Attachment B

James Elliott Affidavit

Riverkeeper, Inc. and Scenic Hudson Comments on Docket USCG-2014-0602

Review and Update of the New York/New Jersey Area Contingency Plan

October 10, 2014

SUPREME COURT OF THE STATE OF NEW YORK

COUNTY OF ALBANY

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In the Matter of the Application of

RIVERKEEPER, INC., SIERRA CLUB ATLANTIC CHAPTER,
WATERKEEPER ALLIANCE, INC., CENTER FOR
BIOLOGICAL DIVERSITY, and EZRA PRENTICE

TENANTS' ASSOCIATION

Index No. _______

Petitioners/Plaintiffs,

for a judgment pursuant to Article 78 and
Section 3001 of the Civil Practice Law and Rules,

AFFIDAVIT OF
JAMES E. ELLIOTT

-against-

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION, JOE MARTENS, as Commissioner of the
New York State Department of Environmental Conservation,
and GLOBAL COMPANIES, LLC,

Respondents/Defendants.

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STATE OF TEXAS)

: ss.:

COUNTY OFGALVESTON)

I, James E. Elliott, being duly sworn, depose and say:

1. I am a former senior Coast Guard officer who has directed multiple oil spill response operations over more than a 25-year period throughout the United States, earning the titles of Federal On-Scene Coordinator, Type-1 Incident Commander and National Strike Force Response Officer, among others. My formal education includes a B.S. Environmental Management with High Distinction, Masters of Environmental Policy with Honors, and M.A. National Security and Strategic Studies with Highest Distinction. I also completed over 1,400 hours of technical training on oil and hazardous materials response and incident management operations. Based on my advanced education and experience, I have earned the Certified Environmental Professional (CEP), Registered Environmental Manager (REM), Certified Hazardous Materials Manager (CHMM) and Certified Environmental, Safety and Health Trainer (CET) professional certifications. I am also certified as an instructor qualified to present the International Maritime Organization (IMO) Oil Spill Response Course, OSHA Hazardous Waste Operations (HAZWOPER) Course and advanced Incident Command System (ICS) courses. I have been selected by the U.S. State Department and National Response Team to instruct and guide various nations on pollution response and emergency management, including Vietnam, Panama, Cameroon, Dominican Republic, Bahamas, British Virgin Islands, Costa Rica, Trinidad and Equatorial Guinea, among others. As a result of my leadership during multiple oil spills and emergency response operations, I have earned over 70 U.S. Coast Guard awards and commendations, a National Environmental Manager of the Year Award, the National Registry of Environmental Professionals Leadership Award, the Texas Association of Environmental Professionals Regulator of the Year and commendations from the Governor of Texas and Texas General Land Office, among others.
2. My oil spill response experience includes over 100 incidents, including the Deepwater Horizon and Tank Barge DBL 152 oil spills in the Gulf of Mexico, tank ship ATHOS I oil spill in the Delaware River and Barge No. 120 oil spill in Buzzards Bay, Massachusetts. Additionally, I have managed multiple oil and hazardous material response and recovery operations associated with Hurricanes Ivan, Katrina, Rita and Ike, among other major storm events.

3. As a Vice President for an international marine salvage and oil spill response organization, I have successfully responded to multiple marine casualty incidents and exercises involving tank barges and tank ships. Most recently in March 2014, I managed the vessel salvage operations and subsequent oil spill clean-up efforts following the collision between a fully-laden tank barge and a freight ship in the Houston Ship Channel.
4. I was requested by Riverkeeper, Inc. to assess oil spill response capabilities and the potential impacts of oil spills in the Hudson River, in the context of the application by Global Companies, LP to the New York State Department of Environmental Conservation (NYSDEC) to amend its Title V Air Permit to allow the heating, handling and transfer of heavy crude oil at its Terminal in Albany, New York. I provide this affidavit of my own free will and without monetary compensation.
5. The volume of crude oil shipped as cargo via railway and barge is expected to increase in and adjacent to the Hudson River. The types of petroleum products shipped are reported to include No. 6 fuel oil, heavy crude oils (including but not limited to tar sands crude oil), some biofuels (e.g., pure biodiesel), and asphalt.
6. I have been informed and am aware that the heavy crude oil Global Companies LLC would gain the capacity to receive, handle and transport at its Albany Terminal if its Permit Application is approved by NYSDEC can include the type of crude oil that could potentially sink or be suspended in the water column rather than float on the surface. The recovery of this type of oil from the Hudson River presents complications, as described in more detail below. Global Companies LLC has indicated that it intends to store and ship Group IV oils, if its Permit Application is approved. While Global Companies LLC has recently stated that it does not anticipate storing Group V oils, it should be noted that Group IV oil, which has a specific gravity of slightly less than 1.0, "might mix into the water column and sink to the seabed after weathering and interaction with sediments" (National Research Council, 1999)." Based on my personal experience, this situation occurred during the ATHOS I oil spill in the Delaware River in November 2004. The spilled ATHOS I cargo was a heavy crude oil that was "slightly buoyant" with a high asphalt content and required heating. Portions of this oil was discovered on the river bottom and submerged into the water column, complicating recovery operations.

