

DAVID K. GORDON

Attorney and Counselor at Law

42 CATHARINE STREET, SUITE 210
POUGHKEEPSIE, NY 12601
(845) 943-1142
DGORDONLAW@OPTONLINE.NET

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BY ELECTRONIC MAIL

Randy Whitcher
Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7020
randy.whitcher@dec.ny.gov

Re: Remedial Action Work Plan
Former Marble Quarry Landfill
DEC Site # C360143

Dear Mr. Whitcher:

This office represents Ki Martial Arts-Westchester Krav Maga, a studio that conducts martial arts classes for numerous adults and children at 125a Marbledale Road, Tuckahoe, NY, 10707. Ki Martial Arts is directly adjacent to the above captioned Brownfield Cleanup Program (“BCP”) site, and its staff and students may be affected by an ineffective remediation.

The proposed Remedial Action Work Plan (“RAWP”) for 109-125 Marbledale Road (the “BCP Site”) fails to protect public health or the environment, or to comply with applicable law and Department of Environmental Conservation (“DEC” or “Department”) regulations and guidance. For the below reasons, DEC should set aside the Remedial Action Work Plan pending the site investigation and proposed remediation of the overall quarry toxic dump of which the BCP Site is a part.

Background

For more than 25 years, from the 1950s through the 1970s, the former quarry was operated as a landfill for industrial and municipal wastes. These wastes included a wide variety of chemicals, pharmaceutical wastes, fly ash, cinders, liquid solvents, automotive wastes, refrigeration equipment, petroleum products and other materials. Samples of toxic chemicals found on the BCP Site far in excess of safe levels included perchloroethylene (carcinogenic, more than 300x groundwater quality standard), trichloroethylene (carcinogenic, almost 10x groundwater standard), mercury (more than 20x groundwater standard), lead (more than 1,000x groundwater standard), chromium (more than 20x groundwater standard), PAHs such as benz(a)anthracene (carcinogenic, more than 9,000x groundwater standard) and benzo(b)fluoranthene (carcinogenic, more than 10,000x groundwater standard), and phenol (100x groundwater standard).

The incidence of these and many other toxic wastes is fully consistent with reports of the dumping from local residents. The longtime former chairman of the Tuckahoe Board of Police Commissioners, Joseph Marinello, attested to the intensity of the dumping in the abandoned quarry, and the damage it caused to the neighborhood. He submitted an affidavit describing the dumping he witnessed from his home on the ridge just above the site. The affidavit reads in part:

When I returned home from the Korean War in 1954, I got off the train, and put my duffle bag on my shoulder, and began walking home. I turned onto Circuit Avenue, the street where I was born. As I was walking up, I could not believe the foul air and the stench. I could not believe that anyone could live there.

I asked my father what was going on, my father said that they were filling the quarry with waste. I asked what the community was doing about it, and my father said that we were told to keep our mouths shut.

* * * *

For approximately 27 years, I witnessed an immense amount of industrial and toxic dumping in the quarry.

I witnessed repeated spontaneous combustion of the site.

There were Eastchester Fire Trucks parked in front of the Quarry because of the constant fires. As they kept filling the quarry with toxic debris ash and all sorts of containers of combustible chemicals, the area would ignite.¹

Mr. Marinello also includes a lengthy list of the private industries and municipalities he witnessed dumping at the quarry. .

Contrary to its DEC site name, the BCP Site only covers about one-half of the former quarry toxic dump. DEC has recently informally announced that it will classify the other half as a potential inactive hazardous waste site, and presumably commence the investigation and remediation procedures under that program. There is no physical separation between the BCP Site for which the RAWP has been proposed and the potential inactive hazardous waste dump.

¹ *A Review of the Former Marble Quarry Landfill Site*, Dr. Donald J. Hughes, P.E., Hughes Environmental Consulting Services, February 29, 2016, Appendix C, incorporated herein by reference. We respectfully request the Department to add Dr. Hughes's report to the record for the RAWP.

The RAWP must await investigation and evaluation of the quarry dump

In April, 2016 DEC announced that it would recognize the Marbledale Road quarry toxic dump site as a potential inactive hazardous waste site and investigate its pollution and cleanup under the State Superfund program. DEC's announcement and pending action are well warranted in light of the history of the dump, including anecdotal evidence such as Mr. Marinello's, as well as the findings of the limited monitoring at the BCP Site, and DEC's finding that the BCP Site poses a significant threat to public health or the environment.

