Response 13:

Cleanings generated by pressure washing will be captured and transported for proper disposal. See footnote 2 of BMP section.

Comment 14:

The Permittee is asked to sample any infiltration waters in drainage systems for outfall 005/006 and test for VOCs but not PCBs. The groundwater is highly contaminated with PCBs, knowing if there is PCBs in the infiltrate is valuable information to obtain and PCB testing of these waters needs to be done.

Response 14:

The piping network connected to outfall 005 goes through a massive LNAPL plume, and the piping network connected to outfall 006 goes through property formally used as a manufactured gas plant (which left behind significant PAHs) and goes through a massive LNAPL plume as well as various other NAPL plumes. VOCs before and after pipe cleaning activities will show whether the BMPs are sufficiently reducing or eliminating infiltration of pollutants. VOC measurements can be used as an indicator for possible PCB contamination, although the routine dry weather measurements of PCBs taken at outfalls 005 and 006 will provide more direct measurements of PCBs in groundwater infiltration

Comment 15:

Permit pollutant monitoring and limits
The Fact Sheet explained that many of the storm water outfalls also carried industrial process waters in addition to storm water. These additional influent flows resulted in discharge data not indicative of current conditions so the probability of water quality criteria exceedances can not be determined for this draft permit because of insufficient data on current (no process water) conditions. What outfalls had process waters? When were the various industrial process flows discontinued? It seems most of the process water was discontinued years ago. For example, the temperature data for outfall 007 appears to show the non-contact cooling water component stopped years ago since the water temperatures from 1998 on appear to be ambient temperatures. If there are several years of data for each outfall since the curtailment of industrial process water influent, why wouldn't this be sufficient information to determine if there is a probability for water quality criteria exceedances? Even if a few outfalls had process water until recently, those outfalls which had the process water removed since 2002 or 2003 should have enough information available from discharge monitoring to ascertain the probability of exceedances for a given pollutant.

Response 15:

The 1992 permit describes the authorized flow components for each outfall. EPA does not know the exact dates that flow components were removed, nor does EPA think this would be especially helpful in interpreting the discharge data. The primary difficulties in determining interpreting the data are that neither the weather conditions during the sampling events, nor the discharge flow at the time of the sampling event are known, so the effluent quality as a function of flow cannot be determined. EPA has endeavored to correct this problem in this permit by requiring sampling under both wet and dry weather, by requiring continuous discharge flow measurement from the treated discharges, and by the collection and reporting of detailed rainfall data.

Comment 16:

Copper
The past monitoring has shown elevated copper levels in the wet weather effluent. The commingling of the samples from several outfalls prevents ascertaining which outfall or outfalls might have elevated copper concentrations. The Fact Sheet (p. 10) explained toxicity, metal and flow limitations were removed from the permit because cooling water is no longer discharged.

Has testing been undertaken since the cooling water was eliminated or source identification done to show the only potential source of metals was from the cooling water? To ascertain which outfall(s) were the significant source(s) of copper? If individual outfall testing was not performed than the possibility of any given outfall having elevated copper can not be dismissed and all outfalls should be required to monitor for copper. This request is supported by recent discharge monitoring data from testing on the combined effluent from the outfalls which no longer carry any industrial process water. In May, 2004 the copper concentration was 0.46 mg/l. The calculated daily maximum (acute) copper limit cited in Attachment R is 0.016 mg/l and the monthly (chronic) average is 0.011 mg/I. None of copper results from monitoring in 2004 would have fallen below the monthly average of 0.011 mg/I and only a third would have been in compliance with the daily maximum. This recent DMR data shows there is definitely still reasonable potential for copper exceedances and monthly monitoring of each individual outfall, at the least, should be required and limitations added should any of the combined concentrations of outfalls into the same waterbody exceed calculated acute and chronic copper limits. Combining samples from the individual outfalls for testing should not continue. While it is more costly to sample and test each outfall individually, the copper problem highlights the inadequacy of batch testing. Without information on each individual outfall it is not possible to determine which outfall(s) may be the source of noncompliant levels of a pollutant. Without this information solutions to address the problem can not be expedited.

The information in the Fact Sheet and the requirements in the draft permit for outfall 001 indicate a belief that outfall 001 was the primary contributor of copper. Attachment R appears to

indicate six samples informed the Reasonable Potential Evaluation Assessment for outfall 001 but it is not clear if the six samples were independent of the combined testing of outfalls 001, 004, 005, 007, 009 and 011. Was sampling and testing done specifically on the flow from outfall 001? If there was separate testing of each individual outfall to determine the source(s) of copper than this data should have been provided in the Fact Sheet. Attachment R indicates there is reasonable potential for the discharge from outfall 001 to exceed chronic and even acute copper limits but the draft permit does not contain copper limits for this outfall. The permit does indicate BMPs and other improvements are being made to the outfall 001 infrastructure but there does not appear to be any measures specifically targeted at copper removal. Attachment R indicates the effluent has the probability to be more than twice the water quality criteria. Would increasing the ability of the oil and water separator to handle flows result in appreciable copper or any other metals removal? Given the calculated reasonable potential provided in the Fact Sheet and no justification provided to show the propose improvements in the basin will have a substantial affect on copper; acute and chronic copper limits need to be added to the permit.

Response 16:

As noted elsewhere, Outfall 001 has been removed from the permit as it is no longer owned by GE. However, based on reasonable potential analysis shown in Attachment R of the Fact Sheet, and the analysis GE submitted in their comments, there is a reasonable potential to exceed the copper criterion in the Outfall 001 discharge. The effluent samples were collected from sampling locations 001, 005-64T, 005-64G, 09A, 09B and dominated by Outfall 001 and 009 flows. This reasonable potential finding is based on calculating the Outfall 004 and 007 percent makeup flow of the composite sample was 0% and the Outfall 001 and 009 percent makeup flow was 50%. Therefore, it appears that a copper limit should have been included on the dry weather discharge from 001 and EPA anticipates such a limit when EPA reissues the PEDA permit. Also, based on the reasonable potential analysis shown in Attachment R of the Fact Sheet, there is no reasonable potential to exceed the copper criterion in the discharge from the remaining outfalls.

Comment 17:

WET
Attachment Q shows some problems with whole effluent toxicity compliance in the tests performed on the combined outfall flows- especially under dry conditions (worst case was 6.25 % survival NOCEL in July, 1999). Recent tests show improvement but the testing was done on a combined sample. If the lack of information is the rationale cited for not establishing pollutant limits for the outfalls than this argument is equally valid concerning the elimination of criterion. Consideration should be given to requiring WET testing for those outfalls with dry weather flows.

The whole effluent toxicity testing for outfall 007 has been eliminated in this draft permit. The reason for the elimination is the curtailment of process and cooling water discharges to the

system. The removal of this requirement should be reconsidered. Attachment M indicates this outfall is impacted by GE's application of pesticides, herbicides and soil conditioners in this drainage basin. The presence of these turf management chemicals pose a reasonable threat to the aquatic life in the receiving water and testing is pertinent and should be retained since the water toxicity is unknown/unproven.

