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VIA FEDERAL EXPRESS

Mr. Alex H. Whitlow, E.I.T.
Environmental Engineer
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality
301 E. Louis Glick Highway
Jackson, MI 49201-1556

Re: Violation Notice Response (4/29/16)
Arbor Hills West Expanded Sanitary Landfill

Dear Mr. Whitlow:

On April 29, 2016, the Michigan Department of Environmental Quality ("DEQ") sent a Violation Notice to Advanced Disposal Services, Inc. ("Advanced") and Republic Services, Inc. ("Republic") regarding the Arbor Hills Landfill ("Landfill").¹ While DEQ only requested a response from Advanced, Republic would like to take this opportunity to keep the DEQ informed of its progress at the Landfill and its efforts to determine the sources and causes of odors at the Landfill as instructed by the DEQ.

This letter supplements Republic's March 29, 2016 response to the DEQ's prior Violation Notice. In its March 29th response, Republic described significant repair work on the landfill gas collection and control system ("GCCS") caused by Advanced's operational issues and the status of our investigation of odor sources. A copy of that letter is attached for your reference. Since sending that letter, we continue to work closely with GCCS experts, consultants, and contractors to eliminate the GCCS as a potential odor source. We have also initiated odor scans, twice-daily odor patrols and developed a mobile app to record and track on and off site odor observations. This letter details these and further efforts to expedite GCCS expansion and repairs, obstacles to GCCS work, and to describe Advanced's operational issues that are causing odors and impeding the expansion and effectiveness of the GCCS.

¹ The MDEQ has addressed correspondence to "Republic Services, Inc." but the actual DEQ permit holder is BFI Waste Systems of North America, LLC. Republic has no direct ownership or permitting at the Arbor Hills Landfill. However, solely for consistency and convenience, we will use the name "Republic" in this letter.

Importantly, the existence of odors, even landfill gas odors, cannot simply be placed on the GCCS or Republic. The realities of landfill operations are much more complex and the multi-company ownership of the Landfill and landfill gas systems at Arbor Hills requires all parties to cooperate to prevent odors and maintain a working system.² As recently conveyed to Mr. Larry Bean of DEQ, a more holistic approach in terms of compliance must be taken at the Landfill to effectively and efficiently craft a long-term solution to potential odor issues. Further, many of the neighbors' odor complaints are unrelated to landfill gas at all. In this regard, it is troubling that neighbors have reported comments allegedly made by DEQ representatives and noted commentary on the DEQ website assigning responsibility solely to landfill gas and/or Republic, despite repeated descriptions of odors that have nothing to do with landfill gas.

Like the odor complaints themselves, our investigation has also identified several odor sources—all or nearly all of which are related to Advanced's operational failures. Those odor sources include freshly placed garbage (especially when daily cover is not placed on the waste), pooling and drainage of huge amounts of leachate at the Landfill, the type of waste accepted and chemical reactions with that waste which produce odorous steam clouds, and waste that is trucked into the Landfill. Advanced's composting facility next door to the Landfill has also been the source of multiple odor complaints from neighbors, as has truck traffic and accompanying dust. Again, resolving any current or future odor issues at the Landfill requires addressing all potential odor sources and causes.

I. Expedited GCCS Expansion and Repair

Republic became aware of the odor complaints from neighbors in January and it aggressively worked to uncover and address any issues relating or possibly relating to the GCCS.³ Initial work included the expedited installation of 31 new gas collection wells. Advanced's rapid Landfill expansion led to some new wells, but others were dug to expand the GCCS system into Cell 4A much earlier than required by federal and state regulations as a prophylactic measure. Republic also replaced 22 gas wells and accelerated repairs needed to address GCCS damage caused by Advanced's operations—primarily replacing or repairing gas wells, headers and lines physically damaged or destroyed by truck traffic, heavy equipment, or waste placement in a manner disregarding the safety or integrity of the GCCS infrastructure. To be clear,

² The Landfill and its operations are owned and controlled solely by Advanced; BFI owns the GCCS and retains some environmental obligations at Arbor Hills East and for the GCCS; and Fortistar leases and operates the gas to energy facility. Each company has obligations for the parts of the Landfill under its control, to the extent that there is independent control.

³ Many of the corrective actions taken are detailed in the March 29, 2016 response to the MDEQ's prior Violation Notice.

these improvements were already in process as part of annual expansion and repair planned in the May/June timeframe. This acceleration was intended to eliminate the GCCS as a possible odor source or to remedy any odors potentially caused by the GCCS.

After completing this work, Republic continued to evaluate wellfield data and in April we submitted a plan to DEQ to perform additional work, including the installation of 20 re-drill wells, 4 new wells and associated airlines, and/or lateral pipes throughout the entire Landfill footprint. This work began on April 27th and well drilling and connection to the GCCS was completed on May 18th. Airline/force main installation and pump placement is ongoing. With the exception of well installation at the closed Arbor Hills East landfill, this was work caused by damage to Republic's wells or necessitated by Advanced's continued expansion and, as explained below, Advanced's refusal to provide filling plans to Republic. Most recently, Republic added 22 additional new wells at the top of the Landfill (Cell 1 and Cell 5B primarily) to its work plan. This work began May 25th and is expected to be completed by June 30th. Advanced's expansion necessitated many of these new wells, but the extreme traffic and refusal to modify waste acceptance has delayed working time and hours due to, among other things, safety concerns expressed by subcontractors. Further collection along the toe of Arbor Hills East is in the design stage at this time with construction anticipated in the month on June.

