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L-3 KEO Facility
50 Prince Street, Northampton, Massachusetts
2017 Stormwater Inspection and Maintenance Review

INTRODUCTION

On September 21, 2017, Kristine M. Baker, P.E. of Fuss & O'Neill, performed a stormwater inspection and reviewed operation and maintenance records of the L-3 KEO facility located at 50 Prince Street in Northampton, Massachusetts. John Weatherwax, Manager, Environmental Health & Safety Officer of L-3 KEO accompanied Ms. Baker during the site visit and provided maintenance-related information and records.

This stormwater inspection and maintenance review report is for the period October 1, 2016 to September 21, 2017. The following section evaluates each stormwater feature and maintenance requirement of the facility's operation, maintenance, and inspection agreement (see *Attachment A)* under the Northampton Stormwater Management Ordinance. The facility's quarterly inspection records are included in *Attachment B*, maintenance records are included in *Attachment C*, and site inspection photographs are included as *Attachment D*. There were no storm events with recorded 24-hour precipitation greater than 2.5 inches during the period October 1, 2014 to the date of the inspection; therefore, no storm-related follow-up inspections were required.

SUMMARY

Based on the September 21, 2017 inspection, the stormwater infrastructure on the site is in good condition. The facility has maintained the stormwater bioswales, bioretention areas, and detention basin as specified in the Landscape Maintenance Plan. Maintenance activities included routine plant maintenance (including picking up trash, etc.), mowing, weeding, and removal of leaf debris. Landscaping was conducted up to weekly during the summer months. Landscaping invoices are included in *Attachment C*. Additional landscaping over the past year has included cleanouts of the stormwater inlet areas on the eastern side of the facility, the addition of fertilizer to the beds (which reportedly increased plant growth significantly), and the replacement of six trees that did not survive with multi-stem birch trees. A pilot project was started in CB-20 to assess how ¾-inch bank run gravel performs in the non-infiltrating basins as opposed to mulch.

Mr. Weatherwax reported and provided invoices to document that the catch basins were cleaned out on November 11, 2016 and June 3, 2017 and paved areas swept on November 11, 2016 and April 22, 2017. The facility conducts detailed quarterly stormwater inspections of the site in accordance with the requirements of the EPA Multi-Sector General Permit and conducts weekly routine inspections of the site, including inspection of the bioretention areas, the outlet control structures, the Vortechs® unit, and Detention Basin No. 6. The facility installed wayfinding posts with identification numbers at each of the catch basins and bioretention areas to facilitate site inspections.

In 2010, the facility transitioned from a sand and salt mixture to salt only for de-icing of paved areas. Since no sand is applied to paved areas, there is very little sediment buildup in the catch basins. There was a minor amount of sediment observed in the gravel filter strip inlet areas to the bioswales and bioretention areas, although little to no sediment in the pervious areas of the bioswales or bioretention.

L-3 KEO FACILITY – 50 PRINCE ST

The bioswales and bioretention areas on the site have adequate vegetation growth in most areas, with the exception of the bioretention areas CB-20, CB-21, CB-22, and CB-23. These basins are non-infiltrating basins and the high volume of runoff the areas receive is likely limiting vegetation growth. Several irises were transplanted from the western side of the site during the past year and were observed to be thriving. This year, CB-20 was transitioned to a ¾-inch gravel bed to see how the vegetation grows and if erosion decreases. CB-8/CB-10 has a bump-out area which should be replanted following the removal of a dead tree.

Overall, the vegetation density in the bioswales and bioretention areas has increased since previous stormwater inspections, with fuller vegetation and more cattails, sedges, and grasses filling the swales. The increased vegetation density helps to increase the stability of the soils and enhance pollutant removal. Although there was no evidence of erosion in the small bare spots observed in bioretention areas CB-20, CB-21, CB-22, and CB-23, a denser stand of vegetation is recommended consistent with the original landscaping plan.

INSPECTION RESULTS

The inspection results are presented in the same format as the "Stormwater Facility Maintenance Schedule" included in the facility Stormwater Management Plan *(See Attachment A)*. The requirement for each stormwater management structure is provided in italics, followed by the inspection results in the accompanying text box.

Parking Lot Sweeping

The parking lots and paved areas will be swept a minimum of twice per year, including once in the spring soon after snow melt. Any sediment collected will be transported and disposed of off-site in accordance with applicable regulations.

The paved areas on the site were swept twice in the past year – November 11, 2016 and April 22, 2017. The invoices for these services are included in *Attachment C.*

Catch Basins and Manholes

Inspect semi -annually and after any storm event where 2.5 inches, or more, of rain falls within a 24-hour period.

Clean structures to remove any accumulated sediment and floatables which inhibit the flow through the structure. Catch basins shall be cleaned twice per year, once in the spring (April -May), and once in the fall (October-November). Sediment and debris shall be transported and disposed of off-site in accordance with applicable regulations.

The catch basins and manholes were inspected quarterly by facility personnel, on November 16, 2016, March 27, 2017, and July 17, 2017. Note that one quarter was missed. Completed inspection checklists are included in *Attachment B*. There were no recorded events with 24-hour precipitation greater than 2.5 inches during the past year.

The catch basins were cleaned out twice in the past year - November 11, 2016 and June 3, 2017. The invoices for these services are included in *Attachment C.*

All Bioswales and Bioretention Areas

Inspect quarterly upon completion of construction activities.

Observe that the bioswales and bioretention areas are operating as intended. The bioswales are designed to collect and convey stormwater from the parking lots to the bioretention areas. The bioretention areas are designed to collect, store and infiltrate stormwater conveyed from the bioswales until the stormwater fills to the elevation of the catch basin grate in the bioretention area. Failure of the bioretention areas can occur if sediment and debris is allowed to build up to the point where infiltration and plant growth is inhibited. Therefore, the bioswales and bioretention areas must be routinely inspected for sediment and debris build-up and erosion on the above established schedule. If there is accumulation of sediment and debris over 2 inches in depth in any area, the sediment and debris shall be removed, transported and disposed of off-site in accordance with applicable regulations. Inspect gravel filter strips at curb inlets and remove debris and sediment build-up. Gravel shall be added to the filter strips as required to maintain the minimum 8-inch wide x 8-inch deep dimensions.

During winter months, maintain breaks in curbing free from snow and ice to allow proper drainage. Snow shall not be plowed or stored in the bioswales or bioretention areas.

The vegetation in the bioswales and bioretention areas shall be inspected and maintained in accordance with the Landscape Maintenance Plan on the following schedule:

> *Spring - identify and replace dead plants, prune broken or dead branches from woody plant materials, remove leave accumulations, and re-seed bare native grass areas. Mulch shall be replaced in the bioretention areas every two years in the spring.*
> *Summer - inspect plant materials for signs of pest infestation or disease, remove weeds, and prune plants as necessary to maintain clearances for parking.*
> *Fall - remove leaf accumulation and trim native grass to a height of no less than 6-inches.*

All bioswales and bioretention areas including CB-5, CB-6, CB-7, CB-8, CB-9, CB-10, CB-11, CB-12, CB-13, CB-17, CB-18, CB-20, CB-21, CB-22, CB-23, and CB-24 were inspected during the site visit on September 21, 2017 and were found to be in good condition. Site inspection photographs are contained in *Attachment D*. A minor amount of sediment was observed within the gravel filter strip inlet areas on the western side of the facility. The inlets on the eastern side were cleaned in the past year. The gravel filter strips at the curb cut inlets were observed to be in good condition. The filter strips were observed to be at least 8" wide and are believed to be approximately 8" deep. The facility intends to continue to maintain the gravel filter strips on a 5-year schedule by removing the stone and clearing sediment buildup. Little to no sediment was observed within the bioswales and bioretention areas. The facility transitioned from a sand and salt mixture to salt only for de-icing of paved areas in 2010, which has decreased the rate at which sand accumulated in the inlet areas and bioretention or bioswale areas.

As has been the case for several years, CB-19 has transitioned from a bioretention area to a wet detention basin with permanent standing water. The area is located on the edge of the site and is providing habitat value, nutrient removal, and peak flow reduction. Although the area was originally intended as a bioretention area, the basin is not included in the site water quality volume treatment calculations, which the Northampton Department of Public Works approved in a letter dated May 17, 2012. Therefore, no changes are recommended to the basin.

The facility has maintained the stormwater bioswales and bioretention areas as specified in the Landscape Maintenance Plan through routine plant maintenance, mowing, weeding, and removal of leaf

debris. Landscaping invoices are included in *Attachment C*. The use of mulch was discontinued in the parking lot bioswales in 2010 since the mulch tends to float in the stormwater and clogs the catch basin grates. The mulch has been replaced with river stone in a few additional locations to minimize erosion potential. The facility is pilot testing the use of ¾-inch stone in CB-20 to increase vegetation density and reduce erosion. The viability of the plantings will be assessed over the coming year. The bioswales and bioretention areas were inspected quarterly by facility personnel, and completed inspection checklists are included in *Attachment B*.

Parking stalls located between the parking islands on the western side of site are used for snow storage. Snow is not placed within bioswales or bioretention areas.

The bioswales and bioretention areas on the site have adequate vegetation growth in most areas, with the exception of bioretention areas CB-20, CB-21, CB-22, and CB-23. These non-infiltrating basins receive large runoff volumes, which is believed to limit vegetation growth. Several irises were transplanted from the western side of the site during the past year and were observed to be thriving. This year, the facility began testing the use of ¾-inch gravel in CB-20 to increase vegetation density and reduce erosion. CB-8/CB-10 has a bump-out area which should be replanted following the removal of a dead tree.

Overall, the vegetation density in the bioswales and bioretention areas has increased since previous stormwater inspections, with fuller vegetation and more cattails, sedges, and grasses filling the swales. The increased vegetation density helps to increase the stability of the soils and enhance pollutant removal. Although there was no evidence of erosion in the small bare spots observed in bioretention areas CB-20, CB-21, CB-22, and CB-23, a denser stand of vegetation is recommended consistent with the original landscaping plan.

