

Providence Water Docket 4406

**Data Requests of the
Division of Public Utilities and Carriers
Set 1**

DIV 1-28. Please provide supporting documentation for the unit chemical prices shown on Schedule HJS-S8A.

Response: Attached is documentation showing the unit bid prices at which Providence Water is purchasing its treatment chemicals. The bid price for liquid ferric sulfate is quoted on a per pound basis. At the solution strength received, this equates to a cost of \$1.40 per gallon of solution.

Providence Water is presently in the process of soliciting new bids for chemicals and these prices may soon change.

City of Providence



Rhode Island

Department of City Clerk

MEMORANDUM

DATE: July 25, 2011

TO: Acting Purchasing Director

SUBJECT: LIQUID FERRIC SULFATE (BLANKET 2011-2013)-WATER SUPPLY BOARD.

CONSIDERED BY: Board of Contract and Supply

DISPOSITION: VOTED: that the Acting Purchasing Director be authorized to engage Kemira, 3211 Clinton Parkway, CT., Lawrence, Kansas 66047, low bidder, for Liquid Ferric Sulfate (Blanket 2011-2013), in a total amount not to exceed Three Million Five Hundred Thousand (\$3,500,000.00) Dollars for a two year period, all in accordance with the offer of said firm submitted on June 6, 2011.

cc: Pur.Dir.
Contr. ✓
WSB
File

A handwritten signature in black ink, appearing to read "A. M. [unclear]", positioned above the title "City Clerk".

City Clerk

PROVIDENCE WATER SUPPLY BOARD
 LIQUID FERRIC SULFATE BLANKET BID
 CONTRACT IS FOR 1.2 MILLION GALLONS/YEAR
 July 2011 - June 2013

BIDDERS: PENCCO LLC KEMIRA GENERAL CHEMICAL


BID MEET SPECS: NO BID YES YES

PRICE PER ANHYDROUS POUND
 July 2011 .2313/lb ← .3850/lb
 Through
 June 2013

TOTAL BID

RECOMMENDATIONS: Award to KEMIRA in the amount of \$3,500,000
 to supply ferric sulfate from July 11-June
 2013. (2.4 million gallons)

PREPARED BY: FREDERICK J. CROSBY
 MANAGER OF TREATMENT OPERATIONS
 JUNE 13, 2011



City of Providence



Rhode Island

Department of City Clerk

MEMORANDUM

DATE: April 23, 2012

TO: Acting Purchasing Director

SUBJECT: QUICKLIME FOR USE AT THE WATER TREATMENT PLANT
(BLANKET 2012-2013)-WATER SUPPLY BOARD.

CONSIDERED BY: Board of Contract and Supply

DISPOSITION: VOTED: that the Acting Purchasing Director be authorized to engage Univar USA Inc., 175 Terminal Road, Providence, RI 02905, low bidder, for Quicklime for use at the Water Treatment Plant (Blanket 2012-2013), in a total amount not to exceed One Million Seventy Two Thousand Two Hundred Fifty (\$1,072,250.00) Dollars, all in accordance with the offer of said firm submitted on March 26, 2012.

cc: Pur.Dir.
Contr.
WSB ✓
File

Anna M. [Signature]
City Clerk



CITY OF PROVIDENCE
STATE OF RHODE ISLAND
BOARD OF CONTRACT AND SUPPLY

BIDDERS BLANK

Name of Company:	Univar USA Inc.
Agrees to bid on: Items(s) to be bid	QUICKLIME FOR USE AT THE WATER TREATMENT PLANT FOR THE PROVIDENCE WATER SUPPLY BOARD (BLANKET 2012-2014)
Date of Award	
Total Amount in Writing:	One million seventy two thousand two hundred fifty dollars
Total Amount in Figures:	\$1,072,250.00

(\$214.45/ton) ←

Additional Bidding Details (Use Additional Pages if Necessary)

Federal ID# or Social Security #:	91-1347935
Signature:	
Title of Person signing:	Joseph McGonagle - General Manager
Firm Name:	Univar USA Inc.
Address:	175 Terminal Road - Providence, RI 02905
Phone #:	800-556-2426 or 401-784-6600
Delivery Date:	3 days
Name of Surety Company	Travelers Casualty & Surety Company of America

City of Providence



Rhode Island

Department of City Clerk

MEMORANDUM

DATE: June 6, 2011

TO: Acting Purchasing Director

SUBJECT: CHLORINE FOR USE AT THE WATER TREATMETN PLANT
(BLANKET 2011-2013)-WATER SUPPLY BOARD.

CONSIDERED BY: Board of Contract and Supply

DISPOSITION: VOTED: that the Acting Purchasing Director be authorized to engage JCI Jones Chemicals, Inc., 40 Railroad Avenue, Merrimack, NH 03054, sole bidder, for Chlorine for use at the Water Treatment Plant (Blanket 2011-2013), in a total amount not to exceed Three Hundred Fifty Two Thousand (\$352,000.00) for the 2 year period, all in accordance with the offer of said firm submitted on May 9, 2011.

cc: Pur.Dir.
Contr.
WSB ✓
File

A handwritten signature in black ink, appearing to be "A. J. ...", written over a horizontal line.

City Clerk

PROVIDENCE WATER SUPPLY BOARD
BLANKET BID FOR
CHLORINE GAS 220 TONS/YEAR
2011-2012, 2012-2013

BIDDERS: JONES CHEMICAL No other bidders.

Does bid conform
to specifications: Yes

COSTS:

Chlorine/ ton 2011/2012 \$800.00 ←

Chlorine/ ton 2012/2013 \$800.00 ←

Cost for site visit/cylinder removal \$300.00
2011/2012

Cost for site visit/cylinder removal \$300.00
2012/2013

RECOMMENDATION: Award bid to Jones Chemical at a cost of \$352,000. 00 for the period
of July 2011 - June 2013.
Award for a total of 440 tons during the contract period.

PREPARED BY: Frederick J. Crosby
Manager of Operations
05/16/11



REVIEWED BY: Michael A. Covellone
Director of Water Supply.



City of Providence



Rhode Island

Department of City Clerk

MEMORANDUM

DATE: June 6, 2011

TO: Acting Purchasing Director

SUBJECT: HYDROFLUOROSILICIC ACID FOR USE AT THE WATER TREATMENT PLANT (BLANKET 2011-2013)-WATER SUPPLY BOARD.

CONSIDERED BY: Board of Contract and Supply

DISPOSITION: VOTED: that the Acting Purchasing Director be authorized to engage Solvay Fluorides, 3333 Richmond Avenue, Houston, TX 77098, low bidder, for Hydrofluorosilicic Acid for use at the Water Treatment Plant (Blanket 2011-2013), in a total amount not to exceed Four Hundred Fifty Nine Thousand Two Hundred (\$459,200.00) Dollars for a two year period, all in accordance with the offer of said firm submitted on May 9, 2011.

cc: Pur.Dir.
Contr. /
WSB
File

City Clerk

PROVIDENCE WATER
Fluorosilicic Acid for use at the Water Treatment Plant
Blanket order July 2011 - June 2013
160,000 gallons of 23 percent acid

<p>Bidders:</p> <p>LCI Ltd PO Box 49000 Jacksonville Beach Florida 32240 800-578-7891, ext 124</p>	<p>Solvay Fluorides 3333 Richmond Ave Houston TX 77098 713-525-6862</p>	<p>Univar</p>	<p>PENNCO</p>
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<p>Price per ton</p>	<p>-----</p> <p>\$573.00</p>	<p>No Bid</p>	<p>-----</p>
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<p>Price per gallon of 23% solution</p>	<p>←</p> <p>\$2.87</p>	<p>No Bid</p>	<p>\$3.61</p>
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<p>Price per 160,000 gallons of 23% solution</p>	<p>\$459,200.00</p>	<p>\$577,600.00</p>
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Recommendation: Award contract to Solvay Fluorides in the amount of \$459,200.00 to supply fluoride (fluorosilicic acid) for the period of July 2011 - June 2013 for furnishing up to 160,000 gallons. This is a two year contract.

