

Repositioning Brownfield Property

Primer in Finding, Remediating, and Repositioning Properties with Environmental Liabilities

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Introduction

In taking on the development of a property that has been contaminated with potentially harmful chemicals, a site with environmental liability, or what can be generically called a Brownfield site – any developer has the same objective:

To reposition the property in the appropriate real estate market so that it can be sold and/or redeveloped while controlling cleanup costs and improving socioeconomic health.^[i]

How a site's current environmental condition as well as its future use can iteratively play a significant part in the eventual outcome of the disposition of the property. Nevertheless, there are some common criteria that can be applied to cleanup and redevelopment. Following is a discussion to help identify the physical, market and environmental conditions that affect the use, layout and feasibility of redeveloping a specific site to its highest and best use.

An examination of these issues is important because it is estimated that there are over 1,500 possible brownfields sites within Oklahoma City metropolitan area. Oklahoma City's 19 square mile federally designated Empowerment Zone is estimated to contain 100 brownfields sites. "Within the Empowerment Zone, three neighborhoods have been a focus of the city's brownfields program: the Eastside Reinvestment Area, the Core to Shore Planning Area, and an eight-mile stretch of the Oklahoma River. The history of the target communities includes oil and gas exploration, scrap metal facilities, and chemical companies. Contamination from these activities has made much of the groundwater unusable."^[ii]

This paper is directed to both smaller property owners and real estate licensees and primarily deals with historic contamination, rather than current contamination. As a property owner (either current or potential) in a potentially contaminated area, you need to understand how you may be impacted by environmental considerations. As real estate licensee, you need to understand the significance of brownfields regulations and contingent liabilities to you may properly advise your clients.

For the purposes of discussion, we assume that the prospective property owner (developer) was not a contributor to any environmental hazards that may currently be found on a property. When determining the impact of environmental liability on a property, there are three classes of primary stakeholders:

- Current & Previous landowners and users (tenants) which may have joint and several liability for the consequences of environmental contamination
- Adjacent landowners which may be inadvertently and adversely impacted by a natural migration of hazardous chemicals (both air and groundwater) from the property that is the source of the pollution
- Government agencies that promote the public good in at least two areas:
 - Environmental Protection
 - Economic Development

The maze of laws surrounding the concept of Brownfields have an effect on how these classes interact with each other with respect to environmental liabilities and these liabilities will impact how a property is used for future development.

The Context

According to the National Conference of State Legislatures, there are three main obstacles to brownfields cleanup and redevelopment:^[iii]

1. Liability concerns of prospective property owners and developers –, every past and present owner of a contaminated property (and future owners under some circumstances) are held fully responsible for all cleanup costs, regardless of fault
2. Insufficient financial incentives to make the necessary cleanup and redevelopment investments – depending on the extent of cleanup required, the property may have a negative net worth without government assistance
3. Lack of specific requirements--institutional controls--that ensure sites are cleaned up to different degrees based on future use.

Definitions:

To establish the foundation for discussion, a few definitions need to be established. We will then discuss one of the overlooked but potentially ruinous problems, contingent liability from pollution from adjacent properties.

Brownfield is a concept that has both a legal definition and a slightly different popular definition. In the common vernacular, Brownfield is defined in Wikipedia as “abandoned or under-used industrial and commercial facilities available for re-use. Expansion or redevelopment of such a facility may be complicated by real or perceived environmental contaminations”

Brownfield land is defined by the U.S. EPA as “a real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.”^[iv] In a broader definition, brownfields properties can be defined as abandoned, idled, or underutilized residential, industrial, and commercial lands or buildings in already developed urban or suburban areas, where expansion or redevelopment is complicated by real or perceived contamination or intangible factors related to the site’s location that can add cost, time, or uncertainty to the redevelopment.

Superfund Sites are defined by the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (or CERCLA^[v]) as posing sufficient danger to public health and/or the environment to demand in-depth site investigation, remediation, restoration and inclusion in a list of “national priority” sites (NPL). Initially there were 400 NPL sites that were designated. Over time other sites have been added to the NPL and the list has grown to over 1,200 properties. It is common for contamination from superfund sites to have spread off-site into surfaces and through aquifers, or gases have spread through the soil,

which means that development of surrounding properties are problematic, and may be subject to unanticipated and consequential damages.

Remediation – *the process of converting a Brownfield property to Greenfield Status*; is usually defined as the removal of pollution or contaminants from environmental media such as soil, groundwater, sediment, or surface water for the general protection of human health and the environment or from site intended for redevelopment. Remediation is generally subject to an array of state and federal regulatory requirements. The level of remediation required for redevelopment will depend, in part, on the intended future use of the property.

Risk-Based Remediation Plan – a site specific, ODEQ approved remediation program used in an approved Oklahoma Voluntary Cleanup Program for brownfields

Certificate of Completion is a document issued by the Oklahoma Department of Environmental Quality upon a determination that the property owner (or applicant) has successfully completed approved risk-based remediation of the property. Part of the remediation program may include future restrictions on the use of the property, continuous monitoring, or other requirements; conditions may be described by a “Consent Order”.

Consent Order means an order entered into by the Oklahoma Department of Environmental Quality and an applicant, binding an applicant and the Department to specified authorizations, activities, duties, obligations, responsibilities and other requirements

Certificate of No Action Necessary is a document issued by the Oklahoma Department of Environmental Quality upon a determination that no remediation is deemed necessary for the expansion or redevelopment of the property for a planned use

Land use Disclosure is the Certificate of Completion or the Certificate of No Action Necessary, issued by the Department of Environmental Quality, which is required to be filed in the office of the county clerk of the county wherein the site is situated.

Failure to record the land use disclosure with the county clerk and submit the official copy to the Department as required by this section shall render the Certificate of Completion or Certificate of No Action Necessary voidable.

Whoever knowingly converts, develops or uses a brownfield site in violation of an authorized use as specified in the land use disclosure shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punishable by a fine of not more than One Thousand Dollars (\$1,000.00), imprisonment in the county jail for not more than one (1) year, or both such fine and

imprisonment. Each day such violation continues shall be considered a separate offense. (OS 27A § 2-15-107)

Friable Asbestos Material means any material that contains asbestos of one percent (1%) or more that can be crumbled, pulverized or reduced to powder by hand pressure; (OS 40 § 451.1)

Asbestos "Contractor" means any public or private entity that engages in friable asbestos containing material abatement in any facility in this state except private residences or apartment houses of less than six family units; (OS 40 § 451.5)

Greyfield land is used to describe economically obsolescent, outdated, failing, moribund and/or underutilized real estate assets or land. While the vast majority of these obsolete facilities can be reused without problems, one should still conduct a due diligence review of contamination, structural, other physical and legal constraints before proceeding with redevelopment. (Wikipedia)

Greenfield Land is usually used to describe semirural property, typically either used for agriculture or left to nature, which may be considered as a site for expanding urban development. In an urban area, it can be unfenced open fields or urban lots, or restricted, closed property kept off limits to the general public by a private or governmental entity (Wikipedia)

Greenfield status is used to describe an end point wherein a parcel of land that had been in commercial or industrial use is restored to the conditions existing before the construction of the facility. The land on which the facility sat may have been polluted through the course of business and remediation is therefore required to bring the land to Greenfield Status before redevelopment can begin. (Wikipedia)
Also, the endpoint point where contaminated property is restored to a point that traditional development can progress.

Green Building is used to describe a building that has been constructed to use reduced levels of energy and other natural resources and reduces the impact of the building on the environment through the building's lifecycle through improved design, construction, operation maintenance and removal. Both the Building Owners and Managers Association (BOMA) through its licensing of the Green Building Initiative's *Green Globes*^[vi] program and U.S. Green Building Council (USGBC) through its *The Leadership in Energy and Environmental Design (LEED)*^[vii] Green Building Rating System have developed a suite of standards to measure a building's environmentally sustainable construction, as well as its operation and maintenance, by measuring how well the building:

- efficiently uses energy, water, and other resources
- protects occupant health and improve productivity
- reduces waste, pollution and environmental degradation

Contingent Liability

One of the things that will scare investors away from any investment is contingent liability – the fear of liability, especially a fear of things that are not known. There are two separate but related sources of contingent liability, one generated from Federal CERCLA legislation (the source of what is sometimes called Superfund Liability), and the other generated from Oklahoma nuisance statutes. Contingent liability can also be the result of “what is not known” by a property owner that does not perform adequate due diligence before purchasing a property, typically one that fails to perform an All Appropriate Inquiry or Phase I Environmental Assessment.

CERCLA Related Contingent Liability

In this case, the contingent liability is from the cost of cleaning up pollution on properties -- contamination that may not have been known at time of purchase. This concept of contingent liability for the reason that “we should know what we don’t know” came about as a result of CERCLA federal legislation in 1980 that established the Superfund. According to the National Association of State Legislatures: ^[viii]

Congress enacted the strict, joint and several liability provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund) to stop the discharge of hazardous pollutants into the environment. Under that law, every past and present owner of a contaminated property is held fully responsible for all cleanup costs, regardless of fault. Superfund liability provisions also applied to brownfields owners and developers, making them subject to liability even if they did not cause the pollution. This policy raised barriers to brownfields redevelopment since businesses were unwilling to invest in redeveloping sites that could result in later federal enforcement actions and additional cleanup costs and responsibilities.

In an effort to eliminate federal Superfund liability for brownfields owners and developers and spur site cleanup and redevelopment, the Small Business Liability Relief and Brownfields Revitalization Act signed in January 2002 gives liability protection to bona fide prospective purchasers, contiguous property owners and innocent landowners seeking to redevelop brownfields. These owners have to prove they had no responsibility for contributing to the contamination of the property and no knowledge of the contamination prior to acquiring the property.

