

CARDINAL RESOURCES LLC

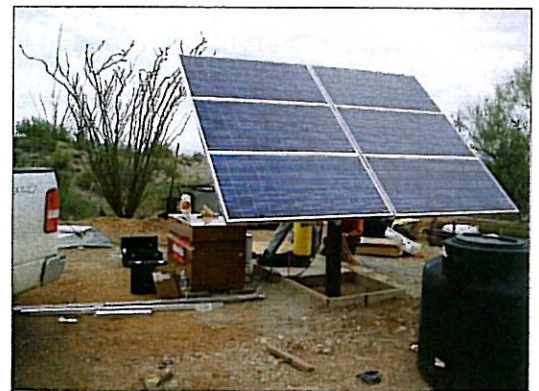
A New Direction in Environmental Services and Products

Since the 1800s, environmental engineering and services have played a key role around the world in business and people's lives. Cardinal Resources builds on that proud tradition of service with a culture of entrepreneurship, innovation, and the discipline to turn concepts into solutions. We implement solutions that focus on reducing our clients' environmental footprint, improving their processes, and finding new ways to eliminate or solve old problems. No longer driven strictly by the regulations, our clients look to Cardinal Resources to go beyond the traditional environmental assessments and cleanups and help our clients work smarter, cleaner, and cheaper, giving them a Green Advantage in their marketplaces.

The Future

Ongoing learning and diversification keeps Cardinal Resources ready to provide the best services for clients anywhere, anytime. Developing new ways to solve water and environmental problems is one part of our mission. This has led us to develop alternative water treatment approaches, including:

- ◆ The **Red Bird System**, a solar-powered high-tech solution for providing clean water in a low-tech environment;
- ◆ The **Gray Bird Approach** for low or alternative energy wastewater treatment systems; and
- ◆ Water management approaches for use in Green Building and Green Development.



Our services also continue to grow from our core in the areas of:



"I never have to chase you around like other consultants. Cardinal just goes out, does the job, and solves the problem."

- ◆ Strategic environmental management,
- ◆ Property redevelopment,
- ◆ Infrastructure development,
- ◆ Environmental liability assessments,
- ◆ Natural resources permitting, and
- ◆ Renewable energy assessments for solar, wind, and bio-diesel.

From the initial evaluation to the final solution, Cardinal Resources can provide the strategic thinking, the technical expertise, and the discipline to make the solution a reality. Whether it is for Fortune 500 companies or a small business, our commitment to our clients is the same -- *to partner with our clients to provide practical and cost-effective solutions to environmental and engineering challenges.*

Phase I Environmental Site Assessments

Cardinal Resources offers a wide array of services that may be required during the Phase I ESA. In addition to performing the actual assessment, our personnel can provide costs to remediate environmental liabilities that are identified in the course of the study. Cardinal Resources provides services to property owners, developers, attorneys, and insurers, all of whom need the information provided in a Phase I ESA to make decisions.

All Phase I ESA's are completed in accordance with ASTM standards. A typical Phase I ESA includes the following:

- ◆ Review of historic records — A review of historic environmental records is performed so that environmental risks caused by past site practices can be identified on both the subject property and neighboring properties.
- ◆ Visual assessment of site conditions — A visual assessment of the site will be performed to evaluate current conditions at the subject site and neighboring properties.
- ◆ Interviews with personnel and neighbors — Interviews with present and past personnel and personnel on neighboring properties to provide a picture of the current and past operations on site.
- ◆ Reporting — A summary of all information collected during the course of the Phase I ESA will be compiled into a report. Included in the summary will be Cardinal Resources' conclusions regarding potential environmental risks and costs related to the site. Cardinal can also include recommendations and costs related to the identified environmental issues on the property.

Phase II/Phase III Environmental Site Assessments

Cardinal personnel are very experienced in designing site assessment programs to focus on our clients' goals for the property and the regulatory program under which the work is performed. All assessments are designed for the collection of the most important data at the lowest cost. A phased approach is often the most cost-effective way to perform an assessment, and Cardinal Resources tailors this to meet the individual client needs.

Custom site assessment activities may include:

- ◆ Geophysical studies
- ◆ Drilling in unconsolidated and consolidated material
- ◆ Surface and subsurface soil sampling
- ◆ Soil gas sampling
- ◆ Groundwater sampling
- ◆ Aquifer characterization
- ◆ Dye trace studies
- ◆ Indoor air sampling



Remediation – A No-Nonsense Approach

Past disposal practices must sometimes be addressed so that a site can be put back into productive use. Every day the property cannot be used, the property owner loses money. Cardinal understands these issues and can move rapidly to evaluate and remediate our client's property.

Our staff has designed and installed groundwater and soil treatment systems; has performed the permitting; written the closure plans, work plans, and QA/QC plans; and oversees the work in the field.

After sufficient data is collected to evaluate the remedial options, Cardinal works with their client to decide upon the optimal solution. These decisions will be highly dependent on the client's plans for the property in the future. Because of Cardinal Resources' extensive experience in dealing with federal, state and local regulatory agencies, our personnel will assist you with any discussions with regulatory agencies before, during, and after the remedial option has been selected.



Start of remediation in 1999



Follow-up visit in 2006

Wastewater Treatment

Cardinal Resources wastewater services range from simple system troubleshooting to design/build of treatment systems. Cardinal can provide construction management, installation, permits, startup and will oversee the plant operation if needed.

We are well aware of the various municipal and industrial issues, and are able to keep the public's welfare firmly in mind at all times while keeping costs as low as possible. Cardinal Resources' personnel have years of industrial experience and remain current with all federal, state and local regulations.



Cardinal offers a broad range of WWTP services including:

- ◆ Design/Build/Operation
- ◆ Pilot Testing and Evaluation of Unit Processing
- ◆ Pretreatment Surveys and Administration
- ◆ Treatability Studies for Complex Wastewaters
- ◆ Conventional and Advanced Biological Systems
- ◆ Plant Start-up and Operator Training
- ◆ Treatment Plant Performance Evaluations
- ◆ Regulatory Liaison and Permitting



Industrial Compliance



Cardinal's compliance professionals are aware of these varied issues, and make every effort to reduce the costs of mandated compliance activities while seeking ways to improve our client's bottom line through compliance audits, waste minimization, automation of routine compliance functions, and other site-specific methods. We understand that industrial compliance activities must be completed in the most cost-effective manner possible while still maintaining adherence to federal, state, and local regulations.

Our industrial compliance services include:

- ◆ NPDES Permitting, Sampling, and Engineering Controls
- ◆ Stormwater Permitting, Sampling, and Engineering Controls
- ◆ Development and Update of SPCC/PPC Plans
- ◆ SARA Compliance and Reporting
- ◆ Compliance Audits
- ◆ Environment Management Plans and Systems
- ◆ Development of FRPs/RMPs/BMPs
- ◆ Wastewater Treatment Services

Environmental Health & Safety Services

Safety Always is a part of our mission and reflects the way we approach our Environmental Health and Safety Services. Cardinal's professionals, experienced in the consulting and industrial sectors, can help develop a corporate-level program, provide the training to implement the program, and provide audits to keep the program on track.

Corporate Health and Safety Program Development

- ◆ Corporate Policy — Guiding the approach to a Health and Safety culture
- ◆ Health and safety Procedures Manual — The road map for corporate-wide Health and Safety
- ◆ Compliance Audits — Continual feedback on program implementation and success
- ◆ Hazards Review — Provides site-specific data for program development
- ◆ Written Health and Safety Programs — Specific programs developed as required by compliance regulations

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