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

November 9, 2018

Charles Hendrickson, Sparton Project Coordinator
U.S. Environmental Protection Agency
Region VI – Federal Facility Section (6PD-F)
1445 Ross Avenue
Dallas, TX 75202-2733
(3 copies)

Dave Cobrain, Sparton Project Coordinator
New Mexico Environment Department
Environmental Health Division
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Subject: **Approval with Modification of the 2017 Annual Report**
**Sparton Technology, Inc. - Former Coors Road Plant Remedial Program**
**EPA ID No. NND083212332**
**ST-18-002**

Gentlemen:

Reference is made to your letter of September 13, 2018 addressed to Mr. Ernesto Martinez of Sparton Technology, Inc. (Sparton) on the subject approval. Your letter points to Table 3.1 of the Annual Report, which noted that the water level in monitoring well MW-09 was below the bottom of the screen during the fourth quarter of 2017, and requests that we "describe how the sample was collected from this well and discuss whether the data generated from this sample are valid." Your letter also requests that future Annual Reports provide "a table listing all wells and which includes corresponding descriptions of the purging and sampling methods used for each well (e.g., dedicated pump, bailer , submersible pump) and the sampling frequency (e.g., semi-annually, annually)." On behalf of Sparton, S.S. Papadopulos & Associates, Inc. (SSP&A) is pleased to respond to these requests.

Monitoring well MW-09 was sampled by first purging three borehole volumes using a bailer and then taking a sample. A copy of the log kept by the sampler during the November 2017 sampling event is presented in Attachment A. As indicated on this log, it took about 7 minutes to remove the first borehole volume; however, because water-level recovery in the well was very slow, the sampler had to wait one-half hour or more between each subsequent removal of 0.25 gallons of

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water (about 1/3rd of the borehole volume). Removal of the three borehole volumes and the sampling of the well took more than 4 hours. [1]

The 4th Quarter of 2017 was not the first time the water level in MW-09 was below the bottom of the screen. The well has 5 feet of screen with 5 feet of blank casing below the bottom of the screen, and the water-level in the well has been below the screen bottom and within the blank casing section for most of the time since the start of the current remedial operations, as indicated by the hydrograph of the well, presented in Figure 1. The blank casing does not have a bottom plug, and when the water level in the aquifer is below the bottom of the screen, groundwater flows in or out of the well through the open bottom of the blank casing. The hydrograph of the well (Figure 1), indicates that, besides the screened interval, the well is also connected to the aquifer through its bottom and that the water level in the well continues to respond to water-level changes in the aquifer even during periods when it is below the bottom of its screen. A comparison of the hydrograph of this well to the hydrograph of the nearby monitoring well MW-12 (see Figure 2), in which the water level has always been above the bottom of the screen, further supports the conclusion that MW-09 is connected to the aquifer through the bottom of the blank casing.

Water levels in the well are measured quarterly, and the water level in the well has time to equilibrate with the water level in the aquifer;[2] the well is sampled only during the fourth quarter, usually within two weeks or less after the water-level measurement, using the sampling procedures described above. Water-level measurements and samples from the well are, therefore, representative of the water level and water quality in the aquifer at the well location, even when the water level is below the bottom of the screen and are valid for use in the preparation of water-level and plume maps.

We hope the above adequately addresses your concerns regarding the data from monitoring well MW-09. As for your second request, a table such that you requested will be included in future Annual Reports.

We certify under penalty of law that this document and all attachments were prepared under our direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon our inquiry of either the person or persons who manage the system and/or the person or persons directly responsible for

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[1] The Groundwater Monitoring Program Plan (Attachment A to the Consent Decree) indicates that for wells "that cannot be reasonably purged of three well volumes" a sampling procedure that consists of first evacuating the well and then obtaining a sample when sufficient water has accumulated in the well is acceptable (Procedure P-2 Groundwater Sampling, 3.0 Requirements, p. 5-5). Accordingly, field personnel will be instructed to follow this procedure in future sampling events.

