3855 NORTH OCOEE STREET, SUITE 200, CLEVELAND, TN. 37312
(423) 336-4000 FAX (423) 336-4166

February 22, 2012

Mr. Brian Sadowski
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Subject: **Charles Gibson Site**
NYSDEC Registry No. 9-32-063
Periodic Review Report - 2011

Dear Mr. Sadowski:

As requested by NYSDEC, I have attached one electronic version (in Adobe PDF format) of the subject report. This report summarizes the site conditions and activities performed during 2011 for the operation and maintenance of the containment remedy for the Charles Gibson Site in Niagara Falls, N.Y.

The report is in the format requested by NYSDEC, and is submitted prior to March 1, 2012.

Please direct any comments to me at 423-336-4007. Thank you.

Sincerely,
OLIN CORPORATION

Curt M. Richards
Corporate Vice President
Environmental Health & Safety

cc:
Adam Carringer - Olin
Matthew Forcucci – NYSDOH Buffalo
Michael Hinton – NYSDEC Buffalo
Mike Walker – Sevenson Environmental Services

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. 932063

Site Name Charles Gibson Site

Site Address: N.E. Cnr. of Niagara Falls Blvd. & Tuscarora Rd. Zip Code: 14304
City/Town: Niagara Falls
County: Niagara
Site Acreage: 2.0

Reporting Period: January 31, 2011 to January 31, 2012

	YES	NO
1. Is the information above correct?	X	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill	X	☐
7. Are all ICs/ECs in place and functioning as designed?	X	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Curtis M Richards — 2/21/12

Signature of Owner, Remedial Party or Designated Representative — Date

Curtis M Richards
Corporate Vice President
Environment, Health & Safety

SITE NO. 932063

Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
161.05-3-7	OLIN CORPORATION	Monitoring Plan O&M Plan
161.05-5-12	OLIN CORPORATION	Monitoring Plan O&M Plan

Box 4

Description of Engineering Controls

Parcel	Engineering Control
161.05-3-7	Cover System Fencing/Access Control Groundwater Containment Leachate Collection
161.05-5-12	Cover System Fencing/Access Control Groundwater Containment Leachate Collection

Engineering Control Details for Site No. 932063

Parcel: 161.05-3-7

Consent Judgment 3/12/85 including IC stipulations p. 23 Permits and Easements, sections 11-24.

EC:

- Realignment of Cayuga Creek
- Cap
- Double Membrane Liner
- Perimeter Leachate Collection System. Discharge to NFWWTP.
- Perimeter Fence
- Groundwater Quality Monitoring
- Leachate Monitoring
- Creek Sediment Monitoring

Engineering Control Details for Site No. 932063

Parcel: 161.05-5-12

Consent Judgment 3/12/85 including IC stipulations p. 23 Permits and Easements, sections 11-24.

EC:

- Realignment of Cayuga Creek
- Cap
- Double Membrane Liner
- Perimeter Leachate Collection System. Discharge to NFWWTP.
- Perimeter Fence
- Groundwater Quality Monitoring
- Leachate Monitoring
- Creek Sediment Monitoring

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Curtis M Richards

Signature of Owner, Remedial Party or Designated Representative

2/21/12

Date

Curtis M Richards
Corporate Vice President
Environment, Health & Safety

IC CERTIFICATIONS
SITE NO. 932063

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I CURTIS M RICHARDS at 3855 N OCOEE ST. CLEVELAND, TN 37312
print name print business address

am certifying as OLIN CORPORATION (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Curtis M Richards
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

2/21/12
Date

Curtis M Richards
Corporate Vice President
Environment, Health & Safety

IC/EC CERTIFICATIONS

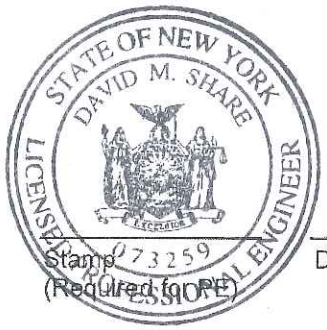
Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I David M. Share (print name) at 3855 N. Ocoee St., Suite 200, Cleveland, TN (print business address)

am certifying as a Qualified Environmental Professional for the Olin Corporation (Owner or Remedial Party)



Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification

Stamp 073259 (Required for PE)

Date 2/23/2012

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I. INTRODUCTION

A. Brief summary, nature and extent, remedial history:
Construction of the remedy on the Charles Gibson Site concluded in 1990. The remedy consisted of rerouting Cayuga Creek around and away from the waste, installation of a fully circumscribed soil-bentonite slurry wall barrier and installation of a double flexible membrane liner cap with a perimeter collection drain system. The first year of operations and maintenance (O&M) of the containment remedy for the site and the ground water monitoring program began in 1993. Waters collected in the site perimeter collection drain system are managed by direct discharge to the City of Niagara Falls Wastewater Treatment Facility. The Charles Gibson site is classified as a commercial/small industrial/residential user (CSIRU) and does not require a permit.

B. Effectiveness of remedial program:
Ground water monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the ground water indicates that the containment remedy is effective. An evaluation of data from the piezometer pairs at the Site indicates that an inward hydraulic gradient has been established in the containment area of the site. Since 2003, concentrations of site compounds being monitored have been undetected or estimated at concentrations below the detection levels, in all monitor wells. The remedial program is achieving the objectives of containing groundwater flow and maintaining groundwater quality standards.

C. Compliance: There are no areas of non-compliance.

D. Recommendations: The Operation and Maintenance program has shown that the conditions at the site are stable and consistent.

II. SITE OVERVIEW

A. Site description and nature/extent prior to remediation:
The Site as now defined incorporates approximately two acres bounded to the east and north by Cayuga Creek, to the west by Tuscarora Road and to the south by Niagara Mohawk Power Corporation right-of-way and the Auto Zone Incorporated auto parts store and parking lot. The Site cap is slightly mounded with the center of the capped area essentially flat. The capped area is enclosed by a chain link fence. A wooden privacy fence is immediately next to and outside of the chain link fence on portions of the perimeter.

B. Remediation chronology:
The Settlement Agreement includes a provision in the event that after seven years following the delivery of a Release of Liability (issued December 15, 1992), Olin demonstrates that conditions at the Site are such that the stated frequency or duration of the requirements are no longer necessary to determine whether the remediation is effective, Olin may reduce the frequency and duration of such monitoring or inspections. Olin has submitted annual reports and has conducted the required monitoring for the duration of the remediation.

Olin will sustain adequate staff to administer the following post-remediation activities: post-remediation site inspections; maintenance; monitoring of the hydraulic gradient within the containment area; water level monitoring; inspection and maintenance of direct (leachate) discharge system; and storage and updating of the facility post-remediation plans. Information concerning

proposed changes or modifications to the plan will only be distributed to the State by Olin.

III. REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

The work performed for the Site during 2011 was reviewed and found to be in accordance with the approved O&M Manual (Revised 2009). Ground water monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the ground water data generated during the 2011 monitoring year indicates that the containment remedy is effective. An evaluation of data from the piezometer pairs at the Site indicates that an inward hydraulic gradient has been established in the containment area of the site. An evaluation of data from the piezometer pairs at the Site indicates that an inward hydraulic gradient is being maintained year round in two of the three piezometer pairs. The third pair (P1/P2) has an inward gradient during the second and third quarters. There was minimal difference in the outward gradient with the maximum outward gradient being 0.44 ft. ***Attachment A*** shows the most recent tables for piezometric data demonstrating that inward gradient.

IV. IC/EC PLAN

A. IC/EC requirements:

- Fence is in place around the landfill, effectively restricting access
- Clean soil cover is in place on the landfill, restricting infiltration and promoting runoff
- A hydraulic control system is in place, effectively controlling groundwater flow direction

B. Certification:

- Attached

V. MONITORING PLAN COMPLIANCE REPORT

A. Components of Monitoring Plan:

Operation, maintenance, and monitoring activities to be performed include:

- Performance of a ground water monitoring program to monitor ground water quality at the site and to verify the inward hydraulic gradient within the capped area.

