Honeywell

Honeywell 301 Plainfield Road Suite 330 Syracuse, NY 13212 www.honeywell.com

February 1, 2017

To: Harry Warner, NYSDEC, Region 7 (1 bound)
Diane Carlton, NYSDEC, Region 7 (1 PDF)
Holly Sammon, Onondaga County Public Library (1 bound)
Samuel Sage, Atlantic States Legal Foundation (1 bound)
Mary Ann Coogan, Camillus Town Hall (1 bound)
Stephen Weiter, Moon Library (1 bound)
Joseph J. Heath, Esq. (1 bound)
Ann Moore, Solvay Public Library (1 bound)

Re: Letter of Transmittal – Onondaga Lake Repository Addition

The below document has been approved by the New York State Department of Environmental Conservation (NYSDEC) and is enclosed for your document holdings:

 Construction Summary Report for Onondaga Lake Through 2015 January 2017

Sincerely,

John P. McAuliffe, P.E.

Program Director, Syracuse

Enc.

cc: Timothy Larson, NYSDEC Project Manager Chris Fitch, Brown and Sanford (ecopy)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau D 625 Broadway, 12th Floor, Albany, NY 12233-7013 P: (518) 402-9676 I F: (518) 402-9773 www.dcc.ny.gov

January 27, 2017

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Mr. John P. McAuliffe, P.E. Program Director, Syracuse Honeywell 301 Plainfield Road, Suite 330 Syracuse, NY 13212

Re: Construction Summary Report for Onondaga Lake through 2015, Dated January 2017

Dear Mr. McAuliffe:

We have received and reviewed the above-referenced report, a copy of which was attached to Tom Drachenberg's January 11, 2017 email to my attention, and the revised version of the report appropriately addresses our previous comments. Therefore, the Construction Summary Report for Onondaga Lake through 2015, dated January 2017, is hereby approved. Please see that copies of the approved report, including this approval letter, are sent to the distribution list selected for this site as well as the document repositories selected for this site.

Sincerely,

Timothy J. Larson, P.E. Project Manager

ec:

B. Israel, Esq, - Arnold & Porter J. Davis - NYSDOL, Albany M. Schuck - NYSDOH, Albany M. McDonald - Honeywell R. Nunes - USEPA, NYC M. Sergott - NYSDOH, Albany T. Drachenberg - Parsons



Department of Environmental Conservation

Honeywell

Honeywell 301 Plainfield Road Suite 330 Syracuse, NY 13212 www.honeywell.com

January 31, 2017

Mr. Timothy J. Larson New York State Department of Environmental Conservation Division of Environmental Remediation Remedial Bureau D 625 Broadway, 12th Floor Albany, NY 12233-7016

RE: Construction Summary Report for Onondaga Lake Through 2015 January 2017

Dear Mr. Larson:

Enclosed you will find one bound copy and one electronic (PDF and original) of the Construction Summary Report for Onondaga Lake Through 2015, dated January 2017.

Please feel free to contact Tom Drachenberg at 315-451-9560 or me if you have any questions.

Sincerely,

John P. McAuliffe, P.E.

John P. McAuliffe, P.E. Program Director, Syracuse

Enclosure

cc: Robert Nunes, USEPA (1 bound, 1 PDF) Argie Cirillo, USEPA (cover letter only) Mike Spera, AECOM (1 bound, 1 PDF) Bob Montione, AECOM (1 bound, 1 PDF) Margaret Sheen, Esq. NYSDEC (cover ltr only) Harry Warner, NYSDEC (1bound, 1 PDF) Mark Sergott, NYSDOH (1 PDF) Norman Spiegel, Env. Protection Bureau (cover ltr only) Andrew Gershon, Env. Protection Bureau (cover ltr only) John Davis, Env. Protection Bureau (1 bound, 1 PDF) Joseph Heath, Esq. (ec cover letter only) Thane Joyal, Esq. (1 PDF) Mr. Timothy Larson NYSDEC January 31, 2017 Page 2

cc: (Continued)

Curtis Waterman (1 PDF) Alma Lowry, Esq. (1 PDF) Jeanne Shenandoah, Onondaga Nation (1 bound plus ec cover letter only) Bill Hague, Honeywell (ec cover ltr only) Brian Israel, Arnold & Porter (1 PDF) Steve Miller, Honeywell (1 PDF)

CONSTRUCTION SUMMARY REPORT ONONDAGA LAKE THROUGH 2015

Prepared for:



Syracuse, NY 13212

Prepared by:

PARSONS

301 Plainfield Road, Suite 350 Syracuse, New York 13212 Phone: (315) 451-9560 Fax: (315) 451-9570

January 2017

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Figure 2 RA-B Capping Progress