The WET testing should remain in place for outfall 001, and all other outfalls with dry weather flow, until the "unknown origin dry weather" flow is shown to have no acute or chronic toxicity. Many permits now contain language allowing for Permittee to petition for a reduction in WET testing after two years of compliance with permit limits. This approach would be valid in this instance.

WET testing- how was daphnid chosen as test organism? Was WET testing performed on other organisms *(Pimpales,* etc) to determine the most sensitive organism.

Response 17:

The data in Attachment Q shows that there has only been one LC50 less than 100 percent (93 percent) in all of the tests since 1998 (collected during both wet and dry weather). Since 2002 there has only been one NOEC less than 100 percent (75 percent). NOEC samples were also collected during both wet and dry weather.

WET testing is not typically required of storm water discharges because of the variability of the storm water effluent and the difficulty of identifying individual toxic components in the effluent. Data collected to date do not support a finding of reasonable potential for outfall 007. WET testing is more appropriately applied to continuous discharges where the characteristics of the effluent are better known or more easily predicted. Note that outfall 007 has been plugged and is no longer included in the permit.

Although the toxicity tests results at this site does not establish a more sensitive test organism, Ceriodaphnia dubia was selected because it is the more sensitive test organism for the vast majority of discharges in New England.

Comment 18:

TSS
Many of the outfalls do not currently have total suspended solids (TSS) monitoring requirements but of the outfalls with this requirement, the data show large quantities of total suspended solids are discharged into the receiving waters. The addition of total suspended solid concentration and load limits for the outfalls should be considered. Storm water can carry large quantities of TSS

and the planned demolition of many of the structures at this site and the presence of contaminated soils raises concerns about the potential impacts high concentration and loads of TSS could have on the receiving waters.

The discharge monitoring data supports the need for TSS limitations. Recent discharge monitoring data illustrates pervasive TSS problems at Outfall 001I which had a TSS loading of 104.5 pounds in March, 2004. Outfall 009 had lower, but still significant, loadings with 35.9 lbs in May, 2004 and 21.4lbs in March, 2004 while outfall 005 reached 9.4lbs in May, 2004 and 16.5 lbs in March, 2003. Data is not available for other outfalls but given the similarities between the outfalls' drainages and contributing flows, it seems likely there are TSS concerns and reasonable potential for elevated TSS concentrations and loadings.

TSS load and concentration monitoring requirements based on water quality needs are very much needed for all the storm water outfalls and yard drains. Load and concentration limits should be seriously considered for all outfalls based on water quality issues and the cumulative impact of the multiple discharges into the receiving waters. For the smaller Unkamet Brook and for Silver Lake, large loads of suspended solids from multiple discharges have the potential to be quite detrimental to the aquatic ecosystems of these systems with lower assimilative capacities. The addition of a reporting requirement will help to develop more information but the existing data indicates it is reasonable to assume cumulative TSS loads from the multiple outfalls are capable of degrading receiving waters. The data also shows many of the highest readings occur in the spring which suggests basic storm water pollution prevention activities such as street sweeping and storm sewer maintenance are not occurring or are inadequate. TSS monitoring should be increased to a minimum of monthly sampling but it would be preferable to require composite sampling for each discharge event so the total load of TSS entering the receiving waters from the GE site can be calculated and assessed and the effectiveness of the BMPs to be instituted can be determined.

Outfall 001 has only a wet weather TSS load limit. The limits are 628 lbs/day maximum daily and a monthly average maximum load of 138 lbs/day with monthly monitoring required. Several aspects of the outfall 001 TSS permit requirements raise issues. First is how the daily maximum and monthly average loads were determined? Silver Lake is a highly degraded, 303(d) listed impaired water offering little dilution and depositional conditions inherent in a lake. The lake also has additional point source discharges. Was water quality and cumulative impacts considered in establishing this load limit? Is it known if the TSS contain PCBs in measurable quantities?

Outfall 009 also has load limits with an allowable daily maximum load limit of 876 lbs/day. This is a significant quantity of TSS going into the relatively small Unkamet Brook. The Fact Sheet also does not contain information on how the load for this outfall was calculated. What discharge volume and concentration was the load based upon? Are these load limits based on water quality

concerns? The load limits are considerably larger than the actual loads measured and reported in DMRs, range of 0-82 lbs/day (Attachment N). This suggests the loads are not technology based or conservative. Note the TSS load has been increasing at this outfall from the earlier sampling period '98-'00 to '01-'03 so the problem is worsening though the relatively generous load limit does not produce incentive to keep the loads from increasing over time.

Why do storm water outfalls 001 and 009 have both a load limit and a monthly monitoring requirement, (with a composite sample) while other storm water outfalls have only quarterly, report only monitoring despite all being storm water outfalls except 005? The receiving waters have multiple discharges so the cumulative loads need to be considered and controlled. Has the impacts to the aquatic system for these potential loads into the brook, (or lake or river) been considered thoroughly? Is there a probability or potential for the TSS loads to impact water quality, habitat and aquatic life? Is there enough data about all the discharges from multiple source- GE and City- to confidently determine what is a acceptable load of TSS or any other pollutant? With multiple discharges, even the outfalls with smaller storm flows warrant more intensive monitoring and a proportional load limit based on the water quality concerns of the receiving waters.

Response 18:

With the revision to the monitoring requirements in the Final Permit, all authorized outfalls to receiving waters now have TSS monitoring requirements.

The TSS effluent limits included in the permit are technology-based limits carried over from the 1992 permit. The mass limitations were based on the permitted monthly average flows through the outfalls. The concentrations that were the basis for these limits can be back-calculated (see table below) and show that they are more stringent than technology-based limitations typically assigned to wet weather discharges (see Region 1 oil terminal permits, which include a monthly average TSS limit of 30 mg/l and a maximum day limit of 100 mg/l, the MSGP, which has a benchmark TSS value of 100 mg/l, and the storm water construction permit, which has a 50mg/l monthly average limit and a 100 mg/l maximum day).

The following table presents the TSS, BOD, PCB, oil and grease (O&G) mass limits and the associated flow limits from the 1992 permit, and the flow limits for each of the discharges and shows that the limits for TSS and O&G are based on similar effluent concentrations for each discharge, showing that similar BPJ concentration limits formed the basis for the mass limitations.

