Dvirka and Bartilucci
CONSULTING ENGINEERS

330 Crossways Park Drive, Woodbury, New York, 11797-2015
516-364-9890 ▪ 718-460-3634 ▪ Fax: 516-364-9045
e-mail: db-eng@worldnet.att.net

December 23, 2002

Mr. Ronnie Lee
Division of Environmental Remediation
New York State Department of
Environmental Conservation
625 Broadway
Albany, NY 12233

Re: Barretto Point Site
Remedial Alternatives Report
Revised Volume Estimate
D&B 1616

Dear Mr. Lee:

Enclosed for your review, please find a write-up providing a revised volume estimate for the remediation of soil in the area of the former paint and varnish manufacturing facility at the Barretto Point Site based on the results of the supplemental investigation. Also enclosed is a table summarizing all soil boring and test pit sample results (initial and supplemental investigations) and a figure which was prepared to estimate the volume of soil requiring remediation. This write-up will be incorporated as a section of the revised Remedial Alternatives Report which will provide a description of the supplemental investigation and the volume estimate calculation. The New York City Department of Environmental Protection is performing a concurrent review of this information.

If you have any comments or questions or require any additional information, please do not hesitate to contact me at (516) 364-9890.

Very truly yours,

Kenneth P. Wenz, Jr.
for Thomas F. Maher, P.E.
Vice President

TFM/tam
Enclosures
cc: John Wuthenow, NYCDEP
Kay Zias, NYCEDC
☼1616/TFM02LTR.doc-07(R01)

2.4 Volume of Soil Requiring Remediation

The results of the Supplemental Site Investigation were combined with the results of the initial Site Investigation to develop a volume estimate of contaminated soil requiring remediation in the area of the former paint and varnish manufacturing facility, based on standards, criteria and guidelines (SCGs) developed for the Barretto Point Site. Data from 31 test pits and 4 soil borings that provided soil quality information with depth were utilized to develop a contaminant contour map, which is illustrated on Figure 2-2. A number of other sample locations were not utilized due to limited information with depth. At the locations that were not utilized, sampling was not performed either due to refusal during soil boring construction or termination of test pit excavation due to the potential for the release of organic vapors. The locations utilized to develop the volume estimate are identified with an "*" on Figure 2-2 and are also highlighted in Table 2-3. The contaminant contour map was utilized to calculate an estimated volume of 9,200 cubic yards of in-place soil requiring remediation. Utilizing a factor of 1.2 to account for volume increase when excavated, the estimated volume of contaminated soil requiring transportation and off-site disposal is 11,400 cubic yards.

Although the above estimate utilizes all pertinent data, as shown on Figure 2-2, there are areas where limited soil quality information exists with depth and the actual remediation volume is likely greater than that estimated above. Of particular note is the area to the west and south of TP-SB-10 where there is limited information with depth due to the presence of a soil berm. In addition, the contaminant contours were developed by linear extrapolation of the data between points and, as a result, the estimated quantity assumes that the depth of contamination increases linearly between points. Since the depth of contamination likely increases more rapidly in some areas, in particular, in the vicinity of the former paint and varnish manufacturing building and near the facility boundary, the volume of soil to be remediated will also increase. For these reasons, it is estimated that the volume will be 25 percent greater than that calculated based on the contaminant contour map. Based on this assumption, the estimated volume of soil to be remediated is approximately 14,200 cubic yards.

As a note, for purposes of estimation, it is assumed that soil within the shaded area on Figure 2-2, extending from south of TP-16 to just north of SB-17, from a depth of 2 to 8 feet below ground surface, will not require remediation based on the analytical results for samples in this area and depth horizon and, as a result, has been excluded from the volume estimate. This assumption reduces the volume estimate by approximately 1,000 cubic yards to 13,200 cubic yards.

Finally, samples will be taken during excavation to determine if all of the contaminated soil has been removed from this area. Based on experience, the volume of soil requiring remediation is typically higher than estimated even at sites where extensive investigation has been conducted. In order to account for this likelihood, a 25 percent contingency has been incorporated into the final estimate for a total of 16,500 cubic yards.

In summary the volume estimate for soil remediation is calculated as follows:

- Volume estimate based on linear interpolation of data: 9,200 cubic yards in place
- Ex-situ volume increase by a factor of 1.2: 11,400 cubic yards
- 25 percent increase to account for data limitations resulting from surface and subsurface interference, such as the soil berm and shallow refusal depths: 14,200 cubic yards
- 1,000 cubic yard decrease due to contamination not being detected in the shallow subsurface in the western portion of the former paint and varnish manufacturing area: 13,200 cubic yards
- 25 percent contingency due to likely additional contamination beyond that identified in the site investigation: 16,500 cubic yards

Therefore, the total volume of soil requiring remediation in the area of the former paint and varnish manufacturing facility is estimated to be 16,500 cubic yards.