- The current groundwater level monitoring system for the Site consists of six piezometers (P-1 through P-6) and two manholes (A and B). Piezometers P-1, P-2 and Manhole A are located in the northeast section of the Site; P-3, P-4, and Manhole B are located in the southeast section; and P-5 and P-6 are located toward the southwest (see ***Attachment B***).

- All piezometers are constructed of Schedule 80 PVC and are 2 inches in diameter. Each piezometer has been constructed with 5 feet of screen and were screened at the water table.

- The construction of the piezometer screens at the water table allows for continued monitoring of the water table elevation inside and outside of the containment area during periods of water level fluctuations. Piezometers P-1, P-3, and P-5 are located outside of the slurry wall that runs along the

perimeter of the Site. Piezometers P-2, P-4, and P-6 are inside the slurry wall and paired opposite the three piezometers inside the slurry wall.

- Water level elevations will be measured quarterly at the Site. Manholes A and B and piezometers P-1 through P-6 will be measured. Water level elevations are measured by means of an acoustical sounder or electronic water level probe. The sounder or probe is lowered into the manhole or piezometer until it makes contact with the free water surface. The depth from the top of the piezometer riser pipe or manhole rim to the water surface is measured to an accuracy of 0.01 ft. Depth to water measurements are converted into mean sea level elevations by referring to the surveyed elevation of the top of the piezometer riser pipe or manhole rim provided on the Groundwater Elevation Form. The depth to water measurements for Manholes A and B are checked to see that they are not greater than 10.27 feet and 12.41 feet, respectively to ensure that the automatic sump pump is functioning.

B, C. Summary and comparison to remedial objectives:

The isolation of ground water within the capped area has been established and is being maintained by current operation and maintenance activities. The ground water elevation data indicate that ground water within the capped area is consistent with historical data. Review of the ground water elevation data indicates that inward hydraulic gradients were observed between piezometers within the capped area and piezometers outside of the capped area with exception to one pair (P1/P2) which has variance between the four quarters. The pair does show inward gradients during the second and third quarters.

The water elevation data collected from the piezometers and ground water wells was used to determine whether an inward hydraulic gradient exists was made by comparing water level measurements within the capped area to those measured outside the capped area.

D. Deficiencies:

None

E. Recommendations for changes:

The groundwater monitoring program has shown consistent results throughout this monitoring period.

VI. O&M PLAN COMPLIANCE REPORT

A. Components of the O&M Plan:

- Site remediation requirements have been met by Olin through rerouting of Cayuga Creek around and away from the waste, by constructing a fully circumscribing soil-bentonite slurry wall barrier, and through installing a double flexible membrane liner cap as part of the final cover with a perimeter collection drain system. The O&M Plan will safeguard that remedy and provide for monitoring of the Gibson Site in compliance with the Settlement Agreement.

- Inspections, on at least a quarterly basis, of the Gibson Site are conducted to identify any potential problems with physical deterioration of structures, possible malfunctions of the slurry wall or of the perforated CPVC drain system, and to ensure that all site remedial measures components are operating effectively, in accordance with the Settlement Agreement.

- The Environmental Inspector conducts the inspections to ensure that the remedial measures at the Site will remain operative in a manner that will minimize the need for extra maintenance. Additionally, the inspections address the safeguards to control, minimize or eliminate threats to human health and the environment. The potential post-remediation threats include the release of HCB, BHC, or contaminated leachate to the groundwater, and/or the creek.

- Operation, maintenance, and monitoring activities are conducted to identify proposed changes to the O&M Manual or site procedures which would provide a safer and/or more efficient and cost-effective operation.

- Recordkeeping is conducted for each site visit and inspection.

B. O&M Summary

The ground water collection system is inspected semi-annually for the buildup of hard or soft scale-like deposits. The inspection is performed concurrently with inspection of the capped area. If a component of the ground water collection system is found to be damaged or malfunctioning, it is repaired or replaced.

The capped area is mowed on a regular basis to prevent establishment of woody vegetation during this reporting period. The capped area functions as designed and complies with the O&M Plan.

