental field back in 1970 may remember the passage of the National Environmental Policy Act ("NEPA").[1] Subsequent to NEPA, and later that same year, then President Richard Nixon signed an Executive Order creating the United States Environmental Protection Agency ("EPA"). Both NEPA and EPA were predicated on public concerns that, as a nation, we were not focusing on the environment or even had an understanding of how human activity could have an impact on the environment. The creation of EPA and subsequent legislation, such as the Clean Water Act ("CWA"),[2] Clean Air Act ("CAA"),[3] Resource Conservation and Recovery Act ("RCRA")[4] and Superfund,[5] to name just a few, started the environmental regulatory transformation.

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1. National Environmental Policy Act of 1969, 42 U.S.C. § 4321 (2012). NEPA established a United States national policy promoting the enhancement of the environment.

2. Clean Water Act, 33 U.S.C. § 1251 (2012). The CWA is the primary federal law in the United States governing water pollution. Passed in 1972, the Act established the goals of eliminating releases of high amounts of toxic substances into water, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983.

3. Clean Air Act, 42 U.S.C. § 7401 (2012). The CAA, which includes several pieces of legislation, was enacted and relates to the reduction of airborne contaminants, smog and air pollution in general.

4. Resource Conservation and Recovery Act, 42 U.S.C. § 6901 (2012). The RCRA, enacted in 1976, is the principal federal law in the United States governing the disposal of solid waste and hazardous waste.

5. Superfund is the common name for the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), a United States federal law designed to clean up sites contaminated with hazardous substances, as well as "pollutants or contaminants," which are defined more broadly. 42 U.S.C. § 9601 (2012).

Transformation might seem like an odd word to use to explain the start of environmental protection in this country, but it conveys where we were then, where we are now and where we are going in the future. Protecting the environment is one of the purest missions one could choose, yet we have to approach environmental protection differently than we did years ago. We have far more technical tools available to help drive the difficult decisions we make, while not stifling economic growth. As an example of this transformation, consider a property owner twenty years ago who was faced with cleaning up a site to background or non-detect levels without the ability to use site-specific cleanup levels, natural attenuation or alternative strategies.

The intent of this article is to get you thinking about options and tools available in case you find yourself associated with a contaminated property.

I. PRELIMINARY DECISIONS TO CONTEMPLATE

As with any decision, one needs to understand what the ultimate goal or desired outcome is. The same is true when you have a piece of contaminated property. Below are just some of the questions you should be asking yourself:

- Do I know enough about past uses of the property?
- Am I responsible for the contamination? If not, how do I protect myself?
- What will be the final use of the property? Will this be a residential or industrial property?
- What remediation standards are required to be met?
- Do I need an expedited review? What is my timeframe for completion?
- Will having development restrictions on the property effect its resale?
- What about existing permits? Do I need to transfer them? What are my liabilities?

The following information will help you understand the tools that are available to you.

II. TOOLS TO PROTECT YOURSELF – PROSPECTIVE PURCHASER AGREEMENT ("PPA")

Often times, we are faced with a contaminated property in which we had no role in contaminating. What tools are available to protect you in this circumstance? Proper due diligence is the cornerstone of self-preservation when it comes to property transactions. There are a variety of methods to conduct due diligence, including Phase I and Phase II Environmental Site Assessments and appropriate representations and/or warranties in the sale documents, just to name a few. One tool available in Arizona is the Prospective Purchaser Agreement, or PPA.[6]

In many cases, the threat of environmental liability and uncertainty associated with environmental contamination have discouraged redevelopment of former industrial sites. Arizona Revised Statutes section 49-285.01 authorizes the Arizona Department of Environmental Quality ("ADEQ") to enter into an agreement with a prospective purchaser of a facility, wherein ADEQ will provide a written release and covenant not to sue for existing contamination at the facility for potential Water Quality Assurance Revolving Fund ("WQARF")[7] liability and for potential owner liability to the State under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA").

