S. S. PAPADOPULOS & ASSOCIATES, INC.
ENVIRONMENTAL & WATER-RESOURCE CONSULTANTS

S. S. PAPADOPULOS
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April 23, 1998

Michael T. Donnellan, Esq. **BY HAND DELIVERY**
U. S. Department of Justice
Environment and Natural Resources Division
Environmental Enforcement Section
1425 New York Avenue, N.W.
Washington, DC 20005

Subject: City of Albuquerque v. Sparton Technology, Inc., No. CV-97-0206 (D.N.M.)

Dear Mr. Donnellan:

At the request of Mr. James B. Harris of Thompson & Knight, we are herewith enclosing six (6) copies of Sparton Technology Inc.'s proposal to enhance onsite ground-water recovery at their Coors Road Facility in Albuquerque, New Mexico.

Sincerely,

S. S. PAPADOPULOS & ASSOCIATES, INC.

Stavros S. Papadopulos
Chairman, Board of Directors

Enclosure

cc: James B. Harris, Esq., Thompson & Knight
R. Jan Appel, Esq., Sparton Corporation

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PROPOSAL TO INSTALL A RECOVERY WELL AND ASSOCIATED FACILITIES AT THE SPARTON TECHNOLOGY, INC. COORS ROAD FACILITY ALBUQUERQUE, NEW MEXICO

1.0 INTRODUCTION

Sparton Technology, Inc. (Sparton) is currently operating an on-site groundwater recovery system at its Coors Road Facility in Albuquerque, New Mexico. The system consists of eight shallow monitoring wells completed across the water table (the Upper Flow Zone or UFZ) and which were converted to recovery wells; the water recovered from these wells is treated by an on-site air stripper and the treated water is discharged into the City of Albuquerque sewer system. Based on preliminary evaluations of the expected yield of the recovery wells, the air stripper was originally designed for a capacity of 20 gallons per minute (gpm).

In recent years, irrigation in areas upgradient from the site has been discontinued and the water table at the site and in its vicinity has been declining at a rate of about one-half foot per year. As a result, the total yield from the eight recovery wells has declined to less than one-half gpm; recovery well MW-8 has become dry, and at the current rate of water-table decline it is expected that all these shallow recovery wells will eventually become dry. Sparton, therefore, proposes to replace the eight on-site recovery wells with a single recovery well installed immediately downgradient of the site. This proposed well, which will be pumped at 20 gpm, will capture most of the contaminant mass leaving the Sparton site and will utilize the full capacity of the existing on-site air stripper. Details on the proposed recovery well and associated facilities are presented in this proposal.

2.0 SITE CONDITIONS

The vertical distribution of TCE concentrations near the northwestern boundary of the Sparton Site is shown in Figure 1. As shown on this figure, TCE concentrations along the northwestern site boundary are relatively low near the water table; the highest concentrations, and hence the greatest mass discharge across this boundary, occur at depths of about 20 to 40 feet below the water table, primarily within what has been referred to as the Lower Flow Zone (LFZ).

Water-level contours, based on January 1998 measurements in wells open to the LFZ, and the average direction of groundwater flow across the Sparton site are shown in Figure 2. The hydraulic gradient across the site, calculated from these contours, is about 0.0045 foot per foot. The transmissivity of the aquifer underlying the site has been previously determined to be 18,000 gallons per day per foot (gpd/ft) from a pumping test conducted on well PW-01 (see Figure 2 for well locations). The capture zone of the proposed recovery well, presented later in this proposal, was calculated using the above values of transmissivity and hydraulic gradient.

3.0 PROPOSED RECOVERY WELL AND ASSOCIATED FACILITIES

The location of the proposed recovery well is shown in Figure 3. As shown in this figure, the well will be installed within an 80-foot easement that runs parallel to the northwestern boundary of the Sparton Site. The well location shown in Figure 3 is the optimum for maximizing the mass of contaminants that can be captured by a 20-gpm well located within this easement. The well will be completed with 4-inch nominal diameter casing and screen; the screened interval will extend from the water table to a depth of 50 feet below the water table.

After treatment, the water pumped from the recovery well will be discharged into one of two infiltration ponds located within a 100-foot wide fenced area within and along the northeastern boundary of the Sparton Site (see Figure 3). Each pond will be designed to accept the entire 20 gpm discharge of the recovery well; thus treated-water discharge can be switched from one pond to the other for rehabilitation, maintenance and repair operations. (For the purposes of this proposal the dimensions of each pond have been assumed to be 20 ft by 300 ft.) As shown in Figure 3, the existing air stripper and control building will also be moved to the area within the fence.

