



Metropolitan Waterfront Alliance

Testimony of Roland Lewis, President and CEO

New York City Council

Committee on Waterfronts & Committee on Environmental Protection

re: An Update on Governors Island

June 12, 2014

Good morning, and thank you for the opportunity to submit this testimony. I am Roland Lewis, President and CEO of the Metropolitan Waterfront Alliance (MWA). The MWA is a bi-state coalition of nearly 800 community and recreational groups, educational institutions, businesses, and other stakeholders committed to restoring and revitalizing the New York and New Jersey waterways. Our Harbor is our most precious shared resource, a resource for commerce and economic development, waterborne transportation and tourism, and active recreation. While our waterways are cleaner now than they have been in generations, much work remains to ensure that we continue on that trajectory, for safe use and enjoyment by all. That our Alliance spans political boundaries is no accident: what happens on New York's waterfront affects New Jersey, and what happens in New Jersey affects New York as well.

Many New Yorkers, and Staten Islanders in particular, have raised concerns about the Rahway Arch project, where millions of tons of contaminated soil are slated for dumping within a coastal flood zone, on waterways that flow directly into Staten Island's Arthur Kill. Should another storm the magnitude of Superstorm Sandy befall our region, with surges flooding both sides of the Harbor, it is highly possible that those chemicals would wind up on Staten Island's shores, potentially threatening New Yorkers' health and safety. We do not need to imagine this scenario – Staten Islanders and all New Yorkers, as well as New Jersey residents have just lived through, and are still recovering from this devastation. At minimum, the possibility of adverse effects crossing state lines demands careful study, if not action, at the federal level. Section 404 of the Clean Water Act gives the Environmental Protection Agency (EPA) the authority to conduct a permit review process for “the discharge of dredged or fill

material into the navigable waters.” Yet EPA and the US Army Corps of Engineers (USACE) have recently stated that the federal government has no oversight over this project because the property on which it will be constructed exists outside federal wetlands jurisdiction. In a letter to Sen. Charles Schumer, they write, “There is no state-permitted construction work within regulated waters or wetlands of the United States.” Instead, the New Jersey Department of Environmental Protection (NJDEP), which has approved the project, has full jurisdiction within “state-regulated upland transition zone adjacent to the wetlands and waterways.”

This is wrong. While the State of New Jersey may regulate the land on which this project is built, the waterways that may be impacted are shared by all. We urge the City of New York, both representatives in this Council and officials within the Administration to continue to pressure your federal counterparts to conduct a careful review and analysis of the projected impacts of this project, by any means necessary. We must not wait until disaster strikes again to know for certain.

FOR THE RECORD



The North Shore Waterfront Conservancy of Staten Island, Inc.
P.O. Box 140502
Staten Island, New York 10314

June 10, 2014

Donovan Richards, Chair
NYC City Council Committee on
Environmental Protection

Deborah Rose, Chair
NYC City Council Committee on
Waterfronts

Reference: The Rahway Arch Project's Potential Impact on Staten Island

On behalf of the North Shore Waterfront Conservancy of Staten Island, Inc. (NSWC), and the environmental justice and waterfront communities that we advocate on behalf of, live, work, play and pray in. We would like to thank Chair Richards and Chair Rose for the opportunity to submit our comments to their committees and to the NYC City Council.

NSWC first heard about the Rahway Arch Project/Soil Safe from the NY/NJ Baykeepers Alert Newsletter back in September 6, 2013 and we immediately put it in our Email Blast and forwarded it to our members, friends, and officials.

The next alerts went out about the Rahway Arch/Soil Safe project to Staten Island officials in emails on February 25, 2014. These promptings came about because some of our members had been following the Rahway Arch project and how New Jersey's Department of Environmental Protection was in essence acting as an enabler in allowing the project to go through.

Because of Staten Island's close proximity to New Jersey's industrial waterfront there is very little that they can do involving the environment that will not have a direct and/ or indirect effect to Staten Island and its people. Therefore, if it is their plan to place additional toxins on site that is in a flood prone area with no intentions of doing a full remediation of this site and with no means of containing those toxins. Then it is more than reasonable to state that those toxins will end up in our joint waterways the Arthur Kill, Newark Bay and the Kill Van Kull river.

And by Staten Island being an island community whose culture of harvesting from its rivers and shores date back to when Native Americans inhabited the island. Then you can rest assured that the residents of today and tomorrow will be catching the fish and shellfish from

these rivers and banks of our shore line and feeding themselves and their families with their harvest.

Our government has known for decades that these rivers are badly polluted, as they have known for decades that our people eat the fish from these polluted rivers. Yet no efforts of a substantial nature have been made to stop residents from eating the fish from the rivers, because of the fear that it would mean starving our people and/ or being accountable for this environmental atrocity that has been allowed to continue for a century and a half.

Therefore, the option has been to clean these rivers in what only can be described as being at a snails pace and then turn a blind eye to all of the rest. Well this very slow and methodical pace is catching up to us.

Staten Island has some of the highest numbers of cancer in our people and the highest numbers of lead poisoning in our children in New York City. Yet no one has ever attempted to make the connection between these illness and the most common of denominators which is; what is in our environment. What we inhale, ingest, and through dermal exposure are exposed to every single day. Anyone of these things is probably dangerous enough, but any combination of them and/ or all three together make for quite deadly recipe. Especially in people whose immune systems are already over exposed to hazardous condition, or whose immune systems have not fully developed, or are vulnerable due to age, or other illnesses.

It is long overdue that New York City and State government make it their business to engage New Jersey on its environmental and adverse health impacts to Staten Island and its people. This Rahway Arch/Soil Safe project needs to be stopped in its tracks by any means necessary. Followed by a more suitable plan to fully remediate the contaminates on this site, while providing the very best of protection for Staten Island's people, especially in the environmental justice communities, our waterways and waterfront.

Thank you for your time and consideration and we look forward to your immediate response on this matter.

Sincerely,



Beryl A. Thurman, Executive Director/President
NSWC
nswcsi@nswcsi.org

Save All of Arlington Marsh and its Cove !

Cc: Debbie Mans, NY/NJ Baykeeper, Paul Gallay, Riverkeeper, NSWC, PPOW, NRPA, SITA, CBI, NYS DEC, U.S. EPA, James Oddo Borough President, Assemblyman Joseph Borelli and any other interested parties.

June 9, 2014

Mr. Gary Altman
Legislative Counsel
New York City Council
City Hall
New York, New York

RE: Committee Hearing on the Rahway Arch Site Remediation, June 12, 2014

Dear Mr. Altman:

I recently received a letter from Mr. Mark Smith of Soil Safe in which he forwarded me your May 27, 2014 email to him regarding the planned joint meeting of the Committee on Environmental Protection and the Committee on Waterfronts to be held on June 12, 2014 regarding remediation of the Rahway Arch site in Carteret, New Jersey. A copy of Mr. Smith's letter is attached.

I am a New Jersey Licensed Site Remediation Professional (LSRP) and have been engaged by the property owners to be responsible for the remediation of the Rahway Arch site. Under New Jersey law, enacted via the Site Remediation Reform Act (C.58:10C-1 et seq. - SRRRA); remediation of contaminated sites in New Jersey is performed under the supervision and direction of an LSRP.

The LSRP is responsible for ensuring that the remediation is planned, designed and implemented in accordance with New Jersey's Administrative Requirements for Remediation of Contaminated Sites (NJAC 7:26C - ARRCs), the Technical Requirements for Site Remediation (NJAC 7:26E - Tech Rule) and applicable New Jersey Department of Environmental Protection (NJDEP) guidance documents. The LSRP's highest priority is protection of public health and safety and the environment.

The majority of the Rahway Arch site is owned by Rahway Arch Properties, LLC, although two parcels within the contaminated area are owned by the Borough of Carteret. I have been engaged by both parties for remediation of the entire site. As LSRP, I have been responsible for investigating the site, establishing the remediation objectives, preparing the remedial action workplan (RAW) and designing the capping system that will be the primary engineering control for site remediation. I will also be responsible for overseeing the remediation as it is performed, on behalf of both property owners, ensuring that the requirements of the RAW and remedial design are met and issuing the final remediation document once the remediation is complete.

As LSRP, I am also responsible for responding to inquiries from the public regarding the remediation. Soil Safe has been selected as the remediation contractor because of the superior properties of the engineered fill material they will manufacture to construct the cap system. Soil Safe is neither the property owner nor the responsible party for the site remediation.

Over the past several years a number of negative newspaper, television and web articles have been published about this remediation project that contain significant errors. I believe that these erroneous statements are the reason why the Committees are holding this hearing in the first place. As a result, the property owners have requested that I provide factual information regarding this site remediation so you can see for yourself this project is necessary for public health and safety and environmental protection of the Rahway River and its environs.

I request that this letter be included as part of the formal record for this upcoming hearing.

Site Description and Background

The Rahway Arch site is a 124.7 acre property that was used by American Cyanamid (now Cytec) from the 1930s through the 1970s to dispose of approximately 2,000,000 tons of alum and yellow prussiate of soda (alum-YPS) sludge in six sludge lagoons, covering approximately 85 acres of the property. This sludge and additional undocumented fill that has been placed on this site are contaminated with cyanide, metals and polynuclear aromatic hydrocarbons (PAHs). My investigations have shown PAH contamination up to 300 times the New Jersey Non-residential Direct Contact Remediation Standards.

The site requires remediation to correct numerous environmental and safety problems. At the present time, 25.5 million gallons of water per year percolate through the contaminated materials and into the groundwater and the adjacent Rahway River. The berms that form the impoundments were constructed in the 1930s and are not stable. A catastrophic berm failure will release the contaminated materials into the adjoining wetlands and the River. The surfaces of the impoundments are unstable and pose a safety hazard to people and wildlife that enter the site. The NJDEP has recognized the need to remediate the site and on May 30, 2014 rescinded the No Further Action/Covenant Not to Sue (NFA/CNS) decision that was granted to Cytec in 2002.

In accordance with New Jersey law, this site must be remediated. I intend to remediate this site using an engineered capping system that will:

- ☐ Eliminate direct contact hazards
- ☐ Stabilize the impoundments and berms
- ☐ Control and manage stormwater
- ☐ Eliminate infiltration into the groundwater and River
- ☐ Eliminate the on-site safety hazards

The remediation will be fully compliant with New Jersey regulations and technical guidance for site remediation. This was confirmed by NJDEP during a nine-month long component review of the RAW and remedial design. The cap system will be constructed by Soil Safe using recycled soil manufactured into engineered fill in an on-site soil recycling facility. This is the only purpose for the recycling facility, and it will be removed upon completion of the site remediation.

The permitting process for this site remediation has been going on for four years. Five local public hearings have been held which have resulted in unanimous approval votes by the Borough of Carteret Planning Committee, Middlesex County Planning Department, Middlesex County Solid Waste Advisory Committee and Middlesex County Board of Chosen Freeholders. The remediation plans have been reviewed by five separate departments at NJDEP, Freehold Soil Conservation District and the U.S. Army Corps of Engineers. I anticipate that the last permit necessary before we can begin the site remediation will be issued this summer.

Some of the incorrect statements regarding this remediation project that I need to address with the correct information and facts include:

- *"The Project will be importing "toxic" and "highly contaminated" waste."*

This is incorrect. No solid, toxic or hazardous waste will be brought to the site. Only approved recyclable materials will be brought to the site and will be used in a proven process to make the engineered fill for the cap system.

The recycled material used to construct the cap system must meet New Jersey Residential Direct Contact Soil Remediation Standards for all constituents except six polynuclear aromatic hydrocarbon (PAH) compounds that currently exist on the site at concentrations that exceed the Standards. The allowable concentrations of these six compounds in the recycled material that will be used to construct the cap system will be less than 40% of the average concentrations of these six compounds that already exist on the site today.

To be clear, the recycled engineered fill material used to cap the site will be a durable soil-cement matrix that will be overwhelmingly residential in chemical quality, except for six compounds, and the concentrations of those six compounds will be substantially less than what is already on site today. Finally, the entire surface of the cap system will be covered in 12" of clean soil meeting all residential standards.

This remediation and closure process is identical to the remedial designs engineered and permitted for contaminated sites all over the country, including in New York by DEC at the Fresh Kills Landfill which is directly across the Arthur Kill, quite literally overshadowing the Borough of Carteret.

To reiterate; no toxic, solid or hazardous waste will be used in this project.

- *"The project will create a chemical waste repository along the Rahway River."*

This is incorrect. At the present time, the site is a chemical waste repository and is discharging leachate into the groundwater and the Rahway River, approximately one half mile upstream from the Arthur Kill. It was used to dispose of 2,000,000 tons of cyanide contaminated industrial waste from 1937 through 1974. Since that time an unknown amount of undocumented fill, which recent investigations have also shown to be contaminated, has been brought to the site. This project will remediate this site and ensure the waste and

contaminants contained in these old and deteriorating impoundments will not have any future impact on the environment.