Repairs on the McGill flare and blower were completed on May 25th, bringing back-up flare capacity (which is redundant to the gas to energy facility at Arbor Hills) to 100% pending flare testing. Republic requested an expedited test date of June 8th, which was approved by the DEQ last week. Full back-up redundancy is not required under Michigan law, but Republic is adding this capacity to address possible fugitive odors in the event of a gas to energy plant shut down. To further enhance air monitoring, Republic worked collaboratively with the DEQ's Air Division to develop an ambient air monitoring plan that was submitted to DEQ on May 23rd. Republic is awaiting DEQ approval so it can begin implementation. Finally, and further demonstrating Republic's focus on Arbor Hills, I have been re-assigned by the company so that I now work solely at the Landfill and will remain on-site at least until the current issues have been resolved.

II. Advanced's Obstruction of GCCS Planning

Unfortunately, as described above, Advanced's operations cause extensive damage to Republic's GCCS. Advanced's refusal to work cooperatively with Republic thwarts its ability to expand properly, operate, and maintain the GCCS. Advanced has consistently withheld information, making planning for future growth and even repairs extremely difficult. In order to coordinate GCCS repairs, well-raising, and expansion, we need to know Advanced's filling plans and need this information on a continuing basis. Obviously, it is difficult or impossible to properly stage and plan an expansion without

knowing when new cells are going to be started and completed. We have, with difficulty, procured subcontractors willing to raise wells in active work areas (often only after the Landfill has closed operations) despite the danger caused by Advanced's refusal to manage waste acceptance and truck traffic during construction. However, even after we are able to repair or replace wells, Advanced often fails to backfill around the well in a timely manner, creating the likelihood of future well damage or pinching of the wells. We have advised Advanced of all of these issues, but still get limited or no cooperation.

Similarly, crews cannot access wells for maintenance or repair when heavy equipment is traversing the area or when Advanced is unwilling to manage or regulate the acceptance of new waste to allow Republic to make GCCS repairs—ironically caused by Advanced's operations in the first place. As it has for some years, Advanced continues to refuse to provide this basic information and cooperation, preventing us from planning for the rapid growth in volume and traffic. We do not raise these issues to deflect or blame. The DEQ instructed Republic to identify odor causes and sources at the Landfill. Unless these issues are addressed, no long-term or meaningful solution can exist.

III. Advanced Operational Issues

Responding to the DEQ's directive, Republic has extensively investigated possible odor sources at the Landfill. To the extent that odor sources could have related to the GCCS, Republic has aggressively sought solutions. However, Republic's investigations uncovered operational issues attributable to Advanced that are causing both landfill gas and non-landfill gas odors. Many of our findings are detailed in the Affidavit of Christina Bossick (with photographs). Ms. Bossick's Affidavit is enclosed with this letter (without the lengthy exhibits, although those will be provided if DEQ would like to see them). It is notable that Advanced was aware that Ms. Bossick was taking photographs of its operational failures, raising the troubling question of what the Landfill looked like when Advanced did not know someone was documenting these issues.

We understand that the Landfill is accepting between 10,000 to 11,000 tons of waste a day, by far the highest volume in the State. To accommodate this volume, multiple active open faces are generally operating at the Landfill, a practice that greatly increases the potential for odors, particularly when Advanced does not place appropriate daily cover. While Advanced's Operating Plan (and Michigan law) requires placement of at least six inches of daily cover, we have observed repeated, often daily, violation of this condition with either insufficient or no cover over active waste fill areas at all. (Please note photographs at pages 22-26 of Ms. Bossick's Affidavit). Because the Landfill takes in significant amounts of special waste and sludges (which themselves can be extremely odorous), adequate cover is especially critical in managing odors. We have also observed the use of compost and C&D waste as daily cover, which can be odorous

itself (compost) or ineffective at preventing fugitive landfill gas or other odors from escaping (C&D waste). When cover has been used, Advanced most often does not strip the cover the following morning, leaving lenses of perched leachate that contribute to watering in gas wells because trapped leachate cannot percolate through the waste mass to the Landfill's leachate collection system as designed. (A picture illustrating this effect at the Landfill is at page 30 of Ms. Bossick's Affidavit). These practices contribute to the rampant leachate outbreaks documented at the Landfill. Beyond soaking through the entire waste mass and filling gas wells, leachate pools, "bowls," and streams are found throughout the Landfill on cell surfaces and slopes and were seen almost daily since we started documenting our observations. (Photos showing leachate outbreaks are found at pages 8, 9, 28 and 29 of Ms. Bossick's Affidavit). Both MDEQ and EPA have repeatedly told Advanced that it must manage its leachate problems more effectively, yet little happens.

Beyond the stench of leachate, the most direct problem Advanced's leachate problem causes is the "watering-in" of gas wells. Excessive leachate infiltrating its gas wells has forced Republic to lay widespread air and drainage lines to drain the wells because they are inefficient or useless when filled with leachate. This is not a permanent solution under any conditions, but Advanced's heavy truck traffic and haphazard operations damage surface air and leachate drainage lines, further hampering the ability to drain leachate. In his visit to the Landfill on May 23rd, Mr. Bean questioned the wisdom of exposed leachate drainage lines running all over the faces of the Landfill, recognizing that when these lines are damaged, leachate cannot be removed from the wells. Mr. Bean recommended tying leachate drainage from wells to the Landfill's overall leachate collection system. We agree with Mr. Bean, and, for the overall benefit of the Landfill and its operations, would appreciate the DEQ's assistance in making this solution possible. Even with leachate drainage improved, however, a lasting solution to the leachate outbreaks will come only from Advanced operating the Landfill so that the waste mass is not taking in vast amounts of leachate in the first place.