Inspections are conducted using the items listed on the Site Inspection Form presented in ***Attachment C***. Information to be entered on these forms includes the inspector's name, date, and time of inspection, item inspected and any comments. The inspector indicates on the forms whether the condition of each item was acceptable or unacceptable to ensure that the requirements of this O&M Plan are fulfilled. The scheduled Site monitoring inspections are performed by a qualified individual assigned to inspect the items and systems noted on the Site Inspection Form. The completed Site Inspection Forms are maintained at Olin Environmental Remediation offices in Cleveland, TN. Inspections are performed, at a minimum, on a quarterly basis.

The groundwater monitoring and sampling is performed on an annual basis, with 2011 results presented in ***Attachment D***. Per NYSDEC request, future groundwater monitoring events will be done in rotating quarters to help assess seasonal variability.

Sample collection and analysis of creek sediments are performed annually during the second half of the calendar year. The 2011 data show a decrease in all sediment parameters, both upstream and downstream. Olin will continue to track this trend.

C. Evaluation of remedial systems:

All components are performing as designed.

D. O&M deficiencies

None

E. Conclusions

The O&M system is being run and maintained properly and does not require additions or modifications at this time. The Operations and Maintenance (O&M) Manual was updated in 2009, reflecting modifications to site protocols.

VII. OVERALL PRR CONCLUSIONS AND RECOMMENDATIONS

A. Compliance with SMP

Based on the operations and maintenance documentation listed above, the system requirements are being met. There are no new exposure pathways. Additional plans and modifications are not necessary.

B Remedy Effectiveness:

Based on the data developed to date, the remedy has been effective in attaining the remedial objectives. :

- The isolation of ground water within the capped area has been established and is being maintained by current operation and maintenance activities.

- Review of the ground water elevation data indicate that inward hydraulic gradients were observed between piezometers within the capped area and piezometers outside of the capped area. Fluctuations of ground water elevations indicate that minor outward hydraulic gradients occur, but typically revert back to inward gradients by the next quarter.

- Currently two locations, immediately upstream and downstream of the Site and the adjacent remediated portion of the Cayuga Creek bed, are sampled once per year, in the Fall or 'low water' period. A sample is collected downstream of the Site to monitor changes in levels of contaminants in creek sediments, if any. The other sample, immediately upstream of the Site is used to monitor potential upstream contaminant sources or potential 'backwash' effects caused by the changing level of the Niagara River. Beginning with the October 2000 sample event, annual creek sediment samples have been analyzed for BHC isomers only. This modification is based on analytical sediment data collected as part of the long-term monitoring program. HCB results are undetected (U) for all sampling events since 1993.

C. Future submittals:

Reporting will continue on an annual schedule.

ATTACHMENT A

TABLE 1
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING 2001-2011

MONITOR WELL: MW-A3

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U	.050U	.050U	.029J	.048U	.035J	.048U	.047U	.047U	.048U	.049U	.032J	.048U	-	.048U	.048U	0.049U	-	-	.034J	.053U	-
Beta-BHC	.050U	.050U	.050U	.016J	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.014J	.048U	-	.048U	.048U	0.049U	-	-	.050U	.053U	-
Gamma-BHC	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.048U	.048U	-	.048U	.048U	0.049U	-	-	.029J	.053U	-
Delta-BHC	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.03J	.048U	-	.048U	.048U	0.049U	-	-	.050U	.053U	-
Hexachlorobenzene	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	9J	NR	NR	5U	NR	NR	NR	NR	NR	NR	NR

MONITOR WELL: MW-1R

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U/.050U	.099/.060	.070/.061	.055/.030J	.014J/.015U	.052U	.049U/.049	.026J/.048U	.040J/.049U	.047U/.048U	.037J	.032J	.041J	.029J	.032J	.015J	0.049U	-	-	.038J	0.13	-
Beta-BHC	.12J/.050U	.19/.15	.10/.050U	.13/.095	.053/.052	.052U	.049U/.065	.090U/.024J	.050U/.049U	.047U/.048U	.036J	.022J	.035J	.024J	.049U	.05U	0.028J	-	-	.045J	.048U	-
Gamma-BHC	.050U/.050U	.063J/.058U	.050U/.050U	.055U	.049U	.052U	.049U/.049U	.048U/.048U	.036J/.049U	.047U/.048U	.050U	.048U	.048U	.048U	.023J	.05U	0.049U	-	-	.025J	0.072	-
Delta-BHC	.050U/.050U	.061U/.058U	.050U/.053	.055U	.049U	.052U	.049U/.049	.048U/.048U	.050U/.049U	.047U/.048U	.050U	.034J	.048U	.048U	.025J	.05U	0.049U	-	-	.048U	.048U	-
Hexachlorobenzene	10U/10U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	10U	NR	NR	5U	NR	NR	NR	NR	4.7U	NR	NR