In order to be eligible for a PPA, the following conditions must be met: (1) the property is within a WQARF registry site or ADEQ has been provided sufficient information to determine the extent of soil and/or groundwater contamination; (2) the purchaser did not cause or contribute to the contamination and is not affiliated with any person who may be responsible for the contamination; (3) the purchaser's use or development of the property will not exacerbate the contamination or interfere with ongoing remedial actions; and (4) the purchaser provides a substantial public benefit, which must be more than the mere continuation of a business on the property.[8]

Examples of substantial public benefits include: (1) substantial funding or other resources to perform or facilitate remedial measures at the property; (2) an agreement by the purchaser to perform substantial remedial measures at the property; (3) productive reuse of a vacant or abandoned industrial or commercial property; (4) development of property by a governmental entity or nonprofit organization to address an important public purpose; and (5)

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6. ARIZ. REV. STAT. ANN. § 49-285.01 (2013).
7. *Id.* § 49-282. WQARF is the state's version of CERCLA.
8. *Id.* § 49-285.01(A)(1)–(3).

creation of conservation or recreation areas. The mere continuation of business from the seller to the purchaser will not be considered a substantial public benefit.[9]

A complete application must be received by ADEQ before the sale of the property closes in order for the purchaser to be eligible for a PPA. If a person purchases the property without first submitting an application to ADEQ, then the person is not eligible for a PPA.

The decision to enter into a PPA is solely within ADEQ's discretion and is not an appealable agency action.[10] The release and covenant not to sue are not effective until the public benefit is realized and all other obligations under the PPA have been performed.

Fees for PPAs vary depending on whether the site is within a WQARF registry site or outside of the WQARF boundaries. ADEQ has received fee authority pursuant to Arizona Administrative Code section R18-7-301(C). Initial fees cover ADEQ's staff review time up to either thirty-four hours or fourty-nine hours, depending on the site location.[11] Additional fees beyond the initial fee are billed per hour.[12]

After a purchaser has provided the public benefit, has paid to ADEQ all fees and costs that are due, and has fully complied with the terms of the PPA, a purchaser may request that ADEQ agree to seek entry of a federal court-approved consent decree that includes contribution protection for matters covered by the PPA. If ADEQ agrees to seek entry of a consent decree, the purchaser must pay ADEQ an initial nonrefundable fee of $2000, which includes attorneys' fees, court costs, and other expenses incurred in connection with the consent decree, including the cost to prepare, execute and file the complaint, consent decree and other settlement documents; the cost of publishing notice of the settlement; and the cost of responding to any public comment. If ADEQ's consent decree costs exceed $2000, the purchaser must pay all additional costs.

III. REMEDIATION OPTIONS – AN UNDERSTANDING OF SOIL CLEANUP STANDARDS AVAILABLE TO YOU

Persons conducting remediation under Title 49 programs may be private citizens, businesses, school districts, financial institutions, state agencies, or

9. *Id.* § 49-285.01(A)(4)(a)–(e).

10. *Id.* § 41-1092.

11. If a property is within a WQARF registry site, the fee is $2500 (thirty-four hours). If the property is outside the WQARF boundary the fee is $3600 (forty-nine hours).

12. Hourly fees are billed at $73 per hour.

political subdivisions of the state (counties or municipalities).[13] Responsible parties are persons or entities required to conduct soil remediation under Arizona law. A volunteer is any person who is not required by state law to remediate contaminated property but wishes to do so voluntarily. Thus, a responsible party may include a person who owns contaminated property or who was responsible for the contamination of the property, and persons selling, buying, or developing contaminated property. While volunteers and responsible parties share similar motives for conducting remediation, responsible parties may be compelled to remediate as required by law and may be more concerned with liability associated with property they have contaminated.

Achieving cleanup standards that are based on the most recent scientific research will help reduce liability for damages associated with residual contamination that may remain on site post-active remediation. Further, any cleanup costs could be reflected in the purchase price of the property.

The most crucial cost determinant is typically the cleanup standard that is chosen by the entity conducting the remediation. Second is the type of remediation technology chosen.

The type of cleanup technology used will be decided by the person conducting remediation on a case-by-case basis, in conformance with specific program requirements. A combination of technologies may be necessary to achieve cleanup standards to which the site is subject.

For example, typical costs for a consultant to prepare a remedial design for a single site could range from $17,000 to $22,500, while a risk assessment could range from $18,000 to $24,000.[14] The cost will be higher for more complex sites.[15]

No specific cleanup standard is prescribed by the Soil Remediation Standards rule for a site,[16] although a site in residential use has fewer options. For a non-residential use site, the person conducting remediation may choose to remediate to one of five standards: pre-determined residential or non-residential, site-specific residential or non-residential (by performing a risk assessment), or background (naturally occurring)

13. ARIZ. REV. STAT. ANN. § 49-281 (2013).

14. 13 Ariz. Admin. Reg. 958 (Mar. 23, 2007).

15. Title 18, chapter 7, article 2 of the Arizona Administrative Code provides the basis for conducting remediation of soil in accordance with Arizona Revised Statutes sections 49-151 and -152, Arizona Revised Statutes section 33-434.01 and other applicable environmental statutes.