	Outfall 001	Outfall 004	Outfall 005**	Outfall 009
Mo. Avg Flow MGD	1.1	0.38	2.09	---
Max Day Flow MGD	2.55	2.09	2.09	---
Mo. Avg TSS lbs/day (mg/l)	138 (15*)		188 (21*)	213 (20***)
Max Day TSS lbs/day (mg/l)	628 (30*)		270 (30*)	876 (30***)
Mo. Avg PCB lbs/day (ug/l)	---		0.01 (1*)	---
Max Day PCB lbs/day (ug/l)	---		0.03 (3*)	---
Mo. Avg BOD lbs/day (mg/l)	---		90 (10*)	106 (10***)
Max Day BOD lbs/day (mg/l)	---		135 (15*)	438 (15***)
Max Day O&G lbs/day	319 (15)	261 (15)	135 (15)	438 (15)
Max day O&G mg/l	15	15	15	15

* Not a limitation – calculated from mass limit and flow limit

** Mass limits for outfall 005 were originally calculated based on a flow limit of 1.08 MGD. The flow limit was later increased pursuant to a permit modification to allow the tie in of the groundwater treatment system, but the mass limits were not increased. For purposes of comparing the calculated concentrations for outfall 005 to those of other outfalls, the originally permitted flow of 1.08 MGD was used in the calculation.

*** Mass limits for outfall 009 were originally calculated based on a monthly average flow limit of 1.28 MGD and a daily maximum flow limit of 3.5 MGD. The flow limits was later removed from the permit pursuant to a permit modification, but the mass limits were not changed. For purposes of comparing the calculated concentrations for this outfall to those of other outfalls, the originally permitted flow limits were used.

As can be seen, the technology-based mass limitations for TSS correspond to 15-20 mg/l for monthly average limits and 30 mg/l for daily maximum limits. The Oil and Grease limitations correspond to maximum daily limits of 15 mg/l and the BOD limitations correspond to 10 mg/l for a monthly average and 15 mg/l for a daily maximum.

There are no numeric water quality criteria for TSS, but if monitoring data shows TSS to be a reliable indicator of PCB concentrations, the Region may develop water quality-based limitations for TSS.

Comment 19:

Oil and grease
Most of the questions raised concerning TSS loads, limits and absence of limits also apply to oil and grease. Adding load limits for oil and grease improves over a straight concentration limit since loads can be sensitive to the water quality needs of the receiving water. How load limits for select outfalls were determined and which outfalls need O&G load limits was not covered in the Fact Sheet. The draft permit assigns an oil and grease limit of 438 lbs/day daily maximum for outfall 009. Outfall 009 discharges to the relatively small Unkamet Brook. The daily maximum flow recorded between 11/01 and 10/03 was 1.068 mgd (Attachment N). Typically the O&G concentration limit is 15 mg/l. If one calculates the load using these figures the resulting load, 133.7 lbs/day, is significantly less than the load limit in the draft permit unless the 1.068 mgd discharge has an oil and grease concentration of about 50 mg/l. The draft permit's loading limit is more reflective of a flow 3x the maximum discharged from this outfall and presumably the required BMPs will further reduce the maximum flows making this large permitted loading even more unsuitable. This is a large load for a small brook and one that is apparently well in excess of what would be expected. How was this load limit derived and is it protective of water quality especially in concert with the O&G loads coming from the other point sources, whether from GE or other sources, into these connected receiving waters? The permitted loading needs to be based on water quality issues and take into account the current or expected flow conditions from this outfall.

The elevated load for outfall 009 illustrates the bigger picture issue with the permit limit variations between the outfalls. There are multiple outfalls from this site carrying storm water runoff from an industrial site and discharging into interconnected waterways. The flow characteristics should be comparable. The Fact Sheet does not explain why one outfall has a load limit while another has a concentration limit and others only reporting requirements. Some outfalls require monthly monitoring while others are quarterly and grab samples are the sampling method required. Given the large number of outfalls, the variability of flow, and the infrequency of the sampling, how large a load of oil and grease is entering the Housatonic River from direct outfalls and from tributaries Silver Lake and Unkamet Brook is likely unknown and this is an unfortunate condition given the goal of protecting and restoring our waterways. All of the outfalls with O&G data show a reasonable potential to exceed a 15 mg/l concentration limit but the concentration does not tell the entire story because there are multiple outfalls in the receiving waters and many outfalls, notably the storm and yards drains, do not have O&G data. Having better data, from composite sampling and more frequent sampling, load limits that reflect water

quality needs and consistent requirements for all discharges, including storm and yards drains, would provide protection to the receiving waters.

Response 19:

Similar to the TSS limits discussed above, the oil and grease limitations in the Draft Permit for outfalls 001, 005, and 009 (in the final permit, the limitations for 009 are now applied at outfall 09B), are technology-based and have been carried forward from the 1992 permit. Unlike TSS however, the permit limits for these outfalls included both concentration and mass limits. As shown on the table above, the load limits were calculated using the design flow of the facility and a concentration of 15 mg/l.

In addition, the Draft and Final Permits include concentration limits of 15 mg/l for outfalls 05A, 05B, and 06A. This concentration is generally accepted as protective of the narrative Class B water quality criteria requiring these waters to be free from oil, grease, petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water, or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life. These limits were included because EPA believed there was reasonable potential for the discharge of oil and grease to exceed the narrative criteria. As discussed previously outfalls 001, 01A and 004 were removed from the permit because they were transferred to PEDA.

The Final Permit also requires oil and grease monitoring of outfalls 64G and 009 (09B in the Draft Permit). With the addition of oil and grease monitoring for the outfalls listed in Part I.A.14 all outfalls have oil and grease monitoring requirements. If the data submitted for these outfalls show the reasonable potential for oil and grease concentrations to exceed water quality standards, or if it is shown that oil and grease concentration is a good indicator of PCB concentration, a water quality-based limitation can be added through a permit modification.

Comment 20:

pH

The receiving waters of these outfalls are classified as Class B waterways by the State. The water quality pH range for Class B waters is 6.5-8.3 s.u. The draft permit appears to have only limitations in place for pH for outfall 005 dry weather and the limitation proposed fails to conform to the State's Class B standard since the draft permit allows an upper pH limit of 9.0 s.u. The other outfalls do not appear to have pH limitations at all just report only status despite some remarkably high and low pH values (3.5 s.u. in outfall 01 A and 11.17 s.u. in outfall 004). Why are there no pH permit limitations required for the storm water outfalls given there is a high probability for exceedances of Class B Water Quality Standards? All discharges, both dry and

wet weather flows, need to meet Class B water quality standards for pH unless natural conditions result in values outside the Class B range.

The monitoring schedule for pH should also be reconsidered. The EPA's PCS data base has pH readings for almost every outfall for each month yet the draft permit has quarterly monitoring schedules for some of the outfall s showing monthly readings. Is the facility currently required to monitor some outfalls monthly that will be monitored quarterly under the draft permit or did the Permittee monitor more frequently than required? Given the relative ease and low cost of pH testing, the past pH record for this site, the apparent history of monthly monitoring, and the need for more complete data to better understand the potential affect of the discharges on the receiving waters, monthly monitoring and even monitoring of each discharge event is warranted.