Bioretention Areas in Front Parking Lot Which Provide Infiltration (CB-5, CB-6, CB-7, CB-8, CB-9, CB-10, CB-11, CB-12, CB-13)

In addition to the inspection and maintenance requirements detailed above for all bioswales and bioretention areas, those bioretention areas in the front parking lot which are designated to provide infiltration shall be subject to the following additional inspection and maintenance requirements.

During the first two months of operation following construction, the bioretention areas in the front parking lot shall be inspected after every rainstorm where 2.5 inches or more rain falls within a 24-hour period. The approximate elapsed time from the end of the storm until there is no longer standing water shall be recorded for each bioretention area in the front parking lot.

An infiltrating bioretention area shall be deemed to be not functioning correctly if it takes longer than 72 hours to drain completely following the end of a rainstorm. If an area is not functioning correctly the following steps shall be taken to restore the infiltration properties of the bioretention area.

- *Remove any sediment accumulations from the areas which are not draining. Re-check standing water duration following next significant storm.*
- *If sediment accumulation removal does not restore the infiltration characteristics of the bioretention area, loosen the topsoil and subsoil by tilling, harrowing, or overturning the material in the problematic areas. Vegetation should be removed prior to disturbing the soils if possible. Following disturbance, replant and/or replace the vegetation and mulch.*

- *If sediment removal and soil loosening efforts do not restore the required infiltration properties, the upper 30-inches of soil should be removed and replaced with new engineering planting mix consisting of 40% sand, 20% topsoil, and 40% compost. Vegetation should be removed prior to excavation if possible. Following replacement of the soil, replant and/ or replace the vegetation and mulch.*

Mr. Weatherwax reported that he has not observed standing water for greater than 72 hours within bioretention areas CB-5, CB-6, CB-7, CB-8, CB-9, CB-10, CB-11, CB-12, or CB-13 during the past year. Refer to the inspection evaluation in the previous section for additional information. There were no events with recorded 24-hour precipitation greater than 2.5 inches during the past year.

Vortechs® Treatment Unit (WQS-1)

Inspect semi-annually upon completion of construction activities.

Observe that the unit is operating as intended and that there is no structural damage or wear that should be corrected. Inspection results and maintenance work should be recorded on the Vortechs® inspection and maintenance log included with this document.

All chambers of the unit should be checked for sediment buildup during the routine inspection. The Vortechs® unit should be cleaned out with a vacuum truck immediately in the event of a spill in the parking lots or loading dock area, when the depth of sediment has accumulated to within 12 to 18 inches of the dry weather surface water elevation in the swirl chamber, or a minimum of once per year. If present, sediment should also be removed from the baffle chambers during the cleaning process. Cleaning should be performed during dry weather conditions when no flow is entering the system. All material removed from the Vortechs® unit should be disposed of off-site in accordance with applicable regulations.

The Vortechs® unit was inspected approximately bimonthly during the weekly site inspections conducted by facility personnel *(Attachment B)*. Records of the depth of water and depth to sediment were recorded. The sediment depth has consistently been less than 4 inches. The three chambers of the Vortechs® unit were cleaned using a vacuum truck at the same time as the semi-annual catch basin cleaning.

Outlet Control Structures (OCS-1, OCS-3)

Inspect semi-annually upon completion of construction activities and after any storm event where 2.5 inches, or more, of rain falls within a 24-hour period.

Observe that the outlet control structures are operating as intended. The outlet control structures are designed to detain and control the outflow of stormwater at certain points in the stormwater management system. These structures should be inspected for sediment, debris build-up, and damage. Sediment and debris should be removed during the routine inspection so that there is no interference with the intended operation of the structure. Sediment and debris should be transported and disposed of off-site in accordance with applicable regulations.

OCS-1 and OCS-3 were inspected for depth of sediment, debris, and damage during the site visit on September 21, 2017. Sediment depth was less than ½-inch and there was no observed debris or damage to the units. Quarterly inspection checklists completed by facility personnel (*Attachment B*) indicate no issues in the last year.

Subsurface Detention System

Inspect semi-annually upon completion of construction activities.

Observe that the subsurface detention system is operating as intended and in accordance with manufacturer's requirements. The subsurface detention system is incorporated into the stormwater system to temporarily detain stormwater within the management system. The detention system shall be inspected through the access risers and cleanout ports for sediment and debris build-up and damage. Sediment and debris shall be removed when the depth of material exceeds 15% of the detention system pipe diameter. Sediment and debris shall be removed from the subsurface system through the access risers and the cleanout ports using a vacuum truck. Manual cleaning through the access ports may be required if it is determined that large debris is present in the system. Only certified confined space entry personnel shall enter the system for manual cleaning. Sediment and debris shall be transported and disposed of off-site in accordance with applicable regulations.

The Subsurface Detention Systems located on the eastern and southern sides of the building were inspected for depth of sediment, debris build-up and damage during the site visit on September 21, 2017. No debris or sediment was observed in the systems; therefore, sediment removal is not required at this time. No damage was observed. Quarterly inspection checklists completed by facility personnel (*Attachment B*) indicate no issues in the last year.

Detention Basin No. 6

Inspect semi-annually upon completion of construction activities and after any storm event where 2.5 inches, or more, of rain falls within a 24-hour period. Particular attention should be paid to the condition of the basin outfall area following large storm events.

Access for inspection and maintenance of the basin shall be across the grassed slope from the fire lane along the south side of the L-3 KEO facility. The detention basin shall be inspected for debris and sediment build-up, erosion, health of vegetation, and settlement. General trash and debris shall be removed on a semi-annual basis. If erosion is found it should be repaired utilizing loam, seed, and erosion control blankets, as necessary.

Sediment shall be removed from the main basin area when it reaches a depth of 6-inches, but not less than once every five years. Sediment shall be removed from the forebay when it reaches a depth of 6-inches, but not less than once every year.

Sediment and debris shall be transported and disposed of off-site in accordance with applicable regulations.

The outlet control structure and downstream swale including the weir, outlet pipes, and rip rap channel shall be inspected for signs of deterioration, clogging, or erosion. Outlet pipes shall be cleaned and erosion shall be repaired with additional rip rap or loam, seed, and erosion control blankets as necessary.

The basin vegetation shall be mowed and/or trimmed on a semi-annual basis to a height of no less than 4-inches.

Detention Basin No.6 was inspected during the site visit with respect to debris and sediment build-up, erosion, the health of the vegetation, and settlement. Overall, the basin was found to be in good condition. Site inspection photographs are provided in *Attachment D*. The results of quarterly inspections completed by facility personnel (*Attachment B*) indicate no issues within the last year.

At the time of the site visit, there was no evidence of debris or clogging of the inlet or outlet structures or within the basin. There are some cattails located near the low-level outlet intake pipe, although they

do not appear to be impacting the flow path. Maintenance of the forebay or basin is not required at this time. The vegetation around the edge of the basin is mowed routinely for access. The gravel located at the inlet to the pond and the gravel placed in the downstream channel are working to minimize erosion of the inlet and outlet to the pond. The vegetation within the basin is healthy and is well-established.

Areas Downstream of Detention Basin No.6

Inspect semi-annually upon completion of construction activities. The 18-inch inlet at Grove Street shall also be inspected after any storm event where 2.5 inches, or more, of rain falls within a 24-hour period.

Flow from detention basin no 6 leaves the rip rap outlet pad and travels through a small wetland area to an 18-inch diameter reinforced concrete drainage system inlet adjacent to Grove Street. A portion of the outflow from the basin is also directed by a small vegetated berm to a drainage channel which runs parallel to the driveway for 91 Grove Street before discharging to the drainage system inlet. This small berm was constructed to prevent the detention basin outflow from entering the back parking area for 91 Grove Street. The vegetated berm, small channel, and general grading of the wetland area must be maintained so that drainage flows are directed to the rip rap basin and 18-inch inlet and not to the paved parking area at 91 Grove Street or to the Grove Street roadway.

The wetland area between the basin outfall and the drainage system inlet, the vegetated berm, and the small channel along the 91 Grove Street driveway should be inspected on a semi-annual basis for erosion. If erosion is found it should be repaired utilizing loam, seed, and erosion control blankets. Approval from the Conservation Commission may be necessary prior to undertaking work within the designated wetland area.

The 18-inch inlet to the Grove Street drainage system should also be inspected for sediment build-up and clogging. If sediment or debris reaches a depth of 6-inches or more in the small rip rap basin at the inlet it should be removed and disposed of off-site in accordance with applicable regulations. An easement for access to the property at 91 Grove Street for inspection and maintenance of the drainage system components has been prepared and a sketch detailing the limits of this easement is attached. All maintenance work and access shall be performed in accordance with the requirements of the easement agreement.

The areas downstream of Detention Basin No. 6, including the basin outlet, the wet meadow, and the rip rap stone pad and inlet pipe near Grove Street, were inspected during the site visit on September 21, 2017 and found to be in good condition. Vegetation around the Grove Street stormwater inlet was cut to the level of the rip rap. See site inspection photographs in *Attachment D*. Quarterly inspections and inspections completed by facility personnel are documented in *Attachment B*. There were no events with recorded 24-hour precipitation greater than 2.5 inches during the past year.

The vegetation within the wet meadow consists of wild flowers and grasses. There was no sediment build-up observed within the rip rap pad or the inlet structure at Grove Street at the time of the site visit.

Record Keeping and Annual Reports

Records shall be maintained by L-3 KEO at their offices as described above and shall document all routine and emergency maintenance work performed on the stormwater management system and shall bear the signature of the individual supervising the work. Annual reports documenting the inspection and maintenance of the stormwater management system shall be certified by a registered professional engineer or other qualified stormwater professional, as approved by the Northampton Department of Public Works. Annual reports shall be submitted to the Northampton Department of Public Works and the Northampton Office of Planning and Development no later than October 1st of each year.

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See the Certification section below.

CERTIFICATION

This "2017 Inspection and Maintenance Review" documents the inspection and maintenance of the stormwater management systems located at the L-3 KEO facility at 50 Prince Street in Northampton, Massachusetts. The stormwater inspection and evaluation were conducted in accordance with the requirements of the operation, maintenance, and inspection agreement under the Northampton Stormwater Management Ordinance. The inspection was conducted by the undersigned Massachusetts registered Professional Engineer on September 21, 2017. This report is hereby submitted to the Northampton Department of Public Works and the Northampton Office of Planning and Development on behalf of L-3 KEO.

