Pinnacle Engineering

PERSPECTIVE

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Railroad Spill Initiates Pinnacle's Emergency Response Efforts

An Unexpected Derailment Led to Emergency Clean-up Efforts

Pinnacle was recently called upon to act as lead emergency responder when a railroad client had a train derailment in eastern Iowa. The train derailed after hitting a large boulder, loosened by heavy rains, which had fallen onto the tracks. Approximately 2100 gallons of diesel fuel spilled into the railroad track bed adjacent to the Mississippi River.

Pinnacle's emergency response team was on site within 5 hours of receiving initial notification from the client. Upon arrival, Pinnacle personnel assumed control of the site and were in contact with the Iowa Department of Natural Resources and the US Coast Guard, the two primary governmental bodies with responsibility for overseeing actions at the site, during the entire operation.

Pinnacle's first task was to contain the spilled fuel. The train had derailed close to the banks of the Mississippi River, causing diesel fuel to seep from the spill site, down the river embankment and into a two-mile section of the river. Booms and pads were strategically placed along the river's edge to contain and collect the fuel. Secondly, with the DNR's approval, a plan was then instigated to pump water from the river into the spill area, pushing additional spilled fuel to the river, from the spill site on the tracks above. This action allowed the client to capture over 50% of the fuel that had been initially spilled.

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CEO'S CORNER—Case Study

Pinnacle Enhances Client's Environmental Compliance Programs—adds profits to bottom line.

In this issue's column, I will provide a "picture in time" of the relationship that has developed between Pinnacle Engineering and one of our long term manufacturing clients.

Pinnacle's initial introduction to the client came in typical form. The client had challenges with staying in compliance regarding the myriad of regulations it faced. Pinnacle's staff assisted the client in coming into compliance with air emissions rules and hazardous waste rules. As the relationship grew, Pinnacle took on the role of trusted partner and has advised this client on a number of difficult issues.

In an effort to reduce regulatory requirements and make it easier and less costly to comply, Pinnacle, along with the client's internal engineering staff, began looking at alternative processes and materials. The initial goal of these work efforts was to develop feasible methods to substantially reduce total pollutant load from the facility. Initial efforts focused on process material substitution but that alone did not yield desired results.

The team then began to look at process modification as well as material substitution. The team developed a manufacturing process that not only met the stated goal of substantial pollutant reduction, but resulted in significant cost savings in the production process and a higher quality (more durable) product for the client.

The purpose of this article is to demonstrate the multi-faceted engineering talents that Pinnacle brings to all projects we are faced with. We welcome the opportunity to assist you in the difficult day-to-day problems your business encounters.

If you or any other members of your organization have issues or questions, please feel free to contact me personally at your convenience.

P.S. *A special thank you to each employee of Pinnacle, without you none of these success stories would be possible.*

Sincerely,
Jim Holland, P.E./CEO

Inside this Issue:

AUAR Promotes Proactive Planning

The **AUAR** (Alternative Urban Areawide Review) is a relatively new environmental planning tool **available for local units of government** when planning for **development of residential, commercial, warehousing and light industrial uses.** The AUAR format offers the planner more flexibility and planning options than an EAW or EIS.

The AUAR's documentation and preparation time is similar to that of an EAW, with the exception that a plan (Mitigation Plan) is provided for mitigation of the various environmental impacts identified in the AUAR. Its level of analysis compares to that of an EIS, but the AUAR can be used in place of an EAW or EIS for land development planning. Under ASA general rule, the AUAR should provide a *"worst case scenario"* analysis for each possible environmental impact associated with the planned development.

One of the biggest advantages of an AUAR is its **flexibility** and its **completeness**. The AUAR is flexible because it is not project or area specific. It can address one or a multiple of projects within an area, or a number of areas, along with mitigation approaches for each. The AUAR provides a "big picture" of what environmental impacts will occur based on future expansion possibilities.

The AUAR must be consistent with the comprehensive plan developed by the local government. As such, the AUAR is complete because it addresses several scenarios for growth planned for by the government unit, allowing the government unit a more thorough analysis of the development plan. The AUAR requires the implementation of the Mitigation Plan, providing the government with a measure of control over the development, ensuring that environmental impacts are properly mitigated.

In summary, **the AUAR allows the government unit to be more proactive in planning for growth, while still having flexibility for change.** For more information, contact Jim Holland or Eric Hansen at 763-315-4501.