Response 20:

The details for the pH data results mentioned by the commenter are as follws: 01A had a pH value of 3.5 S.U. and this sample was collected on 9/30/98. Outfall 004 had a pH value of 11.17 S.U. on 2/28/03. There are several values that are fairly low, which appear to due to low pH rainfall. The high value of 11.17 looks like an anomaly, or may have been from an industrial process since this occurred 5 ½ years ago. The pH range at 004 was 4.28 – 8.6 S.U., excluding the 11.17 value, from 1/31/03 – 3/31/05.

Effluent pH values reported in GE's DMR:

Outfall:	Sample Dates:	pH Range:
001	1/31/04 – 3/31/05	6.0 – 8.7
01A	1/31/04 – 3/31/05	6.0 – 8.5
004	1/31/04 – 10/22/04	6.0 – 8.5 (outfall 004 was sealed in May 2005)
05A	3/31/04 – 3/31/05	6.0 – 8.7
05B	3/31/04 – 12/25/07	6.0 – 8.6
006	3/31/04 – 1/25/07	6.0 – 8.5
06A	3/31/04 – 1/25/07	6.0 – 8.5
007	1/31/04 – 4/21/05	6.0 – 8.5 (outfall 007 was sealed in March 2005)
009	1/31/04 – 3/23/07	6.0 – 8.7
09A, 09B, 09D	no pH data	(outfall 09A was sealed in March 2005)
64G	1/31/04 – 3/21/07	6.5 – 8.0
64T	1/31/04 – 3/23/07	6.4 – 8.6
SRO4	3/31/04 – 4/21/05	7.1 – 8.97 (outfall SRO4 was sealed in March 2005)

The pH in the East branch of the Housatonic River upstream of the GE discharges is in the range of 6.12 – 7.92 S.U. according to the toxicity test results from 1/6/04 – 9/14/07. The MA Water Quality Assessment Report for the Housatonic River Watershed, 2002 reported no pH problems

or impairments for the East Branch of the Housatonic River. It therefore that appears that there is no reasonable potential for any of the existing discharges to cause or contribute to exceedances of pH water quality criteria.

Comment 21:

Other matters
All outfalls receiving groundwater infiltrate or overflows/surcharge from the 064T or 064G should have monitoring requirements on par with outfall 005 which discharges groundwater treated to remove PCBs and other pollutants. If these pollutants have the potential to be in the effluent of the groundwater treatment system, it is logical to assume they could be present in any outfall containing groundwater or outfall 005 surcharges. Monitoring for volatile and semivolatile organic compounds needs to be added to all outfalls receiving groundwater infiltrate. This is also further argument to include WET testing for these outfalls.

Response 21:

Because the commenter mentions volatile and semi-volatile monitoring, which is only required at outfall 64G, EPA assumes the commenter is requesting that all outfalls have monitoring requirements the same as 64G, not 005.

EPA does not believe that all outfalls require the same monitoring requirements as 64G, as it is treating highly contaminated groundwater. However, to ensure that EPA has required monitoring that will provide an indication or groundwater contamination from areas known to have contaminated groundwater EPA has required that volatiles and semi-volatiles be monitored for outfalls in the 005 and 006, the only other outfalls with dry weather discharges in the 005 and 006 drainage areas.

As discussed previously, all outfalls discharging during dry weather now include limitations and monitoring for PCBs, and all other outfalls require PCB, TSS, and oil and grease monitoring. EPA has determined that this monitoring will be sufficient to identify any additional problem areas.

Comment 22:

The Permittee has undertaken priority pollutant analysis associated with toxicity testing using a composite sample of outfall discharges. This testing does not appear to be required under the new permit. This site is complex, undergoing a significant number of changes related to remediation, institution of BMPs, and redevelopment. The site still has significant groundwater and other remediation efforts to carry out. Continuing the priority pollutant testing through these

massive site disturbances would provide a measure of confidence concerning the continued reasonable effluent concentrations of priority pollutants.

Response 22:

The composite sampling requirements were intended to show whether there was an overall concern with WET and other toxics. The tests have shown that there is not. EPA believes that The permit focuses on PCBs, which is the main pollutant of concern on this site.

Comment 23:

Information in the Fact Sheet indicates 9 outfalls were determined to be nonpoint source discharges and not point sources. More clarification on how an outfall, presumably some sort of discreet conveyance into a receiving water if it is labeled a outfall, is a nonpoint source discharge not subject to coverage under the NPDES program would be appreciated. The 9 non point outfalls were not apparent on the attached Drainage Area and Outfall Locations Map. Clarification on the location of these particular non-outfalls and information on the land uses within the drainage areas of these nonpoint outfalls would be welcome. Also if there are any best management practices associated with these nonpoint outfalls.

Response 23:

EPA determined that these discharges were nonpoint sources. EPA has included a requirement that GE conduct a site survey to determine whether there are additional point sources on their facility. The BMPs required under the permit are intended to address both point and nonpoint source pollutant discharges from the site.

Comment 24:

The draft permit does not allow dry weather flows from several outfalls currently discharging during dry weather, outfalls 01A, SR05, 06A. The draft permit does not indicate there is an interim period of time between the permit finalization and when the dry weather flows must stop. The lack of a schedule for compliance suggests the curtailment of dry weather flows must coincide with the final permit. Is this the intention or will the Permittee be given additional time to address these unknown dry weather flows? If the dry weather flows will be phased out over time, the permit should provide a detailed timeline for the elimination of these dry weather flows and a temporary monitoring schedule to test the dry weather flows until they are eliminated.

Response 24:

As described previously, it was EPA's intent in the Draft Permit to authorize dry weather discharges through those outfalls that included such discharges, subject to PCB effluent limitations and monitoring requirements, and to not authorize dry weather discharges for outfalls for outfall that did not currently have such discharges. Based on differences between the flow balance diagrams submitted by GE and other application materials, this was not consistently done in the Draft Permit and has been corrected in the Final Permit. Therefore, there is no need for schedules for the elimination of such discharges.

The Draft Permit did not authorize outfalls 01A, SR05, 06A to discharge during dry weather. It is understandable however that the descriptions of the outfall flow components on the respective effluent limitations pages would cause some confusion and we have changed the language to make it clear that discharges during dry weather are prohibited.. As noted previously, outfall 01A is no longer included in the permit. The flow component descriptions for outfall SR05 and 06A on their respective limitations pages and in Attachment A have been modified to make it clear that these outfalls are not authorized to discharge during dry weather.

Comment 25:

A clarification please. The Fact Sheet explained that storm water runoff from 64T is discharged to outfall 005. Does this mean area around the building, just the roof or actual areas where treatment occurs and may drain through floor drains or other means into the outfall.

Response 25:

Building 64T contains a storm water treatment system consisting of pH adjustment, polymer addition to promote flocculation of solids, mixing, inclined plate clarification and multimedia filtration.

The 64T treatment facility accepts groundwater infiltration and storm water from drainage basin 005, which has a total area of 52 acres (43 impervious acres) and discharges this flow to outfall 005 during both wet and dry conditions.

