Fact Sheet on Remedial Investigation Reports for Proposed Remediation of the United States Dredging Corp. Site in Brooklyn, NY

This Fact Sheet is provided in connection with the environmental investigation and the proposed remediation of the property owned by U.S. Dredging Corp. located at 1 Beard Street, Brooklyn, New York (the Site) by IKEA Property, Inc. (IKEA) under the Brownfields Act, and summarizes information contained in remedial investigation reports prepared for the Site, including Phase I and Phase II Environmental Site Assessments dated September 2002 and November 2002, respectively, and a Supplemental Subsurface Investigation Report, dated September 2003. More detailed information concerning the results of the investigation can be found in the reports themselves, or in the Draft Environmental Impact Statement (DEIS) dated April 26, 2004, that has been prepared for the proposed IKEA construction project.

I. Phase I Site Investigations

Preliminary investigations were conducted to identify historic activities and conditions at the Site, which are discussed in a Phase I Environmental Site Assessment dated September 2002 (the Phase I report). The Phase I investigation included a visual inspection of the Site; a review of existing data on the geology and hydrology of the area; an examination of historical maps; interviews with site occupants; a review of past reports; and a review of federal and state databases to determine the regulatory status of the Site and surrounding areas. Summarized below are existing and historic activities and conditions at the Site identified during the Phase I investigation.

A. Site Occupants / Uses

From the 1860s to the present shipyards and related ship maintenance and repair operations have occupied the Site. Historically, shipyards have utilized a variety of hazardous materials, including petroleum products, solvents, polychlorinated biphenyls (PCBs), and heavy metals (used in marine paints) such as mercury, arsenic, lead, copper and tin. Public records indicate that the following four hazardous waste generators carried on shipyard operations at the Site: (i) the United

States Navy; (ii) Stevens Technical Services; (iii) New York Shipyard; and (iv) Royal Marine Tank Cleaning.

At the time of the Phase I in 2002, the owner and principal occupant of the Site was U.S Dredging Corp., which used the northern portion of the Site for docking and ship maintenance. U.S. Dredging's maintenance activities included hydro blasting, grit blasting, painting and general repairs. Other occupants of the Site included a tow truck operator, an operator of trailers used for film and video production, a manufacturer of fiberglass boats, a furniture manufacturer, a limousine company, a boat repair business, a movie set builder, an antique dealer, and a wholesaler of toiletries.

B. Filling Activities

Large portions of the Site were filled in at different points in the Site's history. The fill materials used at the Site are unknown, but may have included coal and incinerator ash, demolition debris, and industrial wastes, which commonly were used as fill in past decades. In addition, organic wetland sediments may be buried beneath the fill. Decomposition of such organic matter can generate flammable methane gas.

C. Buildings on the Site

There are twelve buildings currently located on the Site that were constructed at various times between 1866 and 1946. These buildings are likely to contain asbestos and lead-based paint.

D. Storage Tanks

The Phase I Study identified nineteen underground storage tanks that are currently located on the Site. Only two of the tanks remain in service: a 20,000-gallon tank that formerly held fuel oil but is now used for diesel fuel, and a 1,000 to 2,000-gallon tank used to hold sewage waste from ships. Thirteen other tanks remain in place and are listed as either temporarily or permanently out of service. The status of four other tanks believed to be on the Site is unknown. In addition,

records indicate that a 5,000-gallon fuel oil tank was removed from the Site in 1992 or 1993. Approximately 50 cubic yards of contaminated soil were reportedly removed when the tank was removed, and oil was observed floating on the water in the excavation.

Fifteen aboveground storage tanks were also observed on the Site in connection with the Phase I investigation, most of which were in active use and contained diesel fuel, waste oil, sewage waste from ships, and other materials.

E. PCB Containing Equipment

The Phase I identified over thirty active and inactive transformers, which are likely to contain PCBs, housed within electrical substations on the Site. Dismantled transformers were observed at two additional locations on the Site. In addition, based on historical information, the Phase I identified three locations where PCB-containing equipment probably was used in the past.

F. Chemical and Waste Storage

The Phase I Study noted the presence of 55-gallon drums and other containers at a number of different locations on the Site. According to their labels, the contents of these containers included hydraulic oil, motor oil, waste oil, antifreeze, paints, thinners, styrene, and solvents.

Three waste stockpiles were found on the Site, which were composed of debris and/or process waste from hydro or grit blasting of ships.