However, having found that the overall dump is a potential inactive hazardous waste site, there is no basis or justification for bifurcating the dump into separate investigation and remediation for the BCP Site and the Superfund site. The BCP Site is carved out from the broader dump based only on property lines traversing the quarry hole dumpsites. Nothing in the history of the site suggests any different use of the quarry hole areas inside and outside the BCP. It is obvious that a responsible remedial plan requires a compatible plan for the BCP Site, and that this planning requires the completion of the remedial investigation for the Superfund site. It is also obvious, in light of the comments below, that the investigation of the Superfund site as directed by DEC should be more thorough and even handed than the volunteer-directed investigation of the BCP Site.

The RAWP does not protect public health and the environment

Even if it were appropriate to prioritize the BCP Site remediation over the rest of the toxic dump (it is not), the RAWP is based on numerous dubious assumptions which together render it unsupported and unprotective of public health and the environment. These assumptions include proceeding with a very limited sampling of the chemical contamination of the site; failure to investigate for the presence of chemical containers or dioxins; assuming that groundwater contaminants are contained on the site; and that a cap will effectively prevent pollutant exposure to people and the natural environment.

In his comments on the RAWP, Dr. Donald Hughes, PE notes the multiple nonconservative, unprotective assumptions underlying the investigation and proposed remedy, including the above among others. He concludes:

Each and every one of these assumptions is based on evidence which is often sketchy or non-existent. In some cases, the existing information argues against the assumption. Ultimately, each assumption is just that: an assumption. Taken together, they make for a remedial plan which, like a house of cards, could easily collapse, thus endangering both the community and the surrounding environment.²

² April 25, 2016 Comment of Dr. Donald J. Hughes, P.E., at 2

Below are several of the most obvious dubious assumptions and assertions on which the RAWP is based, among those discussed in greater technical detail in Dr. Hughes's comment.

1. There is no basis to conclude that toxic contaminants will be contained on the site

It is clear, and conceded by DEC as well as the volunteer, that groundwater flows generally north to south through the soil and above the bedrock underlying the BCP Site. There is also little doubt that the bedrock under the BCP Site is fractured, further allowing for groundwater and pollutant migration. In both the Phase II Environmental Site Assessment and the Remedial Investigation Report, the volunteer's hydrogeologic consultant has reported that groundwater flows through material underneath the BCP Site and through fractures in the bedrock, and that contaminants in the groundwater would be expected to move horizontally along the bedrock. DEC and hydrogeologist Paul Rubin of HydroQuest, who was retained by Ki Martial Arts, have also acknowledged the general flow of groundwater from the BCP Site (and from above the BCP Site) to the south-southwest toward Bronxville. Mr. Rubin also reports substantial indication of karst conduits through the bedrock, which would transport pollutants offsite even more rapidly.

Despite this hydrogeologic background, and the contamination of the groundwater by numerous toxic pollutants far in excess of their groundwater standards, DEC is minimizing the potential for pollutant migration offsite. At its April 14, 2016 public meeting, DEC presented for the first time, its rationale for passively leaving the contamination in place. Among other things, DEC explained that it filtered the samples to revise the concentration of contaminants, on the theory that flow of the water through the soil would remove the contaminants that were bound to particulates. However, DEC presented no analysis comparing the effectiveness of the 0.45 micron membrane filter it used with that of the soil in filtering the particulate pollutants. And in any event, DEC's data manipulation ignores both state groundwater standards restriction of total, not merely dissolved, concentrations of the pollutants, and EPA guidance restricting filtration of groundwater samples to situations not applicable here.

At the April 14, 2016 meeting DEC staff also explained for the first time that it was rejecting the possibility of karst conduits moving contaminants from the BCP Site because of readings from a nearby Kings Electronics site. Again, this new rationale was not presented in any written material, and the Kings Electronic data were not part of the record for the instant project. Upon investigation of the Kings Electronic report, Mr. Rubin discovered that its data were derived from a well in a different bedrock formation, with a completely different type of rock, not the BCP Site Inwood marble, but rather in the Manhattan schist, or, according to the report possibly Fordham gneiss. Schist is a metamorphic, non-carbonate, bedrock formation that occurs east of the Inwood marble which underlies the quarry sites. Thus, DEC's reliance on Kings Electronic data to dismiss the indication of conduits, which include sinkholes and sinking streams in the area as well as the nature of the marble itself, is incorrect and baseless. Since DEC has not produced any written findings purporting to apply the Kings Electronic site data to the likelihood of karst to the BCP Site, it is unclear whether it was even aware of the distinction in the bedrock formations it was attempting to characterize.