MONITOR WELL: MW-2

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.048U	.048U	.047U	.038J	.047U	0.048U	-	-	.048U	0.071	-
Beta-BHC	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.048U	.048U	.047U	.056U	.047U	0.048U	-	-	.048U	.049U	-
Gamma-BHC	.050U	.054U	.050U	.050U	.050U	.030J	.050U	.030J	.050U	.050U	.050U	.048U	.048U	.047U	.056U	.047U	0.048U	-	-	.048U	.031J	-
Delta-BHC	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.030J	.048U	.047U	.034J	.047U	0.048U	-	-	.048U	.049U	-
Hexachlorobenzene	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	10U	NR	NR	5U	NR	NR	NR	NR	NR	NR	NR

MONITOR WELL: MW-4

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U	.0069J	.050U	.050U	.049U	0.056	.048U	.048U	.047U	.047U	.049U	.041J	.042J	.025J	.03J	.048U	0.047U	NR	-	.49U	0.076	-
Beta-BHC	.050U	.047J	.041J	.033J	.049U	.026J	.048U	.037J	.047U	.036J	.022J	.044J	.033J	.047U	.037J	.048U	0.047U	NR	-	.49U	.048U	-
Gamma-BHC	.050U	.050U	.071J	.050U	.049U	.033J	.048U	.048U	.047U	.047U	.049U	.048U	.048U	.047U	.05U	.048U	0.047U	NR	-	.49U	.024J	-
Delta-BHC	.050U	.050U	.050U	.050U	.049U	.050U	.048U	.048U	.047U	.047U	.030J	.036J	.048U	.047U	.024J	.048U	0.047U	NR	-	.49U	.048U	-
Hexachlorobenzene	10U	NR	NR	NR	NR	NR	NR	9U	NR	NR	NR	10U	NR	NR	5U	NR	NR	NR	NR	4.9U	NR	NR

MONITOR WELL: MW-5

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U	.013J	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.032J	.041J	.026J	.035J	.017J	0.048U	NR	-	.030J	.047U	-
Beta-BHC	.050U	.022J	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.015J	.025J	.048U	.052U	.047U	0.048U	NR	-	.049U	.047U	-
Gamma-BHC	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.048U	.047U	.048U	.027J	.018J	0.048U	NR	-	.025J	.017J	-
Delta-BHC	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.030J	.047U	.048U	.031J	.0094J	0.048U	NR	-	.049U	.047U	-
Hexachlorobenzene	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	NR	NR	NR	5U	NR	NR	NR	NR	4.7U	NR	NR

Notes: Concentration in ug/l
- \- insufficient sample
- U Undetected
- J Estimated value
- NR Not required

TABLE 2
Charles Gibson Site
Niagara Falls, New York

ANALYTICAL SUMMARY

Annual Cayuga Creek Sediment Sampling 2001 - 2011

UPSTREAM

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Parameter	October*	September	September	September	September	September	September	September	September	September	September
Alpha- BHC	55	19/90	28/22J	80U/86J	23J	13	40	77	240	94	200J
Beta- BHC	49	37/76	48/30	20J/190	36	34	4.8	69	260	97	120J
Gamma- BHC	24	31/26	12J/28	23J/56J	15J	13	4.6	17J	18J	33J	190U
Delta- BHC	3.3J	5.8U/1.6U	1.9J/26U	80U/38J	26U	3.9J	3.7	26U	39J	52J	140J