The prospective purchaser of property must proactively prove that they had no knowledge of potential pollution on the property before it is purchased in order to benefit from the innocent landowner’s defense and limit their exposure from contingent pollution liability. At this time, the only way to accomplish this proactively is to perform what is commonly called a *All Appropriate Enquiries (AAI) assessment* before the property is purchased (title is transferred).

Landowners, including purchasing landowners are jointly and severally liable for the cost of remediating a property's contamination. Other liable parties can also be sued to pay "any other necessary costs" In the 2007 decision the *United States vs. Atlantic Research Corporation*, the US Supreme Court unanimously ruled that landowners conducting voluntary cleanups "have a federal cause of action under CERCLA... to recover cleanup costs from those who caused or contributed to the contamination"^{ix} and owners conducting voluntary cleanups have the right to recover their cleanup costs from those who caused or contributed to the contamination in Federal Court

Oklahoma Nuisance Statute Related Contingent Liability

The foundation of much of Oklahoma's pollution laws are based on the concept of Public Nuisance. Oklahoma statutes define Nuisance in two sections, the general section (title 50) and as it specifically related to the environment (Title 27A). For example, pollution is specifically classified as a public nuisance:

It shall be unlawful for any person to cause pollution of any waters of the state or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any air, land or waters of the state. Any such action is hereby declared to be a public nuisance. (OS 27A § 2.6.105.A)

The statute further allows the ODEQ to regulate pollution in Oklahoma by allowing it's Executive Director to issue orders to cease the polluting activities within a reasonable time or requiring treatment to prevent further pollution. (OS 27A § 2.6.105.B)

The Nuisance section of Oklahoma Statutes (<http://law.justia.com/oklahoma/codes/os50.html>) further defines a nuisance as either doing an act or omitting to perform a duty that either (OS 50 § 501):

1. Annoys, injures or endangers the comfort, response, health, or safety of others; or
2. Offends decency; or
3. Unlawfully interferes with, obstructs or tends to obstruct, or renders dangerous for passage, any lake or navigable river, stream, canal or basin, or any public park, square, street or highway; or
4. In any way renders other persons insecure in life, or in the use of property, provided, this section shall not apply to preexisting agricultural activities.

A significant component of Oklahoma Nuisance law makes "Every successive owner of property who neglects to abate a continuing nuisance upon, or in the use of such property, created by a former owner, is liable therefore in the same manner as the one who first created it." (OS 50 §505) Additionally, under normal circumstances, the fact that you have abated (or cleaned up) polluted property does not necessarily. The abatement of a nuisance does not prejudice the right of any person to recover damages for its past existence. (OS 50 §506) Additionally, "No lapse of time can legalize a public nuisance, amounting to an actual obstruction of

public right. (OS 50 §507). Cities and towns as well as counties with populations in excess of 550,000 have the power to declare and abate nuisances (OS 50 § 16 and 20)

Groundwater Contamination

Neither a ODEQ Brownfields Certificate, nor an All Appropriate Inquiry or Phase I Environmental assessment, precludes an adjoining property owner from filing a civil suit under provisions of the Resource Conservation and Recovery Act (RCRA), (42 U.S.C. § 6972), the federal statute regulating hazardous waste management.

- Migration of groundwater contamination through another's property may be deemed "trespass" that is "continuing"
- Failing to mitigate groundwater contamination and allowing it to migrate to another's property may be deemed "nuisance."

The issue of groundwater contamination can be a particularly significant cost in the remediation of sites, because of continued monitoring that may be required well after the majority of remediation is completed.

Due Diligence

Due Diligence the performance of an investigation. When used in connection with investment property, once a property has been located, and preliminary due diligence is performed to investigate and verify the condition and status of the property, the investor will negotiate a sale price and sale terms with the seller, then execute a contract for sale. During the acquisition process, the formal offer to buy will include the payment of "earnest money" to the seller to reserve the investor's rights to complete the transaction if price and terms can be satisfactorily negotiated. The terms of the offer will also usually include a number of contingencies which allow the investor time to complete due diligence and obtain financing among other requirements prior to final purchase. Within the contingency period, the investor usually has the right to rescind the offer with no penalty and obtain a refund of earnest money deposits. Once contingencies have expired, rescinding the offer will usually require forfeit of earnest money deposits and may involve other penalties as well.

An environmental site assessment should be performed as a component of due diligence for any commercial property, and especially for industrial properties. A component of the site assessment should be an All Appropriate Inquiry (AAI or Phase I Environmental Assessment). Such assessments are often undertaken to avoid liability under the Comprehensive Environmental Response, Compensation, and Liability Act, commonly referred to as the "Superfund law".

Environmental Site Assessment

An Environmental Site Assessment can be thought of as a series of assessments designed to identify potential or existing contamination liabilities and establish a plan of remediation that will bring the property to a developable state. In the first phase of the assessment, court records and other public records are examined and property owners of both adjacent properties and past owners of subject property are interviewed. If potential contamination is identified, a second phase to determine how to remediate the contamination and a third phase to be initiated the cleanup.

An Environmental Site Assessment should not be confused with an *Environmental Assessment* which is a study developers perform that is preliminary to an Environmental Impact Statement. The Environmental Assessment identifies how a proposed development will impact the environment by investigating a broad set of parameters including water and air pollution, traffic and public safety issues, as well as issues of public concern such as visual impacts, environmental noise, biodiversity, and also hazardous substance issues.

All Appropriate Inquiry (Phase I Environmental Assessment)

An **All Appropriate Inquiries (AAI)** is defined in the Brownfields legislation, and is sometimes also called a Phase I Assessment (which refers to a comparable ASTD standard 1527 study) is the first part of an environmental due diligence report. Typically a AAI or Phase I assessment addresses both the underlying land as well as physical improvements to the property and includes investigation of documents, physical inspection, interviews with adjoining property owners, but typically not the actual collection of physical samples or chemical.

Under CERCLA, any current or former property owner may have remediation liability for any contamination found now or in the future, regardless of who is responsible for the contamination. The most significant way to mitigate the effects of CERCLA and eliminate the risk of contingent remediation liability is to perform an AAI or Phase I Environmental Site Assessment.

Meeting the AAI or Phase I standards (having the environmental assessments completed before closing on the purchase of property) is critical for landowners seeking to comply with^[x]:

- rating agency requirements for property securitizations
- a Brownfields revitalization grant for characterization and assessment
- **Establish the *Innocent Landowners Defense*** - applied to property purchased after 1986 and assumes that property owner "did not know and had no reason to know" of contamination at the time of purchase (42 USC § 9601, et seq. (CERCLA))

- **Obtain *Contiguous Property Owner Liability Protection*** - (pursuant to CERCLA) applied to property purchased after 2002, provides that the owner of property adjacent to property with pollution is not liable provided they did not contribute to pollution and are not related to liable party
- **Obtain *Bona Fide Prospective Purchaser Liability Protection*** - (pursuant to CERCLA) applied to property purchased after January 11, 2002, provides that someone can purchase property knowing of environmental contamination, and not be held liable

For an AAI to be useful in mitigating the impact of CERCLA, the AAI must be performed before closing (title is transferred) and is valid for 180 days – if closing will occur more than 180 days after the completion of the AAI, the AAI will need to be revised.

Therefore, in order to establish a point on time that limits liability, there are a variety of actions that can cause an AAI or Phase I study to be performed for a commercial property, the most common being:

- purchase of real estate by a person or entity not previously on title
- a new lender to provide a loan on the property
- partnership buyout or principal redistribution of ownership
- requirement by a regulatory agency that suspects toxic conditions on the site and as a prerequisite to obtain public assistance for remediation (ex. loan guarantees, subsidized loans from revolving funds, grants to non-profit organizations, etc).

Phase II & III

Phase II Environmental Site Assessment is a more detailed investigation in which professionals collect original samples of soil, groundwater or building materials to analyze for quantitative values of various contaminants. The deliverable document is a comprehensive report detailing the rationale for the sampling that took place, an explanation of the analytical results, and, if necessary, a description of the recommended remedial action needed to restore the site to the appropriate condition for its intended use. The most frequent substances tested are:

- petroleum hydrocarbons on the sites of former service stations or other petroleum related industry,
- cleaning solvents on sites where dry cleaner facilities are located
- heavy metals on the sites of manufacturing facilities,
- pesticides on agricultural land or facilities where pesticides were manufactured
- solvents on the sites of dry cleaner plants or other manufacturing facilities
- asbestos in any type of building.

Phase III Environmental Site Assessment is an investigation involving remediation of a site. Phase III investigations aim to delineate the physical extent of contamination based on recommendations made in Phase II assessments. This study normally involves assessment of alternative cleanup methods, costs and logistics. The associated reportage details the steps taken to perform site cleanup and the follow-up monitoring for residual contaminants. The deliverable of a Phase III assessment is a document that describes the design and implementation of the remediation of the site as well as the necessary reports and permits to achieve cleanup of the site to agree upon site specific standards.

Lender Liability

AAI rules do not apply to lenders, when acting only as a lender. If lender assumes any role in the management of the property, the liability exclusion is voided. CERCLA defines "participation in management" as actually participating in the management or operational affairs of a facility and not merely having the capacity to influence or the unexercised right to control facility operations. In general, lenders may do those management activities that are necessary to maintain their security interest, but nothing more.

Protection from Superfund Liability

From a property owner standpoint, a primary objective is the mitigation of the joint and several responsibility (liability) for any current or historic environmental hazards that may be found on the property. Rita Kottke, of ODEQ, describes how the AAI is instrumental in protecting the property owner from Superfund Liability: ^[xi]

AAI is the first step in protecting yourself from Superfund liability – the three owner protections from Superfund are - Innocent Land Owner, Contiguous Property Owner, Bona Fide Prospective Purchaser.

The first two require that the buyer has/had NO knowledge and NO reason to believe that the property was contaminated prior to purchase...with the [AAI or] Phase I as proof.

