

GEC // **GENESIS ENVIRONMENTAL CONSULTING, INC.**

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December 2, 1996

Dave Ann Pennington.
Geologist
Solid Waste Management Division
Arkansas Department of Pollution Control & Ecology
8017 I-30, P.O. Box 8913
Little Rock, AR 72219-8913

SUBJECT: Response to Dye Test Workplan Comments Dated November 4, 1996
Sunray, Tontitown, Arkansas

Dear Dave Ann:

On behalf of Sunray\USA Waste, Genesis Environmental Consulting, Inc. (GEC) would like to take this opportunity to responded to your November 4, 1996 letter concerning your comments to the Dye Test Workplan for the Sunray\USA Waste Tontitown Landfill. The majority of these comments were discussed verbally during the November 8, 1996 meeting at the Tontitown Landfill which was attended by Bob Lemmer, John Hill, Mike Hood and yourself from the Solid Waste Division of the Arkansas Department of Pollution Control and Ecology (ADPC&E), and Dr. Albert Ogden, Dan McCullough, David Hopkins and Mark Witherspoon of GEC. The following provides a brief summary of the conclusions reached during this meeting. A detailed description of the dye test methodology will be presented in hydrogeologic section of the permit modification application.

- During the November 8 meeting, Dr. Ogden provided detailed explanations concerning the amount of dyes to be utilized and submitted publications addressing the possible adverse health effects to groundwater from the three dyes . As requested, the injection of all three dyes was delayed until the results of the background samples were known in order to verify that background levels were acceptable and effects from previous dye test were not evident. In addition, the MSDS sheets for all dyes were presented to the ADPC&E to identify the exact type of dyes as requested. It was agreed that these dyes were approved after consultation with Dick Cassat of ADPC&E.
- After extensive discussions on the amount of dye to be injected, it was decided that two pounds of fluorosine, and one pound of eosine and

rhodamine would be injected at designated points. It was agreed after consultation with Dick Cassat and based upon other dye tests performed in the area, that this amount would be adequate while insuring that groundwater quality was not adversely affected. It was also determined that the formulas referenced in EPA 904/6-88-001 could not be accurately utilized due to the number of unknown variables (groundwater flow velocities, discharge rate of spring). Rather than estimate these variables, the amount of dye was based on the experience of Dr. Ogden, and the amounts utilized in other dye tests in the area. It was the opinion of Dr. Ogden that the amount of dye utilized is very site specific.

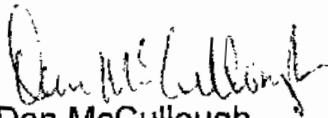
- The sampling frequency was increased at the request of ADPC&E. The round was collected approximately 24 hours following the injection as requested. The second and third rounds were collected at 72 and 120 hours following injection. The fourth round will be collected 96 hours (4 days) following the third round. The fifth and sixth rounds will be collected at 168 hour (7 days) intervals for two weeks from the fourth round. The remaining rounds until the conclusion of the test will be collected at 336 hour intervals (14 days) from the sixth round.
- All sampling points will be monitored during each sampling event even after a positive detection at a monitoring point as requested.
- A complete spring inventory was conducted during the field investigation. This spring inventory covered an area bound by Little Wildcat to the east and Clear Creek to the south. Since it was not specified in your letter as to the distance from the landfill that every downgradient spring must be monitored, the distance was based on the best analysis of Dr. Ogden. Each spring was re-visited prior to injection and several new monitoring points were added at the suggestion of Dr. Ogden. Results of the spring inventory will be presented in the hydrogeologic section of the Permit Modification Application. As discussed, the monitoring program not only includes wells and springs, but also includes stream locations in order to monitor the receiving area for undetected springs.
- A complete lineament analysis will be presented in the Permit Modification Application. This information will be based on research conducted by University of Arkansas, U.S. Geological Survey and historical aerial photographs analyzed by GEC.

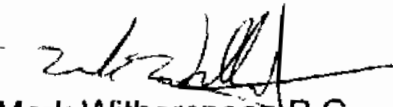
- GEC understands that ADPC&E contacted the laboratory (Crawford and Associates) which is conducted the analysis of the dye packets directly. During this conversation, a method of analysis and handling was agreed upon. All samples will be rinsed as agreed upon and visual records will be recorded. In addition, results from the dye test will be submitted directly to ADPC&E from the laboratory.

As you are aware, the regular groundwater sampling event is scheduled for the Tontitown site in December, 1996. Since the dye test will be on-going at this time, GEC request that this event be postponed until the next scheduled event in March, 1997. GEC believes that the outcome of the dye test could be altered by the pumping of the monitoring wells during purging. Sunray would greatly appreciate a written response to this issue prior to the scheduled sampling event.

If you have any questions, please contact Mark Witherspoon or myself.

GENESIS ENVIRONMENTAL CONSULTING, INC.


Dan McCullough,
Senior Hydrogeologist


Mark Witherspoon P.G.
President

cc. Kevin Hodges