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Superfund Records Center
SITE: NEW BEDFORD
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18724. In 1983, the Camp Dresser & McKee estimated that combined sewer overflow (CSO) discharges totaled over 1.5 billion gallons per year (CDM, 1983).

18725. According to the Conservation Law Foundation, dry weather overflows are the product of design mistakes, poor maintenance, and illegal connections of sewage pipes leading directly to CSO outlets.

18726. Dry weather overflows are the product of design mistakes, poor maintenance, and illegal connections of sewage pipes leading directly to CSO outlets.

18727. Dry weather discharges are estimated to account for a flow of 4.7 million gallon per day, or another 1.7 billion gallons per year (CDM, 1987).

18728. According to the Conservation Law Foundation, one of the most serious costs of sewage pollution in New Bedford is the impact that the flow of raw and inadequately treated sewage has had on shellfishing in the productive beds of Clarks Cove and the Outer Harbor.

18729. One of the most serious costs of sewage pollution in New Bedford is the impact that the flow of raw and inadequately treated sewage has had on shellfishing in

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the productive beds of Clarks Cove and the Outer Harbor.

18730. The closure of the Inner Harbor and estuary to shellfishing predated concern over PCBs by more than fifty years, and would be in place even without PCBs.

18731. According to the Conservation Law Foundation, water quality problems have plagued the shellfishing industry in the New Bedford area for much of this century.

18732. Water quality problems have plagued the shellfishing industry in the New Bedford area for much of this century.

18733. According to the Conservation Law Foundation, Massachusetts public health officials closed New Bedford Inner Harbor and Acushnet River Estuary to all shellfishing in 1925 due to gross pollution.

18734. Massachusetts public health officials closed New Bedford Inner Harbor and the Acushnet River Estuary to all shellfishing in 1925 due to gross pollution.

18735. According to the Conservation Law Foundation, New Bedford Inner Harbor has remained closed to shellfishing since 1925 (CDM, 1987).

18736. New Bedford Inner Harbor has remained closed to shellfishing since 1925.

18737. Sewage pollution also led to a ban on shellfishing in the Outer Harbor and Clarks Cove in 1971.

18738. In 1981, sewage pollution kept many such areas closed to shellfishing.

18739. Sewage pollution is keeping vast areas of the Outer Harbor and Clarks Cove closed to shellfishing.

18740. Areas closed to fishing activities are closed to shellfishing due to sewage pollution.

18741. The closure to shellfish harvesting of all of Clarks Cove and nearly all of New Bedford Outer Harbor results in significant economic loss to the area's economy.

18742. According to the Conservation Law Foundation, in addition to its aesthetic and recreation-related impacts, sewage pollution in the New Bedford area has crippled the local shellfishing industry.

18743. Attachment Q.VIII.e.152 is a true and accurate copy of

the original document by Philip Gidley of Gidley Laboratories, Inc. entitled "Water Quality Study of the New Bedford Inner Harbor," published on March 29, 1974 and prepared for New Bedford Gas and Edison Light Company, New Bedford, Massachusetts and the document is genuine.

18744. Attachment Q.VIII.e.152 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to a duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

18745. Attachment Q.VIII.e. 152 is a business record, which was prepared and received and kept in the ordinary course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by a person with knowledge of such activity.

18746. The information in the above Attachment Q.VIII.e.152 is true.

18747. Gidley identified heavy metals in elevated

concentrations within harbor bottom sediments.

18748. Attachment Q.VIII.e.153 is a true and accurate copy of an article by C. P. Summerhayes, J. P. Ellis, and T. Stoffers entitled, "Estuaries as Sinks for Sediment and Industrial Waste - A Case History From the Massachusetts Coast", published in Contributions to Sedimentology, dated 1985, (referred to herein as Summerhayes (1985)).

18749. Attachment Q.VIII.e.153 is a study of the Acushnet River Estuary and New Bedford Harbor.

18750. Attachment Q.VIII.e.153 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to a duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

18751. Attachment Q.VIII.e.153 is a business record, which was prepared and received and kept in the ordinary course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by a person with knowledge of such activity.

18752. For the past 100 years, New Bedford Harbor has been the dumping ground for fine-grained copper-rich industrial waste.

18753. Summerhayes (1985) reports that chemical pollutants that are dumped into the estuary in solution may be adsorbed onto fine particles and settle in the estuary.

18754. New Bedford was one of the world's major whaling ports in the 1820s.

18755. Since the 1860s New Bedford has been a manufacturing center and fishing port.

18756. Summerhayes (1985) reports that New Bedford's industrial activities have lead to contamination of the Acushnet Estuary with metals, while New Bedford human growth, along with restriction of the harbor by the construction of a hurricane barrier in 1964-1966 have led to increased siltation of the harbor with sediment rich in organic matter.

18757. New Bedford's industrial activities have lead to contamination of the Acushnet Estuary with metals, while its human growth, along with restriction of the harbor

by the construction of a hurricane barrier in 1964-1966 have led to increased siltation of the harbor with sediment rich in organic matter.

18758. According to an article by U. Forstner quoted in Summerhayes (1985), New Bedford Harbor sediments have higher levels of heavy metal contaminations than any other coastal area in the United States.

18759. New Bedford Harbor sediments have higher levels of heavy metal contamination than any other coastal area in the United States.

18760. Summerhayes (1985) reports that previous studies have shown that New Bedford Harbor estuarine sediments contain as much as one percent of copper, chromium, and zinc.

18761. Summerhayes (1985) reports that sewage discharge has greatly added to the organic rich sediment found in New Bedford Harbor.

18762. Sewage discharge has greatly added to the organic rich sediment found in New Bedford Harbor.

18763. Summerhayes (1985) reports that harbor sediment

contained greater concentrations of copper than any other heavy metal analyzed.

18764. Harbor sediment contained greater concentrations of copper than any other heavy metal analyzed.

18765. Summerhayes (1985) reports that copper is most abundant within the harbor and especially near the Coggeshall Street Bridge.

18766. Copper is most abundant within the harbor and especially near the Coggeshall Street Bridge.

18767. Summerhayes (1985) reports that one sample taken from near the Coggeshall Street Bridge had up to 0.8 percent copper.

18768. One sample taken from near the Coggeshall Street Bridge had up to 0.8 percent copper.

18769. Summerhayes (1985) reports that there is a local patch of copper rich sediment outside the harbor on the edge of the spoil area, a past dumping ground for dredgeways from the harbor.

18770. There is a local patch of copper rich sediment outside

the harbor on the edge of the spoil area, a past dumping ground for dredgeways from the harbor.

18771. Unpublished data from the USACOE on surface and subsurface mud samples taken from 15 cores collected along a transect from the harbor down [illegible] igation channel, show that heavy metals are [illegible] abundant in the harbor, with concentrations decreas[illegible] downstream away from peaks near the New Bedford-Fairhaven Bridge.

18772. Peak abundances of metals from the USACOE sampling are shown in Table 5A; sample locations are shown in Figure 24.

18773. Summerhayes (1985) reports that metals were usually more abundant in surface samples than in subsurface samples (taken from 30-35 cm deep in cores).

18774. Summerhayes (1985) reports that DWPC data (1971, 1975) confirms that harbor sediments were enriched with metals, with the most metal being detected at the head of the harbor near the Coggeshall Street Bridge.

18775. DWPC data (1971, 1975) confirms that harbor sediments were enriched with metals, with the most metal being detected at the head of the harbor near the Coggeshall

Street Bridge.

18776. Summerhayes (1985) reports that the most significant metal contamination exists in samples from close to the western bank, indicating that the point source for metals lies on the western bank near the Revere Copper and Brass factory.

18777. The most significant metal contamination exists in samples from close to the western bank, indicating that the point source for metals lies on the western bank near the Revere Copper and Brass factory.

18778. Summerhayes (1985) reports that large amounts of metal have been discharged into the harbor, including mainly copper, chromium, lead, and zinc with lesser amounts of other metals.

18779. Large amounts of metals have been discharged into the harbor, including mainly copper, chromium, lead, and zinc with lesser amounts of other metals.

18780. Summerhayes (1985) reports that the main source of metals is on the west bank of the harbor by the Coggeshall Street Bridge, near the Revere Copper and Brass plant.

18781. The main source of metals is on the west bank of the harbor by the Coggeshall Street Bridge, near the Revere Copper and Brass plant.

18782. Summerhayes (1985) reports that copper, chromium and zinc combined form more than one percent of the sediment near the Revere Copper and Brass plant.

18783. Copper, chromium and zinc combined form more than one percent of the sediment near the Revere Copper and Brass plant.

18784. Metal abundance decreases exponentially seaward, away from the harbor.

18785. Summerhayes (1985) reports that the seawards movement of metal-enriched clay has lead to heavy metal contamination of the top 20 centimeters of sediments in the middle of Buzzards Bay.

18786. Summerhayes (1985) reports the following conclusion which is true and correct: The harbor sediments are rich in metals, especially Cu, Cr, Zn, and Pb, which are extremely abundant near industrial plants on the west bank near the head of the harbor. 18787. Ag, As, and

Hg are also present in these sediments, though their absolute abundances are low compared with Cu.

18788. Like many other estuaries with moderate to low river discharge, the Acushnet estuary is a sediment trap gradually being filled with silt transported landward from the continental shelf.

18789. Because flood tide currents are stronger than ebb tide ones, silt and clay tend to be fractionated from one another, with silt accumulating preferentially in the harbor, leaving clay enriched in the bay. The harbor is an imperfect trap for clay.

18790. Sediment movement takes place in suspension in a near-bottom mobile carpet rich in clay and organic matter.

18791. Siltation of that part of the estuary forming the harbor has increased since construction of the hurricane barrier across the harbor entrance.

18792. Attachment Q.VIII.e.154 is a true and accurate copy of an article entitled, "Copper and Other Heavy Metal Contamination in Sediments from New Bedford Harbor, Massachusetts: A Preliminary Note," published in Environmental Science and Technology, August 1987, by P.

Stoffers, C. Summerhayes, U. Forstner, and S. Patchineelam.

18793. Attachment Q.VIII.e.154 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to a duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

18794. Attachment Q.VIII.e.154 is a business record, which was prepared and received and kept in the ordinary course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by a person with knowledge of such activity.

18795. The clay fraction of bottom sediments near the head of New Bedford Harbor, Massachusetts, contains more than 1 percent of copper, chromium, and zinc combined.

18796. According to Stoffers (1977) (1979) heavy metals and other industrial waste have been discharged into the harbor for the past 80 years.

18797. Heavy metals and other industrial waste have been discharged into the harbor over the past 80 years.

18798. According to Stoffers (1977) heavy metals are located mainly in the clay fraction of the sediments, and their concentrations warrant consideration of their recycling potential.

18799. Metal concentrations decrease exponentially seaward into Buzzards Bay, where surface sediments contain three times as much copper (the main contaminant) as buried sediment.

18800. According to Summerhayes (1979) marine sediment from bays and estuaries near large industrial and urban areas are typically contaminated with heavy metals like copper, lead, zinc, chromium, and cadmium, which may be present in amounts 5-10 times higher than they were 50-100 years ago.

18801. According to Stoffers (1977) most of the recent concentration of metals is due to discharge of industrial waste into the sea.

18802. During a study of sediment dispersal in the Massachusetts coastal zone, it was found that the bottom

sediments of New Bedford Harbor and in the Acushent River Estuary contained large amounts of heavy metals and it appears that these have an industrial source.

18803. According to Stoffers (1977) the history of waste metal accumulation in New Bedford Harbor sediment covers a period of about 80 years, which is in agreement with the known history of copper discharged from industrial plants in the area.

18804. According to Stoffers (1977) contamination of New Bedford Harbor bottom sediments by copper and associated elements is similar to those reported for marine sediments in mining districts rather than industrial areas.

18805. The amounts of metal in New Bedford Harbor sediment are sufficiently high to raise the possibility that they may be profitably extracted by some recycling process.

18806. Calculations suggest that there are about 3,500 metric tons of copper, chromium and zinc in New Bedford Harbor muds.

18807. According to Stoffers (1977) the possible value of metal deposits in New Bedford Harbor, at current market values

is about $5 million.

18808. Attachment Q.VIII.e.155 is a true and accurate copy of the original article by C. Summerhayes, J. Ellis, P. Stoffers, S. Briggs, and M. Fitzgerald entitled "Fine Grained Sediment and Industrial Waste Distribution and Dispersal in New Bedford Harbor and Western Buzzards Bay, Massachusetts," dated April 1977 and is a technical report the Office of Sea Grant and is genuine prepared for the Department of Commerce, National Oceanic and Atmospheric Administration (herein referred to as Summerhayes (WHOI 1977).

18809. Attachment Q.VIII.e.155 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to a duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

18810. Attachment Q.VIII.e.155 is a business record, which was prepared and received and kept in the ordinary course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by

a person with knowledge of such activity.

18811. Attachment Q.VIII.e.155 is a learned treatise, established as a reliable authority by experts in the field.

18812. Attachment Q.VIII.e.155 is an unpublished manuscript.

18813. Human and industrial waste discharged into the inner harbor and Acushnet River have caused its waters to be highly polluted.

18814. Construction of a hurricane barrier which restricts tidal flow may in part be part of the problem of the pollution of the New Bedford Inner Harbor.

18815. The Massachusetts Division of Water Pollution Control (1975) and the New England Division of the U. S. Army Corps of Engineers (unpublished data) found that the bottom sediments of the inner harbor's navigation channel contain large amounts of heavy metals, oil, and grease.

18816. Pollution of New Bedford Harbor sediments is suggested by the oil and grease content.

18817. Silts within the harbor are reported to contain at least 10 and up to 80 times more oil and grease than Buzzards Bay sediments.

18818. Attachment Q.VIII.e.155 reports that pollution is chronic at the head of the harbor, where oil and grease form more than 1 percent of the dry weight of sediment.

18819. Pollution is chronic at the head of the harbor, where oil and grease form more than 1 percent of the dry weight of sediment.

18820. Summerhayes (WHOI, 1977) reports that metals, oil, grease, and organic nitrogen were found to be more abundant in silts than sand.

18821. Summerhayes (WHOI, 1977) reports that metals were found in higher concentrations in surface than in subsurface samples.

18822. Summerhayes (WHOI, 1977) reports that New Bedford Harbor metals levels are far higher than in average shales, deep sea clays, unpolluted coastal inlands, and diagenetically enriched sediment, but are similar to levels typical of mining districts, or areas of industrial contamination.

18823. Sediments in New Bedford Harbor contain substantial quantities of metal, particularly copper.

18824. For marine sediments massive increases in silver, cadmium, chromium, copper, lead and zinc are thought to be caused by the introduction of industrial waste.

18825. Summerhayes (WHOI, 1977) reports that copper is the main waste metal found in harbor sediments.

18826. Copper is the main waste metal found in harbor sediments.

18827. Summerhayes (WHOI, 1977) reports that elevated copper levels found in sediment next to the West Island dredge spoil disposal area were believed to be from dredging of New Bedford Harbor.

18828. Summerhayes (WHOI, 1977) reports that there are very large amounts of metal in the sediments of New Bedford Harbor.

18829. Summerhayes (WHOI, 1977) reports that the most abundant metal in New Bedford Harbor sediment is copper, with substantial amounts of chromium, zinc, and lead.

18830. Summerhayes (WHOI, 1977) reports that elements such as silver, arsenic, cadmium, and mercury are also found in New Bedford Harbor sediment with respect to background levels, although together these elements total less than about 100 ppm.

18831. Summerhayes (WHOI, 1977) reports that metal is most abundant on the west bank, near the head of the harbor, where industrial plants have been discharging in partuclar, substantial amounts of copper for at least 80 years.

18832. Summerhayes (WHOI, 1977) reports that copper, chromium and zinc combined form more than 1 percent of dry sediment weight near the west bank of the head of New Bedford Harbor.

18833. Summerhayes (WHOI, 1977) reports that according to available EPA records, the average discharge of copper into New Bedford Harbor in recent years has been approximately 90 kilograms per day.

18834. According to available EPA records, the average discharge of copper into New Bedford Harbor in recent years has been about 90 kilograms per day.

18835. If one were to assume that the discharge rate for the past 80 years has averaged 45 kilograms per day, then New Bedford Harbor should contain 1.4 x 106 kilograms of copper.

18836. Summerhayes (WHOI, 1977) reports that if the harbor had not been dredged in the 1930s and 1950s the carpet of metalliferous sediment would be about twice as thick as it is now, and would contain twice as much metal.

18837. Summerhayes (WHOI, 1977) reports that in Buzzards Bay, only the top 20 centimeters of the sediment is enriched with copper that is probably anthropogenic, as is the case in other areas where such enrichment occurs.

18838. Summerhayes (WHOI, 1977) reports that large quantities of potentially toxic metals have been discharged into the New Bedford Harbor area including copper, chromium, lead, and zinc, with lesser amounts of arsenic, silver, cadmium, and mercury.

18839. Summerhayes (WHOI, 1977) reports that metals rapidly become part of the bottom sediment, particularly the clay fraction, and, for the most part, remain within the confines of the harbor.

18840. Summerhayes (WHOI, 1977) reports that metalliferous sediment is found only at or near the surface and is, therefore, clearly of recent input, dating back a maximum of 100 years.

18841. Summerhayes (WHOI, 1977) reports that the major source of metal discharge was found to be on the harbor's west bank, between the Coggeshall and New Bedford-Fairhaven Bridges.

18842. Summerhayes (WHOI, 1977) reports that metal concentrations in the harbor are sufficiently high to warrant consideration of their recycling potential.

18843. Metal concentrations in the harbor are sufficiently high to warrant consideration of their recycling potential.

18844. Summerhayes (WHOI, 1977) reports the following conclusions which are true and correct:

18845. a) The construction of a hurricane barrier has caused a significant increase in the sedimentation rate in New Bedford Harbor.

18846. b) The harbor acts as an imperfect trap for materials

that are introduced into it, thereby allowing the transfer of industrial contamination to Buzzards Bay.

18847. c) The surface and near surface sediments of New Bedford Harbor are highly enriched in metals and these metals were from local sources.

18848. Attachment Q.VIII.e.156 is a true and accurate copy of an article entitled "Heavy Metals in Mercenaria mercenaria and Sediments from the New Bedford Harbor Region of Buzzard's Bay, Massachusetts" published in Bulletin of Environmental Contamination Toxicology, Volume 26, 1981, and was authored by P. Genest and W. Hatch (herein referred to as Genest (1981)).

18849. Attachment Q.VIII.e.156 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to a duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

18850. Attachment Q.VIII.e.156 is a learned treatise, established as a reliable authority by experts in the field.

18851. Information reported in Genest (1981) is true.

18852. A wide variety of metals can accumulate in the marine environment.

18853. Although the concentration of heavy metals may be extremely variable, some marine ecosystems contain metal levels indicative of contamination from anthoroprogenic sources.

18854. Genest (1981) addresses a study of the metal accumulation in one edible clam, the Mercenaria.

18855. The bivalve, Mercenaria, is essential and thus indicative of local metal distribution.

18856. Genest (1981) states that Mercenaria inhabit benthic sediments which accumulate heavy metals (Phillips, 1977).

18857. Genest (1981) states that Mercenaria are microphageous and ingest sediment containing metals (Pringle et al, 1968).

18858. Genest (1981) states that Mercenaria are significant in

both commercial and recreational fisheries.

18859. Mercenaria and sediments from the New Bedford region were analyzed for cadmium, copper, iron, lead and zinc to investigate some of the relationships bet[illegible] environmental and organismal metals le[illegible] 1978 and 1979.

18860. For this study, six individuals of the common quahog M. Mercinaria and one sediment sample of the top few millimeters of substratum where collected at each of three sites.

18861. The locations from which samples were collected were Angelica Point, Mattapoisett, Mattapoisett Neck and West Island, Fairhaven, Massachusetts.

18862. All sites studied were located east of New Bedford Harbor.

18863. Shucked hole clams were analyzed.

18864. Samples were collected the first weekend of every month from April 1978 through March 1979.

18865. It was reported that metal concentrations in sediments

at each site showed little variation over time.

18866. According to Hatch, a high degree of correlation between all metals in the sediments was observed.

18867. Genest (1981) reported that the sediment concentration of metals was of the same order of magnitude as those seen in a previous study by Summerhayes et al. (1978).

18868. The industrialized region surrounding New Bedford Harbor was reported as a potential major source of observed metals.

18869. Genest (1981) reported that the metal concentrations in the sediment at each site showed little variation over time.

18870. Sediment metals concentrations may be a reliable indicator of heavy metal contamination.

18871. A strong relationship was present between sediment and tissue metal concentrations.

18872. Genest (1981) reported that Mercenaria tissue levels are at least partially dependent on sediment metal concentrations.

18873. Genest (1981) reported that additional inputs or increases in existing inputs of metals may raise metal concentrations to toxic levels.

18874. According to Genest (1981) dredging activities are likely to increase the amounts of metals available to local biota due to increased sediment suspension.

18875. Dredging activities can increase the availability of metals to local biota.

18876. Dredging activities can increase the uptake of metals in biota.

18877. Attachment Q.VIII.e.156 is a true and accurate copy of an original article entitled "Water Pollution - A Case History" by James G. Hoff, published in The Science Teacher, Vol. 38, No. 1, January 1971. (herein referred to as Hoff (1971)).

18878. Attachment Q.VIII.e.156 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to a duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to

authority granted by law.

18879. Hoff (1971) is a learned treatise, established as a reliable authority by experts in the field.

18880. Information in Hoff (1971) is true.

18881. Hoff (1971) reports that New Bedford is beset with varied domestic and industrial pollution problems.

18882. Hoff (1971) reports that untreated wastes of approximately 200,000 people enter the watershed daily.

18883. Hoff (1971) reports that three sampling stations within the harbor were grossly polluted and do not meet Massachusetts Division of Water Pollution Control lowest acceptable water classification (SB) acceptable for bathing and recreational purposes.

18884. Hoff (1971) reports that the BOD values in the Acushnet River are extremely high.

18885. Hoff (1971) reports that some of the upriver BOD values are comparable to raw sewage influent concentrations.

18886. Attachment Q.VIII.e.158 is a true and accurate copy of

Buzzards Bay, Massachusetts" by J. Robert Moore, published in the Journal of Sedimentary Petrology, Vol. 33, No. 3, September 1963 (herein referred to as Moore (1963)).

18887. Information in Moore (1963) is true.

18888. Moore (1963) reports that Buzzards Bay sediments are relatively uncontaminated.

19000 Dr. Walmsley resides at 78 Hedge Street in the Town of Fairhaven.

19001 Dr. Walmsley is a doctor of veterinarian medicine.

19002 Dr. Walmsley graduated from Ohio State University College of Veterinarian Medicine.

19003 Dr. Walmsley is now a retired veterinarian.

19004 Dr. Walmsley has been a member of The Board of Health of the town of Fairhaven for the past 20 years.

19005 Dr. Walmsley is a member of the Town of Fairhaven's Council For The Aging and the Solid Waste Disposal Commission.

19006 Dr. Walmsley has lived in the town of Fairhaven for over 70 years.

19007 Dr. Walmsley's lifelong experiences qualify him as a historian of the Town of Fairhaven.

19008 Dr. Walmsley is a recreational boater.

19009 Dr. Walmsley has been a recreational boater in the New Bedford Harbor area for about 60 years.

19010 Dr. Walmsley has observed that more people are recreationally and commercially boating in the area than ever before.

19011 More people are recreationally and commercially boating in the area than ever before.

19012 Dr. Walmsley is a recreational fisher.

19013 Dr. Walmsley has been a recreational fisher in the New Bedford Harbor area for about 60 years.

19014 Dr. Walmsley has often fished in the outer harbor, in Buzzards Bay and Vineyard Sound.

19015 Dr. Walmsley has observed that for at least as long as he can remember, back over 60 years, no recreational fishing has occurred in the inner harbor, from the Hurricane dike northward.

19016 No recreational fishing has occurred in the inner harbor, from the Hurricane dike northward over the last 60 years.

19017 Dr. Walmsley has fished in the New Bedford Harbor area waters for the last 60 years.

19018 Dr. Walmsley has observed that more people are recreationally fishing in the New Bedford Harbor area than ever before.

19019 More people are recreationally fishing in the New Bedford Harbor area than ever before.

19020 Dr. Walmsley has used New Bedford area beaches and swam in area waters since his childhood.

19021 Dr. Walmsley has not observed anyone swimming in the inner harbor regularly since long before PCBs were first alleged to exist in the area.

19022 No recreational swimming has ever regularly occurred in the inner harbor since long before PCBs were first alleged to exist in the area.

19023 Parking facilities at the town beach are overcrowded.

19024 Parking facilities at the town beaches are limited.

19025 People in the New Bedford Harbor area are aware of crowded parking at town beaches.

19026 People in the New Bedford Harbor area are aware of crowded beaches.

19027 Dr. Walmsley believes that this summer he will be recreationally fishing, boating and swimming in area waters, after recovering from surgery.

19028 Dr. Walmsley's recreational swimming, boating or fishing has been affected in any way by allegations of PCBs in area waters.

19029 According to Dr. Walmsley, there has always been non-PCB pollution in the inner harbor, including oil and sewage pollution.

19030 The citizens of the New Bedford Harbor area have long recognized that the inner harbor is polluted by oil and sewage.

19031 The citizens of the New Bedford Harbor area have long recognized the industrial and commercial nature of the inner harbor.

19032 The citizens of the New Bedford Harbor area have used the inner harbor as a commercial and industrial center since at least the 1800's.

19033 The citizens of the New Bedford Harbor area have recognized that pollution from sewage and oil has affected the inner harbor since at least the 1800's.

19034 The citizens of the New Beford Harbor area have been aware of sewage and oil pollution in the inner harbor for as long as Dr. Walmsley can remember.

19035 The citizens of the New Bedford Harbor area have not used the Acushnet River for recreational amenities, such as swimming, boating or fishing, during Dr. Walmsley's lifetime.

19036 The citizens of the New Bedford Harbor area have been aware that the inner harbor has been primarily devoted to industrial uses, not recreational uses, since the 1800's.

19037 Oil pollution has existed in the Acushnet River for as long as Dr. Walmsley can remember.

19038 Oil has regularly polluted the river and harbor from discharges from the commercial fishing and shipping industry.

19039 New Bedford Harbor is a deep water port used for recreational boating, passenger shipping, oil tank farms, oil shipping, and the fishing fleet.

19040 Oil from bilge and holding tank dumping has always existed from the commercial fishing fleet, oil shipping, recreational boaters and passenger shipping.

19041 In the 19th century New Bedford Harbor had the largest whaling industry in the world.

19042 The New Bedford Harbor area was the largest whaling port in the world from the middle 1800's until the early 1900's.

19043 The City of New Bedford and the Town of Fairhaven areas were once known as the largest whaling port in the world.

19044 Whale oil was regularly processed in the New Bedford Harbor area, both in New Bedford and Fairhaven.

19045 Whale bones were brought into the New Bedford Harbor

area.

19046 The whale oil industry has existed in the Town of Fairhaven since the 1800's.

19047 William F. Nye, Inc., has processed and sold whale and other types of oil in the Town of Fairhaven since the 1800's.

19048 Hadler Stack has operated an industry in Fairhaven producing nails, buttons and shoes for many years.

19049 Industry such as paint factories existed since the 1800's in the Town of Fairhaven.

19050 One paint factory in the Town of Fairhaven during the 1800s was located at the corner of Washington Street and Main Street.

19051 Nineteenth century industry in the Town of Fairhaven included barrel making.

19052 Shipyards have existed in the Town of Fairhaven since the 1800s.

19053 The Town of Fairhaven housed a thread factory in the nineteenth and twentieth centuries.

19054 The preparation of lubricating oils is still ongoing in Fairhaven, including by William F. Nye, Inc.

19055 Industry manufacturing and processing whale oil and fine lubricating oils is located in the vicinity of Hallen Road along the river.

19056 Every factory and mill in New Bedford originally had a sewer line running directly into the river throughout the 19th and early 20th centuries.

19057 All waste from New Bedford and Fairhaven industries was either pumped directly into the river, or reached the river through the sewer system.

19058 Dr. Walmsley, personally and in his capacity as a member of the Board of Health of the Town of Fairhaven, has observed evidence of pollution from sewage in the Town of Fairhaven.

19059 Dr. Walmsley acted as the representative of the Board of Health in checking the beach in June, 1984 for fecal contamination.

19060 In June, 1984, and at other times, Dr. Walmsley

observed fecal waste, used condoms and tampon applicators on area beaches.

19061 In June, 1984, and at other times, Dr. Walmsley has noticed a distinct fecal odor at area beaches.

19062 Dr. Walmsley caused the beaches in the Town of Fairhaven to be closed for a week in June, 1984 due to pollution.

19063 Complaints are made to the Town of Fairhaven's Board of Health every summer concerning fecal odor at area beaches.

19064 According to Dr. Walmsley, sewage pollution at Town of Fairhaven beaches comes from the New Bedford Wastewater Treatment Plant.

19065 Dr. Walmsley has observed that coliform counts are always a little higher on the west side of Wilbur Point at the extreme southwest end of Fairhaven, the area the closest to the sewer outfall of New Bedford.

19066 Complaints of odors to the Board of Health are usually received several times every summer.

19067 When there are complaints of odor at Town of Fairhaven beaches, usually more than one person will complain of that odor on a given day.

19068 Attachment Q.VIII.e.0159 is a true and accurate copy of the reports of beach coliform testing data done by or for the Town of Fairhaven, from 1978-1989.

19069 Attachment Q.VIII.e.0159 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

19070 Attachment Q.VIII.e.0159 is a business record, which was prepared and received and kept in the ordinary course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by a person with knowledge of such activity.

19071 The information contained in Attachment Q.VIII.e.0159 is true.

19072 Attachment Q.VIII.e.0160 is a true and accurate copy of

Massachusetts Department of Marine Fishery reports sent to the Board of Health of the Town of Fairhaven.

19073 Attachment Q.VIII.e.0160 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

19074 Attachment Q.VIII.e.0160 is a business record, which was prepared and received and kept in the ordinary course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by a person with knowledge of such activity.

19075 The information contained in Attachment Q.VIII.e.0160 is true.

19076 Attachment Q.VIII.e.0161 is a true and accurate copy of a letter dated May 30, 1989, reporting the closure of shellfish area in Fairhaven due to a sewerage accident, marked as Town of Fairhaven Deposition Exhibit No. 15.

19077 Attachment Q.VIII.e.0161 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

19078 Attachment Q.VIII.e.0161 is a business record, which was prepared and received and kept in the ordinary course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by a person with knowledge of such activity.

19079 The information contained in Attachment Q.VIII.e.0161 is true.

19080 Dr. Walmsley has noticed that hard waste such as plastics, condoms and tampon applicators, generally come out as part of the sewage discharge.

19081 Dr. Walmsley has personally observed actual stool and

paper waste washed up on the shores of the Town of Fairhaven.

19082 The sewage contamination in the New Bedford Harbor area is frequently more noticeable after a rainfall.

19083 Coliform counts in the New Bedford Harbor area are usually higher on warm weekends with a high concentration of boat use.

19084 Coliform counts rise due to sewage pollution.

19085 The City of New Bedford has a problem controlling industrial waste pollution, including sewage pollution.

19086 The City of New Bedford has a problem controlling sewage pollution because after a rain storm, rainwater as well as sewage flows into a common sewer.

19087 New Bedford's combined sewer overflow system operates such that after a rain storm rain water merges with sewage in a common sewer system that flows directly into the inner harbor, bypassing primary treatment at the City of New Bedford's Waste Water Treatment Plant.

19088 The City of New Bedford's combined sewer overflow system spills untreated sewage waste into the inner harbor.

19089 The City of New Bedford's combined sewer overflow system often results in the discharge of untreated sewage waste to the inner harbor.

19090 The City of New Bedford's combined sewer overflow system results in untreated sewage waste flowing directly into the inner harbor after all rainfalls.

19091 The combined sewer overflow system in the City of New Bedford results in untreated sewage going directly into the inner harbor area after most rainfalls.

19092 The combined sewer overflow system in the City of New Bedford results in untreated sewage going directly into the inner harbor area after certain rainfalls.

19093 The combined sewer overflow system in the City of New Bedford results in untreated sewage waste going directly into a common sewer which empties into the water near Fort Rodman Beach.

19094 The City of New Bedford's combined sewer overflow system results in spills of untreated sewage waste in the vicinity of Clarks Cove.

19095 The City of New Bedford's combined sewer overflow system results in spillage of untreated waste directly into the Acushnet River.

19096 Prior to the construction of the Fairhaven sewage treatment plant, the Fairhaven sewage system consisted of an outfall pipe system leading directly to the inner Harbor. All sewage waste was discharged into the inner harbor without any primary or secondary treatment.

19097 Until at least the 1960's, all raw sewage in the Town of Fairhaven was pumped directly to the inner Harbor.

19098 There are a large number of commercial and recreational boats docked and moored in the Town of Fairhaven.

19099 There have been commercial and recreational boats docked in the Town of Fairhaven for as long as Dr. Walmsley can remember.

19100 It was common practice in the New Bedford Harbor area for many years to discharge the waste in bilges and holding tanks directly into the area waters.

19101 Bilge tank pump-outs have been a common practice in the area of New Bedford.

19102 Bilge tank pump-outs have been a common practice in the area of New Bedford for as long as Dr. Walmsley can remember.

19103 Until recent years bilge tank pump-outs were a common practice in the Town of Fairhaven area waters for as long as Dr. Walmsley can remember.

19104 Bilge tank pump-outs are commonly contaminated with oil.

19105 Bilge tank pump-outs are commonly contaminated with hydro-carbons.

19106 Bilge tank pump-outs are commonly contaminated with oil and hydro-carbons.

19107 Public awareness in the New Bedford Harbor area of pollution due to bilge dumping has only increased in very recent years.

19108 Bilge dumping is still occurring in the New Bedford Harbor area.

19109 Bilge pump-outs violate Town of Fairhaven by-laws.

19110 New, additional by-laws have been proposed to regulate bilge pump-outs in the Town of Fairhaven.

19111 The Board of Health of the Town of Fairhaven is unable to police bilge pump-outs.

19112 The Board of Health has been unable to police bilge pump-outs from area boats because the Board of Health has no boat.

19113 A natural resource officer of the Town of Fairhaven has issued cease and desist orders in order to contain spills from bilge pump-outs.

19114 The natural resource officer for the Town of Fairhaven has worked with the Coast Guard concerning past pollution due to bilge tank pump-outs.

19115 Dr. Walmsley believes that the most knowledgeable resource besides himself, of historical conditions of pollution in the inner Harbor, is Dr. Philip T. Gidley.

19116 Dr. Walmsley also considers that Mr. Leonard V. Hathaway is a longtime area resident with a great wealth of information concerning baseline pollution conditions.

19117 Patricia Fowle is an expert in the field of pollution control for the Town of Fairhaven.

19118 In the past, dumps have been located in the Town of Fairhaven on the edge of the inner Harbor.

19119 Dumps have existed on the river edge in the Town of Fairhaven at the end of every street bordering the inner Harbor area.

19120 For at least the last 50 years, dumps have existed at the end of streets bordering the river in the Town of Fairhaven, where people dumped their waste, including waste from heating systems, tin cans and ash.

19121 There was a dump at the bottom of Hedge and Tailor Streets in the Town of Fairhaven for over 50 years.

19122 There was a dump near Douglas Stack in the Town of Fairhaven.

19123 Tin cans and ash were commonly disposed of in each of the Town of Fairhaven dumps on the inner Harbor.

19124 Streets in Fairhaven were made out of cinders fifty or sixty years ago.

19125 It was common practice in the Town of Fairhaven to use cinders as a base to lay a street.

19126 When it rained cinders would run into the drain and into the inner Harbor.

19127 There have been similar dumps on the inner Harbor at the end of the streets in New Bedford.

19128 Rainfall has regularly washed cinders and ashes from dumps into the inner Harbor.

19129 Shellfish beds in the New Bedford Harbor area have been closed due to coliform counts in excess of safety levels established by the state.