Prepared by: Fred Crosby
 Manager of Operations
 05/16/11



Approved by: Michael A. Covellone
 Director of Water Supply



City of Providence



Rhode Island

Department of City Clerk

MEMORANDUM

DATE: February 4, 2011

TO: Acting Purchasing Director

SUBJECT: BULK CARBON DIOXIDE FOR ALKALINITY ADJUSTMENT AT PHILIP J. HOLTON WATER PURIFICATION PLANT, SCITUATE PLANT (BLANKET CONTRACT JANUARY 2011-JANUARY 2013)- WATER SUPPLY BOARD.

CONSIDERED BY: Board of Contract and Supply

DISPOSITION: VOTED: that the Acting Purchasing Director be authorized to engage the following bidders, for Bulk Carbon Dioxide for Alkalinity Adjustment at the Philip J. Holton Water Purification Plant, Scituate Plant (Blanket Contract January 2011-January 2013), in a total amount not to exceed Six Hundred Thousand (\$600,000.00) Dollars, all in accordance with the offer of said firm submitted on January 3, 2011.

Praxair
7000 High Grove Blvd.
Burr Ridge, IL 60527

American Carbonation
19 2nd Street
PO Box 719 Palmer, MA 01069

cc: Pur.Dir.
Contr. ✓
WSB
File

Anne M. Johnston
City Clerk

City of Providence
Water Supply Board
Specifications for Carbon Dioxide
For use at the
Philip J. Holton Water Purification Plant
Blanket Bid (2011-2013)
3300 Tons Per Year

BIDDERS:	PRAXAIR	AMERICAN CARBONATION CORP
	7000 High Grove Blvd Burr Ridge IL 60527	19 Second Street PO Box 719 Palmer Industrial Park Palmer, Mass 01069
	630-320-4460 Attn Rose Kendall	603-425-2500 Attn Tim Koerner

BID COMPARISON:

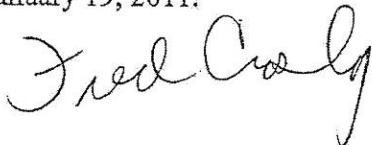
Price/Ton 2011/2012	\$106.30	\$128.00 ←
Price/Ton 2012/2013	\$109.00	\$130.00 ←

NSF Certified	Yes	No 8 – 10 week application process.
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Inspection Fee	Yes \$500.00 One time fee	None
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Recommendation: Since CO2 is a brand new treatment process, with many unknowns, award to both bidders. Praxair would be the primary vendor and American Carbonation would serve as a backup vendor in the event that Praxair would be unable to supply product. This would be a 2 year contract. Not to exceed \$600,000

Fred J. Crosby
January 19, 2011.



Providence Water Docket 4406

**Data Requests of the
Division of Public Utilities and Carriers
Set 1**

DIV 1-29. Please provide complete supporting documentation, including any studies or analyses for the claimed increase in sludge disposal costs from \$552,692 to \$1,700,000 per year.

Response: In 2004, PW entered into a 15-year contract with the firm of Synagro for ongoing sludge removal and disposal services, based on a unit bid price per dry ton of sludge. The contract and budget were based on projections at that time of the estimated quantity of sludge that would be produced from PW's treatment operations. The removal and disposal operations were structured in 3-year cycles, with a single, fixed, payment being due in each of the first two years of the cycle, and a third payment being due at the end of the third year of the cycle which would be computed as the remaining balance due for the three year cycle of sludge removal and disposal, based on the actual quantity of sludge that ended up being handled. Attached is a copy of that contract that shows the payment schedule and mechanism that had been established.

As the contract proceeded, it turned out that the amount of sludge that had to be removed from the lagoons significantly exceeded what had been previously estimated. As a result, payments due in the third year of each cycle greatly exceeded what had been expected and budgeted for. Attached is a table that compares the sludge volume and the cleaning and disposal costs that had been anticipated under the original contract with what was actually experienced.

Providence Water Docket 4406

**Data Requests of the
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As a result, PW renegotiated the sludge removal contract with Synagro, based on new projections of actual sludge production. A new amended contract was entered into on November 29, 2012, a copy of which is attached. Under this contract, PW negotiated a lower unit cost for sludge handling. The contract included sludge removal and disposal services over the ensuing 10-year period, with the quantity of sludge to be removed over this period to include the 22,000 tons of sludge that still remained in the lagoons, plus an estimated ongoing sludge production of 3,500 tons per year. The spreadsheet table shown on the second to the last page of the new contract shows the financial analysis performed to arrive at the new payment terms of \$1,691,985.70 per year.

THIS AGREEMENT

MADE and concluded this 26th day of January A. D. 2004, by and between the CITY OF PROVIDENCE, a municipal corporation created by the General Assembly of the State of Rhode Island, in the County of Providence, in said State, party of the first part; and, **Synagro Northeast, Inc., 199 Municipal Road, Waterbury, CT**, party of the second part, WITNESSETH, that the said party of the second part, in consideration of the promises and agreements herein mutually entered into, both for itself and for its Successors and Assigns, promise and agree to and with the said City that it; the said party of the second part shall and will in a good and workmanlike manner, and to the satisfaction of the Chief Engineer of the Providence Water Supply Board (PWSB), to be expressed in writing by said officer, at its own proper cost and expense, do and perform all the work, and furnish all the materials which may be required by the Providence Water Supply Board, to wit **Maintenance Related Construction Services Associated with the Removal and Disposal of Water Treatment Residuals from Providence Water's Sludge Lagoon System Located adjacent to Philip J. Holton Purification Plant in Scituate, RI for the Providence Water Supply Board** in accordance with the Contract Documents (as hereinafter defined), hereto annexed and made a part hereof, IN AN AMOUNT NOT TO EXCEED **Twenty Three Million Fifty Six Thousand Five Hundred Eighty Two (\$23,056,582.00) Dollars**, unless otherwise agreed, which will be received and payable as follows: **Payment will be made for work assigned and performed**

to the satisfaction of the Providence Water Supply Board in accordance with the provisions of the Contract Documents.

That said party of the second part, its Successors and Assigns, shall and will hold said City harmless, saved and indemnified from and against all loss, cost, damage and expense on account of all mechanics' liens, and all other liens, arising out of the services performed under this Agreement and also on account of any and all other lawful claims and demands for work done or materials furnished by sub-consultants and suppliers to party of the second part under this Agreement. And also, that all work to be done under this Contract on the part of said party of the second part shall be fully completed and performed

Fifteen (15) years from notice to proceed, unless modified in accordance with the Contract Documents.