The Bona Fide Prospective Purchaser protection allows you to acquire property with FULL KNOWLEDGE that it is contaminated and the AAI is the baseline that establishes what was known at the time of purchase. To maintain the Bona Fide PP protection...you have to meet the CONTINUING OBLIGATIONS listed in the Brownfield Act. These obligations include ensuring that no one is exposed to the contamination, the contamination is not migrating, you have to comply with any engineering/institutional controls in effect on the site, and you have to COOPERATE with EPA. If the site is a Superfund cleanup [there may be additional obligations].

Another way that the AAI can be used to limit liability is its use to establish a baseline of contamination.

The requirement that the purchaser perform an AAI only deals with documenting the contamination as a baseline ~ and continuing obligations under that documentation ~ so that if and when EPA decides to pursue the site under Superfund or the DEQ decides to pursue the site under RCRA enforcement or the statutory nuisance law, then the purchaser will have some sort of defense in court.^[xii]

Note: ASTM International, originally known as the American Society for Testing and Materials (ASTM), is working on a standard for Continuing Obligations. There is scheduled to be a session at the conference with a speaker from the ASTM workgroup to discuss the issue of continuing obligations. .

Environmental Issues & Disclosure

In general, under Oklahoma Law, defects in property are treated differently for commercial and residential property. Commercial properties typically fall under common law; Under common law, in most cases, if a defect in a property is visible, it does not need to be disclosed; if the defect is not visible but known to the seller, it must be disclosed. However, the definition of residential properties varies, depending on the section of statutes being considered. For example, a residential unit under the Oklahoma Residential Property Condition Disclosure Act is a single family or duplex structure. On the other hand, Asbestos abatement standards for residential properties also apply to multi-family properties under six units (OS 40 § 451.5)

Lead Based Paint

Federal Lead Based Paint disclosure requirements have been promulgated by the Federal EPA and HUD are working together to develop disclosure requirements for sales and leases of older housing units, those built before 1978. Any residential structure (including all sizes of apartment complexes) and most child-occupied facilities are covered by these requirements.^[xiii]

Oklahoma Residential Property Condition Disclosure Act

The Oklahoma Residential Property Condition Disclosure Act (OS 60 § 831 – 839) replaces common law for residential real property with one or two dwelling units and is required under most circumstances when residential property is sold. One of the defects that are required to be disclosed is the “existence of hazardous or regulated material and other conditions having an environmental impact” (OS 60 § 833.B.1.g) and any other defects known to the seller (OS 60 § 833.B.1.i). Under the act, “The seller shall not be liable for a defect or other condition in the property if the existence of the defect or other condition in the property was disclosed in the disclosure statement...” (OS 60 § 835.A) There is a two year statute of limitations for any actions brought under the act (OS 60 § 837.C). The act, which applies to single family and duplex residential properties, requires that property owners with knowledge of defects need to disclose those defects.

Environmental factors are defined as a defect. The law basically absolves the property owner of any liability for any defects that are disclosed. Any civil action between buyer, seller and/or realtor under the act must be brought within two years of the date of transfer of the property.^[xiv] The Disclosure Act does not limit any liability between the property owner and the government as provided under Brownfields acts.

An important thing to consider about the interaction between the Residential Property Condition Disclosure Act and the Brownfields law is that the Disclosure

Act limits liability between buyer, seller, and realtor, and does not impact any potential liability between the landowner and the government.

Under the Oklahoma nuisance law, everyone in the chain of title is liable to the government for an unabated nuisance ~ including residential property owners. The real estate law is not talking about liability to government, but rather liability between two private parties.^[xv]

Issues when Purchasing Property

Under Oklahoma Real Estate Law, a member of the public may be represented by a real estate licensee under either a *transaction* brokerage or a *single-party* brokerage agreement. Simplistically, transaction broker has their primary obligation transaction, and a single-party broker is the advocate for their client.

It is arguable, especially if a single-party broker, that the real estate licensee has an obligation to inform a client of the issues relating to Superfund Liability and performing an All Appropriate Inquiry (AAI) as a component of Due Diligence.

While under Oklahoma law “property can always be sold without cleanup. But everyone in the chain of title can be held responsible, just like in Superfund, under the state nuisance law and the DEQ’s statutory nuisance law.... If the AAI is done by a purchaser, and if the ongoing obligations of a bona fide prospective purchaser are met, then the purchaser would have a viable defense if/when EPA or the State came after him/her later.”^[xvi]

When using a Realtor to help in purchasing a property, remember that in Oklahoma a Real estate Licensee does not have a duty to investigate.

If an prospective purchaser or seller contracts for an AAI, there is no requirement for this document to be presented to ODEQ^[xvii]

The following is a sample addendum to a Real Estate Purchase contract used by the author:

By initialing this space _____, Buyer gives notice that Buyer, at Buyer’s expense, intends to conduct a satisfactory Environmental Site Assessment meeting the requirements of the “All Appropriate Inquiries” (AAI) standard. Buyer recognizes that the completion, before closing, of a Phase I or AAI Assessment is a minimum requirement to assert the “Bona Fide Prospective Purchaser,” “Innocent Landowner,” or “Contiguous Property Owner” defense under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 USCA §9601et. seq.)

Typical Sources of Contamination

The history of the estimated 1,500 possible brownfields sites in Oklahoma City includes oil and gas exploration, scrap metal facilities, and chemical companies. Contamination from these activities has made much of the groundwater unusable. In general, the best way to identify potential issues is to perform an All Appropriate Inquiry environmental assessment, but just looking at the past use of the subject (or adjoining) properties will provide significant insights.

Petroleum Storage Tank Sites

With a few exceptions, any tank over 150 gallons that are used for storage of petroleum products and other liquids defined by the EPA as hazardous to the environment are regulated by the Corporation Commission. Title 165 Chapter 29 of Oklahoma Statutes describes responsibilities; basically the owner and/or operator of petroleum storage tanks is responsible for reporting suspected discharges from tanks, and is responsible for proactively monitoring for such discharges.

Oil and Gas Wells

Oklahoma is littered with oil and gas wells, working, plugged, and abandoned. There are also a significant number of water wells. Typically the land abstract will identify the location of a well, but may not identify whether the well, if no longer operational, was properly plugged.

The Oklahoma Corporation Commission has responsibility for issues relating to oil and gas wells, pipelines, and petroleum products.

Dry Cleaning Facilities

Regulation of Dry Cleaning facilities is the responsibility of the Oklahoma Department of Environmental Quality under provisions of the Oklahoma Clean Air Act (OS 27A § 2-5-101-118). In general, the owner or operator of a dry cleaning facility must request that the facility be granted an Authorization general permit to construct and operate a dry cleaning facility using petroleum solvents or perchloroethylene or trichloroethane.

The Oklahoma Department of Environmental Quality has responsibility for regulating dry cleaning facilities.

Asbestos

Asbestos is a mineral with long, thin fibrous crystals that are soft and pliable and have an ability to withstand heat. Because of the ability to withstand heat, asbestos became very popular with manufacturers and builders as an insulating material during the 19th and first part of the 20th century. However, the inhalation of these fibrous crystals has been shown to cause various lung ailments, including cancer and many uses have been banned since the 1980's.

Asbestos is regulated by the federal Occupational Safety and Health Act and by Chapter 11 of Title 40 of the Oklahoma Statutes; with the several Oklahoma agencies involved in inspection, testing and abatement of asbestos:

- Department of Labor regulating asbestos in the workplace, in addition to the contractors performing asbestos abatement (<http://www.ok.gov/odol/Asbestos/>)
- Department of Health's Construction Industries Board regulates building inspectors (40 OS § 457) that can inspect a building for the presence of asbestos.
- Oklahoma Department of Environmental Quality , Air Quality Division (<http://www.deq.state.ok.us/AQDnew/index.htm>)

Asbestos is a complicated issues for the EPA because traditionally it had no cleanup authority unless the material was "friable" (could be crumbled, pulverized or reduced to powder by hand pressure) and entering the outside environment. On the other hand, developers have a need to remove asbestos, even it is not currently "friable." Since "Asbestos building materials are not "hazardous" until they degrade and become hazardous,^[xviii]" the issue of asbestos is a difficult one for many environmental agencies.

Manufacturing and Mining & Transportation

Almost any manufacturing, mining, and transportation related business involves the use of environmentally hazardous liquids that may become problematic. Chemicals may have been stored in leaky storage tanks; leaking causing plumes in the water table that need to be remediated. Airborne particulates may have also settled on the adjoining property that needs remediation. Monitoring of groundwater after remediation is complete may continue for 30 years or more.

Oklahoma State Agencies Regulating Environmental Hazards

While the Oklahoma Department of Environmental Quality is the lead agency regarding hazardous materials and contamination, other state agencies have significant legislative authority in specific areas.

Oklahoma Department of Environmental Quality (ODEQ)

The Oklahoma Department of Environmental Quality is the Oklahoma State Agency with jurisdiction over:

- Air Quality (department of Health and Labor share responsibilities for asbestos)
- Water Quality
- Waste Disposal (hazardous and non-hazardous)
- Cleanup of historical contamination

The ODEQ operates the only program recognized by the Federal DEQ, and has been designated by the Governor as the "Point of Contact" agency for all Brownfield issues. Local agencies also have Brownfields programs including: The Association of South Central Oklahoma Governments, The City of Oklahoma City, the Tulsa Industrial Authority, Cherokee Tribe, Cheyenne & Arapaho Tribe, Absentee Shawnee Tribe, and the Comanche Tribe.

The ODEQ also operates regularity programs related to the Oklahoma Resource Conservation and Recovery Act (RCRA). Within the ODEQ's Land Protection Division, there are two regularity program areas delegates to the state by the Federal EPA ~ solid waste and hazardous waste. There are RCRA staff who deal with permits for hazardous waste facilities and staff who deal with permits for solid waste facilities. We have RCRA inspectors whose job is to inspect facilities that generate hazardous waste or that receive hazardous waste for disposal ~ it's the enforcement group. There are also staff who inspect solid waste landfills and transfer stations ~ again, an enforcement arm.