Other problems we have witnessed include abnormal amounts of pungent, acidic steam shooting from special waste piles on top of the Landfill, extensive surface erosion, and other operational deficiencies that cause odors, contribute to problems with the GCCS and/or that may violate the requirements of Advanced's Operating Permit and Operating Plan. (Photographs of these issues be seen at pages 21 and 22 of Ms. Bossick's Affidavit). These problems have all caused or contributed to the odors complained of by the Landfill's neighbors, yet Advanced has yet to take full responsibility for the remediation of these repeated and gross operational failures. As the owner of the GCCS, we are especially concerned about the continued lack of intermediate cover and the resulting erosion at the Landfill. (A picture of one area of erosion is seen at page 19 of Ms. Bossick's Affidavit). Lack of proper cover lets oxygen into the GCCS and allows landfill gas to escape. Applying additional vacuum to the GCCS is not a viable solution. In fact, increasing vacuum presents a direct risk of bringing more oxygen into the GCCS,

which can lead to significant consequences such as subsurface oxidation events. We have advised Advanced when we locate surface cracks, but significant erosion exists throughout at the Landfill, including in and around gas collection fields. The deep erosion channels present surface stability and oxygen draw issues now and in the future.

Republic does not bring these issues to DEQ's attention to shirk its responsibilities, and it will continue to investigate and resolve the causes of any odor issues at the site. But no amount of effort on Republic's part can completely counteract Advanced's careless landfill management practices. Advanced's failure to recognize its odor issues and shirking its role in crafting a remedy is a sure path to failure and a disservice to the neighboring residents who are expecting lasting relief in short order. We sincerely hope that the DEQ will fully and fairly address what is happening at the Landfill and look forward to continuing to participating in a viable solution with all parties.

IV. Conclusion

Republic remains committed to expeditiously addressing any ongoing odor issues that are within its power to control. We are continuing to tune the wellfield and monitor the site for any additional areas where additional extraction may be beneficial. We will also continue to monitor odors daily and will address issues if they relate to Republic, or advise Advanced or DEQ if they do not. We will continue this aggressive monitoring as long as necessary. We greatly appreciate the concerns and feedback DEQ has provided, the time the DEQ has dedicated to this matter, and will continue to provide regular updates on the Landfill until the odor issue is fully addressed. We also look forward to following up on the leachate disposal suggestion made by Mr. Bean and would appreciate the DEQ's assistance in this regard. If you have any questions, or need further information, do not hesitate to contact me at (734) 231-8217.

Regards,



Ms. Christina Pearse-Bossick
Environmental Manager

Attachment:

Affidavit of Christina Pearse-Bossick dated May 9, 2016 (without exhibits)

Mr. Alex H. Whitlow, E.I.T.

May 31, 2016

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cc: (w/enclosure)
Mr. Robert Nix, Northville Township Supervisor
Mr. Daniel Moody, Washtenaw County Division of Environmental Health
Mr. Lawrence Bean, DEQ
Mr. Scott Miller, DEQ
Ms. Diane Kavanaugh Vetort, DEQ
Mr. Dave Rettel, Advanced
Mr. Thomas Flanagan, Advanced
Mr. Jay Warzinski, Advanced
Mr. Michael Slattery, Advanced
Ms. Suparna Chakladar, Fortistar

STATE OF MICHIGAN
IN THE CIRCUIT COURT FOR THE COUNTY OF WASHTENAW

BFI WASTE SYSTEMS OF NORTH AMERICA,
LLC, a Delaware limited liability company, and
ALLIED WASTE INDUSTRIES, LLC, a Delaware
limited liability company,

Case No. 14-1032-CK

Plaintiffs,

Hon. Archie C. Brown

vs.

ADVANCED DISPOSAL SERVICES ARBOR
HILLS LANDFILL, INC.,
a Michigan corporation,

Defendant.

/

AFFIDAVIT OF CHRISTINA BOSSICK

STATE OF MICHIGAN

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COUNTY OF WAYNE

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ss:

NOW COMES Christina Bossick, and upon being first duly sworn, deposes and says as follows:

1. I am currently employed by Sauk Trail Development, Inc., an affiliate of BFI Waste Systems of North America, LLC and Allied Waste Industries, LLC (collectively referred to for convenience as "Allied") as an Environment Manager. I have been continuously employed in that position since 2004.

2. As Environmental Manager, my responsibilities include supervising the operations, permit compliance and maintenance of Allied's gas collection and control system ("GCCS") at the Arbor Hills Landfill located in Section 13, T1S, R7E, Salem Township,

Washtenaw County, Michigan (the "Landfill"). I am also responsible for all of Allied's other environmental compliance at the Landfill, including permitting by the Michigan Department of Environmental Quality ("MDEQ") and the United States Environmental Protection Agency ("EPA"), and Allied's business relationships with the Landfill's owner and operator, Advanced Disposal Services Arbor Hills Landfill, Inc. (together with its predecessors, "Advanced").

The Arbor Hills Landfill

3. The Landfill consists of two waste collection areas. The first, Arbor Hills East stopped accepting new waste in 1989 and was certified as closed by the MDEQ on November 15, 1990. The second, Arbor Hills West, is active and has been accepting waste since the late 1980's.

4. In early 2000 Advanced purchased the Landfill from Allied as reflected by a Purchase Agreement between the companies. Under the terms of the Purchase Agreement, Advanced owns and operates the Landfill, while Allied owns the GCCS and retains certain environmental obligations at the Landfill.

5. In 2009 Advanced obtained permission from local governing authorities (Salem Township and Washtenaw County) to increase the vertical limit of the Landfill by 168 feet and to reduce the set-back from 6 Mile Road for waste placement from 500 feet to 100 feet.

6. Based on those changes to the vertical and lateral size restrictions at the Landfill, in 2009 the MDEQ granted Advanced's requested permit to allow Arbor Hills West to expand over and into the closed Arbor Hills East waste mass. In public statements and in MDEQ filings to get its expansion permit, Advanced stated that its expansion will, among other things, (i) cut out part of the GCCS at Arbor Hills East; (2) remove approximately one million cubic yards of

waste that has been closed and sealed since Arbor Hills East was closed in 1990 and move that waste to Arbor Hills West; (3) and place new waste areas or “cells” (as they are called in the waste industry) closer to 6 Mile Road and the residents who live nearby. The new cells closest to 6 Mile Road are called and permitted as Cells 4A, 4B and 4C. (For the Court’s reference, two Google Earth images of the Landfill and surrounding neighborhoods are attached as **Exhibits A** and **B**; attached as **Exhibit C** are site drawings from Advanced’s Landfill expansion permit).