16. *See* ARIZ. REV. STAT. ANN. § 49-152 (2013); ARIZ. ADMIN. CODE § R18-7-203 (2012).

standard.[17] This allows persons conducting remediation to control remediation decisions while considering remediation cost and other factors. However, if a site is in residential use at the time of closure, the site must be remediated to either a residential standard (pre-determined or site-specific) or background standard.[18]

The remediation standards are based on principles accepted by the scientific community and EPA.[19] Uniform standards must apply to all entities, whether they are public or private; small or large businesses. The question of costs revolves around contamination in site-specific cases, and what it costs to remediate the contamination. ADEQ has provided alternatives for selecting remediation standards. This flexibility allows parties to choose the option that is most appropriate and cost effective for their individual purposes.

Definitions of background, residential use and non-residential use are as follows:

> Background: means a concentration of a naturally occurring contaminant in soils.[20]
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> Residential use: means those uses of remediated property where natural persons are reasonably expected to be in frequent, repeated contact with soil.[21]
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> Non-residential use: means those uses of property other than residential uses.[22]

Further explanation of residential and non-residential use is provided below:

> Residential: This is typically a location where someone is present for an average of more than eight hours a day. It includes, but is not limited to, schools, dwellings, residences, hospitals, child care centers, nursing homes, correctional facilities, and any other human activity areas of repeated, frequent use and/or chronic duration.
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> Non-residential: This is typically a location where someone is on-site an average of eight hours a day, i.e., a typical work day. It includes, but is not limited to, all types of commercial and industrial operations, such as

17. ARIZ. ADMIN. CODE § R18-7-203 (2012).
18. *Id.* § R18-7-206(C).
19. *See id.* § R18-7-206(B).
20. *Id.* § R18-7-201.
21. ARIZ. REV. STAT. ANN. § 49-151 (2013).
22. *Id.*

gas stations, dry cleaners, airports, marinas, municipal and military motor pools, trucking maintenance and refueling terminals, and commercial agricultural operations. This non-residential category may further be refined into commercial or industrial uses. These are locations where employees work but do not reside on a continuing basis. Hotels, motels and other transient activities are included in the non-residential definition, rather than as residential.

IV. COSTS AND BENEFITS

These rules are expected to better protect public health and the environment. Although achieving cleanup standards cannot eliminate all risk for adverse health effects, it can help reduce risks by reducing exposure to contaminants. Because these rules reduce the uncertainty associated with estimating risk and provide more scientifically defensible screening levels, remediation efforts can be more effectively focused at sites that have the greatest potential to adversely affect human health and the environment.

Exposure to some contaminants can lead to adverse health effects, especially to those who live and work in the vicinity of contaminated sites. Depending on the properties of the contaminants, adverse health effects can range from minor symptoms, such as headaches, nausea, eye irritations and dizziness, to more severe health conditions that could be irreversible, debilitating and even life threatening (e.g., neurological disorders, learning disabilities, developmental delays, kidney and liver damage, cancer and reproductive disorders). Potential health effects could include aggravation of existing ailments, chronic and acute health disorders and premature death.

Adverse impacts arising from exposure to contaminated soils may be evidenced by school absences, work loss days, aggravated asthma, increased emergency room visits and hospital admissions, acute respiratory symptoms, chronic bronchitis, decreased organ function and other health effects. The potential health benefits that could accrue to the public by reducing risk to exposure to contaminants is substantial.

Although remediation to a risk level of 10^{-6} is ten times more protective than to a risk level of 10^{-5}, actual reduction in the manifestation of health problems depends on the number of persons exposed, the duration and means of exposure, and the concentrations of contaminants at a site. It is difficult to assign monetary value to many of the benefits of remediating to applicable standards, such as reduced incidence of disease, reduced liabilities, and improved quality of life.

The soil remediation standards are expected to provide greater protection to sensitive populations, such as pregnant women, infants, children, elderly, and persons with preexisting diseases, congenital defects, and impaired nutritional state. In order to be more protective of our sensitive child populations, ADEQ has incorporated a 10^{-6} risk level for schools where children are reasonably expected to be in frequent and repeated contact with contaminated soil.[23]

V. AN EXPEDITED APPROACH – VOLUNTARY REMEDIATION PROGRAM ("VRP")

The Voluntary Remediation Program ("VRP") allows interested parties to work cooperatively with ADEQ to remediate contaminated sites.[24] The main goal of the VRP program is to ensure that properties are remediated to an appropriate standard in a cost effective manner so that the property may be returned to productive use. VRP uses numerous tools to accomplish this objective, including working cooperatively with other ADEQ programs to provide the interested party one point of contact for their remediation, establishing remediation goals that reduce the risk to public health, and expedited turnaround times. VRP statutes[25] include a community involvement component to ensure that the public has an opportunity to comment on actions being taken.