Oklahoma Corporation Commission

Oklahoma, the Corporation Commission is responsible for maintaining records of oil and gas wells as well as underground gasoline storage tanks. The Oklahoma Corporation Commission's Brownfields Program, part of the Oil and Gas division, provides a process for entities to voluntarily investigate and if necessary clean up properties that may be contaminated with oil and gas or petroleum storage tank

wastes, returning the sites to productive use. The Program can provide state and federal environmental liability relief to those who go through the program. Being in the program will also allow Brownfields site owners and lessees to state and/or federal financial and tax relief programs.

(<http://www.occ.state.ok.us/divisions/og/newweb/brownfields/brownfields.htm>)

Oklahoma Health Department

The Oklahoma Health Department regulates home inspectors and certain aspects related to Asbestos and licenses through the licensing function of its Construction Industries Board: Electrical, Plumbing, Mechanical, Building

(<http://www.ok.gov/cib/>)

Oklahoma Department of Labor

The Oklahoma Department of Labor has a responsibility for dealing with the federal Occupational Safety Health Act (OSHA) as well as dealing with certain aspects of Asbestos (<http://www.ok.gov/odol/Asbestos/>) and it's licensing of asbestos professionals ([http://www.ok.gov/odol/Licensing/Asbestos Licenses/](http://www.ok.gov/odol/Licensing/Asbestos_Licenses/))

Evaluation for Development

The acquisition, remediation, and re-use of a greyfield, brownfields or superfund site requires an initial advanced and specialized appraisal analysis because the highest and best use of the site may be impacted by contamination and subsequent cost of remediation. Additionally, the value should take into account residual stigma and potential for third-party liability. Where a public interest is a factor in valuation, contingent valuation, a survey based economic methodology that focuses on utility received rather than economic benefit) may be appropriate. Case studies or statistical analyses may also be of benefit.^[xix]

In general, funding from governmental environmental agencies is not available for remediating properties – their primary purpose is regulation and protection of the general public. However, there are government funds available for economic development – and many of these funding sources are specifically designed is not available for remediation of properties with environmental hazards.

When looking a developing a Brownfields Sites vs. a comparable Greenfield Status Sites, the primary difference is the cost and time required remediating a brownfields site to Greenfield Status.

	Greenfield Status Site	Brownfield Status Site
Land Purchase Cost	Land Cost	Land Cost <i>Remediation Cost</i> <i>Remediation Risk</i>
Land Development Cost	Engineering, Grading, Streets, Utilities, etc.	Engineering, Grading, Streets, Utilities, etc.
Development Considerations (Potential Uses)	Demographics Disposable Income Adjacent Properties	Demographics Disposable Income Adjacent Properties <i>Remediation Constraints</i>

Under this evaluation model, the Land Purchase Cost would contain both land cost as well as the costs of actual remediation and a factor for remediation risk – the cost of the uncertainty of remediation (once remediation begins, unexpected environmental hazards will inevitably cause both estimated costs and time lines to increase.)

The cost of remediation is closely related to the types of remediation constraints that are placed on the land, which are impacted by the desired future use of the land. For example, a site containing a sludge pit with significant ground water contamination with a potential single-family residential use would probably require remediation to the point that the project would not be economically viable.

However, the same site with a retail or distribution center uses, and appropriate restrictions, may be as a redevelopment site. (For an example, see Federated Metals 30 acre site former lead and zinc smelter in Sand Springs that was redeveloped as a site for a WalMart store which opened in 2003; the parking lot is part of the cap covering disposal cells.)

Another example deals with ground water contamination. Depending on whether there are operating wells for irrigation or potable water, there will be differing levels of remediation required. In other words, remediation of ground water contamination will be less expensive in areas where the local city has passed ordinances forbidding the drilling and use of water wells.

For severe cases of environmental contamination, there may be both immediate and long term costs for remediation. In these cases, the more expensive component may not be the cost of digging and hauling earth. In the case of groundwater remediation, pumping systems may be in use for years to remove contaminants that have seeped into the water table. Engineering and other monitoring controls may need to be in-place for 30 or more years to assure that contamination is contained.

“Ultimately, the question you want answered is whether you're looking at good real estate. But remember, all the economic and social factors can improve the chance for a success in a Brownfields project's redevelopment.... The buy or no-buy argument should be based on knowing the risks of committing valuable resources to a Brownfields redevelopment project. And, in most instances, margins of error relate directly to how certain the parties are that the project will be successful.”^[xx]

Finding the Site

List from local governments' responsibility for finding brownfields locations has fallen to state and local governments. For example, the Oklahoma County Clerk and Assessor provide on-line access to their databases, which may be searched for properties by use (residential vs. commercial/industrial) including those that have been condemned.

The most accurate site inventories are prepared by local governments that have received funds from the federal EPA as part of a Brownfield pilot program. Since 2001, the ODEQ created an annual Property Report that describes sites in which the ODEQ has an interest. The Appendix A to this report has an unofficial compilation of these sites.

Classifications of Sites

While each brownfields site must be judged on its own merits, Greenberg, Mayer, Lowrie and Shaw suggest that it is useful to categorize sites into three types. ^[xxi]

Tier I, "are the best sites—they are relatively inexpensive to acquire, have minimal contamination or other physical constraints, already have infrastructure, and are located in desirable areas. These are "low hanging fruit" ... that can be returned to economic use in a variety of ways."

Tier II sites have many of the same attributes as their Tier I counterparts but may have less intrinsic site location value, and likely there are one or two problems that complicate redevelopment. The constraint could be inadequate infrastructure, limited road access, relatively high remediation costs, and other problems that make the project economically less attractive than a Tier I site. The Tier II sites will wait until economic conditions change, regulations are modified, or intervention by a party with investment capital makes them developable.

Tier III sites sometimes have some spatial attributes and infrastructure. But they are handicapped by real and perceived problems. The most obvious is contamination levels that are high enough to make locations too expensive to redevelop without a large government or private subsidy. Some brownfield properties are so contaminated that their owners will not release them for development because their remediation costs are too high. Accordingly, they keep these properties active with a skeleton workforce. Overall, without a large influx of capital, Tier III sites are not going to be redeveloped anytime soon. This cohort of Tier III sites creates the greatest opportunity to engage the surrounding community in remediation and redevelopment efforts, and yet these sites are all too often left unattended, exacerbating the neglect and disinvestment associated with brownfield impacted areas.

Evaluating Potential Uses

With traditional commercial development, the process of determining highest and best use is a fairly straight forward proposition. The developer analyzes population characteristics such as age, household density, disposable personal income and availability of other commercial services. The cost of land and its characteristics will impact the amount of grading that will be required to ready the raw land for development. The location of public utilities such as water and what will be required to bring these utilities to the site will also be analyzed.

When the analysis is of properties with environmental contaminations, the analysis process becomes more complicated because the cost of remediation needs to be, for purposed of analysis, included as an acquisition cost. In general:

- No one wants to have to pay for the clean up of the site;
- If nearby properties are found to be contaminated it may have to be noted on their property title, potentially affecting the value;
- No one wants to pay for the cost of assessment.

The cost of remediation will be an iterative process in that remediation cost may significantly depend on the projected use of the property. For example, a single-family use will lead to very high remediation costs while an industrial use may require lower remediation costs; the corresponding revenue from uses may not justify the higher level of remediation.

If the subject property is a Tier I or Tier II property, the estimated cost of remediation is in effect subtracted from the market price for comparable non-polluted properties. This adjusted price would be a starting point for negating a purchase price for the property. Significant questions that need to be answered include:

- *Is size of the property sufficient to:*
 - *Meet a critical mass needed to justify the overhead required for managing the project?*
 - *Overcome the stigma associated with the contamination given the anticipated use?.*
- *What existing infrastructure and social service facilities are nearby?* Is the site near major transportation systems? Are electricity, natural gas pipelines, water & sewage systems, and telecommunications infrastructures already in place? Is the site near facilities that are core to social infrastructure and civic pride? Is the site near other industrial or commercial operations that can lead to mutual benefits?

However, if the subject property is a Tier III property, then the cost of remediation is greater than the value of the property (the property has a negative

net worth.) In this case, government assistance will be needed for development. To the extent that public assistance will be needed for development, several questions need to be answered that may not be significant for Tier I or Tier II properties: ^[xxii]

- *How will the chosen reuse option affect other socioeconomic issues?* Can the site be an anchor to stimulate further economic redevelopment in the community? If so, what are the job-generating reuse options? Will site reuse enhance the local social infrastructure?
- *What is the real estate market and redevelopment potential?* As with any real estate development, location is key. For Tier III projects, location in particular is important when weighing a Brownfield's economic outcome when public policy becomes a factor in redevelopment.
- *Is the city open to rezoning the property?* Highest and best use factors can be used as a bartering tool to maximize reuse options. Also consider whether the site will be redeveloped for industrial, office, retail, municipal, recreational, residential, use or a mix.
- *Is insurance available to protect your investment in the site?* Can public/private entities be formed to manage the liability issues?
- *What are the community relations and/or public perception issues?* Is the site a community hot button? Are perceived risks greater than actual risks? Or will public sentiment drive reuse options?
- *Is the location in a growth part of the community?* Consider whether social safety risks (i.e. crime) are more of a concern than environmental risk.
- *What issues do all stakeholders in the process have and how can consensus be reached?* Consensus (a general agreement of overarching goals and objectives for the project) is usually a better approach than Politics (where there are winners and losers). Identify all parties that have a potential, vested interest in the project. What public/private partnerships can be formed to subsidize the site? What are the political drivers? Is community pride demanding action? What are each stakeholder's priorities? Identify the potential conflicts and address all priorities to eliminate conflicts, help generate resolution and build consensus.
- *What are the site's structural similarities and distinguishing characteristics?* Is there any architectural appeal to the building(s) on the site? Do structures need to be renovated or demolished? If demolition is the best approach, the amount of debris and building material types have significant recycling value. Sometimes, architecturally significant buildings reflect a community's heritage, and structural restoration will garner public support and funding. In other cases, demolition and recycling can offset the cleanup costs and make the project financially viable.