[2] Except after the unlikely occurrence of a sudden water-level change in the aquifer just before the water-level measurement.

gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We further certify, to the best of our knowledge and belief, that this document is consistent with the applicable requirements of the Consent Decree entered among the New Mexico Environment Department, the U.S. Environmental Protection Agency, Sparton Technology, Inc., and others in connection with Civil Action No. CIV 97 0206 LH/JHG, United States District Court for the District of New Mexico. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions concerning this document, or need further clarification on the issues discussed herein, please contact us.

Sincerely,

S.S. PAPADOPULOS & ASSOCIATES, INC.

Stavros S. Papadopulos, PhD, PE, NAE
Founder & Senior Principal

Alex Spiliotopoulos, PhD
Associate & Senior Hydrogeologist

Enclosures

cc: Secretary, Sparton Technology, Inc., c/o Mr. Ernesto Martinez
Mr. Joseph G. McCormack, Senior Vice President and Chief Financial Officer of Sparton Corporation
Mr. Steven M. Korwin, Senior Vice President, Quality & Engineering of Sparton Coporation
Mr. Ernesto Martinez, EHS Corporate Manager of Sparton Corporation
Mr. Joseph S. Lerczak, Sparton Corporation
Mr. James B. Harris, Thompson & Knight LLP
Mr. Robert Marley, Senior Hydrogeologist, EA Engineering, Science, and Technology, Inc. PBC, Project Coordinator for Sparton

ATTACHMENT A

# SPARTON TECHNOLOGY, INC.

Bailed Wells Worksheet  Quarter 4Q2017

MW#: 9  Time Onsite: 11:07  Date: 11-14-17  Crew: CRC-MKC

Purge Vol=TD 76.63 -SR 72.10 = $H_2O$ Column 0.1632 X gals/ft X 3 = 2.218 gals

(0.6528 = 4"/0.1632 = 2")

Maximum purge between stabilization readings ( 10% of purge volume) = 0.25 gals

| Time | Purge Vol. | Total Purge | °C ± 1°C | ℧ ± 20 µ Mhos | pH ± 0.1 | Notes ✓✓✓ = Stabilized |
|---|---|---|---|---|---|---|
| 11:10 | Start | Ø | 19.6 | 868 | 7.71 | |
| ~~——~~ | ~~First~~ | ~~H2O~~ | —— | —— | —— | —— |
| 11:12 | .25 | .25 | 19.6 | 868 | 7.93 | |
| 11:16 | .25 | .50 | 19.5 | 885 | 8.06 | |
| 11:17 | .25 | .75 | 19.9 | 885 | 8.02 | Bailer not bring up water, switched out big bailer |
| 12:11 | .25 | 1.00 | 20.9 | 938 | 7.87 | Wait to small bailer still no water. |
| 12:45 | .25 | 1.25 | 21.2 | 928 | 7.92 | Keeping bucket in shade. but warming up. |
| 1:20 | .25 | 1.50 | 21.4 | 931 | 8.01 | |
| 1:57 | .25 | 1.75 | 21.5 | 926 | 7.90 | |
| 2:40 | .25 | 2.00 | 21.4 | 930 | 7.99 | |
| 3:15 | .25 | 2.25 | 21.7 | 933 | 8.01 | This was long small bailer |

