

ST 1993



BRUCE KING  
GOVERNOR

State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
Harold Runnels Building  
1190 St. Francis Drive, P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-2850

JUDITH M. ESPINOSA  
SECRETARY

RON CURRY  
DEPUTY SECRETARY

MEMORANDUM

TO: File, ST/red/93

THROUGH: Edward Horst, RCRA Program Manager, and Steve Alexander, Technical Section Supervisor *SM*

FROM: Ron Kern, Technical Program *PK* *your copy*

DATE: February 26, 1993

SUBJECT: **Technical Re-evaluation of Off-site Contaminant Plume Delineation at Sparton Technology, Inc., Albuquerque**

The Technical Section has been conducting a review during February of information and data related to the file on Sparton Technology, Inc. (ST). This review was undertaken for familiarization with the current status on ST's Draft Corrective Measure Study (CMS) Report (November 6, 1992). During the course of this review, all available off-site monitoring well and soil-gas survey data were examined to verify the horizontal and vertical extent of contaminant plume migration.

Figure 1 indicates the location of monitoring wells (MW) drilled by ST for delineation of the contaminant plume in the Upper Flow Zone (UFZ) in the uppermost part of the aquifer. Trichloroethylene (TCE) concentration contours are shown because TCE is one of the major constituents of the groundwater contamination.

Numbers and locations of MW's at the "down-gradient limit" of the plume are insufficient to completely characterize the groundwater flow direction in the UFZ. The plume, which appears to be migrating with the groundwater flow, may therefore also be insufficiently delineated.

During ST's most recent soil-gas survey (June, 1990), anomalous values of TCE were encountered immediately south of Congress Avenue and west of Irving Boulevard (Fig. 2). These data suggest that there may be groundwater contamination in the UFZ below this general area. ST has not addressed this anomalous zone with any MW.

It is possible that either a part of the contaminant plume or that the entire plume is migrating in a southwesterly direction near the "down-gradient limit" currently proposed by ST. Between MW-53 and MW-62 (Fig. 1) there is a linear gap of approximately one thousand

(1000) feet through which the plume may have progressed. Such a possibility is consistent with the soil-gas survey discussed above.

The same possibilities exist in the Upper Lower Flow Zone (ULFZ) and the Lower Lower Flow Zone (LLFZ), located below and hydraulically connected to the UFZ. Within the ULFZ, there is a gap of eighteen hundred (1800) feet between pertinent MW's; within the LLFZ, placement of the MW's has not been sufficient to define the down-gradient limit of the TCE plume.

Part of the problem relates to the locations and spacings of MW's that ST was required to drill.

The Corrective Action Plan (CAP), attached as Exhibit 1 to the Administrative Order on Consent (AOC), stipulates that ST shall define "the complete horizontal extent of contamination in the upper flow zone using monitor wells... [to bracket] the leading edge of the plume utilizing well spacings across the edge of no more than three hundred (300) feet" (Task III.A.1). Furthermore, the CAP requires definition of "the complete horizontal extent of contamination in the pervious zone immediately underlying the upper flow zone using monitoring wells for confirmation" (Task III.A.2). Additionally, as part of the Post-Closure Permit application, ST is required [40 CFR 270.14(c)(4)] to delineate the extent of the plume and identify the concentration of each Appendix IX constituent (Part 264) throughout the plume. The Post Closure Permit, if issued by NMED, must contain all Part 270 requirements.

ST, through a dispute resolution process outlined in the AOC (IV.F), requested and received relief from the well spacing requirement. The U.S. Environmental Protection Agency (EPA), Region VI, had instigated the requirement for additional wells which led to the dispute resolution. The current number and location of MW's was consequently approved by EPA, Region VI (September, 1990).