Regulatory issues

Some issues are not negotiable. Others are not politically negotiable, you need to know the difference; some questions to ask include: ^[xxiii]

- *What are the management strategies to reduce liability and accomplish site transaction and reuse objectives? What is the potential for obtaining a covenant-not-to-sue from the state, or a comfort letter from the EPA? Investors will want assurance that you won't be held liable for contamination that occurred prior to your ownership.*
- *Are the regulatory philosophies and aligned or remote processes in place? How the regulatory process can dovetail with redevelopment strategies is another juncture point in weighing the candidacy of a project. Does the site meet primary EPA or ODEQ department of environmental quality regulations and guidelines? Will the site's future use continue to maintain cleanup standards? And, can environmental and economic redevelopment organizations reach a consensus on the site's viability?*
- *What are the financial and environmental risk assessment, management and communications issues? In Oklahoma, voluntary Brownfields initiatives are a risk-based approach to site reuse, focusing on the likelihood of contaminant exposure and its consequences. Thus, it's important to identify cleanup end-points. How much remediation must be done to consider the site "clean?" Risk also is weighed among social and ethical factors, so community involvement can help to validate the decisions.*
- **Any document submitted to an Oklahoma agency is subject to the Open Records Act. The Freedom of Information Act only applies to federal agencies, not state agencies, it does not protect corporations from disclosing contamination ~ only some proprietary information such as trade secrets.** ^[xxiv]

Funding Remediation

(Where does the money come from)

In general, there is no funding available to cleanup historical contamination. Remediation is the responsibility of the landowner or a company that polluted the property. While there is funding available through EPA (Superfund), provided that the site has been ranked on the hazard ranking system and the site qualifies for federal funds; however, then EPA finds the principal responsible party and sues them for cost recovery.

However, public policy sentiments may lean towards redevelopment of a property that is environmentally challenged. In these cases, funding can sometimes be arranged for economic development reasons. Because the remediation costs of Tier III properties is typically greater than the value of the property, the redevelopment of Tier III properties can typically only occur with this type of economic development government assistance. The following questions should be asked: ^[xxv]

- *Who owns the land and is responsible for it?* Records of past owners are a matter of public record. Records of uses and tenants usually are sometimes public. Potentially Responsible Parties (PRPs) often are identifiable and may be a source of funding remediation. Whether the PRPs are financially capable of preparing the site for reuse — either through investment or offering the property in kind in exchange for release of liability — can help determine whether redevelopment is feasible.
- *What are the property tax impacts?* Are taxes overdue on the site, or is it generating low tax revenue because of underuse? Is the site appropriately property zoned? Will site redevelopment have little or profound effects on long-term property tax revenue? This can be leveraged to gain economic advantages when considering redevelopment and reuse.
- *Are there available funding mechanisms and magnets?* Can environmental cleanup costs be recovered through PRPs, insurance vehicles or public means? Is the site a target for economic redevelopment funding alliances? Are low-interest, revolving funds available? Can a municipal partnership be formed to leverage other funding? Financial management groups may assist with the purchase and redevelopment of the site.
- *What are the costs-of-cleanup estimates with associated reliability margins?* The previous questions can help determine the estimated cleanup costs, as well as the preliminary, economic feasibility margin for site redevelopment.

Grants

Corporation Commission

The Oklahoma Corporation Commission is the agency that will determine the initial eligibility for any likely petroleum contaminated portions of a Brownfields project

Oklahoma Petroleum Storage Tank Release Indemnity Fund

The Petroleum Storage Tank Release Indemnity Fund was created by the Oklahoma Legislature in 1989 to help fuel storage tank owners meet a requirement for liability insurance for damage caused by leaking tanks. The fund is administered by the Corporation Commission's Petroleum Storage Tank Division (<http://www.occ.state.ok.us/Divisions/PST/pst.htm>)

Oklahoma Energy Resources Board

Originally founded in 1993, the Oklahoma Energy Resources Board (OERB, www.oerb.com) is a quasi state-agency that was created to cleanup abandoned well sites in the state of Oklahoma. Funded through voluntary contributions (one-tenth of one percent on the sale of oil and natural gas in Oklahoma, by oil and natural gas producers and royalty owners), the OERB voluntarily restores abandoned Oklahoma well sites at no cost to landowners. Since 1994, OERB has spent \$40 million to restoring more than 8,000 orphaned and abandoned well sites.

Waste Tire Fund

While separate from the Brownfields program, The Oklahoma Waste Tire Recycling Act (Act) was created in 1989 to clean up historical nuisance tire dumps and prevent further illegal dumping by providing an outlet for tire dealers. The program is currently administered by ODEQ. Property owners that purchased property to later find that part of the property was historically a tire dump may petition for funds to remove tires. While the tire fund does not pay property owners directly, it does pay a waste tire firm to remove tires.

Oklahoma Department of Commerce

The Oklahoma Department of Commerce coordinates several economic development programs directed toward the repositioning of Brownfields properties: Brownfields Assessment Grants (each funded up to \$200,000 over three years), Brownfields Cleanup Grants (each funded up to \$200,000 over three years). *Brownfields and Land Revitalization - EPA Grants -* (http://www.okcommerce.gov/index.php?option=com_grants§ionid=4&id=174&Itemid=328)

Revolving Funds

Clean Water State Revolving Fund

Administered by the Oklahoma Water Resources Board, the State's designated steward of water resources and the regulator of water use with an objective of preserving water supplies for future use. The Clean Water State Revolving Fund may be used for Brownfields remediation (<http://www.owrb.ok.gov/financing>). The fund typically provides loans to communities and rural water districts for cleanups where ground water is threatened or affected. Loans from the revolving fund are typically at 40% of market rates with 20 year terms. Private borrowers may also be eligible to receive low-interest loan funds through a link deposit program.

Brownfields Revolving Loan Fund (RLF)

The Oklahoma Brownfield Cleanup Revolving Loan Fund (each funded up to \$1,000,000 over five years) provides low interest loans to private industry, local governments, and tribes for the cleanup of properties contaminated by hazardous substances. The decisions are made primarily by the Oklahoma Department of Environmental Quality with the Oklahoma Department of Commerce administering the fund.

Oklahoma City Brownfields Cleanup Revolving Loan Fund

For properties located within the city limits of Oklahoma City, there is a revolving loan fund that can provide low interest loans for remediation of Brownfield sites. A joint Project of the City of Oklahoma City, Oklahoma City Housing Authority, Oklahoma City Urban Renewal Authority, Oklahoma County, and the US EPA. Emphasis is being given to projects in the OKC Empowerment Zone, and is intended to operate as gap financing that will leverage private dollars to create economically viable projects. Loans ranging from \$50,000 to \$1,000,000 are available. The Oklahoma City Planning Department's Brownfields Coordinator is responsible for reviewing proposals, the Community Action Agency of Oklahoma City and Oklahoma/Canadian Counties administers the loans.

Other Incentives

Community Reinvestment Act

Community Reinvestment Act (CRA) of 1997 was originally passed by congress to require banks, thrifts, and other lenders to make capital available in low- and moderate-income urban neighborhoods. In 1995 the act was amended to allow lenders subject to claim community development loan credits for loans made to help finance the environmental cleanup or redevelopment of an industrial site when it is part of an effort to revitalize the low- and moderate-income community in which the site is located. (<http://www.epa.gov/swerosps/bf/html-doc/cra.htm>)

Oklahoma Quality Jobs Act

A section of the Oklahoma Quality Jobs Act (<http://www.okcommerce.gov/index.php?option=content&task=view&id=299&Itemid=378>) was amended to provides for quarterly incentive payments to basic industries that locate their principal business activities on contaminated properties of at least ten acres in size which qualify as 1) a federal Superfund removal site, 2) National Priorities List (NPL or Superfund) site, 3) a site formally deferred to the state in lieu of NPL listing, or 4) a site that was remediated pursuant to an order of the DEQ. These companies may be eligible for the Quality Jobs Program incentive payments irrespective of their actual gross payroll or the number of full-time-equivalent employees in new direct jobs [68 O.S. Supp. 2000 § 3604 (E - H)].

Sales Tax Exemption

The Oklahoma Sales Tax Code allows an exemption for machinery, equipment, fuels, and chemicals incorporated into the treatment process to substantially reduce the volume or harmful properties of hazardous waste at facilities approved by the DEQ for the cleanup of a site of contamination [68 O.S. Supp. 2000 §1359 (7)].

City of Oklahoma City

The City of Oklahoma City has a Brownfields Coordinator in the Planning Department who can assist individuals in all stages of redevelopment. The city's Brownfields Coordinator can coordinate **Site Assessments**: Phase I & II Environmental Site Assessments as well as participate in Phase III Cleanup Plans on priority redevelopment sites.

Conclusion

From an investment / redevelopment perspective, as Rita Kottke and Barbara Rauch of the Oklahoma Department of Environmental Quality have noted:

Ultimately, the question you want answered is whether you're looking at good real estate. But remember, all the economic and social factors can improve the chance for a success in a Brownfields project's redevelopment.

The buy or no-buy argument should be based on knowing the risks of committing valuable resources to a Brownfields redevelopment project. And, in most instances, margins of error relate directly to how certain the parties are that the project will be successful.