Total Chromium

Total Dissolved Chromium

8260

11:10 Begin Sampling Unfiltered VOC / Total CR

Filtered Total CR

3:20 Finish Sampling / Sampler CRC-MKC

D.O. Reading Mg/L

O.R.P. Reading mV

3:30 Offsite / Weather Sunny Wind @ Ø mph 62 °F

$H_2O$ Clarity

Clear X

Cloudy

Muddy

% Sandy

°C

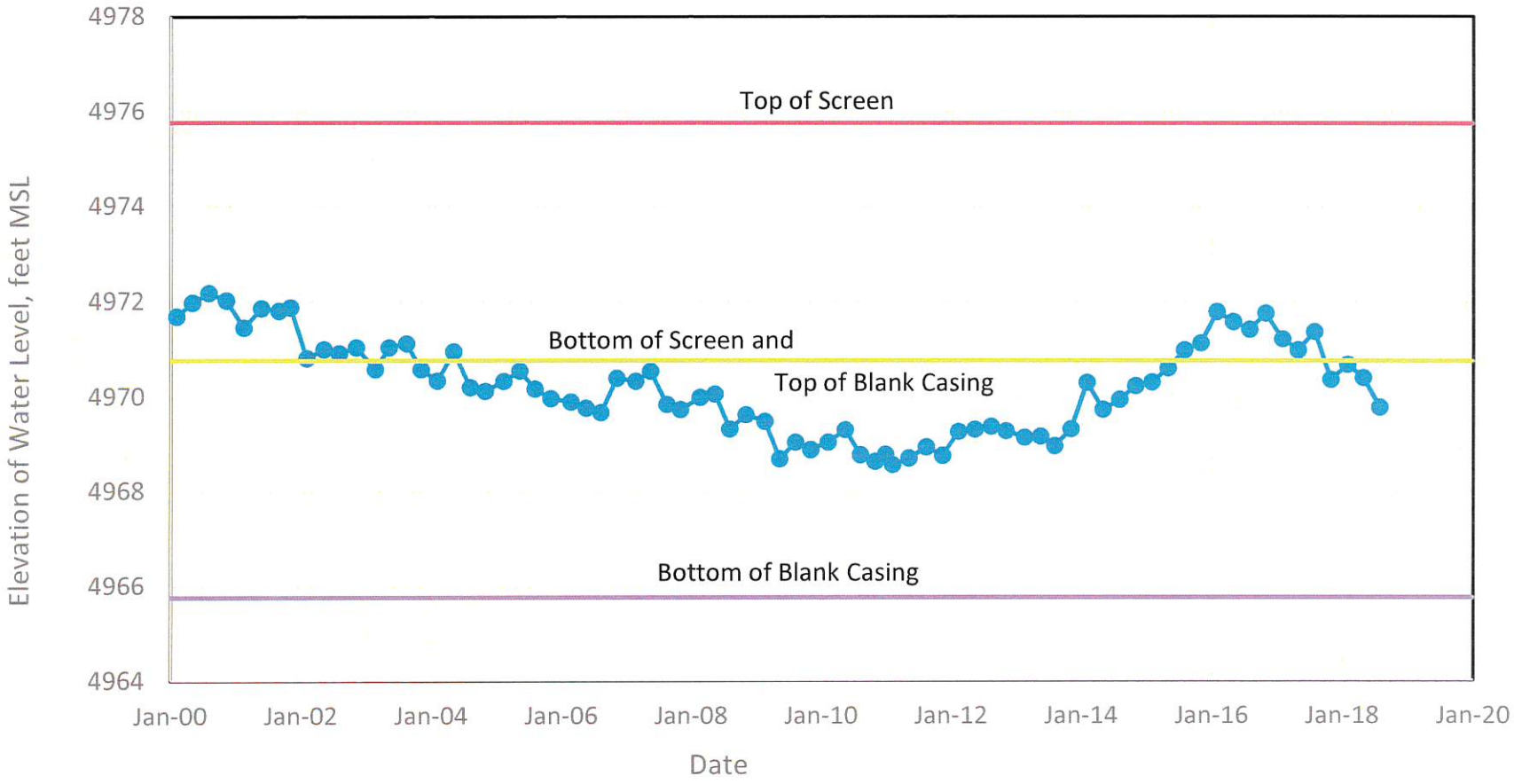


**Figure 1 - Hydrograph of Monitoring Well MW-09**

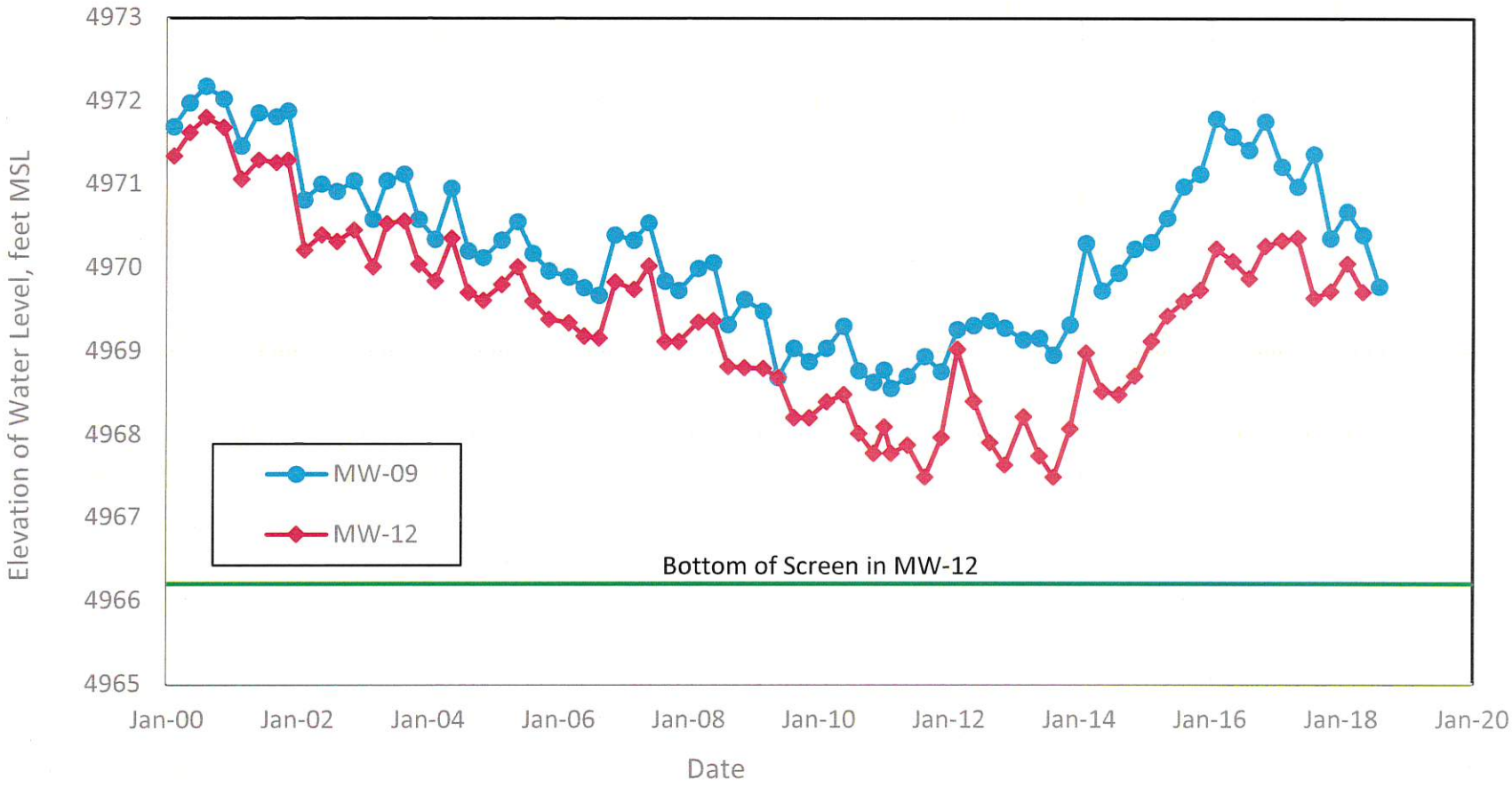


**Figure 2 - Comparison of Hydrographs of Monitoring Wells MW-09 and MW-12**