The said party of the second part, its Successors and Assigns, acknowledge, understand and agree to perform the obligations enumerated under this Contract, subject to the provisions of Section 1006(d) of the Providence Home Rule Charter of 1980, which provides that this Contract or any purchase order for payment on this Contract shall be void and of no effect and that the City shall be under no obligation hereunder unless there is compliance with Sections 813(b)(3) and 1007(c)(2) of said Charter. Said sections require that prior to entering into this Contract or delivering any purchase order, the Board of Contract and Supply and the City Controller, respectively, shall each have ascertained that there exists a sufficient unexpended and unencumbered balance in funds appropriated and allotted for the purpose to justify the cost thereof.

The said party of the second part, its Executors, Administrators, Successors and Assigns, further acknowledge, understand and agree that all City Contracts for purchase of materials, supplies, services, equipment and property, which include a cost per unit shall also include a maximum cost for the Contract, and such

maximum cost shall be used by the Board of Contract and Supply and the City Controller for compliance with Sections 813(b)(3) and 1007(c)(2) of the Providence Home Rule Charter of 1980.

And said City, party of the first part, and said party of the second part will faithfully perform said Contract in all its parts, and satisfying said City that no liens or other claims for labor done or materials furnished in the aforesaid work exist, will pay therefore the aforesaid sum, to be in full satisfaction of all claims and demands therefore, and which sum will be paid in manner aforesaid.

And it is hereby understood and agreed that no payment for extra work shall or will be claimed or made unless in writing by the Board of Contract and Supply of said CITY OF PROVIDENCE.

In addition to this document, the additional Contract Documents which shall constitute this Contract shall include the following:

- (a) **Amendments, Modifications and Change Orders to This Agreement, executed after execution of This Agreement**
- (b) **Exhibit I, Synagro's Proposal**
- (c) **Exhibit II, First Amendment to This Agreement**
- (d) **Exhibit III, Request for Proposals, with Document 00700, "General Conditions", as amended, taking precedence over all other terms stated in the Request for Proposals.**
- (e) **Exhibit IV, Terms and Conditions**
- (f) **Exhibit V, Rhode Island General Law 37-13-1 thru 37-13-13**

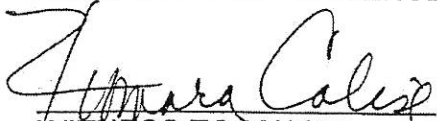
(g) Exhibit VI, Certificate of Insurance

(h) Exhibit VII, Performance Bond

Said additional documents shall be interpreted in the order of priority listed above. The most recent executed addendum shall have the greatest priority.

IN WITNESS WHEREOF, the parties hereto have signed and executed these presents, the CITY OF PROVIDENCE, by DAVID M. CICILLINE, the Mayor thereof, hereunto duly authorized, at said Providence, Rhode Island, on the day and year first above written.

SIGNED IN THE PRESENCE OF:


WITNESS TO MAYOR

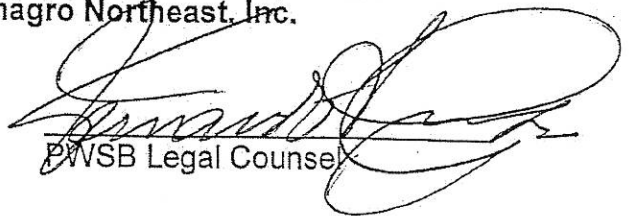

CITY OF PROVIDENCE
MAYOR AND CHAIRMAN


WITNESS

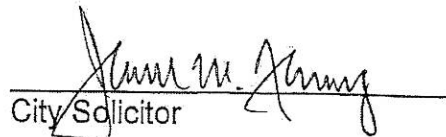

J. Paul Withrow, Vice President

Synagro Northeast, Inc.

Approved as to form and correctness


PWSB Legal Counsel

Approved as to form and correctness


City Solicitor

FIRST AMENDMENT

TO

AGREEMENT BETWEEN CITY OF PROVIDENCE, RHODE ISLAND

AND SYNAGRO NORTHEAST, INC.

DATED January 26, 2007,

REGARDING

MAINTENANCE RELATED CONSTRUCTION SERVICES ASSOCIATED
WITH THE REMOVAL AND DISPOSAL OF WATER TREATMENT
RESIDUALS FROM PROVIDENCE WATER'S SLUDGE LAGOON SYSTEM
LOCATED ADJACENT TO PHILIP J. HOLTON PURIFICATION PLANT IN
SCITUATE, RI FOR THE PROVIDENCE WATER SUPPLY BOARD

THIS FIRST AMENDMENT (the "First Amendment") to AGREEMENT BETWEEN CITY OF PROVIDENCE, RHODE ISLAND AND SYNAGRO NORTHEAST, INC. DATED _____, 20____, REGARDING MAINTENANCE RELATED CONSTRUCTION SERVICES ASSOCIATED WITH THE REMOVAL AND DISPOSAL OF WATER TREATMENT RESIDUALS FROM PROVIDENCE WATER'S SLUDGE LAGOON SYSTEM LOCATED ADJACENT TO PHILIP J. HOLTON PURIFICATION PLANT IN SCITUATE, RI FOR THE PROVIDENCE WATER SUPPLY BOARD (the "Agreement") is hereby entered on the _____ day of _____, 20____, by and between the CITY OF PROVIDENCE, a municipal corporation created by the General Assembly of the State of Rhode Island, in the County of Providence, in said State (the "City") and Synagro Northeast, Inc., a Delaware corporation, 199 Municipal Road, Waterbury, CT ("Contractor").

RECITALS

WHEREAS, the City of Providence, RI, through the Providence Water Supply Board, issued a Request for Proposals (the "RFP") regarding maintenance related construction services associated with the removal and disposal of water treatment residuals from Providence Water's sludge lagoon system in Scituate, Rhode Island; and

WHEREAS, Synagro submitted a proposal in response to the RFP and was chosen by the City as the preferred proposer; and

WHEREAS, Synagro and the City now desire to enter into a binding contract as to the maintenance related construction services associated with the removal and disposal

of water treatment residuals from Providence Water's sludge lagoon system in Scituate, Rhode Island; and

WHEREAS, the parties have mutually agreed to the contents of the Contract Documents and have agreed that such terms shall include the terms stated in this First Amendment;

NOW THEREFORE, in consideration of mutual promises made and received, the sufficiency of which are mutually acknowledged, the parties agree as follows:

1. The terms of this First Amendment shall take precedence over any other conflicting term stated in the Agreement, except for terms included in Synagro's proposal or terms stated in amendments, modifications or change orders which are executed after the date of this First Amendment.
2. The following provisions shall be added to the Agreement:

SCOPE OF CONTRACTOR'S WORK

S.1 *Location of the Work.* All work described herein shall take place at three sludge lagoons located approximately southwest of the Philip J. Holton Purification Plant (PJHPP) on Route 116 in Scituate, Rhode Island. All work shall be limited to that general area. These sludge lagoons are in a remote area and are not serviced by utilities.