Interaction Between Allied, Advanced and Fortistar

7. Since 2004, I have been the primary point of contact between Allied and Advanced relating to the Landfill and have maintained an open dialogue via e-mail, telephone, and in-person communications with Advanced’s representatives including its former General Manager for the Landfill, David Retell, and its current General Manager, Thomas Flannagan.

8. I have also regularly attended monthly meetings with Advanced’s representatives, including Messrs. Retell and Flannagan, regarding the GCCS, Advanced’s operations at the Landfill, and overall environmental compliance, construction and planning matters. Also present at these monthly meetings were representatives of Arbor Hills Energy, LLC, a subsidiary or affiliate of a company called Fortistar (“Fortistar”). These monthly meetings took place before I came to the Landfill in 2004 and continue to the present day. There was no interruption in this monthly meeting schedule in 2015 or any other time since I have been at the Landfill.

9. Since the late 1990’s Fortistar or its predecessor companies have (a) been under contract with Allied to provide operations and maintenance (“O&M”) services on the GCCS and (b) leased and operated the landfill gas to energy facility at the Landfill. For reference, in

addition to O&M, Fortistar purchases landfill gas from Allied, converts that gas to energy, and then sells the energy to Detroit Edison.

10. Fortistar's O&M work on the GCCS includes, but is not limited to, repairs to pipes and wells, monitoring or "tuning" the wellheads for gas collection control, monitoring gas flow and temperature to assure proper running of the system and other continuing tasks that assure the continued and proper running of the GCCS.

11. Since I have been at the Landfill, Fortistar was always instructed and paid to perform O&M on the GCCS. No one from Allied instructed or authorized Fortistar to stop performing O&M on any part of the GCCS in 2015 or any other time. In fact, Allied paid Fortistar over \$2 million dollars for O&M in 2015 for GCCS O&M at Arbor Hills East and Arbor Hills West, an amount that is in line with what Allied paid Fortistar for O&M in prior years.

12. Because of the O&M work Fortistar does for Allied at the Landfill, I am in regular contact with that company and its on-site representatives. Our discussions include the overall maintenance, repairs and expansion of the GCCS required by Advanced's continued expansion and acceptance of new waste.

13. The multi-company structure and the interconnection between operations at the Landfill is unique in my experience because: (a) the Landfill and its operations are owned and controlled solely by Advanced; (b) Allied owns the entire GCCS and retains some environmental obligations at Arbor Hills East; and (c) Fortistar leases the gas to energy facility. Reflecting the three areas of responsibility at the Landfill, the Landfill has a Renewable Operating Permit,

broken into three sections, with each company having obligations for the parts of the Landfill under its control, to the extent that there is independent control.

14. Additionally, Advanced must have and maintain an Operating Permit and Operating Plan that are approved by the MDEQ in order for the Landfill to do business. (Copies of both documents are attached as **Exhibits D and E**, respectively). The relationship between operations and the GCCS requires regular communication and coordination between all three parties in order to comply with permits and to successfully run each area of responsibility at the Landfill.

15. To illustrate this point, Federal and State regulations require the installation or extension of a GCCS within five years after waste is first placed into a new cell. At Arbor Hills I often accelerate GCCS extension into a new cell to approximately two years after waste is first placed due to the nature of the waste accepted at the Landfill. I work with Fortistar to coordinate the construction of new pipes and wells into the new cell, as well as hook up of the extension into the existing GCCS. I try to work with Advanced so that we know the date of waste placement before it is deposited in a location, the nature of the waste itself since that can affect gas production, and the filling and operational location of Advanced so that we can anticipate Advanced's waste acceptance and overall operations and (a) retain necessary consultants to draw construction plans; (b) to secure any necessary MDEQ approval; and then to (c) bring in and stage construction crews in a timely manner to complete necessary work.

Advanced's Lack of Cooperation

16. Over my years at the Landfill I have regularly had difficulty getting cooperation from Advanced, which makes maintaining the GCCS difficult or practically impossible in active

fill areas when Advanced is unwilling to manage or regulate the acceptance of new waste in order for GCCS repair and construction work to take place. While I have always tried to maintain a positive working relationship with Advanced, the response from Advanced personnel I have encountered has most often been one of 'the GCCS system is not our problem.' I have explained repeatedly that the collection of landfill gas is equally a "problem" for Advanced and Allied, but have been regularly rebuffed. Advanced's approach to GCCS repair and construction has led to delays in being able to perform work, or times when work is impossible because Advanced will not manage waste acceptance in areas where its operations have destroyed GCCS wells, pipes, air compressor lines, it also adversely affects leachate extraction when pumps are used in wells, and the like.

17. All landfills in Michigan are required to report the volume of waste they receive to the MDEQ. According to MDEQ's publically available information, the Arbor Hills Landfill is by far the largest landfill by volume in Michigan. The amount of waste accepted at the Landfill results in, among other things, heavy truck traffic. This traffic makes it very challenging to stage GCCS repair and growth, heightening the need for Advanced to provide Allied with information about its anticipated waste filling schedule. For years, however, Advanced has taken the position that it does not need to coordinate with Allied and that Allied (and Fortistar) have to do their best we can to work around the large volume of waste Advanced accepts at its Landfill.