DOWNSTREAM

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Parameter	October*	September	September	September	September	September	September	September	September	September	September
Alpha- BHC	55	19/90	28/22J	80U/86J	23J	8.3	NS	5200	210	53J	230J
Beta- BHC	49	37/76	48/30	20J/190	36	22	NS	1000	73	62J	130J
Gamma- BHC	24	31/26	12J/28	23J/56J	15J	11	NS	66J	60U	63U	220U
Delta- BHC	3.3J	5.8U/1.6U	1.9J/26U	80U/38J	26U	3.7J	NS	82J	32	56J	170J

Notes:
U Not Detected
J Estimated value
NS No sample in trap
* Sediment traps installed April 2001

Table 3

2011 Quarterly Groundwater Elevations Summary

Piezometer Pair	3/9/2011	Inward gradient	4/19/2011	Inward gradient	9/22/2011	Inward gradient	11/08/2011	Inward gradient
P1 outside **P2 inside**	565.05 565.49	Outward	565.50 565.48	Inward	565.54 565.28	Inward	565.33 565.41	Outward
P3 outside **P4 inside**	568.11 565.42	Inward	567.74 565.26	Inward	565.11 565.18	Outward	567.41 565.28	Inward
P5 outside **P6 inside**	569.75 567.88	Inward	569.46 567.77	Inward	567.27 567.09	Inward	568.77 567.53	Inward
		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl
Manhole A **Manhole B**	563.94 564.03	Yes Yes	564.01 564.15	Yes Yes	563.42 563.46	Yes Yes	563.32 563.40	Yes Yes

Notes: Measurement units are in feet above MSL.
Piezometers P1, P3, P5 are outside the slurry wall.
Piezometers P2, P4, P6 are located within the containment area.
NA – Not Available

Manhole monitoring:

- Maintain water level below 565 feet to prevent hydrostatic pressure buildup under concrete slab.
- Pump Manhole B as required to maintain an inward gradient.

Table 4
Olin Corp. Gibson Site
Discharge Volumes

Summary of Yearly Discharge Volumes

Date	Volume (gallons)
2001	20,855
2002	0
2003 (1)	5230
2004	65,082
2005	51,115
2006	52,891
2007	22,958
2008	40,223
2009	40,187
2010	28,118
2011	**40,625**
TOTALS	**367,284**

Monthly Discharge Volumes
2011

Month	Volume (gallons)
Jan	3,736
Feb	2,996
Mar	5,973
Apr	5,630
May	10,378
Jun	3,848
Jul	0
Aug	933
Sep	3770
Oct	0
Nov	0
Dec	3,361
Total	**40,625**

Notes:
(1) Pumped during test of system on 4/13/2003

Table 5

Annual Manhole B Sampling

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
ANNUAL LEACHATE SAMPLING

April 19, 2011

PARAMETER	MANHOLE B (MHB)
alpha-BHC	2.4U
beta-BHC	2.4U
delta-BHC	1.1J
gamma-BHC	2.4U
Hexachlorobenzene	NR

Notes:
U Undetected
J Estimated value
NR Not Required
Concentration in ug/l
Field blank was non-detect for all parameters of interest.
Data has been validated and judged acceptable as qualified.
Next hexachlorobenzene (HCB) sampling scheduled for September 2012

ATTACHMENT B

FIGURE 1
Charles Gibson Site
Niagara Falls, NY
with Sampling Locations

ATTACHMENT C

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 3/9/2011 TIME: 1:00

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): 1st Quarter Inspection

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: The site looked good, but it was still snow covered.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 4/29/2011 TIME: 0:00

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Check for wind damage

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	U	High winds knocked over wooden fence.
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: High winds overnight took out 160' of the wooden perimeter fence. I called Fox Fence and had them come out and erect a temporary emergency fence until they can get a crew out here to make permanent repairs to the wood fence and posts. This should happen early next week. The temporary fence was up and secure by 0930.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 5/2/2011 TIME: 800

INSPECTOR: Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Fence Repair

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Onsite with Fox Fence crew to repair the perimeter fence which was damaged during an earlier wind storm. The temporary fence from last week was still in place and the site looked good on arival. Today Fox removed the broken posts and panels and started to drill holes in the concrete supports for the new steel posts. This way we can strengthen the fence without any soil excavation.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 5/3/2011 TIME: 800