As discussed previously, in recognition of the dry weather contribution of flow from 64T, the dry weather monitoring location for outfall 005 has been moved from 64G to outfall 005, downstream of the discharges from 64G and 64T.

Comment 26:

SR02, SR 03 and SR04 are overflows from the 005 drainage system, a system with treated and untreated groundwater flows in addition to storm water. The data is quite limited for these outfalls yet the Fact Sheet clearly shows SR04 has PCBs higher than applicable water quality criterion. Given the source of influent to these drains, the reasonable potential to exceed water quality criteria or aquatic health criterion, and the known elevated PCB concentrations at the one drain monitored for PCBs, the permit should require monitoring for TSS, oil and grease, PCBs and pH in addition to flow.

Response 26:

SROs (sewer relief overflows) SR02, SR03 and SR04 have been eliminated and are no longer authorized by the permit.

Comment 27:

This draft permit does not include some of the standard criteria and conditions found in other NPDES permits such as:

"The discharge shall not cause or have the reasonable potential to cause or contribute to a violation of a water quality standard."

"The results of sampling for any parameter above its required frequency must also be reported, in accordance with 40 C.F.R. § 122.41 (I) (4)(ii)."

"This permit shall be modified, or revoked and reissued to comply with any applicable effluent standard of limitation issued or approved under Sections 301 (b)(2)(C) and (D), 304(b)(2), and 307(a)(32 of the Clean Water Act, if the effluent standard or limitation so issued or approved:

(1) contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or

(2) controls and pollutants not limited by this permit.

If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the Act."

Why haven't these 'boiler plate' conditions been included in this draft permit? The conditions are most applicable to this situation and would offer additional protection to the environment and more flexibility.

Response 27:

The permit modification condition cited to by the commenter is broader in scope than provided EPA under applicable regulatory authority governing the NPDES permit procedures. Existing authority under 40 C.F.R. § 122.62 provides EPA with sufficient flexibility to modify the permit to impose protective provisions that account for new information not available to the Agency at the time of permit issuance.

EPA has not included the condition that "The discharge shall not cause or have the reasonable potential to cause or contribute to a violation of a water quality standard," because it is potentially confusing and is unnecessary. It is not the obligation of the permittee, but rather EPA, to determine whether a discharge has the reasonable potential to cause or contribute to a violation of water quality standards. EPA has conducted a reasonable potential analysis for all pollutants in the discharges from the GE site and has included effluent limitations on pollutants as necessary to ensure compliance with water quality standards. Thus, the permit itself will ensure that the discharge will not cause or have the reasonable potential to cause or contribute to a violation of water quality standards.

The condition pertaining to reporting of sampling results is contained in the Part II conditions.

VI. COMMENTS FROM ENVIRONMENTAL STEWARDSHIP CONCEPTS, ON BEHALF OF THE HOUSATONIC RIVER INITIATIVE (originally submitted on March 3, 2005 and revised on March 25, 2005; revised version is presented):

Introduction

Since the late 1970's, numerous studies have recorded extensive PCB contamination in the Housatonic River. Contamination has been documented all the way to the termination of the river in Long Island Sound. In a 2000 court hearing, the GE plant in Pittsfield, MA was identified as the sole responsible party for the PCB contamination that extends to the last dam at the mouth of the river and a Consent Decree was signed. Investigation into the extend (sic) contamination and cleanup methods continues to this day, and the Housatonic River remains severely impaired.

The following comments are in response to GE's application to renew its National Pollutant Discharge Elimination System (NPDES) Storm water Permit for the Pittsfield facility.

Comment 1:

General Comments

Considering that the current fragile state of the Housatonic River has been caused almost exclusively by the past actions of the Pittsfield GE facility, the facility should be held to the absolute highest standard for discharges. The current permit does not meet this requirement and fails to account for the Housatonic's impaired state. Because of this facility's past actions, and because PCBs from the facility have been identified as posing extensive risks to both humans and wildlife up and down the Housatonic River, the permit for the Pittsfield facility should not allow the discharge of **any** PCBs into the Housatonic River. GE has had more than a decade to eliminate the creation and release of PCBs during its processes, and current technology allows for this goal to be met.

The current permit allows for unsatisfactory quantities of PCBs to be discharged from the facility and does not provide for adequate monitoring. Outfall 001 discharging into Silver Lake during dry weather is only required to be monitored for PCBs quarterly, and outfalls discharging during wet weather into the Housatonic, Silver Lake, and Unkamet Brook are only required to be monitored for PCBs once a month. Outfall 001 should be monitored on a monthly basis, especially if the source of some of the water flow is not known as stated in Attachment A of the permit. Because these water bodies contribute to the volume of the Housatonic River, it is vital that PCBs be prevented from entering them. Outfalls discharging during wet weather should be monitored for PCBs on a per event basis.

The permit needs to require that GE find the sources of PCB's. GE must undertake trackback procedures to determine the original source or sources of PCB's. The sources may be storm water sumps, buried drums at the sources (e.g. parking lots), barrels, sumps, transformers within the plant, etc. The trackback procedures are needed to find these sources so GE can clean up the PCBs. Permit attachment A says that some PCB sources are unknown; GE must identify the original source.

The current methods for the measurement of whole effluent toxicity are inadequate. LC_{50} and IC_{25} tests are not effective assessments of the risks posed by PCBs. The effects of PCBs are long term, and affect the second generation of exposed organisms much more significantly. The use of only one test organism (daphnids) is also unacceptable. Including tadpoles and a species of fish is recommended to better asses the risks posed by the facility's effluent.

Response 1:

The CWA requires that water quality-based effluent limits be imposed where the discharge of a pollutant has the reasonable to cause or contribute to an exceedance of a water quality standard. As discussed above, the water quality based limits do not have to be numeric.

As discussed above, EPA has added monitoring requirements to outfalls discharging during dry weather that will serve to identify outfalls discharging PCBs contained in groundwater infiltration and other dry weather sources that will help with "track back" of contaminates to their sources.

EPA concurs that WET testing is not the most effective assessment tool. The major focus of additional testing in the permit has been to obtain better quantification of PCBs in the discharges. EPA has also required that all testing be done using modified method 8082 to enhance the detection and quantification of PCBs in all discharges.

Comment 2:

(EPA note: The numbering at the beginning of each of the following comments identifies the particular section of the Draft Permit.)

Part IA

#1: Total PCBs should be monitored from Outfall 001 on a monthly basis rather than quarterly.

Response 2:

Outfall 001 no longer included in the permit as it is a PEDA discharge. In general, EPA agrees that more frequent sampling is appropriate and has generally increased monitoring frequency in the Final Permit.

Comment 3:

#2: The discharge of 319 lbs/day of oil and grease during wet weather from outfall 001 is unacceptable. Counting snow melts, the maximum amount of oil and grease is discharged even on an infrequent basis could result in the release of several tons of oil and grease each year under current standards.