S.2 *Scope of the Work.*

S.2.1 The Work includes all labor, material, equipment and incidentals as identified in Exhibit I, or, if not set forth in Exhibit I, as set forth in other Contract Documents, necessary to complete the following:

S.2.1.1 Remove and dispose of water treatment residuals accumulated in Lagoon 1a and Lagoon 1b under a 15-year maintenance contract. The Work shall be carried out in consecutive three-year cycles. In Year 1 of any cycle, all residual material shall be removed from a Lagoon. In Year 2 of any cycle, all residuals removed from the Lagoon shall be maintained in the drying area. In Year 3 of any cycle, all residuals which have been dried shall be removed from the site for disposal. Once all residuals are removed from the site at the end of any three-year cycle, the next three-year cycle can begin. The first three-year cycle shall begin upon the Commencement Date with the removal of all residuals from Lagoon 1a. The second three-year cycle shall begin with the removal of all residuals from Lagoon 1b. Residuals shall again be removed from Lagoon 1a in Cycle 3, from Lagoon 1b in Cycle 4, and so on. Contractor shall adhere to specifications for the Work

set forth in Section 11366 ("Residuals Dredging, Dewatering and Disposal"). Analytical testing shall be performed as set forth in Exhibit I, and Section 11367 ("Performance Monitoring and Analytical Testing").

S.2.1.2 Contractor shall not be responsible for the removal of residuals collecting in Lagoons 1a and 1b after Cycle 6 excavation has occurred (see schedule below in Section 12.3.1.2).

S.2.1.3 Remove and dispose of accumulated sludge in Lagoon 2 within a five (5) year span beginning in Year 1 of the Contract, including, but not limited to, the following items:

S.2.1.3.1 Clear the perimeter of the lagoon of all trees and vegetation as was previously done on Lagoons 1a and 1b from the edge of the wetted area to the surveyed Elevation 220. See Section 02232 ("Clear and Grub Lagoon 2").

S.2.1.3.2 Plant grass upon finishing of the sludge removal work. See Section 02485 ("Turf Establishment").

S.2.1.3.3 Restore the original channel between Lagoons 1b and 2 by dredging all existing residuals as may be required. See Section 02327 ("Channel Excavation").

S.2.1.3.4 Provide a level and smooth bottom in Lagoon 2 by removing all trees, stumps, earth and rocks as may be necessary.

S.2.1.3.5 Make improvements to the access road that runs along the perimeter of Lagoons 1b and 2. The road shall be graded and improved from its beginning at Lagoon 1b to where it terminates across from the PJHPP's main electrical substation. Improvements may require bringing in fill material. See Section 02328 ("Repair Gravel Access Road").

S.2.1.3.6 Minimize the adverse impact on the site and environment to remain in compliance with all wetlands and RIPDES permits throughout the Contract term. It is the Contractor's responsibility to conduct these operations in a manner to comply with all permits.

S.2.1.3.7 Contractor shall adhere to specifications set forth in Section 11366 ("Residuals Dredging, Dewatering and Disposal"). Analytical testing shall be performed as set forth in Exhibit I, and Section 11367 ("Performance Monitoring and Analytical Testing").

S.2.1.3.8 Contractor's work hours shall be 7 a.m. to 5 p.m. Monday through Friday. Additional work hours shall only be allowed if Contractor has obtained Owner's prior written approval.

S.3 *Drying Areas.*

S.3.1 The Contractor may clear and prepare a drying area where the residual material shall be stored and dewatered, as set forth in the Contract Documents.

S.3.2 A filter barrier as approved by RIDEM shall be erected around the complete perimeter of the drying area prior to placement of any wet residual material. The filter barrier shall consist of silt fence barrier backed by a hay bale erosion check barrier. No point discharge or direct conveyance of runoff will be allowed from this area unless directly into Lagoon 2.

S.3.3 Access to the drying area in the form of a ramp or other access drive shall be installed and maintained throughout the duration of the Contract and shall be repaired and/or modified as necessary by the Contractor to better meet the changing conditions of the work.

S.4 *Quality Control.* Quality control and assurance shall be as set forth in Exhibit I, and otherwise as set forth in the Contract Documents.

3. The following changes shall be made to Section 00700 "General Conditions":

A. The following sections shall be added to Article 1 – "Definitions":

1.27 *Capital Costs* – Those costs incurred by the Contractor to design, construct, rehabilitate and re-initiate the Facilities, including, but not limited to, engineering, equipment purchase and installation, start up and testing, building modifications and other work, including work necessary to obtain and maintain required permits and, generally, all expenses incurred by the Contractor with respect to the Work.

1.28 *Change in Law* – Any of the following acts, events or circumstances to the extent that compliance therewith increases the cost of performing or increases the scope of the party's obligations hereunder:

(i) the adoption, amendment, promulgation, issuance, modification, repeal or written change in administrative or judicial interpretation of any Laws and Regulations, unless such Laws and Regulations were on or prior to the date of this Contract duly adopted, promulgated, issued or otherwise officially modified or changed in interpretation, in each case in final form, to become effective without any further action by any governmental body;

- (ii) the order or judgment of any governmental body issued on or after the date of this Contract (unless such order or judgment is issued to enforce compliance with any Laws and Regulations which were effective as of such date) to the extent such order or judgment is not the result of willful or negligent action, error or omission or lack of reasonable diligence of the Contractor or of the Owner, whichever is asserting the occurrence of a Change in Law; provided, however, that the contesting in good faith or the failure in good faith to contest any such order or judgment shall not constitute or be construed as such a willful or negligent action, error or omission or lack of reasonable diligence; or
- (iii) the imposition of a term, condition or requirement which is more stringent or burdensome than the Contract terms, or than any Laws and Regulations as of the date of this Contract, in connection with the issuance, renewal or failure of issuance or renewal of, any governmental approval to the extent that such occurrence is not the result of willful or negligent action, error or omission or a lack of reasonable diligence of the Contractor or of the Owner, whichever is asserting the occurrence of a Change in Law; provided, however, that the contesting in good faith or the failure in good faith to contest any such occurrence shall not be construed as such a willful or negligent action or lack of reasonable diligence.
- (iv) any change in federal, state or municipal law or regulation, or from any federal, state or municipal agency or judicial action, shall constitute a "Change in Law."

1.29 *Engineer* – A licensed professional engineer employed by the Owner, at the Owner's sole expense.

1.30 *Facilities* - Three sludge lagoons located approximately southwest of the Philip J. Holton Purification Plant (PJHPP) on Route 116 in Scituate, Rhode Island.

1.31 *Site* – The sludge lagoon system owned by Owner and located adjacent to the Philip J. Holton Purification Plant in Scituate, Rhode Island.

1.32 *Uncontrollable Circumstances* – Any act, event or condition that is beyond the reasonable control of the party relying thereon as justification for not performing an obligation or complying with any condition required of such party under this Contract, and that interferes with or increases the costs of, the performance of its obligations hereunder to the extent that such act, event or condition is not the result of the willful or negligent act, error or omission, failure to exercise reasonable diligence, or breach of this Contract on the part of such party.