A. VRP Process

Most sites are eligible for VRP. A site is not eligible if it is located within a WQARF registry site boundary and the applicant has proposed to address the same contaminants of concern being addressed under WQARF.[26] Additionally, any site where remedial action is required pursuant to a written agreement (e.g., judicial judgment, decree, or

23. *See Waste Programs Division: Cleanups: Site Assessment*, ARIZ. DEP'T OF ENVTL. QUALITY, http://www.azdeq.gov/environ/waste/cleanup/site.html#level (last visited Apr. 9, 2014).

24. *Waste Programs Division: Cleanups: Voluntary Remediation Program*, ARIZ. DEP'T OF ENVTL. QUALITY, http://www.azdeq.gov/environ/waste/cleanup/vol.html (last visited Apr. 9, 2014).

25. VRP regulations and processes can be found under title 49, sections 171 to 188 of the Arizona Revised Statutes.

26. ARIZ. REV. STAT. ANN. § 49-172(B)(1)–(2) (2013).

administrative order) between the applicant and the Director is not eligible.[27] RCRA permitted/interim status facilities and federal sites are not eligible.[28]

VRP works cooperatively with other ADEQ divisions if they recommend a site enter VRP to provide a "one-stop shop" for meeting other applicable regulations. Once a site has been accepted into VRP, a work plan may be submitted for review and approval. Once approved, the applicant can proceed with investigation and/or remediation according to the approved work plan.

Work plan modifications should be submitted to VRP. Interested parties can submit pertinent documents for review after remedial activities are completed, although VRP encourages interested parties to work cooperatively throughout the process.

When the remedial goals have been met, and the community involvement requirements completed, the applicant may submit a request for determination of no further action ("NFA").[29] This request has seven required elements.[30]

1. Description of contaminants
2. Description of remedial actions
3. Remedial or treatment systems used
4. Institutional or engineering controls placed on site
5. Any post-remediation monitoring and description
6. Community involvement activities
7. A list of permits obtained under Arizona Revised Statutes title 49 for remedial action or held by the applicant of the site.

A conditional NFA is issued at a site where remediation levels have been met through the use of institutional controls or engineering controls, but post-remediation care obligations such as monitoring or maintenance of engineering controls must be met.[31] The Department reviews and, if appropriate, grants the NFA determination for the site or portion of the site.

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27. *Id.* § 49-172(B)(3).
28. *Id.* § 49-172(B)(5).
29. *Id.* § 49-181(A).
30. *Id.* § 49-181(A)(1)–(7).
31. *Id.* § 49-181(D).

B. VRP Fee Information

A non-refundable application fee of $2000, which accompanies the application, is used by the program to perform research and inquiries within ADEQ to determine eligibility of the site to enter the program.[32] If the site is accepted, any amount of the $2000 remaining is applied to the site account and used by the program to cover document review costs before any other deposits are used.

Upon acceptance into the program, an initial deposit invoice in the amount of $4000 will be issued and must be paid prior to any review work being performed by program personnel.[33] If at any time during the duration of work on the site, the site account balance falls below $1000, ADEQ will issue another $4000 invoice due and payable thirty days from the issuance of the invoice. VRP invoices are only issued in $4000 increments; however, the volunteer has the option to submit payments in excess of $4000 to maintain a positive account balance or in anticipation of a large volume of activity. Time spent on the project by program personnel is billed at $110 per hour in six minute increments. [34]

Upon successful completion of work at the site, or if the site either withdraws or is terminated, a final invoice request will be prepared and issued. This is full account reconciliation.

A volunteer may withdraw from the program at any time.[35] ADEQ also reserves the right to terminate a volunteer for submitting false or misrepresenting information or for failure to do any of the following:

- Submit a work plan or report in a reasonable time period
- Comply with work plan/work plan modification requirements
- Maintain communication with VRP project manager for extended period of time
- Substantially comply with approved schedule for completion
- Reimburse VRP for its costs

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32. *Id.* § 49-179(A) (2013); ARIZ. ADMIN. CODE § R18-7-502 (2012).