19130 Shellfish closures due to coliform counts in excess of safety levels in the Town of Fairhaven have occurred for as long as Dr. Walmsley can remember.

19131 Dr. Walmsley is aware of the deaths of fishermen due to eating shellfish contaminated by bacteria from sewage pollution.

19132 So-called "tar balls" have been viewed at the area beaches.

19133 Such "tar balls" are not tar but organic fats which picked up dyes from area sewage pollution and then washed up on area beaches.

19134 "Tar balls" leave a greasy greenish black stain.

19135 Such "tar balls" leave a greasy greenish black stain on people who visit the beaches in the town of Fairhaven.

19136 Dr. Walmsley has personally observed "tar balls" washing up on area beaches.

19137 Problems with "tar balls" at area beaches have existed for at least 20 years.

19138 Dr. Walmsley remembers coming home as a child with smears of oil on him after swimming in the inner Harbor.

19139 Impetigo is a common summer complaint in the town of Fairhaven.

19140 Dr. Walmsley commonly receives complaints of impetigo during the summer as a member of the Board of Health of the town of Fairhaven.

19141 Dr. Walmsley remembers his parents knowing that he had gone swimming in the inner Harbor because he would come home with smears of oil on him.

19142 Dr. Walmsley's parents did not want him to swim in the inner Harbor.

19143 The citizens in the New Bedford Harbor area are aware of "tar balls".

19144 The citizens in the New Bedford Harbor area are aware of impetigo.

19145 The citizens in the New Bedford Harbor area are aware of oil in the water.

19146 The citizens in the New Bedford Harbor area are aware of bacterial contamination due to sewage pollution.

19147 Patricia Fowle is the Sanitarian in the Department of Public Health for the Town of Fairhaven.

19148 Patricia Fowle has been the Sanitarian for the Town of Fairhaven since 1981.

19149 Patricia Fowle's responsibilities as a sanitarian and health agent for the Town of Fairhaven include but are not limited to investigating and reporting to the Town Board of Health concerning water pollution control, public health complaints, waste disposal, and, specifically, to test area waters for coliform counts and recommend closure of area beaches.

19150 Patricia Fowle is an expert with regard to the above-described duties of Town Sanitarian.

19151 Patricia Fowle is registered by the state as a Sanitarian.

19152 Patricia Fowle is a health officer registered by the state.

19153 Patricia Fowle is a trained medical technologist.

19154 Patricia Fowle is a registered medical technologist with the American Society of Clinical Pathologists ("ASCP").

19155 Patricia Fowle has a Bachelor of Science Degree in Medical Technology from Southeastern Massachusetts University.

19156 Patricia Fowle is an expert in the field of coliform testing.

19157 Patricia Fowle has been approved by the state to conduct coliform testing.

19158 Patricia Fowle tests for coliform counts in the area's swimming water for the Town of Fairhaven.

19159 Tests of swimming waters in the Town of Fairhaven are conducted every two weeks from May to September.

19160 Patricia Fowle takes samples, runs them through the lab, and reports sample results to the Board of Health of the Town of Fairhaven.

19161 Town of Fairhaven beaches were closed from June 13 to June 19, 1984 due to sewage pollution.

19162 On June 1, 1984, a strong foul odor existed permeating a stretch of Fairhaven from Turner Avenue across K-Mart Plaza and over to Dunkin Donuts. Two residents of Turner Avenue requested the Board of Health to investigate the area for possible subsurface sewage disposal overflow; no pollution was noted on inspection. Dr. Walmsley of the Board of Health suggested spreading of manure in the area could be the cause. Mr. Rose, secretary for the Board of Health, checked with the Fairhaven DPW to see if the Town of Fairhaven's Sewer Treatment Plant was functioning well. Mr. Osuch of the DPW said the Plant was fine, but he had heard, though not officially, that the New Bedford Ft. Rodman Treatment Plant had a problem with one of the tanks and it was currently under repair.

19163 On June 6, 1984 thru June 8, 1984, phone complaints from Red Rock Beach, East Allen Street and along Priest's Cove of foul odor persisted. Boaters along Winsegansett and Wilbur's Point complained of seeing solids in the waters off shore.

19164 On June 11, 1984, phone complaints continued from residents along Manhattan Avenue, Bayview Avenue and Highland Avenue. Mrs. Skidmore, speaking for her parents who reside at 41 Bayview Avenue, called to say the water along the shore was "brown, mucky and foul smellling". Dr. Walmsley and Board of Selectment Chairman, Robert Foster did a sanitary survey of the Priest's Cove beaches. Both reported debris on the shores and that the water itself was very murky, foul smelling and had a thick brown algae growth along the shore. This type of wash up had not occurred on the town's beaches before. Dr. Walmsley requested that beach sampling be done on the Priest's Cove area on

Tuesday, June 12 at the Board of Health water lab for total coliform.

19165 On June 12, 1984, four samples gathered by Dr. Walmsley from the Priest's Cove beaches were analyzed in the Board of Health laboratory.

19166 One June 13, 1984, samples read in the lab from June 12, 1984 and results were reported to the full Board of Selectmen of the Town of Fairhaven at a regular meeting which was already in progress. (See lab report #1 6/12/84). The Board requested the Sanitarian to call DEQE and speak with Paul Anderson for his recommendations. Mr. Anderson said the decision to close the beaches must come from the Board of Health but that Mr. Anderson felt there was justification for the beach closings. Mr. Anderson suggested the Board daily test the closed area until the total coliform counts were below 1000 coliform colonies/100 ml of sample. Mr. Anderson states the New Bedford Belleville Station had been down but will be back on line as of 10:30 a.m. today and that he could not believe that the contamination was from the Bellville Station which is inside the dike. The Board's reaction was that there is pollution on the shores and regardless of where it came from or how it arrived, it must be dealt with by the Board in the best interests for the health and well being of Fairhaven's residents. The Board closed beaches along the west side of Sconticut Neck Road from James Street to Wilbur's Point until the total coliform counts were within what the Board feels are acceptable ranges. The acceptable ranges were to be determined by 1983's beach testing performed over the summer months and by the same Board of Health laboratory. Also, all beaches would be opened uniformly, that is, when all closed beaches tested within expected ranges then all beaches would be opened at one time. Notices called and later followed up with written statement to local newspapers and radio stations.

19167 Mr. Hanigan of the Ft. Phoenix State Beach was notified of the Board's decision to close the beaches. He reported he would speak with his regional office for their decision on whether or not to close the state beach. Ft. Phoenix State Beach was closed for swimming.

19168 In follow-up phone calls from DEQE, the Board was told that if the contamination was caused by a sewage spill it should clear in approximately ten tides. Area residents who reside along the closed beaches should be informed to clean the shorelines in front of their property and dispose of the matter properly.

19169 The Board began beach sampling on Thursday, June 14,

1984.

19170 On June 13, 1984, PM, the local newspaper, The New Bedford Standard Times, reported that a 150 lb. grease ball had been found blocking one of the lines to the New Bedford Ft. Rodman Treatment Plant causing raw sewage to spill into the bay.

19171 In June, 1984, a 150 lb grease ball was found blocking one of the lines to the New Bedford Fort Rodman Treatment Plant causing raw sewage to spill into the bay and the beaches to be closed.

19172 On June 14, 1984, 15 beach samples were taken and analyzed by Board of Health water laboratory. The Board felt all beaches which are routinely checked in summer should be checked now to ascertain their cleanliness.

19173 On June 15, 1984, samples were read from 6/14/84. (See lab report #2) Results were reported to all Board members. More samples were gathered and analyzed from the same 15 beaches.

19174 On June 16, 1984, samples were read from 6/15/84. (See lab report #3) Results were reported to all Board members. Only seven samples were gathered and analyzed today, as other eight samples taken from still open beaches check out to be within expected ranges.

19175 On June 17, 1984, samples were read from 6/16/84. (See lab report #4) Results were reported to all Board members. All areas were found to be within DEQE set limits for total coliform counts for beaches. However, the Board unanimously feels for safety sake the town has everything to gain by keeping the beaches closed at least until one more sampling can be taken on Monday 6/18/84. By then all closed beaches would test within the total coliform ranges expected.

19176 On June 18, 1984, 15 beaches were sampled and analzed.

19177 On June 19, 1984, samples were read from 6/18/84. (See lab report #5). Results were reported to all Board members. Results found for all beaches to be within the expected ranges. The Board voted to open all beaches. The DEQE, Board of Selectmen, Fairhaven DPW, Ft. Phoenix, local newspapers and radio stations were notified.

19178 Attachment Q.VIII.e.0162 is a true and accurate copy of the Notice of the Town of Fairhaven Board of Health dated July 3, 1984, from Patricia Fowle, regarding Fairhaven Beach closings June 13, 1984 thru June 19, 1984.

19179 Attachment Q.VIII.e.0162 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

19180 Attachment Q.VIII.e.0162 is a business record, which was prepared and received and kept in the ordinary course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by a person with knowledge of such activity.

19181 Shellfish beds in the Town of Fairhaven waters have been closed due to coliform counts.

19182 The Board of Health's and Patricia Fowle's understanding and records reveal that shellfish closures occurred at least as early as 1918 in the New Bedford Harbor area.

19183 The Board of Health and Patricia Fowle are aware of fatal cases of botulism in the area caused by the consumption of bacterialogically contamined shellfish.

19184 The Board of Health and Patricia Fowle are aware that fishermen in the Town of Fairhaven have died as a result of eating contaminated shellfish.

19185 There have never been any beach closures in the Town of Fairhaven due to PCBs.

19186 High coliform counts are related to rainfall.

19187 Rainfall causes combined sewer overflows to discharge raw sewage into the area waters.

19188 Single source accidents also result in sewage discharge to New Bedford Harbor area waters.

19189 Patricia Fowle conducted the Shore Walk Program for the Town of Fairhaven in conjunction with the Department of Marine Fisheries.

19190 The Shore Walk covers the coastal area from Wilbur

Point around West Island, around all the coves over to the Mattapoiset line.

19191 The objective of the program is to discover system overflows, chemical overflows and other signs of pollution.

19192 Patricia Fowle observed many instances of septic system overflows.

19193 Septic system overflows commonly exist in the Town of Fairhaven.

19194 A number of pollutants wash up on the Town of Fairhaven shores.

19195 Plastics wash up on the Town of Fairhaven shores.

19196 Fishermen's gloves wash up on the shore in the Town of Fairhaven.

19197 Nets wash up on the shore of the Town of Fairhaven.

19198 Tabs from six-packs wash up on the shore of the Town of Fairhaven.

19199 Plastic caps wash up on the shore of the Town of Fairhaven.

19200 Milk containers wash up on the shore of the Town of Fairhaven.

19201 Plastic holding jugs wash up on the shore of the Town of Fairhaven.

19202 Cups wash up on the shore of the Town of Fairhaven.

19203 These examples of non-biodegradable waste washing up on the shores indicate that bio-degradable waste is also washing up on the shore of the Town of Fairhaven.

19204 Attachment Q.VIII.e.0163 is a true and accurate copy of the reports of the Massachusetts Division of Marine Fisheries concerning the Shore Walk Program conducted by Patricia Fowle.

19205 Attachment Q.VIII.e.0163 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

19206 Attachment Q.VIII.e.0163 is a business record, which was prepared and received and kept in the ordinary

course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by a person with knowledge of such activity.

19207 The information contained in the above-described attachment is true.

19208 The Board of Health of the Town of Fairhaven has changed a Harbor Pollution Control By-law to require heads to be sealed on all vessels in port and that no polluting discharges are allowed in Fairhaven waters.

19209 This Town by-law has been very difficult for the Board of Health to police.

19210 Attachment Q.VIII.e.0164 is a duplicate of the Town of Fairhaven by-law.

19211 Attachment Q.VIII.e.0164 is a public record, setting forth the activities of the office or agency; or matters observed pursuant to duty imposed by law as to which matter there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

19212 Attachment Q.VIII.e.0164 is a business record, which was prepared and received and kept in the ordinary course of business; it was in the ordinary course of business to prepare, keep and maintain such records; and the record was made at or near the time of a regularly conducted business activity by or from information transmitted by a person with knowledge of such activity.

19213 It is true that a by-law in the Town of Fairhaven prohibits the conduct cited in the above Attachment.

19214 A proposed by-law for the Town of Fairhaven would require that pump-out facilities be provided by all marinas, defined as wherever three or more boats are docked, whether drydocked or stored.

19215 This new by-law would affect a large number of areas.

19216 This proposed by-law would require the Board of Health to acquire two additional lengthy by-laws to enforce this boat pump-out Town by-law.

19217 The proposed by-law would require that bilges be regulated by the Board of Health to be controlled.

19218 A new proposed Town by-law is necessary because at this

time the Board of Health has no way to police past, present and future acts of bilge and holding tank dumping.

19219 For many years, the Board of Health in the Town of Fairhaven has received a large number of complaints from marina owners concerning the bilge and holding tank pump-out from area boats.

19220 For many years, the Board of Health in the Town of Fairhaven has also received a large number of complaints from septic haulers concerning bilge and holding tank pump-outs from boats in the area.

19221 For many years, the Board of Health of the Town of Fairhaven has received a large number of complaints from both marina owners and sewage haulers concerning bilge and hold pump-out from area boats.

19222 The Board of Health of the Town of Fairhaven still receives complaints from marina owners concerning bilge and hold pump-out from area boats.

19223 The Board of Health of the Town of Fairhaven still receives complaints form septage haulers concerning bilge and hold pump-out from area boats.

19224 The pump-out of holds from area boats is a common practice.

19225 The waste pumped out from holds on area boats is contaminated with oil.

19226 Patricia Fowle's duties take her to the sewage treatment plant in Fairhaven.

19227 Patricia Fowle has noticed an odor from Fairhaven's sewage treatment plant.

19228 An odor often comes from Fairhaven's sewage treatment plant.

19229 Patricia Fowle has occasionally noticed the odor from Fairhaven's sewage treatment plant.

19230 According to Patricia Fowle, Dr. Walmsley is an excellent source on the history of pollution in the New Bedford Harbor area.

19231 According to Patricia Fowle, Leonard Hathaway is an excellent source on the history of pollution in the New Bedford Harbor area.

19232 According to Patricia Fowle, Dr. Philip Gidley is an excellent source on the historical condition of pollution in the New Bedford Harbor area.

19233 According to Patricia Fowle, Dr. Walmsley is an excellent source on the history of waste disposal practices in the New Bedford Harbor area.

19234 The Town of Fairhaven relies on Dr. Gidley's expertise in pollution control matters.

19235 Patricia Fowle has responsibility for the Town of Fairhaven regarding pollution control matters, and relies on the expertise of Philip T. Gidley concerning pollution control matters.

19236 Patricia Fowle is aware that the assessed values of properties in the Town of Fairhaven dramatically increased in the latest assessment for fiscal year 1990.

19237 The increase in assessed property values for Fiscal Year 1990 was most dramatic for waterfront property.

19238 Patricia Fowle has lived in the Town of Fairhaven for 18 years.

19239 Patricia Fowle has lived in either the City of New Bedford or the Town of Fairhaven all of her life.

19240 Patricia Fowle has gone to the beaches and swam in the area waters at East Beach, Fort Phoenix Beach, and Town Beach since her childhood.

19241 Parking at area beaches is limited.

19242 Sometimes, parking lots at area beaches fill up early in the morning.

19243 At times, Patricia Fowle has had to walk over a mile to get to the beach because parking existed only that far from the beach.

19244 Patricia Fowle considers the Town Beach crowded.

19245 On hot summer days, there are parking problems at the Fairhaven Town Beach.

19246 On hot summer days, there are crowding problems at the Town Beach.

19247 The parking lot at West Beach gets overcrowded on hot, summer days.

19248 Parking at West Beach is always tight.

19249 Parking at West Beach is awfully inadequate.

19250 Patricia Fowle considers the parking at West Beach "awful".

19251 The users of area beaches have been aware of pollution at East Beach for as long as Patricia Fowle can remember.

19252 The users of area beaches have been aware of pollution at West Beach for as long as Patricia Fowle can remember.

19253 The users of area beaches have been aware of pollution at Fort Phoenix Beach for as long as Patricia Fowle can remember.

19254 For over 40 years, the users of area beaches in New Bedford have been aware of pollution problems.

19255 Patricia Fowle remembers returning from area beaches and having her mother be outraged because of tar balls.

19256 Patricia Fowle considered the tar balls at area beaches to be awful.

19257 According to Patricia Fowle, such tar balls were not made of tar, but were composed of organic fats which picked up a certain amount of dye from sewage in the area waters.

19258 According to Patricia Fowle, for many years these "tar balls" washed up on the area beaches.

19259 Patricia Fowle remembers "tar balls" leaving greasy, greenish-black stains.

19260 Patricia Fowle remembers cases of impetigo in her family due to trips to area beaches.

19261 Patricia Fowle remembers cases of impetigo in each of the five children in her family due to trips to the area beaches.

19262 Patricia Fowle remembers the penicillin shots for members of her family due to the impetigo due to trips to the area beaches.

19263 Since her childhood, Patricia Fowle's and her family's use of the beach has been affected by pollution at the

area beaches, including by "tar balls" at the beach and family members' cases of impetigo from trips to the area beaches.

19264 Doctor Philip T. Gidley lives in Fairhaven, Massachusetts, one house from the water.

19265 Dr. Gidley has lived in the New Bedford area all his life.

19266 Dr. Gidley is 77 years old.

19267 Doctor Gidley is president of Gidley Laboratories, Inc., Chemical and Environmental Sciences, Fairhaven, MA.

19268 Gidley Laboratories, Inc. consults on the subjects of ground and surface water protection.

19269 Gidley Laboratories, Inc. has consulted on the following projects, including: landfill pollution project; chemical survey of all businesses, factories and institutions; and development of treatment disposal procedures for each business; and design of domestic and hazardous waste landfill at Exeter, New Hampshire

19270 Dr. Gidley's experience includes:

a Chemical Engineer, Chief Chemist, Technical Manager Acushnet Process Company

b Consulting Chemist and Chemical Engineer Standard Oil of New Jersey

c Consultant (Chemical and Environmental) Nikka Chemical Company, Japan; New England Gas and Electric; Borden Chemical; New England Telephone; Southeastern Regional Planning and Economic Development District; General Electric, Bridgeport; Industrias Llave, Buenos Aires; Towns of Exeter, New Hampshire, and Rochester, Dartmouth, Westport, Barnstable, and Fairhaven, Massachusetts

19271 Dr. Gidley's professional affiliations include:

a. Soil Conservation Society of America;
b. Life Fellow, American Institute of Chemists;
c. Life Fellow, American Association for the Advancement of Science;
d. A.S.T.M., Soil and Rock Pollution Committee;
e. American Chemical Society;
f. Technical Member, National Water Well Association
g. National Association of Environmental Professionals

19272 Dr. Gidley's qualifications and experience in chemistry and science, include in part:

a. AMERICAN CHEMICAL SOCIETY (1938-Present) Member-Senior Grade

b. AMERICAN INSTITUTE OF CHEMISTS Elected Fellow (1957) Elected Life Member (1967)

c. PROFESSIONAL CHEMIST: Registration No. 240201; Accredited PC-A-1965

e. AMERICAN SOCIETY FOR TESTING MATERIALS (1943-Present); Senior Member-No. G323850; Member, Soil and Rock Pollution Committee

f. ASSOCIATION OF CONSULTING CHEMISTS AND CHEMICAL ENGINEERS: Certificate No. 424 (1967)

g. AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE Elected Fellow (1956) Elected Lifetime Fellow (1967)

h CHEMICAL ENGINEER, CHIEF CHEMIST (1934-1943) Acushnet Process Company

i CONSULTING CHEMIST AND CHEMICAL ENGINEER (1943-1950) Standard Oil of New Jersey

j CONSULTING CHEMIST (World War II) Chemical Warfare Service Development Laboratory, Massachusetts Institute of Technology

k CONSULTING TECHNOLOGIST (1943-Present) For chemical companies, utilities, manufacturers, government agencies and others

19273 Dr. Gidley's scientific, professional and technical memberships, include, in part:

a. American Chemical Society - 1938 to Present
b. Society of Industrial Engineers (1938)
c. Society of Automotive Engineers-Joint Technical Committee (1942)
d. American Society for Testing and Materials-1943 to Present
Member: Committee D-18-14 Geotechnical Considerations in Waste Management

e. Aeronautical Materials Specification Group (NAA)-1943
f. Chemical Engineer, Federal Civil Service Rating-Grade GS-14 (1951)
g. American Statistical Association-1957
h. American Society for Engineering Education (1961)

i. American Institute of Chemists
Elected Fellow in 1957
Elected Life Member in 1967

j. American Association for Advancement of Science
Elected Fellow in 1956
Elected Lifetime Fellow - 1967

k. Association of Consulting Chemists and Chemical Engineers-1967

l Professional Chemists-Accredited (PC-A)-1965

m New England Water Pollution Control Association

n International Ozone Institute

o National Water Well Association-Technical Member

p Soil Conservation Society of America
Member: Water Resources Committee, Southern New England Chapter

q National Association of Environmental Professionals

r Massachusetts Environmental Education Society

s Pilgrim Resource Conservation and Development Council, Acting Chairman, Land and Water Resource Committee

t National Water Data Exchange, U.S. Geological Survey

u American Society of Professional Ecologists

v Society of Environmental Toxicology and Chemistry

w Union of Concerned Scientists

x Environmental Defense Fund

19274 Dr. Gidley's over thirty-five years experience includes expertise in the following chemical and environmental consulting services, including:

a. Industrial pollution surveys and controls
b. Wastewater chemical analysis
c. Water pollution studies (ground and surface water)
d. Occupational safety hazards surveys and controls
e. Industrial waste disposal systems
f. EPA code compliance studies (NPDES and RCRA)
g. Environmental impact assessments
h. Marine pollution evaluation studies
i. Soil moisture and soil chemistry testing
j. Municipal waste surveys (methods comparisons)
k. Coastal geology surveys
l. Oceanographic environmental studies
m. Pesticide impact studies and controls
n. River and tidal basin surveys
o. Air pollution surveys-municipal and industrial
p. Hazardous waste handling and disposal
q. Land utilization surveys

r. Hydrogeochemical surveys

s. Water quality studies (preservation and protection)

t. Solid waste disposal and management

u. Land application of sludge (municipal and industrial)
v. Leachate travel surveys (landfills, lagoons and spills)
w. Recycling studies and systems evaluations
x. Land conservation programs
y. Water conservation programs
z. Environmental training programs
aa. Environmental science courses
bb. Chemical analyses-environmental

19275 Gidlab's field personnel include:

a. Dr. Philip T. Gidley, F.A.I.C., F.A.A.A.S., PC-A, Consulting Chemical Technologist
b. James S. Gidley, B.S. in C.E. (University of Rhode Island), M.S. (Engineering-Harvard), Ph.D., Environmental Engineering (Harvard), Environmental Scientist
c. Fred Hanack. P.E., Civil Engineer
d. Johannes E. Wajon, B.S. (University of Western Australia), M.S. (Engineering Chemistry-Harvard), Ph.D. (Environmental Chemistry-Harvard), Environmental Chemist
e. Kent Taylor, B.S. (Geology-University of Pennsylvania), Hydrogeologist
f. Lewis Hannigan, B.S. (University of Massachusetts), Biologist
g Mark Howland, B.S. (Southeastern Massachusetts University), Biologist
h. Philip T. Gidley, Jr., B.A. in Geology (University of Rhode Island), Field Geologist
i. Associated Field Personnel Miki Havener, B.S. (Civil Engineering-Lehigh), Seismographer Ground Water Associates, Inc.
j. Associated Field Personnel Richard Parker, R.L.S. (New Hampshire), Land Surveyor

19276 Dr. Gidley is the author of numerous articles concerning contaminants in the New Bedford Harbor area waters, including:

a. Gidley Laboratories, Inc., "Water Quality Study of New Bedford Inner Harbor" for New England Gas and Electric Association, Boston, Massachusetts, March 29, 1974, GIDLAB Report EN-118 (33 pp.).

b. Gidley Laboratories, Inc., "Hydrogeochemical

Survey and Dewline Monitoring of PCB Leachate from the New Bedford Municipal Landfill" to protect the public water supply and the Paskamansett River System of the Town of Dartmouth for the Town of Dartmouth, Massachusetts, May 10, 1980, GIDLAB Consolidated Report ENC-697 (139 pp.).

c. Gidley Laboratories, Inc., "Non-Point Pollution: Categories, Causes, Consequences, Hazard Rating Criteria, Controls and Corrections" for Southeastern (Mass.) Regional Planning and Economic Developement District, Taunton, Massachusetts, July 14, 1977, GIDLAB Report EN-799 (244 pp.).

d. Gidley Laboratories, Inc., "Preliminary Comments on GCA/Sullivan's Ledge New Bedford Report" for Planning Department, City of New Bedford, Massachusetts, November 27, 1983 (9 pp.).

e. GCA Corporation, "New Bedford Environmental Investigation Assessment of the Ground Water Quality in the Vicinity of the Municipal Landfill and Sullivan's Ledge, New Bedford, Massachusetts," for U.S. EPA Research Triangle Park, North Carolina, August 1983.

f. GHR Engineering Corporation, "Report of the Evaluation of Remedial Alternatives for the Aerovox Property, New Bedford, Massachusetts," February 11, 1983.

g. James S. Gidley and Philip T. Gidley, "Innovative Approaches to Toxic Waste Management," Seminar at Center for Environmental Studies, Brown University, Providence, Rhode Island, March 9, 1981.

h. Philip T. and James S. Gidley, "Nasketucket River Basin Survey" for Board of Public Works, Town of Fairhaven, 1976, GIDLAB Report EN-14 (58 pp.).

i. Philip T. and James S. Gidley, "Leachates from Landfills and Lagoons," December 19, 1979, published by the Institute of Water Resources, University of Connecticut, Storrs, Connecticut (56 pp.).

j. Gidley Laboratories, Inc., "Hydrogeochemical Survey of Landfill Pollution Problems at Exeter, New Hampshire" for the Town of Exeter, August 19, 1978, GIDLAB Report ENC-643 (117 pp.).

k. Gidley Laboratories, Inc., "Summary of PCB Air Fallout Data from GIDLAB Projects" for Woods Hole

Oceanographic Institution Conference, October 8, 1981 (3 pp.).

l. Gidley Laboratories, Inc., "Partial Comments on New Bedford Remedial Action Plan" for EPA Region #1, March 3, 1983 (20 pp.).

m. Gidley Laboratories, Inc., "The Environmental Chemistry of Dredging Pollutants in River-Bay Systems," December 29, 1976, GIDLAB EN-B-107.

n. Bush, Paul D., "Philip T. Gidley: Exercises in Hazardous Waste Problem Solving," Dangerous Properties of Industrial Materials, July, August 1984, Vol. 4 No. 4, p.2.

19277 Contamination by metals and bacteria has historically prevented and still prevents safe shellfishing, bottom-fishing, lobster fishing and eeling in New Bedford Harbor.

19278 Contamination by metals and bacteria have also frequently closed beach areas to swimming: namely, Fort Phoenix State Beach, Priests Cove and Pope Beach, all in Fairhaven.

19279 The primary sources for this metal and bacterial contamination in New Bedford Harbor were numerous direct discharges of industrial plants and plating firms, and municipal storm drains into the Acushnet River.

19280 The major causes of pollution of Bay shellfish and bathing areas are pipe discharges into the Bay.

19281 Some of these pipe discharges are legal and illegal private commercial, industrial or residential discharges containing bacteria, metals and organic toxicants.

19282 According to Dr. Gidley, the major volume contributors of this category of pollution (bacteria, lead, oil, grease, cadmium, copper, arsenic, etc.) are public municipal pipe discharges (up to 4 feet diameter).

19283 These are storm drains and culverts from shopping malls, streets and commercial properties directly into prime shellfish areas and onto the bathing beaches.

19284 Such municipal discharges still exist in Fairhaven, Dartmouth, New Bedford, Mattapoisett and elsewhere in the Bay area.

19285 This contamination through storm drains is due to rain washing and snow melt from impervious asphalt surfaces

which collect automotive exhausts; vehicular oil and grease; from chemical air-fallout; from lawn pesticides, and from animal wastes.

19286 In addition to the above-cited contamination permitted under law, the area's pollution problem is exacerbated by the unlawful or quasi-legal direct and indirect discharge of private septic systems and commercial wastes into storm drains, especially in areas where a public sewage system does not exist.

19287 Such public pipe discharges harm the environment of New Bedford Harbor.

19288 DEQE, EPA and local Conservation Commission permit these point discharges which harm the environment.

19289 According to Dr. Gidley, these public discharges should be rerouted to treatment before discharge into harbor waters to avoid further harm to the environment.

19290 The source of GIDLAB's test data derives from environmental projects for New Bedford Gas and Edison Light Company, Atlas Tack Co. (for the Town of Fairhaven), Skipper Marina Complex, New England Telephone Company's Submarine Cable Cross-Harbor Installation, and the Southeast Regional Planning and Economic Development Agency.

19291 The following chart accurately depicts the pollutants and toxicants found by Dr. Gidley's testing to exist in New Bedford Harbor Sediments in 1974-1975 for the following pollutants and toxicants:

Factor	A	B	C	D	E
Copper	1500-3000+	1500-8000	600-2000	5-50	15-70
Mercury	cc-4	dd-4	1-2	1-2	0.5-1
Cadmium	50-100	25-50	1-20	1-10	0.5-2
Lead	300-600	300-400	10-400	3-15	2-25
Zinc	1700-2800	500-1500	50-400	5-15	10-50
Nickel	75-150	75-600	8-50	1-6	1-5
Arsenic	4-6	4-18	1-5	0-0.2	0-0.5
Chromium	1000-1500	1500-3000	20-300	1-8	1-30
Bacteria Coli	100,000-500,000	50,000-200,000	20,000-100,000	No Data	No Data

All Data in Milligrams/Kilogram Except Bacteria Coli in Colonies per 100 ml.

A = Coggeshall St. Bridge Line

B = Elm Street (Fairhaven) Line

C = Fairhaven Marine Line

D = Priest's Cove (Atlas)

E = Pope Beach (Fairhaven)

Note: 1. "D" and "E" are outside hurricane barrier.

ee. Highest values usually on New Bedford side of harbor.

19292 The contamination of the New Bedford Harbor by metals and bacteria has been sufficient absent any PCB-pollution that may exist, to independently prevent shellfishing, lobstering, eeling, bottom-fishing or swimming.

19293 Doctor Gidley recalls beach closures in the New Bedford Harbor area due to coliform but knows of no beach closures due to PCBs.

19294 Beach closures due to coliform, have occurred in the New Bedford Harbor area due to coliform counts exceeding safe limits.

19295 No beach closures due to PCBs have ever occurred in the New Bedford area beaches.

19296 No legal shellfishing has occurred for at least fifty years in the inner New Bedford Harbor, due to coliform bacteria.

19297 Leonard V. Hathaway resides at 19 Orchard Street, Acushnet, Massachusetts.

19298 Mr. Hathaway is a sea captain in the New Bedford Harbor area.

19299 Mr. Hathaway is 58 years old.

19300 For many years, Mr. Hathaway has been boating in the New Bedford Harbor area commercially.

19301 For many years, Mr. Hathaway has been recreationally boating in the New Bedford Harbor area.

19302 More boating occurs today in the New Bedford Harbor area than ever before.

19303 More recreational boating occurs today in the New

Bedford Harbor area than ever before.

19304 More commercial boating occurs in the New Bedford Harbor area now than ever before.

19305 Congestion on the waters due to increased boating in the New Bedford Harbor area is a concern in the area.

19306 Boating causes pollution in the New Bedford Harbor area waters.

19307 Boating has caused pollution in the New Bedford Harbor area water for as long as Mr. Hathaway can remember.

19308 Oil pollution exists due to boating in the New Bedford Harbor area.

19309 Oil pollution exists in the New Bedford Harbor area due to boats dumping their bilges and holding tanks.

19310 Sewage pollution is a problem in the New Bedford Harbor area waters.

19311 Sewage pollution has existed in the New Bedford Harbor area waters for as long as Mr. Hathaway can remember.

19312 Boating in the area has added to the sewage problem in the New Bedford Harbor area waters.

19313 The dumping of bilges and holding tanks by boats in the area has added to the sewage pollution problem in the New Bedford Harbor area waters.

19314 Boats have dumped their holding tanks and bilges into the area waters as a regular routine, and as a matter of custom and practice.

19315 Boats in the New Bedford Harbor are have dumped their bilges and holding tanks as a common practice and procedure for as long as Mr. Hathaway can remember.

19316 Boats have a common practice of dumping their bilges and holding tanks in the New Bedford Harbor area.

19317 New Bedford Harbor area boats have always had the custom and practice of dumping their bilges and holding tanks into the area waters.

19318 Inadequate facilities exist for commercial and recreational boats in the area to pump out their bilges and holding tanks into a facility for primary treatment of the waste.

19319 For many years, the Coast Guard dumped its bilges and holding tanks as a routine common practice and procedure.

19320 The Coast Guard dumped its holding tanks and bilges into New Bedford Harbor area waters as a common practice and occurrence until recent years.

19321 Mr. Hathaway has been swimming in New Bedford Harbor area waters since he was a child.

19322 Mr. Hathaway remembers pollution as always having been a concern in the New Bedford Harbor area waters, even back to his childhood.

19323 Mr. Hathaway still swims regularly in the New Bedford Harbor area waters.

19324 The Coast Guard regularly pumped out bilges and holding tanks of sewage and water waste into the New Bedford Harbor area waters.

19325 Mr. Hathaway is a recreational fisherman in the New Bedford Harbor area.

19326 Mr. Hathaway has been a recreational fisherman in the New Bedford Harbor area since his childhood.

19327 Mr. Hathaway remembers fishing in the vicinity of the Fairhaven Shipyard at times when raw sewage would regularly float out into the waters of this area.

19328 Mr. Hathaway frequently fished off the town pier at Union Wharf.

19329 Mr. Hathaway remembers recreational fishing at the town pier Union Wharf where raw sewage would float into the area waters near from a combined sewer overflow pipe.

19330 Combined sewage overflows are commonly referred to as CSOs .

19331 Numerous CSOs exist in the New Bedford Harbor area.

19332 After rainfalls, combined sewer overflows take raw sewage directly into the river.

19333 Before the mid-1960's, no sewage treatment plants existed at all in the Town of Fairhaven or the City of New Bedford.

19334 Sewage from the town and city flowed directly into the

river without any treatment prior to the 1960's.

19335 Even today, if the wind is the right way, combined sewer overflows can result in solids and toilet paper washing up on area beaches.

19336 The hurricane dike added to the pollution problem in the New Bedford Harbor area waters.

19337 The hurricane dike added to the pollution problem in the New Bedford Harbor area waters by stopping the flow out of the inner harbor of pollutants in the river.

19338 The hurricane dike resulted in greater sewage and oil pollution problems in the New Bedford Harbor area waters.

19339 The public was aware of the increased pollution problem due to the sewage and oil, a problem which was exacerbated by the hurricane dike.

19340 There are a great number of newspaper articles concerning the increased sewage and oil pollution due to the hurricane dike.

19341 Mr. Hathaway remembers a large number of complaints regarding the additional sewage and oil pollution problems due to the hurricane dike.

19342 According to Mr.Hathaway, the residents in the New Bedford Harbor area are aware of the sewage and oil pollution problems in the area waters.

19343 According to Mr.Hathaway, numerous newspaper articles and television reports informed the public of sewage and oil pollution problems in the area waters.

19344 Mr. Hathaway has observed that people do not generally use the inner harbor as a swimming or fishing location.

19345 Michael Gagne is the Executive Secretary of the Town of Dartmouth.

19346 Mr. Gagne recollects closures of both private and town beaches from time to time attributed to high levels of fecal coliform counts beyond what is allowed for public bathing under the public health regulations for Town of Dartmouth beaches.

19347 Both private and town beaches in the Town of Dartmouth are closed from time to time due to high levels of fecal coliform counts beyond what is allowed for public bathing under public health regulations.