EMPLOYEE HIGHLIGHTS

Minneapolis Industrial Group Expands

With the outsourcing of environmental responsibilities becoming a more frequent practice in the industrial sector, Pinnacle continues to expand their Industrial Group with the addition of **Randy Cook**. Coming to Pinnacle from Minnesota's Technical Assistance Program (MnTAP), Randy will serve as the lead contact for Pinnacle's Minneapolis based industrial clientele. **As Senior Environmental Engineer, Randy's primary role will be client development and project management.**

For the last twelve years, Randy has worked for MnTAP, a non-profit organization, providing technical assistance to industry on waste minimization, waste management, environmental compliance, and energy conservation. Industries served included metal casting, plactics, fiberglass, pulp and paper, and ethanol production. Prior to MnTAP, Randy held positions as a plant manager and research engineer gaining additional experience in the areas of new plant start-up, production and plant management, industrial process optimization, and product development and quality control.

Randy has a Masters Degree in Environmental Engineering from the University of Minnesota, and a Bachelors of Science in Chemical Engineering from the University of Wisconsin. His certifications include Certified Energy Manager (CEM) and EIT and he's actively involved in the American Institute of Chemical Engineers and Association of Energy Engineers.

Randy has participated in numerous projects throughout his career. A sampling of his project experience follows.

- Implemented a procedure that reclaimed (for reuse) spent chrome solution at a tannery, dropping their hazardous waste status to SQG and saving $16k/yr.
- Identified a solution for a paper manufacturer that reduced suspended solids in wastewater, resulting in 18,000 lbs./day of recovered raw materials (savings of $2,000/day) with a capital expense of $200k.
- Implemented changes to a coatings process for an engine parts manufacturer that reduced phosphorus (P) discharge by a 50% saving on chemical and water costs and avoiding P surcharge—economic benefit to company about $35k/yr.
- Supervised water conservation effort at consumer products manufacturer that resulted in elimination of $150k SAC fee and annual water savings of $68,000.
- Assisted in energy assessments at several medium sized companies.
- General outreach to the Ethanol plants on water and energy conservation.

In the upcoming weeks, Randy will be contacting clients to introduce himself, while attempting to get a feel for any specific needs you might have. Please welcome Randy onboard and feel free to contact him at anytime. He can be reached at Pinnacle's Minneapolis office at 763-315-4501 or 1-800-366-3406.

Settlements Display Pro Industry Qualities

by Larry Sibik—Pinnacle Industrial Group

EPA announced separate settlement agreements between the Petroleum Marketers Association of America (PMAA) and the American Petroleum Institute (API) in March.

The settlement agreements between the EPA and the industry trade organizations, redefined a number of issues relating to specific SPCC rules. The direction of the changes relaxed certain requirements for the handling and storage of petroleum products. Rule interpretations have been made to make it easier for facilities to comply without extensive modifications to loading/unloading equipment and procedures. Following is a brief outline of the key agreement provisions that are most likely to affect Pinnacle clients.

The complete agreement can be viewed on the EPA web site at **epa.gov/oilspill/pdfs/SettlementAgreement.pdf**.

The requirement for containment during loading and unloading operations.

The EPA changed the interpretation for the construction of a secondary containment unit, to only include facilities that have a load/unload rack (i.e. bulk oil distributors and other large handlers of oil products.)

Under the previous interpretation, secondary containment was required for a truck that was unloading fuel at an industrial facility. Since most facilities were not set up to provide secondary containment, and even had provisions to provide good drainage for rainwater, this provision was going to be difficult and costly to implement. (Attachment A of the API agreement.)

'Not Practical' is further defined

The SPCC rules allow a contingency plan to be used in situations were structural controls are determined to be "not practical". The issue of defining "impracticality" led to the change in secondary containment requirements for some site/specific facilities where additional issues are contributing factors (i.e. geographic limitations, zoning ordinances, fire prevention standards, or safety considerations.) In this instance, facilities may choose other environmentally equivalent approaches, selected in accordance with sound engineering practices, instead of secondary containment or other control structures.

One of the best examples of this issue was at an airport. The local Fire Marshall did not want secondary containment for fueling operations near airplanes on the tarmac. His rational was that if a spill occurred, for safety reasons, he wanted fuel to drain as far away from the planes as possible. Thus his decision rendered the construction of a secondary containment unit to be impractical. (Attachment B of the API agreement.)

Integrity testing of small, shop built tanks.

The requirement to perform expensive and invasive physical testing to determine the tanks integrity can be replaced with periodic visual inspections of the entire tank, as long as the shop-built container is installed in a manner that decreases corrosion potential and makes all sides of the container, including the bottom, visible during inspection.