Uncontrollable Circumstances shall include, and shall not be limited to, the following:

- (i) a Change in Law;
- (ii) the existence of unknown pre-existing environmental conditions, conditions of archeological significance, endangered species and like conditions requiring delay or change in the work;
- (iii) contamination of the Site or the Facility from groundwater, soil or airborne hazardous material migrating from sources outside of the Site or the Facility and not caused by the Contractor's negligence or willful misconduct;
- (iv) naturally occurring events (except weather conditions normal for the area of the Site) such as landslides, underground movement, earthquakes, fires, tornadoes, hurricanes, floods, lightning, epidemics and other acts of God;
- (v) explosion, sabotage or similar occurrence, acts of a declared public enemy or terrorist, extortion, war, blockade or insurrection, riot or civil disturbance;
- (vi) labor disputes, except labor disputes involving employees of the Contractor, which affect the performance of the Work;
- (vii) the failure of any subcontractor (other than the Contractor, or any affiliate of Contractor) to furnish services, materials, chemicals, or equipment on the dates agreed to, but only if such failure is the result of an event which would constitute an Uncontrollable Circumstance if it affected the Contractor directly, and the Contractor is not able after exercising reasonable efforts to timely obtain substitutes;
- (viii) the failure of any appropriate governmental body or private utility having operational jurisdiction in the area in which the facility is located to provide and maintain utilities to the Facility which are required for the performance of the Work;
- (ix) any failure of title to the Site or any placement or enforcement of any encumbrance on the Site not consented to in writing by, or arising out of any action or agreement entered into by, the party adversely affected thereby;
- (x) the preemption, confiscation, diversion, destruction or other interference in possession or performance of materials or services by a governmental body in connection with a public emergency or any condemnation or other taking by eminent domain of any material portion of the Site;
- (xi) a violation of any Laws and Regulations by a person other than the affected party or its subcontractors;

- (xii) with respect to the Contractor, any default of the Owner under the Contract;
- (xiii) with respect to the Owner, any default of the Contractor under the Contract; and
- (xiv) the suspension, termination, interruption, delay in issuance or delay in renewal by any governmental body of any permit, license, consent or authorization affecting the obligations of the Contractor under the Contract, except if caused by the willful or negligent action, error or omission or a lack of reasonable diligence of the Contractor or of the Owner, whichever is asserting the occurrence of an Uncontrolled Circumstance.

1.33 *RIDEM* – shall mean the Rhode Island Department of Environmental Management.

1.34 *RIPDES* – shall mean Rhode Island Pollutant Discharge Elimination System.

B. The following sections of Article 1 – “Definitions” shall be replaced with the definitions appearing below:

1.9 *Contract Documents* - The Contract Documents consist of this Agreement, any Addenda, and Exhibits attached this Contract. Contract Documents do not include other documents not attached to this Contract, unless otherwise specifically stated.

1.10 *Contractor* – Synagro Northeast, Inc.

1.11 *Contract Price* - The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents.

1.12 *Contract Times* - The dates for performance of the Work as stated in this Contract.

1.17 *Owner* – The City of Providence, Rhode Island, acting through its Providence Water Supply Board, and/or its authorized representative.

1.18 *Project* - The total construction, operation and maintenance for which the Work to be provided under the Contract Documents is the whole.

1.23 *Substantial Completion* – intentionally deleted.

1.26 *Work* - The entire completed construction, operation and maintenance or the various separate identifiable parts thereof required to be furnished under the Contract Documents, including, but not limited to, the work set forth in Exhibit I of the Agreement and Article S of the First Amendment. Work includes and is

the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the Project, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

C. Section 2.3.1 of Article 2 – “Preliminary Matters” shall be deleted in its entirety and replaced with the following:

2.3.1 *Commencement of Contract Times; Notice-to-Proceed.* Unless otherwise specified, the Contract Times will commence to run on the Commencement Date specified in the Notice-to-Proceed. The Notice-to-Proceed shall be issued immediately upon execution of this Agreement and shall specify a proceed date within five (5) days of the date of the Notice to Proceed, which date shall be called the Commencement Date.

D. The following sections shall be added to Article 4 – “Availability of Lands; Subsurface and Physical Conditions; Reference Points”:

4.2 *Access.* Access to the sludge lagoons shall be through a gate located on the west side of Route 116 just southwest of the purification plant. Vehicle parking and office trailer shall be in locations indicated by Owner.

4.3 *Hazardous Waste.* Should the Contractor, while performing work under this Contract, uncover hazardous material, as defined in the Rhode Island Hazardous Waste Regulations, the Contractor shall immediately notify the Owner. The Contractor is not, and has no responsibility to act as, a handler, generator, operator or disposer of hazardous substances found or identified at the site, and the Owner shall undertake all such functions.

E. Section 5.1.1 shall be modified as follows. The first sentence shall be deleted and shall be replaced with the following sentence:

The Contractor shall furnish a one year performance bond in an amount of \$750,000, which bond shall renew annually for the Term of this Agreement, as security for the faithful performance of the Contractor’s obligations to perform Work relative to Lagoons 1a and 1b.

F. The following sections shall be added to Article 6 – “Contractor’s Responsibilities”:

6.7.2 The Contractor shall monitor discharge to the Pawtuxet River, either at the discharge point in Lagoon 1b or Lagoon 2 depending on the mode of operation of the lagoon system at a given time, on a weekly basis during dredging and dewatering operations and shall comply with all Regulations, Permit Requirements, etc., as they relate to the weekly monitoring of discharge from the lagoon. The discharge shall be monitored for flow, total suspended solids and pH by a State Certified Laboratory. The cost of

the monitoring shall be borne by the Contractor. Results of the monitoring shall be submitted to the Owner on a weekly basis.

- 6.7.3 The penalty for not meeting discharge requirements shall be liquidated damages in the amount of any fine levied by state and federal authorities for non-compliance. This amount shall be paid to the Owner to offset fines associated with failing to meet permit requirements.

Section 6.22 shall be deleted in its entirety and replaced with the following:

- 6.22.1 The Contractor warrants to the Owner that all Work will be in accordance with the Contract Documents and will not be defective. The Contractor's sole obligation for warranty under this Agreement shall be limited to repair or replacement, at its own option and expense, of any non-conforming portion of the Work, provided that such defect becomes manifest within one year of the completion of such portion of the Work. The Contractor warranty hereunder excludes defects or damages caused by: (i) abuse, modifications or improper maintenance or operation by persons other than the Contractor, subcontractors or suppliers; (ii) failure to operate or maintain the Work in accordance with generally approved industry practice; (iii) use of the Work in connection with any mixture or substance or operating condition other than that for which it was specifically intended; (iv) intentional or accidental damage caused, or improper repair or modification performed, by any party other than the Contractor; or (v) normal wear and tear under normal usage.
- 6.22.2 The warranty set forth in this Section 6.22 is exclusive and in lieu of all other warranties, whether written, oral, implied or statutory for claims based on defects in design, material or workmanship, whether said claims are designated as arising in contract, warranty, tort (including negligence), strict liability, or otherwise, and whether arising before or after delivery, however instituted. NO STATUTORY, EXPRESS, OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY TO THE WORK UNDER THIS CONTRACT.

Section 6.24 shall be deleted in its entirety and replaced with the following:

- 6.24.1 Except as may be limited by Sections 6.24.2 below, the Contractor shall indemnify and hold harmless the Owner and its officials, agents and representatives from and against all losses, costs, damages and expenses (including reasonable attorney's fees) arising out of or relating to bodily injury (including death) or property damage and threatened or asserted against the Owner, and its officials, agents and representatives, if relating to any negligent act or omission, or the fault, of the Contractor with respect to the Work from and after the effective date of this Agreement,

except to the extent of any negligent act or omission, or the fault, of the Owner, or its officials, agents, contractors or representatives.

6.24.2 Notwithstanding any other provision to the contrary in this Agreement, but exclusive of any policies or proceeds of insurance of which Contractor is an insured and which is or are applicable to any claim arising out of or in connection with this Contract or the Work, in no event shall the total cumulative liability of the Contractor to the Owner or any other person under this Contract for any claim of any kind for any losses, damages, or expenses, exceed twenty-five (25) percent of the Contract Price.