The redevelopment of environmentally challenged properties poses significant challenges to the average developer. Points to remember include:

- In general, all previous land owners and users are responsible for remediation
- Environmental Hazards will reduce value of property by remediation costs (negative value)
- All Appropriate Inquiry (AAI or Phase 1 Environmental Assessment)
 - may limit Superfund liability
 - Disclaimer recommended to be included on most commercial and all industrial property contracts
- Re-Development Requires Long Term Focus
- Properties requiring significant remediation (negative net worth) may need to be approached from the standpoint of economic redevelopment, furthering a public good, in order to get public funds to aid in the remediation efforts
- **BE SURE TO HIRE A PROFESSIONAL** that will help walk you through the labyrinth of regulations

Appendix A:

Brownfields & Other Environmentally Challenged Properties

Source:

Oklahoma Department of Environmental Quality

Land Protection Division

P. O. Box 1677

707 North Robinson

Oklahoma City, Oklahoma 73101-1677

The 2001, 2003, 2004, 2005, & 2006 Land Protection Report

<http://www.crossroads.odl.state.ok.us/cgi-bin/showfile.exe?CISOROOT=/stgovpub&CISOPTR=1695>

The following is a compilation of publically available reports from the Oklahoma Department of Environmental Quality. Although, the author has made a best effort to verify that the information presented is correct, no fact checking has occurred and there is no guarantee, expressed or implied, of the data's accuracy.

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Type	Facility	Location	Description	ODEQ Contact	Status
Brownfields	BNSF / Dillard Taylor Property	Ada		Keck, Jarrett	closure
RCRA	Chevron Gas Plant	Ada		Zaidi, Askari	closure
RCRA	Exxon	Ada	Chemical storage and distribution closed in 1991. corrective action for chromium in ground water.	Zaidi, Askari	Monitoring
RCRA	Flexingate General Tires	Ada		Young, Hillary	Monitoring
RCRA	Texaco R&M (Equilon)	Ada	Refined Hydrocarbon storage. Contaminated ground water. Remediation and monitoring continues		
Voluntary	Camrose Tech/Flex-N-Gate	Ada	manufacturer of plastic, felt and rubber molding for automotive industry. Various solvents in ground water. Leaking system shut down in 2000. Continued monitoring	Young, Hillary	
Voluntary	ExxonMobil-Sholem Alec GP	Alec		Johnson, Dale	
RCRA	Altus AFB	Altus		Repogle, Robert	
RCRA	Chevron Gas Plant	Alva		Zaidi, Askari	closure
RCRA	Texaco (Equilon)	Alva	Terminal, leased from Santa Fe RR, Benzene, Toluene, ethylbenzene, xylene, and petroleum hydrocarbons. Remediation continuing	Zaidi, Askari	
RCRA	Valero (TPI, Total Petroleum)	Ardmore		Zaidi, Askari	
SuperFund	Imperial Refinery Company	Ardmore	80 acre abandoned refiner operated from 1917 to 1924. 1940s equipment dismantled, sludge pits remain	Meghan Lloyd	planning
Voluntary	Duke Energy-Fox GP	Ardmore		Keck, Jarrett	closure
Voluntary	Union Oil Co of California (Pure Oil)	Ardmore	70 acre abandoned oil refinery from 1916 to 1935. Investigation	Posey, Kendel	remediation
RCRA	ConocoPhillips Research	Bartlesville	no further action. Monitoring continues	Lawson, David	Operation & Maintenance
RCRA	ZCA-Zinc Corporation of America /Horsehead	Bartlesville	Zinc refinery. Prior to 1991 solid wastes were not regulate. Multimedia cap constructed. Closure Complete	Lawson, David	post closure - maintain cap and monitor ground water

SuperFund	National Zinc	Bartlesville	Air emissions and slag materials contaminate soil.	Datin, Dennis	remediation
Voluntary	National Zinc	Bartlesville	smelting facility with lead, cadmium and other heavy metals. Remediation begin in 1994. residential remediation started in 1995	Datin, Dennis	Remediation Complete, Bartlesville to enforce institutional controls
Voluntary	Blackwell Zinc	Blackwell	Horizontal Zinc and Cadmium smelter operated from 1916 to 1972; contaminants: Zinc Arsenic, lead, cadmium. Currently remediating ground water contamination	Downard, Sara	remediation
Voluntary	ConAgra Foods	Blackwell		Reid, Jon	
Voluntary	Marathon Oil/Boynton	Boynton	48 acre Oil refinery opened in 1917 abandoned in 1933, produced paraffin wax, motor oil, gasoline and kerosene.	Posey, Kendel	investigation
Voluntary	ExxonMobil-Bradley CS	Bradley		Johnson, Dale	
RCRA	Kwikset Corp	Bristow	Manufacturing of Door Knobs, deadbolts for residential housing. 1997 reported release of Tetrachloroethylene. Ground water monitoring	Young, Hillary	investigation
Voluntary	Kwikset	Bristow		Bennett, Jeannine	
RCRA	Huffman Wood	Broken Bow		Hensch, Don	
RCRA	Thomason Lumber	Broken Bow	Wood Preserving facility, abandoned in 1999. Post closure required monitoring of ground water for 30 years or until demonstration of no endangerment can be proved	Hailes, Cindy	
Voluntary	ExxonMobil-Bumpas CS	Bumpas		Johnson, Dale	
RCRA	Clinton-Sherman Industrial Airpark (CSIA)	Burns Flat	Former AFB; Contaminants: trichlorethylene, petroleum fuels, nitrates/nitrites. Remediation	Datin, Dennis	
Voluntary	Duke Energy-Carney GP	Carney		Johnson, Dale	
Voluntary	Duke Energy-Cashion GP	Cashion		Johnson, Dale	
Voluntary	Duke Energy-S. Cashion CS	Cashion		Johnson,	

				Dale	
RCRA	Terra Nitrogen (Verdigris Plant)	Catoosa		Hamill, Gail	
Voluntary	ODO / Ice Plant	Cherokee		Keck, Jarrett	closure
RCRA	Chickasha Manufacturing	Chickasha		Ukpaka, Sam	
Voluntary	ExxonMobil-S Chitwood GP	Chitwood		Johnson, Dale	
Voluntary	ExxonMobil-W Chitwood GP	Chitwood		Johnson, Dale	
RCRA	Hughes Centrlift	Claremore	manufactures submersible pumps for petroleum industry. Ground water treatment.	Zaidi, Askari	Operation & Maintenance
Voluntary	Claremore, City of (Hospital Medical Bldg)	Claremore	Regional hospital to be built on top of municipal landfill operated from 1941 to 1960. Investigation stage	Keck, Jarrett	
Voluntary	Kerr McGee Cleveland	Cleveland	former refinery, petroleum, asbestos, acid sludge, A final feasibility study is being implemented	Roberts, Ray	
SuperFund	Tulsa Fuel & Manufacturing (Acme Brick)	Collinsville	Zink smelter, 50 acre, operated from 1914 to 1925	Sara Downard	planning
Voluntary	Collinsville Smelter (Cyprus Amax)	Collinsville	Zink strip mine and smelter, about 1/2 mile from Tulsa Fuel and Manufacturing site. Slag from zinc and silver processing (Phelps Dodge) Remediation	Downard, Sara	
Voluntary	Coweta Retail Dev	Coweta		Reid, Jon	
Voluntary	Duke Energy-Crescent CS	Crescent		Johnson, Dale	
Voluntary	Duke Energy-Crescent GP	Crescent		Johnson, Dale	
Voluntary	Waldridge	Crescent		Datin, Dennis	closure
SuperFund	Hardage/Criner	Criner	Commercial disposal facility for industrial wasts, closed. Full operation of remediation is continuing	Hal Cantwell	Operation & Maintenance
Brownfields	Sinclair Topping Plant	Cushing	Produced gasoline, kerosene and fuel oils. Final remediation issued in 2000	Thomas, George	final report

SuperFund	Hudson Refinery	Cushing	Former Oil Refinery 200 acre active from 1922 to 1982, Hudson went bankrupt in 1984, with money set aside to close facility, but not property closed. Asbestos, ground water contamination.	Amy Brittain	feasability
Voluntary	Kerr McGee Cushing	Cushing	Former 440 acre oil refinery operated from 1900's to 1972, in addition to uranium and thorium processing. Decommissioning under Nuclear Regulatory Commission	Posey, Kendel	
Voluntary	Koch Ind/Custer City	Custer City		Davis, Paul	
SuperFund	Oklahoma Refining Company	Cyril	Abandoned 220 acre refinery, started in 1908 closed in 1984. remediation continuing.	Meghan Lloyd	remediation
Voluntary	Halliburton Services- Davis	Davis		Roberts, Ray	
Voluntary	Kusa/ASARCO	Dewar	Horizontal retort smelter for zinc oar. Site Characteriazion	Roberts, Ray	
Voluntary	Duke Energy-Dibble CS	Dibble		Replogie, Robert	Feasibility Study
Voluntary	ExxonMobil-Doyle CS	Doyle		Johnson, Dale	
RCRA	Halliburton SVC Ctr	Duncan		Lawson, David	
RCRA	Halliburton/Osage Rd	Duncan	Inactive facility, military rocket and propellant (ammonium perchlorate - Class B Explosive) monitoring continuing	Hamill, Gail	Operation & Maintenance
Voluntary	Duncan Refinery/Tosco Corp	Duncan	Abandoned refinery, 400 acres, operated between 1920's and 1983. Never property closed Consent order in 1995. interium actions planned. ConocoPhillips working on asbestos remediation and chemical seeps into water supply	Brittain, Amy	remediation
Voluntary	EMC Test Systems/Emerson	Durant		Johnson, Dale	
RCRA	Cimarron Aviation	El Reno	El Reno Airpark, originally owned by federal government. In 1970 Cimarron avaiation started painting and refurbishing airplanes. . Disposal laboons capped and closed in	Welch, Bob	final report