33. ARIZ. REV. STAT. ANN. § 49-179(C) (2013); ARIZ. ADMIN. CODE §§ R18-7-503 to -504 (2012).

34. ARIZ. ADMIN. CODE §§ R18-7-504 to -505 (2012).

35. ARIZ. REV. STAT. ANN. § 49-178 (2013).

VRP may refer a site to the appropriate regulatory program upon withdrawal, termination and/or failure to include a known environmental issue into the scope of work. Of course, ADEQ would prefer not to terminate or have volunteers withdraw from the program and we will make every attempt to understand the situation and work to resolve issues.

VI. NOTIFICATION OF AN ENVIRONMENTAL ISSUE – DECLARATION OF ENVIRONMENTAL USE RESTRICTION

A Declaration of Environmental Use Restriction ("DEUR")[36] is a restrictive covenant designed to document the use of institutional and/or engineering control(s) in order to allow closure of a site with contamination above a residential remediation level and ensure the appropriate future use of the subject site. The DEUR ensures that current and future property owners are aware of contamination on a site and take the appropriate actions to prevent unacceptable exposure to the remaining contamination. All land use restrictions, provisions and engineering controls defined in the DEUR must be approved by ADEQ. Upon ADEQ's approval, the property owner records the DEUR with the appropriate county recorder's office. The DEUR remains in effect and is monitored by ADEQ until the property owner demonstrates that releasing the DEUR is appropriate. Property owners seeking a NFA determination from ADEQ should be aware that a conditional NFA will be issued if a DEUR has been used.

Once recorded, the DEUR runs with and burdens the land and allows ADEQ to take actions necessary to ensure that the institutional and/or engineering controls are adequately maintained throughout the life of the DEUR. Once a DEUR is in place, the current property owner is responsible for maintaining the terms of the DEUR. ADEQ may visit the property and conduct inspections to ensure compliance with the terms of the DEUR.

The program providing the oversight of the remediation process will determine if the site conditions meet the requirements of a DEUR placement. The program will provide the property owner with the DEUR application, which must be completed and returned to ADEQ. ADEQ develops a site-specific DEUR based on the conditions of the site and information contained in the application. In addition to the application, ADEQ requires the following:

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36. ARIZ. REV. STAT. ANN. §§ 49-152, 49-158, 49-159 (2013); ARIZ. ADMIN. CODE §§ R18-7-601 to -606 (2012).

- A certified copy of the deed
- Vicinity map illustrating the property's general location
- A legal description of the restricted area(s) as determined from a survey conducted by an Arizona licensed surveyor
- A map of the restricted area(s) created from the dimensions and bearings obtained from the survey
- A contaminant information page citing the contaminant(s) of concern and their respective concentration(s)
- If the DEUR used an engineering control, an engineering control plan and a proposed form of financial assurance document

Similar to other risk-based closure tools, the DEUR allows a property to be closed with contamination still present. Through the risk evaluation process, a predetermined or site-specific cleanup level can be identified and used to allow closure, while still eliminating unacceptable exposure. The DEUR is the administrative tool used to document the closure requirements and maintain notice of those requirements for the entire time that contamination is still present at a site. Use of this tool often allows properties to safely close in a shorter time frame and at less expense than a full-scale cleanup, allowing the property to be redeveloped, sold, or otherwise put to productive use earlier.

The DEUR is perpetual unless formally released by ADEQ.[37] ADEQ will determine that a release of the DEUR is appropriate if the area of the property subject to the DEUR has been remediated to meet the requirement of Arizona Revised Statutes sections 49-152(D) and 49-158(L). In addition, pursuant to Arizona Administrative Code sections R18-7-605 and -606, property owners must pay a fee to cover ADEQ's administrative costs for processing the DEUR release or modification.

Property owners that elect to use institutional controls (land use restrictions) are required by statute to submit to ADEQ a written report once each calendar year regarding the status of the institutional control. ADEQ has established September 1 as the annual reporting deadline. ADEQ will provide a site-specific annual report form to responsible property owners of record prior to the reporting deadline. Property owners will be required to report as to the status of the institutional control and return the completed

37. ARIZ. REV. STAT. ANN. § 49-152(D) (2013).

form to ADEQ by the reporting deadline. ADEQ will review all annual reports for completeness and will periodically conduct site visits to ensure that the institutional control and DEUR provisions are being adequately maintained.