Response 3:

Outfall 001 is no longer in the permit because it has been transferred to PEDA. However, the Draft Permit included both concentration and mass limits for the outfall. An effluent concentration of 15 mg/l (the Draft Permit limit) is generally accepted as a reasonable water quality-base limit for ensuring compliance with narrative state water quality standards for oil and grease. While the permitted mass may seem excessive to the commenter, the mass limit is consistent with achieving 15 mg/l concentration limit at design flow.

Comment 4:

#5: The average monthly discharge of PCBs from the 64G is much too high. At the specified level, several grams of PCBs could be released into the already contaminated Housatonic River even before the nine month time limit is reached for additional controls to be put in place. In the section below titled "Treatment Options to Obtain a Zero PCB Discharge" treatment technologies are outlined that may help reduce effluent concentration to non-detectable values.

Response 4:

The monthly average effluent limitation for outfall 64G has been changed to 0.014 ug/l, the chronic water quality criteria. A dry weather discharge limit of 0.014 ug/l for outfall 005 has also been added to the Final Permit. The compliance limit for the discharge will continue to be based on the minimum level of the test method.

Comment 5:

#13: A discharge of 438/lbs/day of oil and during wet weather from outfall 009 is too high for the reasons described for Part IA, #2.

Response 5:

Similar to the previous comment regarding outfall 001, the Draft Permit included both concentration and mass limits that EPA believes are protective of water quality standards. Please note that the oil and grease limitations for outfall 009 in the Draft Permit have been applied to outfall 09B in the Final Permit. However, an oil and grease limit of 15 mg/l has been included

for outfall 009 as a water quality-based limit to ensure attainment of the Class B criteria for oil and grease (see 314 C.M.R. 4.05(3)(b)7).

Comment 6:

Footnote 7: If there are any detections of copper during the course of this permit then copper monitoring should continue in the future.

Response 6:

Outfall 001 was the only outfall in the Draft Permit for which copper monitoring was required and the outfall is not in the Final Permit. However, the decision whether to continue copper monitoring would have been based on the reasonable potential of the discharge to cause or contribute to an exceedance of water quality criteria. Given that there is no dilution provided by Silver Lake, the decision would have been based on whether the copper concentration was less than the receiving water criteria.

Comment 7:

Footnote 8: Considering that the Housatonic River is already highly contaminated, all PCB discharges should be included in monitoring reports, even those below the ML. Reporting levels below the 0.065 µg/L should under no circumstances be recorded as 0, especially when detection limits are so much lower (0.014 µg/L). Because of GE's past discharges of PCBs created the contamination resulting in GE's Consent Decree regarding the Housatonic, all discharges should be recorded and made readily available for regulatory agencies to review. Such a requirement would put no additional burden on GE as the testing is already being conducted and would be of immense benefit to regulatory agencies and the public to review planning and monitoring the cleanup of the Housatonic.

Response 7:

The compliance reporting is based on the minimum level (ML), which is the level at which the entire analytical system gives recognizable mass spectra and acceptable calibration points, and corresponds to the lowest point at which the calibration curve is determined. This value is typically used by EPA for compliance purposes. Footnotes *13 and *14 of the Final Permit require that the results of all samples, including those less than the ML, be reported in an attachment to the discharge monitoring report.

Comment 8:

Footnote 13: Bioassays should be more complete. One species will not accurately represent risks to all organisms. Please refer to the General Comments section for more information regarding bioassays.

Response 8:

As discussed in the response to your general comments, EPA does not believe that bioassays would be a particularly effective tool in determining environmental risk, particularly when the major pollutant of concern is known and there are numeric water quality criteria for that pollutant (PCBs).

Comment 9:

20 (a-3): Applicants should be required to report any discharge that exceeds the maximum concentration value. Tremendous environmental harm may be cause by one discharge at five times the limit. At a minimum PCB discharges should be handled in this fashion.

Response 9:

Part I.A.20.a.(3) of the Draft Permit pertains to discharges 5 times the maximum concentration reported in the permit application and is from 40 C.F.R. § 122.42 (a)(1)(iii). This is standard language that must be included for existing manufacturing, commercial, mining and silvicultural discharges. EPA does not believe it is appropriate to modify this language.

EPA points the commenter to Part II D.1.e of the permit, which requires 24-hour notice of any non-compliance which may endanger health or the environment, including any anticipated bypass which exceeds any effluent limitation, and any upset which exceeds any effluent limitation, and violation. See 40 C.F.R. § 122.41(l)(6).

Comment 10:

<u>Part D</u>

#1: Nine months is too long of a timeframe for GE to develop a PCB treatment capability study. Considering the length of time that the Pittsfield facility has been aware of the PCB issues regarding the Housatonic and that has been identified as the Responsible Party for those problems, there is no reason why a comprehensive plan to completely eliminate PCBs has not already been developed. At the most, GE should be given 6 months to develop a PCB plan. This plan should result in a zero PCB discharge rate for the entire facility.

Response 10:

GE has provided a high degree of treatment for the 64G discharge, and EPA believes that nine months is a reasonable time for completing the technical evaluation because it will provide EPA with adequately representative sampling data over several seasons.

EPA has established monthly average effluent limitations equal to the chronic water quality criteria for all dry weather discharges from the facility, and have required the application of BMPs for storm water discharges, as recommended by the Interim Permitting Policy. The permit requires monitoring of discharges sufficient to determine whether the BMPs are sufficient to achieve water quality standards.

Comment 11:

#2: We urge EPA to require that GE undertake options outlined in the following section as treatment possibilities.

Response 11:

EPA believes that this comment refers to a section of the comments titled Treatment Options to Achieve a Zero PCB Discharge, which is included below. EPA has responded to this comment in the response following that section

Comment 12:

Attachment B

Section IV: EPA should *require*, rather than strongly urge, that screening be performed prior to a full definitive toxicity test.

Response 12:

The Toxicity Test Protocol in Attachment B states that "It may prove beneficial to have the dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol. See Section 7 of EPA/600/4-89/001 for further information."

WE have not changed the screening requirement. The decision to screen or not should be decided on a case-by-case basis by the permittee and their lab. If the dilution water does not meet the necessary criteria, it will still be tested for certain parameters but will not be allowed for the full definitive toxicity test.

Comment 13:

Attachment C

Notes #2: Solid debris should be evaluated for toxicity before placement into GE's consolidation area. Porous and absorbent objects can contain significant amounts of PCBs.

Response 13:

The On-Plant Consolidation Areas (OPCAs) are designed to accept PCB-contaminated wastes.

Comment 14:

Treatment Options to Achieve a Zero PCB Discharge

Several treatment technologies are currently available that result in the complete dechlorination of PCBs. Many have already been implemented at various facilities across the country with great success.