			1997.		
RCRA	Dowell Schlumberger (McKissick)	El Reno	products for cementing and stimulating oil and gas wells trichloroethane and dichloroethane, degreasers and solvents in ground water. Continued monitoring	Hamill, Gail	Operation & Maintenance
RCRA	Eagle Picher/Boron	El Reno		Zaidi, Askari	
RCRA	El Reno Prison	El Reno	landfill and lagoons that may have received hazardous materials generated from the facility. Capped. Ground water monitoring	Hamill, Gail	Monitoring
RCRA	Gemini Coating	El Reno	Paint Manufacturing facility, solvents leaked contaminating ground water. Monitoring continuing	Bennett, Jeannine	
Voluntary	Gemini Coatings	El Reno		Bennett, Jeannine	
Voluntary	Koch Ind/El Reno	El Reno		Davis, Paul	
Voluntary	Enogex/Riverside PP	Emerson		Reid, Jon	
Voluntary	Home Depot/Emerson	Emmerson		Replogle, Robert	
Brownsfield	Farmrail	Enid		Lyon, Amil	closure
RCRA	Anadarko Petroleum (Union Pacific Resources)	Enid	Old Enid Refinery operated from 1916 to mid 1980's. Ongoing ground water remediation.	Young, Hillary	investigation
RCRA	Clean Clothes Rental	Enid	Dry-Cleaning, Tetrachloro-ethylene plume traveling along sewer line (stabalized)	Risk-Based Closure Complete	
RCRA	Union Pacific Resources Land Treatment	Enid	closed refinery. Sludge and refinery-related oily waste. Post-closing permits	Young, Hillary	investigation
RCRA	Vance AFB	Enid	Trichlorethylene and methyl ethel ketone. Interium corrective actions	Hamill, Gail	
Brownfields	Colorado Interstate Gas - Mocane	Forgan		Replogie, Robert	closure
Voluntary	ExxonMobil-Fox CS	Fox		Johnson, Dale	

Voluntary	Duke Energy-Goldsby GP	Goldsby		Lyon, Amil	
RCRA	Environmental Mgmt, Inc	Guthrie		Young, Hillary	
Voluntary	Duke Energy-Hennessey GP	Hennessey		Johnson, Dale	
Voluntary	ExxonMobil-Dover/Hennessey	Hennessey		Johnson, Dale	
Voluntary	US Zinc Smelter	Henryeta	Site of current G&H Decoy manufacturing, former zind ore processing. Lead and arsenick in soil. Site Characterization	Roberts, Ray	
SuperFund	Shurdden Leist Industrial Park Smelter	Henryetta	Smelter site cleaned up by superfund in 1990. However, utilities could not be installed for an industrial park without disturbing cap.	Kottke, Rita	redevelopment
Voluntary	ExxonMobil-E Hewitt CS	Hewitt		Johnson, Dale	closure
Voluntary	ExxonMobil-Hughes CS	Hughts		Johnson, Dale	
RCRA	Mixon Bro	Idabel	Wood Preserving facility. Post closure required monitoring of ground water for 30 years or until demonstration of no endangerment can be proved	Hailes, Cindy	post closure
RCRA	Madewell & Madewell	Jones	Lead-acid battery reclamation. DEQ approved Closure at industrial risk-based levels	Ukpaka, Sam	closure
Voluntary	Dowell Schlumberger	Kellyville		Roberts, Ray	
Voluntary	Union Pacific Railroad derailment	Kingfisher	1995 RR Derailment near Cimarron River near Kingfisher spilling carbon tetrachloride	Cates, David	Monitoring
Voluntary	Cintas/Omni Services	Lawton		Johnson, Dale	
Voluntary	Lawton, City of	Lawton		Reid, Jon	
RCRA	McAAP (McAlester Army)	McAlester	Continued moitoring and remediation	Lawson, David	Operation & Maintenance
RCRA	Tricat	McAlester		Young, Hillary	Operation & Maintenance
RCRA	Newcastle Land	McClain County	disposal sige of drilling mud. Consent Decree issued in 1992. Annual monitoring continues.	Zaidi, Askari	Operation & Maintenance
Voluntary	Koch Hydrocarbon, LP	Medford		Davis, Paul	remediation

Voluntary	BF Goodrich/Ottawa Mgmt Co	Miami	operated from 1940s to 1983. 30 acre building	Roberts, Ray	Feasibility Study
Voluntary	Michelin/BFG	Miami	operated from 1940s to 1983. Michelin entered consent order in 1997, ground water issues	Roberts, Ray	Remedial investigation
RCRA	Tinker AFB	Midwest City	Misc Waste storage areas, fire training areas, former maintenance facilities	Replogle, Robert	Remedial Action
SuperFund	Tinker AFB (3001 & Soldier Creek)	Midwest City	Three Sites: (1) Building 3001, (2) Soldier Creek Surface Water and Sediments, and (3) Soldier Creek/Industrial Waste Treatment Plant Ground Water	Hal Cantwell	remediation
Voluntary	Midwest City/MidAmerica Mall	Midwest City		Posey, Kendel	Remedial Action
Voluntary	Duke Energy-Moore CS	Moore		Stegmann, Scott	Feasibility Study
RCRA	Madewell Metals (SES Land Corp)	Muskogee	Lead Acid battery manufacturing and reclamation facility. Approved risk-based closure in 1998, continued monitoring of ground water	Stegmann, Scott	closure
Voluntary	Duke Energy-Mustang GP	Mustang		Johnson, Dale	
Voluntary	Duke Energy-S. Mustang CS	Mustang		Johnson, Dale	
Voluntary	Normandy Creek	Norman		Posey, Kendel	Operation & Maintenance
Brownfields	OCURA (Bricktown Urban Renewal- Phase I)	OKC	21 acres Phase 1 of Bricktown Redevelopment, above OKC oil and gas field, previous commercial manufacturing, rail road, retail, etc.	Johnson, Dale	
RCRA	Chemical Products Development Corporation	OKC	Located on OKC Airport Trust land, company now bankrupt; made industrial glues, paints and asphaltic coatings	Ukpaka, Sam	Operation & Maintenance
RCRA	GEO Holdings	OKC		Lawson, David	
RCRA	Interstate Metals	OKC		Ukpaka, Sam	
RCRA	Lucent Technologies/Celestica (AT&T)	OKC	computer assembler. Contaminants: perchloroethylene and trichloroethylene	Bennett, Jeannine	remediation

RCRA	Safety-Kleen Systems Service Center	OKC	Contamination: UST. Residual contamination are below USEPA MCLs for drinking water. Certificate of Closure granted in 20000	Young, Harry	
RCRA	Seagate (Control Data / Magnetic Peripherals)	OKC	Petroleum from underground storage tank	Zaidi, Askari	Monitoring
RCRA	Unit Parts	OKC	Remanufacturing (originally Borg Warner). Waste Solvents	Hamill, Gail	investigation
RCRA	Wall Colmonoy	OKC		Hamill, Gail	
RCRA	Xerox	OKC	Toluene and Methylene chloride. Closure report issued in 1992, remediation of ground water contineous.	Hamill, Gail	
SuperFund	Double Eagle Refinery	OKC	Oil recycler, clay pits with sulfuric acid used to settle solids from motor oil before refining into lubricating oil, sludge from cracking process. Formal remediation complete. Adjacent to Fourth Street Refinery	Amy Brittain	
SuperFund	Fourth Street Refinery	OKC	Adjacent to Double Eagle Refinery, operated from 1940s to 1970s facility stored, collected, and re-refined used oil. Formal remediation complete	Amy Brittain	remediation
SuperFund	Mosley Road Landfill	OKC	Municipal Landfill near Midwest City, operated by Waste Management of Oklahoma, accepted 1.7 million gallons of liquid industrial waste	Dennis Datin	remediation
SuperFund	Parawax Reclaimer Site	OKC	reclaimed crude oil exploration and production waste as well as polychlorinated biphenyls (PCB) oils. Project was Completed in 2001	Kottke, Rita	removal
SuperFund	Tenth Street Salvage Yard	OKC	Auto Salvage: Polychlorinated biphenyls (PCB). Perminant cap completed in 1995	Datin, Dennis	Operation & Maintenance
SuperFund	Woods Tank Farm	OKC	Emergency Response - inactive wastewater & chemical storage, unauthorized discharges, no money to remediate	Kottke, Rita	
Voluntary	Altec Lansing/Telex Comm	OKC		Replogle, Robert	Operation & Maintenance
Voluntary	BNSF/OKX North Yard	OKC		Keck, Jarrett	closure

Voluntary	Casady Square/MVP Part	OKC		Roberts, Ray	Operation & Maintenance
Voluntary	Cintas/Omni Services	OKC		Johnson, Dale	Remedial Investigation
Voluntary	Cross road Chrysler Jeep	OKC		Keck, Jarrett	closure
Voluntary	Dell Computer Site-OKC	OKC		Kottke, Rita	Operation & Maintenance
Voluntary	Dollar 75/MVP	OKC		Roberts, Ray	Operation & Maintenance
Voluntary	FAA Mike Monroney	OKC		Posey, Kendel	Operation & Maintenance
Voluntary	Harcros Chemicals	OKC		Replogle, Robert	
Voluntary	M-D Building Products	OKC	active manufacturing, 2001 entered into consent agreement to investigate potential ground water contamination	Roberts, Ray	investigation
Voluntary	OKC-S Canal Landcell	OKC		Johnson, Dale	
Voluntary	Omni Services / Western Uniform	OKC	Remediation	Johnson, Dale	
Voluntary	Pilchers Lakewood Shpng Ctr	OKC		Roberts, Ray	
Voluntary	Skirvin Hotel	OKC	Historic Hotel vacant since 1988, acquired by OKC in 2001. Revolving Fund Loan, to cleanup PCB, etc.	Kottke, Rita	2006 Opening as Skirvin Hilton
Voluntary	Summit Machine Tool/Seagate	OKC	Brownfield operation and maintenance	Lyon, Amil	
Voluntary	Target Corp:Store T-0043	OKC		Davis, Paul	
Voluntary	Trumbull Asph/Owens Corning	OKC		Davis, Paul	
Voluntary	Okmulgee Refinery	Okmulgee	closed refinery. Sludge and refinery-related oily waste. Phillips. Owned by Okmulgee industrial authority. Assessment	Brunsmann, Angela	Remediation
SuperFund	Tar Creek	Ottawa County	Towns of Quapaw, Commerce, Pitcher, North Miami, and Cardin are impacted. Lead and Zinc mining, contaminated ground water	Dennis Datin	
Voluntary	Owasso Land Trust	Owasso		Replogle, Robert	
SuperFund	Rab Valley Lumber	Panama	Former wood preserving facility closed in 1976. wood treating liquids and sludge. Stockpiles capped in 1998. Remediation continuing	Khalafian, Karen	feasability