18. An example of this problem is Advanced's current operations at Cell 5. This is one of the three presently open and active waste acceptance areas at the Landfill (itself unusual, as most landfill operators do not use three open faces at one time). Advanced is placing as much waste as possible in this area and rapidly moving laterally back and forth across the cell. This

means that new garbage is constantly placed across the cell, by garbage trucks and semis coming in from one side or the other to dump waste. Because of the high truck traffic volume and the presence of Advanced's heavy equipment in the same area, not only are wells hit with regularity, but the weight of the vehicles compresses and "pinches" wells, making them inoperable, or less than ideally operating. Allied is unable to repair these wells until Advanced either temporarily suspends waste acceptance in the area (which it is typically unwilling to do) or until the active waste acceptance is finished in the area.

19. A related problem we encounter, including right now, is that when we can get subcontractors on-site who are willing to raise wells in active work areas despite the danger caused by Advanced's refusal to manage waste acceptance and truck traffic, Advanced then fails to backfill around the well. To explain this better, when Advanced asks or Allied or Fortistar determine that a well has been pinched or needs to be raised, I retain a subcontractor to raise the well. This means that the well might extend vertically 20 or more feet into the air above the waste mass. The next step that should take place in any normal landfill, especially when the well raising is requested and needed for the GCCS operations, would be to place dirt or fluff substance around the well pipe so that it can remain vertical while the waste mass builds around it. Advanced, however, will leave the wells exposed, making the well inaccessible for tuning in the best case, or causing them to tip and pinch in the worst case, rendering the entire well useless. Again, because the GCCS is tied to operations, Advanced must cooperate with Allied to make the system function properly.

20. The high volume of the Landfill also taxes Advanced's overall operations and is a main reason why Advanced is unable (or unwilling) to do things that are necessary to run its

Landfill in accordance with its Operations Plan and permits. Shortcomings like Advanced's failure to place daily cover and/or maintain control over the exceptional amount of leachate this Landfill is producing stem from an understaffed operation given the volume of waste it accepts. For example, the photos below show leachate running into stormwater drainage in amounts I have never before seen in my years working at landfills (more leachate outbreak photos are included later in my affidavit under "Further Examples of Advanced's Poor Operations"):





Allied's Repair and Expansion Work on the GCCS

21. I work with Fortistar to coordinate repairs and overall maintenance of the GCCS throughout the year. For example, nine gas extraction wells were repaired or replaced in December of 2015 alone, along with many others earlier in the year.

22. I also work with Allied's internal environmental engineers and external consultants, as well as Fortistar, to plan GCCS repairs, extensions of the GCCS and/or any capital improvements on the GCCS for the coming year. Initial planning activity for 2016 started in October/November of 2015 and continued through December of 2015. In that timeframe we were in the process of getting planning, construction drawings and models initiated for 2016 repairs and expansion work (including extending the GCCS into the two year old waste that had been placed in Cell 4A, as described above). I also worked with and attempted to get waste filling plans and data from Advanced to coordinate this work, since it could not be accomplished if the wells and repairs were in an active fill area, but received no cooperation.

23. On January 8, 2016, I received a letter from Mr. Rettell advising me that odor complaints had been received from the Landfill's neighbors. I immediately advised others in my company about the issue and sought to determine whether the GCCS was operating properly in order to make sure that any odors were not coming from it or, if they were, to initiate work to correct any issues as soon as possible.

24. As part of this immediate work, I accelerated planned 2016 work to the GCCS, including repair work to the GCCS. This required accelerating several things in order to get work moving, including retention and scheduling of drilling rigs and construction crews, as well

as obtaining plans for the work. I was able to get work in process by January 15, 2016. This initial work was exclusively tied to repairing damage to GCCS pipes and wells caused by Advanced's operations. It entailed "re-drilling" wells next to wells Advanced had destroyed, extending wells because of the height of new waste levels, and repairing gas and air lines trampled or ruptured by Advanced's operations.

25. On January 19, 2016, I sent a letter to Mr. Rettell advising him of Allied's efforts, and what I hoped were Advanced's efforts, to investigate and solve the odor issues at the Landfill. I also expressly reminded Mr. Rettell that, despite his unfounded claim in a prior letter, that Fortistar was never instructed or allowed to do anything less than to fully maintain the GCCS at both Arbor Hills East and Arbor Hills West at all times, exactly as it had done for over a decade. A copy of my January 19, 2016 letter to Mr. Rettell is attached as **Exhibit F**).

26. Mr. Rettell and I also attended every day of the arbitration in December of 2015 when, among other things, Advanced repeatedly complained that Allied was paying Fortistar too much for O&M, and we both saw the exhibits Advanced introduced showing the amounts of O&M that Allied paid Fortistar, including in 2015. Despite this, and despite reiteration in my January 19th letter to him that "[a]t no time—ever—was Fortistar instructed or authorized to do anything less than adhere to its operational and maintenance responsibilities" at the Landfill, I am aware that Mr. Rettell and Advanced have repeatedly told the Landfill's neighbors, and likely the MDEQ, that Allied stopped maintaining the operations and maintenance of the system in 2015. This is a completely false statement.

Allied's Continual Contact and Cooperation with Regulators

27. At all times since January I have coordinated both what Allied was doing, and how it was performing its work, with the MDEQ. This included on-site visits with the MDEQ, as well as calls and emails with the MDEQ.

28. On February 2, 2016, Advanced and Allied were issued with a "Notice of Violation" by the MDEQ. (A copy of the Notice of Violation is attached as **Exhibit G**). I worked with internal and external engineers at my company to document the work we had done and worked with Advanced to draft a joint response to the NOV. The joint Advanced/Allied NOV response was sent to the MDEQ on February 15, 2016. (A copy of this letter is attached as **Exhibit H**).

29. On February 15, 2016, the EPA conducted an inspection at the Landfill and it issued a further request for information based on that inspection on April 1, 2016. Allied has provided all information requested of it to the EPA.