7. The Oil Pollution Act of 1990 (OPA 90) primarily focused on mechanical on-water recovery as the preferred oil spill cleanup technique. Over 20-years after the passage of OPA 90, however, the effectiveness of on-water oil recovery technology remains only at about a 10 to 25% recovery rate. The effective oil recovery rates for submerged oil recovery operations are typically lower than 25%, as evidenced by the Tank Barge DBL 152 and Deepwater Horizon oil spill incidents in the Gulf of Mexico.
8. I have the following concerns regarding spill response capabilities in the Hudson River Estuary.

a. The New York Area Contingency Plan that includes oil spill response strategies for the Hudson River is currently under revision; however, the plan still references pre-2000 technology and inventories. The plan also does not address the potential impacts of the planned increase in rail car and marine based transport. Finally, the plan does not include recent regulatory revisions regarding salvage and marine firefighting response planning timeframes.

b. The Area Contingency Plan states "the Hudson River is unique in that it has a full tidal cycle through much of its course." The National Oceanic and Atmospheric Administration further describes the Hudson River as follows: "Profoundly influenced by the ocean's tides for more than half its length, the Hudson River estuary stretches 153 miles and includes a wide range of wetland habitats, from the brackish marshes of Piermont to the slightly brackish wetlands of Iona Island, and the freshwater tidal mudflats and marshes of Tivoli Bays and Stockport Flats." As such, the Hudson River is a complex riverine system, from fast flowing to tidal flats with unique tidal influences that would complicate oil spill response operations, likely reducing the effective recovery rate given existing oil spill response technology.

c. The National Oceanic and Atmospheric Administration provides "four reasons why oil spills in rivers differ from spills that occur in the open ocean", thus often complicating oil spill recovery operations.

i. "**Some oils are denser than river water.** Oil usually floats because it is less dense than the water it is floating on. (Density is the mass, or weight, of a substance divided by its volume.) The density of river water is usually about 1 gram per cubic centimeter (g/cc).

Water in the open ocean is more dense (usually around 1.02 to 1.03 g/cc) because it contains more salt (the higher the salinity of water, the more dense it is). Densities of oils range from 0.85 g/cc for a very light oil (like gasoline) to 1.04 g/cc (for a very, very heavy oil). Most types of oils have densities between about 0.90 and 0.98 g/cc. These oils will float in either a river or the ocean. But very heavy oils, which have a density of 1.01 g/cc, would float in the ocean, but sink in a river.

Sometimes the density of an oil is so close to that of river water that the oil moves along the river partly underwater.

If spilled oil sinks, it can be very difficult to clean up. If something causes it to pool on the bottom (for example, it may get trapped behind a sunken vessel), then vacuum devices can be used to try and get the oil off the bottom. As you might guess, this method may not be very effective because vacuums may capture a lot of water and sand along with the oil."

ii. "**Movement is usually downstream.** Unlike in a bay or the open ocean, currents in a river are generally directed downstream (except very close to the mouth of the river, where it enters the ocean; here, a flood tide might actually reverse the flow of the surface water)." Note, as stated in the Area Contingency Plan, the Hudson River is influenced by a "full tidal cycle", thus complicating both surface and subsurface oil recovery capabilities.

iii. "**Dams and locks influence oil movement.**"

iv. "**Vegetation may grow right at the water's edge.** Along many rivers, plants and trees grow right up to the river's edge. Those rivers don't have the open, sandy shores that you find along many parts of the open coast. It's much harder to remove oil from vegetation than from a hard-packed sand beach. Spill responders try to protect the plants by using booms, but if the vegetation gets oiled, responders often either cut, burn, or flush it with water to try to get the oil out."