19348 Sewage has had an adverse impact on the wetlands near and in the Town of Dartmouth.

19349 In Mr. Gagne's opinion, sewage has had an adverse impact on the wetlands near and in the Town of Dartmouth.

19350 Shellfish beds in the Town of Dartmouth have been closed due to sewage pollution.

19351 Mr. Gagne is aware that shellfish closures have occurred due to sewage pollution.

19352 Sewage pollution near the Town of Dartmouth has affected aesthetic values in the town of Dartmouth in Mr. Gagne's opinion.

19353 Sewage pollution in the Town of Dartmouth water has had a negative impact on recreational boating, both motoring and sailing.

19354 Mr. Gagne has boated in the area waters since the 1970's.

19355 Dartmouth citizens have commented to Mr. Gagne, as Conservation Commission Officer for the Town of Dartmouth, that they believed the area waters in the Town of Dartmouth have been adversely affected by sewage pollution.

19356 Sewage pollution effecting the Town of Dartmouth is known to Mr. Gagne to come from the area off the shore of Fort Rodman.

19357 There has been increased interest in boating in the waters of the Town of Dartmouth since the 1970's.

19358 There has been an increase in recreational boating in the waters of the Town of Dartmouth since the 1970's.

19359 There has been an increase in recreational and commercial fishing in the waters of the Town of Dartmouth since the 1970's.

19360 The number of fishing boats in area waters in the Town of Dartmouth has increased since the 1970's.

19361 There has been increased numbers of boaters leaving from the Town of Dartmouth landing throughout the fishing season since the 1970's.

19362 Since the 1970's, in the Town of Dartmouth there has been decreasing free parking space available for people wishing to park boats and trailers so as to fish.

19363 Generally, there is a shortage of the parking spaces in the Town of Dartmouth available for boats and trailers of persons interested in recreational boating and fishing, and the shortages have increased in recent years.

19364 There is a tendency during the better boating months to have available parking spaces for boating areas fill up early in the morning in the Town of Dartmouth.

19365 There is a shortage of mooring spaces for boats in the Town of Dartmouth.

19366 During July and August, people wishing to fish in the waters of the Town of Dartmouth, need to get up early in the morning to have a parking space.

19367 Recreational boating in the waters of the Town of Dartmouth has increased since the 1970's.

19368 The number of people recreational fishing in the waters of the Town of Dartmouth has increased from the 1970's to today.

19369 The number of recreational fishers and boaters using Town of Dartmouth waters has increased since the 1970's.

19370 Today there are more recreational yachts moored in the harbor than in the 1970's.

19371 It is difficult to set off from the easterly side of Sconticut Neck of the Town of Fairhaven water with a boat, due to crowded conditions.

19372 Mr. Gagne swims at the Town of Dartmouth public and private beaches, including Roundhill Beach, Napponagansett, Horseneck Beach, the Anthony Beach Club and sometimes off of his boat.

19373 Mr. Gagne's swimming activities have not changed since the mid-1970's due to any allegations of PCBs in area waters.

19374 Since 1982, several condominium projects have been proposed and built in the Town of Dartmouth.

19375 Since 1982, several plans to expand marinas in the Town of Dartmouth have been proposed.

19376 The Town of Dartmouth has proposed to improve Jones Park on the water on Clark's Cove in the Town of Dartmouth.

19377 The hurricane dike aggravated an existing sewage and oil pollution problem in New Bedford Harbor area waters.

19378 The hurricane dike agravated an existing sewage and oil problem in the New Bedford Harbor area waters by trapping pollutants in the river.

19379 David Kennedy is a resident of 52 Morse Street, New Bedford, Massachusetts.

19380 David Kennedy is thirty-eight years of age.

19381 David Kennedy has lived at his present residential address for seven years.

19382 David Kennedy has resided in the City of New Bedford for approximately thirty-eight years.

19383 David Kennedy is the City Planner for the City of New Bedford.

19384 David Kennedy has been the City Planner for the City of New Bedford for approximately three years prior to May, 1986.

19385 Prior to becoming City Planner, David Kennedy was the Assistant City Planner for the City of New Bedford for approximately four years.

19386 Prior to becoming Assistant City Planner, David Kennedy was the Junior Planner for the City of New Bedford for approximately two years.

19387 Prior to becoming the Junior Planner of the City of New Bedford, David Kennedy was the Junior Planner I for approximately three years.

19388 David Kennedy served in the United States Army for approximately two years. He was discharged with the rank of Sergeant E5.

19389 David Kennedy received a Bachelors Degree from the University of Massachusetts in the fields of food and natural resources.

19390 David Kennedy has studied City Planning at Northeastern University.

19391 The duty of the City Planner for the City of New Bedford is to prepare plans and studies going to the economic base, land use, transportation systems of the City of New Bedford, prepare reports to the general body of the City Council, assist the Planning Board and the Historical Commission.

19392 There is no coordinated collection of commercial waste on the waterfront of the Harbor of the City of New Bedford.

19393 The Planning Department of the City of New Bedford has prepared a Recreation and Open Space Master Plan for the period 1979 to 1983.

19394 The Planning Department of the City of New Bedford is responsible for the provision of maintenance of recreational facilities in the City of New Bedford, including the waterfront area.

19395 The City of New Bedford is in the process of developing future plans for the Recreation and Open Space Master Plan.

19396 The structure of the Recreation and Open Space Master Plan is based on an inventory of all existing playgrounds, playlots, any fields, school department controlled, park department controlled, and facilities for the City of New Bedford. There is a general goal of objective statement correlation with existing land use for compatibility. There is an inventory of existing equipment, existing site features, and the problems of those that are deficient or do not measure up to the existing norm; and there is a financial objective statement.

19397 Work on the Route 6 bridge between Fairhaven and New Bedford is being delayed because the parties responsible for the project have not adopted a plan for detouring traffic during replacement construction.

19398 The status of the study with respect to detouring traffic during the work of the Route 6 bridge was a controlling factor in the delay of implementing any project.

19399 There is no current calendar in existence for the commencement of any Fairhaven-New Bedford Route 6 Bridge Project.

19400 The proposed Recreation and Open Space Master Plan for the City of New Bedford contains recommendations for both East Beach and West Beach.

19401 The Planning Department of the City of New Bedford has

determined that there is a perceived parking shortage in the West Beach area.

19402 The City Planner and his staff perceive that there is a parking shortage at East Beach.

19403 The City Planner, David Kennedy, uses both East Beach and West Beach for recreational purposes.

19404 The family of the City Planner of the City of New Bedford uses the East Beach and West Beach.

19405 The family of the City Planner and the City Planner himself use East Beach at present as a recreational facility.

19406 The parking facilities at East Beach in the City of New Bedford have not been able to accommodate those people who wish to park there and use Each Beach as a recreational facility because:

a) People park too close to the entrance and obstruct access to the remaining parking spaces;

b) The gates are not policed or patrolled; and

c) There is no fee excised from the patrons using the parking facility.

19407 People utilizing East Beach as a facility also park on the streets in the area of East Beach.

19408 There is inadequate parking available at East Beach either on the street or in the parking lot to accommodate all persons who attempt to utilize East Beach as a recreational facility.

19409 The public perception of the parking difficulty has diminished the use of East Beach as a recreational facility.

19410 The public perception of parking difficulties has diminished the use of West Beach as a recreational facility.

19411 Recreational use of West Beach has been diminished because there is no central confined parking area.

19412 The parking citations issued by the Police Department of the City of New Bedford have diminished the use of West Beach as a recreational facility.

19413 David Kennedy, having utilized the East Beach and West Beach recreational facilities from the time that he has

been a child, has been aware of the beaches being closed only because coliform was present in the water.

19414 In the lifetime of David Kennedy, the New Bedford Harbor Area north of the present hurricane dike has not been used for bathing.

19415 Parents in the New Bedford area approximately forty years ago instructed their children not to jump into the water of New Bedford Harbor because if they did so they would bounce off the water in that area.

19416 People have fished in the New Bedford Harbor north of the present location of the hurricane dike within the six-month period preceding May 28, 1986.

19417 No commercial fishing has occurred north of the present location of the hurricane dike for approximately thirty-five years.

19418 The Planning Department of the City of New Bedford's projects impacts property values in the city.

19419 Allegations regarding PCB contaminants in the New Bedford Harbor have at most adversely impacted twelve households that border New Bedford Harbor.

19420 The issue of PCB contamination has never surfaced as a recreational issue in the City of New Bedford.

19421 PCB contamination has had no impact upon recreational facilities in the City of New Bedford.

19422 Bernard Cambra lives at 20 Shawmut Avenue in New Bedford.

19423 Bernard Cambra has lived at 20 Shawmut Avenue in New Bedford for thirty years.

19424 Bernard Cambra has lived in the City of New Bedford for at least forty-years.

19425 Bernard Cambra is the Laboratory Supervisor for the New Bedford Health Department.

19426 Bernard Cambra has been an employee of the Health Department of the City of New Bedford for thirty-six years.

19427 Bernard Cambra has been Supervisor of the Health Department for the City of New Bedford for

approximately twenty-one years.

19428 Bernard Cambra has been an employee of the Health Department of the Laboratory of the City of New Bedford since 1950.

19429 Bernard Cambra is a graduate of the Gradwohl School of Laboratory and X-Ray Techniques in St. Louis, Missouri.

19430 Bernard Cambra served an internship at St. Luke's Hospital in the City of New Bedford for approximately six months.

19431 Bernard Cambra served as a hospital corpsman in the United States Navy in both World War II and the Korean War.

19432 Bernard Cambra served as a hospital corpsman assigned to the United States Marine Corps during World War II.

19433 Bernard Cambra has not had oral communications with employees of the United States government or the Commonwealth of Massachusetts with respect to the contamination or alleged contamination of the New Bedford Harbor.

19434 The Health Department of the City of New Bedford does the beach sampling in New Bedford primarily for coliform and fecal coliform in shellfish.

19435 The Health Department of the City of New Bedford monitors and samples the sewer outfalls to determine whether they are the source of coliform.

19436 The only cause of closing of beaches in the City of New Bedford has been the presence of coliform.

19437 Coliform enters the beach area of New Bedford Harbor when heavy rainfall causes raw sewerage to travel through the outflow pipes into the harbor.

19438 In 1985, the West Beach was closed on two occasions because of the presence of coliform in the adjoining waters, each closure lasting approximately twenty-four hours.

19439 In approximately 1976, East Beach was closed for approximately one week due to the presence of coliform in the adjoining waters.

19440 Bernard Cambra is the party responsible for recommending the closure of the City beaches.

19441 Bernard Cambra is not aware of any closures of beaches in New Bedford other than those required by the presence of coliform in the adjoining waters.

19442 Bernard Cambra grew up in the north end of the City of New Bedford.

19443 The inner harbor of New Bedford has not been used as a swimming location during the life of Bernard Cambra.

19444 The inner harbor has not been used as a fishing location during the life of Bernard Cambra.

19445 Bernard Cambra never saw anyone shellfishing in the inner harbor of New Bedford.

19446 There has been no shellfishing in the inner harbor at New Bedford during the life of Bernard Cambra.

19447 Shellfishing has been forbidden in New Bedford Harbor for at least twenty-six years.

19448 Bradford Bourque is a resident of the City of New Bedford.

19449 Bradford Bourque has been a resident of the City of New Bedford for twenty-seven years.

19450 Except for the four years spent in the United States Air Force, Mr. Bourque has been a resident of the City of New Bedford all his life.

19451 Bradford Bourque is an employee of the City of New Bedford.

19452 Bradford Bourque is the Shellfish Warden of the City of New Bedford.

19453 Bradford Bourque has been the Shellfish Warden of the City of New Bedford since August, 1981.

19454 Duties of the Shellfish Warden of the City of New Bedford are to enforce the Massachusetts General Laws, Chapter 130 and enforce all City Ordinances pertaining to shellfish and lobster; in addition, it is the duty of the Shellfish Warden to enhance shellfishing in New Bedford and work as an information point for fisheries and shellfish.

19455 The Department of Environmental Quality Engineering of the Commonwealth of Massachusetts sends the Shellfish Warden of the City of New Bedford a closure notice

relating to Chapter 130, Section 74, which closes New Bedford harbor for a continuance thirty-day period because of coliform bacteria.

19456 The only waters in New Bedford in which shellfish may be taken extends from Ricketsons Point in Dartmouth to Brookline Rock, which is located to the east of Ricketsons Point off of point of Fort Rodman approximately three miles from a beach.

19457 With the exception of the area set forth in the prior request, all waters in the City of New Bedford are closed to shellfishing due to high counts of coliform bacteria.

19458 The waters of the City of New Bedford have been closed to shellfishing due to the presence of coliform bacteria from at least July, 1904.

19459 Except for one area three miles from the beaches, all waters in the City of New Bedford have been closed to shellfishing since 1904 due to the presence of high counts of coliform bacteria.

19460 Shellfishing has not been conducted legally north of the location of the hurricane dike for at least forty years prior to 1986.

19461 Prior to 1979, lobster fishing had not been conducted north of the present location of the hurricane barrier for approximately forty years.

19462 The Shellfish Warden of the City of New Bedford has observed individuals pursuing recreational fishing for bluefish and striped bass on the Coggeshall Street Bridge.

19463 Individuals conduct recreational fishing for bluefish and striped bass on the Coggeshall Street Bridge.

19464 Other than fishing for bluefish and striped bass, recreational fishing has not been conducted north of the Coggeshall Street Bridge for approximately thirty years.

19465 Other than recreational fishing for striped bass and bluefish, there has not been any recreational fishing north of the Fairhaven-New Bedford Route 6 bridge for at least twenty years.

19466 Subsequent to the placement of warning signs in the New Bedford harbor area regarding alleged PCB

contamination, there has been no decline south of the Coggeshall Street Bridge of recreational or commercial fishing.

19467 The Shellfish Warden of the City of New Bedford has never observed recreational fishing north of the hurricane dike for any species other than striped bass and bluefish.

19468 There has been no decrease in the recreational fishing for striped bass and bluefish in the area between the hurricane dike and the end of the New Bedford peninsula at Fort Rodman during the period 1966 to 1986.

19469 During the period that the bluefish are running in New Bedford Harbor, all available locations for fishing south of the hurricane dike are occupied by individual fishermen.

19470 Every season in which the bluefish are running in New Bedford Harbor, the area for recreational fishing is totally occupied by individuals fishing for bluefish.

19471 Daniel John Calnen is a resident of 23 Calumet Street, New Bedford.

19472 Calumet Street in New Bedford is located in the extreme south end of New Bedford.

19473 Daniel Calnen has been a resident of Calumet Street in New Bedford for approximately thirty-five years.

19474 Daniel Calnen is Superintendent of the Waste Water Treatment Plant of the City of New Bedford.

19475 Daniel Calnen has been Superintendent of the Waste Water Treatment Plant for the City of New Bedford for approximately three years.

19476 From December 1, 1971, to approximately 1983, Daniel Calnen was the Head Operator of the Waste Water Treatment Plant of the City of New Bedford.

19477 Daniel Calnen is a veteran of the United States Air Force being discharged with the rank of Sergeant.

19478 Daniel Calnen, a high school graduate, attended technical schools in the military regarding waste water.

19479 Daniel Calnen operated and maintained Waste Water Treatment Plants, Water Treatment Plants, and Mineral

Administration Plants during the period of time that he was in the United States Air Force.

19480 During the approximately twelve years that Mr. Calnen was Head Operator of the Waste Water Treatment Plan of the City of New Bedford, his duties were operating and maintaining the treatment plant, in charge of four crews.

19481 As Superintendent of the Waste Water Treatment Plant, Mr. Calnen is responsible not only for the operation and maintenance of the plant itself but also for the lift stations and system which brings the fluid waste water throughout the city to the treatment plant.

19482 Prior to the building of the Waste Water Treatment Plan in July of 1973, waste water from the City of New Bedford was directly discharged into New Bedford Harbor.

19483 Prior to the Waste Water Treatment Plant becoming operational in July of 1973, waste water from the City of New Bedford was discharged through a gravity discharge to a point approximately 3,300 feet from the shore in New Bedford Harbor.

19484 During periods of heavy rain prior to 1973, some interested waste water was discharged through a seventy-two-inch auxiliary line that discharged approximately 1,100 feet from the shore.

19485 In substance, the Waste Water Treatment Plant operates as follows: waste water enters the plant to settling tanks where the solids are settled out The effluent, which is liquid, is put into a chlorine detention tank to settle the pathogenic bacteria and the waste water is then discharged into New Bedford Harbor. Solids are collected in settling tanks and, eventually, burned in an incinerator.

19486 During periods of heavy rainfall, the normal storm water drainage water is mixed with waste water in the City of New Bedford.

19487 During periods of heavy rainfall, storm water drainage water mixes with interested sewerage effluent and a portion exits the combined sewer through outflow pipes to New Bedford Harbor.

19488 Effluent from the Waste Water Treatment Plan of the City of New Bedford has exceeded the standards

established by the Commonwealth of Massachusetts on at least five occasions during the period 1981 to 1986.

19489 The closure of the beaches in New Bedford has resulted from coliform which entered New Bedford Harbor from the combined sewer outfall pipes.

19490 Paul Saunders is a resident of the City of New Bedford.

19491 Mr. Paul Saunders has lived in the New Bedford area in excess of forty years.

19492 Mr. Paul F. Saunders resides at 1285 East Rodney French Boulevard, New Bedford, Massachusetts.

19493 Mr. Paul F. Saunders' date of birth is December 2, 1928.

19494 Mr. Paul F. Saunders is the Director of the port of New Bedford.

19495 Mr. Paul F. Saunders was Director of the port of New Bedford from approximately 1965 to 1979 and from September 1984, to May, 1986.

19496 Between 1979 and 1984, Mr. Paul Saunders was the Director of a port in Newport News, Virginia.

19497 As Director of the port of New Bedford, Mr. Paul Saunders is employed by the Harbor Development Commission for the City of New Bedford.

19498 As Director of the port of New Bedford, Mr. Paul Saunders is administratively in charge of land, wharfs, piers, and inventory belonging to the City of New Bedford and maintenance thereof. In addition, the Harbor Development Commission leases, sells, and keeps the port in a usable fashion.

19499 Prior to becoming Harbor Pilot for the City of New Bedford, Paul Saunders was the captain of a small tanker used for supplying fuel oils to the maritime operations for the port of New Bedford operations.

19500 The Fairhaven-New Bedford Route 6 bridge has been under study for approximately thirty-two years.

19501 The Harbor Pilot of the City of New Bedford has not had any communications with any United States government employee or any agent thereof regarding any proposed dredging in the future in the New Bedford Harbor.

19502 No employee of the Harbor Development Commission has had communications with any United States government

employee or agent regarding any proposed dredging in New Bedford Harbor.

19503 The Harbor Pilot of New Bedford Harbor has never had any knowledge regarding the volume of material that would be dredged pursuant to maintenance dredging of the navigation channels in New Bedford Harbor.

19504 The Harbor Pilot of New Bedford Harbor has never heard of any mussel landings in New Bedford Harbor.

19505 John Bullard is a resident of Irving Street in the City of New Bedford and has resided there for approximately ten years.

19506 Mr. John Bullard was born in the City of New Bedford and brought up in the Greater New Bedford area.

19507 John Bullard received a Bachelor of Arts from Harvard University in 1969 and received a Masters of City Management and Masters in Architecture in 1974 from M.I.T.

19508 After graduation from M.I.T., Mr. Bullard worked as a consultant for three organizations involved in the revitalization of the Waterfront Historical District in the City of New Bedford. John Bullard is the Mayor of the City of New Bedford and assumed that office on January 6, 1986. John Bullard has not had any communications with the Environmental Protection Agency regarding alleged damages to natural resources in New Bedford Harbor.

19509 Attachment Q.VIII.e.0184 is a duplicate copy of the complaint filed by the United States of America against the City of New Bedford in the United States District Court for the District of Massachusetts in Civil Action No. 87-2497-T, including all attachments referenced in the complaint as filed with the court.

19510 Attachment Q.VIII.e.0184 is an admission by plaintiff United States of America of every factual allegation contained in the complaint.

19511 The allegations in the complaint were (a) accurate at the time they were made, and (b) are still accurate today.

19512 The allegations in Attachment Q.VIII.e.0184 were accurate to the best knowledge of plaintiff United States of America (a) at the time those allegations

were made, and (b) today.

19513 Findings of violation in the letter of compliance, Docket No. 84-36 of the United States Environmental Protection Agency Region I are accurate findings of violation, the actual order for compliance issued, and an admission by plaintiff United States of America of the statements in the document.

19514 Attachment Q.VIII.e.0185 is a duplicate of the consent decree entered in Civil Action No. 87-24917, in the United States District Court for the District of Massachusetts, between the United States of America, plaintiff and the Commonwealth of Massachusetts, plaintiff v. the City of New Bedford.

19515 Attachment Q.VIII.e.0185 constitutes an admission of the plaintiffs of the statements in the document.

19516 The factual statements in Attachment Q.VIII.e.0185 are true.

19517 Plaintiffs' experts on natural resource injury have not followed the standards set forth in Type B Technical Information Document: Guidance on Use of Habitat Evaluation Procedures and Suitability Index Models for CERCLA Application; or the Type B Technical Information Document: Guidance on Use of Habitat Evaluation Procedures and Suitability Index Models for CERCLA Application, published by the United States of America.

19518 The plaintiffs' attempts to determine injury and quantification of injury in this case have not followed the standards and protocol set forth in the learned treaties published by the United States of America on this subject entitled The Type B Technical Information Document: Guidance on Use of Habitat Evaluation Procedures and Suitability Index Models for CERCLA Application.

19519 The United States has not attempted to do a "Type B assessment", as defined in the Department of the Interior Regulations on natural resource damages assessments at 43 CFR Part 11, published in the Federal Register, Volume 51, No. 148 on Friday, August 1, 1986 ("Type B assessment").

19520 A Type B assessment of natural resource damage is one method for determining whether an injury has occurred to the natural resource, and for quantifying the injury

to the natural resource.

19521 Plaintiffs' experts have not followed the guidelines in the "National Economic Development (NED) Benefit Evaluation Procedures" in Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies, Chapter 2, Section 8, Appendices 1 through 3, United States Department of the Interior, Water Resources Council, Washington, D.C., 1983, incorporated by reference into the Federal Register on page 27749 of Volume 51, No. 148 on Friday, August 1, 1988, the Department of the Interior, Natural Resource damage assessments, final rule, 43 C.F.R. Part 11, a document which is a public record and an admission admissible in evidence against plaintiffs.

19522 "Type B procedures" for determining natural resource injury require that: "because the purpose of the natural resource damage assessment is to determine compensation for injuries. . . this phase requires ascertaining the baseline level of the services provided by the resource prior to the discharge or release. The baseline level of services is then compared to the existing level of services or the anticipated level of services upon the completion of any response actions to determine the residual change resulting from the discharge or release. The baseline level of services should include consideration of the resources natural cyclical changes." This statement is an admission by the plaintiffs.

19523 Attachment Q.VIII.e.181 is a true and accurate copy of the Report of Commissioner of Fish and Fisheries.

19524 Attachment Q.VIII. e.181 is a public record setting forth the activities of the office or agency; or matters observed pursuant to duty imposed by law as to which matters there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

19525 Attachment Q.VIII. e.181 is an authentic, ancient document, in existence twenty years or more.

19526 Attachment Q.VIII e.181 is an admission by a party-opponent, offered against a party and is: a plaintiff's own statement; or a statement of which a plaintiff has manifested an adoption or belief in its truth; or a statement by a person authorized by a plaintiff to make a statement concerning the subject;

or a statement by plaintiff's agent or servant concerning a matter within the scope of the agency or employment, made during the existence of the relationship.

19527 Attachment Q.VIII e.182 is a true and accurate copy of the Report of Commissioner of Fish and Fisheries regarding the History of the American Whale Fishery on Synopsis of Importation By Ports From 1804 to 1827.

19528 Attachment Q.VIII e.182 is a public record setting forth the activities of the office or agency; or matters observed pursuant to duty imposed by law as to which matters there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

19529 Attachment Q.VIII e.182 is an authentic, ancient document, in existence twenty years or more.

19530 Attachment Q.VIII e.182 is an admission by a party-opponent, offered against a party and is: a plaintiff's own statement; or a statement of which a plaintiff has manifested an adoption or belief in its truth; or a statement by a person authorized by a plaintiff to make a statement concerning the subject; or a statement by plaintiff's agent or servant concerning a matter within the scope of the agency or employment, made during the existence of the relationship.

19531 Attachment Q.VIII e.182 is a learned treatise, established as a reliable authority by experts in the field.

19532 Attachment Q.VIII e.182 is a chart, summary or calculation of the contents of voluminous writings, recordings, or photographs which cannot conveniently be examined in Court.

19533 Attachment Q.VIII e.183 is a true and accurate copy of the Report of Commissioner of Fish and Fisheries regarding the History of the American Whale Fishery on Tables Showing Returns of Whaling, by port and year and importation of oil.

19534 Attachment Q.VIII e.183 is a public record setting forth the activities of the office or agency; or matters observed pursuant to duty imposed by law as to which matters there was a duty to report; or factual findings resulting from an investigation made pursuant to authority granted by law.

19535 Attachment Q.VIII e.183 is an authentic, ancient document, in existence twenty years or more.

19536 Attachment Q.VIII e.183 is an admission by a party-opponent, offered against a party and is: a plaintiff's own statement; or a statement of which a plaintiff has manifested an adoption or belief in its truth; or a statement by a person authorized by a plaintiff to make a statement concerning the subject; or a statement by plaintiff's agent or servant concerning a matter within the scope of the agency or employment, made during the existence of the relationship.

19537 Attachment Q.VIII e.183 is a learned treatise, established as a reliable authority by experts in the field.

19538 Attachment Q.VIII e.183 is a chart, summary or calculation of the contents of voluminous writings, recordings, or photographs which cannot conveniently be examined in Court.

19539 In order to measure damages resulting from injury to, destruction of, or loss of natural resources, the plaintiffs must establish baseline conditions before and after the injury as well as baseline conditions before and after the damages.

19540 If there has been any injury to, destruction of, or loss of natural resources in the Acushnet River and New Bedford Harbor, such injury, destruction or loss has been caused not by PCBs but rather by other chemicals or toxic substances or raw sewerage in the waters and sediments of the Acushnet River and New Bedford Harbor.

19541 The bureaucracy, when it is prepared to admit its mistake as the Centers for Disease Control has done, will lift the ban on PCBs.

19542 Bureaucratic action either banning or lifting the ban on a product cannot be the basis for determining injury to, destruction of, or loss of natural resources or damages resulting therefrom.

19543 Injury to, destruction of, or loss of natural resources can only be a function of proof that the natural resources in fact have been injured, destroyed or lost.

19544 There has been no injury, destruction or loss of natural resources in the Acushnet River and New Bedford

Harbor areas because of PCB contamination.

19545 USM Corporation was indicted in November 1986 by the United States here in Boston for dumping toxic metals into sewers that lead to New Bedford Harbor.

19546 On December 30, 1986, USM pleaded guilty and was fined $1,025,000.00.

19547 The Court referred to the fine as "small change" for USM's parent corporation, but ruled that $225,000 need not be paid if certain conditions are met.

19548 USM discharged zinc, copper and nickel, all toxic and carcinogenic, into New Bedford Harbor.

19549 USM was not sued by the plaintiffs in this action.

19550 The government charged that until the violations were found in April 1985 during a spot check by an EPA inspector, the company was discharging as much as 44,000 gallons of untreated industrial wastewater every business day.

19551 The effluent, containing metals in concentrations up to 100 times that allowed under the federal Clean Water Act, continued for months afterward in spite of warnings, the EPA said.

19552 The EPA thought Michael Deland said it was reluctant to shut down the New Bedford plant, known as the PCI division of USM Corp., because of the impact it would have on the firm's 177 employees "working in an economically depressed city."

19553 The presence of certain heavy metals in the environment has been positively correlated to certain sub-lethal effects on fish and shellfish in the marine environment, including lobsters, winter flounder, windowpane flounder and sea scallops.

19554 The presence of certain heavy metals in the environment has been positively correlated to enzyme changes, respiratory effects, reproductive effects and effects on blood in marine organisms.

19555 A 1984 study of PCB contamination of bluefish jointly conducted by the Massachusetts Division of Marine Fisheries and the Department of Public Health showed that on average the Food and Drug Administration's

ff ppm standard for PCBs in food products was not exceeded by bluefish taken in Massachusetts waters, including the New Bedford Harbor and Buzzards Bay area.

19556 The 1984 Massachusetts Study of Bluefish did not include any analysis of the presence of heavy metals, chlorinated hydrocarbons other than PCBs, aromatic hydrocarbons, or coliform bacteria, nor were any histopathological studies done on the specimens taken in that study.

19557 The Division of Marine Fisheries has made several efforts since 1979 to convince the Department of Public Health to reopen Area III to lobstering.

19558 Philip Coates, Leigh Bridges and James Fair of MDMF and Jerry Parker, Nancy Ridley, Elaine Kruger and Messrs. Flemming and Gute of the Department of Public Health participated in one or more meetings between 1980 and 1984 regarding reopening Area III to lobstering.

19559 The Division of Marine Fisheries attempted to have Area III reopened to lobstering because the level of PCBs in Area III were substantially lower than that found in Area II and the closure constituted an unwarranted economic burden on the New Bedford commercial lobstering industry.

19560 Lobster catches statewide have increased dramatically. Over the past 10 years the annual catch has increased over 40%.

19561 The Division of Marine Fisheries is aware that shellfishing has occurred in Area II in contravention to the 1979 ban.

19562 The Division of Marine Fisheries is aware that lobstering has continued in Areas II and III in contravention of the 1979 ban.

19563 Neither the Division of Marine Fisheries or the Division of Law Enforcement monitor compliance with the ban on lobstering in Areas II and III on a periodic basis.

19564 The Division of Law Enforcement has declined to enforce the closure of Areas II and III of the New Bedford Harbor until the Department of Public Health first grants it authority to enforce the public health laws. The Department of Public Health has declined to grant the Division of Law Enforcement such authority. It is the position of the Division of Law Enforcement that

absent such grant of authority by the Department of Public Health, the Division is without authorization to enforce the closure of the New Bedford Harbor.

19565 Employees of the Division of Marine Fisheries have reported seeing evidence of 10-20 individual lobstermen lobstering in Areas II and III in contravention to the ban at various times in the course of their duties.

19566 In late 1976 or 1977, DEQE engaged in PCB analysis of the sediments, water column, municipal effluent, water pipes, and other physical materials. DEQE did not look for aromatic hydrocarbons. DEQE did test for heavy metals in the sediment, but not in the water column or elsewhere.

19567 Studies of the Boston Harbor have implied a link between the presence of neoplasia in winter flounder and the presence of aromatic hydrocarbons in the water column and sediment.

19568 Aromatic hydrocarbons are present in the New Bedford Harbor and Acushnet River estuary.

19569 There are at present no bans on the taking of fish, shellfish or lobster due to the presence of aromatic hydrocarbons in the Boston Harbor. No bans are presently being contemplated on the taking of fish, shellfish or lobster in any other territorial waters of Massachusetts due to the presence of aromatic hydrocarbons in the sediment, water column or biota.

19570 Recreational fishing and lobstering has continued in Areas II and III of the New Bedford Harbor since 1979.

19571 The ban on taking of eels, flounder, scup and tautog in Area II of the New Bedford Harbor has not been enforced since 1979.

19572 The Division of Marine Fisheries has engaged in the transplantation of shellfish from the New Bedford Harbor area, including Areas I and II, to areas outside the New Bedford Harbor, including the South Shore of Cape Cod, Buzzards Bay and Westport.

19573 The Division of Marine Fisheries is not aware of any decline in fish sales from the port of New Bedford as a result of the public fear of PCBs.

19574 The ban on lobstering in Areas I, II and III of the New Bedford Harbor has not diminished the size of the catch landed in New Bedford, Fairhaven and Dartmouth.

19575 The Division of Marine Fisheries has knowledge or information that the following substances are present in the sediment or water column of the New Bedford Harbor or Acushnet River estuary: PCBs, heavy metals, coliform bacteria, and aromatic hydrocarbon. In addition, the DMF is aware of non-point runoffs of pesticides into Buzzards Bay.

19576 Studies and investigations have shown that pesticides have various sub-lethal effects on marine organisms, including effects on reproduction.

19577 The closure of Areas I, II and III of the New Bedford Harbor to lobster harvesting has had the effect of replenishing the lobster stock in Buzzards Bay.

19578 The lobster stock in Areas I, II and III of the New Bedford Harbor has increased since the 1979 closure of those areas to lobstering.

19579 The Army Corps of Engineers, in compliance with their statutory mandate, will restrict or prohibit types of pile driving, dredging or disposal of dredge sediments where heavy metal is present in those sediments. The Army Corps of Engineers enforces no regulations on dredging or other projects solely due to the presence of PCB in the sediment or water column.

19580 It is not possible to determine the extra costs associated with dredge and fill projects in the New Bedford Harbor due to the presence of PCBs versus other contaminants.

19581 No division of Massachusetts Department of Public Health is charged with responsibility to enforce the closure in the New Bedford Harbor.

19582 The Division of Marine Fisheries informed Gerald S. Parker of the DPH on various occasions that lobstering continued within the closed area of the New Bedford Harbor, subsequent to September 25, 1979.

19583 The MDPH has considered amending the 1979 closure order to allow seasonal commercial lobstering in Area 3 of the New Bedford Harbor.

19584 The MDPH does not know under what conditions it should reopen the New Bedford Harbor to commercial lobstering.

19585 One site from which raw sewage is discharged to the Acushnet River is at the Wood Street Bridge, upstream of AVX.

19586 On January 8, 1987 at the Acushnet River adjacent to the Aerovox facility S.A. Moss and F.X. O'Brien made certain observations and collections.

19587 The observations and collections set forth below were made on January 8, 1987 in the littoral zone during the morning low tide.

19588 There was present in the Acushnet River adjacent to the Aerovox facility gammaridean amphipods which were found beneath stones that rested on the sediments.

19589 There was present in the Acushnet River adjacent to the Aerovox facility numerous siphon and burrow holes on the intertidal mud surface which indicated the presence of a substantial infaunal community.

19590 There were present in the Acushnet River adjacent to the Aerovox facility two species of polychaet worms as well as softshell clams. The clams represented members of at least two different year classes - the smallest having probably been recruited during the past summer.

19591 All of the animals referred to in the preceding four requests were in apparent good health as indicated by their activity when examined and photographed in the laboratory.

19592 The biota observed in the area of the Acushnet River adjacent to the Aerovox facility was not dissimilar to what one would expect to find in an estuarine muddy intertidal zone during the winter.

19593 There are aromatic hydrocarbons in the Acushnet River and New Bedford Harbor.

19594 Mr. Calabrese of NOAA testified at his deposition that there is no correlation or causal relationship between the presence of PCBs in the Acushnet River and New Bedford Harbor and any injured resource.

19595 Mr. Calabrese was correct.

19596 A laboratory study involving large doses of Aroclors is not a basis for a determination that Aroclors found in the much lower doses and much different configurations in which they are found in the Acushnet River and New Bedford Harbor have caused any injury to destruction of

or loss of natural resources or pose any threat of same.

19597 Any valid effort to determine whether there has been injury to, destruction of, or loss of natural resources caused by PCB contamination must consider the differences among the PCB congeners and the different Aroclors. No government study has attempted to do so, nor have the plaintiffs in this action.

19598 The plaintiffs have not undertaken to assess injury to, destruction of, or loss of natural resources attributable to releases of PCBs by AVX.

19599 Natural resource damages are those resulting from injury to, destruction of, or loss of the natural resources residual to any remediation or cleanup of the site in question.

19600 The Environmental Protection Agency is planning cleanup action for the Acushnet River and New Bedford Harbor. Any decline in real estate values measured by Professor Mendelsohn and allegedly attributable to the presence of PCB contamination will be recovered when either the PCB contamination is abated, in whole or in part, or when the public realizes that the PCB contamination poses no threat to humans or to the aquatic organisms in the area, or to the environment generally.