Kristine M. Baker, P.E.
Name

September 25, 2017
Date

49906
Massachusetts P.E. License Number

Signature

ATTACHMENT A

Stormwater Facility Maintenance Schedule

Name of Project: Kollmorgen Electro-Optical Facility
Project Location: Village Hill South Campus – Prince Street
Assessor's Map, Parcel(s): Map 38A, multiple parcels

Owner of the Stormwater System:
Kollmorgen owns the facility and will be responsible for compliance with all environmental permits.

Responsible Party for Operation & Maintenance of Stormwater System
During construction of the proposed stormwater improvements, the Contractor shall have responsibility for day-to-day operation and maintenance of all stormwater control systems, as well as compliance with the EPA NPDES Construction General Permit and adherence to the SWPPP for the project. At the time that construction is complete, Kollmorgen will take over all maintenance requirements for the stormwater control systems.

Financial Responsibility for Operation & Maintenance of Stormwater System:
Kollmorgen owns the facility and will be responsible for compliance with all environmental permits.

Maintenance Schedule – (see attached plans for locations)

Parking Lot Sweeping

The parking lots and paved areas will be swept a minimum of twice per year, including once in the spring soon after snow melt. Any sediment collected will be transported and disposed of off-site in accordance with applicable regulations.

Catch Basins and Manholes

Inspect semi-annually and after any storm event where 2.5 inches, or more, of rain falls within a 24-hour period.

Clean structures to remove any accumulated sediment and floatables which inhibit the flow through the structure. Catch basins shall be cleaned twice per year, once in the spring (April-May), and once in the fall (October-November). Sediment and debris shall be transported and disposed of off-site in accordance with applicable regulations.

All Bioswales and Bioretention Areas

Inspect quarterly upon completion of construction activities.

Observe that the bioswales and bioretention areas are operating as intended. The bioswales are designed to collect and convey stormwater from the parking lots to the bioretention areas. The bioretention areas are designed to collect, store and infiltrate stormwater conveyed from the bioswales until the stormwater fills to the elevation of the catch basin grate in the bioretention area. Failure of the bioretention areas can occur if sediment and debris is allowed to build up to the point where infiltration and plant growth is inhibited. Therefore, the bioswales and bioretention areas must be routinely inspected for sediment and debris build-up and erosion on the above established schedule. If there is accumulation of sediment and debris over 2 inches in depth in any area, the sediment and debris shall be removed, transported and disposed of off-site in accordance with applicable regulations. Inspect gravel filter strips at curb inlets and remove debris and sediment build-up. Gravel shall be added to the filter strips as required to maintain the minimum 8-inch wide x 8-inch deep dimensions.

During winter months, maintain breaks in curbing free from snow and ice to allow proper drainage. **Snow shall not be plowed or stored in the bioswales or bioretention areas.**

The vegetation in the bioswales and bioretention areas shall be inspected and maintained in accordance with the Landscape Maintenance Plan on the following schedule:

> Spring – identify and replace dead plants, prune broken or dead branches from woody plant materials, remove leave accumulations, and re-seed bare native grass areas. Mulch shall be replaced in the bioretention areas every two years in the spring.
>
> Summer – inspect plant materials for signs of pest infestation or disease, remove weeds, and prune plants as necessary to maintain clearances for parking.
>
> Fall – remove leaf accumulation and trim native grass to a height of no less than 6-inches.

Bioretention Areas in Front Parking Lot Which Provide Infiltration (CB-5, CB-6, CB-7, CB-8, CB-9, CB-10, CB-11, CB-12, CB-13)

In addition to the inspection and maintenance requirements detailed above for all bioswales and bioretention areas, those bioretention areas in the front parking lot which are designated to provide infiltration shall be subject to the following additional inspection and maintenance requirements.

During the first two months of operation following construction, the bioretention areas in the front parking lot shall be inspected after every rainstorm where 2.5 inches or more rain falls within a 24-hour period. The approximate elapsed time from the end of the storm until there is no longer standing water shall be recorded for each bioretention area in the front parking lot.

An infiltrating bioretention area shall be deemed to be not functioning correctly if it takes longer than 72 hours to drain completely following the end of a rainstorm. If an area is not functioning correctly the following steps shall be taken to restore the infiltration properties of the bioretention area.

- Remove any sediment accumulations from the areas which are not draining. Re-check standing water duration following next significant storm.

- If sediment accumulation removal does not restore the infiltration characteristics of the bioretention area, loosen the topsoil and subsoil by tilling, harrowing, or overturning the material in the problematic areas. Vegetation should be removed prior to disturbing the soils if possible. Following disturbance, replant and/or replace the vegetation and mulch.

- If sediment removal and soil loosening efforts do not restore the required infiltration properties, the upper 30-inches of soil should be removed and replaced with new engineering planting mix consisting of 40% sand, 20% topsoil, and 40% compost. Vegetation should be removed prior to excavation if possible. Following replacement of the soil, replant and/or replace the vegetation and mulch.

Vortechs Treatment Unit (WQS-1)

Inspect semi-annually upon completion of construction activities.

Observe that the unit is operating as intended and that there is no structural damage or wear that should be corrected. Inspection results and maintenance work should be recorded on the Vortechs inspection and maintenance log included with this document.

All chambers of the unit should be checked for sediment buildup during the routine inspection. The Vortech unit should be cleaned out with a vacuum truck immediately in the event of a spill in the parking lots or loading dock area, when the depth of sediment has accumulated to within 12 to 18 inches of the dry weather surface water elevation in the swirl chamber, or a minimum of once per year. If present, sediment should also be removed from the baffle chambers during the cleaning process. Cleaning should be performed during dry weather conditions when no flow is entering the system.

All material removed from the Vortech unit should be disposed of off-site in accordance with applicable regulations.

Outlet Control Structures (OCS-1, OCS-3)

Inspect semi-annually upon completion of construction activities and after any storm event where 2.5 inches, or more, of rain falls within a 24-hour period.

Observe that the outlet control structures are operating as intended. The outlet control structures are designed to detain and control the outflow of stormwater at certain points in the stormwater management system. These structures should be inspected for sediment, debris build-up, and damage. Sediment and debris should be removed during the routine inspection so that there is no interference with the intended operation of the structure. Sediment and debris should be transported and disposed of off-site in accordance with applicable regulations.

Subsurface Detention System

Inspect semi-annually upon completion of construction activities.

Observe that the subsurface detention system is operating as intended and in accordance with manufacturer's requirements. The subsurface detention system is incorporated into the stormwater system to temporarily detain stormwater within the management system.

The detention system shall be inspected through the access risers and cleanout ports for sediment and debris build-up and damage. Sediment and debris shall be removed when the depth of material exceeds 15% of the detention system pipe diameter. Sediment and debris shall be removed from the subsurface system through the access risers and the cleanout ports using a vacuum truck. Manual cleaning through the access ports may be required if it is determined that large debris is present in the system. Only certified confined space entry personnel shall enter the system for manual cleaning.

Sediment and debris shall be transported and disposed of off-site in accordance with applicable regulations.

Detention Basin No.6

Inspect semi-annually upon completion of construction activities and after any storm event where 2.5 inches, or more, of rain falls within a 24-hour period. Particular attention should be paid to the condition of the basin outfall area following large storm events.

Access for inspection and maintenance of the basin shall be across the grassed slope from the fire lane along the south side of the Kollmorgen facility.

The detention basin shall be inspected for debris and sediment build-up, erosion, health of vegetation, and settlement. General trash and debris shall be removed on a semi-annual basis. If erosion is found it should be repaired utilizing loam, seed, and erosion control blankets, as necessary.

Sediment shall be removed from the main basin area when it reaches a depth of 6-inches, but not less than once every five years. Sediment shall be removed from the forebay when it reaches a depth of 6-inches, but not less than once every year.

Sediment and debris shall be transported and disposed of off-site in accordance with applicable regulations.

The outlet control structure and downstream swale including the weir, outlet pipes, and rip rap channel shall be inspected for signs of deterioration, clogging, or erosion. Outlet pipes shall be cleaned and erosion shall be repaired with additional rip rap or loam, seed, and erosion control blankets as necessary.

The basin vegetation shall be mowed and/or trimmed on a semi-annual basis to a height of no less than 4-inches.

Areas Downstream of Detention Basin No.6

Inspect semi-annually upon completion of construction activities. The 18-inch inlet at Grove Street shall also be inspected after any storm event where 2.5 inches, or more, of rain falls within a 24-hour period.

Flow from detention basin no.6 leaves the rip rap outlet pad and travels through a small wetland area to an 18-inch diameter reinforced concrete drainage system inlet adjacent to Grove Street. A portion of the outflow from the basin is also directed by a small vegetated berm to a drainage channel which runs parallel to the driveway for 91 Grove Street before discharging to the drainage system inlet. This small berm was constructed to prevent the detention basin outflow from entering the back parking area for 91 Grove Street. The vegetated berm, small channel, and general grading of the wetland area must be

maintained so that drainage flows are directed to the rip-rap basin and 18-inch inlet and not to the paved parking area at 91 Grove Street or to the Grove Street roadway.