Property owners that elect to use engineering controls shall maintain the controls in accordance with the respective Engineering Control Plan ("ECP"). Pursuant to statute, all engineering controls shall be inspected at least once each calendar year and an inspection report must be submitted to ADEQ within thirty days following the inspection.[38] In addition, property owners are required to maintain an amount of financial assurance as calculated in the ECP, which covers the costs of maintaining the controls and implementing a contingency plan in the event that controls fail.[39]

Property owners electing to use an institutional or engineering control to satisfy the requirements of Arizona Revised Statutes sections 49-152 or 49-158 must pay a fee to ADEQ. The fee shall be calculated pursuant to Arizona Administrative Code sections R18-7-601 through -606. All fees are non-refundable and are due at the time the DEUR is submitted to ADEQ for review and approval.

VII. PERMITTING ISSUES – ADEQ'S APPROACH

Many property purchases include the necessity to transfer certain environmental permits to the new owner. Examples may include Title V air quality, landfill, or aquifer protection permits. It is important to contact ADEQ to discuss the process for transferring or closing out permits if no longer needed. These issues should be considered before finalizing purchase of any property and in conjunction with legal counsel.

ADEQ often encounters situations in which ownership changes for properties with existing permit violations or corrective actions occur. What does this mean to you as a prospective or new owner? As mentioned above, it is important to talk with ADEQ about the specifics of any situation in which ownership changes are being contemplated for a contaminated property. ADEQ would prefer not to initiate additional enforcement against a new owner, unless permit violations persist or new violations are discovered which are a direct result of activities performed by the new owner/operator.

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38. *Id.* § 49-152(K).
39. *Id.* § 49-152.01.

VIII. A GRANT APPROACH – BROWNFIELDS ASSISTANCE PROGRAM

A Brownfield is a formerly used property where redevelopment or reuse is complicated due to the actual or perceived presence of some kind of environmental contamination. This definition is consistent with EPA's definition for Brownfields.[40]

Brownfield properties can create several problems in our communities, including being an eyesore, and many times they attract vandalism and graffiti. Depending on the type of contamination, they can create a public health risk and/or environmental risks. Brownfield properties tend to lower property values and decrease tax revenue. Many of them can be fire traps or have other structural dangers on them.

To meet the definition of a Brownfield property, there should be a suspicion of some kind of past use(s) of the property that indicates possible contamination. Examples include: vacant lots, landfills or dump sites, abandoned manufacturing facilities, old gas stations, mine-scarred land, auto repair shops, old historical buildings, etc.

The Brownfields Assistance Program is funded by the EPA State Response Grant ("SRG"). ADEQ has regularly been awarded this grant since 2003. The program not only funds Phase I and II Environmental Site Assessments ("ESAs"), but it can also conduct the project management and fund some cleanups as well. Information obtained from the Phase I and II reports helps the applicant to better understand the extent of contamination and move towards obtaining estimates for remedial activities.

Grants under the SRG are available to cities, towns, counties and non-profit organizations that own that subject property. Opportunities for private businesses to become involved in Brownfields exist under a Community-Wide Assessment Grant, in which the municipality can provide sub-grants to private entities.

Applicants cannot be the party responsible for the contamination and there must be some kind of redevelopment plan that provides a community-wide benefit. If a site is located within a WQARF Registry or Superfund site, it will not be eligible for Brownfield Assistance Program monies.

Benefits of the Brownfield Assistance Program include:

- Reduced environmental hazards – Protecting human health and the environment are the number one priority for addressing brownfields issues.

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40. Brownfields Revitalization and Environmental Restoration Act § 211, 42 U.S.C. § 9601 (2012).

- Creation of new business opportunities – New businesses for cities can create jobs, increase tax revenues and revitalize communities.
- Increased tax revenue – Cities need tax revenues to grow and build better services for the community.
- Restoring blighted areas to productive use – Use of existing infrastructure and transportation resources save cities money. It also discourages crime and encourages pride in the community.

CONCLUSION

Purchasing a potentially contaminated property involves a number of important steps and considerations. Understanding the history of the subject property is one of the most important steps you can take to protect yourself. Due diligence is the key. While conducting the research necessary to protect yourself may add to your initial upfront costs and may delay the sale, not completing this critical step could cost you a great deal more in the long run. There are a number of tools available to you for addressing a contaminated site. From executing a Prospective Purchaser Agreement and helping you understand remediation requirements to providing an expedited review of your remedial activities, ADEQ should be seen as a critical partner to you as you acquire property in Arizona.

APPENDIX A – HOW ARE CLEANUP STANDARDS DETERMINED?