19601 The Department of the Interior has stated in connection with the promulgation by the regulations under CERCLA that the presence of a hazardous substance in a human or other organism is not evidence of injury to, destruction of or loss of natural resources, but rather that there must be a demonstrable adverse, biological effect from the hazardous substance.

19602 Any loss of natural resources as a result of declared ban on PCBs by the EPA or the establishment of a tolerance level by the FDA is the result of arbitrary and unsupported and unsupportable bureaucratic behavior rather than from the chemical itself.

RE: ALLEGED INJURY TO LOBSTERING

Definitions

020000 Catch report -- a report required to be filed annually with the Massachusetts Division of Marine Fisheries by commercial lobster licensees.

020001 New commercial lobstering license -- a commercial lobstering license which is not a renewal of a license previously held by an individual.

020002 MDMF -- The Massachusetts Division of Marine Fisheries.

020003 The June Lobster Report -- the document titled "Assessment of Economic Damages to the Natural Resources of New Bedford Harbor: Damages to the Commercial Lobster Fishery, Final Report," prepared by Kenneth E. McConnell and Brian G. Morrison, dated June 4, 1986. The plaintiffs' Requests for Admissions refer to this document as the "Lobstering Damage Report." This document is attached as Attachment Q.VIII.a.11.

020004 April Lobster Report -- the document titled "Assessment of Economic Damages to the Natural Resources of New Bedford Harbor: Damages to the Inshore Lobster Fishery, Draft Report," prepared by Kenneth E. McConnell and Brian G. Morrison, dated April 30, 1986. This document is attached as Attachment Q.VIII.a.12.

020005 December Lobster Report -- the document titled "Assessment of Economic Damages to the Natural Resources of New Bedford Harbor: Damages to the Commercial Lobster Fishery," prepared by Kenneth E. McConnell and Brian G. Morrison, dated December 1986. This document is attached as Attachment Q.VIII.a.13.

020006 Lobster Reports -- the June Lobster Report and the December Lobster Report.

020007 Lobstering Damage Assessment -- the Lobstering Damage Assessment referred to, and described, in the plaintiffs' Requests for Admissions 2266-2428. This Assessment refers to plaintiffs' Attachment VII.C.RA7-0200, Attachments VII.C.RA7-224a through VII.C.RA7-0232a, Attachment VII.C.RA7-234a, through VII.C.RA7-0238a, and Attachment VII.C.RA7-239a.

020008 Damage Assessments -- the June Lobster Report, the December Lobster Report and the Lobstering Damage Assessment.

020009 Producers' surplus -- the amount received by producers, less the costs of production, including normal profit.

020010 Consumers' surplus -- the difference between the price consumers are willing to pay and the price they actually pay.

020011 Willingness to pay -- the area under a Marshallian demand curve.

020012 New Bedford Harbor commercial lobster fishery -- Areas I, II and III.

020013 Closed area -- the New Bedford Harbor commercial lobster fishery.

020014 First set of notes -- transcriptions of interviewers' notes of interviews of certain commercial lobstermen conducted in August 1985 and February, March, April and May 1986 in the course of the preparation of the June Lobster Report. These transcriptions are attached as Attachment Q.VIII.a.1.

020015 Second set of notes -- interviewers' handwritten notes of interviews of certain commercial lobstermen conducted in September 1986. These notes are attached as Attachment Q.VIII.a.2.

020016 Commercial lobstermen -- people who obtain a commercial lobster license and fish for lobsters for commercial purposes.

020017 Recreational lobstermen -- people other than commercial lobstermen who fish for lobsters.

Other Lobster

020018 The following books are written by authorities on the topic which the book addresses, and both the author(s) and the books are relied upon generally by experts in the field.

a. Questions and Answers in Attitude Surveys, H. Schuman and S. Presser (Wiley, 1981).

b. Asking Questions, N. Bradburn and S. Sudman (Jossey-Bass, 1982).

c. Response Effects in Surveys, S. Sudman and N. Bradburn (Aldine, 1974).

d. Statistical Methods, G. Snedecor and W. Cochran (Iowa State University Press, sixth edition, 1967).

e. Introduction to the Theory of Statistics, A. Mood, F. Graybill, D. Boes (McGraw Hill, third edition, 1974).

f. Survey Sampling, L. Kish (Wiley, 1965).

g. Surveys by Telephone, R. Groves and R. Kahn (Academic Press, 1979).

h. Sampling Techniques, W. Cochran (Wiley, third edition, 1977).

i. Interviewer's Manual, Survey Research Center, University of Michigan (Ann Arbor, 1969).

j. Development of Survey Methods to Assess Survey Practices, B. Bailar and C. Lanphier (American Statistical Association, 1978).

k. Probability and Statistics, M.H. DeGroot (Addison-Wesley Publishing Co., 1975).

020019 Attachment Q.VIII.a.1 is a true and accurate copy of transcriptions of interviewers' notes of interviews of certain commercial lobstermen conducted in August 1985 and February, March, April and May 1986 in the course of the preparation of the June Lobster Report, and is genuine.

020020 Attachment Q.VIII.a.2 is a true and accurate copy of interviewers' handwritten notes of interviews of certain commercial lobstermen conducted in September 1986, and is genuine.

020021 Attachment Q.VIII.a.3 is a true and accurate copy of the original article by B. Bailar, "Some Sources of Error and Their Effect on Census Statistics" which was published in Demography, May 1976, and is genuine.

020022 Attachment Q.VIII.a.3 is an article written by an authority on the topic which the article addresses, and both the author and the document are relied upon generally by experts in the field.

020023 Attachment Q.VIII.a.4 is a true and accurate copy of the original article by M. Hansen and J. Waksberg, "Research on Non-Sampling Errors in Censuses and Surveys" which was published in The Review of the International Statistical Institute, Vol. 38: 318-332 in 1970, and is genuine.

020024 Attachment Q.VIII.a.4 is an article written by authorities on the topic which the article addresses, and both the authors and the document are relied upon generally by experts in the field.

020025 Attachment Q.VIII.a.5 is a true and accurate copy of the original paper issued in March 1974 by the United States Department of Commerce, Bureau of the Census, as "Technical Paper 32: Standards for Discussion and Presentation of Errors in Data," and is genuine.

020026 Attachment Q.VIII.a.5 is a technical paper prepared by an authority on the topic which the paper addresses, and both the source and the document are relied upon generally by experts in the field.

020027 Attachment Q.VIII.a.5 is a true and accurate copy of the original letter from John White, Associate Technical Director, Decision Research Corporation, to Michael T. Huguenin, President, Industrial Economics, Inc., dated April 28, 1986, and is genuine.

020028 Attachment Q.VIII.a.5 was prepared in the regular course of business of Decision Research Corporation, whose business it was to prepare and maintain documents such as Attachment Q.VIII.a.5; was created on or about the date indicated thereon by, or from information transmitted by, a person with knowledge of the facts stated therein.

020029 Attachment Q.VIII.a.7 is a true and accurate copy of an original document consisting of 3 pages and entitled "Informal Interview Protocol of New Bedford Harbor Lobsterman," and is genuine.

020030 Attachment Q.VIII.a.7 was prepared for the use of interviewers conducting the survey upon which the June Lobster Report is based.

020031 Attachment Q.VIII.a.7 was prepared for the use of interviewers conducting the interviews that produced important information used in the June Lobster Report.

020032 Attachment Q.VIII.a.8 is a true and accurate copy of the original article by D. Rugg, "Experiments in Wording Questions: II" which was published in The Public Opinion Quarterly, in March 1941, and is genuine.

020033 Attachment Q.VIII.a.8 is an article written by an authority on the topic which the article addresses, and both the author and the document are relied upon generally by experts in the field.

020034 Attachment Q.VIII.a.9 is a tabulation of data, derived from the catch reports of certain commercial lobstermen, pertaining to the number of lobstering trips taken by such lobstermen, which tabulation was prepared by Industrial Economics, Inc. in the course of preparing the June Lobster Report.

020035 Attachment Q.VIII.a.9 is a true and accurate copy of the original tabulation, and is genuine.

020036 Attachment Q.VIII.a.10 is a tabulation of data, derived from the catch reports of certain commercial lobstermen, pertaining to the number of traps fished by such lobstermen, which tabulation was prepared by Industrial Economics, Inc. in the course of preparing the June Lobster Report.

020037 Attachment Q.VIII.a.10 is a true and accurate copy of the original tabulation, and is genuine.

020038 Attachment Q.VIII.a.11 is a true and accurate copy of the report prepared by Kenneth E. McConnell and Brian G. Morrison for the National Oceanic and Atmospheric Administration, "Assessment of Economic Damages to the Natural Resources of New Bedford Harbor: Damages to the Commercial Lobster Fishery, Final Report," dated June 4, 1986, and is genuine.

020039 Attachment Q.VIII.a.12 is a true and accurate copy of the report prepared by Kenneth E. McConnell and Brian G. Morrison for the National Oceanic and Atmospheric Administration, "Assessment of Economic Damages to the Natural Resources of New Bedford Harbor: Damages to the Inshore Lobster Fishery, Draft Report," dated April 30, 1986, and is genuine.

020040 Attachment Q.VIII.a.13 is a true and accurate copy of the report prepared by Kenneth E. McConnell and Brian G. Morrison for the National Oceanic and Atmospheric Administration, "Assessment of Economic Damages to the

Natural Resources of New Bedford Harbor: Damages to the Commercial Lobster Fishery," dated December 1986, and is genuine.

020041 Attachment Q.VIII.a.14 is a true and accurate copy of some of the exhibits to the plaintiffs' Lobstering Damage Assessment, Attachments VII.C.RA7-0224a through VII.C.RA7-0242a to the plaintiffs' Requests for Admissions.

020042 Attachment Q.VIII.a.15 is a series of tabulations of data, derived from the catch reports of certain commercial lobstermen, pertaining to the number of lobstering trips taken by such lobstermen and the number of traps fished by such lobstermen, based on Attachment VII.C.RA7-0207 to the plaintiffs' Requests for Admissions, and calculations of statistics based on these tabulations.

020043 The calculations of statistics in Attachment Q.VIII.a.15 are true and accurate, and the statistics are of the type relied upon generally by experts in statistics.

020044 Attachment Q.VIII.a.16 is a series of hypothesis tests, using data from the exhibits to the December Lobster Report pertaining to certain commercial lobstermen.

020045 The hypothesis tests in Attachment Q.VIII.a.16 are true and accurate, and are of the type relied upon generally by experts in statistics.

020046 Attachment Q.VIII.a.17 is a series of calculations of confidence intervals and a hypothesis test, using data from the exhibits to the December Lobster Report pertaining to certain commercial lobstermen.

020047 The calculations of confidence intervals and the hypothesis test in Attachment Q.VIII.a.17 are true and accurate, and the confidence intervals and hypothesis test are of the type relied upon generally by experts in statistics.

020048 The June Lobster Report accurately describes the conceptual approach used in the Lobstering Damage Assessment.

020049 The June Lobster Report does not accurately describe the methodology of the Lobstering Damage Assessment since the Assessment extrapolates the results of the interviews of the 1975 lobstermen to the population of 1986 license holders, a procedure not described in the June Lobster Report.

020050 The June Lobster Report assumes that the "willingness to pay" of certain lobstermen for a reopened fishery is the appropriate measure of damages resulting from closure of the New Bedford Harbor commercial lobster fishery.

020051 The June Lobster Report uses a hypothetical measure of damages.

020052 Kenneth McConnell does not know what additional cost, if any, is being incurred by lobstermen in the New Bedford area as a result of the closure of Areas I, II and III.

020053 Brian Morrison does not know what additional cost, if any, is being incurred by lobstermen in the New Bedford area as a result of the closure of Areas I, II and III.

020054 By limiting the analysis in the Damage Assessments to those lobstermen who continue to lobster in the New Bedford area, the authors may have overestimated the impact of the closure on the net revenues of lobstermen.

020055 Without further study, it is impossible to determine whether limiting the Damage Assessments analysis to those lobstermen who continue to lobster in the New Bedford area results in overestimating or underestimating the effect of the closure on net revenues.

020056 The December Lobster Report accurately describes the methodology of the Lobstering Damage Assessment.

020057 The Lobstering Damage Assessment does not indicate the error inherent in its damage estimate.

020058 All statistical estimates are subject to sampling error, or errors in estimation due solely to random, or chance, differences between the sample and the population.

020059 The June Lobster Report estimates the change in net income, which is called producers' surplus, by attempting to measure the increased costs to commercial lobstermen resulting from closure of the New Bedford Harbor commercial lobster fishery.

020060 Any producers' surplus calculation must take into account changes in the price or quantity, if any, of lobsters in the relevant market resulting from the closure of the New Bedford Harbor commercial lobster fishery.

020061 Plaintiffs have no evidence that any change in the price or quantity of lobsters in the relevant market has occurred.

020062 Plaintiffs have not demonstrated that any lobsterman has experienced diminished producers' surplus resulting from closure of the New Bedford Harbor commercial lobster fishery.

020063 Whether or not particular lobstermen who have lobstered in New Bedford Harbor waters have experienced an increased or diminished producers' surplus resulting from the closure of the New Bedford Harbor commercial lobster fishery is not a proper basis for determining what, if any, injury has occurred to natural resources in New Bedford Harbor.

020064 Any change in the producers' surplus of lobstermen resulting from the closure of the New Bedford Harbor commercial lobster fishery is not an appropriate "proxy" for determining whether, and to what degree, the fishery has been injured.

020065 Any change in the costs of lobstermen resulting from the closure of the New Bedford Harbor commercial lobster fishery is not an appropriate "proxy" for determining whether, and to what degree, the fishery has been injured.

020066 Plaintiffs say that consumers of lobsters are not, and have not been, affected by the closure.

020067 The June Lobster Report and the Lobstering Damage Assessment do not purport to show how, if at all, consumers of lobsters have been affected by the closure.

020068 Plaintiffs have no evidence that consumers have been affected in any way by the closure.

020069 If there is no change in the price or quantity of lobsters in the relevant market resulting from the closure of the New Bedford Harbor commercial lobster fishery, then consumers of lobster are not affected by the closure.

020070 The June Lobster Report and Lobstering Damage Assessment assume that any changes in the landings of lobsters from the inshore lobster fishery in the New Bedford area do not affect the prices paid for lobsters by households.

020071 The June Lobster Report and Lobstering Damage Assessment assume that any changes in the landings of lobsters from the inshore lobster fishery in the New Bedford area do not affect the prices received for lobsters by lobstermen.

020072 The closure of the New Bedford Harbor lobster fishery has had no effect on the price or quantity of lobsters in Massachusetts or elsewhere.

020073 The closure of the New Bedford Harbor lobster fishery has had no effect on the consumers of lobster in Massachusetts or elsewhere.

020074 Consumers are not, and have not been, affected by the closure.

020075 Lobsters are not a threatened or endangered species.

020076 The June Lobster Report purports to measure, at least approximately, an alleged decrease in social welfare resulting from closure of the New Bedford Harbor commercial lobster fishery.

020077 The June Lobster Report assumes that closure of the New Bedford Harbor commercial lobster fishery results from PCB contamination.

020078 Closure of the New Bedford Harbor commercial lobster fishery was an inappropriate response to PCBs purportedly found in certain lobster samples taken from New Bedford Harbor.

020079 Any decreases in social welfare associated with closure of the New Bedford Harbor commercial lobster fishery result from the decision to invoke closure and not from PCB contamination.

020080 The decrease in social welfare which the June Lobster Report purports to measure does not result from PCB contamination.

020081 The June Lobster Report assumes the only reason for closing the New Bedford Harbor commercial lobster fishery is PCB contamination.

020082 The June Lobster Report and the Lobstering Damage Assessment do not evaluate factors other than PCB contamination that may have contributed to the decision to close the New Bedford Harbor commercial lobster fishery.

020083 Absent closure due to the alleged PCB contamination, public health officials would have remained concerned about other potential contaminants threatening the New Bedford Harbor commercial lobster fishery.

020084 The June Lobster Report and the Lobstering Damage Assessment do not evaluate factors unrelated to PCB contamination that may have caused the closure of the New Bedford Harbor commercial lobster fishery sometime after 1979.

020085 The plaintiffs' have no evidence that factors other than PCB contamination would not have caused the closure of the New Bedford Harbor commercial lobster fishery sometime after 1979.

020086 There is no evidence to support the June Lobster Report's assumption that the New Bedford Harbor commercial lobster fishery will remain closed until the year 2085 solely due to PCB contamination.

020087 If the New Bedford Harbor commercial lobster fishery would have been closed at any time after 1979 and before 2085 for reasons other than PCB contamination, then the period during which purported injury to the natural resources of the fishery was solely caused by PCBs would be shorter than that assumed by the plaintiffs in the Damage Assessments.

020088 The June Lobster Report purports to measure, as a proxy for measuring actual damage to the natural resources of the New Bedford Harbor, the amount lobstermen would pay for a reopened lobster fishery.

020089 The June Lobster Report purports to measure, as a proxy for measuring actual injury to the natural resources of the New Bedford Harbor, the amount lobstermen would pay for a reopened lobster fishery.

020090 The June Lobster Report purports to measure what commercial lobstermen would pay for an open lobstering ground in the New Bedford Harbor by calculating their increased costs due to the closure.

020091 The calculation of this proxy measure assumes that the closure order is complied with.

020092 The calculation of this proxy measure assumes that lobstermen have not realized offsetting benefits due to any different lobstering methods they may have adopted since the closure.

020093 Some lobstermen have benefitted from the closure.

020094 Some lobstermen may have benefitted from the closure.

020095 The June Lobster Report and the Lobstering Damage Assessment do not consider the possibility that some lobstermen may have benefitted from the closure.

020096 Quantifying a proxy measure of the natural resources of the New Bedford Harbor allegedly lost assumes that these resources have been injured.

020097 Plaintiffs have no evidence that the authors of the June Lobster Report considered or evaluated proxies for the actual damage to the natural resources of the New Bedford Harbor other than the one they adopted in the Report.

020098 The June Lobster Report and the Lobstering Damage Assessment assume that the natural resources of the New Bedford Harbor have been injured.

020099 The June Lobster Report and the Lobstering Damage Assessment assume that the natural resources of the New Bedford Harbor commercial lobster fishery have been injured.

020100 The calculation of the proxy measure in the Damage Assessments assumes that the natural resources have injured solely due to PCBs.

020101 The calculation of the proxy measure in the Damage Assessments assumes that but for PCBs none of the injury the Assessments are purporting to measure would have occurred.

020102 Neither the June Lobster Report nor the Lobstering Damage Assessment substantiate the alleged injury to the natural resources of the New Bedford Harbor commercial lobster fishery.

020103 The plaintiffs have no evidence that the natural resources of the New Bedford Harbor commercial lobster fishery have been injured.

020104 The authors of the June Lobster Report were not requested by the plaintiffs to examine and substantiate the nature and extent of any injury

to the natural resources of the New Bedford Harbor commercial lobster fishery.

020105 The plaintiffs have no evidence that the authors of the June Lobster Report were engaged to evaluate the injury to the natural resources of the New Bedford Harbor commercial lobster fishery.

020106 The authors of the June Lobster Report did not conduct any investigations of their own into the nature and extent of any injury to the natural resources of the New Bedford Harbor commercial lobster fishery.

020107 The underlying assumption of the June Lobster Report and the Lobstering Damage Assessment, that the lobstermen would avoid the additional costs they purportedly incur as a result of the closed area and return to the former grounds if they were reopened, is wrong.

020108 The underlying assumption of the June Lobster Report and the Lobstering Damage Assessment, that the lobstermen would avoid the additional costs they incur as a result of the closed area and return to the former grounds if they were reopened, is unsubstantiated.

020109 Increases in the costs incurred by lobstermen who formerly operated in the closed area, if any, do not reflect their willingness to pay for the resource.

020110 Some of the lobstermen interviewed in the course of preparing the June Lobster Report and the Lobstering Damage Assessment have indicated no willingness to pay for a reopening of the closed area.

020111 The plaintiffs have no reliable evidence on the willingness to pay of commercial lobstermen for a reopening of the closed area.

020112 The plaintiffs did not ask the commercial lobstermen to estimate or reveal their willingness to pay, if any, for a reopening of the closed area.

020113 The authors of the June Lobster Report and the Lobstering Damage Assessment did not ask the commercial lobstermen to estimate or reveal their willingness to pay, if any, for a reopening of the closed area.

020114 Commercial lobstermen may not have any willingness to pay for the reopening of the closed area.

020115 The plaintiffs have no direct evidence that commercial lobstermen have any willingness to pay for a reopening of the closed area.

020116 Commercial lobstermen may not have any willingness to pay for the reopening of the closed area due to depletion of the closed area.

020117 Commercial lobstermen may not have any willingness to pay for the reopening of the closed area due to congestion in the closed area.

020118 Commercial lobstermen may not have any willingness to pay for the reopening of the closed area due to competition from other commercial lobstermen in the closed area.

020119 Commercial lobstermen may not have any willingness to pay for the reopening of the closed area due to competition from recreational lobstermen in the closed area.

020120 Commercial lobstermen may not have any willingness to pay for the reopening of the closed area due to the theft of lobster traps in the closed area.

020121 Commercial lobstermen may not have any willingness to pay for the reopening of the closed area due to the theft of lobsters in the closed area.

020122 Commercial lobstermen may not have any willingness to pay for the reopening of the closed area due to the higher profitability of lobstering in other areas.

020123 Commercial lobstermen who formerly lobstered in the closed area may not have any willingness to pay for the reopening of the closed area due to their switching to other, more financially rewarding occupations.

020124 Increases in the costs incurred by lobstermen who formerly operated in the closed area, if any, do not constitute either injury, the impact of injury, if any, or damages.

020125 Increases in the costs incurred by lobstermen who formerly operated in the closed area, if any, do not demonstrate any injury to the natural resources of the New Bedford Harbor lobster fishery.

020126 The plaintiffs have failed to evaluate all the possible reasons why the costs of lobstering for the lobstermen who formerly operated in the closed area might have increased.

020127 Any increase in the costs incurred by lobstermen who formerly operated in the closed area may reflect the depletion of the former grounds.

020128 Any increase in the costs incurred by lobstermen who formerly operated in the closed area may reflect congestion in the former grounds.

020129 Any increase in the costs incurred by lobstermen who formerly operated in the closed area may reflect the higher profitability of more costly operations.

020130 Any increase in the costs incurred by lobstermen who formerly operated in the closed area may reflect competition from other commercial lobstermen still lobstering in the closed area.

020131 Any increase in the costs incurred by lobstermen who formerly operated in the closed area may reflect competition from recreational lobstermen still lobstering in the closed area.

020132 Any increase in the costs incurred by lobstermen who formerly operated in the closed area may reflect the theft of lobster traps in the closed area.

020133 Any increase in the costs incurred by lobstermen who formerly operated in the closed area may reflect the theft of lobsters in the closed area.

020134 Any increase in the costs incurred by lobstermen who formerly operated in the closed area may reflect factors other than closure of the area.

020135 Any increase in the costs incurred by lobstermen who formerly operated in the closed area would have been incurred if the area had not been closed.

020136 The plaintiffs' have no evidence that any increase in the costs incurred by lobstermen who formerly operated in the closed area would not have been incurred if the area had not been closed.

020137 The June Lobster Report and Lobstering Damage Assessment assume that commercial lobstermen who quit the commercial fishery for reasons other than closure, or who died, have been replaced by other commercial lobstermen who would lobster in the closed area it if were reopened.

020138 The number of commercial lobstermen presumed in the June Lobster Report and the Lobstering Damage Assessment to have been affected by closure of the New Bedford Harbor commercial lobster fishery is in error because lobstermen who quit the commercial fishery for reasons other than closure, or who died, are erroneously assumed to have been replaced by other commercial lobstermen who would lobster in the closed area if it were reopened.

020139 There is no basis for the assumption referred to in the foregoing statement.

020140 The number of commercial lobstermen presumed in the June Lobster Report and Lobstering Damage Assessment to have been affected by closure of the New Bedford Harbor commercial lobster fishery is not based on a statistically valid sample.

020141 Given that a commercial lobster license held by a person whose port of landing is Fairhaven, Dartmouth or New Bedford is not renewed by the license holder, the probability that a new license will be issued to a person whose port of landing is also Fairhaven, Dartmouth or New Bedford is not known.

020142 Issuance of new commercial lobster licenses by the MDMF is on the basis of the order of receipt of applications.

020143 Commercial lobster licenses which are issued to replace licenses which have not been renewed are not issued on the basis of geographical distribution of applicants.

020144 Commercial lobster licenses which are issued to replace licenses which have not been renewed are not issued on the basis of the geographical distribution of licenses which have been renewed.

020145 Lobstering continues inside Area II.

020146 Lobstering continues inside Area III.

020147 No commercial lobstering has occurred inside Area I since well before PCBs were identified as a potential hazard in the Area.

020148 Lobstering had ceased in Area I as of at least 1970, for reasons other than PCBs.

020149 Some of the lobstermen interviewed during the preparation of the June Lobster Report and the Lobstering Damage Assessment stated that they continue to lobster in Areas II and III.

020150 Many of the lobstermen interviewed during the preparation of the June Lobster Report and the Lobstering Damage Assessment stated that they continue to lobster in Areas II and III.

020151 Mr. Morrison did not attempt to factor into his analysis indications of noncompliance with the closure order.

020152 Failure to consider such data prejudices the results of the Damage Assessments.

020153 Mr. Morrison was aware that individual lobstermen other than Mr. Boza to whom he spoke had been cited by the Division of Marine Fisheries for having violated the closure.

020154 Mr. Morrison did not exclude those individuals from the data base and calculations in the Damage Assessments.

020155 Mr. Morrison acknowledges that it is possible that part of his sample population did not comply with the closure order.

020156 The December Lobster Report acknowledges that several of the lobstermen interviewed did not comply with the closure order.

020157 To the extent that the sample population did not comply with the closure, the data upon which the proxy measure of damages to the natural resources of the New Bedford Harbor is inaccurate.

020158 Mr. Morrison did not evaluate how the lobstermen who admitted to not complying with closure order would achieve compliance if they decided to do so.

020159 The plaintiffs have no evidence regarding how the lobstermen violating the closure order would achieve compliance with the order if they chose to do so.

020160 The Damage Assessments make assumptions about how lobstermen violating the closure order would achieve compliance with the order if they chose to do so.

020161 One response to the closure of the New Bedford Harbor to lobstering is to ignore it.

020162 Most lobstermen in the New Bedford Harbor area do not comply with the closure of Areas I, II and III.

020163 Some lobstermen in the New Bedford Harbor area do not comply with the closure of Area I.

020164 Some lobstermen in the New Bedford Harbor area do not comply with the closure of Area II.

020165 Some lobstermen in the New Bedford Harbor area do not comply with the closure of Area III.

020166 The estimation of damages to the New Bedford Harbor lobster fishery contained in the Damage Assessments assume that commercial lobstermen comply with the closure order.

020167 Dr. McConnell was informed by Mr. Morrison of the levels of noncompliance prior to the completion of the June Lobster Report.

020168 Many lobstermen who continue to lobster in 1980 and beyond disregarded the closure of Areas II and III and continue to lobster largely where they lobstered before the closure.

020169 The large numbers of the sample population who continue to lobster in Areas II and III compromise the conclusions of the Damage Assessments.

020170 To the extent that the calculations of trap loss in the Damage Assessments do not consider levels of compliance with the closure order, their conclusions are compromised.

020171 As of April 14, 1980, the Division of Marine Fisheries was aware of noncompliance with the closure of the New Bedford Harbor lobster fishery.

020172 On April 11, 1980, the Division of Marine Fisheries surveyed approximately 255 lobster pot buoys in Areas II and III.

020173 The buoys surveyed by the Division of Marine Fisheries in Areas II and III on April 11, 1980 were owned by, among others, Robert Sakwa, Antone Farias, Richard Perentz, Joseph Ferreira, Frederick Stowell, all members of the sample population used in, and interviewed for, the June Lobster Report.

020174 On August 12, 1981, 664 buoys were counted, many attached to trawls, and the Division of Marine Fisheries estimated 1,000 pots in the area closed to lobstering.

020175 The prohibition against lobstering in Area II is unnecessary.

020176 The prohibition against lobstering in Area III is unnecessary.

020177 The prohibition against lobstering in Area II is inappropriate.

020178 The prohibition against lobstering in Area III is inappropriate.

020179 The lobsters in Area II are safe for human consumption.

020180 The lobsters in Area III are safe for human consumption.

020181 There is no health risk from human consumption of the lobsters from Area II.

020182 There is no health risk from human consumption of the lobsters from Area III.

020183 The governments' unwillingness to incur the costs necessary to enforce the closure of Areas II and III reflects a determination that the benefits of such enforcement are less than the costs of such enforcement.

020184 The governments' unwillingness to incur the costs necessary to enforce the closure of Areas II and III reflects the public's determination that the benefits of such enforcement are less than the costs of such enforcement.

020185 The benefits of enforcing the closure of Areas II and III are less than the enforcement costs.

020186 The validity of the assumption, that the closure of the New Bedford Harbor commercial lobster fishery is associated with PCB contamination, is not established in the Lobster Reports or the Lobstering Damage Assessment.

020187 The closure of the New Bedford Harbor lobster fishery was not an appropriate response to the presence of PCBs.

020188 The plaintiffs' estimates do not result from injury to a natural resource, but from the inappropriate closure of the New Bedford Harbor.

020189 If the closed area were to be reopened, the congestion that could result could reduce the attractiveness of this area to commercial lobstermen and, hence, their willingness to pay for a reopened lobster fishery.

020190 The plaintiffs' have not evaluated the congestion that might occur in the closed area if it were to be reopened, and the affect this congestion might have on the commercial lobstermen's willingness to pay for a reopened lobster fishery.

020191 On September 25, 1979, the Massachusetts Department of Public Health prohibited lobstering in Areas I, II and III, an 18 square mile area.

020192 The Massachusetts Department of Public Health's closure of Areas I, II and III was an inappropriate response to the presence of PCBs in the tissue samples of certain lobsters.

020193 The Division of Marine Fisheries has determined that the contamination in Area III is not enough to warrant continued closure of Area III.

020194 Most New Bedford area lobstermen have experienced an increase in both net and gross income from lobstering since 1979.

020195 Some New Bedford area lobstermen have experienced an increase in both net and gross income from lobstering since 1979.

020196 In preparing the June Lobster Report, its authors interviewed 32 of the 56 lobstermen identified by the Massachusetts Division of Marine Fisheries as having lobstered in 1975. Four of 56 refused to grant interviews, two are dead and three could not be located by the Division of Marine Fisheries. The remaining 13 were not contacted.

020197 The 16 lobstermen who could not be or were not contacted by the authors of the June Lobster Report are more likely to be small scale lobstermen with relatively few pots and with relatively smaller boats.

020198 The 32 interviewed lobstermen are not representative of the population of New Bedford area lobstermen.

020199 The results from the interviews with the 32 located lobstermen cannot reasonably be extrapolated across the population of 56 lobstermen identified by the Division of Marine Fisheries.

020200 The authors of the June Lobster Report and the Lobstering Damage Assessment assume that the closure of the New Bedford Harbor lobster fishery was an appropriate response to the presence of PCBs.

020201 The authors of the June Lobster Report and the Lobstering Damage Assessment do not substantiate that the closure of the New Bedford Harbor lobster fishery was an appropriate response to the presence of PCBs.

020202 If the closure of the New Bedford Harbor lobster fishery was an inappropriate response to the presence of PCBs, then the damage estimates contained in the June Lobster Report and the Lobstering Damage Assessment result from inappropriate governmental action.

020203 If the closure of the New Bedford Harbor lobster fishery was an inappropriate response to the presence of PCBs, then the damage estimates contained in the June Lobster Report and the Lobstering Damage Assessment reflect, at least partly, inappropriate governmental action.

020204 The Damage Assessments did not attempt to determine the effect of the closure on revenues.

020205 Failure to determine the effect of the closure on revenues limits the utility of the Damage Assessments.

020206 Revenues per trip and revenues per trap frequently increased for individual lobstermen following the closure.

020207 Except in two instances, Mr. Morrison did not inquire into the revenues of the lobstermen he interviewed.

020208 Mr. Morrison did not inquire into the revenues per trap fished, or the size of the catch per year.

020209 The plaintiffs have no evidence whether lobstermen from the New Bedford area have had increases or decreases in revenues since the closure.

020210 The plaintiffs have no evidence whether lobstermen from the New Bedford area have incurred additional lobstering costs due to the closure.

020211 The authors of the June Lobster Report did not attempt to contact by mail the 13 lobstermen for whom it had addresses but not phone numbers.

020212 Failure to contact or attempt to contact these 13 lobstermen compromised the results of the June Lobster Report.

020213 Seventy-two percent of those lobstermen who were interviewed for the June Lobster Report who had quit lobstering in 1979 or before did so for a reason other than the closure.

020214 Some lobstermen who continued to lobster in 1980 and beyond relocated these efforts to other fishing grounds.

020215 In compiling the June Lobster Report, Mr. Morrison did not inquire of the lobstermen whether they were employed at lobstering full or part-time.

020216 Failure to determine the status of the interviewees as part-time or full-time prejudices the results of the Damage Assessments.

020217 In extrapolating from various sample populations, the authors of the Damage Assessments did not attempt to account for the existence of part-time, as opposed to full-time, lobstermen.

020218 Commercial lobstermen are engaged in lobstering to make a profit.

020219 Many commercial lobstermen switch to other types of fishing because they are more profitable.

020220 Some commercial lobstermen switch to other types of fishing because they are more profitable.

020221 Some commercial lobstermen switch to quahogging because it can be more profitable.

020222 Some commercial lobstermen also quahog.

020223 The plaintiffs have not evaluated the availability and characteristics of substitutes for lobstering.

020224 The plaintiffs' have no evidence that certain lobstermen would not have purchased larger boats in the absence of the closure of the New Bedford Harbor commercial lobster fishery.

020225 Larger boats enable commercial lobstermen to lobster over greater areas and fish more traps.

020226 Larger boats used for lobstering are more efficient in many respects than smaller boats.

020227 Larger boats often enable commercial lobstermen to earn higher profits.

020228 Commercial lobstermen can often earn higher profits lobstering offshore rather than inshore.

020229 There are fewer offshore commercial lobstermen than inshore commercial lobstermen.

020230 Smaller boats have less potential than larger boats to produce profits.

020231 The Lobstering Damage Assessment assumes that lobstermen who perceived an opportunity to increase their net revenues by moving to offshore lobstering areas would have moved offshore independently of the closure of Areas I, II and III.

020232 The plaintiffs' Damage Assessments assume that lobstermen who made a significant capital investment in boat and equipment to move offshore, but who also claim their net revenues have decreased as a result of their moving offshore, would not have made the decision to move offshore independent of the closure of Areas I, II and III.

020233 The plaintiffs' Damage Assessments assume that lobstermen, who independent of the closure of Areas I, II and III perceived an opportunity to increase net revenues by moving to productive areas offshore, would have moved offshore independent of the closure of these Areas.

020234 The plaintiffs' Damage Assessments assume that lobstermen who made a significant capital investment in boat and equipment to move offshore, but who also claim their net income has decreased as a result, would not have made the decision to move offshore independent of the closure.

020235 The June Lobster Report asserts that the measure of the damage to the lobster fishery in New Bedford is the resource users' willingness to pay for an open fishery free of PCB contamination but in all other respects unchanged in its condition.

020236 The June Lobster Report implies that injury to the lobster fishery in New Bedford can be measured by the resource users' willingness to pay for an open fishery free of PCB contamination but in all other respects unchanged in its condition.

020237 The June Lobster Report assumes as a proxy measure of resource users' willingness to pay the added cost purportedly necessary for New Bedford Harbor commercial lobster fishermen to comply with the ban on closing the harbor to lobster fishing.