G. Petroleum Spills

There are records of seven petroleum releases on the Site, including releases of various quantities of gasoline, diesel fuel, No. 2 fuel oil and waste oil.

II. Phase II Site Investigations

Phase II environmental investigations were conducted at the Site to further examine issues identified in the Phase I Study, and are discussed in a Phase II Environmental Site Assessment, dated November 2002 (the Phase II report). The Phase II investigation included sampling and

analysis of soil, groundwater, sediment, waste stockpiles, drainage structures, building materials, substations, soil gas and ducts, and excavation of certain suspected former tank locations. In addition, supplemental subsurface investigation work was performed to follow up on the results of the Phase II investigation and to generate additional data required for the design of remedial measures, and is discussed in a Supplemental Subsurface Investigation Report dated September, 2003 (Supplemental Subsurface Report). Summarized below are the results of these Phase II investigations.

A. Soil Sampling

Soil sampling was performed for the Phase II Study at 49 locations at the Site, 11 adjacent to underground storage tanks and 38 at other locations selected based on historic usage. Soil samples from the tank areas were analyzed for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs), and samples from other areas were analyzed for VOCs, SVOCs, metals, PCBs and asbestos.

The sampling results of the Phase II investigation were as follows: (i) VOCs indicative of petroleum were found in one of the 38 soil samples from the non-tank areas, and in one of the 11 soil samples from the tank areas; (ii) as expected for fill material on an industrial site, all samples were found to exceed one or more New York State Department of Environmental Conservation (DEC) Recommended Soil Cleanup Objectives (RSCOs) for polycyclic aromatic hydrocarbons (PAHs, a type of SVOC); (iii) all samples were found to exceed one or more of the RSCOs for metals, and many samples contained elevated levels of metals including arsenic, beryllium, barium, chromium, copper, mercury, lead and vanadium; (iv) PCBs were detected in four of the soil samples, but only one exceeded the RSCO for surface soil; and (v) asbestos was not detected in any of the soil samples.

An additional 31 soil samples were collected for the supplemental subsurface investigation. The analytical results from those samples are set forth in the Supplemental Subsurface Report. The results indicated that contamination of soils at the Site by VOCs and PCBs is limited to isolated hot spots. The report also found that the presence of above-background levels of PAHs and metals is generally consistent throughout the Site and in most cases is attributable to the presence of historic urban fill, which contains ash, cinders and asphalt.

B. Groundwater Sampling

For the Phase II investigation, thirteen groundwater monitoring wells were constructed on site and sampled. Because on-site groundwater is tidally influenced, some of the wells were constructed in areas that allowed for sampling of groundwater flowing onto and groundwater flowing off of the Site. Groundwater samples were analyzed for VOCs, SVOCs, metals and PCBs. Most of the samples from both groundwater flowing on and off-Site contained levels of some metals, notably copper, lead and zinc, exceeding the DEC's Class GA groundwater standards. When the groundwater samples were recollected using a methodology that minimizes suspended particulates, levels of metals were much lower, although still above the GA criteria.

More groundwater samples were collected from the same 13 monitoring wells and analyzed during the supplemental subsurface investigation. The results of those analyses are presented in the Supplemental Subsurface Report. These analyses generally confirmed the results of the Phase II investigation. In particular, analysis of filtered groundwater samples confirmed that the elevated metals concentrations detected in the earlier samples were associated with suspended particulate matter and were not entirely due to metals dissolved in the groundwater.

C. Sediment Sampling

A total of ten sediment samples were collected in Erie Basin along the Site bulkhead in September and October 2002, and were analyzed for VOCs, base neutrals/acid extractables, PCBs,

and priority pollutant metals. Only two VOCs were detected, both at extremely low concentrations: naphthalene in one sample and carbon disulfide in two samples. One sample contained detectable concentrations of PCBs. Some samples contained PAHs and heavy metals at concentrations that can pose a risk to aquatic organisms such as benthic invertebrates.

Additional sediment sampling was conducted in July 2003. A total of 16 samples, including nearshore and offshore samples and deep and shallow samples, were taken and analyzed for PAHs; PCBs; and DDT and its metabolites and all of the priority pollutant metals except for silver, cobalt, antimony, selenium, thallium, vanadium, and sodium. As with the 2002 sampling, the 2003 sampling found some metals and PAHs present at levels that pose a risk to aquatic organisms. PCBs were detected in some of the samples. The concentrations found in surface sediments did not exceed DEC guidance for PCBs in sediments. DDT compounds were detected at low concentrations. PAH concentrations generally did not show consistent variation for nearshore versus offshore or shallow versus deep samples.