- *"No formal project plan has been submitted to NJDEP"*

To suggest that no plan has been submitted to NJDEP, or by extension that NJDEP did not thoroughly review, critique and require improvements to all aspects of this site remediation project is both incorrect and completely unbelievable.

After nearly two years of planning and investigation, completed in concert with NJDEP technical staff at the various divisions, the Remedial Action Workplan and the construction plans for the cap system were submitted to NJDEP on November 29, 2012. Intensive review of these plans was conducted for the next 18 months with the project being extensively reviewed by five separate NJDEP divisions as part of the permitting and approval process. All comments by NJDEP and all other jurisdictional agencies have been satisfactorily addressed.

- *"The project will affect the health and wellbeing of Staten Island residents."*

Remediation of this site will have a positive impact on the health and wellbeing of Staten Island residents. At the present time this site contains uncontrolled deposits of contaminated materials, continues to leach cyanide into the Rahway River and faces the risk of a release if a berm fails. Remediating this site will eliminate the leachate, the potential for berm failure and the potential for release of the contaminated materials into the Rahway River.

- *"The project will place fill in wetlands and waters of the United States that are subject to USACE jurisdiction."*

This is incorrect. The cap system will be limited to the existing contamination. This contamination is constrained by the existing containment berms and is not in wetlands or waters of the United States. No portions of the cap system will be placed in wetlands or jurisdictional waters of the United States. This has been confirmed by USACE following site visits and a plan review.

The site contains 40 acres of wetlands that are outside the containment berms and the limit of remediation. These wetland areas are not part of the remediation project and will not be disturbed. Rather, these areas will be preserved and enhanced. Upon completion of the remediation, approximately 60 acres of the currently contaminated area will be restored to habitat, forming wetlands transition areas that will help protect and preserve these existing wetlands.

- *"The cap will be 29 feet thick"*

This is incorrect. The existing elevation of the 85-acres being remediated is approximately 12 feet above mean sea level. After installation of the cap system, the highest point on the site will be 29 feet above mean sea level. The cap will slope from this high point to stormwater management ponds on the perimeter. This slope is the minimum necessary to ensure proper drainage and prevent water from percolating into the contaminated materials. Overall, the average thickness of the cap system will be 8 feet.

- *"Capping the contaminated site will fill in the flood plain and will cause upstream flooding, and the site has the capacity to store 800,000,000 gallons of flood water."*

Looking at the river hydraulics, the site is not in the floodway. The floodway is adjacent to this site and will not be changed by the remediation.

The site was filled long ago with the alum-YPS waste material. The berms that form the impoundments are approximately 12 feet high along most of the riverbank. In fact, observations made onsite during and after Sandy showed that the majority of the site was **not flooded**, even with the storm surge created by Sandy.

The Rahway River in the vicinity of the site is tidal. Flooding from a severe storm in a tidal area is caused by storm surge coming from the ocean, not water flowing down the river. The problems associated with upstream flooding of the Rahway River are caused by existing constrictions located upstream from this site that restrict water flow during storms. Remediation of this site will not have any impact on those constrictions or flooding. This was explicitly confirmed by NJDEP flood experts and other hydrologists familiar with the area and the site.

The storage capacity of the site is also grossly exaggerated. To store 800,000,000 gallons on 85 acres, the flood waters would need to reach an elevation of 41 feet above mean sea level. If this occurred, not only would the site be flooded but so would most of Manhattan, Long Island and the New York Metropolitan Area.

Finally, I must question the concept of thinking that flooding 85 acres that are contaminated with cyanide, metals and PAHs is a sound environmental engineering practice. As an LSRP, my primary responsibility is to protect human health and the environment. Allowing this site to flood would be in direct conflict with that responsibility.

- *"The weight of the cap will cause the berms to fail releasing the sludge into the river."*

No one has been more concerned about the failing berms than the project design and remediation team. It was clear from the beginning of the design process that this was a geotechnically challenged site. However without site remediation, it is a certainty that the berms will ultimately collapse into the Rahway River, releasing much of the 2,000,000 tons of cyanide sludge.

Mr. Altman
June 9, 2014
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Michael Baker Jr., Inc., one of the leading geotechnical engineering companies in the Country, was retained to investigate this site and provide the geotechnical design necessary for the successful construction of this engineered fill cap system. Baker performed field investigations, laboratory analyses, literature searches and extensive modeling. Analyses included both short term and long term slope stability, settlement and bearing capacity of the site.

The results showed that, when constructed following the recommendations contained in Baker's report (and repeated in the Remedial Action Workplan), the engineered fill cap system will meet or exceed acceptable engineering factors of safety both short term during the construction period and long term following the completion of the remediation project. The cap system, constructed as shown on the approved drawings, will result in a safe and stable solution to this long term environmental problem. Also as described in Baker's report and RAW, the stability of the site will be closely monitored throughout the project to ensure that this stability is maintained.

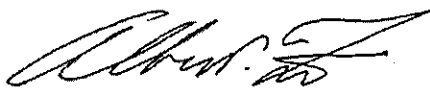
These recommendations were thoroughly reviewed by the LSRP, civil engineers and NJDEP's geotechnical staff. NJDEP has reviewed and signed off on the resulting design, monitoring and construction loading sequencing. There are no technical or factual grounds to conclude that the cap system or the remediation of this site will cause the berms to fail.

- *"A new flood would spread contaminated soil throughout the area."*

This is incorrect. Precipitation and wind have been spreading contamination from this site for more than 70 years. The site remediation will cap the contaminated sludge and other contaminated materials on the site with a durable layer of low permeability soil cement. This will prevent percolation through the contaminated materials, protecting the groundwater and the River. The capped site will be elevated above the most stringent flood elevations, eliminating the possibility of that the contaminated sludge could be washed out from floods. The environmental hazards of this site will finally be completely eliminated.

Thank you for giving me the opportunity to correct, for the record, some of the many incorrect statements that have been made regarding this remediation project. Correct information regarding this remediation project is also available from the project web site at www.CarteretClean.com. If you have any further questions or would like any additional information about this project, please call me at (410) 290-8777.

Sincerely,
EastStar Environmental Group, Inc.



Albert P. Free, P.E., CSP, LSRP
President

Mr. Altman
June 9, 2014
Page 7

cc: Ron D'Argenio - Rahway Arch Properties, LLC
The Honorable Daniel Reiman - Mayor, Borough of Carteret
Mark Smith - Soil Safe, Incorporated
Ken Kloo - NJDEP Site Remediation Program

Mr. Altman
June 9, 2014

ATTACHMENT

LETTER FROM MARK SMITH - SOIL SAFE, INCORPORATED

Soil Safe

June 5, 2014

Via Electronic and U.S. Mail

Mr. Al Free, P.E., CSP, LSRP
President

EastStar Environmental Group, Inc.
10632 Little Patuxent Parkway
Suite 106
Columbia, Maryland 21044

Subject: *Email from NYC Legislative Counsel Gary Altman regarding the Rahway Arch Properties Project*

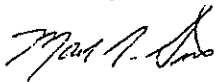
Dear Mr. Free:

On May 28, 2014 the subject email (attached) was received by our sales department. The email is from the office of Legislative Counsel of New York City (Gary Altman) and the subject relates to the Rahway Arch Project. I have received no other correspondence in connection with this matter.

Based on the content of the email, it appears that the Environmental Protection and Waterfront Committees of the New York City Council have scheduled a Joint Committee hearing regarding the potential for the Rahway Arch remediation project to impact Staten Island. It is my strong suspicion that this situation represents, yet again, another attempt by the opposition to spread gross misinformation to unsuspecting authorities. Given the vast amounts of false information that has been disseminated by the opposition to this point, it is difficult to determine exactly what the specific concerns are relative to Staten Island. This situation, however, appears tactically similar to the opposition's numerous prior attempts to generate alarm by promoting false information; as was done to select New Jersey Mayors, EPA, USACE, state politicians, members of Congress, the press and the public.

I am sending this to you for your response, as the LSRP, to the Joint Committees. To my knowledge, neither the Landowner nor the City of Carteret have received any direct communication from the Legislative Council regarding this issue, and will leave it to you to determine how to best reach out to address this matter. We certainly want the Council to get the real facts behind this mandatory project and the extensive investigation, engineering and four year permitting effort that has been done to ensure the safe and efficient remediation of the former American Cyanamid property.

Sincerely,



Mark Smith
President
Soil Safe, Inc.

cc: Ron D'Argenio – Rahway Arch Properties, LLC.

enclosure: May 28, 2014 email – hearings@council.nyc.ny.us

Mark Smith

From: Michael T. Kozak
Sent: Wednesday, May 28, 2014 1:25 PM
To: Mark Smith
Cc: Milt Morris; Bill Roberts
Subject: FW: New York City Council - Hearing Notice

Guys,
See below.
Mike

From: hearings@council.nyc.ny.us [mailto:hearings@council.nyc.ny.us]
Sent: Wednesday, May 28, 2014 11:22 AM
To: Michael T. Kozak
Subject: New York City Council - Hearing Notice

May 27, 2014

Mr. Mark Smith
President and CEO
Soil Safe, Inc.
6700 Alexander Bell Drive, Suite 300
Columbia, MD 21046-2184

Dear Mr. Smith,

RE: Oversight: The Rahway Arch Project's Potential Impact on Staten Island: Will Staten Island's Shoreline be Safe?

Please be advised that the Committee on Environmental Protection jointly with the Committee on Waterfronts will hold a hearing on **Thursday, June 12, 2014 at 1:00 p.m. in the Committee Room, City Hall, New York, NY** regarding the above-referred topic.

You are hereby invited to attend this hearing and testify therein. Please feel free to bring with you such members of your staff you deem appropriate to the subject matter.

If you plan to participate, it would be greatly appreciated if you could bring **twenty (20)** copies double-sided of your written testimony to the hearing.

I would appreciate receiving a response from you as to whether or not you will be able to attend. Thank you for your cooperation.

Sincerely,

Gary Altman
Legislative Counsel

GA/ac

AMERICAN CYANAMID LANDFILL
PI: G000007844
LSD120004 RAW Pending

Teruo Sugihara
March 6, 2013

LSRP Inspector: John Kosher
LSRP Reviewer: Erick Kinsel
Date Referred: December 12, 2012
Document Dated: November 27, 2012
Due Date: March 6, 2013

Subject: Remedial Action Workplan for Rahway Arch Properties Site; Block 602, Lot 1 and 8; Block 603, Lot 1; Block 705, Lots 17 and 18; Carteret, New Jersey 07008 dated November 27, 2012 and prepared by EastStar Environmental Group, Inc. for Rahway Arch Properties, LLC.

Review of the subject document along with the companion Remedial Investigation Report was requested by the Bureau of Inspections and Review. This review will focus on the selected remedial action with particular emphasis on the proposed fill aspects. Specifically the issues of excess fill, nature of the fill to be used, and use of the fill will be the main topics examined. In addition, a meeting with Rahway Arch Properties representatives was held on November 20, 2012 to further explain the remedial action. Where information provided at this meeting is included in this review, it will be clearly identified.

It must be noted that the comments that follow are likely impacted by the results of concurrent reviews being conducted on the permitting aspects of the remedial action. Once final decisions have been reached in these parallel efforts, this document may need to be modified.

Specific Comments:

Section 6.1, Overview of Remedial Action:

There is a statement regarding future use that proposes passive use as well as possible future development. The RAWP provides little more detail regarding future use. This uncertainty makes evaluation of an appropriate remedial capping option more difficult because of the scope of options and/or goals differ. Information provided at the November 20, 2012 meeting suggested a likely use of 10 to 15 acres for redevelopment. If this is the case, the amount of fill being proposed appears to be likely greater than can be justified. In the extreme case, a final elevation of 29 feet is being proposed in an area currently at 10.5 feet. Note that previously the 100 year flood plain elevation was 9 feet (versus the 7 feet mentioned in the subject document) and was the relevant metric when the remedial action work plan was developed. Recent revisions and emergency authorizations have changed the equivalent metric to an Advisory 1% Base Flood Elevation (1%ABFE) of 13 feet with an Advisory Flood Zone (AFZ) of A in the central portion of the site and a 1%ABFE of 15 feet with an AFZ of V for the remainder. The elevations are referenced to the North American Vertical Datum of 1988. The Federal Emergency Management Agency (FEMA) does state, "The ABFEs are not intended to support regulatory flood hazard zone designation or insurance ratings." However, until further guidance is provided, this metric will be the basis for this review in large part to be consistent with the positions of the permitting groups.

Examination of Sheets 1 and 2 showing the Grading and Storm Water Management Plan indicates a toe of slope elevation for the proposed exterior berms that range between 3 to 10 foot in elevation. The proposed exterior berm or sidewall then rises to meet the upper cap. A very crude evaluation of the proposed sidewall heights indicates more than half the proposed walls would typically be 20 feet or more with a believed maximum of 25 feet. Even if the higher of the 1%ABFE is used as a baseline, this means the proposed sidewall may be as much as 10 feet above the 15 foot 1%ABFE and is at least 5 feet above for most locations. Given that the United States Geological Service (USGS) Hurricane Sandy Storm Tide Mapper shows a nearby (HWM-NJ-UNI-209 Union County, NJ) maximum flood elevation of 12.09 feet, a 15 feet elevation should be protective. If the 13 foot 1%ABFE, which

covers most of the existing remediated lagoons, was employed, the proposed amount of fill would be cast in an even more extreme light. Furthermore, insufficient detail was provided to justify the proposed approach.