020238 Some New Bedford commercial lobstermen continued to fish for lobster in Areas II up through 1986.

020239 Many New Bedford commercial lobstermen continued to fish for lobster in Areas II up through 1986.

020240 Most New Bedford commercial lobstermen continued to fish for lobster in Areas II up through 1986.

020241 Some New Bedford commercial lobstermen continued to fish for lobster in Areas III up through 1986.

020242 Many New Bedford commercial lobstermen continued to fish for lobster in Areas III up through 1986.

020243 Most New Bedford commercial lobstermen continued to fish for lobster in Areas III up through 1986.

020244 Some New Bedford commercial lobstermen continue to fish for lobster in Areas II.

020245 Many New Bedford commercial lobstermen continue to fish for lobster in Areas II.

020246 Most New Bedford commercial lobstermen continue to fish for lobster in Areas II.

020247 Some New Bedford commercial lobstermen continue to fish for lobster in Areas III.

020248 Many New Bedford commercial lobstermen continue to fish for lobster in Areas III.

020249 Most New Bedford commercial lobstermen continue to fish for lobster in Areas III.

020250 The June Lobster Report did not attempt to determine what New Bedford commercial lobstermen would do to completely comply with the ban on closing the harbor to lobster fishing.

020251 The June Lobster Report assumes that commercial lobstermen who continued lobstering in the harbor after 1979 would not quit lobstering if they were forced to comply with the ban on fishing.

020252 The June Lobster Report assumes that there has been no change in consumers' surplus as a result of the closure of the New Bedford Harbor.

020253 Experience in lobstering in a certain area will often result in increased harvest per trap while reducing costs.

020254 The Lobstering Damage Assessment assumes that commercial lobstermen who were licensed after 1975 would react to the closure exactly like commercial lobstermen licensed before 1975.

020255 Plaintiffs have no evidence that commercial lobstermen who were licensed after 1975 would react to the closure exactly like commercial lobstermen licensed before 1975.

020256 The Lobstering Damage Assessment assumes that commercial lobstermen who were licensed after 1979, when the harbor was closed to lobster fishing, would react to the closure exactly like commercial lobstermen licensed before 1975.

020257 Plaintiffs have no evidence that commercial lobstermen who were licensed after 1979 would react to the closure exactly like commercial lobstermen licensed before 1975.

020258 The commercial lobstermen who received their licenses before 1975 did so when the New Bedford Harbor lobster fishery was still open, whereas the commercial lobstermen who received their licenses after 1979 did so when the fishery had already been closed.

020259 Plaintiffs have no evidence regarding the costs that commercial lobstermen who received their licenses after 1979 might not have incurred, if any, if Areas I, II and III were not closed.

020260 Commercial lobstermen who received their licenses after 1979 incurred no additional costs as a result of the closure.

020261 Plaintiffs have no evidence regarding the willingness to pay of lobstermen who received their licenses after 1979 for a reopened lobster fishery.

020262 Lobstermen who received their licenses after 1979 have no willingness to pay for a reopened lobster fishery.

020263 The Lobstering Damage Assessment assumes that the increase in the number of lobstermen fishing out of New Bedford Harbor would have occurred if they were forced to comply with the ban on fishing in Areas I, II and III.

020264 Plaintiffs have no evidence regarding the lobstering boats and equipment used by new commercial lobstermen and by commercial lobstermen who quit the New Bedford Harbor commercial lobster fishery.

020265 Plaintiffs have no evidence regarding the extent to which new commercial lobstermen use lobstering boats and equipment which are newer and more efficient than the boats and equipment used by existing commercial lobstermen in the New Bedford area.

020266 New commercial lobstermen are more likely to use new boats and equipment than existing commercial lobstermen.

020267 New boats and equipment are more efficient than old lobstering equipment.

020268 More efficient boats and equipment allow commercial lobstermen to earn higher net revenues.

020269 More efficient boats and equipment give the commercial lobstermen who use them a cost advantage over lobstermen who do not use them.

020270 Plaintiffs have no evidence regarding the differences in lobstering costs for new commercial lobstermen and existing commercial lobstermen in the New Bedford area.

020271 More efficient boats and equipment will reduce over time the additional costs, if any, that commercial lobstermen incur as a result of the closure of the New Bedford Harbor commercial lobster fishery.

020272 Plaintiffs have not evaluated the potential for more efficient boats and equipment to reduce over time any additional costs that commercial lobstermen incur as a result of the closure of the New Bedford Harbor commercial lobster fishery.

020273 Plaintiffs have no evidence regarding the differences in lobstering methods of new commercial lobstermen and existing commercial lobstermen in the New Bedford area.

020274 Improved lobstering methods may reduce over time the additional costs, if any, that commercial lobstermen incur as a result of the closure of the New Bedford Harbor commercial lobster fishery.

020275 Plaintiffs have not evaluated the potential for improved lobstering methods to reduce over time any additional costs that commercial lobstermen incur as a result of the closure of the New Bedford Harbor commercial lobster fishery.

020276 Only 22 of the 66 lobstermen who were commercial license holders in 1986 also held licenses in 1975.

020277 The June Damage Report and the Lobstering Damage Assessment do not address the willingness to pay for the New Bedford Harbor lobster fishery of any resource users other than commercial lobstermen.

020278 The plaintiffs have no evidence that users of the New Bedford Harbor lobster fishery other than commercial lobstermen have any willingness to pay for a harbor free of PCB contamination but otherwise unchanged.

020279 The willingness to pay of commercial lobstermen is not indicative of other resource users' willingness to pay for a harbor free of PCB contamination but otherwise unchanged.

020280 The willingness to pay of commercial lobstermen is not a reliable measure of other resource users' willingness to pay for a harbor free of PCB contamination but otherwise unchanged.

020281 The plaintiffs have not attempted to produce evidence of injury to any users of the New Bedford Harbor lobster fishery other than commercial lobstermen.

020282 The plaintiffs have not attempted to quantify the injury to any users of the New Bedford Harbor lobster fishery other than commercial lobstermen.

020283 The plaintiffs have only attempted to quantify the increased costs of commercial lobstermen due to the closure of the New Bedford Harbor lobster fishery.

020284 The plaintiffs have produced no evidence of any injury to recreational lobstermen from PCB contamination.

020285 The plaintiffs have not quantified any injury to recreational lobstermen from PCB contamination.

020286 The plaintiffs have not evaluated the willingness to pay of recreational lobstermen for a reopened New Bedford Harbor lobster fishery free of PCB contamination but otherwise unchanged.

020287 The plaintiffs have not interviewed any recreational lobstermen.

020288 No recreational lobstermen have been deposed or otherwise provided sworn testimony or affidavits.

020289 The plaintiffs have no evidence regarding the number of recreational lobstermen who lobstered in Areas I, II and III prior to 1977.

020290 The plaintiffs have no evidence regarding the lobstering practices of recreational lobstermen in the New Bedford area either before or after the closure of Areas I, II and III.

020291 The plaintiffs have no evidence regarding the areas in which recreational lobstermen in the New Bedford area lobstered in before the closure of Areas I, II and III.

020292 The plaintiffs have no evidence regarding the areas in which recreational lobstermen in the New Bedford area lobster in after the closure of Areas I, II and III.

020293 The plaintiffs have no evidence regarding the costs of lobstering for recreational lobstermen in the New Bedford area either before or after the closure of Areas I, II and III.

020294 The plaintiffs have no evidence regarding the PCB concentrations, if any, in the lobsters caught by recreational lobstermen inside the closed area.

020295 Any decreases in social welfare associated with closure of the New Bedford Harbor lobster fishery result from the decision to invoke closure and not from PCB contamination.

020296 Any decreases in use value associated with closure of the New Bedford Harbor lobster fishery result from the decision to invoke closure and not from PCB contamination.

020297 Recreational lobstermen continue to lobster in Area II.

020298 Recreational lobstermen continue to lobster in Area III.

020299 Recreational or non-commercial lobstermen are not permitted to sell lobsters that they catch.

020300 The design of a survey is an appropriate criterion in evaluating survey results.

020301 The experience and competence of the overseer in survey methods and evaluation is an appropriate criterion in evaluating survey results.

020302 The training, experience and competence of the interviewer(s) is an appropriate criterion in evaluating survey results.

020303 The design of a sample so as to be representative of the population about which inferences are to be drawn is an appropriate criterion in evaluating survey results.

020304 Where the results of a survey are anticipated to be used in litigation, awareness of the interviewer of the purpose of either the survey or the litigation is an appropriate criterion in evaluating the results of a survey.

020305 The interviewers who conducted the interviews completed in preparing the June Lobster Report and the Lobstering Damage Assessment were aware that the interview results might be used in litigation.

020306 The interviewers who conducted the interviews completed in preparing the June Lobster Report and the Lobstering Damage Assessment were aware that the interview results would be used in litigation.

020307 The interviewers who conducted the interviews completed in preparing the June Lobster Report and Lobstering Damage Assessment were aware that the Report and/or the Assessment might be used in litigation.

020308 The interviewers who conducted the interviews completed in preparing the June Lobster Report and Lobstering Damage Assessment were aware that the Report and/or the Assessment would be used in litigation.

020309 Where the results of a survey are anticipated to be used in litigation, whether respondents have or perceive an interest in that litigation or were given information about that litigation, and the information they were given, are appropriate criteria in evaluating the results of a survey.

020310 Some commercial lobstermen in the New Bedford area brought a lawsuit against the defendants in this case.

020311 The lawsuit brought by some commercial lobstermen in the New Bedford area against the defendants in this case was dropped.

020312 The commercial lobstermen who were interviewed for the Lobstering Damage Assessment may have perceived an interest in this litigation.

020313 The accuracy and precision with which the results of a survey are tabulated and analyzed are appropriate criteria in evaluating the results of a survey.

020314 Experts in the field of survey research have demonstrated that the order in which survey questions are posed can affect the response to and may bias the results of a survey.

020315 The authors of the June Lobster Report have not tested whether the order in which questions were asked of lobstermen may have affected the responses to those questions and biased the results of the interviews used in preparing their Report or the Lobstering Damage Assessment.

020316 The authors of the June Lobster Report do not know what effects the order of the interview questions may have had on the results of the June Lobster Report or the Lobstering Damage Assessment.

020317 Experts in the field of survey research have demonstrated that the precise wording of survey questions affects the response to and may bias the results of a survey.

020318 Experts in the field of survey research have demonstrated that interviewers should avoid either intentional or inadvertent changes in the wording of survey questions to avoid bias in the results of a survey.

020319 Experts in the field of survey research have demonstrated that interviewers may unintentionally bias the results of a survey.

020320 Experts in the field of survey research have demonstrated that interviewers should not summarize or paraphrase a respondent's answer and that summarizing or paraphrasing an answer may bias the results of a survey.

020321 The foregoing statement is a standard set forth in the Interviewer's Manual referred to above and observed by experts in the field of survey research.

020322 None of the interviews conducted in the course of preparing the June Lobster Report or the Lobstering Damage Assessment were recorded verbatim through audio, electronic or other standard means of accurately recording interviews.

020323 All of the interviews conducted in the course of preparing the June Lobster Report and the Lobstering Damage Assessment were not recorded verbatim through audio, electronic or other standard means of accurately recording interviews.

020324 Experts in the field of survey research have demonstrated that the expectations of interviewers may bias the results of a survey.

020325 Experts in the field of survey research have demonstrated that the error introduced into survey results by interviewers is frequently greater than the sampling error.

020326 The foregoing statements are confirmed by the research of B. Bailar, President-elect of the American Statistical Association, reported in Attachment Q.VIII.a.3, and of M. Hansen and J. Waksberg, officials of the United States Bureau of the Census, reported in Attachment Q.VIII.a.4.

020327 Experts in the field of survey research have demonstrated that fewness of interviewers magnifies the bias introduced to survey results by interviewers.

020328 Experts in the field of survey research have demonstrated that the survey error induced by interviewers is separate from and in addition to sampling error.

020329 Attachment Q.VIII.a.5 sets forth standards for reporting the results of survey research which are generally recognized and observed by experts in the field.

020330 The survey undertaken in preparation of the June Lobster Report does not meet some of the criteria set forth in Attachment Q.VIII.a.5.

020331 The interviews and the evaluation of them undertaken in preparation of the June Lobster Report and the Lobstering Damage Assessment do not meet some of the criteria set forth in Attachment Q.VIII.a.5.

020332 The survey upon which the June Lobster Report and the Lobstering Damage Assessment is based is susceptible to bias resulting from inappropriate survey methods.

020333 The interviews which provided information used in the June Lobster Report and the Lobstering Damage Assessment are susceptible to bias resulting from inappropriate interview methods.

020334 Other than random selection, Mr. Morrison knows of no other criteria to assure statistically valid samples.

020335 The only technique used in the June and December Lobster Reports and the Lobstering Damage Assessment to assure a statistically valid sample was to attempt to interview the entire population of lobstermen.

020336 No attempt was made in the Damage Assessments to use a random number generator or other technique to avoid sample bias.

020337 No effort was made to correct for possible sample bias due to a tendency of some segment of the sample population, commercial lobstermen, to decline to cooperate.

020338 Failure to correct for such sample bias prejudices the conclusions of the Damage Assessments.

020339 The June Lobster Report and the Lobstering Damage Assessment do not evaluate actual or potential errors resulting from inappropriate survey methods.

020340 The June Lobster Report and the Lobstering Damage Assessment do not evaluate actual or potential errors resulting from inappropriate interview methods.

020341 The June Lobster Report and the Lobstering Damage Assessment do not evaluate actual or potential sampling errors.

020342 Among the criteria which experts in the field of survey research apply to the evaluation of surveys are: proper design of the survey, proper development of the questionnaire, proper interview methods, implementation of a probability sample, and computation of variances and standard errors of sample estimates.

020343 The survey undertaken in preparation of the June Lobster Report and the Lobstering Damage Assessment meets none of the criteria set forth in the foregoing statement.

020344 The authors of the June Damage Report and Lobstering Damage Assessment ignored the standards observed by experts in the field of economics, survey research and statistical analysis for the presentation of results.

020345 The authors of the June Lobster Report were aware of the criteria used by experts in the field of survey research during the time the June Lobster Report and the Lobstering Damage Assessment were in preparation.

020346 Mr. Morrison was not aware of the criteria used by experts in the field of survey research during the time the June Lobster Report and the Lobstering Damage Assessment were in preparation.

020347 The authors of the June Lobster Report were not aware of the criteria used by experts in the field of survey research during the time the June Lobster Report and the Lobstering Damage Assessment were in preparation.

020348 In the June Lobster Report, Mr. Morrison relied upon interviews with 32 of the 56 potentially affected New Bedford area lobstermen.

020349 Mr. Morrison interviewed 12 New Bedford area lobstermen in person. The remainder of the interviews were conducted by telephone.

020350 In the December Lobster Report, Mr. Morrison relied upon interviews with 35 of the 56 potentially affected lobstermen.

020351 Many of the lobstermen were interviewed more than once.

020352 Some of the lobstermen were interviewed more than once.

020353 Many of the lobstermen provided conflicting information in different interviews.

020354 Some of the lobstermen provided conflicting information in different interviews.

020355 Attachment Q.VIII.a.5 recites certain standards regarding sampling procedure, the conduct of interviews and the tabulation of results of interviews.

020356 The purpose of the standards recited in Attachment Q.VIII.a.5 is to minimize the probability of error in the survey to which the letter relates.

020357 None of the standards recited in Attachment Q.VIII.a.5 were observed in the survey conducted in preparation of the June Lobster Report and the Lobstering Damage Assessment.

020358 Some of the standards recited in Attachment Q.VIII.a.5 were not observed in the survey conducted in preparation of the June Lobster Report and the Lobstering Damage Assessment.

020359 The book by Sudman and Bradburn, which is referred to above, describes the susceptibility of surveys to the problem of faulty memory.

020360 The points made in Chapter 3 of the book referred to in the foregoing statement suggest that the survey undertaken in preparation of the June Lobster Report is susceptible to the problem of faulty memory.

020361 The problem of faulty memory, as referred to in the foregoing statement, either produces random error, or induces systematic bias.

020362 The standards for survey research referred to in the foregoing statements are observed by experts in that field.

020363 Failure to observe the standards referred to in the foregoing statement eliminates the scientific credibility of survey results.

020364 The interviewers who conducted interviews in preparation for the June Lobster Report and the Lobstering Damage Assessment, had prior expectations concerning the nature of the response to questions.

020365 During the course of the interviews conducted in preparation for the June Lobster Report and the Lobstering Damage Assessment, the interviewers

revealed to respondents the interviewers' prior expectation concerning the response to questions.

020366 During the course of the interviews conducted in preparation for the June Lobster Report and the Lobstering Damage Assessment, the interviewers revealed the purpose of the survey to respondents.

020367 Revealing the purpose of the survey to the respondents may have affected their responses.

020368 Revealing the purpose of the survey to the respondents affected their responses.

020369 The plaintiffs have no evidence that revealing the purpose of the survey to the respondents did not affect their responses.

020370 The precise wording of the purpose of the survey, as revealed by interviewers to respondents during the course of the interviews conducted in preparation for the June Lobster Report and the Lobstering Damage Assessment, is unknown.

020371 During the course of the interviews conducted in preparation for the June Lobster Report and the Lobstering Damage Assessment, the respondents were aware that the results of the interview would be used in litigation to advance claims made against persons alleged to have contaminated the New Bedford Harbor commercial lobster fishery with PCBs.

020372 Revealing to the respondents how the results of the interview would be used may have affected their responses.

020373 Revealing to the respondents how the results of the interview would be used affected their responses.

020374 The plaintiffs have no evidence that revealing to the respondents how the results of the interview would be used did not affect their responses.

020375 The interviewers who conducted the survey upon which the June Lobster Report and Lobstering Damage Assessment are based did not adhere to a questionnaire which meets the criteria adhered to by experts in survey research.

020376 The interviewers who conducted the survey upon which the June Lobster Report and Lobstering Damage Assessment are based did not adhere to a questionnaire prepared by a person with training and experience in survey research.

020377 The interviewers who conducted the survey upon which the June Lobster Report and Lobstering Damage Assessment are based did not ask the same questions of each respondent.

020378 To the extent the interviewers who conducted the survey upon which the June Lobster Report and Lobstering Damage Assessment are based asked the same questions of multiple respondents, the precise wording of such questions varied among interviewers and from interview to interview.

020379 To the extent the interviewers who conducted the survey upon which the June Lobster Report and Lobstering Damage Assessment are based asked the same questions of multiple respondents, the order of such question varied among interviewers and from interview to interview.

020380 The interviewers paraphrased or summarized the answers of respondents in the survey upon which the June Lobster Report and Lobstering Damage Assessment are based.

020381 Bias in the results of the survey upon which the June Lobster Report and Lobstering Damage Assessment are based was unintentionally induced by interviewers.

020382 Bias in the results of the survey upon which the June Lobster Report and Lobstering Damage Assessment are based may have been unintentionally induced by interviewers.

020383 If bias in the survey upon which the June Lobster Report and Lobstering Damage Assessment are based was induced by interviewers, the scope and magnitude of such bias is unknown.

020384 Bias which is unintentionally induced in the results of the survey upon which the June Lobster Report and Lobstering Damage Assessment are based may result from variations in the questions asked of respondents, or variations in the order or precise wording of questions.

020385 The interviews upon which the June Lobster Report and Lobstering Damage Assessment are based were conducted singly or by two people, except that in some instances a second or third person associated with the interviewer attended the interview and participated therein to some extent.

020386 Attachment Q.VIII.a.7 was used by the interviewers who conducted the surveys upon which the June Lobster Report and Lobstering Damage Assessment are based.

020387 Attachment Q.VIII.a.7 was used by some of the interviewers who conducted the surveys upon which the June Lobster Report and Lobstering Damage Assessment are based.

020388 Attachment Q.VIII.a.7 was used by some of the interviewers for some of the interviews upon which the June Lobster Report and Lobstering Damage Assessment are based.

020389 No document which has been made available to defendants in this litigation was used by any interviewer in the survey upon which the June Lobster Report and Lobstering Damage Assessment are based for the purpose of instructing the interviewer on the precise wording of questions to be asked of respondents, other than Attachment Q.VIII.a.7.

020390 No document which has been made available to defendants in this litigation was used by any interviewer in the survey upon which the June Lobster Report and Lobstering Damage Assessment are based for the purpose of instructing the interviewer on the order of questions to be asked of respondents, other than Attachment Q.VIII.a.7.

020391 Attachment Q.VIII.a.7 is not suitable for the purpose of conducting a survey which would be used for the purpose of providing a foundation for the June Lobster Report and Lobstering Damage Assessment because it does not state the precise wording of statements made to respondents concerning the purpose of the survey.

020392 Attachment Q.VIII.a.7 is not suitable for the purpose of conducting a survey which would be used for the purpose of providing a foundation for the June Lobster Report and Lobstering Damage Assessment because it imprecisely suggests areas of inquiry.

020393 Attachment Q.VIII.a.7 is not suitable for the purpose of conducting a survey which would be used for the purpose of providing a foundation for the June Lobster Report and Lobstering Damage Assessment because it does not instruct the interviewer to pose questions which are relevant to the purposes of the June Lobster Report and Lobstering Damage Assessment.

020394 Attachment Q.VIII.a.7 is not suitable for the purpose of conducting a survey which would be used for the purpose of providing a foundation for the June Lobster Report and Lobstering Damage Assessment because it suggests questions which reveal the prior expectations of the interviewer.

020395 Attachment Q.VIII.a.7 is not suitable for the purpose of conducting a survey which would be used for the purpose of providing a foundation for the June Lobster Report and Lobstering Damage Assessment because it suggests leading questions.

020396 The lobstermen interviews are subject to bias.

020397 The interviewers had little or no experience or training.

020398 There was no survey instrument; there was merely an incomplete outline of certain areas of inquiry drawn up by one of the authors of the June Lobster Report and Lobstering Damage Assessment.

020399 The outline contains questions which were leading or revealed expectations of the interviewer, both of which are known to induce bias in the response.

020400 The interviewers informed the respondents of the purpose of the survey.

020401 The respondents were asked different questions.

020402 Variation in the wording of questions was inevitable because there was no interview script.

020403 The interviewers summarized and paraphrased the lobstermen's responses.

020404 Proper survey procedures require consistent wording and ordering of survey questions, and verbatim recording of responses.

020405 The interviewers' survey procedures preclude generalization from the surveyed group to a larger group, specifically, the population of potentially affected lobstermen.

020406 The interviewers did not obtain answers to certain questions, or would not accept answers previously given, until the second, third, or fourth interview.

020407 When the responses are not recorded verbatim, critical scrutiny of the inferences taken from the survey is frustrated, and acceptance of the results becomes an act of faith.

020408 The interviewers' questions and the respondents' answers were not recorded verbatim.

020409 In conducting in-person interviews, Mr. Morrison followed no scripted questionnaire but extemporized from an informal interview protocol.

020410 Other than a single interview attended by Mr. Huguenin of IEc and four interviews attended by Dr. McConnell, Mr. Morrison conducted all the in-person interviews of lobstermen alone.

020411 Mr. Morrison and Steven Fine together conducted all of the telephone interviews.

020412 Mr. Morrison's interview "protocol" for in-person interviews was 3 to 4 pages long and contained 20 to 30 questions.

020413 Mr. Morrison did not ask identical questions of each in-person interviewee.

020414 Messrs. Morrison and Fine did not ask the same questions of each telephone interviewee.

020415 Failure to ask the same questions of each interviewee may have affected their responses.

020416 Failure to ask the same questions of the sample population prejudices the results of the Damage Assessments.

020417 Mr. Morrison knew at the time of the interview that some of the interviewees were hostile, unwilling to talk and resentful.

020418 Failure to factor such hostility into the analysis prejudices the results of the Damage Assessments.

020419 Prior to the beginning of an interview, Mr. Morrison would indicate to the interviewee that he was investigating the effect of the PCB-related closure on New Bedford lobstermen.

020420 Such disclosure prejudices the results of the Damage Assessments.

020421 Prior to the beginning of an interview, Mr. Morrison would indicate to the interviewee that the information gathered in the interview might be used in a government lawsuit.

020422 Such disclosure prejudices the results of the Damage Assessments.

020423 Telephone interviews were conducted on the basis of nine questions.

020424 During his interviews with lobstermen, Mr. Morrison never specifically inquired into the interviewee's knowledge of the closure.

020425 Neither Mr. Morrison nor anyone else conducted any study of the awareness of lobstermen in the New Bedford area to the closure.

020426 Mr. Morrison never inquired into the level of compliance with the closure when interviewing New Bedford area lobstermen.

020427 Mr. Morrison never inquired into the level of compliance with the closure in his interviews of New Bedford area lobstermen prior to September 1986.

020428 Mr. Morrison was informed by Stephen Boza that he, Mr. Boza, continued to lobster in the closed area.

020429 Mr. Morrison was informed by Stanley Baron, Jr. that he, Mr. Baron, had violated the closure.

020430 Mr. Morrison was informed by other interviewees that lobstering continued inside the closed area.

020431 Mr. Morrison was informed by MDMF that lobstering continued in the closed area by, among others, a number of Mr. Morrison's sample population.

020432 The statement in the June Lobster Report that "none of the lobstermen that we interviewed admitted having consciously violated the closure" (p. 5) is no longer accurate.

020433 The statement in the June Lobster Report that "none of the lobstermen that we interviewed admitted having consciously violated the closure" (p. 5) does not reflect information obtained in interviews conducted subsequent to the June Lobster Report.

020434 Some of the commercial lobstermen interviewed by Mr. Morrison admitted to violating the closure.

020435 Mr. Morrison has stated that it makes no difference to the June Lobster Report whether the closure was complied with or not.

020436 Dr. McConnell, noting the reluctance of New Bedford area lobstermen to be interviewed, stated that they had to be "coaxed" to be interviewed.

020437 Such "coaxing" prejudices the results of the Damage Assessments.

020438 The interviewed lobstermen were asked to gauge changes in their lobstering activities solely with respect to closure of a segment of all of the lobstering grounds available to them.

020439 The interviewed lobstermen had to abstract from all other factors that may have caused their activities to change, such as their age and their types of equipment before and after closure.

020440 The interviewed lobstermen had to abstract from the manner in which other lobstermen would and would not have altered their operations, with and without closure.

020441 The interviewed lobstermen were not told that the authors of the June Lobster Report and the Lobstering Damage Assessment were assuming that closure had not affected the price or quantity of lobsters.

020442 Fuel consumption rates differ depending on whether the boat is steaming, hauling traps or idling.

020443 Patterns of lobstering change by season.

020444 Any increase in steaming time may be the result of seasonal changes in the pattern of lobstering.

020445 Lobstermen who set traps both inside and outside of the closed area may have increased steaming time to the first trap, but the total steaming time would not necessarily be increased.

020446 The interviewer's questions regarding fuel consumption rates assumed, contrary to the responses of some lobstermen, that the relocation of lobstering traps caused longer traveling time.

020447 The length of the trip varies depending on the season of the year.

020448 The length of the trip may vary depending on the season of the year.

020449 The interviewers did not attempt to ascertain the season of the year.

020450 The additional steaming time may have resulted from reasons other than from the closure.

020451 The interviewers did not question whether some or all of the reasons for moving were related to the closure.

020452 The interviewer did not question whether the respondents would move back to the closed area if it were reopened.

020453 The lack of precision in the questions prevented some of the lobstermen from giving clear answers. Some lobstermen indicated the increased steaming time to the nearest trap, rather than the increased overall steaming time.

020454 The lobstermen did not indicate whether the steaming time was one way, roundtrip, or to the nearest trap.

020455 None of the lobstermen attempted to break out the increased steaming time by the time of year so as to permit an accurate assessment of the seasonal effects of the closure.

020456 The June Damage Report and Lobstering Damage Assessment do not clearly indicate whether the time estimate refers to the added time to the first trap, or whether it refers to added one-way or roundtrip steaming time.

020457 Mr. Morrison and IEc did not attempt to contact commercial lobstermen who they were unsuccessful at reaching by telephone by mail despite the fact that the Division of Marine Fisheries had mailing addresses available.

020458 IEc did not attempt to reach those commercial lobstermen by mail due to "time and resource" constraints.

020459 Failure to reach commercial lobstermen in the subject population prejudices the results of the Damage Assessments.

020460 Attempting to reach by mail the commercial lobstermen not reached by telephone could have been done at a reasonable cost.

020461 Attempting to reach by mail the commercial lobstermen not reached by telephone could have been done for less than $5,000.

020462 Mr. Morrison had no factual basis for his assumption in the Damage Assessments that those lobstermen who last reported a catch in 1977, 1978 or 1979 quit lobstering at least in part due to the closure.

020463 The work plan proposed by Steven Crutchfield was discarded because it resulted in a lower total damage figure than that which results from not assuming profit maximization on the part of the lobstermen.

020464 No effort was made to examine the characteristics of the non-responding part of the population.

020465 No effort was made to compare the characteristics of the non-responding commercial lobstermen with those of the responding commercial lobstermen.

020466 The June Lobster Report "relies on statements by lobstermen regarding their preferred activity, so that [the authors] analyze[d] the locations that they would prefer to fish or characterize[d] the time of year that they would prefer to lobster, based on their preferences and not based on whether or not lobstering in that area or at that particular time best maximizes their income."

020467 Neither Mr. Morrison, Dr. McConnell, nor any one else connected with the Damage Assessments sought to assure that the lobstermen whose catch report data were used to calculate the average number of trips made per year were representative of lobstermen who continued to lobster.

020468 The damage calculations contained in Exhibit 12 of the June Lobster Report and Exhibit 11 of the Lobstering Damage Assessment are highly sensitive to the individual characteristics of the sample population.

020469 Mr. Morrison never plotted the sensitivity of these calculations to the data and assumptions for individual lobstermen to determine if there were significant outliers.

020470 Mr. Morrison did not incorporate information regarding lobstermen for whom he had catch report data but whom he did not interview into his calculation of the average number of trips per year in the Damage Assessments.

020471 Failure to incorporate such information prejudices the results of the Damage Assessments.

020472 Had Mr. Morrison incorporated data from catch reports from lobstermen he had not interviewed, the median increased steaming time would have been lower than that shown on Exhibit 11 of the June Lobster Report.

020473 Had Mr. Morrison incorporated data from catch reports of lobstermen he had not interviewed, his sample would have been more complete and his conclusions more accurate.

020474 Failure of the government to produce all catch reports used in the June Lobster Report precluded the defendants from analyzing the effect of the exclusion of such information on the June Lobster Report, and prejudices the defendants' ability to respond fully.

020475 At one point, Mr. Morrison calculated the average yearly number of traps for all lobstermen who continued to lobster and for whom catch report data were available.

020476 Mr. Morrison did not include the calculation of the average yearly number of traps for all lobstermen who continued to lobster for whom catch report data were available in the June Lobster Report because he regarded it as irrelevant.

020477 Mr. Morrison did not include the calculation of the average yearly number of traps for all lobstermen who continued to lobster for whom catch report data were available in any of the Damage Assessments.

020478 Such data are relevant to assessing costs incurred by lobstermen due to the closure of the harbor to lobstering.

020479 The method for extrapolating the results of the interviews to the 1986 population of license holders uses sample statistics from one population and applies them to another population.

020480 The extrapolation assumes that the 1986 population had the same characteristics as the 1976 population.

020481 The extrapolation assumes that the proportion of 1975 lobstermen who fished in the closed area prior to the closure was the same as the proportion of 1986 lobstermen who would have fished in the closed areas if the New Bedford Harbor had not been closed.

020482 Plaintiffs have not substantiated the assumption referred to in the foregoing statement.

020483 Those lobstermen who were not interviewed but who released their catch reports fished fewer than half as many traps and took only half as many trips on average as those who were interviewed and released their catch reports.

020484 Tables A-7, A-8, A-3 and A-4 in Attachment Q.VIII.a.15 substantiate the foregoing statement.

020485 If the noninterviewed lobstermen made fewer trips and fished fewer traps than interviewed lobstermen, they also may not have experienced the same increases in steaming time as the interviewed lobstermen.

020486 The authors of the Lobstering Damage Assessment calculated a damage estimate based on a survey of 16 lobstermen who lobstered in 1975.

020487 The results of these interviews were generalized to an estimated total population of 52 lobstermen who lobstered in 1986.

020488 The 16 lobstermen were not a scientifically selected sample of the 52 lobstermen.

020489 Each of the 16 lobstermen were not asked the same questions, in the same order, with their answers recorded verbatim.

020490 The interviewed sample of lobstermen was small.

020491 Different groups of lobstermen answered different questions.

020492 Only eight of the lobstermen interviewed provided the full information requested by the authors of the Lobstering Damage Assessment.

020493 Only eight of the lobstermen interviewed provided supplied information on all three of the significant components of the damage estimate in the Lobstering Damage Assessment for which survey data were used: increased steaming time, fuel consumption, and the proportion of traps lost.

020494 These eight lobstermen were a small proportion of the assumed population affected by the closure of 49 lobstermen.

020495 The authors of the Lobstering Damage Assessment did not interview any lobstermen who obtained licenses subsequent to the closure.

020496 Seven of the lobstermen who had quit lobstering for reasons other than the closure were considered part of the population affected by the closure.

020497 It is reasonable to assume that a higher proportion of lobstermen who neither were interviewed nor released catch reports had quit lobstering or lobstered less actively than those who were interviewed.

020498 The lobstermen who were not interviewed were less active than the lobstermen who were interviewed.

020499 On average and according to the catch reports, the interviewed lobstermen took 82 trips per year, compared to 43 trips per year for the noninterviewed lobstermen.

020500 Tables A-3 and A-4 in Attachment Q.VIII.a.15 substantiate the foregoing statement.

020501 On average and according to the catch reports, the interviewed lobstermen fished 181 traps, compared to 72 traps for the noninterviewed lobstermen.

020502 Tables A-7 and A-8 in Attachment Q.VIII.a.15 substantiate the foregoing statement.

020503 The trip and trap differences between the interviewed and noninterviewed lobstermen are statistically significant, at the 90 percent confidence level for trips and at the 95 percent confidence level for traps.

020504 This finding of significant differences disproves the assertion that the lobstermen who were interviewed and those who were not were essentially similar groups.

020505 The fuel price assumed in the Lobstering Damage Assessment is higher than that quoted to the plaintiffs by several interviewed lobstermen.

020506 The trap loss data used in the Lobstering Damage Assessment are not representative of members of the purportedly affected population who were not interviewed.

020507 Plaintiffs have no evidence on the value of traps lost by lobstermen in the New Bedford Harbor commercial lobster fishery.

020508 None of the estimates contained in the Lobstering Damage Assessment for additional travel time, fuel and maintenance expense, the number of traps fished, and changes in the rates of trap loss are acceptable hypotheses.

020509 Tables B-1 through B-10 in Attachment Q.VIII.a.16 substantiate the foregoing statement.

020510 The estimates derived in the Lobstering Damage Assessment for time-related costs (i.e., labor, fuel and maintenance) and trap-related costs for all lobstermen for whom a complete set of data are available are not acceptable as hypotheses.

020511 Tables C-1 through C-4 in Attachment Q.VIII.a.17 substantiate the foregoing statement.

020512 Certain inferences taken from the data were based on statistical propositions which were mathematically incorrect.

020513 Certain inferences taken from the data were based on statistical propositions which were, apparently, misunderstood by the authors of the Damage Assessments.

020514 Other inferences are unsubstantiated, biased, or both.

020515 The aggregation of the damages estimated for a purportedly representative lobsterman in a representative year to a lump sum present value was merely an exercise in arithmetic; it had no basis in economics.

020516 The cumulative effect of the deficiencies in the June Damage Report and Lobstering Damage Assessment precludes the computation of a reliable estimate of the willingness of affected lobstermen to pay for a natural resource which is now unavailable.

020517 The authors of the June Damage Report and Lobstering Damage Assessment were unable to obtain the desired information from the entire group they had identified as potentially affected.

020518 Some members of the potentially affected group could not be located. Some of the potentially affected group were deceased. Some of the potentially affected group were simply unresponsive.

