NJDEP Contour Map Reporting Form
Addendum to December 2015 Groundwater Progress Report – August 2016
Hoffmann-La Roche Inc. - Nutley, New Jersey
Building 716 (B716) Gauging Event - Zone S1
October 7, 2015

1. Did any surveyed well casing elevations change from the previous sampling event?
   Yes ___ No _X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

   All Roche-owned wells have been surveyed. All available well documents (including the surveyor Form Bs) are provided in Appendix B of the June 2016 *Addendum to December 2015 Groundwater Progress Repor*t.

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes _X_No ___. If yes, identify these wells.
   MW-33B, MW-57, MW-99, MW-106A, MW-108A, MW-112, MW-141, MW-142, MW-143, MW-144A, MW-171A, MW-257A and MW-304A.

3. Are there any monitoring wells present at the site but omitted from the contour map?
   Yes ____ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitoring wells containing separate phase product during this measuring event?
   Yes ___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes __No _X_. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes ___ No _X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map?
   Yes _X_ No ____. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence. Was mounding caused by a groundwater remediation system?

   The contoured mound located west and south of Building 716 within the Zone S1 aquifer is the result of the impoundment (i.e., dam) of St. Paul's Brook in an area downgradient of Building 716 (south of Nichols Park). The pooled surface water infiltrates the soil and rock and serves as groundwater recharge to an isolated portion of the Zone S1 aquifer. The groundwater mounding is not the result of a groundwater remediation system.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes _X_ No ___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated _____, computer aided _____, or hand-drawn _X_? If computer aided or generated, identify the interpolation method(s) used.

NJDEP Contour Map Reporting Form
Addendum to December 2015 Groundwater Progress Report – August 2016
Hoffmann- La Roche Inc.- Nutley, New Jersey
Focused Gauging Event - Zone S2
October 7, 2015

1. Did any surveyed well casing elevations change from the previous sampling event?
   Yes ___ No _X__. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

   All Roche-owned wells have been surveyed. The surveyor Form Bs for new monitoring wells, installed after completion of the Site-wide groundwater RI program (GWRIR, March 2014), are included in Appendix B of the June 2016 *Addendum to December 2015 Groundwater Progress Report*.

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes __X__No ___. If yes, identify these wells.
   MW-55B, MW-73, MW-99B, MW-106B, MW-107, MW-108B, MW-112B, MW-142B, MW-143B, MW-144B, MW-145B, MW-171B, MW-221B, MW-257B, MW-278B, MW-304B, MW-334B, MW-335B, MW-337B, MW-338B, MW-339B, MW-366B, MW-367B, MW-367-S2 and MW-478B.

3. Are there any monitoring wells present at the site but omitted from the contour map?
   Yes __X__ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.
   MW-340B was not gauged during this event.

4. Are there any monitoring wells containing separate phase product during this measuring event?
   Yes ___ No_X___. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes __No __X__. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes ___ No __X__. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map?
   Yes __X__ No ____. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence. Was mounding caused by a groundwater remediation system?
   The data indicate that the contoured mound in the building 716 boundary is representative of true conditions within the S2 aquifer (not the result of a groundwater remediation system) and appear to be the result of an area of low permeability within the bedrock.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes __X No ___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated _____, computer aided _____, or hand-drawn _X__? If computer aided or generated, identify the interpolation method(s) used.

NJDEP Contour Map Reporting Form
Addendum to December 2015 Groundwater Progress Report – August 2016
Hoffmann- La Roche Inc.- Nutley, New Jersey
Focused Gauging Event - Zone S3
October 7, 2015

1. Did any surveyed well casing elevations change from the previous sampling event?
   Yes ___ No _X__. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

   All Roche-owned wells have been surveyed. The surveyor Form Bs for new monitoring wells, installed after completion of the Site-wide groundwater RI program (GWRIR, March 2014), are included in Appendix B of the June 2016 *Addendum to December 2015 Groundwater Progress Report*.

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes __X__No ___. If yes, identify these wells.
   MW-55C, MW-75C, MW-99C, MW-112C, MW-140, MW-142C, MW-143C, MW-145C, MW-171C, MW-173C, MW-221C, MW-303C, MW-304C, MW-336C, MW-337C, MW-338C, MW-339C, MW-340C, MW-366C, MW-367C, MW-367-S3, MW-429C, MW-462C1, MW-462C2 and MW-478C

3. Are there any monitoring wells present at the site but omitted from the contour map?
   Yes ____ No_X___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitoring wells containing separate phase product during this measuring event?
   Yes ___ No_X___. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes __No __X__. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes ___ No __X__. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map?
   Yes __X__ No ____. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence. Was mounding caused by a groundwater remediation system?
   The data indicate that the contoured mound in the building 716 boundary is representative of true conditions within the S3 aquifer (not the result of a groundwater remediation system) and appear to be the result of an area of low permeability within the bedrock.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes __X No ___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated _____, computer aided _____, or hand-

drawn _X__? If computer aided or generated, identify the interpolation method(s) used.

NJDEP Contour Map Reporting Form
Addendum to December 2015 Groundwater Progress Report – August 2016
Hoffmann- La Roche Inc.- Nutley, New Jersey
Focused Gauging Event - Zone D1
October 7, 2015

1. Did any surveyed well casing elevations change from the previous sampling event?
   Yes ___ No _X__. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

   All Roche-owned wells have been surveyed. The surveyor Form Bs for new monitoring wells, installed after completion of the Site-wide groundwater RI program (GWRIR, March 2014), are included in Appendix B of the June 2016 *Addendum to December 2015 Groundwater Progress Report*.

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes __X__No ___. If yes, identify these wells.
   DW-25A, DW-25-D1, DW-47A, DW-49A, DW-51A, DW-52A, DW-53A, DW-54A, DW-55A and DW-63A.

3. Are there any monitoring wells present at the site but omitted from the contour map?
   Yes ____ No_X__. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitoring wells containing separate phase product during this measuring event?
   Yes ___ No_X__. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes __No __X__. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes ___ No __X__. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map?
   Yes __X__ No ____. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence. Was mounding caused by a groundwater remediation system?
   The data indicate that the contoured mound in the building 716 boundary is representative of true conditions within the D1 aquifer (not the result of a groundwater remediation system) and appear to be the result of an area of low permeability within the bedrock.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes __X No ___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated _____, computer aided _____, or hand-drawn _X__? If computer aided or generated, identify the interpolation method(s) used.