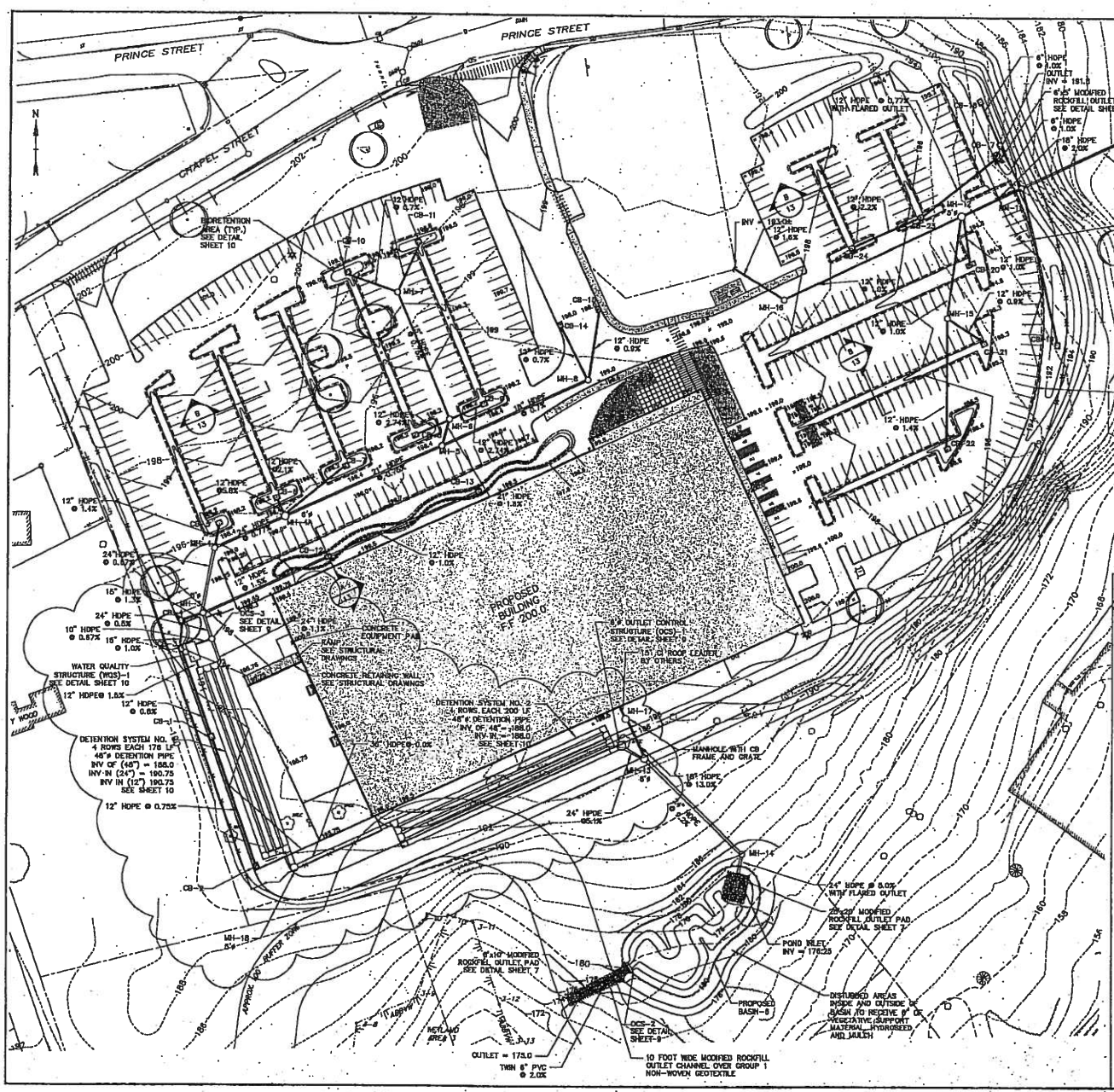
The wetland area between the basin outfall and the drainage system inlet, the vegetated berm, and the small channel along the 91 Grove Street driveway should be inspected on a semi-annual basis for erosion. If erosion is found it should be repaired utilizing loam, seed, and erosion control blankets. Approval from the Conservation Commission may be necessary prior to undertaking work within the designated wetland area.

The 18-inch inlet to the Grove Street drainage system should also be inspected for sediment build-up and clogging. If sediment or debris reaches a depth of 6-inches or more in the small rip rap basin at the inlet it should be removed and disposed of off-site in accordance with applicable regulations.

An easement for access to the property at 91 Grove Street for inspection and maintenance of the drainage system components has been prepared and a sketch detailing the limits of this easement is attached. All maintenance work and access shall be performed in accordance with the requirements of the easement agreement.

Record Keeping and Annual Reports

Records shall be maintained by Kollmorgen Electro-Optical at their offices as described above and shall document all routine and emergency maintenance work performed on the stormwater management system and shall bear the signature of the individual supervising the work. Annual reports documenting the inspection and maintenance of the stormwater management system shall be certified by a registered professional engineer or other qualified stormwater professional, as approved by the Northampton Department of Public Works. Annual reports shall be submitted to the Northampton Department of Public Works and the Northampton Office of Planning and Development no later than October 1st of each year.



NOTES:

IT IS THE INTENT OF THESE DOCUMENTS TO PROVIDE SITE GRADING THAT IS CONSISTENT WITH THE RELEVANT ACCESS REQUIREMENTS OF THE ARCHITECTURAL BARRIERS ACT (ABA), THE AMERICANS WITH DISABILITIES (ADA), AND ARCHITECTURAL ACCESS BOARD (521 CMR – PART C EXTERIOR). SMALL CHANGES IN GRADE OVER RELATIVELY SHORT DISTANCES (E.G. AT PARKING SPACES, ACCESSIBLE ROUTES, AND RAMPS) MIGHT NOT BE CLEARLY DEPICTED WITHIN THE CONTOUR INTERVAL SHOWN. CONTRACTOR SHALL COMPLY WITH THE CRITERIA DEFINED IN THESE STANDARDS. SELECT MAXIMUM SLOPE CRITERIA ARE REPRODUCED BELOW:

- PARKING STALL AND PASSENGER LOADING ZONE (ANY DIRECTION) SLOPE < 2.0%
- LONGITUDINAL SLOPE ALONG ACCESSIBLE ROUTES < 5.0%
- CROSS SLOPE ALONG ACCESSIBLE ROUTES < 2.0%

CONTRACTOR SHALL NOTE THAT THE CITED ACCESSIBILITY REQUIREMENTS ALLOW NO TOLERANCE FOR SLOPES GREATER THAN THE MAXIMUM SLOPE.

DRAINAGE STRUCTURES

CB-1 GR = 195.0 INV = 192.0	CB-12 GR = 196.2 INV = 193.47	MH-4 RIM = 199.0 INV = 193.1(NE) INV = 191.84 (SWLE)
CB-2 GR = 195.0 INV = 192.8	CB-13 GR = 198.2 INV = 194.8	MH-4A RIM = 199.0 INV = 192.31(E,W) INV = 193.06 (N,NE)
CB-3 GR = 198.0 INV = 191.4	CB-14 GR = 198.0 INV = 194.8	MH-5 RIM = 199.0 INV = 193.37
CB-4 GR = 197.2 INV = 191.2	CB-15 GR = 198.0 INV = 194.8	MH-6 RIM = 198.5 INV = 193.56
CB-5 GR = 197.7 INV = 193.34	CB-17 GR = 191.8 INV = 188.26	MH-7 RIM = 198.9 INV = 194.5
CB-6 GR = 197.7 INV = 193.62	CB-18 GR = 191.8 INV = 188.6	MH-8 RIM = 198.9 INV = 194.26
CB-7 GR = 197.7 INV = 194.4	CB-19 GR = 192.5 INV = 189.3	MH-10 RIM = 175.0± INV = 171.0
CB-8 GR = 197.7 INV = 194.4	CB-20 DOUBLE GRATE GR = 194.2 INV = 190.9	MH-11 RIM = 192.5 INV = 187.91(N,S,E) INV = 188.32(W)
CB-9 GR = 197.7 INV = 194.4	CB-21 GR = 194.8 INV = 191.6	MH-12 RIM = 195.0 INV = 190.52
CB-10 GR = 198.0 INV = 194.8	CB-22 GR = 196.0 INV = 192.8	MH-13 RIM = 195.0 INV = 187.25
CB-11 GR = 198.0 INV = 194.8	CB-23 GR = 195.8 INV = 192.4	MH-14 RIM = 182.0 INV = 177.00
WQS VORTECH #3000 GR = 196.0 INV = 190.85(IN & OUT)	CB-24 GR = 196.9 INV = 193.7	MH-15 RIM = 195.5 INV = 191.3
OCS-1 RIM = 196.0 INV = 188.0 (IN, OUT)	OCS-3 RIM = 197.0 INV = 193.9 (W,N) INV = 193.95 (S-OVER WEIR) WEIR EL = 192.95	MH-16 RIM = 198.2 INV = 192.2
OCS-2 INV (3-6") = 178.0 WEIR (5 FT.) = 179.2	MH-3 RIM = 197.9 INV = 191.5(NE) INV = 191.0(W,S) INV = 191.82(E)	MH-17 RIM = 196.0 INV = 191.3 (CB FRAME & GRATE)
		MH-18 RIM = 195.0 INV = 186.0

Tighe&Bond
Consulting Engineers
53 Southampton Road
Westfield, Massachusetts
(413) 562-1600
www.tighebond.com