4.0 CAPTURE ZONE OF THE PROPOSED RECOVERY WELL

The areal limit of the capture zone of the proposed recovery well is shown in Figure 4. As shown in this figure, recharge from the infiltration ponds will cause the capture zone to be somewhat skewed with respect to the average direction of groundwater flow. There will also be a slight change in the limit of the capture as discharge of the treated water is switched from one pond to the other; however, the width of the capture zone along the northwestern property boundary will remain essentially the same, about 250 ft. The vertical projection of this width of the capture zone along the property boundary is shown in Figure 5, superimposed on the vertical distribution of TCE concentrations.

The horizontal and vertical extent of the capture zone presented in Figures 4 and 5 are based on calculations that assume a well fully penetrating the saturated interval corresponding to the

transmissivity of 18,000 gpd/ft. Because the proposed recovery well will be partially penetrating this interval, its capture zone could be wider and shallower[1].

After the recovery well is put into operation, pumpage from the existing on-site recovery wells will be discontinued. During the first month of operation, water levels will be monitored in the recovery well and in existing on-site monitoring wells to assess the performance of the recovery system.

[1] Bair, Scott E. and Terry D. Lahm, 1996, Variations in Capture-Zone Geometry of a Partially Penetrating Pumping Well in an Unconfined Aquifer, Ground Water, v. 34, no. 5, pp 842-852.