G. Section 12.3 shall be deleted in its entirety and replaced with the following:

12.3 *Payments*

12.3.1 *Lagoon IA and IB:*

12.3.1.1 *Narrative Description.* Payment for maintenance services (dredging, drying, removal and utilization of residuals) during each three-year cycle of Work, as such cycles are described in Article S, Section S.2.1.1, shall be invoiced and paid as follows. Contractor shall generate an invoice for services one time annually at the time indicated in the chart appearing in Section 12.3.1.2. Payments on all invoices shall be paid by the Owner within thirty (30) days of Owner's receipt of any invoice. Payment for services is based on the total number of dry tons of residuals removed from the drying bed during each three year cycle as shown in Section 12.3.1.2. Residuals are assumed to reach a minimum of 22% solids prior to removal from the drying bed.

12.3.1.2 *Billing Chart.* Fees for the services indicated shall be invoiced in accordance with the following chart:

Year	Dry Ton Service Fee	Lagoon / Service	Billing Date	Billing Amt.
<i>Cycle 1:</i>				
Year 1	\$279.21	1a / Excavation	Completion of excavation	\$400,000.00
Year 2	\$279.21	1a / Drying & Disposal	September 30, Year 2	\$550,000.00
Year 3	\$279.21	1a / Drying & Disposal	Completion of removal from drying bed	Lagoon 1a fee calculated per Section 12.3.1.4
<i>Cycle 2:</i>				
Year 1	\$290.56	1b / Excavation	Completion of excavation	\$500,000.00
Year 2	\$290.56	1b / Drying & Disposal	September 30, Year 2	\$520,000.00

Year 3	\$290.56	1b / Drying & Disposal	Completion of removal from drying bed	Lagoon 1b fee calculated per Section 12.3.1.4
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Dry Ton

<u>Year</u>	<u>Service Fee</u>	<u>Lagoon / Service</u>	<u>Billing Date</u>	<u>Billing Amt.</u>
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Cycle 3:

Year 1	\$304.18	1a / Excavation	Completion of excavation	\$520,000.00
Year 2	\$304.18	1a / Drying & Disposal	September 30, Year 2	\$550,000.00
Year 3	\$304.18	1a / Drying & Disposal	Completion of removal from drying bed	Lagoon 1a fee calculated per Section 12.3.1.4

Cycle 4:

Year 1	\$326.88	1b / Excavation	Completion of excavation	\$550,000.00
Year 2	\$326.88	1b / Drying & Disposal	September 30, Year 2	\$590,000.00
Year 3	\$326.88	1b / Drying & Disposal	Completion of removal from drying bed	Lagoon 1b fee calculated per Section 12.3.1.4

Cycle 5:

Year 1	\$340.50	1a / Excavation	Completion of excavation	\$590,000.00
Year 2	\$340.50	1a / Drying & Disposal	September 30, Year 2	\$615,000.00
Year 3	\$340.50	1a / Drying & Disposal	Completion of removal from drying bed	Lagoon 1a fee calculated per Section 12.3.1.4

Cycle 6:

Year 1	\$340.50	1b / Excavation	Completion of excavation	\$615,000.00
Year 1	\$340.50	1b / Drying & Disposal	Completion of removal from drying bed	Lagoon 1b fee calculated per Section 12.3.1.4

12.3.1.3 *Rebate Percentage (Rebate %).* If the average solids concentration of the residuals removed from the drying bed during any three year cycle exceeds 22% solids, the Owner shall be entitled to a rebate as follows:

Average Solids Concentration Of Residuals Removed	Rebate: (stated as a % of 2/3 of the Unadjusted Billing Amount)
25%	1%
30%	2%
35%	4%

40%	5%
45% and above	7%

12.3.1.4 *End of Cycle Fee Calculation.* The amount to be invoiced and paid at the end of any three-year cycle of services shall be calculated as follows:

12.3.1.4.1 *Definitions.*

Unadjusted Billing Amount =
(Total Dry Tons Removed from Drying Bed x Dry Ton Service Fee)

Service Fee Solids Adjustment =
(2/3 x Unadjusted Billing Amount) x Rebate %

12.3.1.4.2 *Calculation.*

The End of Cycle Fee Calculation shall be made as follows: The Unadjusted Billing Amount shall be calculated. The Service Fee Solids Adjustment shall be calculated. The Service Fee Solids Adjustment shall be subtracted from the Unadjusted Billing Amount, then the total of the fees paid by Owner during the first two years of the three year cycle shall be subtracted. The resulting number is the End of Cycle Fee.

12.3.1.4.3 *Examples of Calculation.*

Example One: In Cycle 3, Year 3 5100 dry tons are removed from the drying bed at an average solids content of 30%. The End of Cycle Fee Calculation shall be made as follows:

Unadjusted Billing Amount = 5100 (dry tons) x \$304.18 (Year 3 fee) = \$1,551,318

Service Fee Solids Adjustment = (2/3 x \$1,551,318) x 2% = \$20,684

(Unadjusted Billing Amount)	\$1,551,318
- (Service Fee Solids Adjustment)	- \$20,684
- (Fee paid in Year 1)	- \$520,000
- (Fee paid in Year 2)	- \$550,000
End of Cycle Fee for Year 3 equals	\$460,634

Example Two: In Cycle 4, Year 3, 5700 dry tons are removed from the drying bed at an average solids content of 50%. The End of Cycle Fee Calculation shall be made as follows:

Unadjusted Billing Amount = 5700 (dry tons) x \$326.88 (Year 3 fee) = \$1,863,216

Service Fee Solids Adjustment = $(2/3 \times \$1,863,216) \times 7\% = \$86,950$

(Unadjusted Billing Amount)	\$1,863,216
- (Service Fee Solids Adjustment)	- \$86,950
- (Fee paid in Year 1)	- \$550,000
- (Fee paid in Year 2)	- <u>\$590,000</u>
End of Cycle Fee for Year 3 equals	\$636,266

12.3.1.5 *Cycle 6, Year 1.* In the final cycle of the term, material all residuals will be excavated from Lagoon 1b and placed in the drying bed. Should off-site removal of the materials from the drying bed not occur until after Cycle 6, Year 1, those portions of this Agreement allowing for Contractor to maintain the drying bed materials and remove the material off-site, and Owner's obligation to pay the End of Cycle Fee for Cycle 6 shall survive any termination of this Agreement due to the expiration of the 15-year maintenance term. Contractor shall remove the material generated during Cycle 6 in accordance with a mutually acceptable schedule to be determined by both parties, and payment shall be made by Owner no more than thirty days after Owner's receipt of the final invoice.

12.3.2 *Lagoon 2:*

The Contract Price for Work relating to Lagoon 2 shall be a lump sum of \$13,000,000.