020519 Some of the group agreed to be interviewed, but did not authorize the release of their catch reports. Some of the group who released catch reports did not agree to be interviewed.

020520 Those potentially affected persons who agreed to interviews constituted a "sample" of the potentially affected population in 1975.

020521 The sample population was extrapolated to a final set of lobstermen potentially affected in 1986.

020522 The interviews of certain lobstermen are the primary source of data for the June Lobster Report and the Lobstering Damage Assessment.

020523 The interviews of certain lobstermen are an important source of data for the June Lobster Report and the Lobstering Damage Assessment.

020524 The interviews of certain lobstermen are a source of data for the June Lobster Report and Lobstering Damage Assessment.

020525 The interviews of certain lobstermen are the only source of data for certain variables used in the June Lobster Report and Lobstering Damage Assessment.

020526 The interviews of certain lobstermen are the only source of data for average annual trap losses used in the June Lobster Report and Lobstering Damage Assessment.

020527 The interviews of certain lobstermen are the only source of data for the additional steaming time due to closure of the New Bedford Harbor commercial lobster fishery used in the June Lobster Report and Lobstering Damage Assessment.

020528 The only source indicated in Exhibit 11 in both the June Lobster Report and the Lobstering Damage Assessment is interviews with New Bedford area lobstermen.

020529 The interviews of certain lobstermen are the only source of data for the number or proportion of lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery used in the June Lobster Report and Lobstering Damage Assessment.

020530 The only source indicated in Exhibit 6 in both the June Lobster Report and the Lobstering Damage Assessment is interviews with New Bedford area lobstermen.

020531 The interviews of certain lobstermen are the only source of data for the identification of lobstermen who previously lobstered in the closed area used in the June Lobster Report and Lobstering Damage Assessment.

020532 The interviews of certain lobstermen are the only source of data for the estimated fuel consumption rates for lobster boats used in the Lobstering Damage Assessment.

020533 The only source indicated in Exhibit 13 in the Lobstering Damage Assessment is interviews with New Bedford area lobstermen.

020534 The First and Second Sets of Notes are not verbatim transcripts of the interviews.

020535 The interviews do not provide internally consistent information.

020536 The assumptions regarding lobstermen in the June Lobster Report and the Lobstering Damage Assessment are often inconsistent with the First and Second Set of Notes.

020537 The assumptions regarding lobstermen in the June Lobster Report and the Lobstering Damage Assessment are not substantiated with reliable and verifiable evidence.

020538 The information obtained from interviews conducted after the June Lobster Report was completed was often significantly different from the information obtained in interviews conducted prior to completion of the June Lobster Report.

020539 The First and Second Set of Notes provide many examples of inconsistency between the information provided in different interviews with the same commercial lobstermen.

020540 The authors of the June Lobster Report assume that the increase in Stanley Baron, Jr.'s roundtrip steaming time due to closure of the New Bedford lobster fishery is one hour and 15 minutes.

020541 The Lobstering Damage Assessment assumes that the increase in Stanley Baron, Jr.'s roundtrip steaming time due to closure of the New Bedford lobster fishery is 30 minutes.

020542 Plaintiffs assumed a 60 percent lower increase in Mr. Baron's roundtrip steaming time due to closure in the Lobstering Damage Assessment compared to the June Lobster Report.

020543 Plaintiffs' assumptions regarding Mr. Baron's purported increased roundtrip steaming time are highly inconsistent across the Damage Assessments.

020544 The authors of the June Lobster Report assume that Stanley Baron, Jr.'s annual trap loss increased by 10 percent due to closure of the New Bedford lobster fishery.

020545 The Lobstering Damage Assessment assumes that Stanley Baron, Jr.'s annual trap loss increased by 5 percent due to closure of the New Bedford lobster fishery.

020546 Plaintiffs assumed a 50 percent lower increase in Mr. Baron's annual trap loss due to closure in the Lobstering Damage Assessment compared to the June Lobster Report.

020547 Plaintiffs' assumptions regarding Mr. Baron's purported increased annual trap loss are highly inconsistent across the Damage Assessments.

020548 The Second Set of Notes indicates that, since 1982, Stanley Baron, Jr. has stayed outside of Area III by choice, not because of the closure.

020549 The Second Set of Notes indicates that, even if Areas II and III were open, Mr. Baron would continue to set traps near the Elizabeth Islands.

020550 The Second Set of Notes indicates that Mr. Baron has experienced no change in the size of his catch due to the closure of Areas I, II and III.

020551 The Second Set of Notes indicates that, before he quit fishing for lobsters in 1973, Mr. Baron had no more than 150 traps.

020552 The Lobstering Damage Assessment assumes that Mr. Baron had an average of 215 traps before the closure.

020553 The Second Set of Notes indicates that Mr. Baron cannot remember how many traps he lost during an average year before the closure of Area III.

020554 The plaintiffs have no basis for estimating Mr. Baron's trap losses before 1979.

020555 The authors of the June Lobster Report assume that Stephen Boza's roundtrip steaming time increased by one hour and 20 minutes due to the closure of the New Bedford lobster fishery.

020556 The Lobstering Damage Assessment assumes that Mr. Boza's roundtrip steaming time increased by 2 hours and 20 minutes due to the closure of the New Bedford lobster fishery.

020557 Plaintiffs assumed a 75 percent higher increase in Mr. Boza's roundtrip steaming time due to closure in the Lobstering Damage Assessment compared to the June Lobster Report.

020558 Plaintiffs' assumptions regarding Mr. Boza's purported increased roundtrip steaming time are highly inconsistent across Damage Assessments.

020559 The authors of the June Lobster Report assume that Mr. Boza's fuel consumption per hour of steaming time is 6 gallons.

020560 The Lobstering Damage Assessment assume that Mr. Boza's fuel consumption per hour of steaming time is 4 gallons.

020561 Plaintiffs assumed a one-third lower fuel consumption per hour of steaming time for Mr. Boza in the Lobstering Damage Assessment compared to the June Lobster Report.

020562 Plaintiffs' assumptions regarding Mr. Boza's purported fuel consumption rate per hour of steaming time are highly inconsistent across Damage Assessments.

020563 The authors of the June Lobster Report assume that Mr Boza's annual trap loss has increased by 23 percent due to the closure of the New Bedford lobster fishery.

020564 The Lobstering Damage Assessment assumes that Mr. Boza's annual trap loss did not change due to the closure of the New Bedford lobster fishery.

020565 Plaintiffs' assumptions regarding Mr. Boza's purported increased annual trap loss are highly inconsistent across Damage Assessments.

020566 The Second Set of Notes indicates that, between April and July, during the period before 1979, Mr Boza moved all of his pots out of Areas II and III, to the Penikese Island.

020567 The Second Set of Notes indicates that Mr. Boza lost 20 traps out of 200 traps fished in Areas II and III during the winter periods during 1970 to 1977. This translates into a 10 percent loss rate for the winter periods before 1979.

020568 The Second Set of Notes indicates that Mr. Boza's average trap loss has not changed since the closure.

020569 Plaintiffs' assumptions regarding Mr. Boza's purported increased annual trap loss are highly inconsistent across Damage Assessments and the Second Set of Notes.

020570 The authors of the June Lobster Report assume that Mr. Boza's average number of traps fished between 1980 and 1984 was 370.

020571 The authors of the June Lobster Report assume that Charles Connor's roundtrip steaming time increased by one hour and 10 minutes due to the closure of the New Bedford lobster fishery.

020572 The Lobstering Damage Assessment assumes that Mr. Connor's roundtrip steaming time increased by one hour and 15 minutes due to the closure of the New Bedford lobster fishery.

020573 Plaintiffs assumed a 7 percent higher increase in Mr. Connor's roundtrip steaming time due to closure in the Lobstering Damage Assessment compared to the June Lobster Report.

020574 Plaintiffs' assumptions regarding Mr. Connor's purported increased roundtrip steaming time are highly inconsistent across Damage Assessments.

020575 The authors of the June Lobster Report assume that Mr. Connor's annual trap loss increased by 23 percent due to the closure of the New Bedford lobster fishery.

020576 The Lobstering Damage Assessment assumes that Mr. Connor's annual trap loss increased by 12 percent due to the closure of the New Bedford lobster fishery.

020577 Plaintiffs assumed a 48 percent lower increase in Mr. Connor's annual trap loss due to closure in the Lobstering Damage Assessment compared to the June Lobster Report.

020578 Plaintiffs' assumptions regarding Mr. Connor's purported increased annual trap loss are highly inconsistent across Damage Assessments.

020579 The Second Set of Notes indicates that, prior to the closure of Areas II and III, Mr. Connor would lose 30 to 40 out of 300 pots per year.

020580 The Second Set of Notes indicates that, after the closure of Areas II and III, Mr. Connor would lose 70 to 130 out of 400 to 450 traps per year.

020581 Plaintiffs' assumptions regarding Mr. Connor's purported increased annual trap loss are highly inconsistent across Damage Assessments and the Second Set of Notes.

020582 Plaintiffs' have no reliable basis on which to determine whether Mr. Connor's annual trap loss has increased or decreased due to closure.

020583 The authors of the June Lobster Report assume that Walter Dixon's roundtrip steaming time increased by 3 hours due to the closure of the New Bedford lobster fishery.

020584 The Lobstering Damage Assessment assumes that Mr. Dixon's roundtrip steaming time did not increase due to the closure of the New Bedford lobster fishery.

020585 Plaintiffs assumed a 100 percent lower increase in Mr. Dixon's roundtrip steaming time due to closure in the Lobstering Damage Assessment compared to the June Lobster Report.

020586 Plaintiffs' assumptions regarding Mr. Dixon's purported increased roundtrip steaming time are highly inconsistent across Damage Assessments.

020587 The authors of the June Lobster Report assume that Mr. Dixon's fuel consumption per hour of steaming time is 5 gallons.

020588 The Lobstering Damage Assessment assumes that Mr. Dixon's fuel consumption per hour of steaming time is 3.6 gallons.

020589 Plaintiffs assumed a 28 percent lower fuel consumption per hour of steaming time for Mr. Dixon in the Lobstering Damage Assessment compared to the June Lobster Report.

020590 Plaintiffs' assumptions regarding Mr. Dixon's purported fuel consumption rate per hour of steaming time are highly inconsistent across Damage Assessments.

020591 The authors of the June Lobster Report assume that Mr. Dixon's average number of traps fished per year between 1978 and 1984 is 209.

020592 The Lobstering Damage Assessment assumes that Mr. Dixon's average number of traps fished per year between 1978 and 1984 is 179.

020593 Plaintiffs assumed a 14 percent lower average number of traps fished per year between 1978 and 1984 for Mr. Dixon in the Lobstering Damage Assessment compared to the June Lobster Report.

020594 Plaintiffs' assumptions regarding Mr. Dixon's purported average number of traps fished per year between 1978 and 1984 are highly inconsistent across Damage Assessments.

020595 The Second Set of Notes indicates that, prior to 1978, Mr. Dixon lobstered east of West Island, towards the Cape Cod Canal.

020596 The Second Set of Notes indicates that, after his move to West Island in 1978, Mr. Dixon would set 20 traps in Area III, and the rest of his traps around the Elizabeth Islands, in Martha's Vineyard Sound, and south of the Vineyard towards Normans Land.

020597 The Second Set of Notes indicates that Mr. Dixon would set 20 traps in Area III early in the spring for a few weeks, but sometimes without bait since he needed to soak the wooden traps for a few weeks so they would stay on the bottom.

020598 The Second Set of Notes indicates that Mr. Dixon would have moved his lobster fishing activity to the Elizabeth Islands regardless of the closure because the lobsters are bigger further out.

020599 The Second Set of Notes indicates that Mr. Dixon believes he is financially better off after having moved his operation to the Elizabeth Islands.

020600 The Second Set of Notes indicates that Mr. Dixon retired from fishing for lobster because it was less demanding physically to operate a dragger.

020601 The authors of the June Lobster Report did not include an estimate of Thomas Egan's increased roundtrip steaming time in determining the impact of the closure on the New Bedford lobster fishery.

020602 The Lobstering Damage Assessment assumes that Mr. Egan's roundtrip steaming time increased by four hours and 45 minutes due to the closure of the New Bedford lobster fishery.

020603 Plaintiffs' assumptions regarding Mr. Egan's purported increased roundtrip steaming time are highly inconsistent across Damage Assessments.

020604 The Second Set of Notes indicates that Mr. Egan spent 15 minutes of steaming time to reach his pots when fishing for lobster in Areas II or III.

020605 The Second Set of Notes indicates that Mr. Egan spent one hour in steaming time to reach the Elizabeth Islands.

020606 The Second Set of Notes indicates that James White has been the main user of Mr. Egan's lobstering license from 1982 to 1986.

020607 The Second Set of Notes indicates that in 1983 Mr. White located 20 percent of his traps inside Area III, and 80 percent along the southern boundary of Area III -- White Rock to Great Ledge to Mishaum.

020608 The Second Set of Notes indicates that in 1984, after the first month, Mr. White located 100 percent of his traps around the Elizabeth Islands.

020609 The Second Set of Notes indicates that in 1985 Mr. White located 100 percent of his traps around the Elizabeth Islands.

020610 In 1984 and 1985 Mr. White did not fish for lobster in Areas I, II or III.

020611 Between 1982 and 1985, Mr. White's per trap harvest of lobster was fairly constant.

020612 Mr. White's decision to move offshore to Mud Hole, west of Normans Land and southwest of Gay Head, to fish for lobster in 1986 was independent of the closure of Areas I, II and III.

020613 The authors of the June Lobster Report assume that Mr. White's decision to move offshore, and leave New Bedford Harbor, was based on a perceived opportunity to increase net revenues.

020614 The Lobstering Damage Assessment assumes that Mr. White did not leave the New Bedford Harbor lobster fishery.

020615 The Second Set of Notes indicates that Mr. Egan stated that he and Mr. White experienced about a 30 percent trap loss per year in Areas II and III as well as around the Elizabeth Islands.

020616 Mr. White and Mr. Egan did not experience an increase in the rate of trap loss as a result of the closure of Areas II and III.

020617 The authors of the June Lobster Report identified Mr. Fernandes as a lobsterman who previously fished for lobster in the closed area.

020618 The Lobstering Damage Assessment identifies Mr. Fernandes as a lobsterman who previously did not fish for lobster in the closed area.

020619 Plaintiffs' assumptions in the June Lobster Report and the Lobstering Damage Assessment regarding Mr. Fernandes's purported lobstering locations are contradictory.

020620 The Second Set of Notes indicates that Mr. Fernandes stated that he is certain he has never lobstered in the closed area, before or after closure.

020621 The Second Set of Notes indicates that Mr. Fernandes stated that he always lobstered east of Sconticut Neck, not west.

020622 On May 28, 1986, Mr. Fernandes stated that he has fished for lobster in Area II in every year he fished for lobster up to and including 1986.

020623 On May 28, 1986, Mr. Fernandes stated that he has fished for lobster in Area III of New Bedford Harbor in every year in which he has fished for lobster, up to and including 1986.

020624 On March 14, 1986, Mr. Fernandes purportedly told Brian Morrison that before the closure he would set his lobster traps around West Island into Area III.

020625 On March 14, 1986, Mr. Fernandes purportedly told Brian Morrison that since the closure he has set his traps around West Island.

020626 On March 14, 1986, Mr. Fernandes purportedly told Brian Morrison that his travel time has increased by one hour due to the closure.

020627 On April 21, 1986, Mr. Fernandes purportedly stated that he fished a little in the closed area, but mostly outside before the closure. Since the closure he has fished outside the closed area.

020628 On May 28, 1986, Mr. Fernandes purportedly stated that his travel time to his lobster pots has increased by one hour due to the construction of the hurricane dike.

020629 On May 28, 1986, Mr. Fernandes purportedly stated that he has incurred no increase in travel time due to the closure of Areas I, II and III.

020630 The plaintiffs have no reliable basis for determining whether the closure of Areas I, II and III has had any impact on Mr. Fernandes.

020631 The Lobstering Damage Assessment assumes that Richard Perentz's decision to move offshore out of the New Bedford Harbor was not influenced by factors other than the closure.

020632 The authors of the June Lobster Report assume that Mr. Perentz's roundtrip steaming time increased by 4 hours due to the closure of the New Bedford lobster fishery.

020633 The Lobstering Damage Assessment assumes that Mr. Perentz's roundtrip steaming time increased by 21 hours and 30 minutes due to the closure of the New Bedford lobster fishery.

020634 Plaintiffs assumed a more than 430 percent higher increase in Mr. Perentz's roundtrip steaming time due to closure in the Lobstering Damage Assessment compared to the June Lobster Report.

020635 Plaintiffs' assumptions regarding Mr. Perentz's purported increased roundtrip steaming time are highly inconsistent across Damage Assessments.

020636 The First Set of Notes indicates that Mr. Perentz experienced a 1 to 3 hour increase in steaming time due to the closure.

020637 The First Set of Notes indicates that Frederick Szela, Sr. fished about 100 to 120 traps.

020638 The First Set of Notes does not indicate how many traps Frederick Szela, Sr. fished before 1979.

020639 The First Set of Notes does not indicate how many traps Frederick Szela, Sr. fished between 1980 and 1986.

020640 The authors of the June Lobster Report assume that the average number of traps fished by Frederick Szela between 1978 and 1984 is 110.

020641 The plaintiffs have no evidence on the average number of traps fished by Frederick Szela, Sr. between 1978 and 1984.

020642 Additional interviews of the lobstermen already interviewed might produce information which is inconsistent with that used as the basis for the Lobstering Damage Assessment.

020643 The plaintiffs have not obtained signed affidavits from any of the lobstermen to verify any of the information used as the basis for the June Damage Report and the Lobstering Damage Assessment.

020644 The plaintiffs have not attempted to verify the information obtained in the interviews.

020645 The plaintiffs have reinterviewed lobstermen in the hope of obtaining accurate information.

020646 The catch reports are an unreliable source of data.

020647 The accuracy of the data contained in the catch reports is unknown.

020648 The plaintiffs have no evidence to demonstrate the accuracy of the data contained in the catch reports.

020649 The plaintiffs have provided no evidence that demonstrates the accuracy or reliability of the data contained in the catch reports.

020650 The contents of the catch reports for a given year vary depending on the requirements imposed by the Massachusetts Division of Marine Fisheries ("MDMF").

020651 Attachment VII.C.RA7-205 to the plaintiffs' Requests for Admissions shows that the types of data available from catch reports varies from year to year.

020652 Attachment VII.C.RA7-205 also shows that no data were available from catch reports for the number of trips taken per month or per year for 1977 and 1978.

020653 The form for the catch report changed in 1980.

020654 The amount of detailed information furnished by lobstermen in the catch reports varies across individuals.

020655 Some lobstermen report considerable detail; others only aggregate data.

020656 The catch reports are an important source of data used in the Damage Assessments.

020657 All lobstermen do not submit catch reports.

020658 The information in catch reports do not substantiate any injury to the natural resources of the New Bedford Harbor commercial lobster fishery.

020659 None of the information reported in the catch reports provides a proper basis for determining what, if any, injury has occurred to natural resources in the New Bedford Harbor.

020660 Any change in the information provided in the catch reports resulting from the closure of the New Bedford Harbor commercial lobster fishery is not an appropriate proxy or basis for determining whether, or to what degree, the fishery has been injured.

020661 To the extent that the conclusions of the Damage Assessments rely upon catch report data not provided to the defendants, the defendants have been unable to fully assess the accuracy and inappropriateness of those conclusions.

020662 To the extent that Exhibit 8 of the June Lobster Report and Exhibit 8 of the Lobstering Damage Assessment rest on the content of catch reports not produced to the defendants, the defendants have been unable to fully assess the accuracy of those exhibits and the conclusions drawn from them.

020663 The June Lobster Report calculates the average number of trips affected by the closure by looking at the catch reports of the eight lobstermen who have both released catch report data and who in interviews stated that they relocated to different grounds due to the closure.

020664 To the extent that this calculation, and Exhibit 10 of the June Lobster Report in general, relies upon catch report data not produced to the defendants, the defendants have been precluded from a full and fair opportunity to assess the June Lobster Report's accuracy.

020665 The June Lobster Report's calculation of the average number of traps used relies upon information drawn from catch reports for eight New Bedford area lobstermen.

020666 To the extent that the June Lobster Report relies upon information of these eight lobstermen, the conclusions drawn from that data are not representative of New Bedford area lobstermen as a whole.

020667 To the extent that the June Lobster Report relies on catch report data not produced to the defendants in calculating the average number of trips affected by the closure, the defendants have been precluded from a full and fair review of the factual underpinnings of the June Lobster Report.

020668 To the extent that the calculation of the average number of traps used ignores comparable information provided in catch report data available to the plaintiffs, that failure compromises the validity of the June Lobster Report's conclusions regarding the average number of traps used.

020669 The "Average Number of Trips per Year" shown on Exhibit 10 of the June Lobster Report is derived solely from catch reports of Messrs. Boza,

Dixon, Farias, Fernandes, Ferreira, Sakwa, Vital and an anonymous respondent.

020670 In Exhibit 10 of the June Lobster Report, certain of the data shown in the column headed "1983" are incorrect tabulations from catch reports; the correct data for the months of January through July are 2.3, 2.8, 5.8, 12.4, 15.6, 17.3, and 14.9, respectively.

020671 In Exhibit 10 of the June Lobster Report, the column headed "Overall Average" is a biased estimate of the actual number of trips currently taken by the eight individuals upon whom the Exhibit is based because the number of trips currently taken by the eight individuals exceeds the historical average.

020672 The eight individuals upon whose catch reports Exhibit 10 of the June Lobster Report is based currently take fewer trips than indicated in the column of Exhibit 10 headed "Overall Average."

020673 Tabulation of the catch reports of eight individuals, upon which Exhibit 10 of the June Lobster Report was based, treated Walter Dixon, one of the eight, as though he had not reported for the year 1983, when, in fact, he had reported, and had reported no trips.

020674 The eight individuals whose catch reports are tabulated in Exhibit 10 of the June Lobster Report are not representative of New Bedford lobstermen, and their trip report data cannot be reasonably extrapolated to the population as a whole.

020675 Tabulation of the catch reports of Joseph Ferreira, one of the eight individuals upon which Exhibit 10 of the June Lobster Report is based, involved an allocation of Mr. Ferreira's trips during the year 1982 which is not based on information supplied by Mr. Ferreira or anywhere reported by him.

020676 The time required to steam to lobster grounds outside the closed area imposes no opportunity cost on some New Bedford area lobstermen, relative to the time required to steam to lobster grounds in the closed area.

020677 The time required to steam to lobster grounds outside the closed area constitutes a savings to some New Bedford area lobstermen, relative to the time required to steam to lobster grounds in the closed area.

020678 Exhibit 11 of the June Lobster Report derives an estimated value of additional steaming time due to closure of the New Bedford Harbor commercial lobster fishery of one hour and five minutes.

020679 Exhibit 11 of the June Lobster Report is based on information obtained from interviews of 12 commercial lobstermen.

020680 Exhibit 11 of the June Lobster Report purports to be a sample of the population of commercial lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery.

020681 Exhibit 11 of the June Lobster Report does not include information pertaining to Richard Russell.

020682 During the interviews reported in Attachment Q.VIII.a.1, Richard Russell purportedly stated that closure has not much affected the time he spends steaming to lobster grounds.

020683 During the interviews reported in Attachment Q.VIII.a.1, Richard Russell purportedly stated that closure may have reduced the time he spends steaming to and around lobstering grounds.

020684 During the interview reported in Attachment Q.VIII.a.1, Richard Perentz purportedly stated that his steaming time has increased between one hour and three as a result of the closure.

020685 The June Lobster Report interpreted the foregoing statement of Richard Perentz to mean between one hour and three hours each way, or between two hours and six hours roundtrip.

020686 This interpretation is biased and results in a higher estimate of the increased roundtrip steaming time than warranted by Mr. Perentz' reported statement.

020687 The foregoing statement of Richard Perentz is ambiguous in that Mr. Perentz may have meant either between one hour and three hours each way, or between one hour and three hours roundtrip.

020688 Mr. Perentz' statement thus implies an increased roundtrip steaming time of either between two and six hours, or between one and three hours.

020689 An unbiased interpretation of Mr. Perentz' statement would be to take the simple average of the two means of the two possible interpretations, four and two, which yields an unbiased estimate of three hours.

020690 Exhibit 11 of the June Lobster Report uses four hours as the increase in steaming time for Richard Perentz.

020691 Richard Perentz later purportedly claimed that his roundtrip steaming time increased by 21 hours and 30 minutes due to the closure.

020692 This claimed increase, which was used in the December Lobster Report and the Lobstering Damage Assessment, is more than five times the estimate used in the June Lobster Report.

020693 Neither the plaintiffs nor the December Lobster Report nor the Lobstering Damage Assessment have provided an explanation for the dramatic change in the assumed increase in roundtrip steaming time for Richard Perentz.

020694 Exhibit 11 of the June Lobster Report uses one hour as the increase in steaming time for Joseph Fernandes.

020695 Joseph Fernandes has not been affected by closure of the New Bedford Harbor commercial lobster fishery.

020696 If Joseph Fernandes spent any more time steaming to lobstering grounds after as opposed to prior to closure, that time is no more than one hour.

020697 Any increase in steaming time to lobstering grounds for Joseph Fernandes since closure of the New Bedford Harbor commercial lobster fishery is due to construction of a dike.

020698 Exhibit 11 of the June Lobster Report incorrectly imputes to Joseph Fernandes some willingness to pay for a reopened commercial lobster fishery in New Bedford Harbor.

020699 Exhibit 11 of the June Lobster Report incorrectly imputes to Stephen Boza a willingness to pay for a reopened commercial lobster fishery in New Bedford Harbor which Mr. Boza disclaims in Attachment Q.VIII.a.1.

020700 Exhibit 11 of the June Lobster Report incorrectly imputes to Robert Sakwa a willingness to pay for a reopened commercial lobster fishery in New Bedford Harbor which Mr. Sakwa disclaims in Attachment Q.VIII.a.1.

020701 Exhibit 11 of the June Lobster Report incorrectly imputes to Frederick Szela, Sr. a willingness to pay for a reopened commercial lobster fishery in New Bedford Harbor which Mr. Szela disclaims in Attachment Q.VIII.a.1.

020702 The willingness to pay for a reopened commercial lobster fishery in New Bedford Harbor estimated in Exhibit 12 of the June Lobster Report is derived from Exhibit 11 of the Report and extended in Exhibits 20 and 21 of the Report.

020703 Exhibit 13 of the June Lobster Report derives a measure of fuel consumption rates from 17 entities, of which at least five are not commercial lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery.

020704 Exhibit 13 of the June Lobster Report is not a suitable basis for a statistically valid estimate of the fuel consumption rates of commercial lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery.

020705 The fuel consumption rates of commercial lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery cannot be derived from the data shown in Exhibit 13 of the June Lobster Report.

020706 The measure of fuel consumption rates derived in Exhibit 13 of the June Lobster Report is based in part on the fuel consumption rates of two boats used by Frederick Sela for commercial lobster fishing.

020707 The fuel consumption rate of one of the boats referred to in the foregoing statement is four times the rate of the other boats.

020708 That boat which purportedly consumes fuel at four times the rate of the other boat is not used in lobstering.

020709 The calculations of fuel consumption rates contained in Exhibit 13 of the June Lobster Report and Exhibit 12 of the Lobstering Damage Assessment do not consider the relative number of different types of boats and engines.

020710 A calculation of fuel consumption rates which considers the relative number of the different types of boats and engines would result in a more accurate calculation of fuel consumption costs.

020711 Exhibit 15 of the June Lobster Report derives a measure of maintenance costs from seven entities, none of which are commercial lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery.

020712 Exhibit 15 of the June Lobster Report is not a suitable basis for a statistically valid estimate of the engine maintenance costs of commercial lobstermen affected by closure of the New Bedford commercial lobster fishery.

020713 The engine maintenance costs of commercial lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery cannot be derived from the data shown in Exhibit 15 of the June Lobster Report.

020714 Tabulation of the average number of traps fished by eight individuals in Exhibit 17 of the June Lobster Report ignored the report of Walter Dixon, one of the eight, that he had fished no traps in 1983.

020715 The treatment of the traps fished by Walter Dixon as described in the foregoing statement creates an upward bias in the estimates derived in the exhibit.

020716 In Exhibit 17 of the June Lobster Report, the column headed "Average Traps Fished Per Year" is a biased estimate of the actual number of traps currently fished by the eight individuals upon whom the exhibit is based because the number of traps currently fished exceeds the historical average.

020717 The eight individuals whose catch reports are tabulated in Exhibit 17 of the June Lobster Report are not representative of New Bedford Lobstermen, and their trap use data cannot be reasonably extrapolated to the population as a whole.

020718 The eight individuals upon whom Exhibit 17 of the June Lobster Report is based currently fish fewer traps than indicated in the column of Exhibit 17 headed "Average Traps Fished Per Year."

020719 Exhibit 18 of the June Lobster Report is based in part on the increased trap losses of Joseph Fernandes before and after closure.

020720 The increased trap losses of Joseph Fernandes which are included in Exhibit 18 of the June Lobster Report are not the result of closure of the New Bedford Harbor commercial lobster fishery because Mr. Fernandes continues to lobster in the closed area.

020721 Joseph Fernandes stated under oath that "... I have had quite a few of them [lobster traps] wiped out just by sticking them in close to where the big boats are going. These are things that you learn as you are going out there. It takes years to learn them."

020722 Exhibit 18 of the June Lobster Report is biased because it fails to account for the possibility that commercial lobstermen learn methods of reducing trap losses over time.

020723 Exhibit 18 of the June Lobster Report is not a valid estimate of the additional costs due to increased trap losses resulting from closure because it does not account properly for the costs of replacing traps which are lost.

020724 The nine individuals whose trap losses are purportedly tabulated in Exhibit 18 of the June Lobster Report are not representative of New Bedford lobstermen, and their trap loss data cannot be reasonably extrapolated to the population as a whole.

020725 The median value of the increase in annual trap loss, if any, is less than 23 percent.

020726 Charles Connor did not suffer a 23 percent increase in annual trap loss due to the closure.

020727 Stephen Boza did not suffer a 23 percent increase in annual trap loss due to the closure.

020728 Antone Farias did not suffer a 34 percent increase in trap loss due to the closure.

020729 Joseph Fernandes did not suffer a 37 percent increase in trap loss due to the closure.

020730 The number of lobstermen estimated in the June Lobster Report to be affected by closure of the New Bedford Harbor commercial lobster fishery is 28.

020731 The number of lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery is unknown.

020732 The precision of an estimate derived from a sample is low when the size of the sample is small.

020733 An estimate which is imprecise because the size of a sample is small does not become more precise by the use of sample medians in lieu of sample means.

020734 Aa a statistical proposition, the median of the sum is not the same as the sum of the medians.

020735 Calculations of additional steaming time, fuel expense and maintenance costs in the June Lobster Report and Lobstering Damage Assessment, incorrectly assume that the sum of medians equals the median of the sum.

020736 The mean and standard deviation of the increase in roundtrip steaming time of the 12 lobstermen reported in Exhibit 11 of the June Lobster Report are 1.47 hours and 1.23 hours, respectively.

020737 The 95% confidence interval for the increase in roundtrip steaming time of the 12 lobstermen reported in Exhibit 11 of the June Lobster Report is 0.68 hours to 2.25 hours.

020738 The mean and standard deviation for the average number of traps fished from 1978 to 1984 by the eight lobstermen reported in Exhibit 17 of the June Lobster Report are 232 and 96, respectively.

020739 The 95% confidence interval for the average number of traps fished by the eight lobstermen reported in Exhibit 17 of the June Lobster Report is 152 to 312.

020740 The mean and standard deviation of the increase in annual trap losses of the nine lobstermen reported in Exhibit 18 the June Lobster Report are 26% and 17%, respectively.

020741 The 95% confidence interval for the increase in annual trap losses of the nine lobstermen reported in Exhibit 18 of the June Lobster Report is 13% to 39%.

020742 The ranges reported above demonstrate the imprecision of the estimates used to compute the damages calculated in the June Lobster Report.

020743 The "Average Increase in Annual Time Costs" set forth in Exhibit 12 of the June Lobster Report is based on data obtained from 12 lobstermen.

020744 The "Average Increase in Annual Fuel Costs" set forth in Exhibit 14 of the June Lobster Report is based on data obtained from 11 commercial lobstermen and six other entities.

020745 The "Average Increase in Annual Vessel Maintenance Costs" set forth in Exhibit 16 of the June Lobster Report is based on data obtained from seven entities, none of which are commercial lobstermen.

020746 The "Average Increase in Annual Gear Replacement Costs" set forth in Exhibit 19 of the June Lobster Report is based on data obtained from nine lobstermen.

020747 Of the commercial lobstermen included in the groups upon which Exhibits 12, 14 and 19 of the June Lobster Report are based, data pertaining to six commercial lobstermen only are included in all three exhibits. These are Messrs. Boza, Farias, Fernandes, Ferreira, Sakwa and an anonymous respondent. (In the case of Mr. Farias, the costs associated with additional fuel expenditures are zero, based on Exhibit 13.)

020748 With respect to the six commercial lobstermen referred to in the foregoing statement, the average increase in annual cost associated with the reported combination of additional steaming time, additional fuel expenditures and an increased rate of trap losses is $2,240. The corresponding standard deviation and standard error are $1,723 and $703, respectively. The 95% confidence interval around the estimated mean ranges from $432 to $4,048.

020749 A 95% confidence interval of plus or minus 81% of the mean is imprecise.

020750 An estimate of increased costs due to a combination of additional steaming time, additional fuel expenditures and an increased rate of trap losses which results in a range in which the higher bound of the estimate is 9 times the lower bound of the estimate is imprecise.

020751 An estimate of increased costs due to a combination of additional steaming time, additional fuel expenditures, and an increased rate of trap losses which results in a range in which the higher bound of the estimate is 9 times the lower bound of the estimate is speculative.

020752 An estimate which results in a confidence interval between $432 to $4,048 is imprecise.

020753 An estimate of damages which results in a confidence interval from $432 to $4,048 is speculative.

020754 Experts in the field of survey research have demonstrated that the results of a survey may be affected by nonrespondent bias.

020755 Errors introduced by nonrespondent bias are in addition to errors due to sampling.

020756 Exhibit 19 of the June Lobster Report is based upon the average number of traps fished by eight lobstermen over a period of seven years, which lobstermen and years are identified in Exhibit 17 of the June Lobster Report.

020757 The data set forth in Exhibit 17 of the June Lobster Report are derived from Attachment Q.VIII.a.10, or, alternatively, the data set forth in Exhibit 17 of the June Lobster Report and the data contained in Attachment Q.VIII.a.10 are derived from the same source.

020758 Attachment Q.VIII.a.10 contains data pertaining to the average annual number of traps fished by 19 commercial lobstermen for whom data are not included in Exhibit 17 of the June Lobster Report.

020759 Considering the years 1978 to 1984, and treating years in which an individual did not lobster as an observation that such lobsterman fished zero traps, the average number of traps fished by the eight lobstermen who are included in Exhibit 17 of the June Lobster Report is, at the 5% level of significance, significantly greater than the average number of traps fished by the 19 lobstermen for whom data are contained in Attachment Q.VIII.a.10 and not contained in Exhibit 17 of the June Lobster Report.

020760 The average number of traps fished by the eight lobstermen for whom data are reported in Attachment Q.VIII.a.10 and reflected in Exhibit 17 is 282% of the average number of traps fished by the 19 lobstermen for whom data are reported in Attachment Q.VIII.a.10 and not reflected in Exhibit 17 of the June Lobster Report.

020761 The difference in the average number of traps fished by a) the eight lobstermen for whom data are reported in Attachment Q.VIII.a.10 and in Exhibit 17 and b) the 19 lobstermen for whom data are reported in Attachment Q.VIII.a.10 and not in Exhibit 17 indicates nonrespondent bias in Exhibit 19 of the June Lobster Report.