TABLE 2-3
SUMMARY OF TEST PIT AND SOIL BORING SAMPLE RESULTS
FORMER PAINT AND BARNISH MANUFACTURING AREA
BARRETTO POINT SITE, BRONX, NEW YORK

LOCATION	ODORS NOTED *	SAMPLE DEPTH *	TVOCs (ug/kg)	TICs (ug/kg)
TP-01	0-3 **	3	U	1,830
TP-02	0-2 **	1-2	751,350	1,397,000
TP-02A	2-17	11	174,000	1,216,000
TP-09	4-6 **	--	--	--
TP-10	0-2 **	--	--	--
TP-10A	1-17.5 **	4	659,000	5,247,000
TP-11	10-12 **	--	--	--
TP-11A	9-16	12.5	43	6,950
TP-12	12-13 **	--	--	--
TP-13	9-14 **	--	--	--
TP-14	2-4 **	--	--	--
TP-14A	1-9	4	21	20,800
TP-15	2-6	--	--	--
TP-16	8-13 **	--	--	--
TP-17	--	14	25	U
TP-18	6-7 **	--	--	--
TP-18A	5-11	7	57,550	4,770,000
TP-19	0-1 **	--	--	--
TP-19A	3-6	4	48,200	710,500
TP-20	1-2 **	--	--	--
TP-20A	3-11	5	113	17,050
TP-21	2-3 **	--	--	--
TP-22	1-3 **	--	--	--
TP-23	1-4 **	--	--	--
TP-23A	2-6	4	35,400	1,758,000
TP-24	10-12 **	--	--	--
TP-25	--	15	19	U
TP-26	2-3	14	20	U
TP-27	--	15	20	U
TP-28	--	--	--	--
TP-29	--	14	17	U
TP-30	4-8 **	--	--	--
TP-30A	4-10	8	4,246	106,500
TP-31	2-5	--	--	--
TP-32	6-10	15	21	237
TP-32A	2-4	3	30	17,470
TP-33	4-5 **	--	--	--
TP-33A	4-8	6	30,800	3,327,000
TP-34	--	--	--	--
TP-35	2-11	--	--	--
TP-36	1-4 **	--	--	--
TP-37	2-7 **	--	--	--
TP-38	--	11	17	U
TP-39	--	--	--	--
TP-40	--	12	58	11
TP-41	--	14	7	U
TP-42	--	--	--	--

LOCATION	ODORS NOTED *	SAMPLE DEPTH *	TVOCs (ug/kg)	TICs (ug/kg)
GP-01S	4-17	--	--	--
GP-02S	6-10 **	--	--	--
GP-03S	--	--	--	--
SB-06	10-17	17-19	900	1,238
SB-07	12	--	--	--
SB-08	4-6	--	--	--
SB-09	0-8	--	--	--
SB-10	5-16	--	--	--
TP-SB10	2-16.5	7	52,000	1,165,000
SB-11	4-14	--	--	--
SB-12	--	11-12	15	U
SB-13	--	4-6	13	U
SB-14	--	3-5	24	U
		9-9.5	38	2,237
SB-15	--	4-6	12	6
SB-16	--	4-6	7	U
SB-17	--	4-6	14	31
SB-18	--	4-6	13	74
SB-19	--	3-3.5	28	7
SB-20	--	4-4.5	12	U
SB-21	--	4-6	4,500	1,553,000
		9-10	677	70,300
SB-22	4-18	4-6	180	40,030
		9-10.5	108	28,040
		14-15.5	103	16,490
		18-20	86	20,660
SB-23	--	3-5	17	80
SB-25	--	3-4.5	85	U
SB-26	4-6	4-6	893	934
SB-27	--	4-6	112	795
SB-28	--	4-5	22	14
		9-9.5	55	4,650
SB-29	--	4-5	31	991
SB-31	--	3-5	442	115
SB-32	--	4-5	55	675
SB-33	--	4-6	34	407
SB-34	--	3-4	18	798
SB-36	--	4-6	105	1,264
		9-9.5	104	293
		14-16	31	U
		18-20	5	U
SB-37	--	4-6	32	920
		9-11	31	379
		14-16	75	1,266
		18-20	5	U
SB-38	--	4-6	4	91

* Feet below ground surface
TVOCs: Total volatile organic compounds
TICs: Total tentatively identified compounds
: sample location utilized in volume estimate

** Represents bottom of test pit or soil boring
U: Undetected
SB-24, SB-30 and SB-35 were not constructed.