2. People and the environment downgradient may be exposed to the toxic groundwater

It is notable that the section of the RAWP on groundwater contamination, section 2.3 at pages 5-6, does not consider the potential for pollutants to migrate offsite in groundwater at all. The section dismisses concerns about exposure to groundwater by noting that people on the site would be well above the groundwater and also that the groundwater is not used for water supply. This likely reflects the assumption that there is no opportunity for migration of contaminants offsite in the groundwater to surface.

The assumption is not based on any monitoring or analysis, and belies both the nature of the contamination and the downstream groundwater flow. The groundwater flows toward a confluence with the Bronx River in Bronxville, either through subsurface recharge or through emergence in springs. There are numerous reports of very high groundwater and occasional flooding in the southern Tuckahoe/Bronxville area, and additionally some facilities use well water for irrigation. And the Bronx River and its associated wetlands represent a diverse ecosystem with numerous avenues to expose people and biota to any contamination transported in the groundwater. Exposure may result from either the groundwater surfacing while still carrying its toxic contamination, or the volatile chemicals such as TCE emerging into the air outside the BCP Site. Accordingly, absent further monitoring, there is no basis for DEC to dismiss the likelihood of exposure to contamination.

3. Sampling and testing of the BCP Site were incomplete

Sampling and testing of the BCP Site was too incomplete and dilatory to characterize the extent of contamination. Only a small fraction of collected soils were tested for contamination. In the BCP Site portion of the southern quarry hole out of 161 soil samples only 20 were tested for organic chemicals, and 18 were tested for inorganic substances (*e.g.* arsenic, barium, lead, and other metals). All of these were collected in the top 34 feet of the landfill. In the BCP Site portion of the northern quarry hole, 83 samples were collected, all within the top 36 feet of the landfill surface. However, only 11 of them were tested for organic chemicals, and 10 were tested for inorganic substances. Only two borings were drilled deeper into the bottom half of the toxic dump, both in the BCP part of the southern hole, and the deeper one showed clear evidence of petroleum contamination. However no testing for any pollutant was done at these lower depths.

Moreover, there was no testing for dioxin contamination, or for the existence of chemical storage containers (*e.g.* drums, tanks). Both of these are indicated from the history of the site. Dioxins are products of combustion which are indicated here both because of the dumping of incinerator ash and more significantly, the numerous chemical fires that occurred at the dump. The presence of drums and/or tanks is indicated by eyewitness accounts of the dumping as well as the continued release of chemicals, especially Freon.

Given the failure of the sampling to describe much of the contamination of the BCP Site, including the entire lower half, there is no basis for any determination based on the supposedly limited contamination.

4. A cap is an ineffective remediation for the BCP Site

The volunteer and DEC have described the preferred cap alternative as a typical remediation for a closed landfill. This is an inapt and misleading comparison, based on the clear differences between the amount and variety of toxic pollution they contain. Moreover, the main purpose of a landfill cap is to abate the infiltration of water into the buried material. However, this has little applicability to the BCP Site, because there is no basis for concluding that a cap will restrict groundwater from entering the Site, or more importantly toxic pollutants from leaving it. Even if the cap were to function as intended, *i.e.* preventing rainfall from filtering into the ground under the BCP Site, there is no basis for concluding that the contaminants will remain in place.

The most important and obvious reason is that there is a constant alternative source of water to the soil under the site: the flow of groundwater from the north-northeast. Moreover, the cap would not cover the portions of the quarry dump adjacent to the BCP Site. Rain falling on these areas will generally recharge the groundwater in the quarry dump, which will have a clear hydrologic effect on the groundwater and wastes underlying the BCP Site. Combined with the lack of any constraint on the already conceded pathways for migration from the site, there is no basis for crediting the proposed cap with any remediation of contaminated groundwater migration from the BCP Site.

5. The RAWP contains no adequate safeguards on airborne pollutant emissions

The proposed remedial plan/hotel development would involve excavation of thousands of cubic yards of soil, some of it contaminated, during construction, and the installation of a venting system for soil vapors after construction. There is no analysis of how safety of those near the BCP Site would be ensured from either the dust raised during the construction activity or the soil venting after development. Especially given that DEC has already found the site a human health hazard due to soil vapors, the failure of the RAWP to address this renders it useless as a serious proposal, even apart from its failure to address groundwater contamination as discussed above.