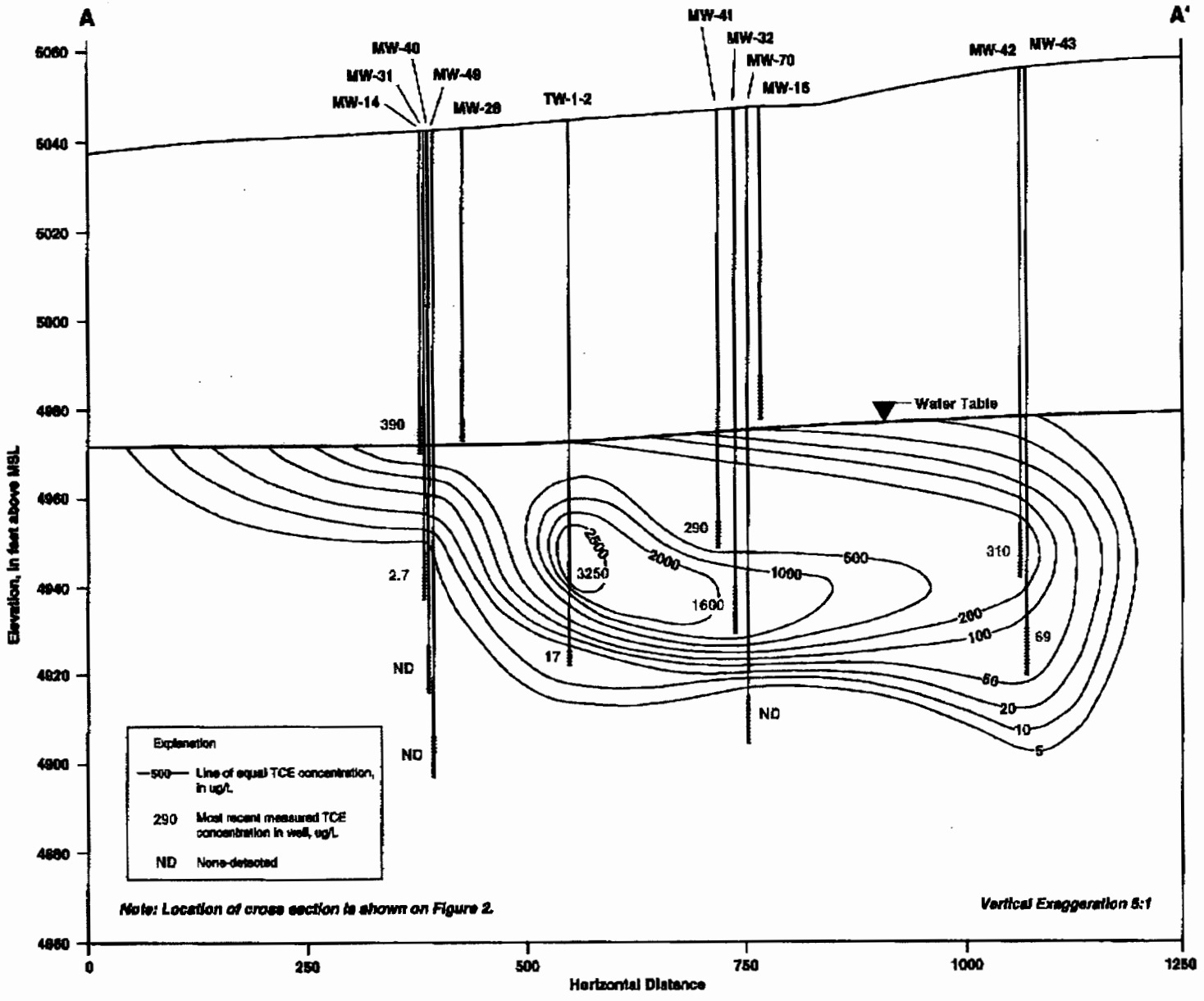

Figure 1 Vertical Distribution of TCE Concentrations along the Northwestern Site Boundary