Section 6.2.2:

This section states, "The elevations of the bottoms of the storm water management basins will be the controlling elevations for the remainder of the cap design. The basins will also need to be large enough to contain the run-off volumes." This seems to contradict the storm water management assumptions in Table 6.1 where quantity control is not required because the receiving stream is tidal. It also seems to be in contradiction to N.J.A.C. 7:8-5.4. If quantity control is not required, why are there storm water detention basins (see also Figure 6.2)? The approval of fill placement is therefore contingent upon the Department evaluation of storm water as well as the need to build the recycling facility.

If storm water basins are needed, has consideration been given to using low permeability materials (such as liners) to minimize the need for fill?

Section 5 Areas of Concern, Table 5.1:

The historical record to include boring logs indicates that contamination is beneath the berms and in one wetland location (Section 3.1.4) as well as likely extends beyond the berm due to berm failure. The AOC 2 remedial action recommended is no further action because no impact was identified outside the berm. As the overall proposed remedial action is to address in part the weakness of the berm system, additional clarification of the basis of the proposal for no remedial action is suggested to resolve this apparent conflict and to comply with N.J.A.C. 7:26E-4.2(a). The amount and nature of the fill would likely be directly impacted by how this is resolved. Please also refer to the remedial investigation report review memo for this project for additional discussion.

For AOC 7, Ecological Evaluation, no further action is the proposed remedy because "completed pathways for ecological impact were not identified." However, statements related to AOC 4, Impacts to Surface Water suggest the need for remediation because "contaminants could leach through the berms and impact surface water" (see also page 30: The berms ... do not have cores to prevent infiltration of water from the impoundments through the berms). In addition, capping is a general proposed remedial action because of flooding of the sludge lagoons where a direct contact threat is reported due to minimal cover. This would suggest another potential pathway. These contradictory lines of argument need to be resolved because again the amount and nature of the fill needed could be impacted and to comply with N.J.A.C. 7:26E-4.8. Also note that displacement or release of sludge into the adjacent wetlands and/or the Rahway River, which would be an "uncontrolled or unpermitted discharge or transfer of contaminants from one medium to another" in violation of N.J.A.C. 7:26E-5.1(d)3. In addition, such a remedy would not meet the requirement at N.J.A.C. 7:26E-5.1(a) to "implement a remedy that removes, treats, or isolates contamination, and that is protective of the public health, safety and the environment." Please refer to the ecological review memo for this project for additional discussion.

Sections 6.2.3 through 6.2.5:

The proposed capping scenario is described. Based on characterizations in the subject document that the sludge will not take any load, there are concerns about the approach. It appears the plan is to work the material into the surface and then allow compression to dewater the underlying material with no horizontal containment being proposed. Successive lifts would continue this process. Is it proposed to do the entire sludge layer in this fashion or is a hardened "crust" the goal?

Based on information provided in Section 6.3.2 regarding radial flow as well as the differential compression rates of the sludge and underlying material (Section 6.2.3, Page 34), it raises a concern that loading will likely result in a discharge to the river. This likelihood was confirmed at the November 20, 2012 meeting. Since an increased amount of proposed fill may exacerbate the situation, please explain why this is not a valid concern. Please refer to the ground water review memo for this project for additional discussion.

Section 6.2.1, Page 30:

Capping with a reduced permeability material was mentioned as the only other viable remediation option. At the November 20, 2012 meeting it was indicated that all steps had been taken to minimize the use of fill. Was an option involving a geomembrane which would reduce the need for fill considered? Was augering in a blend of pozzolonic material and/or Portland cement to solidify the sludge considered? This could be accomplished on the perimeter and would at the very least stabilize the perimeter and contain any potential discharge to the river. Identifying other options considered but not chosen would add support to the justification of the selected remedy.

Section 6.2.3, Page 37:

At the November 20, 2012 meeting it was identified that a 2.5 % slope for drainage purposes was required and was within the accepted range of (1 to 4%). Why not 1% to minimize height and therefore volume of fill needed? 1% is believed to be more typical of a landfill cap. Please provide additional support for your position.

Kernan Consulting Engineers is cited as the developer of the remediation plan. Unfortunately, the associated 21 sheet set of design drawings detailing this proposal, while listed, were not provided/found. The basis for the selected remediation remains unclear to this reviewer in part as a result of the absence of these documents and makes evaluation challenging.

Section 7.1:

Petroleum contaminated soils are mentioned as stock for the facility. Given the low EPH levels present, this is expected to be quite restrictive. Is this type of material viable as an alternative fill source? Characterization is proposed to be done in accordance with Soil Safe's Metro 12 Sampling and Analysis Plan, but the plan was not provided or its contents discussed. It is noted that at the November 20, 2012 meeting that the intention to comply with the Alternative and Clean Fill Guidance for SRP Sites was indicated. This would mean like on like and 75th percentile compliance are in effect (assuming no variance).

Section 7.2:

Based on information from the November 20, 2012 meeting, the plan is to import the materials underlying the proposed Class B facility. Could this source be used instead of constructing a new facility? Doing so would allow for reduction in the amount of fill required.

Dry placement is stated to be subject to a lot of variables. If the material is not performing as expected, is the contingency to increase the amount of fill needed?

Section 7.3:

The 1%ABFE is no higher than 15 feet. Exceedance of 15 feet is what triggers an evaluation of excess fill. The justification for a maximum of 29 feet at the peak of the fill is not presented in sufficient detail to allow appropriate review. Please provide more details regarding the justification. Note that some of these details were presented at the November 20, 2012 meeting, but have not been included in the subject document as expected.

Section 7.4.1:

Assuming nonresidential values as default values for fill selection is not acceptable. The Like on Like requirement of the Alternative and Clean Fill Guidance for SRP Sites (Section 4.2) as well as N.J.A.C. 7:26E-5.2(b) must be complied with unless a valid variance/departure is established. Note that data used as justification must be from as well as representative of the material being imported.

Table 7.1 and Sections 7.4.2 and 7.4.3:

Note that the 95% UCL of the mean cannot be used if it exceeds the maximum value present. The maximum value present at the receiving site becomes the limit as per the Alternative and Clean Fill Guidance for SRP Sites (Section 4.4). When the 95% UCL of the mean exceeds the maximum value in the data set it is an indication that there are problems with the underlying data base.

The 95 percent UCL of the mean should be provided for all contaminants present (based on the RI results) to determine all acceptable levels. Note that the use of the 95 percent UCL of the mean is a variance and requires justification. Also note the calculation should be AOC based.

Benzo(k)fluoranthene should be 10.7 and not 23 mg/kg. Chrysene should be 12.1 not 230 mg/kg. Non-residential is not the default fill concentration allowed to be imported.

Conclusion:

Using the information provided in the plan and in consideration of the above, the determination is that pre-approval of the placement of excess fill above 15 feet cannot be granted at this time. This pre-approval is required and cannot be varied from under N.J.A.C. 7:26E-1.7(b) and N.J.A.C. 7:26E-5.2(b)3.

American Cyanamid Landfill
Remedial Investigation Report for the Rahway Arch Properties Site
PI: G000007844
LSD120003 RIR Pending
Job: 31870000 AC: V6RC

BEERA Deficiencies/Comments
Reviewed by David Barskey, Technical Coordinator
Date: 16 January 2013

The review has been limited to general issues for meeting the Tech Rule requirements for a remedial investigation and the remedial action proposed in the associated RAW. The appendices in the RIR were not reviewed, except for the appendices that were identified in the RIR as containing the laboratory data deliverables and the receptor evaluation. The following deficiencies/comments have been entered into NJEMS under the LSD120003 grey bar.

N.J.A.C. 7:26E-4.8

1. Section 8: The conclusion of the ecological evaluation is that further ecological evaluation is not warranted. Contrary to this conclusion, the review of the ecological evaluation by BEERA-ETRA and the information included in the RIR indicate that further ecological evaluation is warranted, which will require revision and resubmittal of the Receptor Evaluation form and associated documentation in Appendix A of the RIR. In Section 3.3 (p. 34) of the RIR, it is stated that "berm overtopping and berm failure events have been documented" to have occurred from the lagoons to the adjacent wetlands. This is in contrast to the statement in Section 8.1 (p. 93) of the ecological evaluation that "there is no indication that the wetland areas have been impacted by the impoundments or the disposal of alum-YPS sludge." Therefore, delineation of contaminants in the nonproject areas of the site, mainly the wetlands, and potentially the Rahway River, is needed for both surface water and sediment.

N.J.A.C. 7:26E-1.6

2. It is not clear from the text or the figures whether the Rahway Arch project boundaries are the same as the site boundaries. Based on the text and inconsistent boundaries labeled in the various figures, it seems that the Rahway Arch project boundaries do not encompass the totality of the site area, but are limited to the boundaries of the impoundments. As BEERA agrees that the remedial action previously approved by the Department is no longer protective of human health, safety, and the environment, the Rahway Arch project should include remedial actions for the whole site area, not just the impoundment areas.

N.J.A.C. 7:26E-4.9

3. Section 5.6: The Geotechnical Recommendations section belongs in the remedial action work plan, not in the RIR. However, the implementability of these geotechnical recommendations is technically questionable as it will likely lead to displacement or release of sludge into the adjacent wetlands and/or the Rahway River (the 10 January 2013 BEERA-ETRA memo, entered into NJEMS, is in concurrence with this point), which would be an "uncontrolled or unpermitted discharge or transfer of contaminants from one medium to another" in violation of N.J.A.C. 7:26E-5.1(d)3. In addition, such a remedy would not meet the requirement at N.J.A.C. 7:26E-5.1(a) to "implement a remedy that removes, treats, or isolates contamination, and that is protective of the public health, safety and the environment." This issue is discussed in more detail in the 14 December 2012 letter from the Rahway River Association, et al.

N.J.A.C. 7:26E-4.2(a)

4. Horizontal delineation of contaminants in soil is incomplete beyond the berms and impoundments. Almost all the soil samples were collected from the berms or impoundments where contaminants exceed the applicable soil remediation standards. Soil sampling and analyses to complete horizontal delineation is needed beyond the bermed impoundments.

N.J.A.C. 7:26E-4.2(a)

5. Vertical delineation of contaminants in soil is incomplete. A limited number of soil samples were collected and analyzed from soil below the berms and impoundments. The limited data indicate that vertical delineation into and below the peat is incomplete. Soil sampling to complete vertical delineation is needed below

the berms and impoundments and outside of these areas too, although this will be difficult due to elevated detection limits from the high moisture content of these samples.

N.J.A.C. 7:26E-1.6(b)8

6. The sample data are not plotted on site maps and cross-sections as required, so it is difficult to determine whether contaminants have been properly delineated (see soil delineation comments above). In addition, the data from the previous investigations summarized in Section 2 have not been integrated with the discussion and presentation of the recent data in Section 6, which makes it difficult to determine the overall distribution of contaminants and whether horizontal and vertical delineation of all contaminants in all media have been completed pursuant to N.J.A.C. 7:26E-4.1(a)1.

N.J.A.C. 7:26E-2.1(c)

7. It is not clear whether all samples for all media have been analyzed for the contaminants present at the site, which determines whether delineation is complete pursuant to N.J.A.C. 7:26E-4.1(a)1. Based on the data from the prior investigations summarized in Section 2 of the RIR, it seems that the recent 2012 investigations may not have analyzed all samples for the contaminants requiring delineation based on the data from the prior investigations. The recent 2012 soil analyzes were limited to mainly metals, cyanide, and PAHs, with a few samples analyzed for SVOCs and VOCs. Based on the analytical data from previous investigations, it is not clear why more samples were not analyzed for SVOCs and VOCs or what was the selection basis for the samples that were analyzed for SVOCs and VOCs. Additional samples may have to be collected and analyzed for SVOCs and VOCs to ensure that these contaminants have been properly delineated.

N.J.A.C. 7:26E-4.2(a)

8. The impact to groundwater (IGW) evaluation has relied on comparison of the analytical data to the default IGW values. Considering the mainly saturated or near-saturated nature of the sludge and site soils, the ground water and sludge water data should also be evaluated as an indicator of the impact of contaminated soil and sludge on ground water quality. Based on a cursory review of the data summary tables, Al, As, Be, Fe, Pb, Mn, Na, Se, and Tl exceed GWQSs in sludge water and/or ground water.