Figure 3 RA-C Capping Progress

Figure 4 RA-D Capping Progress

Figure 5 RA-E Capping Progress

PARSONS

LIST OF ACRONYMS

CMU	capping management unit
CQAP	Construction Quality Assurance Plan
су	cubic yards
GAC	granular activated carbon
LGP	low ground pressure
MPC	modified protective cap
NMC	Ninemile Creek
NYSDEC	New York State Department of Environmental Conservation
QA/QC	quality assurance/quality control
QC	quality control
RA	Remediation Area

CONSTRUCTION SUMMARY REPORT ONONDAGA LAKE THROUGH 2015

1.0 INTRODUCTION

This construction summary report documents capping production for the Onondaga Lake remediation project completed through 2015, and summarizes enhancements that were implemented to further improve productivity, quality, and safety. The cumulative cap material volume placed by the end of 2015 is approximately 2,064,000 cubic yards (cy), which is slightly ahead of the design schedule. Capping operations in 2015 exceeded design volumes and capping is still projected to be completed within five years as originally planned.

2.0 CAPPING

This section summarizes the capping operational metrics through 2015 and projected 2016 values. It also summarizes the operational improvements that were made in 2015 and additional enhancements that will be considered for implementation in 2016.

2.1 2015 Capping Operational Metrics Summary

The capping operation achieved several key milestones through 2015, including:

- Placement and amendment dose verification of approximately 68 acres of granulated activated carbon (GAC) and siderite amended cap. Approximately 7 acres of amended cap remain to complete the final design amended cap plan area.
- Placement of approximately 711,000 cy of required cap material
- Placement of approximately 14 acres of completed topsoil area
- New York State Department of Environmental Conservation (NYSDEC) approval on 68 layer approval packages
- NYSDEC approval on 16 Capping Management Unit (CMU) approval packages, encompassing 117 acres

Capping operations from 2012 through 2015 resulted in the placement of approximately 2,064,000 cy of cap material over approximately 330 acres of lake bottom. Cap material was placed in Remediation Areas A, B, C, D, and E, and in the adjacent Ninemile Creek Spits, Wastebeds 1-8 connected wetlands, Wastebed B/Harbor Brook Outboard areas, and SMU 8 area, as presented in Figures 1 through 5. Capping activities in Remediation Area- (RA) F are planned for 2016. The overall planned and actual capping production through 2015 are summarized in the table below.

Metric	2015 Planned	Cumulative through 2015 Planned	2015 Actual	Cumulative through 2015 Actual
Capping Volume	551,000 cy	1,838,000 cy	704,000 cy	2,064,000 cy

The planned production rates for 2015, actual 2015 production rates, and planned production rates for hydraulic and mechanical capping in 2016 are presented in the table below. As shown, actual 2015 production rates for hydraulic operations was slightly below design projected production rates. To achieve the 2015 planned production volume for mechanical capping, an additional production unit, the Telestacker, as well as another mechanical unit were added.

Equipment	Materials	2015 Planned Production Rates	2015 Actual Production Rates	2016 Planned Production Rates
Hydraulic Capper (single capping unit)	Sand Sand / Siderite Sand / GAC	1,700 cy/day	1,689 cy/day	1,700 cy/day
Mechanical Capper (24 hr) Sennebogen (single capping unit)	Sand Gravelly Sand Sand / GAC Fine Gravel Coarse Gravel Gravelly Cobble Topsoil	1,700 cy/day	1,457 cy/day	1,200 cy/day
Telestacker Capper (single capping unit)	Fine Gravel Coarse Gravel Gravelly Cobble Topsoil	1,800 cy/day	1,244 cy/day	1,300 cy/day

2.2 2015 Capping Operational Improvements

Several process enhancements were implemented during the 2015 season to improve capping productivity. These process enhancements and modifications are summarized below.

• Mechanical Capping Operations –

• Mechanical capping operations continued working under a 24 hour/day schedule. A second mechanical unit started late in the fall to supplement the mechanical operations and continued for the remainder of the year. The second mechanical capping operation supported placement, and worked in areas requiring touch ups and re-grading to meet required Construction Quality Assurance Plan (CQAP) tolerances in RAs A, B (connected wetlands), D, and E.