The data indicate that sediments near the Site were affected by much of the same current and historical contamination sources of as the Upper New York Harbor, and that sediment quality near the Site is similar to that found throughout much of the Upper New York Harbor. The data also indicate that, in general, sediments at lower depths in the Erie Basin have higher levels of contamination than sediments at shallower depths. These sampling results are the result of the deposition of cleaner sediment over historically contaminated areas, which appears to be occurring in the Erie Basin at the rate of about 2-5 inches per year.

D. Waste Stockpile Sampling

Five composite samples were collected from the three waste piles identified on the Site. The samples were analyzed for VOCs, SVOCs, metals, PCBs and asbestos. No VOCs were detected in

the samples. However, PCBs and above-background levels of PAHs and metals were present in all the samples.

E. Below Grade Structure Sampling

A total of 23 samples of sludge or soil were collected from drainage structures, sumps and manholes throughout the Site. The samples were analyzed for VOCs, SVOCs, metals, PCBs and asbestos. All but five of the samples contained PCBs. PCB concentrations were at low levels in most of those samples, except for one sample that contained PCBs at a level exceeding the hazardous waste criteria, and another sample that was close to such criteria.

F. Building Material Sampling

Samples of stained wood flooring were collected from two locations and samples of stained concrete flooring were collected from five locations. The wood and concrete samples were analyzed for VOCs, SVOCs, metals, PCBs and asbestos. The wood samples both contained PCBs, high levels of PAHs, and elevated levels of metals, notably lead, copper and zinc. One concrete sample, which had an accumulation of oily sludge on its surface, contained high levels of PAHs and metals. PCBs were also detected in this sample and one additional concrete sample. No asbestos was found in any of the samples.

G. Substation Sampling

Wipe samples were collected from floor areas within the seven electrical substations on the Site. The wipe samples were analyzed for PCBs. PCBs were detected in 24 of the 28 wipe samples at concentrations well below the United States Environmental Protection Agency (EPA) standard cleanup level of 10 micrograms per 100 square centimeters for "high contact" surfaces.

H. Soil Gas Sampling

Thirteen soil gas monitoring wells were installed to collect soil gas samples for the Phase II investigation. Soil gas was analyzed for methane, oxygen, carbon dioxide and total organic vapors

using field instruments. Levels of methane exceeded the lower explosive limit of five percent at three of the sampling locations, all on the eastern portion of the Site.

In the supplemental subsurface investigation, an additional 31 soil gas samples were collected and analyzed. Soil gas collected from two locations had methane levels exceeding the lower explosive limit of five percent. In the other samples, methane was either not detected or present at much lower concentrations. VOCs were detected in a number of soil gas samples at levels exceeding normal background levels in indoor air.

I. Duct Sampling

Three wipe samples and one bulk dust sample were collected from ducts associated with a former dust collection system within Building 93, the largest building on the Site. The samples were analyzed for VOCs, SVOCs, metals, PCBs and asbestos. The analyses detected no VOCs or asbestos, low levels of PCBs and SVOCs, and elevated levels of some metals.

J. Test Pit Excavations

Four suspected locations of additional underground storage tanks were investigated for the Phase II Study. At one location, a structure resembling an oil-water separator was located. At the other three locations, test pits were excavated. One excavation located a 3,000-gallon tank within a concrete vault. The other two excavations found no tanks, but encountered soil that showed evidence of contamination. Two soil samples were collected from each of the three test pits and analyzed for VOCs and SVOCs. No VOCs were detected in these samples, but above-background levels of PAHs were found.

III. The afore mentioned documents are available for public review in the document repository at the Red Hook Branch of the Brooklyn Public Library, 7 Wolcott Street, Brooklyn, NY 11231.

IV Next Steps

IKEA is currently in the process of preparing a remedial Action work plan (RAWP), which will address each of the areas of concern identified during the course of the site investigations described above. Upon completion, notice of the proposed RAWP (along with a fact sheet summarizing its contents) will be provided to persons on the Site Contact List, and a copy of the RAWP will be placed in the document repository. Public comment will be invited once the document is available.