30. On March 15, 2016, the MDEQ issued a second NOV, asking for more detail on the GCCS work as well as information on the suspected odor causes. Although Advanced asked to see a copy of the second NOV response in order to submit it jointly, when it was given a draft copy of the response, it refused to join the response because some of the suspected odor sources identified in the draft related solely to Advanced's operational deficiencies at the Landfill.

31. On March 29, 2016, I sent a response letter to the MDEQ's second NOV noting, as requested, suspected odor causes, but also identifying efforts taken by Allied with respect to the GCCS. (A copy of this letter is attached as **Exhibit I**). These efforts included, but were not limited to:

- On January 15, leachate collection cleanout risers were connected to the GCCS by Allied to provide gas collection pending expansion of the GCCS into Cell 4 (which had been planned for May 2016, that date itself being three years ahead of regulatory requirements).
- Surface scans were conducted to detect and identify any odor sources on January 23 and 29.
- February 4, Allied purchased a new air compressor to provide even more pressure for pumps to remove leachate or condensate from gas wells.
- February 4-March 21, Allied expedited replacement of 18 gas wells and added 24 new gas wells to repair damage caused by Advanced's operations or to account for rising waste rapidly placed by Advanced.
- On March 8, Allied discovered through cameras that 4 wells in Cell 5 had also been damaged by Advanced's operations. Further scans were taken on March 8 and 9, and I sent the camera and scan results, along with a construction plan, to Scott Miller of the MDEQ on March 10. With MDEQ approval, Allied installed 7 temporary wells and replaced the 4 damaged wells from March 14-22.
- March 8, Allied initiated daily surface scanning and it submits those results to the MDEQ.
- Additionally, 53 recently constructed gas wells were tuned for maximum safe extraction efficiency.

- Allied also committed to the MDEQ that it would provide it with an overall GCCS evaluation by April 30 (which it did and sent to the MDEQ, along with construction plans for new work).

32. On April 12, 2016, I had an in person meeting at the MDEQ with Alex Whitlow, Scott Hamilton and Dianne Kavanaugh of the MDEQ to report on progress and work to date completed by Allied.

33. On April 13, 2016, I received an email drafted by Fortistar regarding continuing and new damage to wells caused by Advanced's operations, including a photograph of the damage. The photo below shows damage to a well (the wellhead was installed vertically and is supposed to be vertical; not at a 45 degree angle) and Advanced's nearby heavy equipment is illustrative of the damage to the wells caused by Advanced's active operations. This photo also gives a sense of the overall haphazard operation and considerable exposed garbage on top of the Landfill—away from public view, but upwind from the neighboring citizens.



34. On April 17, 2016, I sent additional odor scan information to the MDEQ.
35. On April 20, 2016, I observed landfill gas odors at the eastern edge of the cell overliner that Advanced placed on top of the Arbor Hills East waste mass. I contracted Mr. Flannagan suggesting additional soil coverage on the area by Advanced.
36. On April 20 2016, as requested, I also sent a Gas Migration Report to the MDEQ.
37. On April 25, 2016, in response to a request from the MDEQ, I sent copies of: (1) monthly wellfield data for January through March of 2016; (2) the First Quarter 2016 Surface Monitoring Report; and (3) a 12 month cover integrity report. (A copy of this email is attached as **Exhibit J**).
38. On April 26, 2016, I sent an email to the MDEQ advising it of additional construction plans and new work that had been or was being performed on the GCCS by Allied, as well as the timeline for work completion. (A copy of this email is attached as **Exhibit K**).
39. On April 27, 2016, I had a meeting with our construction team, but also representatives of Advanced and Fortistar and their consultants so they were advised of the specific construction plans and timelines in an effort to coordinate with them as well. I sent all meeting attendees a copy of the detailed construction plans by e-mail.
40. As promised to the MDEQ, I sent a copy of Allied's GCCS Design Plan from Cornerstone Consultants on April 28, 2016 by hard copy and, as requested, again electronically on May 2, 2016. (A copy of my email to the MDEQ sending the Cornerstone GCCS Design Plan is attached as **Exhibit L**).
41. On April 29, 2016, the MDEQ issued a third NOV (based on a site visit from April 11), this time asking only Advanced to take action, both in relation to leachate outbreaks at

the Landfill and to address Advanced's failure to put adequate "daily cover" on an area of the Landfill to prevent the release of fugitive landfill gas, and accompanying odors. "Daily cover" is what is placed on top of an open waste collection area each night pursuant to applicable regulations and that should be removed the following morning before the next day's operations commence.

Odor Sources at the Landfill

42. I have reviewed Advanced's Motion and flatly disagree with any conclusion that (a) there has been any finding by any party (including the MDEQ) that the GCCS or Allied's operation or maintenance of the GCCS was the sole or main cause of odors at the Landfill and (b) that the odor complaints relate solely to landfill gas.

43. First and foremost, odors come from many sources at the Landfill that have nothing to do with Allied or its GCCS. This includes freshly placed garbage (especially when daily cover is not placed on the waste), pooling and drainage of huge amounts of leachate on the exterior of the Landfill, the type of waste accepted and chemical reactions with that waste, and waste that is trucked into the Landfill.

44. Odors also regularly come from the Advanced composting facility across the street from the Landfill. The presence of these non-landfill gas odors has been documented by the MDEQ, the Landfill's neighbors, off-site odor monitoring, and by my own observations. The photo below shows stench clouds coming from the site, including release when loaded. As mentioned below, Advanced also takes compost and uses it as daily cover at the Landfill—at best a curious decision when odor issues have been present already:



45. Speaking again to the volume of this Landfill and its subpar operations, neighbors have repeatedly complained about odors and dust caused by Advanced failing to (1) consistently maintain cover or vegetation on the Landfill or (2) sufficiently water areas heavily traveled by lines of trucks and semis. An example of the dust/odor clouds can be seen below:



46. Further, even if landfill gas is detected, that does not mean that it came from the GCCS or that it has any relationship to the maintenance or operation of the GCCS by Allied. For example, landfill gas can, and does, escape from areas where the Landfill has inadequate cover placement (as the MDEQ noted in its April 29, 2016 ordering Advanced to place more cover in an area where it detected fugitive landfill gas odors). Landfill gas also escapes through erosion riddled slopes at the Landfill where landfill gas collection is difficult or impossible; it escapes from open faces where new garbage is accepted (especially if daily cover is not properly placed); it escapes from seams between cells (again, exacerbated if proper cover is not put down); and it escapes when any digging is done (including for new or redrilled wells, or if there is other construction or operational digging into a waste mass).