INSPECTOR: Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Fence Repair

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Onsite with Fox fence to continue with the repair of the perimeter fence. Fox finished drillin the holes in the concrete supports, Pounded in the steel posts and re-hung the wood fence panels on the posts to complete the fence. They also rebuilt the Man Gate near MH-B . The cleaned up the site of broken fence panels, rolled up the temporary emergency fence and left.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 6/15/2011 TIME: 800

INSPECTOR: Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Fence Repair

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Walker was on site today to add some wood planks to the lower portion of the perimeter fence . This was suggested by Mike Bellotti during his site vist. The additional planks will close a gap between the bottom of the fence and the ground.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 9/22/2011 TIME: 1215

INSPECTOR: Chris Jones COMPANY: Sevenson

WEATHER: Sunny 72f

REASON FOR INSPECTION (QUARTERLY OR OTHER): 3rd Quarter Inspection

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS:

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

OLIN CORPORATION
CHARLES GIBSON SITE, TUSCARORA RD. NIAGARA FALLS, NY

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 10/17/2011 TIME: 11:00AM

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Repair front gate

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	U	The latch holding the front gate was broken
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: I received a call from Steve Stepien notifying me that the front gate unlocked and open. I went to the site immediately for an inspection of the property. It looked like the bolts holding the latch and locking mechanism on the steel gate had been removed, the lock was still intact, but the gate was open. I did not find any broken bolts nearby. I then went to the shop and got what I neded to fix the gate and secure the property. A walking inspection did not reveal and damage or vandalism to the property.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 11/8/2011 TIME: 1000

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): 4th Quarter Inspection

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	Leaf Covered
COVER VEGETATION	A	Good, Green
TREES	A	Good.
LITTER	A	None
EROSION (CAP)	A	None
EROSION (BANK)	A	None

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: Site looked good.

ATTACHMENT D

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Jones
SAMPLED BY: Jones
COMPANY: Sevenson

SAMPLE ID: MHB_041911
SAMPLING EVENT/DATE: 4/19/2011
MONITORING WELL: ManHole B
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)

PURGE METHOD: grab
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.68	721	11	
2				
3				
4				
5				

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/19/2011

MEDIA: GROUNDWATER X
CREEK SEDIMENT

SAMPLE TIME: 1010

LOCATION: Manhole B, on Cap

SAMPLE METHOD: Grab sample using Pump with dedicated tubing

SAMPLING OBSERVATIONS: no

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: 2, 1 liter glass amber

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Jones
SAMPLE ID: MW-1R 041911 & MW7 041911
SAMPLED BY: Jones
SAMPLING EVENT/DATE: 4/19/2011
COMPANY: Sevenson
MONITORING WELL: MW-1R
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/19/2011

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

DEPTH TO BOTTOM FROM TOP OF RISER: 12.10 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 3.90 (FT.)
WATER COLUMN: 8.20 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.31 (GALS)

PURGE METHOD: 3 volumes
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME: 11:15 STOP TIME: 1130
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.69	815	11.7	Clear/ No Odor
2	7.58	835	12.1	Clear/ No Odor
3	7.51	841	12.2	Clear/ No Odor
4	7.47	850	12.3	Clear/ No Odor
5				

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/19/2011

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1135

LOCATION: MW-1R, Near tuscarora Rd.

SAMPLE METHOD: Pump with dedicated tubing.

SAMPLING OBSERVATIONS: Clear and No Odor.

QC SAMPLES TAKEN: Duplicate samples taken and labeled MW-7 for Lab QC

OTHER OBSERVATIONS/COMMENTS: 4, 1 liter glass amber total

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Jones
SAMPLED BY: Jones
COMPANY: Sevenson

SAMPLE ID: MW-2 041911
SAMPLING EVENT/DATE: 4/19/2011
MONITORING WELL: MW-2
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: 12.13 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 3.7 (FT.)
WATER COLUMN: 8.43 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.35 (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3 volumes
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME: 10:30 STOP TIME: 1043
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.19	1142	12.1	Clear/ No Odor
2	7.07	1089	12.4	Clear/ No Odor
3	7.05	1075	12.5	Clear/ No Odor
4	7.01	1070	12.5	Clear/ No Odor
5				