The schedule for the Work shall appear on the schedule of the work to be provided to Owner by Contractor in accordance with this Agreement. The parties have agreed that the following amounts represent the monetary value of various milestones which will be achieved over the course of Work on Lagoon 2:

Permitting, Site Clearing and Preparation	\$1,000,000
Dredging and Site Closure	\$6,200,000
Removal and Beneficial Reuse	\$5,800,000

Subject to Article 13 of these General Conditions, Contractor shall provide Owner with invoices at least thirty days prior to the due dates for payment of the lump sum owed for Lagoon 2 Work, set forth in the schedule below:

December 1, 2004	\$1,000,000
October 1, 2005	\$1,000,000
July 1, 2006	\$1,000,000
July 1, 2007	\$1,000,000
July 1, 2008	\$1,000,000
July 1, 2009	\$1,000,000
July 1, 2010	\$1,000,000
July 1, 2011	\$1,000,000
July 1, 2012	\$1,000,000

July 1, 2013	\$1,000,000
July 1, 2014	\$1,000,000
July 1, 2015	\$1,000,000
July 1, 2016	\$1,000,000

The lump sum pricing for Lagoon 2 work assumes a maximum removal of 166,750 wet tons @ 25% solids. Should such maximum be exceeded, the parties will adjust the Contract Price by way of a Change Order in accordance with Article 8.

H. The following Sections shall be added to Article 12 – “Payments to Contractor and Completion”:

12.7 *Rate Covenant.* Until the termination of this Agreement, the City shall set and maintain rates charged to users of its services and maintain reasonable reserves such that the Service Fees required to be paid hereunder may always be paid in a timely manner as provided herein.

I. Notwithstanding anything to the contrary stated in Article 13 – “Suspension of Work and Termination”, Owner shall not have the right to terminate this Agreement unless Owner has provided Contractor with notice detailing the alleged default(s) and provided Contractor with not less than thirty (30) days to cure any defaults, or such longer reasonable time as the parties may agree. Section 13.4, including its subparagraphs, shall be deleted from this Agreement.

J. The following sections shall be added to Article 13 – “Suspension of Work and Termination”:

13.6 *Right to Stop Work.* The Contractor may cease any or all work required under this Contract if the Owner fails to pay any amounts due to the Contractor when due and such failure has been noticed as provided in Section 13.2 and remains uncured for a period that exceeds thirty (30) days from the date of such notice.

13.7 The Contractor may terminate this Contract in whole or in part due to Changes in Law, regulations, or requirements of applicable regulatory authorities, or the interpretation thereof, or due to any Uncontrollable Circumstances, if (i) such changes or such Uncontrollable Circumstances result in a prohibition against the Contractor conducting the Work, in whole or in any substantial respect, or (ii) if such changes or such Uncontrollable Circumstances result in a material increase in the cost of or time for completion of all or any significant part of the Work about which the parties cannot agree to a Change Order in accordance with Articles 9 and/or 10 of the General Conditions. Prior to termination under this Section, the parties shall endeavor in good faith to avoid termination by agreeing on reasonable relief in accordance with Articles 9 and/or 10 of the General Conditions.

13.8 *Payment in the Event of Termination.* In the event of termination of this Contract for any reason, regardless of whether due to the fault of the Contractor, the Owner shall be responsible for payment to the Contractor for all Work completed in accordance with this Agreement to the date of termination. If, upon termination, the amount owed for Contractor's work on Lagoon 2 exceeds \$1,000,000, Owner shall make annual payments of not more than \$1,000,000 until all amounts owed to the Contractor for Work on Lagoon 2 are paid in full.

K. The following sections shall be added to Article 14 – "Miscellaneous":

14.5 *Other Notice.* In the event that notice is required to be given pursuant to this Contract, it shall be in writing and sent by certified or registered mail, return receipt requested, postage prepaid, or by nationally recognized overnight delivery service, as follows:

If to the Owner, to: Robert J. Kilduff, Esq.
Chief Engineer
Providence Water Supply Board
552 Academy Avenue
Providence, RI 02908

With copies to: Fernando S. Cunha, Esq. or successor
Chief Legal Counsel
Providence Water Supply Board
189 Wickenden Street
Providence, RI 02903

Jason Herrick, P.E.
Providence Water Supply Board
552 Academy Avenue
Providence, RI 02908

If to the Contractor,
to: Synagro Northeast, Inc.
199 Municipal Road
Waterbury, CT 06708
Attn: Regional Vice President

With a copy to: General Counsel
Synagro Technologies, Inc.
1800 Bering Drive, Suite 1000,
Houston, TX 77057

Any party may change its above-designated individual or position for notice by providing advance written notice to the other parties of such change.

14.6 *Severability.* The invalidity, illegality, or unenforceability of any provision of this Contract, or the occurrence of any event rendering any portion or provision of this Contract void, shall in no way affect the validity or enforceability of any other portion or provision of this Contract. Any void provision shall be deemed severed from this Contract, and the balance of this Contract shall be construed and enforced as if this Contract did not contain the particular portion or provision held to be void. The parties further agree to amend this Contract to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this Section shall not prevent this entire Contract from being void should a provision that is of the essence of this Contract be determined void.

14.7 *Waivers.* Any waiver of a requirement of this Contract granted by any party shall not waive any other requirement hereof.

14.8 *Assignments.* None of the parties shall assign any rights or duties under this Contract without the prior written consent of the other parties, provided that (i) a transfer in stock ownership of the Contractor or any of its parent companies shall not be considered an assignment requiring prior written consent, and (ii) the Contractor may make an assignment of such rights or duties to a wholly owned subsidiary, a parent company or an affiliate that is at least majority owned by itself or its parent companies.

14.9 *Lender Modifications.* The parties hereto agree that the terms of this Contract may be modified or altered as may be reasonably required by any commercial or institutional lender for the Contractor with the consent of the Owner, which consent shall not be unreasonably withheld, delayed or denied.

14.10 *Bonds.* Notwithstanding anything stated to the contrary in the Agreement, the Contractor shall only be required to provide a Performance Bond, as described in Section 5.1.1 of the General Conditions, as amended, to fulfill the requirements set forth in Section 00610 of the Request for Proposals.

14.11 *Survival.* All obligations of indemnification and payment stated in this Agreement between the parties shall survive termination of the Agreement.

4. The following changes shall be made to 00650 "INSURANCE REQUIREMENTS":

A. Section 7 shall be deleted and replaced with the following:

Cancellation and/or reduction in coverage must be upon 30 days written notice, except that 10 days notice is required for cancellation based on non-payment of a premium.

B. The following provisions shall be added:

8. Notwithstanding anything contained in the Contract Documents to the contrary, the insurance shall remain in effect throughout the term of the Contract.
9. Should the Owner determine to request additional insurance than what is set forth in this Section 00650, Contractor shall provide such insurance as it is reasonably able to provide, at Owner's cost. Such changes shall be set forth in a Change Order.

IN WITNESS WHEREOF, the Parties have caused this First Amendment to be executed by their duly authorized representatives on the day and year first above written.

Contractor:
SYNAGRO NORTHEAST, INC.

Owner:
THE CITY OF PROVIDENCE,
RHODE ISLAND, acting through its
Providence Water Supply Board

By: J. Paul Withrow
Name: J. Paul Withrow
Title: Vice President, Synagro Northeast, Inc.