- An additional placement process was instituted in September 2015 to ensure the planned production for 2015 was met. A mechanical unit used temporary roads constructed with weight dispersion mats to place topsoil in RA-A. The roads were floated above the topsoil and low ground pressure (LGP) trucks used the roads to bring topsoil to LGP – excavators then placed the topsoil. This means for cap installation allows the topsoil to be placed as required for acceptance, enabling habitat planting within these areas to be completed within the optimum schedule for plant survival.
- Use of Telestacker To address placement challenges associated with accessing areas with shallow water depths, a Telestacker was used. The Telestacker was able to place material in areas that would have been otherwise inaccessible with a hydraulic capper or mechanical placement equipment.
- Use of a Loading Area within Ninemile Creek (NMC) outlet for Mechanical Barges The loading area within Ninemile Creek outlet was used to load material barges for mechanical and telestacker cap placement in Remediation Area A. The loading of barges at this area reduced the barge travel time from the existing barge loading area at Remediation Area D.
- Improved quality control methods for cap verification The continuation of capping quality control practices used in 2014 have enabled the capping Quality Control (QC) team to verify, and submit for approval, capped areas in a more timely manner while continuing to maintain the same level of quality control/quality assurance (QC/QA). This gives the cap operations team more approved areas (i.e., ready for the next layer) and allows for more efficient scheduling of placement and equipment moves. These improved quality control practices include:
 - Vibracoring gravely sand and fine gravel materials
 - Use of tablets in the field to receive quality control targets from and send data to the office staff;
 - Predetermining passing heights for touch-up and sequential placement areas
 - Recording mechanical QC data using GPS and buckets on contractor equipment

In addition, the use of a remote control survey boat, called the Z-boat 1800, was instituted in 2015. The Z-boat is a high speed remotely operated hydrographic survey boat. Survey transect lines for the target area are laid out in advance, and programmed into the Z-boat's navigation software. This allowed for final elevation bathymetric surveys, required for final Capping Management Unit (CMU) approval, in very shallow water not accessible by pontoon boat. It also served to reduce the amount of manual pole shots and safety risks associated with QC/QA staff walking in shallow water.

2.3 Modified Protective Cap (MPC)

Movement of small areas of the cap in 2012 and 2014 (approximately 1.6 percent of the total capping area under the lake remediation program) necessitated collection of additional *in situ* data, and geotechnical analysis of the sediments. The data indicated localized areas where the underlying sediments were softer than previously identified in the pre-design investigation. For

these localized areas, MPCs were developed that are generally consistent with protectiveness from the final design, but designed with less overall cap thickness. MPCs for portions of RA-B and RA-D were approved and started in 2015.

2.4 2016 Planned Capping Productivity

The capping productivity realized in 2015 will be used as a target in projecting productivity for 2016. It is anticipated that the capping operations in 2016 will be similar to 2015. Capping operations are projected to be completed as originally scheduled in 2016.

2.5 2016 Planned Capping Operational Improvements

Additional enhancements are planned for the 2016 cap season. The enhancements are designed to further improve capping productivity and placement quality. These enhancements are described in detail below:

- Mechanical Capping Operations An additional mechanical unit will continue to be used to supplement the mechanical operations and continued capping for the remainder of the project. The second mechanical capping operation will support placement, touch-ups and re-grading to finish caps that have already been started by other operations in order to bring any areas of the cap outside the CQAP required elevation tolerance into compliance.
- **Topsoil Placement Operations** Additional crews and equipment will be utilized so topsoil placement can occur in multiple areas simultaneously. The 2016 goal will be to complete RA-A and RA-B as early in the season as possible, and start the outboard area as early as possible in order to complete topsoil placement in 2016.
- QC Efforts for Cap Finalization As all remaining cap areas are planned to be completed in 2016, rapid layer and CMU approval will be required to allow the Construction Management team to effectively manage placement operations and personnel. Enhancements to the approval process, including allocation of additional resources, will allow the QC team to focus on timely submission of cap layer and CMU approval packages in 2016. The intent is to more efficiently outline potential touchup areas, and/or obtain approval on cap areas.





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Feet		

CMU designations were modified for Remediation Area B during 2016 capping operations

Onondaga Lake Remediation Project

Remediation Area B End of 2015 Construction Season Cap Status Figure 2

Honevwell	DATE:	11/28/2016
PARSONS	CREATED BY:	Evan Sisson
Onondaga Lake	CHECKED BY:	T. Drachenberg
Syracuse, New York	FILE:	RAA Cap Status

301 PLAINFIELD RD, SUITE 350, SYRACUSE, NY 13212



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500	1,000	
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Remediation Area C End of 2015 Construction Season Cap Status Figure 3

Honeywell	DATE:	11/28/2016
PARSONS	CREATED BY:	Evan Sisson
Onondaga Lake	CHECKED BY:	T. Drachenberg
Syracuse, New York	FILE:	RAA Cap Status

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