N.J.A.C. 7:26E-2.1(b)

9. It is not clear whether the extractable petroleum hydrocarbons (EPH) results for the soil and sludge samples were completely and correctly evaluated in accordance with the Department's guidance "Protocol for Addressing Extractable Petroleum Hydrocarbons" (August 2005) found at http://www.nj.gov/dep/srp/guidance/srra/eph_protocol.pdf. It is assumed that the EPH results should be evaluated for Category 2 EPH, but there is no discussion of the EPH results in the text of the RIR and the data summary tables incorrectly state that there is no nonresidential soil standard or criterion for EPH, which are listed and discussed in the Department's EPH Protocol.

N.J.A.C. 7:26E-2.1(a)6

10. It is not clear whether the samples analyzed for EPH were analyzed correctly pursuant to the EPH analytical method and the Department's guidance "Protocol for Addressing Extractable Petroleum Hydrocarbons" (August 2005) found at http://www.nj.gov/dep/srp/guidance/srra/eph_protocol.pdf, as there is no discussion of the EPH results in the text of the RIR or footnotes to the data summary tables.

N.J.A.C. 7:26E-2.1d)

11. Based on the presence of petroleum hydrocarbons from an assumed unknown source at the site, the samples analyzed for EPH were apparently not analyzed in compliance with Department's guidance "Protocol for Addressing Extractable Petroleum Hydrocarbons" (August 2005) found at http://www.nj.gov/dep/srp/guidance/srra/eph_protocol.pdf and N.J.A.C. 7:26E-Table 2-1. The samples for EPH analysis should have included analysis of 25% of the samples where EPH was detected for VO+TICS, SVO+TICS, PCBs, and TAL metals.

N.J.A.C. 7:26E-4.2(a)4

12. There is no discussion of the presence or absence of free and/or residual product (FRP) based on the methods required at N.J.A.C. 7:26E-2.1(a)14 for soil and ground water, so it is not clear whether FRP is present and will require remediation in the RAW.

N.J.A.C. 7:26E-1.6(b)9

13. The usability of the laboratory data is unknown, because there is no discussion of data usability in the RIR as required.

N.J.A.C. 7:26E-2.1(a)15ii

14. Appendices C, E, and F: Summary pages from the analytical data deliverables are included in the listed appendices, but these do not meet the requirements for reduced data deliverables pursuant to the requirements in N.J.A.C. 7:26E-Appendix A. Reduced data deliverables must be submitted pursuant to the requirements in N.J.A.C. 7:26E-Appendix A.

N.J.A.C. 7:26E-1.6(a)5

15. The horizontal and vertical sample locational information for each sample location and sample is missing. The horizontal and vertical sample locational information for each sample location and sample must be submitted pursuant to the requirements in N.J.A.C. 7:26E-1.6(a)5i and ii. It is not mentioned in the RIR whether the EDDs and metadatafile have been submitted as required pursuant to N.J.A.C. 7:26E-1.6(a)5 and 1.6(a)5iii, respectively.

N.J.A.C. 7:26E-1.6(a)6

16. It is not mentioned in the RIR whether the GIS compatible site plan has been submitted as required.

N.J.A.C. 7:26E-1.6(b)6

17. Based on a review of the data summary tables, it seems that for much of the analytical data, particularly for the organics, detection/quantitation limits are elevated, likely due to high moisture content, but there is no identification or explanation for this in the text or tables as required.

N.J.A.C. 7:26E-1.6(b)6

18. Exceedances of standards or criteria are indicated in bold in the data summary tables, but it is not clear whether it is the direct contact, IGW, or ecological criteria that are exceeded. Exceedances of each category of standard or criteria should be highlighted using different types of highlighting in each cell in the tables (e.g., bold typeface for IGW, grey fill background for direct contact, etc.). It is noted that exceedances of GWQS are not properly highlighted in the data summary tables.

ENGINEER'S REPORT

90TH DAY: April 26, 2013
120TH DAY: May 24, 2013
DATE: April 15, 2013, revised May 23, 2013

APPLICATION NOS.: 1201-03-0003.3 FHA120001 (VER)
1201-03-0003.3 FHA120002 (IP)
1201-03-0003.3 FWW120002 (GP #4)
1201-03-0003.3 FWW120003 (GP #11)
1201-03-0003.3 CAF120002 (GP #15)

SPECIALIST: Suzanne Dietrick
ENGINEER: Gabriel Mahon

PROJECT: Rahway Arch

LOTS: 1 & 8 / 1 / 17 & 18
BLOCKS: 602 / 603 / 705
MUNICIPALITIES: Carteret Borough
COUNTIES: Middlesex

PROJECT SUMMARY

The purpose of this permit application is to remediate a former disposal site including the construction of a materials processing facility. The applicant has requested a hardship exception for the processing of solid waste and hazardous materials in the flood hazard area, and for the storage of unsecured materials (stockpiles). The proposed remediation method is to cap the site with a cap that varies up to 19' in height.

FLOOD HAZARD LIMITS (N.J.A.C. 7:13-3.1):

The project site is located along the Rahway River, which is FEMA studied at this location. The FEMA ABFE is 15' NAVD for the majority of the site and 13' NAVD for the remainder. The area with an ABFE of 15' NAVD is located within a V-Zone.

Other watercourses are located on site, but their flood elevations are no higher than that of the Rahway River.

FLOOD HAZARD VERIFICATION (N.J.A.C. 7:13-9.6-9.7):

A verification has been requested, and can be granted based upon method 2.

A complete application was not submitted until after 1/24/2013. Therefore, the regulatory flood hazard elevation on site is equal to the ABFE as discussed above, as opposed to the previous FEMA delineation.

REQUIREMENTS FOR A REGULATED ACTIVITY IN A CHANNEL (N.J.A.C. 7:13-10.1):

No channel disturbance is proposed.

REQUIREMENTS FOR A REGULATED ACTIVITY IN A FLOODWAY (N.J.A.C. 7:13-10.3):

No fill is proposed within the floodway.

REQUIREMENTS FOR A REGULATED ACTIVITY IN A FLOOD FRINGE (N.J.A.C. 7:13-10.4):

The project is located within a tidal flood fringe. As such, the 0% net fill standards do not apply to the project.

REQUIREMENTS THAT APPLY TO ALL REGULATED ACTIVITIES (N.J.A.C. 7:13-11.1):

The work will be entirely performed within the applicant's property.

REQUIREMENTS FOR STORMWATER MANAGEMENT (N.J.A.C. 7:13-11.2):

Some of the proposed basins are located below the flood hazard elevation. No information has been provided to address the tailwater issues associated with basins that are below the flood hazard elevation. However, as quantity reductions and water quality do not apply to the project, the concerns with tailwater are minimal.

REQUIREMENTS FOR EXCAVATION, FILL AND GRADING ACTIVITIES (N.J.A.C. 7:13-11.3):

No construction will occur in areas of steep slopes.

REQUIREMENTS FOR A STRUCTURE (N.J.A.C. 7:13-11.4):

All structures will be suitably anchored.

REQUIREMENTS FOR A BUILDING (N.J.A.C. 7:13-11.5):

A new office/scale house is proposed. The office's first floor is labeled as 30" above grade. The grade at the office is approximately 16'. Therefore, the first floor of the office will be located at 18.5' NAVD. Since this is greater than 1' above the FHE, the elevation of the building is acceptable.

REQUIREMENTS FOR A RAILROAD, ROADWAY OR PARKING AREA (N.J.A.C. 7:13-11.6):

The proposed parking area will be entirely elevated to greater than 1' above the flood hazard elevation. The existing roadway that accesses the site is located below the flood elevation and will not be altered. Considering that a purpose of the project is to cap a site, the Department can accept the fact that the access road is below the flood elevation.

REQUIREMENTS FOR A BRIDGE OR CULVERT (N.J.A.C. 7:13-11.7):

No new or replacement bridges or culverts are proposed.

REQUIREMENTS FOR A FOOTBRIDGE (N.J.A.C. 7:13-11.8):

No footbridges are proposed.

REQUIREMENTS FOR A UTILITY LINE (N.J.A.C. 7:13-11.9):

No utility line crossings of a watercourse are proposed.

REQUIREMENTS FOR A STORMWATER OUTFALL STRUCTURE (N.J.A.C. 7:13-11.10):

Outfall structures are proposed at basins A-D. These structures will be constructed with a 3' deep headwall and a 3' x 3' toe wall on the rip-rap apron. The application does not appear to include any outfall structure(s) at the basin in the processing area other than a spillway set approximately 4 feet higher than its bottom. It is unclear how the basin will drain without outfall structures. It will likely fill up with water up to the weir elevation and, since it is lined with an impermeable liner, the water will remain until it evaporates. Per a phone conversation with the applicant's consultant, the applicant is considering reusing runoff collected in the basin to aid in materials processing. While this is not an acceptable design for a stormwater basin, it technically complies with this section of the Flood Hazard Area Control Act rules since no outfall structures are proposed.

REQUIREMENTS FOR A DAM OR A LOW DAM (N.J.A.C. 7:13-11.11):

No dams are proposed.

REQUIREMENTS FOR A FLOOD CONTROL PROJECT (N.J.A.C. 7:13-11.12):

No flood control projects are proposed.

REQUIREMENTS FOR A RETAINING WALL OR BULKHEAD (N.J.A.C. 7:13-11.13):

No retaining walls are proposed.

REQUIREMENTS FOR BANK STABILIZATION (N.J.A.C. 7:13-11.14):

No bank stabilization is proposed.

REQUIREMENTS FOR SEDIMENT AND DEBRIS REMOVAL FROM A WATER (N.J.A.C. 7:13-11.15):

No watercourse cleaning is proposed.

REQUIREMENTS FOR THE STORAGE OF UNSECURED MATERIAL (N.J.A.C. 7:13-11.16):

The applicant proposes to store unsecured material on-site. This material will be stored in 4 stockpiles on-site. The table below shows the elevation of the lowest point of each proposed stockpile.

Proposed Elevation of Bottom of Stockpiles	
	Proposed Plan
Raw Material Stockpile	17'
Processed Material Stockpile	15.6'
Oversize Material Stockpile	15.6'
Crushed Material Stockpile	15'
Non-recyclable Stockpile	16'

In the proposed plan, all of the stockpiles are entirely above the ABFE. N.J.A.C. 7:13-11.16 requires that the application comply with the following requirements:

The unsecured material is stored as part of a business or facility, the primary function of which is to store and distribute material, such as a bus or truck depot, car dealership or rental facility, gravel pit, junk yard, landscaping business, lumber yard or vehicle impoundment area;

The proposed project is not a business or facility that will store and distribute material. The sole function of the stockpiles is temporary storage prior to and after processing for use on-site. Compliance with this requirement is not demonstrated.

The unsecured material to be stored is isolated from floodwaters by berms, or will be situated in a specially designed containment area onsite, so that, in the event of a flood, the stored material will not be transported off the site by floodwaters;

The application complies with this requirement as the stockpiles are all elevated above the FHE.

The Department determines that the storage of unsecured material in a flood hazard area and riparian zone will not pose a threat to the environment or to public health, safety or welfare.

The unprocessed material is stated to be "petroleum contaminated soils". If this material were to be washed away during a flood event, it would pose a threat to the environment or to the public health. As such, the project does not comply with this requirement. **A hardship exception has been requested from all non-compliant portions of this section.**

REQUIREMENTS FOR THE PLACEMENT, STORAGE OR PROCESSING OF HAZARDOUS SUBSTANCES (N.J.A.C. 7:13-11.17):

The on-site facility will process petroleum contaminated soils. Under the flood hazard area control act rules "*Hazardous substance means material defined as such in the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11.*" The Spill Compensation and Control Act states that "*Hazardous substances means the "environmental hazardous substances" on the environmental hazardous substance list adopted by the department pursuant to section 4 of P.L.1983, c.315(C.34:5A-4); such elements and compounds, including petroleum products, which are defined as such by the department, after public hearing, and which shall be consistent to the maximum extent possible with, and which shall include, the list of hazardous substances adopted by the federal Environmental Protection Agency pursuant to section 311 of the federal Water Pollution Control Act Amendments of 1972, Pub.L.92-500, as amended by the Clean Water Act of 1977, Pub.L.95-217 (33 U.S.C. 1251 et seq.); the list of toxic pollutants designated by Congress or the EPA pursuant to section 307 of that act; and the list of hazardous substances adopted by the federal Environmental Protection Agency pursuant to section 101 of the "Comprehensive Environmental Response, Compensation and Liability Act of 1980," Pub.L.96-510 (42 U.S.C. 9601 et seq.); provided, however, that sewage and sewage sludge shall not be considered as hazardous substances for the purposes of this act.*" Please note the underlined portion of the definition in the Spill Compensation and Control Act. Petroleum products are defined as hazardous substances. Since the soils in question are contaminated with a hazardous substance (petroleum products), the placement, storage, and processing of those soils on-site is prohibited by the Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-11.17. **A hardship exception has been requested from this section.**

REQUIREMENTS FOR THE PLACEMENT, STORAGE OR PROCESSING OF SOLID WASTE (N.J.A.C. 7:13-11.18):

The site will also be processing concrete, brick, and block for use on-site and the applicant has proposed a small stockpile area for "Non-Recyclable Waste Materials." These materials may be classified as solid waste. Under the Flood Hazard Area Control Act "Solid waste means any garbage, refuse, sludge or any other material defined as solid waste in the Solid Waste Rules at N.J.A.C. 7:26-1.6." N.J.A.C. 7:26-1.6 reads, *A solid waste is any garbage, refuse, sludge, or any other waste material except it shall not include the following:*

Recyclable materials that are exempted from regulation pursuant to N.J.A.C. 7:26A;

The applicant contends that because the material is being recycled, it does not meet the definition of a solid waste. However, the rule states that only materials that are exempted from regulation are not solid waste. Since this activity requires a permit from the NJDEP Bureau of Solid Waste, it is not exempted from regulation, and is therefore, a solid waste under the Flood Hazard Area Control Act Rule. However, in an April 19th email, a representative of the Bureau of Solid Waste stated that this material was not to be considered as, or regulated as, "solid waste" since it was intended for recycling. In other words, it was supposed to be regulated as "recyclable material." Despite this, note that the concrete, block, and brick are proposed to be ground up and mixed with petroleum contaminated soils and then disposed of on-site. Additionally, the applicant is proposing a small stockpile of "Non-Recyclable Waste Materials," which would be classified as solid waste under either interpretation.