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/19/2011

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1045

LOCATION: MW-2, Adjacent to Autozone parking lot
SAMPLE METHOD: Pump with dedicated tubing.
SAMPLING OBSERVATIONS: Clear and No Odor.
QC SAMPLES TAKEN: MS/MSD
OTHER OBSERVATIONS/COMMENTS: 6, 1 liter glass amber

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{\text{SC measured}}{\{\{T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Jones
SAMPLE ID: MWA3-041911
SAMPLED BY: Jones
SAMPLING EVENT/DATE: 4/19/2011
COMPANY: Sevenson
MONITORING WELL: MW-A3
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/19/2011

DEPTH TO BOTTOM FROM TOP OF RISER: 11.95 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 10.99 (FT.)
WATER COLUMN: 0.96 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 0.15 (GALS)

PURGE METHOD: 3 volumes
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME 1420 STOP TIME: 1425
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.35	1159	11.9	Cloudy
2				
3				
4				
5				

TOTAL VOLUME PURGED: 0.10 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/19/2011

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1440

LOCATION: MW-A3, Behind Falls Motel on NF Blvd.

SAMPLE METHOD: The well went dry after 5 min. of purging. Waited for recharge then collected .

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: 2, 1 Liter amber glass.

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Jones
SAMPLE ID: MW4- 041911
SAMPLED BY: Jones
SAMPLING EVENT/DATE: 4/19/2011
COMPANY: Sevenson
MONITORING WELL: MW4
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/19/2011

DEPTH TO BOTTOM FROM TOP OF RISER: 13.75 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 7.28 (FT.)
WATER COLUMN: 6.47 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.04 (GALS)

PURGE METHOD: 3 volumes
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME 1320 STOP TIME: 1340
PURGE OBSERVATIONS: slightly yellow

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.51	940	13.1	yellow
2	7.31	958	13.2	yellow
3	7.28	967	13.3	Clearing
4	7.23	977	13.2	Clearing
5				

TOTAL VOLUME PURGED: 3 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/19/2011

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1345

LOCATION: MW4 behind Autozone

SAMPLE METHOD: Pump with dedicated tubing.

SAMPLING OBSERVATIONS: Slight Yellow then clearing

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: 2, 1 Liter amber glass.

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Jones **SAMPLE ID:** MW-5-041911

SAMPLED BY: Jones SAMPLING EVENT/DATE: 4/19/2011

COMPANY: Sevenson MONITORING WELL: MW-5

CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/19/2011

DEPTH TO BOTTOM FROM TOP OF RISER: 15.28 (FT.)

DEPTH TO WATER FROM TOP OF RISER: 7.26 (FT.)

WATER COLUMN: 8.02 (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= 1.28 (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-1R	12.10'
MW-2	12.13'
MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: 3 volumes
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME 12:15 STOP TIME: 1240
PURGE OBSERVATIONS: Clear/ slightly yellow

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.65	1301	11.6	Slightly Yellow
2	6.74	1325	11.7	Slightly Yellow
3	6.8	1320	11.6	Clearing
4	6.83	1334	11.8	Clearing
5				

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/19/2011

MEDIA: GROUNDWATER X SAMPLE TIME: 1245
CREEK SEDIMENT

LOCATION: MW-5, behind Auot zone, near pipe bridge

SAMPLE METHOD: Pump with dedicated tubing.

SAMPLING OBSERVATIONS: Slight Yellow

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: 2, 1 Liter amber glass.

Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC\ measured}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 4/19/2011 TIME: 920

INSPECTOR: Jones COMPANY: Sevenson

WEATHER: 35 F. Cloudy

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.22	565.5	
P-2	574.89	9.41	565.48	
P-3	574.16	6.42	567.74	
P-4	576.14	10.88	565.26	
P-5	575.05	5.59	569.46	
P-6	578.28	10.51	567.77	
MANHOLE A	575.22	11.21	564.01	
MANHOLE B	577.34	13.19	564.15	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS: