USE OF INJECTION WELLS FOR REFINERY WASTE DISPOSAL

QUARTERLY

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Objectives

The Ground Water Protection Council (GWPC) has had initial discussions with the American Petroleum Institute staff and several major oil companies concerning a project that would address several technical and regulatory issues related to the use of injection wells at refineries. All parties believe that this project has significant potential to save millions of dollars in operational costs by streamlining and improving both state and federal UIC regulations which are now overly redundant and not risk-based.

As currently regulated by the United States Environmental Protection Agency (USEPA), injection wells used for refinery related disposal are typically classified as either Class I hazardous or non-hazardous, depending on RCRA classification. The expense of acquiring an operating permit for these types of wells is very high and they have substantially more operational expenses than a typical Class II injection well. The combination of permitting requirements (including a "no-migration" petition), stringent construction requirements, and intensive monitoring and reporting requirements often make these wells uneconomical for otherwise legitimate waste disposal purposes.

What is perplexing, based on general observation, is that some Class II injection wells are being permitted and allowed to dispose of wastes having similar characteristics as some of those used by the refineries but classified as hazardous. Class II injection wells are authorized statutorily because the injectate is associated with fluids originating from the production of hydrocarbons. From our conversations with several state oil and gas regulatory agencies and representatives of the refinery industry, it appears that the use of Class II wells at refineries has been rejected because they are not seen as being directly associated with the production of oil & gas. Examples of such refinery wastes are those associated with various treatment or process streams originating from the plant. Although these wastes are associated with produced hydrocarbons, USEPA does not consider them to be in the same category as wastes associated with Class II injection wells, even if they are characteristically similar.

This project would collect sufficient data to determine whether or not (in relation to the underlying regulations) there is an inconsistency in current federal and state regulation. If one is found, refineries might be eligible for a reclassification of wastes.

This project could result in a modification of these wells' classification given the fact that the GWPC through its state members and USEPA have resolved similar issues in the past. One example is the USEPA modified rules so that waste fluids (brines) brought to the surface as a result of gas storage operations could be exempted under the RCRA program's hazardous waste exemption. This determination essentially said that these fluids could be defined as being associated with the initial production of hydrocarbons. In another example some states have made UIC program decisions, in turn approved by USEPA, that wells used to dispose of non-hazardous fluids associated with oil & gas enhanced recovery equipment maintenance could be disposed via a Class II injection well.

These are not accomplishments that can easily, if at all, be done by the regulated industry. These are functions of the state and federal government. Subsequently, it takes a state regulating group like GWPC, with assistance from DOE to do the work.

Summary Of Technical Progress

Task 1: Characterize the Various Wastes that are Produced at a Sample of Refineries. The refining industry, as well as, USEPA has been actively attempting to characterize these wastes. This project will allow the use of existing records that have been accepted by both parties.

Task 2: Correlate Waste Types with the Current Disposal Mechanisms and Desired Disposal Mechanisms. This will require discussion with selected refineries most interested in utilizing underground injection to thoroughly assess and analyze waste characterization and disposal mechanisms. The characteristics of these wastes will then need to be compared to waste characteristics common to Class II injection wells.

Task 3: Assess Disposal Options. This task will involve a study of the feasibility of using Class I injection wells (hazardous vs non-hazardous), Class II injection wells, modifying regulations for the development of a well class or modifying existing well classification restrictions. The objective of this effort will be to delineate the most cost effective possibilities, some of which may require modifications to existing underground injection control regulations at the federal level.

Task 4: Prepare Final Report. The final report will summarize the objectives of this effort, the waste characterization and existing disposal methods assessment, and the feasibility of potential alternatives.

Summary of Progress:

- In early January the project team worked to compile preliminary results of the responses to the questionnaire that was distributed to the 67 member company representatives of the Environmental Committee of the National Petroleum Refiners Association in December, 1996.
- Work continued on the accumulation of background material needed from representatives state agencies and refineries to identify barriers to developing a different classification for these refinery wastes. Early responses from some state regulators indicated some lack of acceptance to change the current well classification process. Some do not want to open discussion on a regulatory system of longstanding and maturity and one they believe is working.

- Assessment of the companies who responded to the survey indicate that not much thought has been given to consider the use of injection of refinery wastes. The general feeling was that the current disposal method is more cost effective than utilizing injection for disposal.
- The project team made a presentation at both GWPC's Annual UIC Meeting in Houston in January and GWPC's Annual Policy Meeting in Washington, DC. At each meeting considerable interest was given by participants.
- In March members of the project team met to discuss the direction to the project since the funding period was soon coming to a close. It was decided that the best way to conclude the effort would be to conduct a national meeting focusing on the specific subject of the use of injection for refinery waste. The idea would bring together those who could discuss the virtues of injection along with the industry representatives to discuss the current waste disposal issues. Additionally the project team would reveal various scenarios of costs to inject if the regulations were altered verses the current Class I regulations, as well as, various scenarios related to environmental liability to refiners if surface discharge requirements were increased. It was also determined that the grant should be extended to accommodate this meeting.