020762 The direction of the bias referred to in the foregoing statement is to inflate the estimates derived in Exhibit 19 of the June Lobster Report and extended in Exhibits 20 and 21.

020763 Exhibits 10, 12, 14 and 16 of the June Lobster Report are based upon the average annual number of lobstering trips of Messrs. Boza, Dixon, Farias, Fernandes, Ferreira, Sakwa, Vital and an anonymous respondent during the period 1979 to 1984.

020764 The data set forth in Exhibit 10 of the June Lobster Report are derived from Attachment Q.VIII.a.9, or alternatively, the data set forth in Exhibit 10 of the June Lobster Report and the data contained in Attachment Q.VIII.a.9 are derived from the same source.

020765 Attachment Q.VIII.a.9 contains data pertaining to the average annual number of lobstering trips of 19 commercial lobstermen for whom data are not included in Exhibit 10 of the June Lobster Report.

020766 Considering the years 1979 to 1984, and treating years in which an individual did not lobster as an observation that such lobsterman took zero trips, the average number of lobstering trips taken by the eight lobstermen who are included in Exhibits 10, 12, 14 and 16 of the June Lobster Report is, at the 5% level of significance, significantly greater than the average number of lobstering trips taken by the 19 lobstermen for whom data are contained in Attachment Q.VIII.a.9 and not contained in Exhibit 10 of the June Lobster Report.

020767 The average number of lobstering trips taken by the eight lobstermen for whom data are reported in Attachment Q.VIII.a.9 and reflected in Exhibit 10 is 232% of the average number of lobstering trips taken by the 19 lobstermen for whom data are reported in Attachment Q.VIII.a.9 and not reflected in Exhibit 10.

020768 The difference in the average number of lobstering trips taken by a) the eight lobstermen for whom data are reported in Attachment Q.VIII.a.9 and reflected in Exhibit 10 and b) the 19 lobstermen for whom data are reported in Attachment Q.VIII.a.9 and not reflected in Exhibit 10 indicates nonrespondent bias in Exhibits 12, 14 and 16 of the June Lobster Report.

020769 The direction of the bias referred to in the foregoing statement is to inflate the estimates derived in Exhibits 12, 14 and 16 of the June Lobster Report and extended in Exhibits 20 and 21.

020770 The hourly wage for captains and fishermen used to determine the cost of the increased steaming time in Exhibit 12 of the June Lobster Report, Exhibit 11 of the December Lobster Report, and Exhibit 12 of the Lobstering Damage Assessment, is based upon estimates for one quarter of 1985 by the Division of Employment Security.

020771 In determining the hourly wage for captains and fishermen used to determine the cost of increased steaming time, Mr. Morrison assumed that the quarterly earnings could be converted to an annual average wage rate using a 40-hour workweek and a 13-week quarter.

020772 Mr. Morrison's assumptions were erroneous.

020773 Mr. Morrison did not attempt to factor seasonal variation in labor demand or labor cost in calculating an hourly wage based on the quarterly figure given him by the Division of Employment Security.

020774 Neither Mr. Morrison nor the Division of Employment Security have any factual basis for assuming that commercial lobstermen work an average 40-hour week over the course of a 52-week year.

020775 The plaintiffs have no evidence to substantiate the assumption that commercial lobstermen work an average 40-hour week during every week of the year.

020776 The assumption of a 52-week work year implies that commercial lobstermen do not take any weeks off for vacations.

020777 Mr. Morrison did not consider the possibility of seasonal variation in the assumed 40-hour workweek in drafting the Damage Assessments.

020778 The average number of hours worked per week by fishermen and captains varies from season to season.

020779 The average number of hours worked per week by fishermen and captains in any season varies from year to year.

020780 The average wage in 1985 of fishermen and captains is lower than $8.46 per hour.

020781 Exhibit 9C of the Lobstering Damage Assessment reports the total number of commercial inshore lobstermen in New Bedford in 1986 to be 21.

020782 Exhibit 9B of the Lobstering Damage Assessment indicates the number of commercial inshore lobstermen in New Bedford in 1986 to be 20.

020783 Exhibits 9B and 9C contain inconsistent information.

020784 Exhibit 9C of the Lobstering Damage Assessment reports the total number of commercial inshore lobstermen in Dartmouth to be 17.

020785 Exhibit 9B of the Lobstering Damage Assessment indicates the total number of commercial inshore lobstermen in Dartmouth to be 18.

020786 The foregoing statements indicate the internally inconsistent information contained in the Lobstering Damage Assessment.

020787 The internally inconsistent information contained in the Lobstering Damage Assessment precluded the defendants from evaluating the Assessment thoroughly, and prejudices the defendants' ability to respond fully.

020788 Erroneous information in Exhibits 9B or 9C may prejudice the results of the Lobstering Damage Assessment.

020789 The calculation of the average increase in purported annual time costs in Exhibit 12 of the Lobstering Damage Assessment is incorrect.

020790 The correct value for the calculation shown in Exhibit 12 is $361.67.

020791 The incorrect calculation in Exhibit 12 also affects the calculations in Exhibits 20 and 21 of the Lobstering Damage Assessment.

020792 The arithmetic mistakes in the exhibits of the Lobstering Damage Assessment affect the final result of the Assessment.

020793 The arithmetic mistakes and internally inconsistent information in the exhibits to the Lobstering Damage Assessment reveal a sloppiness in their development.

020794 The "Average Number of Trips per Year" shown on Exhibit 10 of the Lobstering Damage Assessment is derived from catch reports of Messrs. Boza, Connor, Dias, Dixon, Egan, Farias, Ferreira, Russell, Sakwa, Vital, Amaral, Foster, Hassey and Masaitis.

020795 In Exhibit 10 of the Lobstering Damage Assessment, certain of the data shown in the column headed "1983" are incorrect tabulations from catch reports; the correct data for the months of January through July are 2.6, 1.9, 3.8, 5.9, 6.5, 12.5 and 11.9, respectively.

020796 In Exhibit 10 of the Lobstering Damage Assessment, the column headed "Overall Average" is a biased estimate of the actual number of trips currently taken by the 14 individuals upon whom the Exhibit is based because the number of trips currently taken by the 14 individuals exceeds the historical average.

020797 The 14 individuals upon whose catch reports Exhibit 10 of the Lobstering Damage Assessment is based currently take fewer trips than indicated in the column of Exhibit 10 headed "Overall Average."

020798 Tabulation of the catch reports of 14 individuals, upon which Exhibit 10 of the Lobstering Damage Assessment was based, treated Walter Dixon, one of the 14, as though he had not reported for the year 1983, when, in fact, he had reported, and had reported no trips.

020799 The 14 individuals whose catch reports are tabulated in Exhibit 10 of the Lobstering Damage Assessment are not representative of New Bedford lobstermen, and their trip report data cannot be reasonably extrapolated to the population as a whole.

020800 Tabulation of the catch reports of Joseph Ferreira, one of the 14 individuals upon which Exhibit 10 of the Lobstering Damage Assessment is based, involved an allocation of Mr. Ferreira's trips during the year 1982 which is not based on information supplied by Mr. Ferreira or anywhere reported by him.

020801 One of the boats used in Exhibit 13 to derive a mean of fuel consumption rates consumes fuel at four times the rate of the other boats on average.

020802 Exhibit 15 of the Lobstering Damage Assessment derives a measure of maintenance costs from seven entities, none of which are commercial lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery.

020803 Exhibit 15 of the Lobstering Damage Assessment is not a suitable basis for a statistically valid estimate of the engine maintenance costs of commercial lobstermen affected by closure of the New Bedford commercial lobster fishery.

020804 The engine maintenance costs of commercial lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery cannot be derived from the data shown in Exhibit 15 of the Lobstering Damage Assessment.

020805 In Exhibit 17 of the Lobstering Damage Assessment, the column headed "Average Traps Fished Per Year" is a biased estimate of the actual number of traps currently fished by the 14 individuals upon whom the exhibit is based because the number of traps currently fished exceeds the historical average.

020806 The 14 individuals whose catch reports are tabulated in Exhibit 17 of the Lobstering Damage Assessment are not representative of New Bedford lobstermen, and their trap use data cannot be reasonably extrapolated to the population as a whole.

020807 The 14 individuals upon whom Exhibit 17 of the Lobstering Damage Assessment is based currently fish fewer traps than indicated in the column of Exhibit 17 headed "Average Traps Fished Per Year."

020808 Exhibit 18 of the Lobstering Damage Assessment is biased because it fails to account for the possibility that commercial lobstermen learn methods of reducing trap losses over time.

020809 Exhibit 18 of the Lobstering Damage Assessment is not a valid estimate of the additional costs due to increased trap losses resulting from closure because it does not account properly for the costs of replacing traps which are lost.

020810 The nine individuals whose trap losses are purportedly tabulated in Exhibit 18 of the Lobstering Damage Assessment are not representative of New Bedford lobstermen, and their trap loss data cannot be reasonably extrapolated to the population as a whole.

020811 The number of lobstermen estimated in the Lobstering Damage Assessment to be affected by closure of the New Bedford Harbor commercial lobster fishery is 49.

020812 The number of lobstermen affected by closure of the New Bedford Harbor commercial lobster fishery is unknown.

020813 Calculations of additional steaming time, fuel expense and maintenance costs in the Lobstering Damage Assessment, incorrectly assume that the sum of medians equals the median of the sum.

020814 The mean and standard deviation of the increase in roundtrip steaming time of the 16 lobstermen reported in Exhibit 11 of the Lobstering Damage Assessment are 2.59 hours and 5.04 hours, respectively.

020815 The 95% confidence interval for the increase in roundtrip steaming time of the 16 lobstermen reported in Exhibit 11 of the Lobstering Damage Assessment is -0.10 hours to 5.27 hours.

020816 The mean and standard deviation for the average number of traps fished from 1978 to 1984 by the 14 lobstermen reported in Exhibit 17 of the Lobstering Damage Assessment are 150 and 96, respectively.

020817 The 95% confidence interval for the average number of traps fished by the 14 lobstermen reported in Exhibit 17 of the Lobstering Damage Assessment is 101 to 199.

020818 The mean and standard deviation of the increase in annual trap losses of the nine lobstermen reported in Exhibit 18 of the Lobstering Damage Assessment are 20% and 17%, respectively.

020819 The 95% confidence interval for the increase in annual trap losses of the nine lobstermen reported in Exhibit 18 of the Lobstering Damage Assessment is 6% to 33%.

020820 The ranges reported above demonstrate the imprecision of the estimates used to compute the damages calculated in the Lobstering Damage Assessment.

020821 The "Average Increase in Annual Time Costs" set forth in Exhibit 12 of the Lobstering Damage Assessment is based on data obtained from 16 lobstermen.

020822 The "Average Increase in Annual Fuel Costs" set forth in Exhibit 14 of the Lobstering Damage Assessment is based on data obtained from 15 commercial lobstermen.

020823 The "Average Increase in Annual Vessel Maintenance Costs" set forth in Exhibit 16 of the Lobstering Damage Assessment is based on data obtained from seven entities, none of which are commercial lobstermen.

020824 The "Average Increase in Annual Gear Replacement Costs" set forth in Exhibit 19 of the Lobstering Damage Assessment is based on data obtained from nine lobstermen.

020825 Of the commercial lobstermen included in the groups upon which Exhibits 12, 14 and 19 of the Lobstering Damage Assessment are based, data pertaining to eight commercial lobstermen only are included in all three exhibits. These are Messrs. Baron, Boza, Connor, Ferreira, Sakwa, Szela and two anonymous respondents.

020826 With respect to the eight commercial lobstermen referred to in the foregoing statement, the average increase in annual cost associated with the reported combination of additional steaming time, fuel expenditures, maintenance costs and an increased rate of trap losses is $1,968. The corresponding standard deviation and standard error are $1,158 and $409, respectively. The 95% confidence interval around the estimated mean ranges from $1,000 to $2,936.

020827 A 95 percent confidence interval of plus or minus 49 percent of the mean is imprecise.

020828 An estimate of increased costs due to a combination of additional steaming time, additional fuel expenditures and an increased rate of trap losses which results in a range in which the higher bound of the estimate is nearly three times the lower bound of the estimate is imprecise.

020829 An estimate of increased costs due to a combination of additional steaming time, additional fuel expenditures, and an increased rate of trap losses which results in a range in which the higher bound of the estimate is nearly three times the lower bound of the estimate is speculative.

020830 An estimate which results in a confidence interval between $1,000 to $2,938 is imprecise.

020831 An estimate of damages which results in a confidence interval from $1,000 to $2,938 is speculative.

020832 Exhibit 19 of the Lobstering Damage Assessment is based upon the average number of traps fished by 14 lobstermen over a period of seven years, which lobstermen and years are identified in Exhibit 17 of the Lobstering Damage Assessment.

020833 The data set forth in Exhibit 17 of the Lobstering Damage Assessment are derived from Attachment Q.VIII.a.10, or, alternatively, the data set forth in Exhibit 17 of the Lobstering Damage Assessment and the data contained in Attachment Q.VIII.a.10 are derived from the same source.

020834 Attachment Q.VIII.a.10 contains data pertaining to the average annual number of traps fished by 13 commercial lobstermen for whom data are not included in Exhibit 17 of the Lobstering Damage Assessment.

020835 Considering the years 1978 to 1984, and treating years in which an individual did not lobster as an observation that such lobsterman fished zero traps, the average number of traps fished by the 14 lobstermen who are included in Exhibit 17 of the Lobstering Damage Assessment is, at the 5% level of significance, significantly greater than the average number of traps fished by the 13 lobstermen for whom data are contained in Attachment Q.VIII.a.10 and not contained in Exhibit 17 of the Lobstering Damage Assessment.

020836 The average number of traps fished by the 14 lobstermen for whom data are reported in Attachment Q.VIII.a.10 and reflected in Exhibit 17 is 179 percent of the average number of traps fished by the 13 lobstermen for whom data are reported in Attachment Q.VIII.a.10 and not reflected in Exhibit 17 of the Lobstering Damage Assessment.

020837 The difference in the average number of traps fished by a) the 14 lobstermen for whom data are reported in Attachment Q.VIII.a.10 and in Exhibit 17 and b) the 13 lobstermen for whom data are reported in Attachment Q.VIII.a.10 and not in Exhibit 17 indicates nonrespondent bias in Exhibit 19 of the Lobstering Damage Assessment.

020838 The direction of the bias referred to in the foregoing statement is to inflate the estimates derived in Exhibit 19 of the Lobstering Damage Assessment and extended in Exhibits 20 and 21.

020839 Exhibits 10, 12, 14 and 16 of the Lobstering Damage Assessment are based upon the average annual number of lobstering trips of Messrs. Boza, Connor, Dias, Dixon, Egan, Farias, Ferreira, Russell, Sakwa, Vital, Amaral, Foster, Hassey and Masaitis during the period 1979 to 1984.

020840 The data set forth in Exhibit 10 of the Lobstering Damage Assessment are derived from Attachment Q.VIII.a.9, or alternatively, the data set forth in Exhibit 10 of the Lobstering Damage Assessment and the data contained in Attachment Q.VIII.a.9 are derived from the same source.

020841 Attachment Q.VIII.a.9 contains data pertaining to the average annual number of lobstering trips of 13 commercial lobstermen for whom data are not included in Exhibit 10 of the Lobstering Damage Assessment.

020842 The average number of lobstering trips taken by the 14 lobstermen for whom data are reported in Attachment Q.VIII.a.9 and reflected in Exhibit 10 is 122 percent of the average number of lobstering trips taken by the 13 lobstermen for whom data are reported in Attachment Q.VIII.a.9 and not reflected in Exhibit 10.

020843 The difference in the average number of lobstering trips taken by a) the 14 lobstermen for whom data are reported in Attachment Q.VIII.a.9 and reflected in Exhibit 10 and b) the 13 lobstermen for whom data are reported in Attachment Q.VIII.a.9 and not reflected in Exhibit 10 indicates

nonrespondent bias in Exhibits 12, 14 and 16 of the Lobstering Damage Assessment.

020844 The direction of the bias referred to in the foregoing statement is to inflate the estimates derived in Exhibits 12, 14 and 16 of the Lobstering Damage Assessment and extended in Exhibits 20 and 21.

020845 The Lobstering Damage Assessment differs from the June Lobster Report in several significant ways.

020846 Many of the assumptions used in the Lobstering Damage Assessment are inconsistent with the assumptions used in the June Lobster Report.

020847 Some of the assumptions used in the Lobstering Damage Assessment are inconsistent with the assumptions used in the June Lobster Report.

020848 The findings of the Lobstering Damage Assessment differ from those of the June Lobster Report.

020849 The final damage estimate contained in the Lobstering Damage Assessment is significantly lower than the estimate contained in the June Lobster Report.

020850 The final damage estimate contained in the Lobstering Damage Assessment is 28 percent lower than the estimate contained in the June Lobster Report.

020851 The Lobstering Damage Assessment extrapolated the characteristics of the 1975 population of licensed lobstermen to the 1986 population of license holders.

020852 The June Lobster Report did not use any such extrapolation procedure.

020853 The June Lobster Report assumes that the number of New Bedford lobstermen affected by the closure of the New Bedford Harbor commercial lobster fishery would remain constant after 1975.

020854 The Lobstering Damage Assessment assumes that the number of lobstermen affected by the closure would increase in proportion to the growth of licensed lobstermen who identified New Bedford, Fairhaven or Dartmouth as their port of landing.

020855 The Lobstering Damage Assessment increased the number of lobstermen affected by the closure by 75 percent above the number assumed in the June Lobster Report, from 28 to 49.

020856 Only two lobstermen were interviewed for the first time in September 1986, Stephen Quintin and Anonymous/Fairhaven #2.

020857 All but two of the lobstermen interviewed in September 1986 had been interviewed prior to completion of the June Lobster Report.

020858 One of the two lobstermen interviewed for the first time in September 1986, Stephen Quintin, gave up his lobster license in the late 1970s and was not affected by the closure of New Bedford Harbor.

020859 The second lobsterman interviewed for the first time in September 1986 was an anonymous Fairhaven lobsterman.

020860 Frederick Szela, Sr. was added to the list of lobsterman interviewed in Exhibit 5 of the Lobstering Damage Assessment, however he was only interviewed in May 1986.

020861 The Lobstering Damage Assessment contains the following footnote in Exhibits 5 and 9B: Frederick Szela Jr. & Sr. share a boat but do not fish together. For purposes of this analysis, they are treated as separate entities.

020862 The June Lobster Report contains the following, directly contradictory footnote in its Exhibit 5: Frederick Szela Jr. & Sr. fish from the same boat and for purposes of this analysis are treated as a single entity. We have interviewed both men, but in the text count these interviews as a single interview.

020863 The Lobstering Damage Assessment contains no explanation for this change in the treatment of these two lobstermen, which has the effect of increasing the number of affected lobstermen.

020864 The authors of the Lobstering Damage Assessment significantly modified the results of the June Lobster Report based on new information obtained in September 1986 from 12 lobstermen who had been interviewed at least once before.

020865 The 12 lobstermen interviewed for at least the second time in September 1986 were Baron, Bosa, Connor, Dias, Dixon, Egan, Farias, Fernandes, Russell, Vital, Wlodyka and an anonymous New Bedford lobsterman.

020866 The new information noted above was, in most cases, inconsistent with information obtained from the same lobstermen in earlier interviews.

020867 The new information noted above was, in many cases, inconsistent with information obtained from the same lobstermen in earlier interviews.

020868 The new information noted above was, in some cases, inconsistent with information obtained from the same lobstermen in earlier interviews.

020869 Based on the new information the authors of the Lobstering Damage Assessment decreased by 34 percent the estimate of the average number

of trips per year taken by the affected lobstermen contained in the June Lobster Report.

020870 Based on the new information the authors of the Lobstering Damage Assessment decreased by 40 percent the estimate of the median fuel consumption per hour of steaming time contained in the June Lobster Report.

020871 Based on the new information the authors of the Lobstering Damage Assessment decreased by 34 percent the estimate of the average number of traps fished per year by lobstermen contained in the June Lobster Report.

020872 Based on the new information the authors of the Lobstering Damage Assessment decreased by 48 percent the estimate of the median change in percentage of traps lost by lobstermen contained in the June Lobster Report.

020873 Based on the new information the authors of the Lobstering Damage Assessment decreased by 66 percent the estimate of the affected lobstermen's average increase in annual gear replacement costs contained in the June Lobster Report.

020874 Based on the new information the authors of the Lobstering Damage Assessment decreased by 28 percent the estimated annual added cost per lobsterman due to the closure of the New Bedford Harbor commercial lobster fishery relative to the June Lobster Report.

020875 The differences between the estimates contained in the Lobstering Damage Assessment and those contained in the June Lobster Report noted in the foregoing statements are significant.

020876 New information similar to that used in developing the Lobstering Damage Assessment could reduce even further the plaintiffs' estimated damages due to closure of the New Bedford Harbor commercial lobster fishery.

020877 The damage estimates contained in the Lobstering Damage Assessment and the June Lobster Report are inconsistent.

020878 The damage estimates contained in the June Lobster Report are biased.

020879 The Lobstering Damage Assessment confirms the biased nature of the damage estimates contained in the June Lobster Report.

020880 Plaintiffs have no evidence that a revision or updating of the Lobstering Damage Assessment will not reduce the estimated damages.

020881 The damage estimates contained in the Lobstering Damage Assessment are speculative.

020882 The plaintiffs have failed to substantiate and confirm the accuracy of the assumptions used in the Lobstering Damage Assessment.

020883 The damage estimates contained in the Lobstering Damage Assessment are based on unsubstantiated assumptions.

020884 The effects of closure on the commercial lobster fishery in New Bedford Harbor vary seasonally.

020885 Seasonality of the effects of closure on the commercial lobster fishery in New Bedford Harbor significantly affects estimation of the additional costs incurred by commercial lobstermen as a result of closure.

020886 The seasonal effect of closure described on page 16 of the June Lobster Report represents the subjective judgment of Brian Morrison.

020887 Mr. Morrison is not an expert on the seasonal effects of closure on the New Bedford Harbor lobster fishery.

020888 The distribution of affected trips described on page 16 of the June Lobster Report cannot be derived from the statements of commercial lobstermen which are reported in Attachment Q.VIII.a.1.

020889 The distribution of affected trips described on page 16 of the June Lobster Report cannot be derived from information relied upon by the authors of the June Lobster Report and which was also made available to the defendants in this litigation.

020890 There is no independently verifiable evidence of the seasonal effect of closure described on page 16 of the June Lobster Report.

020891 The seasonal effect of closure on the New Bedford Harbor commercial lobster fishery is unknown.

020892 Mr. Morrison determined the percentage of trips per month affected by the closure based upon his subjective judgment.

020893 Mr. Morrison had no factual basis for his estimate of the percentage per month of trips affected by the closure.

020894 Mr. Morrison acknowledges that his estimate of the percentage of trips per month affected by the closure is subject to considerable potential error.

020895 Mr. Morrison acknowledges that the percentage of trips affected by the closure in January, February, March, November and December might be as low as 75 percent rather than the 90 percent he estimates in the Damage Assessments.

020896 Plaintiffs have no evidence on the actual number of trips per month affected by the closure.

020897 Plaintiffs have no evidence on the percentage of trips per month affected by the closure.

020898 Lobster harvests vary from year to year.

020899 Between 1975 and 1979, the lobster harvest in the New Bedford area increased. Between 1980 and 1982, the harvest declined. Since 1982, the harvest has again increased.

020900 Mr. Morrison knows of no commercial lobstermen who buy their traps.

020901 Many lobstermen make their traps.

020902 Some lobstermen make their traps.

020903 The cost of making a trap is less than the cost of buying a new trap.

020904 Mr. Morrison does not know the cost to a lobsterman to build his own traps.

020905 Mr. Morrison knows of no commercial lobsterman who paid $32.50 for a lobster trap.

020906 Mr. Morrison does not know what actual costs were incurred by New Bedford area commercial lobstermen to replace traps.

020907 Plaintiffs have no evidence of the actual costs incurred by New Bedford area commercial lobstermen to replace traps.

020908 Mr. Morrison's calculation of the average increase in annual gear replacement cost has no factual basis to the extent that it assumes $32.50/trap replacement costs.

020909 Mr. Morrison's calculation of the average increase in annual gear replacement cost in the Damage Assessments does not consider the difference in trap costs among types of traps, including lobstermen-built vs. purchased traps.

020910 Mr. Morrison never calculated an acceptable confidence interval for the results of the Damage Assessments, and cannot provide an estimate of an acceptable confidence interval.

020911 Mr. Morrison is unaware of the cost of landing a pound of lobster in the New Bedford area prior to the closure.

020912 Mr. Morrison made no effort to determine the cost of landing a pound in the New Bedford area prior to the closure.

020913 Mr. Morrison does not know the cost of landing a pound of lobster in the New Bedford area subsequent to the closure.

020914 Mr. Morrison made no effort to determine the cost of landing a pound of lobster in the New Bedford area subsequent to the closure.

020915 Mr. Morrison does not know how the costs of landing lobster in the New Bedford area compared with the costs for other lobster fisheries.

020916 The plaintiffs are unaware of the cost of landing a pound of lobster in the New Bedford area prior to the closure.

020917 The plaintiffs made no effort to determine the cost of landing a pound in the New Bedford area prior to the closure.

020918 The plaintiffs do not know the cost of landing a pound of lobster in the New Bedford area subsequent to the closure.

020919 The plaintiffs made no effort to determine the cost of landing a pound of lobster in the New Bedford area subsequent to the closure.

020920 The plaintiffs do not know how the cost of landing lobster in the New Bedford area compared with the costs for other lobster fisheries.

020921 Neither Mr. Morrison nor Dr. McConnell requested the lobstermen they interviewed to disclose any financial information.

020922 Neither Mr. Morrison nor Dr. McConnell obtained any financial records from the lobstermen they interviewed.

020923 Neither Mr. Morrison nor Dr. McConnell obtained any tax returns from the lobstermen they interviewed.

020924 Neither Mr. Morrison nor Dr. McConnell obtained any financial records from the lobstermen for whom they obtained catch reports.

020925 Neither Mr. Morrison nor Dr. McConnell obtained any tax returns from the lobstermen for whom they obtained catch reports.

020926 Neither Mr. Morrison nor Dr. McConnell have obtained any information on the financial performance of New Bedford area commercial lobstermen.

020927 The plaintiffs have no evidence regarding the financial performance of New Bedford area commercial lobstermen.

020928 The plaintiffs have not obtained any financial records or tax returns for New Bedford area commercial lobstermen.

020929 The plaintiffs have no evidence that the closure of Areas I, II and III resulted in any capital expenditures by New Bedford area commercial lobstermen.

020930 The Damage Assessments do not include any capital expenditures by New Bedford area commercial lobstermen. To the extent that the lobster industry is not in long run equilibrium, lobstermen will earn more than their opportunity costs.

020931 The exit of New Bedford area lobstermen from the lobster industry will thus lead to social welfare gains which, in part or in whole, offset any loss to the natural resources.

020932 The Damage Assessments' determination of the average number of trips affected by the closure rests upon the subjective and factually unjustified judgment of Mr. Morrison.

020933 The average number of trips affected by the closure, if any, is substantially less than that assumed in the Damage Assessments.

020934 The June Lobster Report's assumption that the median increase in steaming time is one hour and five minutes is unsupported.

020935 The sample population upon which the median steaming time is calculated is not representative of New Bedford lobstermen as a whole.

020936 The calculation of median steaming time incurred purportedly due to the closure assumes that the relevant population of lobstermen comply with the closure.

020937 The median fuel consumption rate is not five gallons per hour.

020938 The calculation of gear replacement costs due to the closure is inaccurate.

020939 Neither Mr. Morrison nor Dr. McConnell was able to attribute their estimated damages to the lobster fishery to any particular time of PCB releases.

020940 The actual damages to the natural resources measured in the Damage Assessment, if any, occurred prior to December 11, 1980.

020941 The Damage Assessments did not attribute injury or damages, if any, to the natural resources from the closure of Area I alone.

020942 The Damage Assessments did not attempt to determine the injury or damages, if any, to the natural resources from the closure of Area I alone.

020943 The Damage Assessments did not attribute and did not attempt to determine the injury or damages, if any, to the natural resources from the closure of Area II alone.

020944 The Damage Assessments did not determine and did not attempt to determine the injury or damages, if any, to the natural resources from the closure of Areas I and II together, but independently of Area III.

020945 The Damages Assessments did not determine and did not attempt to determine the injury or damages, if any, to the natural resources from the closure of Area III alone.

020946 The April 30, 1986 draft lobster report was predicated on measuring actual costs incurred by New Bedford area lobstermen due to the closure.

020947 The June Lobster Report is predicated not on the determination of actual costs incurred by the New Bedford area lobstermen, but on the costs lobstermen would incur if they were to comply with the closure.

020948 The authors of the June Lobster Report did not adjust their computation of damages to reflect the change in underlying assumptions.

020949 The authors of the June Lobster Report did not adjust their data, or seek additional data to reflect the change in underlying assumptions.

020950 Some lobstermen engage in lobstering as an avocation only, and not as profit-maximizers.

020951 If lobstermen are not profit-maximizers, then a social benefit arises from their leaving the fishery.

020952 This social benefit in part offsets any damages to the natural resources.

020953 Mr. Morrison acknowledges that it is possible that unusual weather conditions during the years since the closure may account for the change in trap loss, as opposed to that loss being explained by the closure itself.

020954 Unusual weather conditions in 1979-1980 increased lobster trap losses.

020955 The weather conditions inside Area III are substantially identical to the weather conditions outside Area III.

020956 Neither Mr. Morrison, Dr. McConnell, nor anyone else connected with the June Lobster Report conducted any in-person interviews of lobstermen after April 30, 1986 which were relied upon in preparing the Report.

020957 In calculating the steaming time allegedly incurred due to the closure of the New Bedford lobster fishery, the Damages Assessments do not use a single base date upon which the calculations rest.

020958 The Damage Assessments do not consider changes in the port of landing that have occurred since 1986.

020959 Mr. Morrison does not know whether any of the estimates of increased steaming time presented in the Damage Assessments are accurate as of today or as of the date of the interview.

020960 Mr. Morrison has not contacted any of the New Bedford area commercial lobstermen since 1986.

020961 Mr. Morrison has not recontacted any of the New Bedford area commercial lobstermen previously interviewed to determine if their lobstering practices have changed since they were last interviewed.

020962 Plaintiffs have not obtained catch reports for any years after 1984.

020963 Plaintiffs have not requested catch reports for any years after 1984.

020964 The latest catch reports relied upon by the plaintiffs are for 1984.

020965 The latest interviews relied upon by the plaintiffs were conducted in 1986.

020966 The Damage Assessments do not reflect catch report data for 1985 through 1989.

020967 The Damage Assessments do not reflect or consider any changes in lobstering practices or methods that may have occurred after 1986.

020968 The failure to obtain information more recent than 1986 on lobstering practices or methods prejudices the analysis and findings of the Lobstering Damage Assessment.

020969 The failure to obtain catch reports for years more recent than 1984 prejudices the analysis and findings of the Lobstering Damage Assessment.

020970 Mr. Morrison is aware of no factual basis or other explanation for assuming, in preparing Exhibit 21 of the June Lobster Report, that the fishery will remain closed until the year 2085.

020971 Plaintiffs have no evidence that any PCB found in the New Bedford Harbor will be there in 2085.

020972 Plaintiffs have no evidence that if any PCB found in the New Bedford is still there in 2085, it would require closure.

020973 Plaintiffs have no evidence that if any PCB found in the New Bedford Harbor is still there in 2085, it will not be superseded by other substantive concerns as to Harbor pollution calling for closure.

020974 The decision to use a 100-year basis for computation of future damages was based on discussions between Mr. Huguenin and NOAA, to which Mr. Morrison was not a party.

020975 Mr. Morrison has no knowledge as to the rationale for selecting the 100-year time period for future damages.

020976 Mr. Morrison does not know if it is the position of NOAA that PCBs are a danger in the environment for approximately 100 years.

020977 In a two-page summary report prepared at the request of Evan Slavitt, Mr. Morrison calculated the present value of future damages for differing periods of time, the shortest length of time estimating a 15-year closure.

020978 The decision to use the 100-year closure estimate and a 3 percent discount rate was made at the May 7-8, 1986 meeting with the economics review panel.

020979 Mr. Morrison was directed by Mr. Huguenin and NOAA that he was to assume that the New Bedford Harbor was to remain closed to lobstering for 100 years in computing the present value of damages to the Harbor's natural resources.

020980 Mr. Morrison is aware of no factual basis or scientific reason for his assumption that the fishery will remain closed until the year 2085.

020981 The duration of the closure is unknown.

020982 The duration of the closure is uncertain.

020983 The duration of the closure depends on many factors, including any actions taken to restore or remediate the injury, if any, to the lobster fishery.

020984 The duration of the closure depends on any efforts by the plaintiffs to accelerate reopening of the lobster fishery.

020985 The assumption of closure until 2085 is a worst case assumption.

020986 The plaintiffs have no reliable means for projecting the condition of the New Bedford Harbor lobster fishery 100 years into the future.

020987 The plaintiffs have no evidence that the lobster fishery will not reopen prior to 2085.

020988 PCBs biodegrade.

020989 The New Bedford Harbor undergoes a continual process of re-sedimentation, in which the existing PCBs and sediment are covered.

020990 The use of an estimated closure period of 100 years is without factual support and is therefore inappropriate.

020991 Mr. Morrison made no effort to determine when the lobster fishery could reopen.

020992 Dr. McConnell made no effort to determine when the lobster fishery could reopen.

020993 Mr. Morrison did not know and was not informed during preparation of the June Lobster Report that PCBs biodegrade over time.

020994 Dr. McConnell did not know and was not informed during preparation of the June Lobster Report that PCBs biodegrade over time.

020995 The biodegradation of PCBs was not considered in the Damage Assessments' purported assessments of damages to the natural resources.

020996 Dr. McConnell did not know and was never informed that the New Bedford Harbor is continually re-sedimented.

020997 Mr. Morrison did not know and was never informed that the New Bedford Harbor is continually re-sedimented.

020998 The continual re-sedimentation of the New Bedford Harbor was not considered in the Damage Assessments' purported assessments of damages to the natural resources.

020999 The use of a 100-year estimate for the closure of the fishery is inaccurate.

021000 In Exhibit 21 of the June Lobster Report and in Exhibit 21 of the Lobstering Damage Assessment, Mr. Morrison calculated the present value of the estimated damages to the lobster fishery by assuming that the fishery will remain closed until the year 2085 and by applying a 3 percent discount rate.

021001 Mr. Morrison has never applied a 3 percent discount rate in any other study he has conducted or in which he participated.

021002 Mr. Morrison had, prior to the June Lobster Report and Lobstering Damage Assessment, invariably applied a 10 percent discount rate in every study he conducted or in which he participated where a present value calculation was required.

021003 Mr. Morrison is aware of no factual basis or other explanation for assuming that a 3 percent discount rate is appropriate in this instance.

021004 Mr. Morrison was aware that a real discount rate of 10 percent is mentioned in the U.S. Department of the Interior (DOI) regulations on natural resource damage assessment.

021005 A real discount rate of 10 percent is mentioned in the DOI regulations on natural resource damage assessment.

021006 Mr. Morrison was aware that a real discount rate of 10 percent is mandated by the U.S. Office of Management and Budget (OMB) for assessing regulations of the U.S. Environmental Protection Agency (EPA).

021007 A real discount rate of 10 percent is mandated by the OMB for assessing the costs and benefits of regulations proposed by the EPA.

021008 There is no comparable evidence from the DOI, OMB or EPA to support the use of a 3 percent discount rate.

021009 Mr. Morrison has not conducted any study to support use of a 3 percent discount rate.

021010 Plaintiffs have no study which substantiates the basis for using a 3 percent discount rate.

021011 Mr. Morrison is not aware of any sound economic reason for using a 3 percent discount rate for calculating the present value of any damages to the New Bedford Harbor commercial lobster fishery.