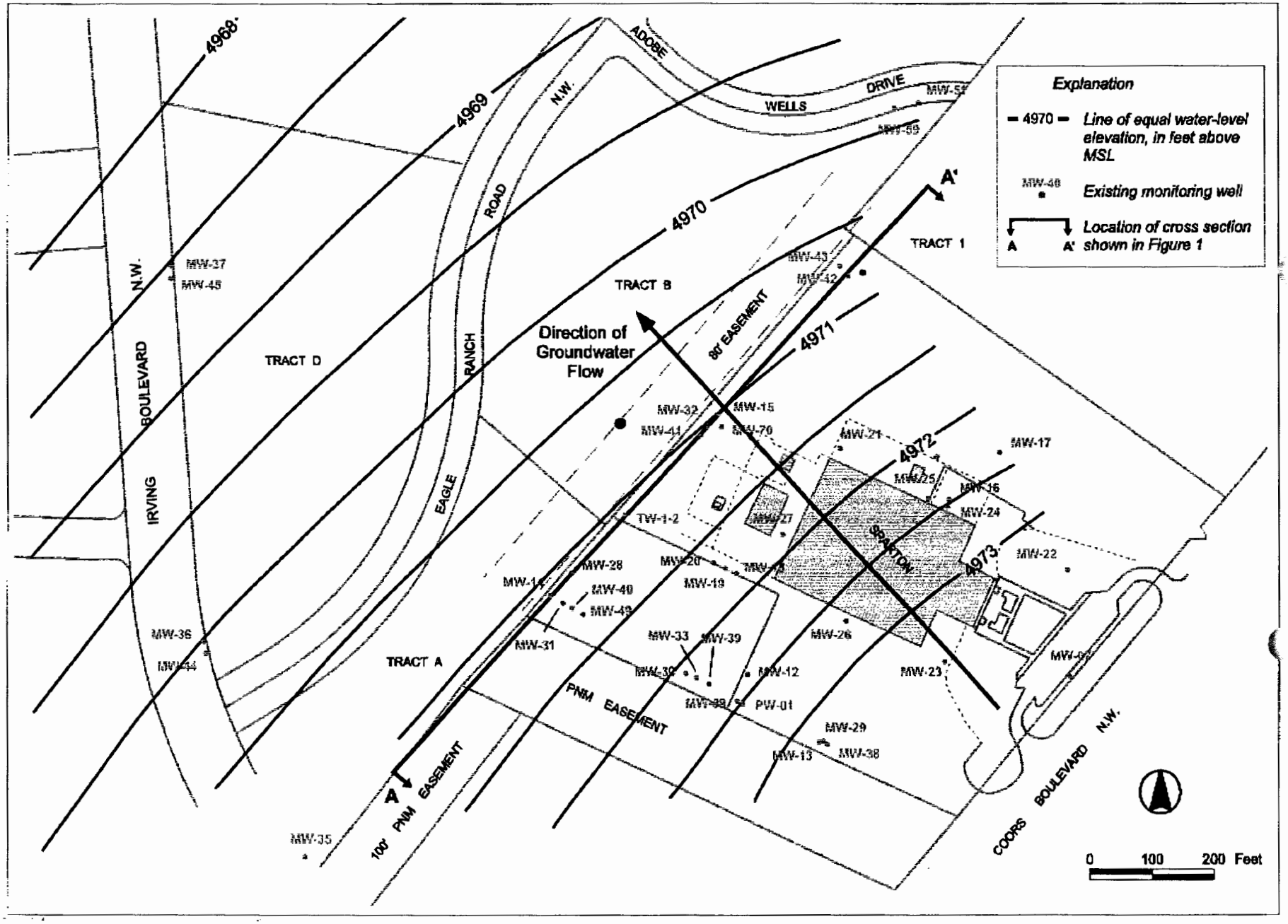

Figure 2 Water Levels and Direction of Groundwater Flow in the Lower Flow Zone

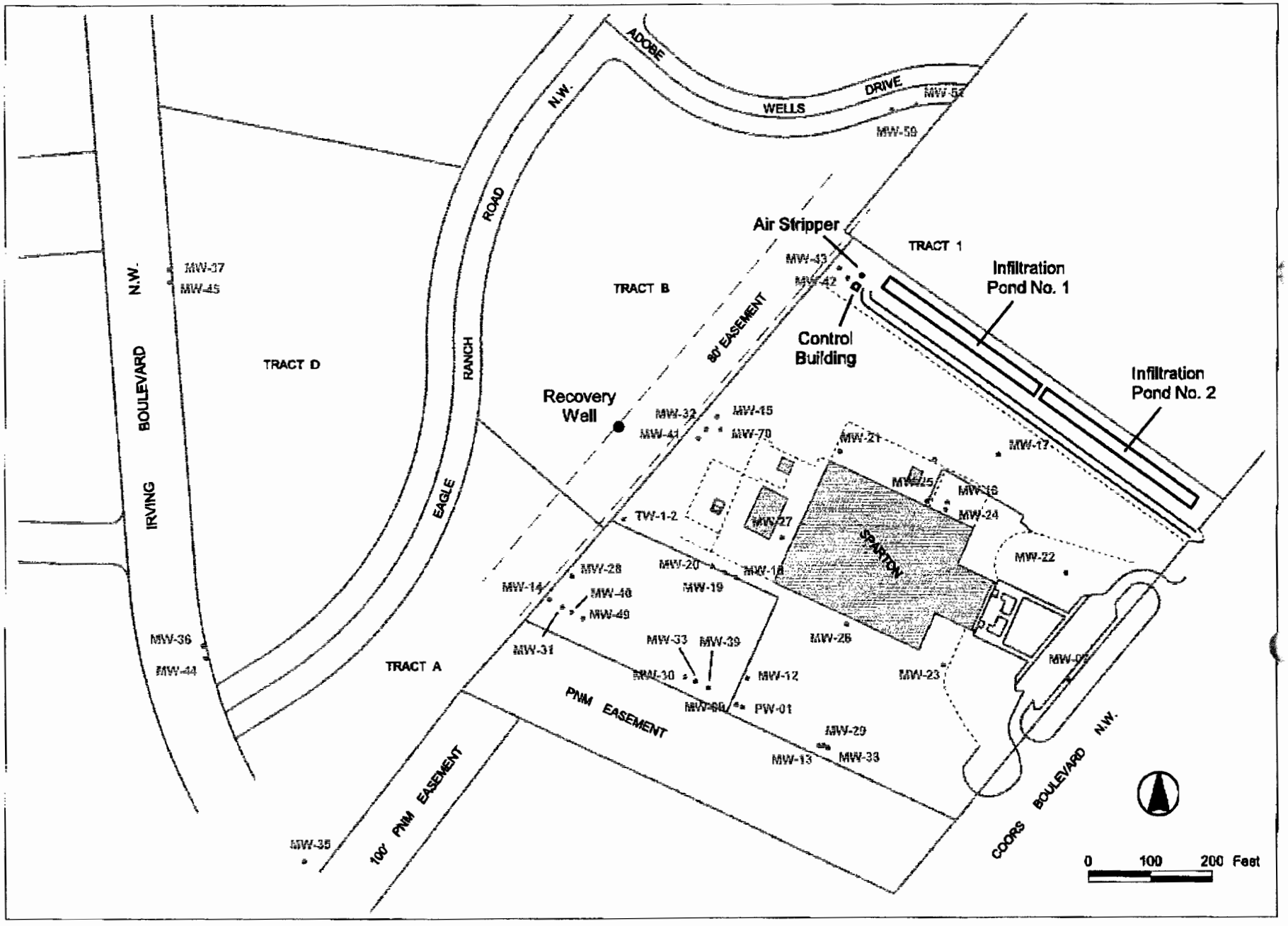

Figure 3 Proposed Recovery Well and Associated Facilities