The intent of the AOC, CAP, and regulations discussed above is to ensure that the facility (ST) performs tasks deemed necessary to protect human health and the environment. If the contaminant plume has not been properly defined because of inadequate MW spacing, then the intent of the regulatory process has not been fulfilled. Additional MW's are therefore required to ensure that the contaminant plume has been properly delineated.

cc: Steve Alexander, Technical Section Supervisor



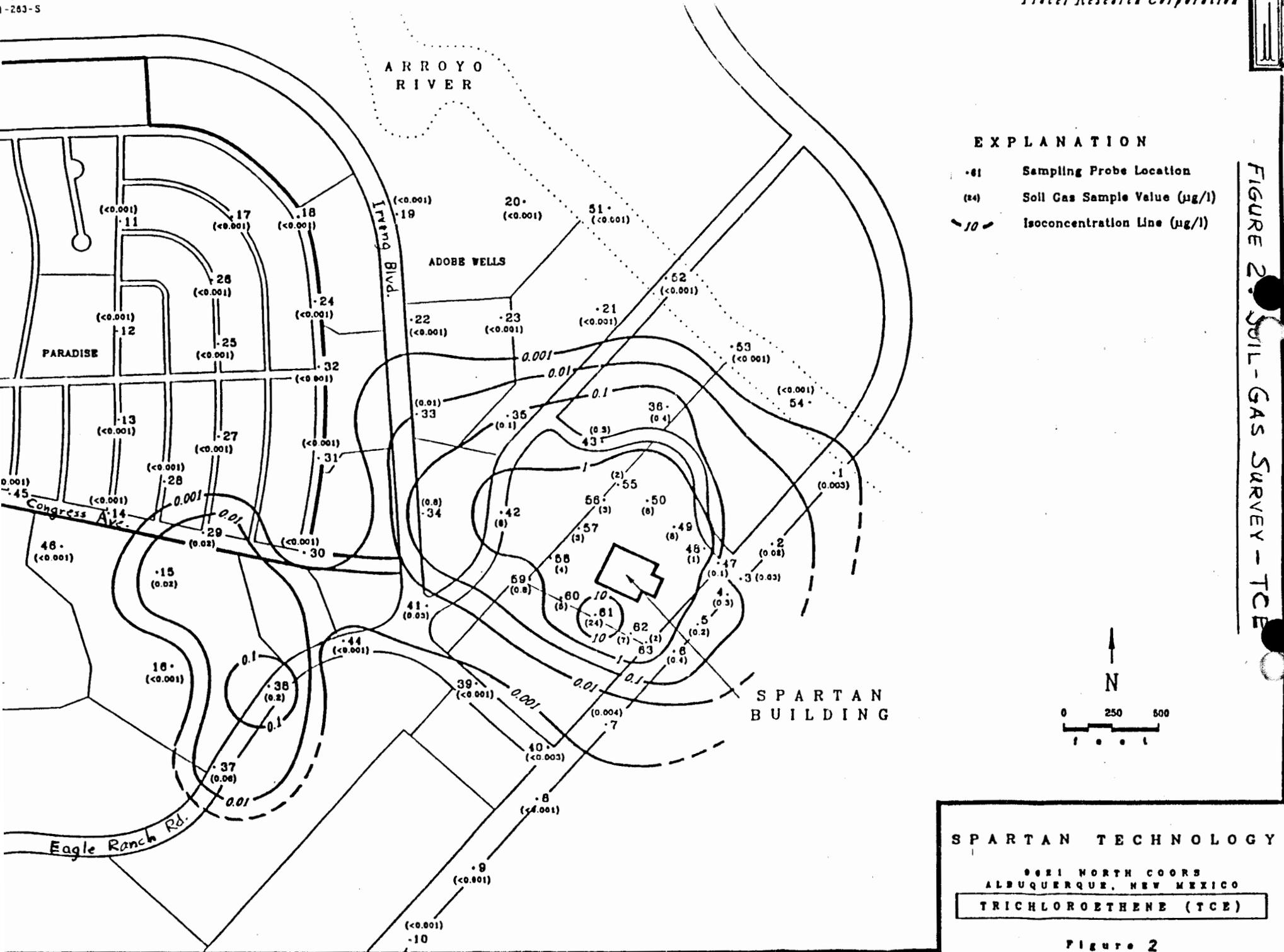


FIGURE 2: SOIL-GAS SURVEY - TCE

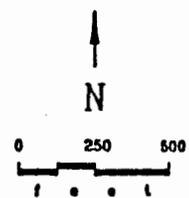


Figure 2