Kollmorgen Electro-Optical

Village Hill, Northampton, Massachusetts

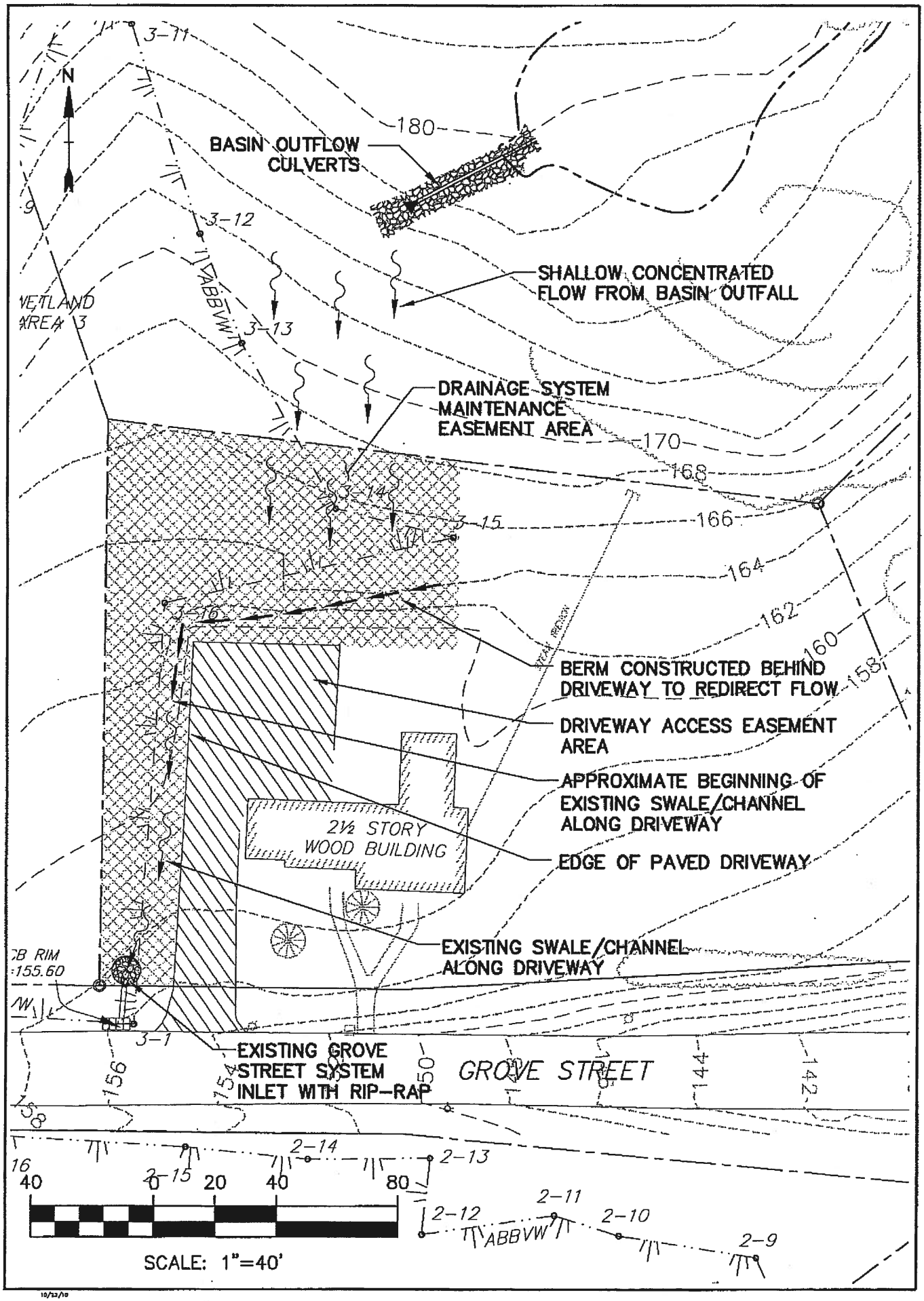
Mark	Date	Description
1	4/12/16	LOADING DOCK MODIFICATION
0	3/31/09	CONSTRUCTION DRAWINGS
E	02/09/09	PARKING LOT & DRAINAGE MODIFICATIONS
D	02/13/08	NEWAY DRIVE & DRAINAGE MODIFICATIONS
C	08/20/07	SITE PLAN APPROVAL APPLICATION
B	07/24/07	REVISED - 2ND SDRB DEVELOPMENT REVIEW
A	4/18/06	REVISED FOR SDRB DEVELOPMENT REVIEW

PROJECT NO: D-0100
FILE: Construction Documents\Drainage.mxl\mxd
DRAWN BY: BJK, DJB, JMM
CHECKED: JPV EVL
APPROVED BY: FJH

GRADING AND DRAINAGE PLAN
REVISED 4-2010 FOR LOADING DOCK MODIFICATION

SCALE: 1" = 40'

SHEET 6 OF 19 REV



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10/12/10

Vortechs Inspection & Maintenance Log

Vortech Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than eighteen inches the system should be cleaned out. Note: To avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

ATTACHMENT B

STORMWATER MANAGEMENT OPERATION, MAINTENANCE, AND INSPECTION AGREEMENT

Pertinent Drainage Easements:

1. Easement to discharge to Basin 5 is contained in the Kollmorgen Release Deed (Book 9957/Page 123), recorded 09/03/2009

2. Easement to discharge from Basin 6 into wetlands on Lot 3 is contained in the Kollmorgen Release Deed (Book 9957/Page 123), recorded 09/03/2009

3. Easement regarding discharge that reaches 91 Grove Street is forthcoming from the City of Northampton, to be recorded

L-3 KEO, Northampton MA Vortechs Sediment Report

9/14/2017 Vortechs Meter History Report Page

Date	Meter Name	Equipment Description	Equipment No.	Description	Value	Unit of Measure
5/16/2017	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
5/16/2017	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	67.00	Inches
5/16/2017	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	36.00	Inches
5/16/2017	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	103.00	Inches
5/16/2017	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	68.00	Inches
5/16/2017	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	35.00	Inches
5/16/2017	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	101.00	Inches
5/16/2017	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	65.00	Inches
5/16/2017	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	36.00	Inches
5/4/2017	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	104.00	Inches
5/4/2017	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	69.00	Inches
5/4/2017	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	35.00	Inches
5/4/2017	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	104.00	Inches
5/4/2017	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	69.00	Inches
5/4/2017	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	35.00	Inches
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5/4/2017	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	67.00	Inches
5/4/2017	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	35.00	Inches
4/27/2017	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
4/27/2017	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	68.00	Inches
4/27/2017	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	35.00	Inches
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4/27/2017	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	68.00	Inches
4/27/2017	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	35.00	Inches
4/27/2017	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	102.00	Inches
4/27/2017	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	66.00	Inches
4/27/2017	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	36.00	Inches
4/10/2017	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
4/10/2017	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	69.00	Inches
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4/10/2017	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	102.00	Inches
4/10/2017	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	68.00	Inches
4/10/2017	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	34.00	Inches
3/29/2017	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
3/29/2017	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	67.00	Inches
3/29/2017	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	36.00	Inches
3/29/2017	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	104.00	Inches
3/29/2017	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	68.00	Inches
3/29/2017	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	36.00	Inches
3/29/2017	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	102.00	Inches
3/29/2017	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	66.00	Inches
3/29/2017	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	36.00	Inches
3/24/2017	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
3/24/2017	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	67.00	Inches

L-3 KEO, Northampton MA Vortechs Sediment Report

9/14/2017

Vortechs Meter History Report

Date	Meter Name	Equipment Description	Equipment No.	Description	Value	Unit of Measure
3/24/2017	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	36.00	Inches
3/24/2017	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	104.00	Inches
3/24/2017	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	68.00	Inches
3/24/2017	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	36.00	Inches
3/24/2017	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	102.00	Inches
3/24/2017	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	36.00	Inches
3/1/2017	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
3/1/2017	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	67.00	Inches
3/1/2017	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	36.00	Inches
3/1/2017	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	103.00	Inches
3/1/2017	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	68.00	Inches
3/1/2017	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	35.00	Inches
3/1/2017	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	102.00	Inches
3/1/2017	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	68.00	Inches
3/1/2017	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	34.00	Inches
2/17/2017	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	104.00	Inches
2/17/2017	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	69.00	Inches
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1/19/2017	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
1/19/2017	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	68.00	Inches
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12/21/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	104.00	Inches
12/21/2016	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	68.00	Inches
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L-3 KEO, Northampton MA Vortechs Sediment Report

9/14/2017

Vortechs Meter History Report

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12/8/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
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11/23/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
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11/3/2016	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	34.00	Inches
11/3/2016	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	103.00	Inches
11/3/2016	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	69.00	Inches
11/3/2016	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	34.00	Inches
11/3/2016	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	101.00	Inches
11/3/2016	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	67.00	Inches
11/3/2016	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	34.00	Inches
10/18/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
10/18/2016	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	69.00	Inches
10/18/2016	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	34.00	Inches
10/18/2016	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	103.00	Inches
10/18/2016	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	69.00	Inches
10/18/2016	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	34.00	Inches
10/18/2016	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	101.00	Inches
10/18/2016	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	67.00	Inches
10/18/2016	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	34.00	Inches
10/14/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
10/14/2016	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	68.00	Inches
10/14/2016	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	35.00	Inches
10/14/2016	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	103.00	Inches
10/14/2016	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	69.00	Inches
10/14/2016	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	34.00	Inches
10/14/2016	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	101.00	Inches

L-3 KEO, Northampton MA Vortechs Sediment Report

9/14/2017

Vortechs Meter History Report

Date	Meter Name	Equipment Description	Equipment No.	Description	Value	Unit of Measure
10/14/2016	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	67.00	Inches
10/14/2016	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	34.00	Inches
9/30/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
9/30/2016	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	68.00	Inches
9/30/2016	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	35.00	Inches
9/30/2016	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	102.00	Inches
9/30/2016	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	67.00	Inches
9/30/2016	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	35.00	Inches
9/30/2016	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	102.00	Inches
9/30/2016	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	68.00	Inches
9/30/2016	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	34.00	Inches
9/13/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
9/13/2016	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	69.00	Inches
9/13/2016	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	34.00	Inches
9/13/2016	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	103.00	Inches
9/13/2016	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	69.00	Inches
9/13/2016	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	34.00	Inches
9/13/2016	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	101.00	Inches
9/13/2016	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	67.00	Inches
9/13/2016	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	34.00	Inches
8/25/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	104.00	Inches
8/25/2016	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	69.00	Inches
8/25/2016	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	35.00	Inches
8/25/2016	WQN-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Sediment	105.00	Inches
8/25/2016	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	69.00	Inches
8/25/2016	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	36.00	Inches
8/25/2016	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	103.00	Inches
8/25/2016	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	67.00	Inches
8/25/2016	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	36.00	Inches
8/18/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
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8/18/2016	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	67.00	Inches
8/18/2016	WQS-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Depth of Water	35.00	Inches
7/29/2016	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	35.00	Inches
7/29/2016	WQS-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Water	67.00	Inches
7/12/2016	WQC-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Sediment	103.00	Inches
7/12/2016	WQC-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Pvmnt to Water	68.00	Inches
7/12/2016	WQC-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-Center Depth of Water	35.00	Inches
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7/12/2016	WQN-02	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Pvmnt to Water	69.00	Inches
7/12/2016	WQN-03	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-North Depth of Water	34.00	Inches
7/12/2016	WQS-01	WQS-1 Vortechs Treatment Unit	SWWQS1000000001	WQS-South Pvmnt to Sediment	102.00	Inches

INSPECT Stormwater - MSGP Quarterly Routine Facility Inspection [3C]

Task No.	9701	Request Date	10/7/2016
Department or Cell	Maintenance- Functional	Request Time	12:37:49PM
Assigned By	PM Program	Requestor	PM Program
Assigned To	4795	Telephone No.	
Scheduled Start Date	10/3/2016	Extension	
Scheduled Finish Date	10/3/2016	WO Type	ENVIRO3M
Perform by Warranty	No	Completion Date	11/16/2016
Priority	1.00	Completion Time	
Labor Code	780	Project Task	
Project ID			

Craft	Estimated Crew Size	Estimated Labor Hours

Equipment No. SW System000001
Equipment Description Stormwater System - Prince Facility
Serial No. NONE

CAR# and WO#

Location Facility
Sub-location 1 50 Prince Street
Sub-location 2 Northampton MA
Sub-location 3 -
Reason for Outage
Must Be Down No
Estimated Down Time
Down Time

User-defined field 1 NONE
User-defined field 2 NONE
User-defined field 3 NONE
User-defined field 4 NONE
User-defined field 5 NONE
User-defined field 6 NONE
User-defined field 7 NONE
User-defined field 8 NONE
User-defined field 9 PRINCE OUTSIDE
User-defined field 10 NONE

Safety Note EHS files = [3C]

2015 MSGP effective 6/4/2015 to 6/4/2020 (5-years).
2008 MSGP administratively continued until 9/2015.
2008 MSGP effective 9/29/2008 to 9/29/2013 (5-years).