One of the most common and effective methods used is through radiolytic and photolytic means. Jones et al (2003) established a process in which complete dechlorination of PCBs was achieved in 120 hours of electron beam irradiation after the addition of triethylamine. UV radiation was also utilized with great success in the same study. Mincher (2000) and others (Chaychian, 1999; Schmelling, 1998) have demonstrated the effective use of irradiation as a method to dechorinate PCBs. Recently, the state of California has begun steps to implement UV sterilization as a method to remove organic compounds in its water recycling program. The process is currently still undergoing validation.

Because the chlorine atoms of all PCB compounds are exocyclic (on the outside of the benzene ring), they can be dechlorinated easily via catalytic hydrogenation. Brinkman (1991) has designed a full scale hydrotreament facility to refine and remove PCBs from used oils. The design has been successfully tested with the treatment of 225,000 gallons of used oil at concentrations of 40 ppm or below (Brinkman, 1995). Phillips has actually commercialized a design similar to this called the Phillips Re-refined Oil Process (PROP). As of 1995, three such facilities were operational and the process achieves similar results (Linnard, 1979). OUP Inc. has also developed a similar technology, achieving > 99.9% PCB removal (Johnson et al, 1987). While these systems have been designed specifically to treat oils, it is feasible that the process could be converted to waste streams containing primarily water.

Subcritical water dechlorination using metal additives has also been identified as a possible means of PCB removal from waste streams (Kubátová, 2003). Heating water to over 250° C in the presence of zerovalent metals such as aluminum and zinc resulted in dechlorination rates ranging 80-99% depending on the PCB congener. Many of the metals described in the study as having a positive effect on dechlorination also have toxic effects of their own. Therefore, any attempts to utilize this technology must address this problem.

Numerous other technologies have also proven to be effective in the removal of PCBs from waste streams. The methods are diverse and include novel approaches such as electro-chemical

peroxidation and sonochemistry. An excellent summary of technologies and references can be found in Meunier (1997).

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Response 14:

NPDES permits do not typically require the consideration or application of particular control technologies, but rather include limitations and conditions that will result in the achievement of appropriate technology-based and water quality-based requirements. EPA believes that the permit includes appropriate limitations and conditions. If it is shown that additional treatment is needed, it may be necessary to consider one or more of the technologies described in the comment.

VII. COMMENTS FROM :

JANE WINN, BERKSHIRE ENVIRONMENTAL ACTION TEAM
TIM GRAY, HOUSATONIC RIVER INITIATIVE
JUDY HERKIMER, HOUSATONIC ENVIRONMENTAL ACTION LEAGUE

Comment 1:

The Environmental Protection Agency (EPA) settlement/consent decree set the stage for the cleanup of two miles of the Housatonic River. Decisions were made without any affected citizens allowed into the negotiations. EPA made promises at public meetings that they would protect the citizens' interests. In motions to intervene in the consent decree, arguments were made that the EPA did not sufficiently address the pathways of migration of polychlorinated biphenyls (PCBs) from the General Electric Company (GE) facility, making recontamination of the river a likely possibility. EPA dismissed the citizens' claims and told the community that reopeners in the consent decree could be utilized and enforcement actions could be taken if new information became available. These would protect the public and the river from more PCB releases.

The data presented in the National Pollution Discharge Elimination System (NPDES) Draft Permit shows that EPA knew that these releases were taking place, did not act on them and let these PCBs continue to leak into the river. The EPA negotiated that a large part of the cleanup would be paid by the public but failed to keep their promises to the community. In 2001 at the monthly Citizen Coordinating Committee (CCC) meeting, EPA was asked directly if they have storm water data. The EPA responded that no such data exists.

Response 1:

Storm water data has been collected, but, as discussed previously, such data are not sufficient to characterize the storm water currently discharged from the site. The Final Permit requires these data, including rainfall, pollutant concentration, flows, and receiving water monitoring.

Comment 2:

In 2001 a call came in from Al Bertelli, Housatonic River Initiative (HRI) vice president and Lakewood river steward, that an oil slick could be seen on the river during a torrential rainstorm. By the time HRI organized the sampling event, the oil slick was no longer visible. HRI then sampled the storm drain during the storm event and a certified lab in Connecticut confirmed the existence of 18 ppb PCB in the water. EPA immediately dismissed the idea that the storm water was contaminated and blamed it on an uncovered pile of contaminated soil washing into the river. Data in the Draft Permit indicates that EPA was wrong and indeed PCBs are flowing into

the river during storm events.

Response 2:

EPA acknowledges that PCBs are being discharged into the river during storm events. In EPA's view, the reissued permit contains effluent limitations that will reduce PCB discharges into the receiving waters going forward, as well as monitoring conditions that will allow the Agency and citizens EPA to closely track violations, if any, of the reissued permit.

Comment 3:

The GE NPDES Draft Permit is insufficient to protect the East Branch of the Housatonic River from being recontaminated with PCBs. According to GE's own data, every outfall that they have been testing is exceeding EPA's PCB water quality criteria. GE and EPA are not even monitoring several discharge pipes that also go into the East Branch of the Housatonic River. These are releases of toxic materials from a hybrid RCRA/Superfund site (EPA's words) governed by the consent decree. Test results from 2001-2003 show PCB levels of more than 900 times the chronic water quality criterion level and 200,000 times the human health water quality criterion levels being released into the Housatonic River. All of these discharges are upriver of the river remediation. PCBs are being detected in the sediments of the remediated portion of the river. The remediation of the river is in jeopardy.

Response 3:

Please see Attachment A, which consists of two graphs showing the results of instream monitoring performed by GE and EPA in the East Branch of the Housatonic River from 1995 to 2006 during both wet and dry weather. These data show violations of water quality criteria, and there is no clear trend showing a reduction in PCB concentration over time. As described previously, the Final Permit requires that GE submit and implement an ambient monitoring plan designed to assess the contribution of its discharges to the river during wet and dry weather.

EPA did not produce similar graphs of outfall concentrations over time given the lack of data for some outfalls and the lack of specific wet versus dry weather data for other outfalls. The Final Permit requires specific wet and dry weather sampling at all outfalls so such data will be available in the future.

Comment 4:

EPA needs enough data to be able to set numerical limits. Even though PCB standards are being exceeded, EPA included few numerical limits in the new Draft Permit. The EPA claims that the Housatonic is one of the most sampled rivers in the country. EPA did not require enough sampling in the previous permit to be able to characterize the amounts of PCBs being discharged. They also have not done enough sampling to characterize the PCB load from the GE facility.

This should have been done as part of the CERCLA enforcement action. Why is the EPA reducing the frequency of sampling instead of increasing it?

Response 4:

The monitoring frequencies in the Final Permit have been increased, an ambient monitoring plan has been required, and numeric PCB limits have been included for all known dry weather discharges.

Please see previous responses regarding the relationship between the NPDES permit and the CERCLA enforcement action.

Comment 5:

Antibacksliding should be enforced especially with the amount of contamination and complexity of the GE facility. This permit should require an immediate assessment of these storm drains and require that remedies to stop the migration of PCBs from the site be implemented as soon as possible.