Regardless of the above, it is the intent of the Flood Hazard Area Control Act rules to prevent waste materials from being transported into nearby waterways during flood events. Whether the material is recycled or not will not affect its ability to contaminate floodwaters. Grinding a material up can make it easier to be carried by floodwaters. The proposal is to store 10,000 tons of unground concrete, block, and brick, and to store 30,000 tons of processed material in the Flood Hazard Area. The intent of the regulations is to prevent this material from being placed, stored, or processed in the flood hazard area. Since this section of the regulations prohibit the storage and processing of solid waste in the flood hazard area, the proposed project is prohibited at N.J.A.C. 7:13-11.18. **The applicant has requested a hardship exception from this section.**

Hardship Exception:

In order for the Department to entertain a hardship exception application, the applicant must first demonstrate one of the following:

1. The Department determines that there is no feasible and prudent alternative to the proposed project, including not pursuing the project, which would avoid or substantially reduce the anticipated adverse effects of the project, and that granting the hardship exception would not compromise the reasonable requirements of public health, safety and welfare, or the environment;

The applicant contends the only feasible alternative is to process the fill material on-site by processing contaminated soils and concrete. However, in the alternatives analysis the applicant discusses 5 alternative methods in addition to the proposed project.

The first alternate method would be to completely excavate all contaminated soils on-site and to replace with clean fill. The analysis states, "This option would eliminate all of the existing site hazards and would comply with all of the remediation criteria." The analysis does state that due to the high groundwater the applicant would likely need to limit the backfill to coarse materials that would not require compaction. However, the analysis does not rule this alternative out as infeasible.

The second alternative proposed is to stabilize the existing material and then fill on top of it. The applicant states that this alternative would limit the potential for future development of the site, but does not substantiate this claim with any other information. It is noted that the Site Remediation Reform Act would require the site to be left in a developable state, but the applicant does not state that this would be infeasible with this alternative.

The third alternative the applicant proposed is to fill with an alternate fill material. The conclusions on this alternative are essentially identical to those of the second alternative.

The fourth alternate design is to fill with an alternate fill and stabilize with a geomembrane cap. The analysis does not state that this method would be infeasible. It does not mention any negatives to this method.

The fifth alternative discussed is to use processed dredged material. The applicant states that the disadvantages to this method are "the reliability of the supply, the lack of homogeneity among the various PDM sources and the need to obtain a site specific AUD from each PDM processor/generator/supplier. These uncertainties will likely extend the time required to complete the remediation and make it questionable if a sufficient volume of PDM can be obtained to complete the site remediation." However, the analysis does not discuss any infeasibility with this method. While it may be undesirable to use PDM as additional permitting and longer time frames are involved, it does not appear to be infeasible.

After reviewing the discussed alternatives, the Department cannot conclude that there is no feasible or prudent alternative to processing hazardous/solid waste on-site. The submitted analysis concludes that alternatives appear to be feasible. While some may be

less desirable for one reason or another, they all appear to be feasible. As such, a hardship exception cannot be accepted under this provision.

2. The Department determines that the cost of compliance with the requirements of this chapter is unreasonably high in relation to the environmental benefits that would be achieved by compliance; and/or

The applicant submitted a cost estimate for each of the 5 alternatives plus the proposed method. The proposed method will cost \$15,000,000. The other alternate methods will cost \$265,000,000, \$304,000,000, \$23,200,000, \$27,900,000, and \$14,100,000. Note: No detail was submitted with any of these cost estimates. The Department cannot conclude that these estimates are accurate.

The alternatives analysis concludes that (including cost) only the methods using the geomembrane, the PDM, and proposed method are acceptable. Since the applicant's own analysis concludes that these methods are acceptable, and that PDM method actually has lower cost than the proposed alternative, the Department cannot conclude that the cost of compliance is too high. As such, a hardship exception cannot be accepted under this provision.

3. The Department and applicant agree to one or more alternative requirements that, in the judgment of the Department, provide equal or better protection to public health, safety and welfare and the environment.

The Department has not agreed to any alternate requirements. As such, a hardship exception cannot be accepted under this provision.

Since a hardship exception cannot be reviewed under any of the three required criteria above, the applicant is not eligible for a hardship exception. However, if the applicant were able to prove one of the three criteria above (which the applicant has not), the applicant would be required to meet all of the following four requirements:

1. Due to an extraordinary situation of the applicant or site condition, compliance with this chapter would result in an exceptional and/or undue hardship for the applicant;

As noted in the alternatives analysis, two other methods are acceptable, even considering cost. As such, the Department cannot conclude that compliance would result in an exceptional or undue hardship for the applicant and a hardship exception cannot be granted.

2. The proposed activities will not adversely affect the use of contiguous or nearby property;

Approval of the hardship exception would not adversely affect the use of contiguous or nearby properties in terms of impacting the ability of those property to be developed from a land use perspective.

3. *The proposed activities will not pose a threat to the environment, or to public health, safety and welfare; and*

While the intention of the proposed project is to remediate a hazardous situation, the processing of petroleum contaminated soils and concrete, brick, and block within the Flood Hazard Area could pose a threat to the environment and to the public health as these materials could easily be washed into nearby watercourses or onto neighboring properties during a flood. The section from which the applicant seeks relief is intended to protect the environment and public health. Allowing the applicant relief from a section that protects the environment and the public from exposure to petroleum contaminated soils and ground concrete would pose a threat to health and to the environment. As such, a hardship exception cannot be granted.

4. *The hardship was not created by any action or inaction of the applicant or its agents.*

The regulations from which the applicant seeks relief have been in effect since November 2007. The applicant did not purchase the property until 2010. While the Department does not agree that the applicant has a hardship, and the Department acknowledges that the applicant did not create the hazardous situation on site, any hardship perceived by the applicant was self-created as a result of the 2010 purchase date and subsequent selection of a remedial alternative that does not comply with existing regulations. This relates to the fact that alternatives exist to the proposed method of capping the site. These alternatives have not been ruled out. As such, a hardship exception cannot be granted.

REQUIREMENTS FOR THE REMOVAL OF EXISTING FILL OR AN EXISTING STRUCTURE (N.J.A.C. 7:13-11.19):

No fill removal in the floodway is proposed.

STORMWATER MANAGEMENT (N.J.A.C. 7:8):

Under the Flood Hazard Area Control Act, jurisdiction for the Stormwater Management rules exists when a proposed project meets the definition of a major development and when a portion of the project is located in a regulated area. A major development is one whereby there will be a net increase in impervious coverage of $\frac{1}{4}$ acre or more, or where the total land disturbance will be 1 acre or more. The $\frac{1}{4}$ -acre net increase is applied under the following conditions:

- a. a net increase in impervious area of at least $\frac{1}{4}$ acre is created,

- b. a new point discharge is created that will convey runoff from a minimum of $\frac{1}{4}$ acre of impervious area,
- c. an existing point discharge is utilized that will convey runoff from an additional $\frac{1}{4}$ acre of impervious area, or
- d. a collection system is proposed consistent with a-c above and that will result in the loss of an existing water quality feature.

The project disturbs greater than 1 acre, but will not create $\frac{1}{4}$ acre of new impervious coverage. Therefore, the application is major development but will not trigger the water quality standards.

The applicant contends that the extensive filling across the site is required in order to address the stormwater management rules. This is an incorrect assessment. No fill is required to address stormwater management. In fact, no stormwater management features are required to meet the SWM rules. Protection against erosion could be achieved by minimal fill just to provide positive drainage and the use of basins with swales and conduit outlet protection to prevent erosion. Basins may not even be required. The cap could be graded to drain to perimeter swales with check dams, which can slow the flow to non-erosive velocities.

Water Quantity:

The site is located within a tidal flood hazard area, and the project will have no downstream impacts. Therefore, the project complies with water quantity.

Water Quality:

Since the project does not create $\frac{1}{4}$ acre of new impervious surface subject to vehicular traffic, the water quality standards do not apply to the project.

Groundwater Recharge:

The project site is located within a PA-1 zone, is likely in an area of very high groundwater (based on aerials since no testing was submitted), and the majority of the project is to cap contaminated soils. Therefore, groundwater recharge is not required.

Low Impact Development:

The applicant has provided a NSPS. However, it is not correct. It does not show any impervious surface on-site, while the applicant will create some impervious surface. Additionally, the applicant uses D soil type, which is not necessarily the case. The soil group is psammments, which, according to the Middlesex County Soil Survey, requires testing in order to determine the HSG. However, as the project is the clean-up of a contaminated site and will require capping, the project has incorporated low impact development to the maximum extent practicable.

Conclusion: I have reviewed this case as cited above and find that it is not in compliance with the Flood Hazard Area Control Act Rules.

REVIEW ENGINEER:

Gabriel Mahon

DATE:

In addition to the above, the Department sent an email to the applicant's consultant on October 3, 2012 that discussed the feasibility of obtaining a hardship exception. In part, the applicant was required to demonstrate that the fill source used to implement the remediation could originate solely from the processing facility on site. The applicant's analysis does not demonstrate this at the current time. As such, the hardship exception cannot be granted at the current time.

SUPERVISOR REVIEW:

Peter DeMeo

DATE:

American Cyanamid Landfill
Remedial Investigation Report for the Rahway Arch Properties Site
2 April 2013 Responses to 15 March 2013 Department Comments
PI: G000007844
LSD120003 RIR
Job: 31870000 AC: V6RC

BEERA Deficiencies/Comments
Reviewed by David Barskey, Technical Coordinator
Date: 2 May 2013

In general, the responses are incorrect or do not dispute the incompleteness of the remedial investigation; instead the responses rely on a judgment where deficiencies are acknowledged that they do not affect the remedial action, which will consist of institutional and engineering controls to remediate the alum-YPS sludge in the impoundments. However, the responses do not indicate whether the LSRP will be using variances to address these deficiencies or is relying on Departmental approval of the proposed remedial action to justify these deficiencies.

N.J.A.C. 7:26E-4.8

1. Response to Comment (RTC) 1: The response focuses solely on the presence of alum-YPS sludge under the berms and apparent lack of this sludge in the adjacent wetlands based on visual observations and previous investigations. As stated in the comments, the issue is the lack of sample data and delineation of contaminants (not necessarily the sludge itself) in the adjacent wetlands (ecological receptor). This was discussed in the 5 April 2013 meeting between the Department and Site representatives. It was agreed that appropriate surface water and sediment sampling and analyses would be conducted in the adjacent wetlands to complete an ecological investigation, if the proposed remedial action is approved. This is acceptable to BEERA, but note that the sampling, analyses, and ecological investigation are required even if the proposed remedial action is not approved. See the BEERA-ETRA comments dated 4/11/2013 from Allan Motter for additional details on completion of the ecological evaluation.

N.J.A.C. 7:26E-1.6

2. RTC 2: The response clarifies that the proposed remedial action is for just the impoundments, not the whole site. The site and project boundaries must be clearly differentiated on the site maps/figures. If the sampling in the wetlands adjacent to the impoundments confirms that these wetlands require remediation due to unacceptable risk to ecological receptors, then a remedial action will be required for those areas, in addition to the impoundments. See the BEERA-ETRA comments dated 4/11/2013 from Allan Motter for additional details on completion of the ecological evaluation.

N.J.A.C. 7:26E-4.9

3. RTC 3: BEERA disagrees with the response that the Geotechnical Recommendations section belongs in the RIR instead of in the remedial action work plan. However, this has no substantive impact on the acceptability of the RIR. The parts of the response concerning the acceptability of the remedial action are being handled by others in the Department.