The RAWP violates state law and DEC's own cleanup rules

State law requires a Brownfield remedy to be “fully protective of public health and the environment including, but not limited to, groundwater according to its classification . . .” ECL § 27-1415(1); 6 NYCRR § 375-3.8(a). State law also requires the remedial investigation to “*fully characterize* the nature and extent of contamination at and/or emanating from a brownfield site.” ECL § 27-1415(2)(a) (emphasis added). DEC regulations require BCP applicants to “*fully investigate and characterize* the nature and extent of contamination on the brownfield site” in their remedial investigations.” 6 NYCRR § 375-3.8(b)(1) (emphasis added). The investigation must:

emphasize data collection and sampling and monitoring, as necessary, and includes but is not limited to: characterization of site geologic and hydrogeologic conditions, including *groundwater flow, contaminant movement*, and the response of the groundwater system to extraction; and *assessment of the existing and potential impact of groundwater*

contamination on private or community water supply wells, surface water quality, air quality, and indoor air quality

ECL § 27-1415(2)(a) (emphasis added). The regulations also specifically require BCP volunteers to “perform a qualitative exposure assessment of the contamination that has migrated from the site” in accordance with state law and Department guidance. 6 NYCRR § 375-3.8(b)(2)(i).

The RAWP and associated reports fail to comply with these rules. Largely as a result of undocumented, un-conservative, and improbable assumptions, often at odds with basic guidance and regulations, DEC and the volunteer have failed to investigate the transmission of pollutants offsite through groundwater, and the potential vectors for exposure of the contaminants to people and the environment.

The failure to investigate or analyze offsite migration of contaminated groundwater leads to, and is compounded by, a failure to address this problem in the proposed remedial action. DEC regulations require proposed remedial alternatives to evaluate “the threat to public health and the environment resulting from contamination in environmental media other than soil,” e.g. groundwater. 6 NYCRR § 375-3.8(e)(5). The volunteer was required to study an alternative capable of cleaning up the site to an unrestricted use. 6 NYCRR § 375-3.8(f)(3)(ii)(a). None of this was done.

Critically, where there is an on-site source of groundwater contamination, as there is here, DEC regulations require BCP volunteers to, among other things, “evaluate the feasibility of containing the plume on-site. The development of alternatives will include an evaluation of feasible remedial alternatives that can achieve groundwater plume containment/stabilization.” 6 NYCRR § 375-1.8(d)(1)(iii). Additionally, DEC guidance requires the application of soil cleanup objectives for the protection of groundwater where

- (i) contamination has been identified in on-site soil by the remedial investigation; and
- (ii) groundwater standards are, or are threatened to be, contravened by the presence of soil contamination at concentrations above the protection of groundwater SCOs.³

Notably, and contrary to all of these requirements, the RAWP fails to address any remediation for the groundwater, including anything that would have diverted groundwater from entering the

³ DEC Policy CP-51 / Soil Cleanup Guidance, § V(D)(1) at 10. The guidance allows an exception where there is an on-site source which is being remediated, and where there is either no contaminated groundwater migration offsite or the remedial plan will address this, and where DEC has determined that the groundwater will improve over time or the contamination is due wholly to an off-site source *Id.* § V(D)(2). However, none of these conditions hold true.

BCP Site or contained the groundwater on the BCP Site. Despite this obviously badly contaminated site, and the threat to human health and the environment from groundwater migration, DEC has proposed a remedial action work plan that would simply remove some surface soil and cap the BCP Site with a parking lot, hotel and restaurant. .

Conclusion

The Department is to be commended for its expressed intent to recognize the quarry dump as a potential inactive hazardous waste site, and presumably to begin investigation and cleanup. However, the benefit of this is undercut by its insistence on proceeding with the BCP proposal, which would absurdly carve out the central portion of the toxic dump for an ineffective remediation designed to allow a private volunteer to build a major hotel on top of the dump.

The RAWP is inconsistent with state law and DEC rules and policies, and does not protect public health and the environment. It reflects a series of cavalier presumptions relating to the serious groundwater contamination on the BCP Site, which presumptions are individually dubious and together represent an illegal preference for not addressing the contamination. In particular these presumptions lead to an erroneous conclusion to ignore the contamination of the groundwater by a host of toxic organic and inorganic constituents, many at levels that far exceed ambient standards. The RAWP also contains no specific proposals for limiting exposure to volatized air pollutants, either during construction or afterwards as a result of the active venting of such contaminants.

For the foregoing reasons, the Department should suspend its evaluation of the RAWP, pending a site investigation and remedial investigation of the entire former quarry-toxic waste dump. Should the Department nevertheless continue with the BCP process, it should choose a remedy that protects the public from the migration of contaminated groundwater from the site and from the air emissions caused by construction and ultimate development and venting. To its discredit, and contrary to a host of commonsense laws and regulations applicable to serious contamination such as that on the BCP Site, the RAWP does neither.

Respectfully submitted,



David Gordon