9. Based on this discussion of the complexities of oil spills in riverine environments, and given the current state of oil spill recovery technology at about a 10 to 25% recovery rate, it is likely that oil spill responders in the Hudson River could potentially achieve a lower than average spill recovery rate.

10. In addition to the unique challenges faced by oil spill responders in riverine systems noted above, the Hudson River typically has ice and ice flows during cold weather periods. The Area Contingency Plan states: "Ice is also an important factor that often prevails in some areas of the COTPNY zone during the winter months, particularly in the Hudson River." Having recently completed the National Oceanic and Atmospheric Administration "Arctic and Cold Weather Response Considerations and Methods" course and with personal experience managing oil spill response operations in cold weather environments, the current state of technology to recover oil in ice covered environments adds additional complexities to those already noted in the Hudson River system. Of note, as stated in the Area Contingency Plan, the cold weather season is a period of a "greater volume of petroleum products being handled in the greater New York area." Thus, the operating conditions for recovering oil are often the most complex during the largest volume of oil transits within and near the Hudson River.

11. Many of the oil cargos currently transiting or planned for transit on and near the Hudson River are considered Group V or Low API oils with a specific gravity greater than one. As noted previously, these oils may submerge and/or sink in the water column, complicating clean-up operations and lowering the probability of recovery. Note, even oils with specific gravities less than one can submerge. For example, during the 2004 ATHOS I oil spill response on the Delaware River (a similar operating environment to the Hudson River) oil mixed with sand and submerged making the oil difficult to recover. During this oil spill response, divers were required to collect oil on the river bottom; however, given the extent of contamination and dynamic, turbid riverine environment, the overall spilled oil recovery rate was low. Additionally, during the 2014 ship/barge collision in the Houston Ship Channel, the spilled oil cargo had a specific gravity near one. As a result, oil arrived onshore subsurface prior to that anticipated by the National Oceanic and Atmospheric Administration surface trajectory model.

12. The U.S. Coast Guard's salvage and marine firefighting regulations, published in 2008 and 2013, only apply to vessels carrying Groups I to IV oils and, therefore, do not apply to vessels carrying Group V oils. As such, vessels carrying Group V (sinking oils) as cargo are not required to meet the response timelines outlined in the regulatory framework. Note, the Area Contingency Plan states "an important element of any risk assessment is the amount of time it takes to mount an effective response." Unfortunately, the U.S. Coast Guard does not require a timely response to marine casualties involving vessels carrying Group V oils since they are excluded from their own regulatory framework.
13. The Area Contingency Plan states: "In most situations within the COTP New York area of responsibility, it is possible for the oil to wash up on the beach or shoreline within minutes of the spill. As a result, unless conditions are such that a containment boom can be deployed immediately and such boom will be effective under the given wind/sea conditions, most strategies are confined to deflecting oil to pocketing areas where it can be collected, and also booming off non-affected areas to prevent them from becoming contaminated." The U.S. Coast Guard Research and Development Center's "Oil Spill Response in Fast Currents: A Field Guide" states: "Controlling and recovering oil spills in fast moving water above one knot is difficult to accomplish because oil entrains under booms and skimmers in swift currents." Water current speeds in the Hudson River often exceed one knot depending on tidal influence and location. In regards to the effectiveness of oil containment booms, the International Tank Owners Pollution Federation Limited (ITOPF) states "Thus, even if they can be operational within a few hours, it will not be feasible for them to encounter more than a fraction of a widely spread slick. This is the main reason why containment and recovery at sea rarely results in the removal of more than a relatively small proportion of a large spill, at best only 10 - 15% and often considerably less." In the end, booming is predominantly an ineffective oil spill response strategy, especially in dynamic riverine environments.
14. In sum, the Hudson River is a unique riverine ecosystem, tidally influenced and seasonally subjected to cold weather, ice conditions. The current state of surface oil spill response technology provides an anticipated oil recovery rate of about 10 to 25%, often considerably less in a complex riverine operating environment such as the Hudson River.

Furthermore, the anticipated recovery rate of sinking and submerged oils is substantially less than that of surface spill recovery rates. As such, it is very important to implement policies, procedures and response strategies, to prevent and minimize the negative environmental impacts caused by oil spills.

15. I declare, under penalty of perjury, that the foregoing is true and correct.

James E. Elliott

James E. Elliott, CEP, CHMM, REM, CET

Sworn before me this

6th day of June, 2014

NOTARY PUBLIC
STATE OF TEXAS
JULIE A WOODS
My Commission Expires
April 15, 2017

Julie A. Woods

Notary Public