N.J.A.C. 7:26E-4.2(a)

4. RTC 4: The response states that horizontal delineation of soil contaminants beyond the limits of the berms and impoundments is acceptable based on direct observations and other lines of evidence during the RI including aerial photographs, maps, and previous site investigation documents. BEERA disagrees with the response. There are only a few sample locations outside the impoundments, and this number is insufficient to achieve acceptable delineation of soil contaminants. Almost all the soil samples were collected from the berms or impoundments where

contaminants exceed the applicable soil remediation standards. Soil sampling and analyses to complete horizontal delineation is needed beyond the bermed impoundments. Based on Figure 1.2 in the RIR, most of the areas surrounding the berms and impoundments are wetlands and tidal creeks. The only upland soil area that may require soil delineation sampling is the access road to the impoundments from the warehouse on the western side of the site, which can be addressed during the remedial action. See comment 7 below for additional details concerning the adequacy of the delineation.

N.J.A.C. 7:26E-4.2(a)

5. RTC 5: The response concerning vertical delineation of contaminants in soil is not acceptable. The response focuses solely on the delineation of alum-YPS sludge or states that vertical delineation will have no impact on the site remediation. While vertical delineation may not affect the proposed remedial action, assuming it is approved, vertical delineation is required by the Tech Rule with these analytical data also needed for inclusion in the deed notice.

N.J.A.C. 7:26E-1.6(b)8

6. RTC 6: The response is not acceptable concerning properly and completely plotting the sample data on site maps and cross-sections and states that compliance is not necessary due to the proposed remedial action. Without proper plotting of the analytical data, it is difficult to determine whether horizontal and vertical delineation has been achieved.

N.J.A.C. 7:26E-2.1(c)

7. RTC 7: The response is not acceptable concerning whether all samples for all media have been analyzed for the contaminants present at the site, which determines whether delineation is complete pursuant to N.J.A.C. 7:26E-4.1(a)1. The response again states that compliance is not necessary due to the proposed remedial action or that the contaminants were not contaminants of concern at the site. All contaminants exceeding the applicable SRS are contaminants of concern at the site, unless acceptable justification is provided that certain contaminants are from an upgradient or off-site source. In any case, all contaminants exceeding the applicable SRS must be delineated so the data is sufficient to support the proposed remedial action as protective and they can be included in the deed notice. Additional samples may have to be collected and analyzed for SVOCs and VOCs to ensure that these contaminants reported from previous investigations have been properly delineated. The summary of the results from the previous investigations in Section 2 does not always indicate what samples are from the sludge versus soil or whether detected contaminants exceed the SRS. For example, are the samples summarized in Section 2.2.4 sludge samples or soil samples. A more detailed summary of the existing datasets and plotting of the analytical data on site maps would allow for a better determination of whether additional soil delineation below the impoundments and outside the impoundments is necessary.

N.J.A.C. 7:26E-4.2(a)

8. RTC 8: The response is incomplete with the ground water part deferred to Greg Giles in BGWPA for comment. As stated in the IGW guidance found at http://www.nj.gov/dep/srp/guidance/rs/igw_intro.htm, "for Class I or III ground water, the Department will develop site-specific health-based ground water quality criterion appropriate for the ground water classification from which a site-specific IGW soil remediation standard can be derived." Therefore, if site-specific health-based ground water quality criteria were developed for the Class IIIB classified ground water (assumed to not apply to bedrock), then site-specific IGW soil remediation standards must be established for those contaminants that exceed the Class IIIB ground water quality criteria, which should occur prior to approval of the proposed remedial action, as the remedial action must remediate soil to meet the site-specific IGW soil remediation standards.

N.J.A.C. 7:26E-2.1(b)

9. RTCs 9 and 10: The response concerning petroleum hydrocarbons again states that the contaminants are not contaminants of concern at the site. All contaminants exceeding the

applicable SRS are contaminants of concern at the site (see comment 7 above), unless acceptable justification is provided that certain contaminants are from an upgradient or off-site source. The response is not correct concerning whether the extractable petroleum hydrocarbons (EPH) results for the soil and sludge samples were completely and correctly evaluated in accordance with the Department's guidance "Protocol for Addressing Extractable Petroleum Hydrocarbons" (August 2005) found at http://www.nj.gov/dep/srp/guidance/srra/eph_protocol.pdf. Steps 2 through 7 were not fully completed or discussed in the RIR as detailed below.

The March 2011 fill samples (10 samples, not clear whether sludge or soil samples) were analyzed for petroleum hydrocarbons using the wrong analytical method. These samples (see Table 2.4) were analyzed for diesel range organics (DRO by USEPA SW-846 Method 8015), when the samples should have been analyzed using the Department's Extractable Petroleum Hydrocarbons method in accordance with the Department's Phase-In guidance (http://www.nj.gov/dep/srp/guidance/srra/eph_phasein.pdf). For purposes of this comment, the DRO results will be evaluated as EPH results for Category 2 discharges. There were 4 nonaqueous samples collected and analyzed for EPH in the summer 2012 investigation (1 fill, 2 peat, and 1 organic clay according to the data summary tables in Section 6 of the RIR). Based on the DRO and EPH results shown in the data summary tables (Tables 2.2, 2.4, 6.4, and 6.12), EPH has not been found to exceed 1,700 mg/kg (ecological soil screening level, Step 7) or 17,000 mg/kg (FRP limit for EPH, Step 5). However, PCB was not analyzed for in the contingency sample (see comment 10 below, Steps 2 and 3), IGW has not been evaluated for site contaminants (Step 4), and the presence of sheen has not been evaluated (Step 6). Despite the incomplete EPH evaluation, it is unlikely EPH will require remediation at this nonresidential site. This conclusion is based on the assumption that all the samples analyzed for EPH were properly located and selected for analysis and the laboratory results are of acceptable quality.

N.J.A.C. 7:26E-2.1d)

10. RTC 11: The response that the samples for EPH analysis were correctly analyzed pursuant to Table 2-1 in the Tech Rule is not correct. The selected EPH sample should have also been analyzed for PCBs, based on the waste oil requirements for an unknown source. Note that PCBs have been detected in samples from the site (see Section 2.2.1.1 in the RIR).

N.J.A.C. 7:26E-4.2(a)4

11. RTC 12: The response is not acceptable concerning the presence or absence of free and/or residual product (FRP) based on the methods required at N.J.A.C. 7:26E-2.1(a)14 for soil and ground water, which were apparently not used in the EastStar investigations. The responses refers to the response to comment 9, but the response to comment 9 does not mention anything about FRP, so it remains unclear whether FRP is present and will require remediation in the RAW. However, based on the limited EPH data, it is unlikely that FRP will be an issue for the proposed remedial action, but the RAW should include a contingency plan for FRP in case FRP is encountered during the remedial action.

N.J.A.C. 7:26E-1.6(b)9

12. RTC 13: The response concerning the usability of the laboratory data is acceptable, but is limited to the recent 2012 data from the EastStar investigations. However, there is no discussion of data usability for the analytical data summarized in Section 2 of the RIR, including the 2011 EastStar investigations, which should be submitted for the 2011 EastStar investigation. If the historical data is of unknown quality, this must be stated in the data usability section of the RIR and the EastStar investigations should have factored this into their data quality objectives for their 2011 and 2012 investigations.

N.J.A.C. 7:26E-2.1(a)15ii

13. RTC 14: The response states that the reduced data deliverables pursuant to the requirements in N.J.A.C. 7:26E-Appendix A will be provided when they are available from QC Labs, but no date is

given when they will be submitted. When the reduced data deliverables are sent by QC Labs to EastStar, EastStar must review them to determine whether the data usability assessment in Attachment 1A needs to be updated and resubmitted to the Department. Reduced data deliverables must be submitted for both the 2011 and 2012 EastStar investigations

N.J.A.C. 7:26E-1.6(a)5

14. RTC 15: The response states that the EDD is being prepared and will be uploaded when completed, but no date is given when the EDD will be submitted. In addition, no response is included concerning inclusion in the RIR of the horizontal and vertical sample locational information for each sample location and sample.

N.J.A.C. 7:26E-1.6(a)6

15. RTC 16: The response states that the GIS compatible site plan will be "prepared and submitted upon completion." No date is given when the GIS compatible site plan will be submitted.

N.J.A.C. 7:26E-1.6(b)6

16. RTC 17: The response refers to Attachment 1A concerning the explanation for nondetectable analytical results with elevated detection/quantitation/reporting limits greater than the applicable remediation standards. However, there is no explanation of these occurrences in Attachment 1A or a statement that this condition did not occur. This would have been expected in the Sensitivity presentation in the attachment.

N.J.A.C. 7:26E-1.6(b)6

17. RTC 18: The response is incomplete. The other data summary tables in Sections 2 and 4 must also be revised in accordance with the original comment: "Exceedances of each category of standard or criteria should be highlighted using different types of highlighting in each cell in the tables (e.g., bold typeface for IGW, grey fill background for direct contact, etc.)." In addition, the analytical results for groundwater samples in the data summary tables should highlight exceedances of the site-specific Class IIIB ground water quality criteria, assuming such criteria have been established.

MEMORANDUM
LSRP SUPPORT REFERRAL

To: Kevin Schick, Chief
Bureau of Environmental Evaluation & Risk Assessment

From: Matthew Turner, LSRP Inspector *MT*

Re: AMERICAN CYANAMID LANDFILL

G000007844

LSD120004 RAW Pending - 12/11/2012 *+ LSD120003 RIR Pending - 11/30/12*

LSRP Inspector: John Kosher,

LSRP Reviewer: Erick Kinsel

Date Referred: December 12, 2012

Document Dated: November 27, 2012

Due Date: December 26, 2012

LSRP Document Referral

The attached is being submitted for review/comment by your staff:

Component Review assigned to TC	Date	Comment
Remedial action proposed needs further review	12/12/2012	Per meeting, RAW and supporting RIR to be referred to BEERA. Please review soil and sediment remediation. <i>Terry attended</i>

Please contact Matthew Turner before contacting the LSRP.

From: Kevin Schick [<mailto:Kevin.Schick@dep.state.nj.us>];
Sent: 7/29/2010 6:08:15 PM
To: Frasco, Barry [<mailto:Barry.Frasco@dep.state.nj.us>];
CC: Sugihara, Teruo [<mailto:Teruo.Sugihara@dep.state.nj.us>]; Kropp, Irene [<mailto:Irene.Kropp@dep.state.nj.us>];
Subject: Fwd: Cytec Carteret "alum sludge"

Barry, after yesterdays Rahway Arch Property/Cytec (Carteret) meeting I did a little Internet searching on the property since I was unfamiliar with the American Cyanamid project. I found that the NJ Turnpike Authority had conducted an assessment of sites within the proposed Tremley Point Connector Road project several years ago. The link to the NJTPA document is provided below.

See page 4-39 and 4-40 regarding the Cytec alum lagoons. Data look worse than I expected with high cyanides, metals and some moderate levels of VO's. The class III-B is the only thing that saved them from a much more costly remedy. Looks like the lagoons were capped with sewage sludge. Capping the non-weight bearing alum sludges with 2+ million tons of "alternative fill" material may have very unexpected consequences in forcing out the alum sludge and/or dissolved contaminants into the adjacent Rahway River and GW. Remember, they propose to not do any more RI work at the site since it has an NFA (cap/DN) and only geotechnical parameters are to be looked at. They were surprised by our request for GW data before, during and after the project.

http://www.state.nj.us/turnpike/documents/nj-tremley-point-Section-4.0_Existing-Conditions.pdf

I understand this issue was discussed at the upper level managers meeting today. Even in the current climate of stimulating the economy and assisting business projects, I fail to see how this proposed project has any benefit except to the current property owners and Soil Safe. The property was purchased from Cytec with the knowledge that a DN existed and the berms and caps would need to be maintained. The project is closed as far as site remediation is concerned and any further redevelopment of the site should be considered a new landfill issue. I seriously doubt that our landfill engineering group would ever allow construction of a C&D type landfill on top of unstable sludges, berms and current water impoundments. If this is not a landfill, then there are no municipal tipping fees. After site closure, would there be long-term monitoring and an escrow account set up like a landfill? This proposal is well outside the parameters of the Alternative Fill Policy.

There is no long-term economic benefit to the state and nothing whatsoever proposed here to be sustainable. Conversations with Suzanne Dietrich indicates that PDM should not be a significant fill product for this site in the future since the large dredge projects already have disposal contracts established. This project is based upon shearly developer/business profit driven motivation. They came in to our meeting freely admitting that this proposal is totally outside the box of both their and the Department's normal operating mode. Due to the structural issues, no future commercial site use was even being proposed. The adjacent 3 million square foot Panatone Warehouse complex has sat vacant for several years now. They should have looked into final end use of the site for solar or wind power generation. This seems to be the wave of the future for large parcels of use restricted and/or unstable land, such as landfills.

I also don't see how the property being considered "unusable" is an issue. The site was a wetlands, is still a wetlands and would be unusable for development in any event. Since the site has an NFA from SRP, are we just being asked to act as their sponsors to filling wetlands? Are we going to reopen all of our capped/Deed Noticed properties that are uplands and would be usable? Rahway Arch bought the property with full knowledge of the sludge lagoons, need to maintain the berms and caps and deed notice and biennial certification requirements. In the first year of their ownership they acted surprised of these limitations.