Comments

Equipment No. (Meter)	Meter Name	Meter Reading

Item No.	Equipment No. (Parts)	Item Description	Qty Required	Date Used	Qty Used

List extra parts and comments here

Pictures on Z Drive

Employee Code	Equipment No. (Employee)	Work Date	First Name	Last Name	Regular Hours	Overtime Hours
4795		11/16/2016		Weatherlax		

Task Instructions

TASK SUMMARY
The purpose of this task is to

Street facility stormwater management system and infrastructure in accordance with DAPP 9.21.

LOCATION
Refer to the SWPPP site map for the location of each item that must be inspected.

FREQUENCY
This task is required to be performed once each calendar quarter.

PM TASKS
Procedure (Check off as completed)

[✓] 1. Complete the Quarterly Routine Facility Inspection Form attached to this PM task.
[✓] 2. Attach a copy of the weather report for the month when this PM was perfromed. Go to www.wunderground and select weather history.
[✓] 3. Forward the completed forms to the E&S Manager for proper retention

HISTORY

Completed: 7/5/16, 5/11/16, 2/25/16, 12/22/15, 7/17/15, 6/1/15, 3/2/15, 10/1/14, 7/21/14 5/20/14, 3/27/14, 10/7/13, 8/27/13, 6/3/13, 1/31/13, 12/18/12, 7/17/12, 5/0/12, 1/27/12, 12/15/11

Last Updated: 2016-07-06

Generated: 2011-10-05

Multi Sector General Permit MSGP (Quarterly)

Stormwater Routine Facility Inspection Report

General Information			
Facility Name	L-3 KEO, 50 Prince Street, Northampton MA 01060		
NPDES Tracking No.	MAR053035		
Date of Inspection	11/16/2016	**Start/End Time**	0820 / 0930
Inspector's Name(s)	John Weatherway		
Inspector's Title(s)	Manager Facilities/EHS		
Inspector's Contact Information	L-3 KEO		

Weather Information

Weather at time of this inspection?
☐ Clear ☒ Cloudy ☐ Rain ☐ Sleet ☐ Fog ☐ Snow ☐ High Winds
☐ Other: Rainfall subsided about 0600 Temperature: 50F

11/15/16 = 0.42" rain
11/16/16 = 0.02" rain

Were pictures taken? ☒ Yes ☐ No
Z Drive / SWPPP folder

Have any previously unidentified discharges of pollutants occurred since the last inspection? ☐ Yes ☒ No
If yes, describe:

Are there any discharges occurring at the time of inspection? ☒ Yes ☐ No
If yes, describe: Outfall #001 - rain water

Structural Control Measures

- *Number the structural stormwater control measures identified in your SWPPP on your site map and list them below (add as many control measures as are implemented on-site). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required control measures at your facility.*
- *Structural controls include practices such as vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet retention measures*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

Areas of Industrial Materials or Activities exposed to Stormwater

- *Take pictures whenever possible to document compliance with the MSGP.*

	Area/Activity (Refer to SWPP site map)	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes (Non-structural control measures and best management practices BMPs)
A	Product loading/ unloading	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
B	Hazard waste shipments at loading dock	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
C	Compactor, recycling (40yd)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
D	Dumpster, scrap metal (4yd)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
E	Emergency generator, diesel (600gals)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
F	Dumpster, refuse (10yd)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
G	Chemical storage room (interior of facility only)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
H	Paved area	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
I	Product storage, uncovered	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
J	DELETED			
K	Transformer, utility	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
L	DELETED			
M	Product storage, covered	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
N	DELETED			
O	DELETED			
P	Rooftop exhaust stack for Paint Booth	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
Q	DELETED			
R	DELETED			
S	Salt container, covered (0.5yd)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	

	Structural Control Measure	Control Measures Operating Effectively?	If No, Needs Maintenance, Repair or Replacement?	Corrective Action Needed and Notes (Identify needed maintenance and/or repairs or any failed control measures that need replacement)
1	Q. Storm Water Detention Basin #6	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
2	R. Subsurface Detention System 1 (West)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
3	R. Subsurface Detention System 2 (South)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
4	CB-5. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
5	CB-6. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
6	CB-7. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
7	CB-8. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
8	CB-9. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
9	CB-10. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
10	CB-11. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
11	CB-12. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
12	CB-13. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
13	OCS1. Outlet Control Structure (Detent Sys. #2 discharge)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
14	OCS2. Outlet Control Structure (Outfall #001)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	(Detent Basin #6 discharge) Water depth (inches) = Sediment ☐Yes ☐No
15	OCS3. Outlet Control Structure (Detent. Sys. #1 inlet)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
16	WQS. Water Quality Structure Vortech Separator	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	
	WQS Data (Rqd by City NHamp)	Depth of water (inches)	MH – North MH – Center MH - South	N = C = S = Refer to weekly rounds sheet

	Stormwater system infrastructure	Inspected?	Controls adequate? (appropriate, effective and operating)?	Corrective Action Needed and Notes (Non-structural control measures and best management practices BMPs)
17	CB1. Catch Basin Non-retention	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
18	CB2. Catch Basin Non-retention	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
19	CB3. Catch Basin Non-retention	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
20	CB4. Catch Basin Non-retention	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
21	CB14. Catch Basin Non-retention	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
22	CB15. Catch Basin Non-retention	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
	CB16.	Does not exist		Does not exist
23	CB17. Catch Basin Non-infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
24	CB18. Catch Basin Non-infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No Repaired by Mohan on 9/9/2016
25	CB19. Catch Basin Non-infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
26	CB20. Catch Basin Non-infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
27	CB21. Catch Basin Non-infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
28	CB22. Catch Basin Non-infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
29	CB23. Catch Basin Non-infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
30	CB24. Catch Basin Non-infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
31	MH3. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
32	MH4. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
33	MH4A. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
34	MH5. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
35	MH6. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
36	MH7. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
37	MH8. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	

	Stormwater system infrastructure	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes (Non-structural control measures and best management practices BMP's)
38	MH10. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
	[illegible]	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
40	MH12. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
41	MH13. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
42	MH14. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
43	MH15. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
44	MH16. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
45	MH17. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
46	MH18. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
	On Grove Street Property			Required Work Description (Work Order Number, Notification Date, Completion Date)
1	Vegetated berm on north side a paved parking area	Grove Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Spring Valley maintains swale
2	Wet Meadow area	Grove Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
3	Drainage channel along west side of driveway	Grove Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
4	Grove St stormwater drain inlet pipe and rip-rap	Grove Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	

Last rainfall >1.0" was 7/30/2016 @ 1.31"

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

None observed

Additional Control Measures

Describe any additional control measures needed to comply with the permit requirements:

None required

Notes

Use this space for any additional notes or observations from the inspection:

Date last CB pump out: 11/11/2016

Date last parking lot sweeping: 11/13/2016

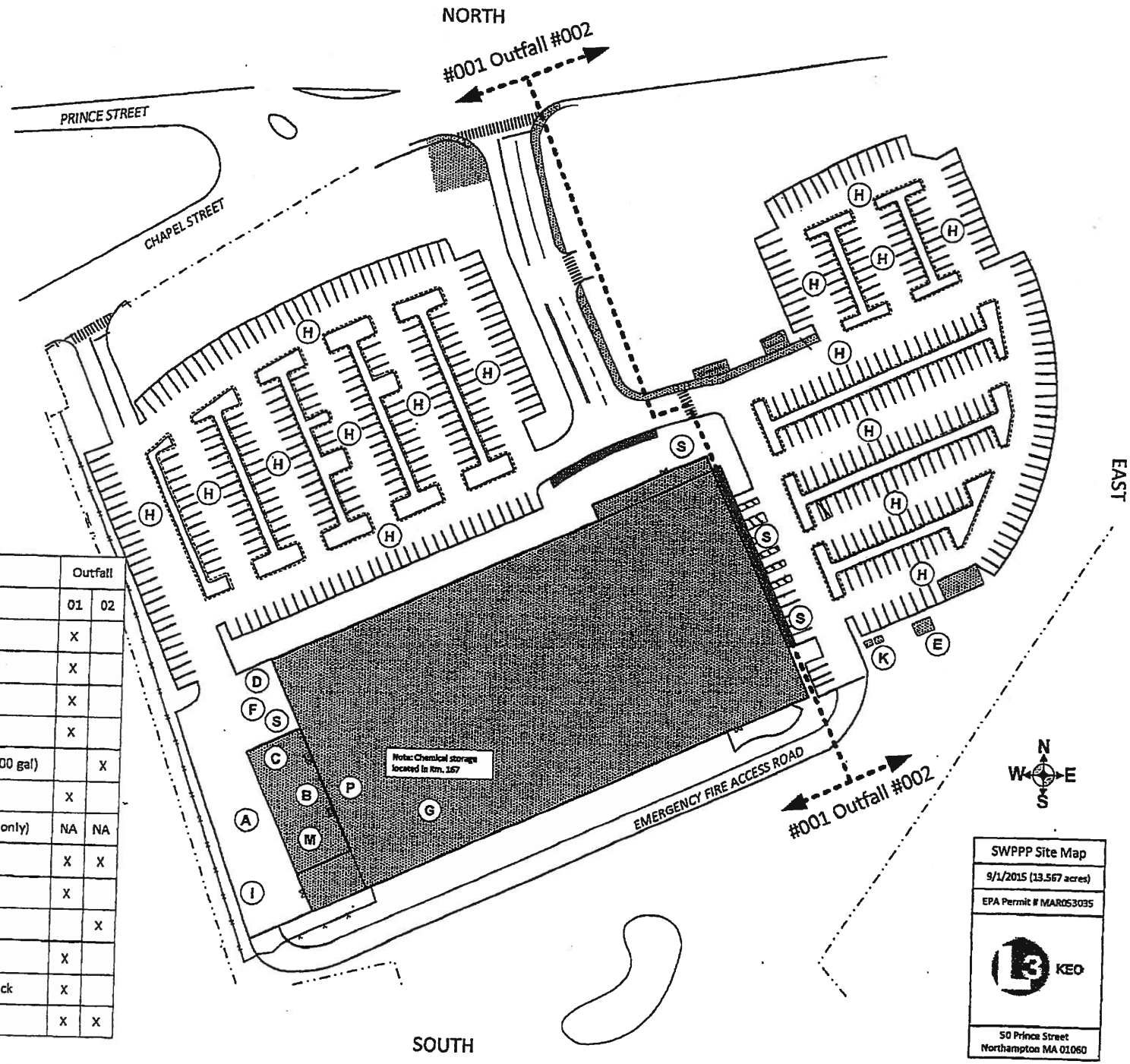
CB18 repaired by Mohawk on 9/7/2016
Annual Inspection w/FANDO on 9/12/2016
Cotton Tree Svc removed 2 large maples in North parking lot 7/18/2016
Conway School Landscape Architecture site visit on 9/26/2016

CERTIFICATION STATEMENT

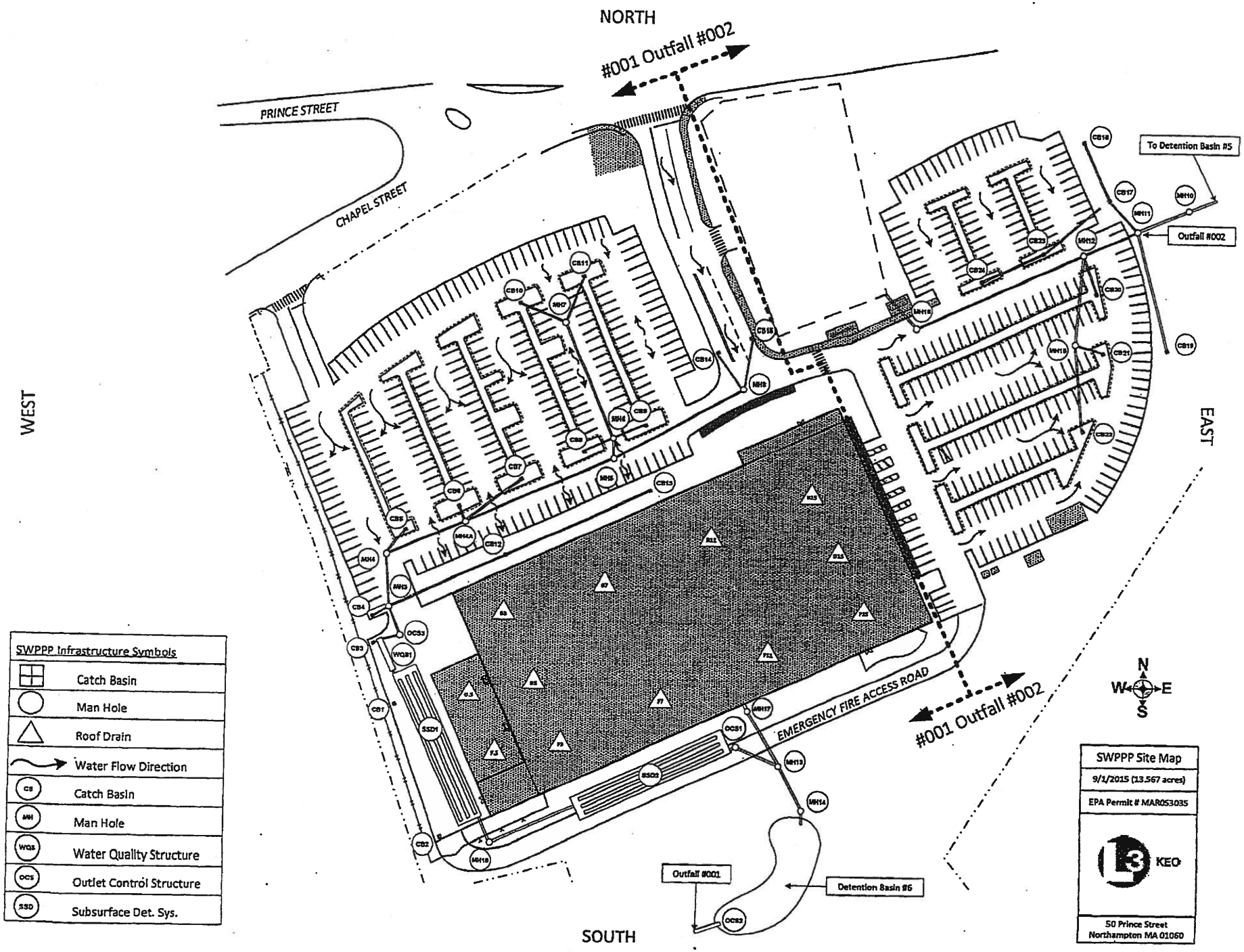
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: John Weatherwax Manager Facilities/EHS

Signature: _____ **Date:** 11/16/2016



Industrial Activity		Outfall	
Description		01	02
A	Product Loading/Unloading	X	
B	Hazardous Waste Shipments	X	
C	Compactor, Recycling (42yd)	X	
D	Dumpster, Scrap Metal (4yd)	X	
E	Emergency Generator, Diesel (600 gal)		X
F	Dumpster, Refuse (10yd)	X	
G	Chemical Storage (inside facility only)	NA	NA
H	Paved Areas	X	X
I	Product Storage, Uncovered	X	
K	Transformer (utility owned)		X
M	Product Storage, Covered	X	
P	Rooftop, Paint Booth Exhaust Stack	X	
S	Salt Container, Covered (0.5yd)	X	X


NORTH
SOUTH
WEST
EAST
PRINCE STREET
CHAPEL STREET
#001 Outfall #002
#001 Outfall #002
EMERGENCY FIRE ACCESS ROAD
To Detention Basin #5
Outfall #002
Outfall #001
Detention Basin #6
SWPPP Infrastructure Symbols
Catch Basin
Man Hole
Roof Drain
Water Flow Direction
Catch Basin
Man Hole
Water Quality Structure
Outlet Control Structure
Subsurface Det. Sys.
SWPPP Site Map
9/1/2015 (13.567 acres)
EPA Permit # MAR053035
KEO
50 Prince Street
Northampton MA 01060

report this ad

Chicopee, MA

Westover Air Reserve Base / Metropolitan Airport

1:59 PM EST on November 16, 2016 (GMT -0500)

Weather History for KCEF - November, 2016

November

16

2016

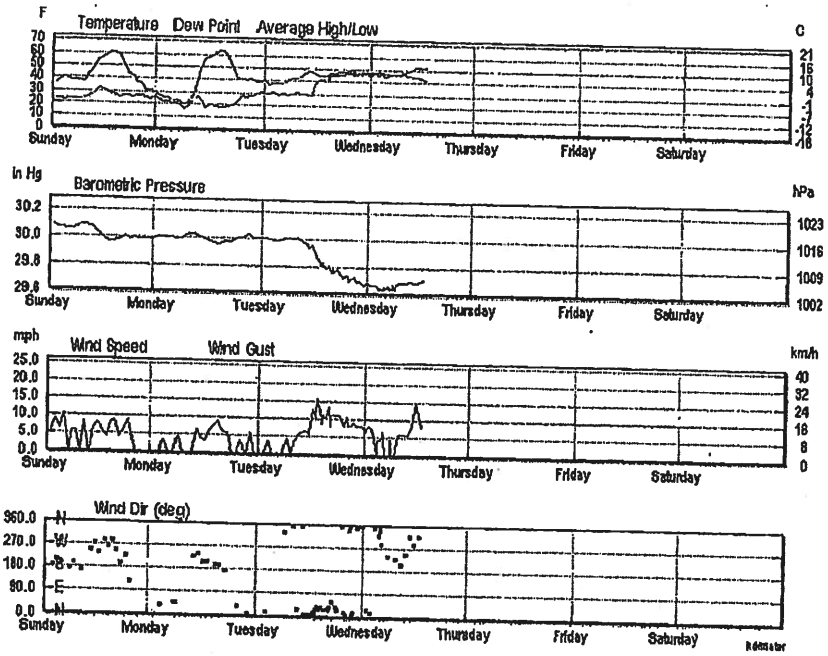
View

Week of November 13, 2016

Daily | Weekly | Monthly | Custom

	Max	Avg	Min	Sum
Temperature				
Max Temperature	63 °F	56 °F	48 °F	
Mean Temperature	49 °F	44 °F	41 °F	
Min Temperature	46 °F	33 °F	19 °F	
Degree Days				
Heating Degree Days (base 65)	24	20	16	82
Cooling Degree Days (base 65)	0	0	0	0
Growing Degree Days (base 50)	0	0	0	0
Dew Point				
Dew Point	47 °F	34 °F	17 °F	
Precipitation				
Precipitation	0.42 in	0.11 in	0.00 in	0.44 in
Snowdepth	-	-	-	-
Wind				
Wind	16 mph	4 mph	0 mph	
Gust Wind	-	-	-	
Sea Level Pressure				
Sea Level Pressure	30.09 in	29.88 in	29.63 in	

Weekly Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

KCEF

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

November

16

Submit

report this ad | why ads?