021012 Use of a 10 percent discount rate, even assuming loss of the fishery for 100 years and that all other calculations made in the June Lobster Report are accurate, would reduce the total damages calculated therein.

021013 The use of a 3 percent discount rate greatly inflates the calculation of damages to the lobster fishery.

021014 In a two-page summary of the draft June Lobster Report prepared at the request of Evan Slavitt, Mr. Morrison calculated future damages using a 10 percent discount rate.

021015 Mr. Morrison produced that two-page summary at the request of Mr. Slavitt prior to drafting the April 30, 1986 Preliminary Draft.

021016 Mr. Morrison submitted the draft of the two-page report to Mr. Huguenin and Dr. McConnell.

021017 Mr. Morrison believed at the time that a 10 percent discount rate was the appropriate measure of the present value of future damages.

021018 Mr. Morrison was directed by Mr. Huguenin and NOAA to use a 3 percent discount rate in computing the present value of the future damages.

021019 In each of the Damage Assessments, Mr. Morrison calculated the present value of the estimated damages to the lobster fishery in New Bedford by assuming that the fishery will remain closed until the year 2085 and applying a 3 percent discount rate.

021020 Mr. Morrison has never applied a 3 percent discount rate before in any study he has ever conducted or in which he has ever participated.

021021 Mr. Morrison had, prior to the June Lobster Report, used a 10 percent discount rate in every study in which he calculated present value or in which he participated.

021022 A 3 percent discount rate is inappropriate in calculating the present value of the damages, if any, to the New Bedford Harbor lobster fishery.

021023 A 10 percent discount rate is more appropriate in determining the present value of the damages to the New Bedford lobster fishery.

021024 The use of a 3 percent discount rate to calculate the present value of future damages is inappropriate.

021025 Dr. McConnell is not an expert in survey research.

021026 Mr. Morrison is not an expert in survey research.

021027 Dr. McConnell is not an expert in conducting interviews.

021028 Mr. Morrison is not an expert in conducting interviews.

021029 Mr. Morrison is not experienced in statistical analysis.

021030 Mr. Morrison is not an expert in statistical analysis.

021031 Mr. Morrison has not authored any articles published in scholarly journals in the field of statistical analysis.

021032 Mr. Morrison was not experienced in the development or conduct of survey, sampling and interview analyses prior to preparing the June Lobster Report.

021033 Mr. Morrison had no experience with the lobster industry prior to preparing the June Lobster Report.

021034 Mr. Morrison took no steps to learn survey, sampling or interview techniques after being assigned to draft the June Lobster Report.

021035 Mr. Morrison is not an expert in survey techniques.

021036 Mr. Morrison has not authored any articles published in scholarly journals in the field of survey techniques or research.

021037 Mr. Morrison is not an expert in interview methods and techniques.

021038 Mr. Morrison is not a recognized expert on the lobster industry.

021039 Mr. Morrison had not studied the economics of the lobster industry prior to Industrial Economics, Inc.'s (IEc) retention by NOAA to evaluate the New Bedford Harbor commercial lobster fishery.

021040 Mr. Morrison has not researched the lobster industry other than in connection with this litigation and in preparation of the June and December Lobster Reports and the Lobstering Damage Assessment.

021041 Mr. Morrison has not interviewed lobstermen other than those interviewed in the course of preparing the June and December Lobster Reports, and the Lobstering Damage Assessment.

021042 Mr. Morrison prepared the Lobstering Damage Assessment.

021043 Mr. Morrison helped prepare the Lobstering Damage Assessment.

021044 Mr. Morrison had no role in preparing the Lobstering Damage Assessment.

021045 Dr. McConnell helped prepare the Lobstering Damage Assessment.

021046 Dr. McConnell had no role in preparing the Lobstering Damage Assessment.

021047 Mr. Morrison directed or co-directed the preparation of the Lobstering Damage Assessment.

021048 Dr. McConnell directed or co-directed the preparation of the Lobstering Damage Assessment.

021049 Mr. Morrison directed or co-directed the interviewing of New Bedford area commercial lobstermen conducted in connection with the June and December Lobster Reports and Lobstering Damage Assessment.

021050 Mr. Morrison had primary responsibility for interviewing the New Bedford area commercial lobstermen in connection with the June and December Lobster Reports and the Lobstering Damage Assessment.

021051 Mr. Morrison is not an expert on the effects of PCBs on lobsters.

021052 Mr. Morrison is not an expert on the effects of heavy metals such as copper on lobsters.

021053 Mr. Morrison has not studied the effects of PCBs on lobsters in Areas I, II and/or III.

021054 Mr. Morrison has not studied the effects of heavy metals such as copper on lobsters in Areas I, II and/or III.

021055 Mr. Morrison has not studied the PCB concentrations in lobsters in Areas I, II and/or III.

021056 Mr. Morrison has no basis on which to ascertain whether the PCB concentrations in Areas I, II and/or III are increasing or decreasing.

021057 Mr. Morrison has not verified the truth and accuracy of the information obtained in the interviews of New Bedford area commercial lobstermen using independent and reliable sources of information.

021058 Mr. Morrison has no independent, objective basis on which to substantiate the truth and accuracy of the information obtained in the interviews of New Bedford area commercial lobstermen.

021059 Mr. Morrison did not record verbatim any of his interviews of New Bedford are commercial lobstermen.

021060 Mr. Morrison did not record verbatim most of his interviews of New Bedford area commercial lobstermen.

021061 Mr. Morrison did not record verbatim some of his interviews of New Bedford area commercial lobstermen.

021062 Mr. Morrison did not attend every interview of the New Bedford area commercial lobstermen.

021063 None of the New Bedford area commercial lobstermen interviewed by Mr. Morrison did so under oath.

021064 The New Bedford area commercial lobstermen were not interviewed under oath.

021065 No expert trained in survey research, statistics or economics would rely upon the data gathering methodology used by Mr. Morrison and Dr. McConnell.

021066 Mr. Morrison has been employed at IEc since December, 1981.

021067 IEc is a consulting firm.

021068 The U.S. Environmental Protection Agency (EPA) provides IEc with approximately 50 percent of its total business, and 66.6 percent of its business related to environmental policy analysis.

021069 IEc has no current environmental policy cases (other than the New Bedford Harbor reports) not funded by the EPA.

021070 The June and December Lobster Reports were funded by NOAA.

021071 The Lobstering Damage Assessment was funded by NOAA.

021072 IEc has never conducted environmental policy analysis not funded by a government agency.

021073 Mr. Morrison drafted all of the June and December Lobster Reports except for the section entitled "Conceptual Approach to Analyzing Economic Damages to the New Bedford Lobster Fishery," which was drafted by Dr. McConnell.

021074 Mr. Morrison prepared all of the exhibits to the June Lobster Report, December Lobster Report and the Lobstering Damage Assessment.

021075 In the course of his sworn deposition conducted on June 4 and 5, 1986, Mr. Morrison testified that he was a participant in a meeting on May 7 or May 8, 1986, in which the preliminary draft, "Assessment of Economic Damages to the Recreational Fishing and Beach Use in the New Bedford Area," was discussed.

021076 Mr. Morrison was directed by counsel to decline to answer any questions regarding his knowledge of discussions held at the meeting regarding the recreational fishing and beach use report.

021077 Such direction by counsel precludes defendant AVX from a full and thorough investigation of the factual record in this case.

021078 The Department of Public Health closure notice describes Area I as being the waters north of the Hurricane Dike which generally include inner New Bedford Harbor and the Acushnet River.

021079 Areas II, III and IV are located south of the Hurricane Dike.

021080 In September, 1975, the Division of Marine Fisheries (DMF) began to analyze finfish, shellfish and crustaceans from New Bedford area waters for PCB content.

021081 Samples of finfish, shellfish and crustaceans were collected and analyzed for PCBs over a four-year period (1976-1980).

021082 During this sampling period one hundred and eleven lobsters were analyzed for PCBs.

021083 During this sampling period no lobsters were collected from the waters of Area I.

021084 During this sampling period no lobsters from Area I were analyzed for PCB content.

021085 The PCB content of lobsters from Area I is not known.

021086 During this sampling period blue crabs were collected from five different stations in Area I.

021087 Three of the stations from which blue crabs were collected are adjacent to the location of Aerovox, Incorporated.

021088 The concentration of PCBs found in the blue crabs collected at these three stations was approximately 1.0 ppm.

021089 This is the lowest concentration measured in any of the blue crabs analyzed during the sampling period.

021090 Between 1975 and 1985 more than 380 lobsters were collected and analyzed for PCBs by the DMF.

021091 None of these lobsters was collected from Area I.

021092 Lobsters live in coastal waters as well as offshore waters.

021093 Lobsters are physiologically unable to live in fresh water.

021094 Because lobsters are physiologically intolerant to low salinities they do not penetrate very far into estuaries.

021095 In the waters around New Bedford, lobsters live in the outer harbor.

021096 Lobsters do not live in the waters between the Hurricane Dike and the Fairhaven Bridge (Rt. 6).

021097 Lobsters do not live in the waters of the Acushnet River between the Fairhaven Bridge and the I-195 overpass.

021098 Lobsters do not live in the waters of the Acushnet River north of the I-195 overpass.

021099 The sediments of the inner New Bedford Harbor and the Acushnet River are contaminated with heavy metals.

021100 The sediments of the inner New Bedford Harbor and the Acushnet River are contaminated with high concentrations of heavy metals.

021101 Concentrations of copper in excess of 2,000 ppm have been found in the sediments in some parts of the inner New Bedford Harbor.

021102 Concentrations of copper in excess of 5,000 ppm have been found in the sediments in some parts of the Acushnet River between the Fairhaven Bridge and the I-195 overpass.

021103 The source of this copper contamination is Revere Copper Co. located on the Acushnet River.

021104 Metals such as copper, Monel, zinc and lead can be lethal to lobsters.

021105 Metals such as copper, Monel, zinc and lead are lethal to lobsters at relatively low concentrations.

021106 Lobsters that crawled into the inner New Bedford Harbor would be exposed to high concentrations of copper.

021107 Lobsters that crawled into the area north of the Fairhaven Bridge (Rt. 6) would be exposed to high concentrations of copper.

021108 Lobsters that feed on benthic organisms inside of the Hurricane Dike would ingest high concentrations of copper.

021109 Lobsters that excavated a burrow in the sediments inside of the Hurricane Dike would be exposed to high concentrations of copper.

021110 Lobsters that crawled into the inner New Bedford Harbor would be exposed to copper.

021111 Lobsters that crawled into the area north of the Fairhaven Bridge (Rt. 6) would be exposed to copper.

021112 Lobsters that feed on benthic organisms inside of the Hurricane Dike would ingest copper.

021113 Lobsters that excavated a burrow in the sediments inside of the Hurricane Dike would be exposed to copper.

021114 Copper is toxic to fish as well as to lobster.

021115 The presence of lobsters in the waters outside the Hurricane Dike suggests that the conditions are favorable for their existence there.

021116 The continued deposition of fine-grained sediments in the inner harbor results in the creation of a muddy or mucky bottom.

021117 In the absence of naturally occurring shelter, lobsters may excavate a burrow if the substrate is firm enough to keep from collapsing.

021118 The walls of a burrow excavated in soft mud will collapse.

021119 Most of the substrate inside of the Hurricane Dike is unsuitable for the construction of lobster burrows.

021120 Environmental conditions inside of the Hurricane Dike are unsuitable for lobsters.

021121 The highest concentration of PCBs in lobsters were found in lobsters taken near the Cornell-Dubilier plant.

021122 The plaintiffs have no documentary evidence that any recreational finfishing occurred in Area I in the period subsequent to the construction of the Hurricane Dike and prior to its closure in September, 1979.

021123 Recreational fishing in Area II for species closed after September, 1979 (eels, scup, flounder, tautog) was limited prior to that date.

021124 The closure of Areas I and II to recreational fishing did not affect the taking of fish for bait in these areas.

021125 There is a bait fishery both for eels (striped bass bait) and mummichogs (summer flounder bait) in Area I.

021126 In the early 1970s the densities of fish eggs and larvae in the water column were the same in Areas I and II.

021127 In the early 1970s the densities of fish eggs and larvae in the water column in Areas I and II were not different from densities found in the Westport River at the same time.

021128 Seven species were affected by the closure in Area II, including tautog, scup, flounder and eels.

021129 PCB concentrations have been reported by the DMF for only 10 samples of tautog.

021130 Only one of these samples of tautog (4.6 ppm) was found to be above the action level of 2.0 ppm of PCBs.

021131 The mean of all reported sample values for tautog is 1.43 ppm of PCBs.

021132 Records for only 6 PCB determinations are found for scup in the DMF reports. These are for Areas I, II, and III.

021133 Taken as a whole, the limited data on PCB concentrations in scup show a trend in declining levels of PCBs, culminating at levels below the FAL:

1977	1979	1980
8.75	2.30	0.06

021134 The window pane and fourspot flounders in Area II are of limited recreational value.

021135 The windowpane and fourspot flounders in Area II are a small population.

021136 The winter flounder is the most important recreational flounder species in Area II.

021137 The winter flounder shows a trend of declining PCBs over all areas:

1976	1979	1980
7.8 (7 fish)	3.2 (18 fish)	2.2 (2 fish)

021138 For summer flounder the following PCB concentrations have been found in Areas I and II:

1976	1979	1980
8.3 (3 fish)	1.7 (2 fish)	2.2 (2 fish)

021139 A limited recreational fishery for eels existed in Area II prior to the closure.

021140 A small recreational fishery for eels existed in Area II prior to the closure.

021141 All PCB values reported for eels in New Bedford show them to be above the FAL.

021142 The DMF has not conducted finfish sampling or PCB analyses on finfish after 1980.

021143 The DMF has conducted limited finfish sampling or PCB analyses on finfish after 1980.

021144 The DMF has not conducted finfish sampling or analyses of PCB concentrations in finfish after 1986.

021145 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for American eels in Area I of the Acushnet River Estuary.

021146 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for American eels in Area I of the Acushnet River Estuary.

021147 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for scup in Area I of the Acushnet River Estuary.

021148 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for scup in Area I of the Acushnet River Estuary.

021149 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for tautog in Area I of the Acushnet River Estuary.

021150 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, an insignificant recreational fishery existed for tautog in Area I of the Acushnet River Estuary.

021151 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for tautog in Area I of the Acushnet River Estuary.

021152 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for cunner in Area I of the Acushnet River Estuary.

021153 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for cunner in Area I of the Acushnet River Estuary.

021154 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for winter flounder in Area I of the Acushnet River Estuary.

021155 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for winter flounder in Area I of the Acushnet River Estuary.

021156 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for summer flounder in Area I of the Acushnet River Estuary.

021157 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for summer flounder in Area I of the Acushnet River Estuary.

021158 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for windowpane flounder in Area I of the Acushnet River Estuary.

021159 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for windowpane flounder in Area I of the Acushnet River Estuary.

021160 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for striped bass in Area I of the Acushnet River Estuary.

021161 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for striped bass in Area I of the Acushnet River Estuary.

021162 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for bluefish in Area I of the Acushnet River Estuary.

021163 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for bluefish in Area I of the Acushnet River Estuary.

021164 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for American eels in Area II of the Acushnet River Estuary.

021165 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for American eels in Area II of the Acushnet River Estuary.

021166 According to the Current Fishery Statistics published by the U.S. Department of Commerce (NOAA) in 1984 and 1985, catches of eels in Massachusetts comprised less than 0.5 percent by numbers of the total marine recreational fishery in this state.

021167 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for scup in Area II of the Acushnet River Estuary.

021168 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for scup in Area II of the Acushnet River Estuary.

021169 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for tautog in Area II of the Acushnet River Estuary.

021170 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for tautog in Area II of the Acushnet River Estuary.

021171 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for cunner in Area II of the Acushnet River Estuary.

021172 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for cunner in Area II of the Acushnet River Estuary.

021173 According to the Current Fishery Statistics published by the U.S. Department of Commerce (NOAA) in 1984 and 1985, catches of cunner in Massachusetts comprised less than 3 percent by numbers of the total marine recreational fishery in this state.

021174 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for winter flounder in Area II of the Acushnet River Estuary.

021175 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for winter flounder in Area II of the Acushnet River Estuary.

021176 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for winter flounder in Area II of the Acushnet River Estuary.

021177 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for summer flounder in Area II of the Acushnet River Estuary.

021178 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for summer flounder in Area II of the Acushnet River Estuary.

021179 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, a minor recreational fishery existed for windowpane flounder in Area II of the Acushnet River Estuary.

021180 Subsequent to the construction of the Hurricane Dike and prior to September 25, 1979, no recreational fishery existed for windowpane flounder in Area II of the Acushnet River Estuary.

021181 According to the Current Fishery Statistics published by the U.S. Department of Commerce (NOAA) in 1984 and 1985, catches of windowpane flounder in Massachusetts comprised less than 0.5 percent by numbers of the total marine recreational fishery in this state.

021182 Subsequent to September 25, 1979, and continuing to the present time, the taking of eels and other fishes for bait is permitted in Area I of the Acushnet River Estuary.

021183 Subsequent to September 25, 1979, and continuing to the present time, the taking of eels and other fishes for bait is permitted in Area II of the Acushnet River Estuary.

021184 According to data assembled by the Massachusetts Division of Marine Fisheries and the Massachusetts Office of Coastal Zone Management, from 1976 to 1981, the PCB concentrations in the edible portions in most tautog caught in Area II of the Acushnet River Estuary are below the FAL of 2.0 ppm.

021185 According to data assembled by the Massachusetts Division of Marine Fisheries and the Massachusetts Office of Coastal Zone Management, from 1976 to 1981, the PCB concentrations in the edible portions in nearly all tautog caught in Area II of the Acushnet River Estuary are below the FAL of 2.0 ppm.

021186 According to data assembled by the Massachusetts Division of Marine Fisheries and the Massachusetts Office of Coastal Zone Management, from 1976 to 1981, the PCB concentrations in the edible portions in many tautog caught in Area II of the Acushnet River Estuary are below the FAL of 2.0 ppm.

021187 According to data assembled by the Massachusetts Division of Marine Fisheries and the Massachusetts Office of Coastal Zone Management, from 1976 to 1981, the PCB concentrations in the edible portions of winter flounder caught in Area II of the Acushnet River Estuary have declined.

021188 According to data assembled by the Massachusetts Division of Marine Fisheries and the Massachusetts Office of Coastal Zone Management, from 1976 to 1981, the PCB concentrations in the edible portions of winter flounder caught in Area II of the Acushnet River Estuary declined to levels below the FAL.

021189 Finfish reproductive success, as measured by egg and larval densities, are similar in Areas I and II of the Acushnet River Estuary.

021190 Finfish reproductive success in Areas I and II of the Acushnet River Estuary, as measured by egg and larval densities, are not different from those found in the nearby Westport River Estuary.

021191 The Westport River Estuary is not polluted.

021192 According to data assembled by the Massachusetts Division of Marine Fisheries, from 1976 to 1980, the PCB concentrations in the edible portions of scup caught in the Acushnet River estuary have declined.

021193 According to data assembled by the Massachusetts Division of Marine Fisheries, from 1976 to 1980, the PCB concentrations in the edible portions of scup caught in the Acushnet River estuary declined to levels below the current FAL of 2 ppm.

021194 According to data assembled by the Massachusetts Division of Marine Fisheries, from 1976 to 1980, the PCB concentrations in the edible portions of summer flounder caught in Areas I and II of the Acushnet River Estuary declined to levels below the current FAL of 2 ppm.

021195 According to data assembled by the Massachusetts Division of Marine Fisheries, from 1976 to 1980, the PCB concentrations in the edible portions of summer flounder caught in Areas I and II of the Acushnet River Estuary declined.

021196 No finfish samples from Areas II or III have been analyzed for PCBs by the Massachusetts Division of Marine Fisheries after 1980.

021197 No finfish samples from Areas II or III have been analyzed for PCBs by the plaintiffs after 1980.

021198 Concentrations of PCBs in fish in New Bedford Harbor and the Acushnet River have been declining since 1980.

021199 The plaintiffs have not evaluated the injury to the New Bedford Harbor lobster fishery that might occur if it were to be reopened and subsequently overlobstered.

021200 The plaintiffs have not evaluated the possible benefits to or improvements in the natural resources of the New Bedford Harbor from the more than 10-year closure of the commercial harbor fishery.

021201 Overlobstering of areas now closed to lobstering, if reopened, would likely adversely affect the supply of lobsters outside of the now closed areas.

021202 Overlobstering of areas such as those now closed to lobstering would likely have an adverse effect on the total population of lobsters in the greater New Bedford waters.

021203 Lobster spawning in areas now closed to lobstering likely substantially increase the availability of lobsters to commercial lobstermen.

021204 The life history of the American lobster in New England waters is dominated by its slow growth and failure to reach sexual maturity quickly.

021205 Most lobsters mature only after spending seven years as juveniles.

021206 By the time most lobsters sexually mature, many of them have been recruited into the fishery, and are captured before ever spawning.

021207 Those lobsters that do sexually mature are usually trapped and steamed before spawning a second time, so intense is the fishery for them.

021208 The Division of Marine Fisheries has instituted a limited entry fishery for lobsters, and established a lobster hatchery on Martha's Vineyard.

021209 When lobster eggs hatch, the pelagic larvae go through four planktonic stages before settling to the bottom.

021210 During lobsters' four-week larval existence, they are carried in the wind- and tidally-driven currents of coastal waters.

021211 Larvae thus released at a particular spot can be transported considerable distances before arriving at the places most of them will consider to be home.

021212 Buzzards Bay in particular has been identified as the richest source of lobster larvae in all of New England.

021213 Large numbers of lobster larvae transported from Buzzards Bay seed the commercially important waters of Cape Cod Bay and Vineyard Sound.

021214 The plaintiffs have no evidence that the levels of PCBs in lobsters from New Bedford waters have any deleterious effects whatsoever.

021215 The plaintiffs have no evidence that the levels of PCBs in lobsters from New Bedford waters have any deleterious effects on adult lobsters.

021216 The plaintiffs have no evidence that the levels of PCBs in lobsters from New Bedford waters have any deleterious effects on lobster eggs.

021217 The plaintiffs have no evidence that the levels of PCBs in lobsters from New Bedford waters have any deleterious effects on lobster larvae.

021218 PCBs are not toxic to lobsters.

021219 The plaintiffs have no evidence that PCBs are toxic to lobsters.

021220 Lobsters that are hatched in New Bedford Harbor but carried to other areas do not contain more than 2 ppm of PCB.

021221 Areas II and III were lobstered extensively prior to their closure.

021222 The closure of Areas II and III has reduced the degree to which they are lobstered.

021223 When the Massachusetts Division of Marine Fisheries acted to close Areas II and III to the taking of lobsters, it established a refuge or sanctuary that protected these crustaceans from heavy fishing to which they had therein been exposed.

021224 The sanctuary created by the DMF encompasses approximately 10,000 acres.

021225 In each year more legal female lobsters per acre should now survive in the closed area to reproduce.

021226 In the absence of fishing, the natural mortality of lobsters is low.

021227 The closure of Areas II and III will allow more lobsters to survive in the Areas than before the closure.

021228 Because lobsters are naturally long-lived, the density of lobsters in the protected area should increase until social factors, food supply, or other habitat considerations begin to limit their number.

021229 The plaintiffs have no evidence that the population of lobsters in the closed area will not increase due to the closure. In time the lobsters in the closed area might attain densities several times that of the heavily fished population, and may disperse to nearby suitable habitat.

021230 Because larger female lobsters produce larger clutches of eggs (small, about 7,000 eggs per year; large, about 75,000 eggs per year), the total fecundity of the lobster population will be a function of both the number of female lobsters and their average size.

021231 The protected population of lobsters in the closed area should increase both the number of female lobsters therein and their average size.

021232 If the ban on lobster fishing within the closed area is successfully enforced, an enhanced production of lobster larvae will result.

021233 As the years go by, the number of larvae injected into the Buzzards Bay and Cape Cod Bay systems from the closed area should increase.

021234 If the number of larvae in the Buzzards Bay and Cape Cod Bay systems increases, the fishable populations of lobsters throughout Buzzards Bay and beyond will increase.

021235 According to Chart No. 249 (1965) of the U.S. Coast and Geaodetic Survey, Areas II and III comprise approximately 10,000 acres.

021236 Most of Areas II and III are desirable habitat for lobsters.

021237 According to Herrick, 1909 (Bulletin of the Bureau of Fisheries. XXIX: 55-408), "It is no exaggeration to say that in practically every known natural region of the North Atlantic Coast the lobster fishery is either depleted or in a state of decline. The problem before us is how to aid nature in restoring and maintaining an equilibrium of number in the species, or how to increase the number of adult animals raised from the eggs."

021238 According to Acheson, 1975 (Transactions of the American Fisheries Society 103(3): 183-207), one way to control fishing effort [and mortality] on lobsters is that of a moratorium and subsidy, involving complete cessation of lobster fishing until stocks improve.

021239 In 1951 the Massachusetts Division of Marine Fisheries established a lobster hatchery at Oak Bluffs on Martha's Vineyard for the purposes of raising larval lobsters and releasing them to improve commercial lobster stocks.

021240 The Massachusetts Division of Marine Fisheries does today maintain and support a lobster hatchery at Oak Bluffs on Martha's Vineyard.

021241 According to Krouse, 1981 (NOAA, Tech. Rpt. NMFS SSR F-747), 2,882 American lobsters were tagged at three locations. Four months after release, 65 percent of the lobsters had been returned, and by the completion of the study in September, 1977, 2,188 (75.9 percent) lobsters had been recaptured.

021242 According to Krouse, 1981 (NOAA, Tech. Rpt. NMFS SSR F-747), 88 percent of the lobster returns occurred within a 9.3 kilometer radius of the release site.

021243 According to Krouse, 1981 (NOAA, Tech. Rpt. NMFS SSR F-747), only 1 percent of the recaptured lobsters had moved more than 18.5 kilometers from the point of release.

021244 According to Krouse, 1981 (NOAA, Tech. Rpt. NMFS SSR F-747), the extremely high annual instantaneous fishing mortality rates for lobsters in each of the study areas confirm the overexploitation of the Maine inshore lobster resource.

021245 According to Krouse, 1981 (NOAA, Tech. Rpt. NMFS SSR F-747), male and female lobsters exhibit no difference in rates of movement through the habitat.

021246 According to Krouse, 1981 (NOAA, Tech. Rpt. NMFS SSR F-747), there is no apparent relationship between a lobster's size (98 percent of the tagged lobsters were between 18 and 100 mm carapace length) and the distance moved.

021247 According to Lawton et al, 1984 (pp. 119-129 in *Observations on the Ecology and Biology of Western Cape Cod Bay*. Springer-Verlag), 95 percent of recovered tagged lobsters were captured within 4.8 kilometers of their release points, and 71 percent were recaptured on the same ledge of their release.

021248 Leigh Bridges (Massachusetts Division of Marine Fisheries) in an unpublished study of Cape Cod Bay from Plymouth to Cape Cod (untitled preliminary report to the National Marine Fisheries Service concerning growth rates, mortality and sustainable yield of lobsters in the area of Cape Cod Bay), reported in 1976 that the then present lobster fishing mortality was five times larger than that needed to maintain maximum sustainable yields per recruit.

021249 Leigh Bridges (Massachusetts Division of Marine Fisheries) in an unpublished study of Cape Cod Bay from Plymouth to Cape Cod (untitled preliminary report to the National Marine Fisheries Service concerning growth rates, mortality and sustainable yield of lobsters in the area of Cape Cod Bay), reported in 1976 that the length frequencies of captured lobsters were indicative of overfishing, leading to instability of the fishery because of dependence on fewer age groups.

021250 Leigh Bridges (Massachusetts Division of Marine Fisheries) in an unpublished study of Cape Cod Bay from Plymouth to Cape Cod (untitled preliminary report to the National Marine Fisheries Service concerning growth rates, mortality and sustainable yield of lobsters in the area of Cape Cod Bay), reported in 1976 that a 75 percent reduction in fishing

mortality and a 30 percent increase in minimum size would still result in overfishing.

021251 Leigh Bridges (Massachusetts Division of Marine Fisheries) in an unpublished study of Cape Cod Bay from Plymouth to Cape Cod (untitled preliminary report to the National Marine Fisheries Service concerning growth rates, mortality and sustainable yield of lobsters in the area of Cape Cod Bay), reported that a 30 percent increase in minimum size would raise the present minimum from 81 millimeters carapace length to 105 mm carapace length.

021252 According to Collings et al., 1983 (NOAA Tech. Rept. NMFS SSTG-775; 35-46), from 9.2 million to 26 million lobster larvae were carried through the Cape Cod Canal from Buzzards Bay to Cape Cod Bay during the years 1976, 1977 and 1978. This finding is true.

021253 According to JG. C. Matthiesson, 1984 (pp. 103-117 in *Observations on the Ecology and Biology of Western Cape Cod Bay*. Springer-Verlag), substantial numbers of lobster larvae are carried through the Cape Cod Canal from Buzzards Bay to Cape Cod Bay. This finding is true.

021254 According to Collings et al., 1981 (*The Effects of Power Generation on some of the Living Marine Resources of the Cape Cod Canal and Approaches*. Mass. Div. Marine Fisheries. 212 pp. + appendices), as recently as 1979 Buzzards Bay was found to have one of the highest densities of lobster larvae in the northeastern part of North America. This finding is true.

021255 Subsequent to 1980 and the closure of Areas II and III in 1979, the Division of Marine Fisheries did not sample, or analyze for PCBs, samples of lobsters from areas other than Area III.

021256 The elimination of commercial fishing as a source of lobster mortality will cause the population of lobsters in Areas II and III to increase.

021257 The plaintiffs have no evidence that the ban on lobstering in Areas II and III will not cause the population of lobsters in Areas II and III to increase.

021258 The plaintiffs have no evidence that the ban on lobstering in Areas II and III has not caused the population of lobsters in Areas II and III to increase.

021259 The elimination of commercial fishing as a source of lobster mortality will cause the population of lobsters in Buzzards Bay outside of Areas II and III to increase substantially.

021260 The elimination of commercial fishing as a source of lobster mortality will cause the population of lobsters in Areas II and III to reach older average age and larger average size.

021261 Older, larger lobsters produce more eggs (are more fecund) than smaller, younger lobsters.

021262 According to the draft report on the American Lobster Fishery Management Plan from the New England Fishery Management Council, August 16, 1982, a lobster management plan is necessary because the resource is fished very intensively throughout its range, resulting in only a small fraction of American lobsters surviving long enough to reproduce once.

021263 In only a small fraction of lobsters in a fishery survives long enough to reproduce once, the risks of recruitment failure and stock collapses increase, and the continuation of a viable fishery can be jeopardized.

021264 Concentrations of PCBs in lobsters in New Bedford Harbor are declining.

021265 The plaintiffs have no evidence that the concentrations of PCBs in lobsters in New Bedford Harbor are not declining.

021266 The concentrations of PCBs in lobsters in Areas II and III have declined since 1980.

021267 The plaintiffs have no evidence that the concentrations of PCBs in lobsters in Areas II and III have not declined since 1980.

021268 The distribution and abundance of lobster larvae is highly variable and depends upon a number of environmental parameters including diet cycle, prevailing currents, wind direction and intensity, presence of floating algae and eel grass, size of parental stock and distance from parental stock.

021269 Because the distribution and abundance of lobster larvae is highly variable, one has to apply appropriate statistical methods to the results of a well-designed sampling plan before one can conclude that there are any temporal or spatial trends in their distribution or abundance.

021270 The following publications are authored by experts on the topics they cover and are relied upon by experts in the field:

a. Observations on the Ecology and Biology of Western Cape Cod Bay, Massachusetts, edited by John D. Davis and Daniel Merriman (1984).

b. The Effects of Power Generation on Some of the Living Marine Resources of the Cape Cod Canal and Approaches, by W. Stephen Collings, Christine Cooper-Sheehan, Sally C. Hughes and James L. Buckley (November 1, 1981).

c. Marine Recreational Fishery Statistics Survey, Atlantic and Gulf Coasts, 1979 (Revised) -- 1980: Current Fishery Statistics -- Number 8322 (September 1984).

d. Marine Recreational Fishery Statistics Survey, Atlantic and Gulf Coasts, 1981-1982: Current Fishery Statistics -- Number 8324 (April 1985).

e. U.S. Dept. of Commerce NOAA Technical Report NMFS SSRF-747, "Movement, Growth, and Mortality of American Lobsters, Homarus americanus, Tagged Along the Coast of Maine," by Jay S. Krouse (September 1981).

f. Article in *Newsweek*, November 29, 1971 entitled, "The High Price of Lobster."

g. "The Distribution of Some Marine Fish Eggs and Larvae in the Acushnet and Westport River Estuarine Systems, Massachusetts," John Jeffrey Govoni (17 May 1973).

h. "Metal Concentrations of Some Macrobenthos of New Bedford Harbor and an Evaluation of the Use of the Slipper Limpet *Crepidula Fornicata* Linnaeus as a Monitor of Coastal Metal Pollution," Brian Charles Kelly, June 1978.

i. "Effects of Temperature, Salinity and Oxygen on the Survival of the American Lobster," D. W. McLeese (July 15, 1955).

j. "The American Lobster: The Biology of Homarus americanus," Stanley J. Cobb (1976).

021271 At the May, 1986 meeting of the Peer Review Panel, Dr. McConnell and the Panel discussed the availability and use of bio-economic models.

021272 At the May, 1986 meeting of the Peer Review Panel, Dr. McConnell and the panel discussed use of bio-economic models to capture the "stock effect" from lobstermen moving further out into the New Bedford Harbor.

021273 Stock effect is the effect on the supply of lobsters in different areas from the shift in lobstering activities.

021274 Dr. McConnell and the Peer Review Panel discussed whether the closure might have a beneficial effect on the lobster population in New Bedford Harbor.

021275 Dr. McConnell and the Peer Review Panel decided to discontinue the effort to determine "stock effects."

021276 Lobsters migrate.

021277 Lobsters migrate from Area II to Area III.

021278 Lobsters migrate from Area III to the water outside Area III.

021279 The closure of Areas II and III has aided the lobster hatchery inside the New Bedford Harbor.

021280 The plaintiffs have no evidence that the closure of Areas II and III has not aided the lobster hatchery inside the New Bedford Harbor.

021281 The number and average size of lobsters inside Area II and III has increased since the closure.

021282 The number and average size of lobsters in areas bordering Areas II and III has increased since the closure.

021283 Dr. McConnell does not know if any of the purported damages to the lobster fishery are attributable to the Aerovox plant.

021284 Dr. McConnell does not know if any releases from the Aerovox plant were in any way responsible for the closure of Area II.

021285 Dr. McConnell does not know if any releases from the Aerovox plant were in any way responsible for the closure of Area III.

021286 Mr. Morrison does not know if any of the purported damages to the lobster fishery are attributable to the Aerovox plant.

021287 Mr. Morrison does not know if any releases from the Aerovox plant were in any way responsible for the closure of Area II.

021288 Mr. Morrison does not know if any releases from the Aerovox plant were in any way responsible for the closure of Area III.

021289 Dr. McConnell discarded earlier versions of various parts of the Lobster Report.

021290 Mr. Morrison discarded earlier versions of various parts of the Lobster Report.

021291 Dr. McConnell and Mr. Morrison discarded earlier versions of various parts of the June Lobster Report pursuant to a directive by Evan Slavitt of the United States Department of Justice.

021292 The authors of the Damage Assessments have no knowledge upon which to base an assumption that they have underestimated the costs of the closure.

021293 Prior to November 1985, IEc employed Steven Crutchfield to work on the Damage Assessments.

021294 Mr. Crutchfield developed a work plan for the Damage Assessments that assumed that commercial lobstermen were profit maximizers.

021295 Sometime during or near November 1985, Mr. Crutchfield was terminated from the Damage Assessments project.

021296 Mr. Crutchfield's work plan was one of the reasons he was terminated from the Damage Assessments project.