I would not want to be in the position of the Land Use staff that may be asked to accommodate such a large project with the numerous wetlands, flood plain and possible endangered species regulatory issues.

ATTACHMENT 3
RESPONSE TO BUREAU OF GROUNDWATER POLLUTION ABATEMENT COMMENTS
BY GREGORY GILES, UNDATED

The comments from the DEP reviewers are provided verbatim in italics. EastStar's responses are provided following each individual comment, indented and in normal font.

1) *The 2012 ground water cyanide testing appears to have been analyzed for "total" cyanide. DEP ground water and surface water criteria are listed as "free" cyanide. As such, a proper assessment of the 2012 ground water cyanide results can not be performed. Future ground water, surface water and sediment pore. water cyanide testing should be performed using a "free" cyanide method.*

Future analyses will be performed for free cyanide.

2) *Section five of the RIR consists of an outline of a geotechnical study that was performed in 2012. It would be more appropriate to include this information in the RAWP where this information is lacking. Section five lists the study objectives, work locations, and methods of testing, but does not significantly present the results of the study or discuss what the results of the study "mean" with respect to the proposed remedial action.*

Please refer to the response to Comment 1 to the RIR report contained in Attachment 1.

3) *The PA conducted in the late 1980's reportedly stated that cyanide was detected in the Rahway River. The presence of cyanide in the Rahway River indicates the existence of a hydrologic pathway from the impoundments to the river. No surface water or sediment pore water cyanide testing data was found in the 2012 RIR. The lack of recent surface water and pore water cyanide data prohibits a determination of how much cyanide the impoundments are presently discharging to the surrounding surface waters (if any). Without recent surface water and sediment pore water cyanide data (i.e., baseline data), how will Rahway Arch determine if their proposed remedial actions increase the discharge from the impoundments to the surrounding surface water.*

The evaluation will not rely upon laboratory testing. Rather they will rely upon the fact that the reduced permeability cap will eliminate the infiltration through the alum-YPS sludge that is the primary pathway for cyanide release and will stabilize the material inside the berms, preventing any form of catastrophic release due to berm failure.

4) Sampling of the site in 2012 showed that significant concentrations of cyanide still exist in the water within the impoundments (43.2 ppm) and the underlying ground. water (12.4 ppm). Railway Arch proposes to backfill soil into the impoundments over cyanide-rich sludge (5 to 20 feet in thickness) that will be neither dewatered nor stabilized. Rahway Arch does not provide any information indicating that they have evaluated the possibility that backfilling the impoundments will drive cyanide-rich waters out of the impoundments and into the surrounding wetlands, ground water, and surface water. Other than a reference to semi-annual monitoring, Rahway Arch does not propose or provide any plan for assessing whether the actions of backfilling the impoundments is driving cyanide-rich water out of the impoundment. BGWPA is concerned that the action of backfilling and compacting soils placed in the impoundments could drive cyanide-rich water out of the impoundments and into the underlying aquifer, surrounding wetlands, and adjacent surface water.

Precipitation onto the site has been infiltrating through the sludges and into the groundwater since the construction of the berms in the 1930s. In 1989, Cytex consultants estimated more than 100 lb/day of cyanide were being released as a result of this trapped precipitation and percolation. While EastStar has calculated a slightly lower rate, percolation continues to this day at a rate of more than 75,000 gallons per day, every day, and will continue until the site is capped. The contaminated water released by the placement of the cap will be released anyway. The cap will eliminate the ongoing release of this water.

ATTACHMENT 3

RESPONSE TO BUREAU OF GROUNDWATER POLLUTION ABATEMENT COMMENTS UNDATED

Please refer to the calculations provided in Attachment 3A that demonstrate the reduction in release of cyanide contaminant during the course of the remediation and virtual elimination of release upon completion of the remediation.

4A) Has Rahway Arch evaluated the possibility that their proposed actions could drive cyanide-rich waters out of the impoundments and into the surrounding environment?

Without remediation, these "cyanide rich" waters will be discharged into the surrounding environment ad infinitum. The remedial action will eliminate this discharge. Please see the above response to Comment 4 and the calculations in Attachment 3A.

What actions will Rahway Arch take to assess whether the backfilling of the impoundments is, or is not, driving cyanide-rich waters out of the impoundments into the surrounding environment.

Please see the above response to Comments 4 and 4A and the calculations in Attachment 3A.

4B) What criteria will Rahway Arch use to determine if the backfilling of the impoundments is, or is not, flushing cyanide-rich water out of the impoundments.

Please see the above response to Comments 4 and 4A and the calculations in Attachment 3A.

5) In the RAWP it is stated that "Groundwater monitoring will be performed semi-annually to evaluate the ongoing groundwater conditions". No documentation is supplied in the RAW that identifies where ground water will be monitored during the remedial action. The act of backfilling the impoundments may cause fluids from the impoundments to be discharged/released in areas different from those under the present static conditions. Given that there is approximately 11,000 linear feet of exterior berm footage, has Rahway Arch evaluated whether the existing well network of 8 well locations is adequate to monitor potential impoundment discharges triggered by the proposed backfilling of the impoundments.

Section 6.3.3 of the RAW states "The 16 groundwater monitoring wells on the site will be sampled and analyzed semi-annually during the remedial action." The monitoring wells are located around the site according to a plan approved by the Department. The LSRP has reviewed the well locations based upon the historic groundwater data and does not anticipate the need for additional monitoring wells at this time. However, if groundwater gradient data from the semi-annual sampling events indicates additional monitoring locations are necessary, they will be addressed at that time.

6) A comparison of the 2012 monitor well cyanide data and the thickness of the underlying meadow mat (as seen in the BBL impoundment cross sections (RIR Appendix D)), reveals that the monitor wells showing the highest cyanide concentration are located near areas identified as having the thinnest layer of meadow mat. Has Rahway Arch taken this relationship into consideration for future ground water quality assessment and monitoring.

This possible relationship has been noted and will be reviewed during the on-going groundwater sampling and analysis. As was indicated in the above response to Comment 5, the need for additional groundwater monitoring wells will be evaluated based upon the conditions observed in the semi-annual groundwater monitoring events.

7) The berms are reported to have been constructed directly upon the existing meadow mat with wooden and earthen materials. Sludge reportedly exists below the berms in some places. On page 27 of the RIR it is stated that while the sludge initially appears firm, disturbance will cause the material to act like a highly viscous liquid. The presence of sludge under the surrounding impoundment berms may be an indicator that the contact between the

**ATTACHMENT 3
RESPONSE TO BUREAU OF GROUNDWATER POLLUTION ABATEMENT COMMENTS
UNDATED**

impoundment berm and the meadow mat may represent a zone of higher permeability and structural weakness with respect to berm stability. The detection of sludge outside the berms has been speculated to be from past berm failures. Given A) the lack of technical information submitted on the composition/construction of the berms, B) the significant volume of soil proposed to fill and cover the impoundments, and C) the reported detection of sludge under the berms, BGWPA is concerned that the proposed actions may lead to berm failure. What data has Rahway Arch generated that would indicate that the existing berms are capable of supporting the volume of soil.

The engineered fill cap will not rely upon the integrity of the existing berms for stability. As discussed in the RIR, the stated objectives of the geotechnical investigation included ensuring the stability of the existing berms and the material within the impoundments during and after the remedial action. The remedial design and the construction sequence discussed in the RAW comply with the geotechnical recommendations and ensure adequate factors of safety are maintained throughout.

Please refer to the response to RIR Comment 3 contained in Attachment 1 for additional details on the geotechnical investigation, design and factors of safety.

**ATTACHMENT 3
RESPONSE TO BUREAU OF GROUNDWATER POLLUTION ABATEMENT COMMENTS
UNDATED**

**ATTACHMENT 3A
CYANIDE RELEASE CALCULATIONS**



**Rahway Arch Properties LLC
Rahway Arch Site Water Model**

Groundwater Discharge Analysis Results

Average Annual Results - 6 year Simulation								
Year of Remediation Project		1	2	3	4	5	Ongoing	Six Year Totals
Existing Conditions - No Remediation								
Precipitation	Inches	42.8	42.8	42.8	42.8	42.8	42.8	257
	(MG)	96.1	96.1	96.1	96.1	96.1	96.1	577
Runoff	(MG)	11.6	11.6	11.6	11.6	11.6	11.6	69.5
Evapo-transpiration	(MG)	60.3	60.3	60.3	60.3	60.3	60.3	362
Percolation through Alum-YPS Sludge	(MG)	25.5	25.5	25.5	25.5	25.5	25.5	153
Release from Pore Water	(MG)							
Discharge to Groundwater	(MG)	25.5	25.5	25.5	25.5	25.5	25.5	153
	(gal/day)	69,700	69,700	69,700	69,700	69,700	69,700	
Cyanide Concentration in Impoundments	(ug/l)	4,000	4,000	4,000	4,000	4,000	4,000	
Cyanide Discharge to Groundwater	(lb/day)	2.33	2.33	2.33	2.33	2.33	2.33	
	(tons)	0.425	0.425	0.425	0.425	0.425	0.425	2.55
Conditions During and Following Site Remediation								
Precipitation	inches	42.8	42.8	42.8	42.8	42.8	42.8	257
	(MG)	96.1	96.1	96.1	96.1	96.1	96.1	481
Runoff	(MG)	11.6	39.8	56.7	65.2	68.0	68.0	241
Evapo-transpiration	(MG)	60.3	44.2	34.6	29.8	28.2	28.2	197
Percolation through Alum-YPS Sludge	(MG)	25.5	12.1	4.8	1.2	0.038	0.038	43.8
Release from Pore Water	(MG)	0.059	0.059	0.059	0.059	0.059	0.000	0.295
Discharge to Groundwater	(MG)	25.5	12.2	4.89	1.25	0.097	0.038	43.9
	(gal/day)	69,900	33,400	13,400	3,400	300	100	
Cyanide Concentration in Impoundments	(ug/l)	4,000	4,000	4,000	4,000	4,000	4,000	
Cyanide Discharge to Groundwater	(lb/day)	2.33	1.12	0.447	0.114	0.010	0.003	
	(tons)	0.426	0.204	0.082	0.021	0.002	0.001	0.734

See notes next page.

EastStar

**Rahway Arch Properties LLC
Rahway Arch Site Water Model**

Groundwater Discharge Analysis Results

Notes:

1. Assumes remediation commences at the beginning of Year 1 and is completed at the end of Year 5. Ongoing conditions will continue for the foreseeable future following completion of remediation.
2. Precipitation, runoff, evapotranspiration and percolation calculations from RIR Appendix G - EastStar Hydrologic Budget Calculations and are based upon HELP Model analysis for the 85 acre contaminated site.
3. Release from pore water calculations based upon conditions and consolidation calculations documented in the Geotechnical Report.
4. Cyanide concentration based upon results of February 2012 samples of water trapped in the impoundments, summarized in Table 2.5 of the RIR.
5. MG = million gallons.



**Testimony of Debbie Mans, Baykeeper & Executive Director, NY/NJ Baykeeper
Rahway Arch Project
June 12, 2014**

It defies logic, especially after Hurricane Sandy, that a company that wants to import petroleum-contaminated soil and pile it up to 29 feet on a site located in a flood plain at the mouth of the Rahway River and the Arthur Kill would get permitted. But that is exactly what the New Jersey Department of Environmental Protection (NJDEP) has done. In fact, the project is just one permit away from receiving full approval.

Concerns by local residents about flooding, increased truck traffic and polluted runoff were ignored by the State of New Jersey in their quest to approve the project. The Christie Administration even waived its own Flood Hazard Area Rules to permit the project. In fact, it has been the elected officials of Staten Island that have shown the greatest leadership on this alarming issue.

Our review of the project has shown that the site is a regularly inundated flood plain, has had exclusively negative technical reviews from NJDEP staff, the company has had numerous violations on its existing two sites in New Jersey and has questionable financing that led the NJDEP to recently revise its Self-Guarantee form and instructions to ensure that the information contained in the form accurately reflects a company's ability to Self-Guarantee in accordance with the Brownfield and Contaminated Site Act and the Administrative Requirements for the Remediation of Contaminated Sites Rule.

Our Concerns

The site consists of six 15-acre earth walled impoundments that contain saturated industrial sludge byproducts up to 20 feet thick that cannot support weight. The contractor, which disposes of petroleum contaminated soils for a living, **proposes filling the site with mostly out-of-state contaminated soils, up to an elevation of 29 feet.** This has been scaled back from the originally planned 40 foot elevation.

In the contractor's engineer's words:

sludge is contained in six impoundments, encompassing approximately 85 acres. The sludge contains cyanide and metals. The sludge has negligible shear strength, is not capable of supporting any significant weight and is sensitive and thixotropic. In addition, the structural stability of the berms that form the impoundments is questionable.