Astronomy

Nov. 16, 2016	Rise	Set
Actual Time	6:42 AM EST	4:27 PM EST
Civil Twilight	6:12 AM EST	4:57 PM EST
Nautical Twilight	5:38 AM EST	5:31 PM EST
Astronomical Twilight	5:04 AM EST	6:04 PM EST
Moon	6:49 PM EST	8:44 AM EST
Length of Visible Light	10h 45m	
Length of Day	9h 44m	

Waning Gibbous, 93% of the Moon is Illuminated

Today	Nov 21	Nov 29	Dec 7	Dec 13
Waning Gibbous	Last Quarter	New	First Quarter	Full

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Daily Weather History & Observations

2016	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Nov	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
13	61	46	29	32	26	22	87	52	26	30.09	30.03	29.97	10	10	10	10	6	-	0.00	
14	63	41	19	30	23	17	92	59	18	30.03	30.00	29.96	10	10	10	9	2	-	0.00	
15	48	42	37	46	40	28	100	83	46	30.01	29.83	29.67	10	7	1	16	6	-	0.42	Rain
16	52	49	46	47	46	42	100	95	69	29.71	29.66	29.63	10	6	1	15	4	-	0.02	Rain

report this ad

INSPECT Stormwater - MSGP Quarterly Routine Facility Inspection [3C]

Task No.	9701	Request Date	3/21/2017
Department or Cell	Maintenance- Functional	Request Time	9:56:36AM
Assigned By	PM Program	Requestor	PM Program
Assigned To	4795	Telephone No.	
Scheduled Start Date	1/3/2017	Extension	
Scheduled Finish Date	1/3/2017	WO Type	ENVIRO3M
Perform by Warranty	No	Completion Date	3/27/2017
Priority	1.00	Completion Time	
Labor Code	780	Project Task	
Project ID			

Craft	Estimated Crew Size	Estimated Labor Hours

Equipment No.	SW System000001		
Equipment Description	Stormwater System - Prince Facility		
Serial No.	NONE	User-defined field 1	NONE
		User-defined field 2	NONE
CAR# and WO#		User-defined field 3	NONE
		User-defined field 4	NONE
Location	Facility	User-defined field 5	NONE
Sub-location 1	50 Prince Street	User-defined field 6	NONE
Sub-location 2	Northampton MA	User-defined field 7	NONE
Sub-location 3	-	User-defined field 8	NONE
Reason for Outage		User-defined field 9	PRINCE OUTSIDE
Must Be Down	No	User-defined field 10	NONE
Estimated Down Time			
Down Time			

Safety Note EHS files = [3C]

2015 MSGP effective 6/4/2015 to 6/4/2020 (5-years).
2008 MSGP administratively continued until 9/2015.
2008 MSGP effective 9/29/2008 to 9/29/2013 (5-years).

Comments

Equipment No. (Meter)	Meter Name	Meter Reading

Item No.	Equipment No. (Parts)	Item Description	Qty Required	Date Used	Qty Used

List extra parts and comments here

Employee Code	Equipment No. (Employee)	Work Date	First Name	Last Name	Regular Hours	Overtime Hours

Task Instructions

TASK SUMMARY

The purpose of this task is to perform a routine facility inspection of the Prince

Street facility stormwater management system and infrastructure in accordance with DAPP 9.21.

LOCATION
Refer to the SWPPP site map for the location of each item that must be inspected.

FREQUENCY
This task is required to be performed once each calendar quarter.

PM TASKS
Procedure (Check off as completed)

[ ] 1. Complete the Quarterly Routine Facility Inspection Form attached to this PM task.
[ ] 2. Attach a copy of the weather report for the month when this PM was perfromed. Go to www.wunderground and select weather history.
[ ] 3. Forward the completed forms to the E&S Manager for proper retention

HISTORY

Completed: 11/16/16, 7/5/16, 5/11/16, 2/25/16, 12/22/15, 7/17/15, 6/1/15, 3/2/15, 10/1/14, 7/21/14 5/20/14, 3/27/14, 10/7/13, 8/27/13, 6/3/13, 1/31/13, 12/18/12, 7/17/12, 5/0/12, 1/27/12, 12/15/11

Last Updated: 2016-11-16

Generated: 2011-10-05

Multi Sector General Permit MSGP (Quarterly)

Stormwater Routine Facility Inspection Report

General Information			
Facility Name	L-3 KEO, 50 Prince Street, Northampton MA 01060		
NPDES Tracking No.	MAR053035		
Date of Inspection	3/27/2017	**Start/End Time**	0900/1100A
Inspector's Name(s)	Weatherwax		
Inspector's Title(s)	Manager Facilities/EHS		
Inspector's Contact Information			

Weather Information

Weather at time of this inspection?
☐ Clear ☐Cloudy ☒ Rain ☐ Sleet ☐ Fog ☐ Snow ☐ High Winds
☐ Other: Temperature:

Were pictures taken? ☐Yes ☒No

Have any previously unidentified discharges of pollutants occurred since the last inspection? ☐Yes ☒No
If yes, describe:

Are there any discharges occurring at the time of inspection? ☒Yes ☐No
If yes, describe: Outfall 001

Structural Control Measures

- *Number the structural stormwater control measures identified in your SWPPP on your site map and list them below (add as many control measures as are implemented on-site). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required control measures at your facility.*
- *Structural controls include practices such as vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet retention measures*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

Areas of Industrial Materials or Activities exposed to Stormwater

- *Take pictures whenever possible to document compliance with the MSGP.*

	Area/Activity Refer to SWPP site map	Inspected?	Controls Adequate (appropriate, effective and operating)?	Corrective Action Needed and Notes (Non-structural control measures and best management practices BMP's)
A	Product loading/ unloading	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	No issues observed
B	Hazard waste shipments at loading dock	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
C	Compactor, recycling (40yd)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
D	Dumpster, scrap metal (4yd)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
E	Emergency generator, diesel (600gals)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
F	Dumpster, refuse (10yd)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
G	Chemical storage room (interior of facility only)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
H	Paved area	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
I	Product storage, uncovered	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
J	DELETED			
K	Transformer, utility	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
L	DELETED			
M	Product storage, covered	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
N	DELETED			
O	DELETED			
P	Rooftop exhaust stack for Paint Booth	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
Q	DELETED			
R	DELETED			
S	Salt container, covered (0.5yd)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	

	Structural Control Measure	Control Measure is Operating Effectively?	If No, Needs Maintenance, Repair, or Replacement?	Corrective Action Needed and Notes (Identify needed maintenance and repairs, or any failed control measures that need replacement)
1	Q. Storm Water Detention Basin #6	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
2	R. Subsurface Detention System 1 (West)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
3	R. Subsurface Detention System 2 (South)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
4	CB-5. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
5	CB-6. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
6	CB-7. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
7	CB-8. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
8	CB-9. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
9	CB-10. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
10	CB-11. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
11	CB-12. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
12	CB-13. Bioretention Swale/Area Infiltrating	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
13	OCS1. Outlet Control Structure (Detent Sys. #2 discharge)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
14	OCS2. Outlet Control Structure (Outfall #001)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	(Detent Basin #6 discharge) Water depth (inches) = Sediment ☐Yes ☐No
15	OCS3. Outlet Control Structure (Detent. Sys. #1 inlet)	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	Water depth (inches) = Sediment ☐Yes ☐No
16	WQS. Water Quality Structure Vortech Separator	Prince Street ☑Yes ☐No ☐ N/A	☐ Maintenance ☐ Repair ☐ Replacement	
	WQS Data (Rqd by City NHamp)	Depth of water (inches) 35-36" each	MH – North MH – Center MH - South	N = refer to weekly rounds C = S =

	Stormwater system infrastructure	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes (Non-structural control measures and best management practices BMP's)
17	CB1. Catch Basin Non-retention	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
18	CB2. Catch Basin Non-retention	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
19	CB3. Catch Basin Non-retention	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
20	CB4. Catch Basin Non-retention	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
21	CB14. Catch Basin Non-retention	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
22	CB15. Catch Basin Non-retention	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
	CB16.	Does not exist		Does not exist
23	CB17. Catch Basin Non-infiltrating	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
24	CB18. Catch Basin Non-infiltrating	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
25	CB19. Catch Basin Non-infiltrating	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
26	CB20. Catch Basin Non-infiltrating	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
27	CB21. Catch Basin Non-infiltrating	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
28	CB22. Catch Basin Non-infiltrating	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
29	CB23. Catch Basin Non-infiltrating	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
30	CB24. Catch Basin Non-infiltrating	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	Water depth (inches) = Sediment ☐Yes ☐No
31	MH3. Man Hole	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	
32	MH4. Man Hole	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	
33	MH4A. Man Hole	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	
34	MH5. Man Hole	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	
35	MH6. Man Hole	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	
36	MH7. Man Hole	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	
37	MH8. Man Hole	Prince Street ☐Yes ☐No ☐ N/A	☐Yes ☐No	

	Stormwater system infrastructure	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes (Non-structural control measures and best management practices BMP's)
38	MH10. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
39	MH11. Man Hole (Outfall #002)	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
40	MH12. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
41	MH13. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
42	MH14. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
43	MH15. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
44	MH16. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
45	MH17. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
46	MH18. Man Hole	Prince Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
	91 Grove Street Property			(Required by Agreement with City of Northampton; not an EPA requirement)
1	Vegetated berm on north side a paved parking area	Grove Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	Q1/2017 no rainfall over 1.0"
2	Wet Meadow area	Grove Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
3	Drainage channel along west side of driveway	Grove Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	
4	Grove St stormwater drain inlet pipe and rip-rap	Grove Street ☑Yes ☐No ☐ N/A	☑Yes ☐No	

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

Additional Control Measures

Describe any additional control measures needed to comply with the permit requirements:

Notes

Use this space for any additional notes or observations from the inspection:

Date last CB pump out:

Date last parking lot sweeping:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: _____

Signature:_____ **Date:**_____