47. To get a sense of some of these factors in action, the photograph below shows a large slope that is exposed at the Landfill. The channels down the eroded slope are caused by leachate or stormwater that becomes leachate. Leachate stinks and it can be seen pooling at the bottom of the slope in this picture. The exposed dirt face of this slope also lets landfill gas escape, and there is no reliable way to capture that gas. There are wells in this area, but because of the exposure to oxygen (from having no vegetative or “green” cover) even applying a vacuum to the wells cannot draw the gas. And, as a further complication, if too much vacuum is used to try to capture the gas, it can cause heating within the waste mass which, combined with drawn in oxygen, can be hazardous. It is no coincidence that this huge, eroded, exposed slope has produced odors; and its location upwind of the neighbors is notable too. I have told Advanced about this problem for months, and that it can and should be corrected with adequate green cover. Advanced has done little to nothing:



48. Successful operation of the wells in Allied's GCCS, like those in any gas collection and control system, can only occur in a properly run and maintained landfill. The Arbor Hills Landfill is not properly operated or maintained. Excess water or leachate in the waste mass or in wells blocks the flow of landfill gas to collection points, and also renders the wells themselves less efficient because it totally or partially blocks their ability to collect gas. In the waste industry this problem is called "watered in" or "watered out" wells. In some cases a pump can be installed to remove leachate or condensate from the wells, but this requires not only a pump, but air lines to the pump and enhanced leachate/condensate collection ability from the

wells, generally on the surface of the landfill. Again, I have never seen a landfill that produced the volume of leachate that is produced at Arbor Hills.

49. In areas where Advanced is disposing of extremely large volumes of waste on a daily basis (such as Cells 1 and 5B), the sheer number of trucks and heavy equipment eliminates or at best greatly hinders Allied's ability to use pumps to clear out leachate or condensate from wells.

50. Another problem at Arbor Hills is "bowls" (depressions in the side or on a level area of the garbage mass) in the Landfill that Advanced has failed to address. Beyond leachate flowing directly down the face of the bowls, the bowls collect water in them which, in turn, adversely affects the ability of GCCS wells to collect gas and operate.

Further Examples of Advanced's Poor Operations

51. While I have devoted nearly all of my working time in 2016 to Arbor Hills, since April of 2016, I have been at the Landfill every day that the Landfill has been open. I have documented in writing and photographs my daily observations of Advanced's operations and have noted repeated problems, deviations from Advanced's Operating Plan and Operating Permit, including repeated failure to place daily cover; continued leachate outbreaks at various locations at the Landfill; geysers of odorous steam shooting from special waste piles on top of the Landfill; failure to remove daily cover before beginning operations; exposed trash; pools of leachate; and other operational deficiencies that cause odors, contribute to problems with the GCCS and/or that violate the requirements of Advanced's Operating Permit and Operating Plan. These issues have all caused odors of the nature complained of by the Landfill's neighbors. As one example, below is a picture of steam shooting from special waste and chemical reactions

from that waste at the Landfill (this odorous steam cloud appears nearly every day due to the volume of special waste and construction debris (containing lime) accepted by Advanced. Please note that these smelly chemical/odor clouds shoot up from the special waste mass and are present all the time on the top of the Landfill (upwind from the neighbors):





52. Some other observations include:

- April 18 and April 19, I observed exposed waste left in uncovered heap. It was still left uncovered a week later (photos from April 25 and 27 are below):





- On April 21, our odor monitoring company called to tell me there was a fire at the Landfill (which was closed). I immediately called Mr. Flannagan, told him of the fire, and drove to the site. Upon arrival I observed a fire in a cell that had started accepting waste less than a week earlier. Allied has no GCCS or operations of any kind in the cell because waste is just now being placed there (notice the lack of cover on the waste too).



- On April 25, 2016, I was driving through the Landfill after operations had closed. I noticed that Advanced had again failed to place cover on the active faces of the Landfill. As I documented my observation that there was no cover, I was seen by Mr. Rettell, who happened to be on-site that day. I observed Mr. Rettell turn around, return to Advanced's office and shortly thereafter the Advanced employees who were leaving for the day were called back and, only then, restarted bulldozers and began placing cover over the active faces. Even then, raw waste was still left uncovered *on all three faces* when they quit for the day, as shown by the photographs below (the first two from the top active face, the third from the mid active face, the fourth from the bottom active face):