NJDEP technical reviewers from 5 different bureaus have universally stated serious concerns that:

- the site has been under-characterized;
- the project will either expel its 2 million tons of cyanide sludge contents into harbor waters, or simply collapse under the weight of the planned additional contaminated fill.

From the Bureau Chief for Environmental Evaluation and Risk Assessment:

"Capping the non-weight bearing alum sludges with 2+ million tons of "alternative fill" material may have very unexpected consequences in forcing out the alum sludge and/or dissolved contaminants into the adjacent Rahway River and GW."

Also: "BGWPA [The Bureau of Ground Water Pollution Abatement] is concerned that the proposed actions may lead to berm failure."

- that solid waste and hazardous materials will be placed in a flood plain;
- that since the area is tidally influenced and storm water runoff is not an issue, that the addition of 14 feet of fill beyond the flood hazard level is unnecessary.

NJDEP staff component reviews concluded that "[i]n general, the responses are incorrect and do not dispute the incompleteness of the remedial investigation" and go on to state that the contractor is relying either on being granted variances for the projects deficiencies, or simply outright approval from the Department, rather than addressing them.

Soil Safe is not able to produce a single positive technical analysis by NJDEP staff; the project was politically approved after objecting staff was steamrolled and waivers were granted to circumvent existing rules.

A geotechnical analysis examining the stability of the site was withheld from NJDEP, and not provided until after conditional approvals were already issued. Additionally, a technical report supposedly justifying the project has been heavily redacted and withheld from the public.

Soil Safe's literature often states that their **compliance record** in New Jersey is "unparalleled." Yet Soil Safe:

- was forced off its first New Jersey project under an Administrative Consent Order from NJDEP, with fines and penalties, and numerous violations. The project was a landfill closure that was filled beyond its original footprint, and a portion of which subsequently collapsed into adjacent wetlands.
- was issued a Notice of Violation at its next project for accepting about a quarter-million tons of contaminated soils over their permitted tonnage, about a 40% overage of the permitted tonnage. For that for an unpermitted act, that generated millions of dollars in revenues, the NJDEP "settled" for a \$2,250 fine.
- originally stated that it would place a "cap" over that property and use "about one million tons" of fill over "5 to 7" years. That project is now in its 10th year, contains 4 million tons of contaminated soils, and just received a 5 year extension from NJDEP.
- This second project is now the subject of a federal lawsuit brought by Delaware Riverkeeper.

Soil Safe literature states that it will use not toxic, solid of hazardous waste in its project, yet

- its ongoing project in Logan Township, NJ is permitted to accept Polycyclic Aromatic Hydrocarbons ("PAHs," a known carcinogen) at over 500 times the non-residential standard
- Lead (Pb) at over 4 times the residential standard, and
- 4 other contaminants, including PCBs at above non-residential standards

The engineer for the project, Albert Free, was quoted in the Staten Island Advance that the project would not use contaminated soils, yet Mr. Free authored the PAH Variance letter to NJDEP justifying the elevated PAHs it will import on the site.

The project, as stated in NJDEP's draft Permit plans to have well over 30,000 trucks, 60,000 diesel truck round-trips per year, through an Environmental Justice neighborhood.¹

Project documents state that the Project is expected to cost \$15 Million, yet:

- Soil Safe's Audited Financial Statements to NJDEP show that Soil Safe, Inc., is about \$100 Million in debt
- that they have lost about \$25 Million in each of the last two years
- their parent company is an additional \$40 Million in debt, and
- Soil Safe, Inc., hasn't been paying the interest on their loans, adding \$6 or \$7 million dollars in each of the previous report years, as additional debt.

How are they guaranteeing this project for completion and what is their guarantee against some catastrophic failure? **So far, NJDEP has only required a \$500,000 financial assurance for the Carteret proposal.**

Several neighboring communities, elected officials and flood plain experts have stated concerns to NJDEP that filling 90 acres of regularly inundated flood plain will increase upriver flooding. The US Army Corps is currently studying the flooding issues on the Rahway River, yet neither NJDEP nor the contractor or owners have done a Flooding Impact Study. Those parties have simply dismissed upriver flooding, stating that it is not a concern because the area is tidally flooded. NJDEP has stated that it will not wait for the Army Corps study to be completed before granting approvals.

We respectfully ask that the NYC Council

- To provide support in our appeal of the permit by NJDEP
- Explore opportunities through the Interstate Environmental Commission (IEC) to ensure that NJ is complying with the parameters of the Tri-State Compact Agreement and not polluting our shared waters
- The project is really a disposal activity, not a recycling activity, and as such should be governed by the appropriate regulations. NJDEP has chosen not to do this and this is not the first time this

¹ <http://njeja.org/2014/03/17/here-we-go-again-dumping-toxic-sludge-in-an-ej-neighborhood-in-carteret/>

company has been allowed to use questionable practices to “dispose” of contaminated material. Therefore, we ask the Council to reach out to USEPA and then the agency to review NJDEP’s delegated authority to implement the federal Resource Conservation and Recovery Act (RCRA).

NY/NJ BAYKEEPER®



PROTECT. PRESERVE. RESTORE.



**PROPOSAL: UP TO
4 MILLION TONS
OF IMPORTED
CONTAMINATED
SOIL TO FILL A
FLOOD PLAIN**



Rahway Arch Property IN CARTERET ON THE RAHWAY RIVER/ARTHUR KILL



WHY WE OPPOSE THE PROJECT



- Soil Safe proposes to pile up to 29 feet of contaminated soil and fill on top of sludge ponds and unreinforced dirt berms. A standard cap to seal contamination is 2 feet. Internal DEP engineer reviews of the project warn that the cap will likely collapse into the river and surrounding wetlands.
- NJDEP staff also question the logic of introducing new contaminants to the property as a way to “clean it up.” Soil Safe claims the project needs to “remediated” but testing does not support claims that the site is heavily contaminated.
- NJDEP technical staff concerns about the project are being overridden by the NJDEP’s top staff, including that capping the non-weight bearing alum sludges on the site with 4+million tons of material may force out the alum sludge and/or dissolved contaminates into the adjacent Rahway River and groundwater.

Opposition Continued.....



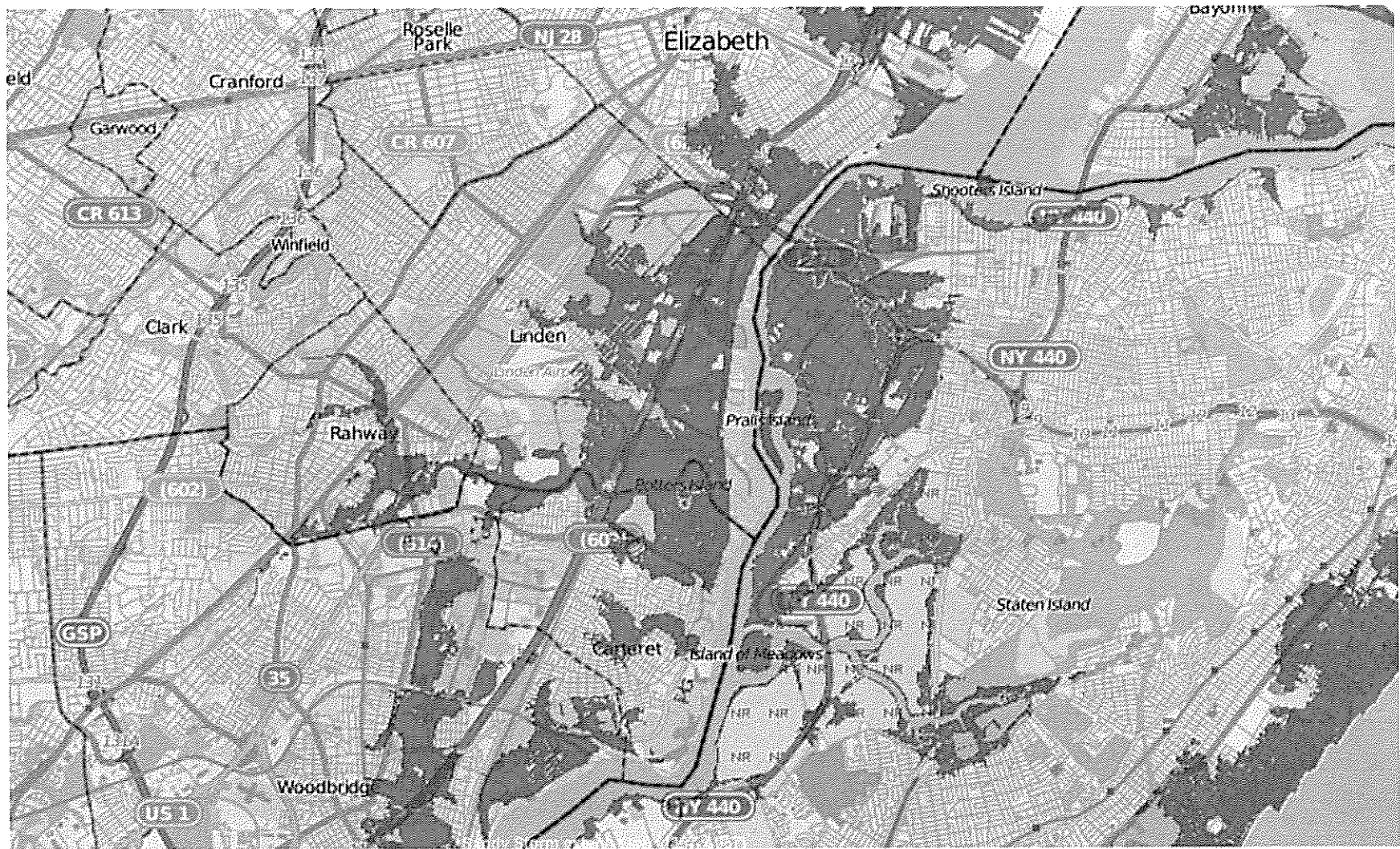
- The company has a history of violations at their other sites in New Jersey.
- There are 10 state threatened and endangered species on the property, which acts as a foraging area for harbor herons.
- The facility is permitted to accept up to 7000 tons per day, which would be 340 trucks. No truck route has been provided.
- The DEP application process has been unorthodox, allowing for repeated revisions and issuing conditional permits before the application was even complete.

Unanswered questions on flooding impacts



Photo: NJ.com

HURRICANE SANDY ACTUAL FLOODING
October 29, 2012, 9:30 pm
Federal Emergency Management Administration



DEP is sending letters to flood-prone communities stating that there need be no concern about flooding, because the area to be filled with contaminated soils only covers a “flood fringe area that acts as storage for flood waters caused by fluvial flooding.”



FEMA's newly released National Flood Hazard Layer shows a regulatory floodway surrounding the entire Rahway River boundary of the project site, extending to the mouth of the Arthur Kill.

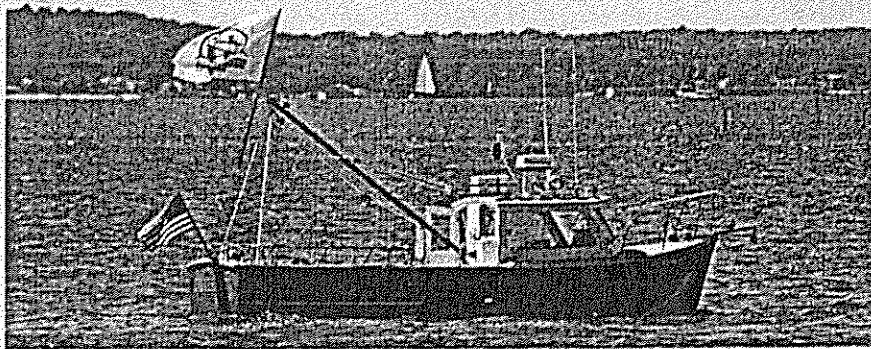
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Federal Emergency Management Administration



- [illegible]

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**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Lonnie Baron

Address: _____

I represent: Assemblyman Matthew T. Lane

Address: 853 Forest Ave SE NY 10310

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Paul Gallay

Address: Riverkeeper 20 Secor Rd Ossining

I represent: Riverkeeper

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Judy England - McCauley

Address: 217 Buchanan St. Linden NJ 07036

I represent: Tremblen Pt. Alliance

Address: Linden NJ 07036

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)
Name: Roland Lewis, Metropolitan Alliance ^{Waterfront}

Address: 217 Water St NY, NY

I represent: _____

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. Rahway Ave Res. No. _____

☐ in favor ☐ in opposition

Date: 6/12/14

(PLEASE PRINT)
Name: Debbie Mans

Address: 52 W Front St, Keyport, NJ 07735

I represent: NY / NJ Baykeeper

Address: Same

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 6/12/14

(PLEASE PRINT)
Name: Kathleen Forza

Address: 230 Crystal Avenue SE NY 10302

I represent: Northfield Community LDC

Address: Heberton Ave SE NY 10302

Please complete this card and return to the Sergeant-at-Arms