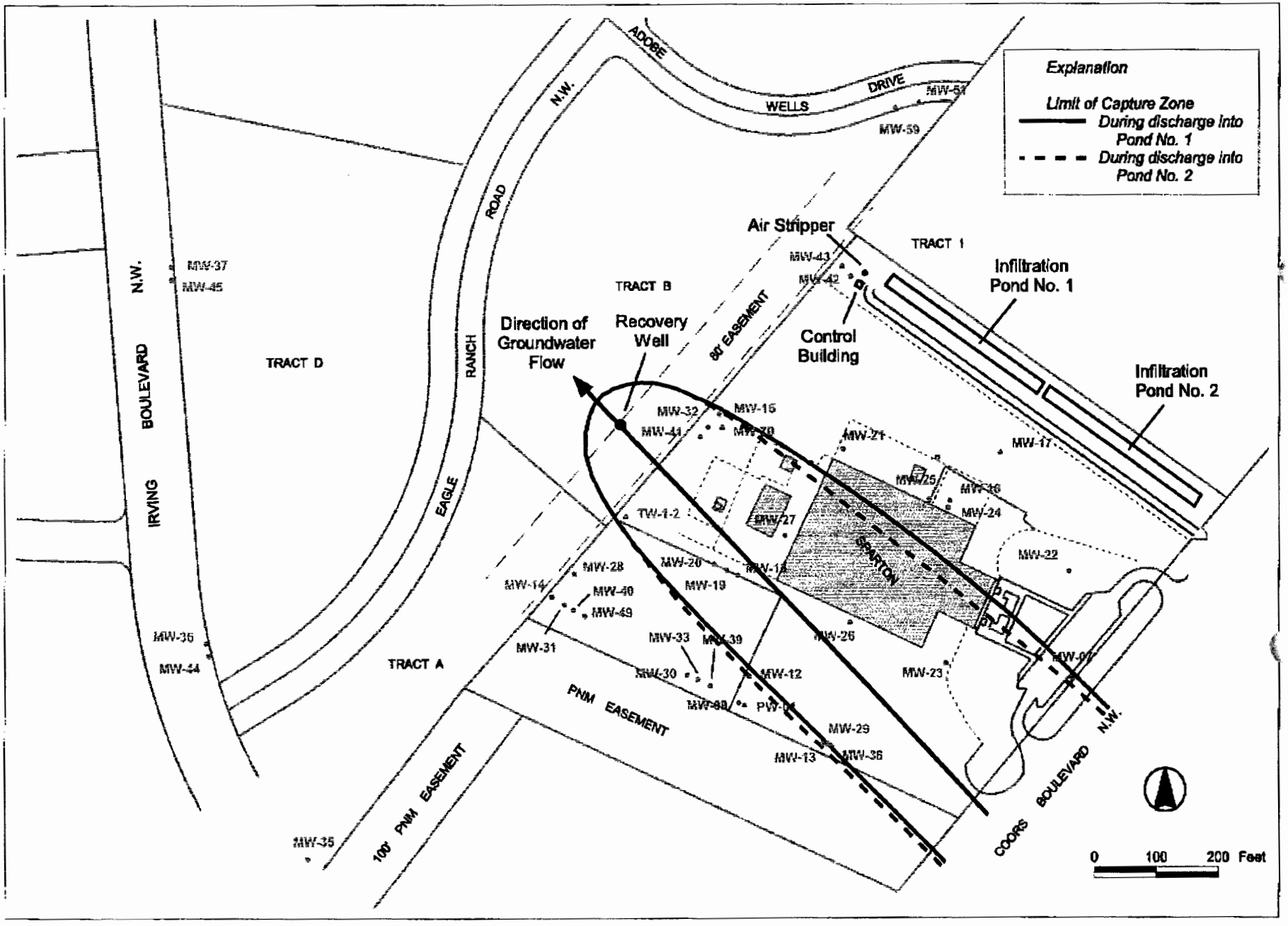

Figure 4 Areal Limit of the Capture Zone of the Proposed Recovery Well

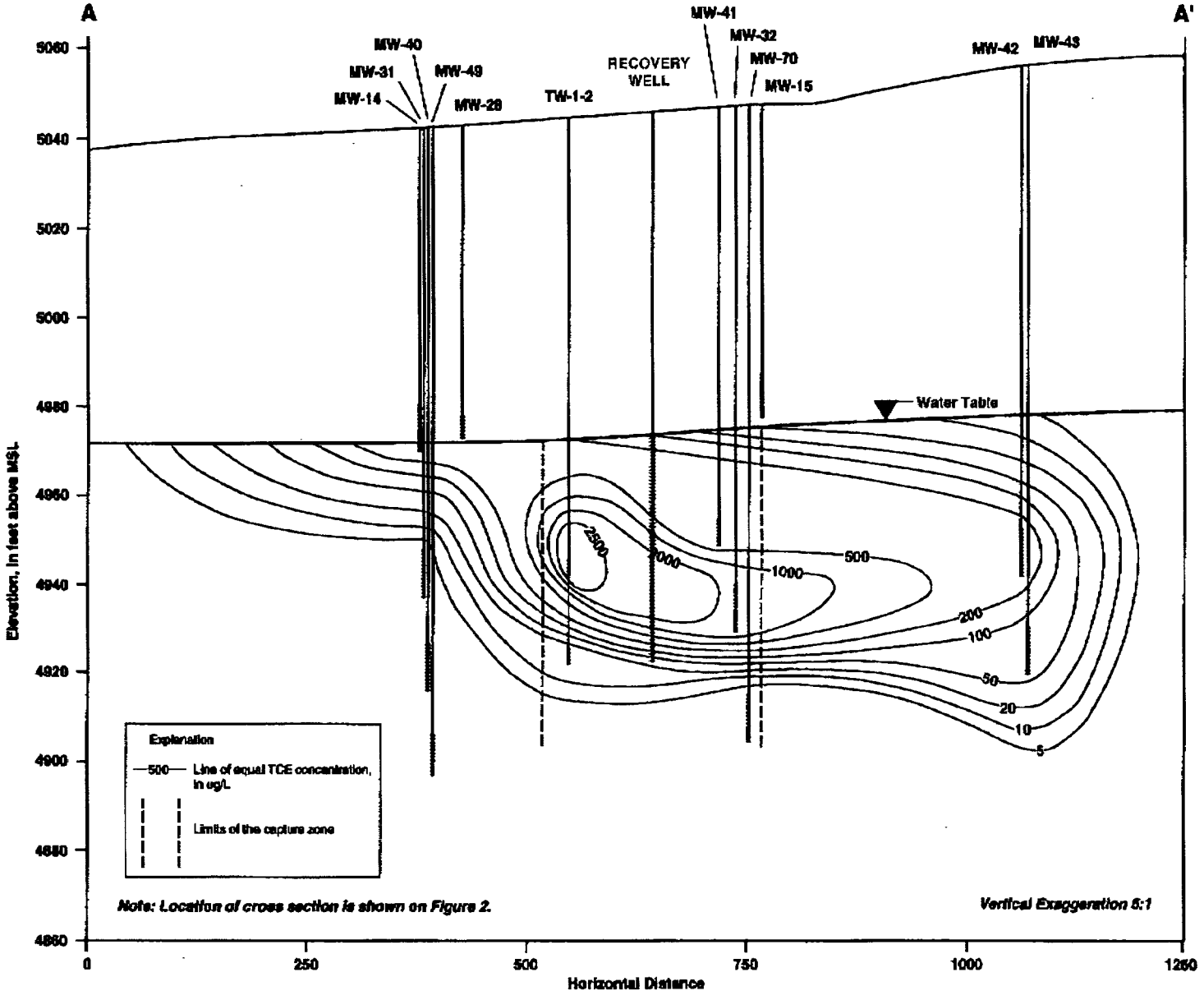

Figure 5 Vertical Limit of the Capture Zone of the Proposed Recovery Well

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FROM: **Michael T. Donnellan** (202) 514-4226
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SUBJECT: Albuquerque v. Sparton Technology, Inc., No CIV 97 0206 (D.N.M.)

MESSAGE: Copy to follow by mail.