SuperFund	EPA Removal	Panama, OK		Khalafian, Karen	feasability
Voluntary	BNSF/(BurkBales)/Phillips Pet	Pawnee		Roberts, Ray	
RCRA	ConocoPhillips Refinery	Ponca City	Refinery in operation since 1900s. Ongoing effort for recovery and treatment of hydrocarbon plume and contaminated ground water. Remediation operation and maintenance	Lawson, David	remediation operation and maintenance
SuperFund	Oshage Power Plant	Ponca City	Emergency Response - power plant taken off grid in 1980's, illegal asbestos removal but not prosecuted by Justice. Building deterioration allowed asbestos to become windblown.	Kottke, Rita	
Voluntary	Dowell Schlumberger	Pond Creek		Roberts, Ray	
RCRA	Eagle Picher EOM - (Umicore)	Quapaw	Primary and Secondary refining of germanium and gallium. Ground water contamination	Zaidi, Askari	Monitoring
RCRA	Julian Lumber	Rattan		Hailes, Cindy	
Voluntary	Willey Ranch	Ringwood	High chloride concentrations from historic saltwater injection wells. Remediation completed and closure granted 2000.	Roberts, Ray	final report
RCRA	Cavenham Forest Industries	Sallisaw	Closed manufacturing plant that made wood treated products using pentachlorophenol and creosote. Closed landfill. Ground water monitoring	Zaidi, Askari	Monitoring
Voluntary	Coltec Ind. / Federated Metal	Sallisaw	Borg Warner, manufactures automotive parts. Perchloroethylene in ground water. Assessment	Roberts, Ray	
SuperFund	Petrochemical Complex (ARCO)	Sand Springs	Refinery & Solvent recycling; acid sludge, petroleum, chlorinated solvents	Datin, Dennis	Operation & Maintenance
SuperFund	Sand Springs	Sand Springs		Datin, Dennis	Operation & Maintenance

Voluntary	Federated Metals	Sand Springs	Lead and Zinc smelter, 30 acres, from 1930 to 1989. Fill cap constructed for slag area. Cap of disposal cells.	Roberts, Ray	Redevelopment, Walmart SuperCenter opened in 2003
RCRA	Commercial Distributing, Inc (CDI)	Sapulpa		Young, Hillary	
Voluntary	Carisle Coating / Quaker	Sapulpa		Lyon, Amil	closed
RCRA	Shawnee Asphalt	Shawnee		Ukpaka, Sam	
Voluntary	ExxonMobil Chem/Shawnee Films	Shawnee		Lyon, Amil	
RCRA	Moore Bus Forms	Stillwater	Dyes and adhesives manufactured. Perchloroethylene spill occurred in 1992. Facility now closed. Well drilled to contain ground water contamination	Bennett, Jeannine	Monitoring
RCRA	National Standard	Stillwater	bead wire manufacturing. Sludge for lead, copper, zink. Monitoring Wells plugged, closure approved 1998	Hailes, Cinty	final report
Voluntary	Okla State Burial Site	Stillwater		Davis, Paul	
Voluntary	Stillwater Regional Airport	Stillwater		Lyon, Amil	
RCRA	Greenway (Chief Chemical)	Stone Bluff		Hailes, Cindy	
RCRA	Allied Materials	Stroud	Closed refinery, dismantled and removed from site. Landfill maintenance part of post-closure	Young, Hillary	post closure maintenance
Brownsfield	Dobson Ranch	Sweetwater		Lyon, Amil	closure
RCRA	Barrett Thomas Refinery	Thomas		Hensch, Don	
RCRA	Air Force Plant #3	Tulsa	US Air Force (Mc Donnell Douglas facility) with title transferred to City of Tulsa. Closure report issued, continued ground water monitor	Replogle, Robert	closure
RCRA	American Airlines	Tulsa	Industrial Waste Treatment Plant. Closure report issued in 2000, continued ground water monitor	Hensch, Don	Operation & Maintenance
RCRA	Ashland Chemical	Tulsa		Hensch, Don	
RCRA	Boeing/Spirit Aerosystems (Rockwell Intl)	Tulsa		Lawson, David	
RCRA	Chem Central	Tulsa		Zaidi, Askari	

RCRA	Clean Harbors (Safety-Kleen/HRI)	Tulsa	Commercial disposal facility for industrial wastes, closed. Full operation of remediation is continuing	Lawson, David	remediation
RCRA	Crosby-McKissick Prod	Tulsa	Manufacturing for oil and construction industries, paint residue, waste coolant oils, spent acid. Tetrachloroethane, Trichloroethene and Trichlorethane degradation products in ground water found in 1990. Ground water monitoring	Ukpaka, Sam	
RCRA	Envirosolve	Tulsa		Young, Hillary	
RCRA	Norris/O'Bannon Electroplating	Tulsa	pump manufacturing plant, chromium plating fluids leaked to sand fill beneath building. 1999 treatment was terminated and monitoring wells have been plugged.	Welch, Bob	Monitoring
RCRA	Ozark Fluorine (Ozark Mahoning)	Tulsa	Sulfuric acid, sodium monofluorophospate, sodium floride and stannous floride.	Zaidi, Askari	investigation
RCRA	Perma-Fix (CRT/RTI)	Tulsa		Ukpaka, Sam	
RCRA	Safety Kleen Systems	Tulsa		Young, Hillary	
RCRA	Sinclair	Tulsa		Young, Hillary	
RCRA	Sunoco, Inc	Tulsa	Refinery (Currently operating) 800 acres operating since 1913	Hensch, Don	investigation
SuperFund	Compass Industries Landfill	Tulsa	Abandoned limestone quarry, jet fules, solvents, bleaches, etc. Composit cap completed in 1991	Hal Cantwell	Operation & Maintenance
SuperFund	S&K Industries	Tulsa	Emergency Response - abandoned electroplating facility. Heirs did not have the money to cleanup property. Became emergency when stolen pickup crashed into building, undermining structure	Kottke, Rita	cleaned up
Voluntary	Baker Petrolite	Tulsa		Posey, Kendel	
Voluntary	Cintas/Omni Services	Tulsa		Johnson, Dale	

Voluntary	Crescent Mach/Scott-Macon	Tulsa		Davis, Paul	
Voluntary	Crosby-McKissick	Tulsa		Ukpaka, Sam	Operation & Maintenance
Voluntary	Dowell Schlumberger	Tulsa		Keck, Jarrett	
Voluntary	Epperly/Mr Keens Cleaners	Tulsa		Roberts, Ray	
Voluntary	Facet International	Tulsa		Replogle, Robert	
Voluntary	Git-N-Go	Tulsa		Replogle, Robert	closure
Voluntary	Hardman Master Cleaner	Tulsa		Keck, Jarrett	closure
Voluntary	Kerr Glass	Tulsa	Cleanup operation and maintenance	Datin, Dennis	closure
Voluntary	Nonni's Foods	Tulsa		Lyon, Amil	closure
Voluntary	Norris Sucker Rod Plant	Tulsa		Lyon, Amil	
Voluntary	Ozark Mahoning, Phosphogypsum Stack	Tulsa	Phosphoric Acid Manufacturing. Phosphogypsum stack and asbestos were disposed offsite. Complete action in 2001	Cantwell, Hal	
Voluntary	Rental Service Corp / Garnett Rd	Tulsa		Keck, Jarrett	closure
Voluntary	Ruhrpumpen	Tulsa		Keck, Jarrett	
Voluntary	Southern Specialties Corp	Tulsa		Replogle, Robert	
Brownsfield	Valero Energy	Turpin	Oil release in 1999. Cleaned up by 2005	Zaidi, Askari	closure
Voluntary	Unarco/Thorco	Wagoner		Davis, Paul	
Voluntary	Beaulieu of America	Watonga		Posey, Kendel	closed
RCRA	Clean Harbors-Lone & Grassy Mtn (Laidlaw/USPCI/Safety Kleen)	Waynoka	current operation, treats, stores and disposes of hazardous and non-hazardous waste. Some of the cells are leaking into ground water. Remediation	Ukpaka, Sam	remediation
Voluntary	Imation Enterprises Corp (3M)	Weatherford		Posey, Kendel	

Voluntary	Kodak Polychrome Graphics	Weatherford		Posey, Kendel	
RCRA	Safety Kleen Systems	Wheatland		Young, Hillary	
RCRA	Chevron Gas Plant	Woodward		Zaidi, Askari	closure
RCRA	Texaco (Equilon)	Woodward	Terminal, leased from Santa Fe RR, Benzene, Toluene, ethylebenzene, xylene, and petroleum hydrocarbons. Remediation continuing	Zaidi, Askari	
RCRA	Wynnewood Refining	Wynnewood	Operating refinery. Continued remediation and monitoring.	Young, Hillary	
RCRA	Sampson Resources/Global Compression	Yukon	TEC Contamination	Hamill, Gail	Remediation
Voluntary	Samson Res/Global Compress	Yukon		Hamill, Gail	
Voluntary	Adolf's Conv. Store /Tim McFarl			Replogie, Robert	
Voluntary	Howard Drilling (OCC-1006)			Replogie, Robert	
Voluntary	Keline Property			Stegmann, Scott	
Voluntary	Mobile Chemical / Midwest Films			Lyon, Amil	
Voluntary	Yale Cleaners #4			Stegmann, Scott	

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Endnotes

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