Determining which remediation soil standard to use for a contaminant at a site can impact total project costs for investigation and remediation. The following gives some explanation as to how standards are determined for a specific site:

Background Standards:

As with any contaminant (e.g., metals, such as arsenic) that is naturally occurring but is also subject to regulation when a release to the environment has occurred, site-specific background may be evaluated if concentrations exceed pre-determined residential or non-residential soil remediation levels. To determine background concentration for a contaminant a person must use all of the following factors:

1. Site-specific historical information concerning land use;
2. Site-specific sampling of soils unaffected by a release but having characteristics similar to those of the soils affected by the release; and
3. Statistical analysis of background concentrations using the ninety-fifth percentile upper confidence limit.

Pre-determined Residential and Non-residential Soil Remedial Levels (SRLs):

Pre-determined standards for carcinogenic contaminants are based on excess lifetime cancer risk. The residential standards for direct and indirect soil contact is based on the risk-based contaminant concentration for a thirty-year, time-weighted average residential exposure for adults and children. The non-residential standards account for only adult receptors in a commercial-industrial worker setting. The non-residential, pre-determined standards for soil exposures are based on a twenty-five year exposure scenario. Pre-determined standards (residential and non-residential levels) are listed in Appendix A of title 18, chapter 7, article 2 of the Arizona Administrative Code.

The pre-determined SRLs include additional consideration for cleanup of contaminants that are carcinogenic at schools and child care facilities where children are reasonably expected to be in frequent and repeated contact with the contaminated soil. This target risk was set at 1 in 1,000,000 (or 1×10^{-6}) excess lifetime cancer risk level when sufficient evidence supports

classification of the chemical as a known human carcinogen. All other carcinogens with less adequate weight of evidence were assigned a target risk of 1 in 100,000 (or 1×10^{-5}). Residential and Non-Residential SRLs can be found at the following link http://www.azsos.gov/public_services/Title_18/18-07.htm. The SRL rule shows residential SRLS at both excess lifetime cancer risk levels, and the known human carcinogen in bold. For instance, a A residential property may clean up carcinogens present in soil to the SRL noted in the 1×10^{-5} risk column, except if the carcinogen appears in bold in Appendix A of the SRL rule at which time the SRL in the 1×10^{-6} risk column must be used for this particular chemical. If conditions at this residential site are such that a child care facility or school is intended for development, regardless of the respective concentrations, all carcinogens must be cleaned up to the SRL listed in the 1×10^{-6} risk column.

Definitions for some of the terms mentioned above are as follows:

1. "Soil Remediation Level" means a pre-determined, risk-based standard based upon the total contaminant concentration in soil, developed pursuant to Arizona Revised Statutes section 49-152(A)(1).
2. "Excess lifetime cancer risk ("ELCR")" means the increased risk of developing cancer above the background cancer occurrence levels due to exposure to contaminants.[41]
3. "Carcinogen" or "carcinogenic" means the potential of a contaminant to cause cancer in humans as determined by lines of evidence in accordance with a narrative classification in the EPA's March 2005 document "Guidelines for Carcinogen Risk Assessment."[42]
4. "Non-carcinogen" means a contaminant that has the potential upon exposure to an individual to cause adverse health effects other than cancer.[43]

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41. ARIZ. ADMIN. CODE § R18-7-201 (2012); *see also* Charles F. Mills III, *Global RCBA: Its Implementation, Foundation in Risk-Based Theory, and Implications*, 22 J. LAND USE & ENVTL. L. 101, 113–14 (2006).

42. U.S. ENVTL. PROT. AGENCY, GUIDELINES FOR CARCINOGEN RISK ASSESSMENT 1 (2005), *available at* http://www.epa.gov/ttn/atw/cancer_guidelines_final_3-25-05.pdf.

43. *Id.*

Site-specific Residential and Non-residential Soil Remediation Levels ("SRLs"):

As with pre-determined standards, site-specific standards are based on excess lifetime cancer risk. The residential standards for direct and indirect soil contact are based on the risk-based contaminant concentration for a thirty-year, time-weighted average residential exposure for adults and children. The non-residential standards account for only adult receptors in a commercial-industrial worker setting. The non-residential, pre-determined standards for soil exposures are based on a twenty-five year exposure scenario.

Conducting a site specific risk assessment offers the prospect of an assessment that reflects the more realistic assessment based on site-specific data. Because the assumptions of the pre-determined standards are generically applied to all sites, it does not necessarily represent actual site conditions. A site-specific risk assessment can allow for cleanup of contaminants at concentrations different from the pre-determined (generic) SRL. For example, the pre-determined residential SRL for tetrachloroethylene ("PCE") is 0.51 mg/kg for the 10^{-6} risk level (and 5.1 mg/kg for the 10^{-5} risk level). For that same chemical, a site specific risk assessment may indicate that the site-specific residential SRL is 8 mg/kg for the 10^{-6} risk level.