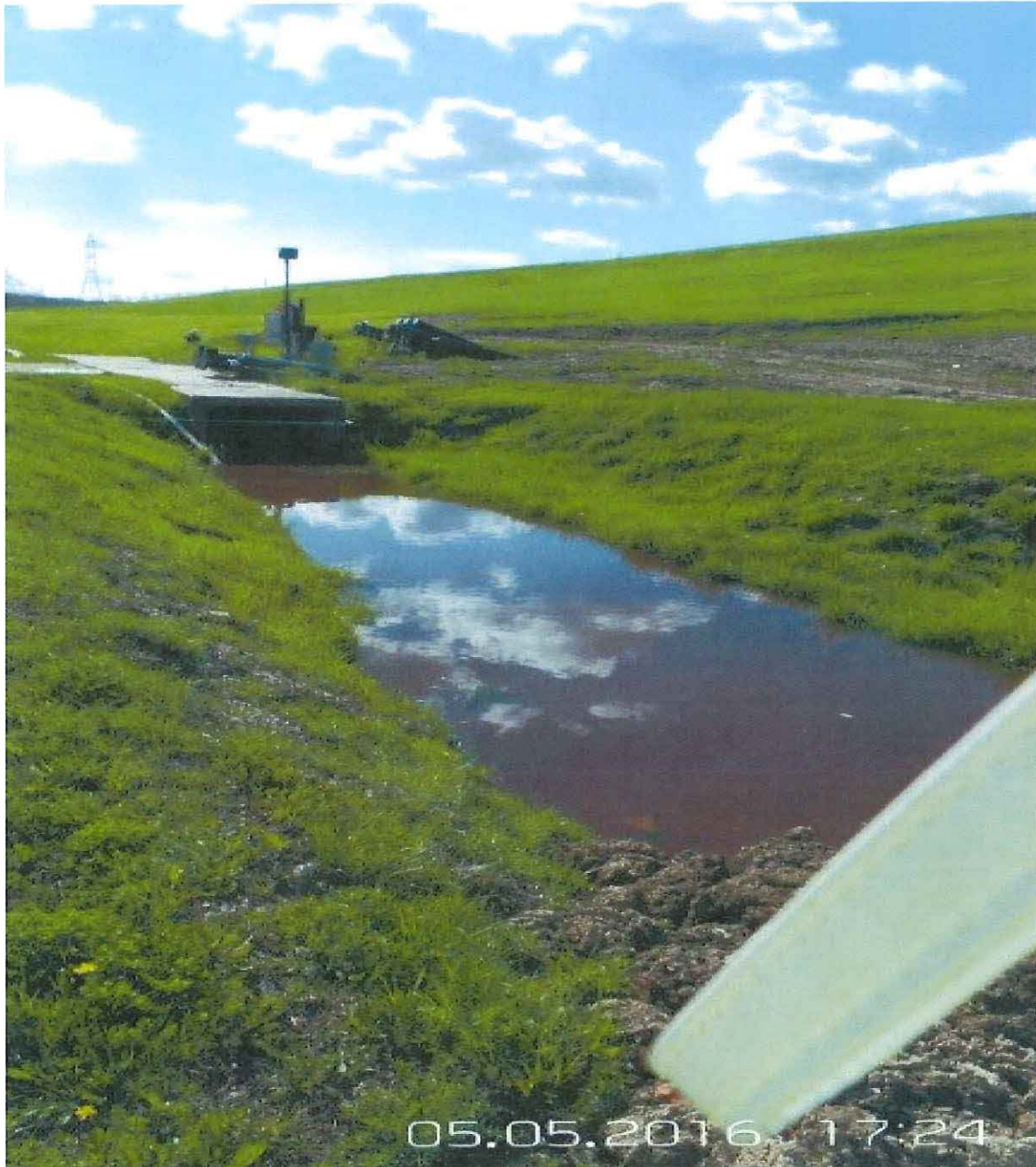
- Every day I have also observed that Advanced puts no daily cover or minimal daily cover on the special waste it accepts. Below is a special waste heap left uncovered all together:



- Advanced is using *compost* as daily cover, which is unusual, but it is also using trash (construction debris) as daily cover...for trash. What appears (and is) a waste heap in the photo below is actually waste used as cover. Obviously this form of daily cover does nothing to prevent fugitive landfill gas (or any other odors) from escaping:



- Leachate outbreaks were noted at the Landfill every day since April 18. Advanced has been repeatedly told by the MDEQ and also the EPA that it must contain its leachate problems. See photographs below:





- Daily cover was either not put down on all the three active waste faces or when it was placed, it was not stripped/removed the following morning. It should be noted that Advanced's MDEQ Operations plan specifies at least 6 inches of daily cover placed each day. Failure to strip daily cover contributes to watering in wells because leachate is prevented from draining down the waste mass as intended where the Landfill is designed to collect.



53. On May 3, the MDEQ was on-site for field training, investigation, odor monitoring and compliance review of the Landfill. During the meetings the MDEQ identified certain follow up points for Advanced and Allied. All of the follow up points relating to Allied were already in process or now are in process, as will be communicated with and to the MDEQ moving forward.

54. On May 4-5, 2016, the EPA was on-site at the Landfill and I was with the EPA team for most of its time at the Landfill. The EPA identified concerns with certain of Advanced's operations such as water intake from multiple open faces accepting waste, insufficiently placing daily cover, not stripping daily cover when it is placed, the resulting watering-in of wells and many other issues already identified by Allied. The EPA indicated that it may follow up on the issues it observed shortly.

55. Over the past two weeks, I have also worked with the MDEQ and an outside consulting firm to secure ambient air monitoring as requested by the MDEQ. I have a call scheduled to confirm the MDEQ's approval of this air monitoring plan and expect that it will be in place by May 13, 2016. For clarity, this air monitoring is separate from the odor monitoring already in place by Allied through a consultant retained by Allied.


56. I also continue to regularly meet with and update the MDEQ on all of Allied's activities with respect to odor monitoring, GCCS operations and maintenance, and the odor source and causation investigation that Allied is performing at this time.

57. This affidavit is made on personal knowledge and affiant, if sworn as a witness, can competently testify to the foregoing facts.

Further affiant sayeth not.


Christina Bossick

Subscribed and sworn to before me in WAYNE County,
State of Michigan, this 9th day of May, 2016.


Print name: KEVIN CHARARA
Notary Public, State of Michigan, County of WAYNE
My commission expires 07/22/22.
Acting in the County of WAYNE.

Kevin Charara
Notary Public, State of MI
County of Wayne
My Commission Expires 7/22/2022
Acting in County of WAYNE