Response 5:

It is unclear to EPA in which respect the commenter believes EPA has failed to enforce the CWAs antibacksliding requirements. EPA believes that it has properly applied antibacksliding requirements to the permit.

Comment 6:

The monitoring for PCBs of the pipes with continuous flows should be daily. The monitoring for PCBs of the pipes that only carry water during storm events should be four times per hour on storm events starting at first flow and continuing until there is no more flow. For pipes that only carry water during storm events, the flow and the PCB levels will change throughout the event. The water may start with no PCBs, increase steadily up to a given point, then decrease. Or, it may have a strong blip in the graph if there is an area that has lots of PCBs that flushes through at a given time. The only way to know is to sample frequently during a rain event. Taking one grab sample can be grossly misleading. Once a number of storms have been monitored for each pipe, the events can be characterized to figure out when the pollutant load comes through each pipe. The data should be compiled and PCB loading should be stated in weekly, monthly and yearly loading. Projections of future PCB loadings should be analyzed to present estimates of further PCB contamination of the remediated river.

Response 6:

EPA has established PCB composite sampling requirements for all dry weather discharges from the site. EPA does not believe that daily sampling of continuous discharges is necessary to properly characterize the discharges because the dry weather flow at this site is not expected to be highly variable from day to day and can be characterized with less frequent testing. EPA has increased the frequency of sampling of dry weather discharges and routine wet weather discharges to twice per month. Bypasses are required to be sampled once per month.

EPA has also altered the sampling requirements to require 24-hour flow weighted composite samples for dry weather sampling and storm duration composite samples for wet weather sampling. See response to GE comment under the Technical Comments Summary Chart, number 19.

Comment 7:

GE should determine the amount of PCBs entering the receiving waters from all the sources combined per year. This should include data from Yard Drains (YD), Overland Flow (OF) and Non-Point sources (NP). This entire site is contaminated and thus could be considered in and of itself a point source. The data from outfall 005 alone shows that we can measure yearly loads of PCBs in pounds instead of parts per billion. When all discharges from storm drains are added together the numbers surely indicate a compromised cleanup.

Response 7:

The mass of PCBs discharges from point sources will be able to be approximated from the collected data, but mass is not the most important PCB measurement for purpose of determining compliance with water quality standards. The water quality criterion for PCBs is established as a concentration, so the concentration in the discharge and the resulting concentration in the receiving water are the measures which determine compliance with water quality criteria.

EPA believes that through the effluent and ambient monitoring requirements of this permit, that any significant nonpoint source of PCB can be ascertained and addressed through the appropriate regulatory mechanisms.

Comment 8:

Sampling of the outfalls within 30 minutes of the storm event is totally inadequate and cannot possibly provide an accurate assessment of PCB loading during the entire storm event at the 256-acre facility. Storm events can be quick or take several days. At times of low groundwater level, it may take considerably longer than 30 minutes for groundwater to rise to a level where it is discharged through the storm water system. PCB's at various depths, soil types, cracks in the

bedrock, and storm flow and velocity all contribute to changing PCB loading. This monitoring should take place immediately and even in the absence of a new permit.

Response 8:

As described previously, EPA has changed the PCB sample type for wet weather samples to a storm duration flow proportioned composite sample. However, EPA does not necessarily agree that single storm events will have the immediate and dramatic effect on groundwater infiltration envisioned by the commenter. EPA believes that high groundwater effects on effluent quality will be sufficiently characterized by dry weather samples taken during spring months, when snow melt and high average rainfall raise groundwater tables.

Comment 9:

GE should account for and provide fully engineering drawings and maps of all pipes under their property. GE should provide current and historical maps of pipes. In particular, the "perforated sub drain lines" that ran throughout the site shown on a map located in Pittsfield Engineering and hand-labeled "GE Drain Mains Main Plant-Plant Drainage System" in the lower right corner. Many of the existing pipes travel through areas of extreme contamination such as underground plumes, highly contaminated soils, and Hill 78...the highly toxic PCB landfill. Underground pipes, even those that are no longer used and have been capped, can act as "preferential pathways" for contaminants to find their way to a water body. Water will flow more easily along the pipe and therefore the pipes act as preferential pathways for the water. Pipes should be tested at their outfalls, but not just the water coming out of the pipe, but also any water that may have followed the pipe as a preferential pathway.

Response 9:

EPA has specifically required that system mapping be included in the SWPPP and that the SWPPP be updated annually. EPA has also required routine inspections of active and plugged outfalls to ensure the integrity of the seals on plugged outfalls to ensure that storm drains not authorized to discharge during dry weather are not discharging under those conditions, and to ensure that there is no breakout of groundwater in the vicinity of the outfalls.

Comment 10:

Accounting for what GE has done with underground structures on their site, GE should give a complete description of how all abandoned pipes, floor drains, liquid waste storage areas, underground storage tanks, tunnels, etc. were demolished, filled, removed, or left in place. GE should videotape all pipes that run through the site that have an outfall into one of the water bodies to show the condition of the pipe and that there are no unknown connections on the site. This includes city storm water pipes where they run through GE property.

Response 10:

EPA added a requirement that the SWPPP include up to date mapping of the storm water collection system, including connections to the system.

The BMPs in the permit are targeted at known areas of groundwater contamination. Videotaping is required for piping which goes through areas of known contamination (see BMP No.1.C). EPA has added a requirement to Section B of Attachment C (the implementation schedule for BMPs) that pipeline defects discovered in the required cleaning and inspection generally be corrected within 120 days of discovery.

Dry weather sampling required of outfalls that discharge during dry weather will demonstrate the extent to which these BMPs are effective and will also identify any other areas requiring additional controls.

Comment 11:

Any ditches from the site should be considered as outflows from the facility.

Response 11:

Under the federal regulations at 40 C.F.R. § 122.2, a point source is defined as "any discernable, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit...from which pollutants may be discharged." Therefore, since a ditch is a point source by definition, they were considered for their potential to discharge pollutants into the receiving waters at this site.

Although EPA believes the permit covers all point source discharges from the facility to U.S. waters, significant modifications to the site have occurred as a result of the ongoing remediation efforts, which may potentially have led to the alteration of existing point source discharges or the creation of new point source discharges, including from ditches, of which EPA is not currently aware. To ensure that all point source discharges of pollutants owned or operated by the permittee are authorized, the Final Permit includes a requirement that the permittee complete a survey of its site to confirm that there are no point source discharges of pollutants from its site that are not included in the permit. This survey shall evaluate whether there are any pipes, ditches, swales, or other discrete conveyances that discharge pollutants either directly to waters of the United States or to conveyance systems owned and operated by others that discharge to waters of the United States. A report of the survey, including a map showing any additional discharges, including flow components (e.g. storm water, groundwater infiltration), estimated flows, and sampling for TSS and PCBs shall be submitted to MassDEP and EPA within 120 days of the effective date of the permit. Based on this information, the permit shall be modified to include point sources not covered (if any) by the Final Permit.