Site-specific risk assessments allow for the incorporation of alternate land use where justified when assessing exposure. It also allows for exposure point contaminant concentration refinements, the use of institutional or engineering controls to eliminate exposure pathways or reduce exposures, and site-specific parameters such as site measured soil properties to be used in risk assessment equations.

Definitions for some of the terms mentioned above are as follows:

1. "Non-residential site-specific remediation level" means a level of contaminants remaining in soil after remediation that results in a cumulative excess lifetime cancer risk between 1×10^{-6} and 1×10^{-4} and a Hazard Index no greater than 1 based on non-residential exposure assumptions.[44]
2. "Residential site-specific remediation level" means a level of contaminants remaining in the soil after remediation that results in a cumulative excess lifetime cancer risk between 1×10^{-6} and 1

44. ARIZ. ADMIN. CODE § R18-7-201 (2012).

x 10^{-4} and a Hazard Index no greater than 1 based on residential exposure assumptions.[45]

3. "Hazard Index" means the sum of hazard quotients for multiple substances and/or multiple exposure pathways, or the sum of hazard quotients for chemicals acting by a similar mechanism and/or having the same target organ.[46]

4. "Hazard Quotient" means the value that quantifies non-carcinogenic risk for one chemical for one receptor population for one exposure pathway over a specified exposure period. The hazard quotient is equal to the ratio of a chemical-specific intake to the reference dose.[47]

45. *Id.*
46. *Id.*
47. *Id.*

APPENDIX B – ARIZONA BROWNFIELDS SUCCESS STORIES

TEMPE MARKETPLACE

This Brownfield cleanup in Tempe was the largest in Arizona history, consisting of 117 acres that was turned into a sparkling shopping and entertainment district now known as Tempe Marketplace. The cleanup project began in 2004 with contamination that included 3 large unregulated dumps, 11,000 cubic yards of lead-contaminated soil, 130 septic tanks and leach pits, 42 drums of hazardous waste, and 260,000 tons of buried construction and household debris. ADEQ partnered with the City of Tempe and others to clean up this public health and environmental high-risk area and redevelop it into a successful open-air shopping and entertainment destination.

CITY OF WINSLOW – STANDIN' ON THE CORNER PARK

The ADEQ Brownfields Assistance Program helped the City of Winslow in Navajo County to assess environmental contamination and provide funds to clean up the "Standin' on the Corner" monument project. Significant restrictions were imposed at the monument after a fire gutted the adjacent former J.C. Penney/Rasco Building in October 2004. The mural, on an exterior wall of the building, is an integral part of the monument, but fire damage rendered the wall unstable, making the park unsafe for visitors. Concerns about potential asbestos and other contamination in the charred rubble prevented efforts to remove the debris and restricted access to the monument. A Phase I Environmental Site Assessment ("ESA") for this project was completed in January 2006. The Phase II ESA was completed in June 2006, which established Winslow's need for cleanup funds. The Phase II site assessment confirmed the presence of asbestos, as well as small quantities of total petroleum hydrocarbons and metals in the soil. During the cleanup, they were able to preserve the famous storefront mural that identifies it as the Standin' on the Corner Park and stabilize the wall. The park reopened in 2008, and the monument's tourist traffic has been of great economic benefit to the community.

CITY OF FLAGSTAFF – PHOENIX AVENUE BUS TRANSIT STATION

This parcel in downtown Flagstaff comprised a vacant lot, a parking lot and a warehouse where railroad activities previously took place. During the

Phase I ESA funded by the Brownfields Program, a possibility of hazardous waste contamination due to the parcel's historical use was identified. The Brownfields Program funded a Phase II site assessment in 2008 to determine the levels and locations of contamination. The Phase II site assessment identified a small amount of contamination in the form of polyaromatic hydrocarbons from previous railroad activities. The city received a $100,000 federal cleanup grant from EPA, and the cleanup activities were completed. The warehouse has been turned into a homeless shelter, and a city bus transit station was built. Planned future uses also include work with the Army Corps of Engineers on the Rio de Flag flood control realignment project. The redevelopment of this site has greatly benefited the community by removing blight and cleaning up the environment, while addressing local transit needs and serving the homeless population.