This modification was a result of evidence that small, shop built tanks, do not typically rupture suddenly, and when installed properly, with proper containment measures for leak detection and control, present a low risk to the environment. (Attachment A of the PMAA agreement.)

Implementation dates have not changed.

For existing facilities the SPCC plan must be amended to meet the new rules by August 17, 2005, and must implement the plan's provisions by February 18, 2006.

For questions or information on how the changes affect your facility, contact Larry Sibik at 763-315-4501 or 1-800-366-3406.

ENVIRONMENTAL

Railroad Connection Warrants Wetland Mitigation

A railroad client retained Pinnacle Engineering, Inc. to obtain the local and federal permits necessary to impact wetlands associated with a proposed railroad connection and siding project in rural southern Minnesota. The project area consisting of agricultural land, restored prairie (in the CREP program), and wetlands, involves five miles of siding adjacent to the existing railroad track and the future right-of-way corridor for a proposed railroad connection. After discussions with the Army Corps of Engineers (ACOE) and the Local Government Unit (LGU), Pinnacle combined the two aspects of the project into one wetland permit application.

The siding portion of the project required a wetland permit to impact eleven separate wetlands along nearly three miles of existing railroad track. The proposed connection began as a single track allowing for an east to north or south to west connection, but grew to become multiple tracks capable of transferring railcars in any direction.

Pinnacle utilized existing wetland delineations, as well as, completing additional wetland delineations, and filed the Wetland Permit application with the ACOE and the LGU. The application proposed filling portions of wetlands totaling over 1.25 acres in size. Pinnacle designed a mitigation area to replace the impacted wetlands adjacent an existing wetland within the project area. Pinnacle also designed a wetland banking plan for the site utilizing an existing county ditch to hydrate nearly two acres of created wetland within the project area.

Due to the land use change, a Conditional Use Permit (CUP) was required for the rail connection by the County. Pinnacle managed the CUP application for the railroad, and gave a presentation during a public meeting to the County Board in order to obtain the CUP. The County Board approved the CUP by a 6 to 1 margin, and construction has begun on the project.

The Pinnacle Project Team included:

Scott Thelen—Project Manager
Jim Holland, P.E.—Principal-In-Charge

Regulatory Calendar

July 30, 2004—Air Emissions Deviation Report (MN)
July 31, 2004—MCES Indus. Wastewater Report (MN)

October 24, 2004—Hennepin County Grant Program application deadline

November 1, 2004—Metropolitan Council Brownfield Grant application deadline, MN Trade & Economic Development Grant application deadline, and **AST Upgrade Requirement—Rule 7151 deadline**

December 15, 2004—Hazardous Waste Annual Report, and **Hazardous Waste License Application** (Hennepin County Residents)
December 31, 2004—Hazardous Waste Training, and **MCES Industrial Wastewater Sampling** (All Permit Holders)

June 30, 2007—Minnesota Petrofund Sunset—the final date to perform reimbursable investigation or cleanup of petroleum storage tanks in Minnesota. For additional information regarding the Petrofund program or reimbursement procedures, contact **John Landwehr** or **Mike Hultgren** at **763-315-4501.**

August 17, 2005—SPCC Plan—the final date to amend your facility's plan to meet the new rule updates.

(Response article continued from page 1)

The recovered fuel was pumped from the boomed area and containerized for proper management. All of these clean up activities were completed from boats since there was no access to the site (except by rail) to deal with the incident.

Due to the location of the spill and the fact that the railroad ballasts (rocks) were sitting on bedrock, Pinnacle obtained approval from IDNR to Bio-remediate the site. **Pinnacle introduced a bio-slurry of petroleum eating microbes at the site, and after successful applications, the site is now pending closure from the IDNR.**

To summarize, Pinnacle's role on this site was to act as the Site Supervisor. Pinnacle controlled all site activities, including regulatory communication, and directed all work efforts of other emergency response contractors. The successful handling of this spill has lead to Pinnacle entering into a contract with the client to act as first responders and site supervisors on future issues.

Pads were placed along the rocky River's edge to soak up the fuel.

The Pinnacle Project Team included:
Eric Hansen, P.E.—Sr. Project Manager
John Landwehr—Project Manager
Matt Stokes—Field Services
Jim Holland, P.E.—Principal-In-Charge

UPCOMING EVENTS

- **River Deployment Procedures Training**—July 19-22, 2004 (Pinnacle/Peak Industrial Team)
- **American Coalition for Ethanol Tradeshow**—Duluth, MN, August 10-12, 2004 (booth #405)

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Pinnacle Engineering

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