By: [Signature]
Name:
Title:

Providence Water Sludge Removal and Disposal Contract (2004)

FY	Contract Cycle/Year	Rate per Dry Ton	Original 2004 Contract Expectations						Actual Contract Conditions			Cumulative Variance	
			Est. Tons Handled	Est. Tons Cumulative	Estimated Cost	Expected Pmt Schedule	Expected Pmts Cumulative	Actual Tons Handled	Cumulative Tons	Actual Required Payments	Req'd Payments Cumulative	Tons	Cost
2005	Cycle 1, Year 1	\$279.21	1,800	1,800	\$502,578	\$400,000	\$400,000			\$400,000	\$400,000		
2006	Cycle 1, Year 2	\$279.21	1,800	3,600	\$502,578	\$550,000	\$950,000			\$550,000	\$950,000		
2007	Cycle 1, Year 3	\$279.21	1,800	5,400	\$502,578	\$557,734	\$1,507,734	7,154	7,154	\$954,125	\$1,904,125	1,754	\$396,391
2008	Cycle 2, Year 1	\$290.56	1,800	7,200	\$523,008	\$500,000	\$2,007,734			\$500,000	\$2,404,125		
2009	Cycle 2, Year 2	\$290.56	1,800	9,000	\$523,008	\$520,000	\$2,527,734			\$520,000	\$2,924,125		
2010	Cycle 2, Year 3	\$290.56	1,800	10,800	\$523,008	\$549,024	\$3,076,758	11,544	18,698	\$2,177,780	\$5,101,905	7,898	\$2,025,147
2011	Cycle 3, Year 1	\$304.18	1,800	12,600	\$547,524	\$520,000	\$3,596,758			\$520,000	\$5,621,905		
2012	Cycle 3, Year 2	\$304.18	1,800	14,400	\$547,524	\$590,000	\$4,186,758			\$550,000	\$6,171,905		
2013	Cycle 3, Year 3	\$304.18	1,800	16,200	\$547,524	\$532,572	\$4,719,330	10,732	29,430	\$2,042,191	\$8,214,096	13,230	\$3,494,766

Notes:

- 1) Shaded amounts were anticipated and actual reconciliation payments at the end of each 3-year cycle, based on amount of sludge handled.
- 2) Not all sludge was removed during this period. An estimated quantity of 22,000 tons was remaining in the lagoons to be removed at the end of this time span.

SECOND AMENDMENT

DATED November 29, 2012

TO

AGREEMENT BETWEEN CITY OF PROVIDENCE, RHODE ISLAND
AND SYNAGRO NORTHEAST, LLC (f/k/a SYNAGRO NORTHEAST, INC.)
DATED JANUARY 26, 2004

REGARDING

MAINTENANCE RELATED CONSTRUCTION SERVICES ASSOCIATED
WITH THE REMOVAL AND DISPOSAL OF WATER TREATMENT
RESIDUALS FROM PROVIDENCE WATER'S SLUDGE LAGOON SYSTEM
LOCATED ADJACENT TO PHILIP J. HOLTON PURIFICATION PLANT IN
SCITUATE, RI FOR THE PROVIDENCE WATER SUPPLY BOARD

THIS SECOND AMENDMENT DATED November 29, 2012 (the
"Second Amendment") to AGREEMENT BETWEEN CITY OF PROVIDENCE,
RHODE ISLAND, AND SYNAGRO NORTHEAST, LLC (f/k/a SYNAGRO
NORTHEAST, INC.), DATED JANUARY 26, 2004, REGARDING MAINTENANCE
RELATED CONSTRUCTION SERVICES ASSOCIATED WITH THE REMOVAL
AND DISPOSAL OF WATER TREATMENT RESIDUALS FROM PROVIDENCE
WATER'S SLUDGE LAGOON SYSTEM LOCATED ADJACENT TO PHILIP J.
HOLTON PURIFICATION PLANT IN SCITUATE, RI FOR THE PROVIDENCE
WATER SUPPLY BOARD (the "Agreement") is hereby entered on the 29 day of
November, 2012, by and between the CITY OF PROVIDENCE, a municipal
corporation created by the General Assembly of the State of Rhode Island, in the County
of Providence, in said State (the "City") and Synagro Northeast, LLC (f/k/a Synagro
Northeast, Inc.), a Delaware limited liability company, 680 Main Street, Watertown, CT
06795 ("Contractor").

RECITALS

WHEREAS, the City and Contractor entered into the Agreement on January 26,
2004; and

WHEREAS, the City and Contractor entered into the First Amendment to the
Agreement as part of the original Agreement, on January 26, 2004; and

WHEREAS, the City and Contractor now desire to enter into binding terms so as
to amend the Agreement as originally written; and

WHEREAS, the parties have mutually agreed to the contents of the Contract
Documents and have agreed that such terms shall include the terms stated in this Second
Amendment;

NOW THEREFORE, in consideration of mutual promises made and received, the sufficiency of which are mutually acknowledged, the parties agree as follows:

1. This Second Amendment shall be added to Section (a) of the Contract Documents set forth on Page 3 of the Agreement.
2. The terms of this Second Amendment shall take precedence over any other conflicting term stated in the Agreement, except for terms which may be included in later amendments, modifications or change orders which are executed after the date of this Second Amendment.
3. The following provisions to the Agreement shall be modified or supplemented as follows:

TERM

4. The Term of the Agreement shall be extended to December 31, 2021. The parties acknowledge that no maintenance work was in progress as of the effective date of this Second Amendment and that all terms of this Second Amendment apply to work performed after the effective date of the Second Amendment.

LOCATION AND SCOPE OF CONTRACTOR'S WORK

5. Section S.1 of the First Amendment shall be deleted and replaced with the following:
All Work described herein shall take place at Lagoon 1a, Lagoon 1b, the Intermediate Pond, Lagoon 2 and the drying beds, all located approximately southwest of the Philip J. Holton Purification Plant (PJHPP) on Route 116, Scituate, Rhode Island, and, upon mutual agreement, at the two concrete Basins located at and behind the PJHPP (collectively the "Work Site"). All work shall be limited to the Work Site except for piping work which may be done, if piping work is mutually agreed in accordance with this Second Amendment, at such locations as set forth in Section S2.2.2 of this Second Amendment.
6. Section S.2 of the First Amendment shall be amended as follows:
 - a. Sections S. 2.1.1, and S.2.1.2 shall be deleted.
 - b. Notwithstanding any language or schedules of work to the contrary contained in Section S.2 (including S.2.1.3) of the First Amendment, in addition to the description of work set forth for Lagoon 2, Contractor shall work to remove material from all locations of the Work Site and shall perform the work in such order and according to such time schedule as the parties may agree are in the best interests of the project during the Term, with the initial goal being that of reducing material in Lagoons 1a and 1b and the Intermediate Pond, and with the ongoing goal of keeping the levels of all lagoons,

ponds and basins (if the Basins have been agreed) in the Work Site to a level where overflow is not a reasonable concern. Contractor acknowledges that, notwithstanding the language of Section S.2.1.3 of the First Amendment, stockpiled sludge from Lagoon 2 remains on the Work Site (approximately 7,000 dry tons) and Contractor shall remove same prior to moving any other dredged material from the Work Site. Contractor and Owner further agree, notwithstanding any language contained in this Second Amendment to the contrary, that Contractor may remove up to but shall not remove more than 10,000 dry tons of dredged material per year from the Work Site, unless the parties have mutually agreed that Contractor can remove more than 10,000 dry tons of material from the Work Site in any one contract year. For informational purposes only, Contractor has attached Exhibit 1 to this Second Amendment, which shows the costs which would be incurred by Owner based on a hypothetical removal of 6,250 dry tons from the Work Site (and 7,000 dry tons during the first contract year). Such Exhibit 1 is attached for demonstrative purposes only and Contractor shall not be bound by the terms of Exhibit 1 relative to the amount of material removed from the Work Site in any given year.

c. Section S.2.1.4 shall be added as follows: Contractor shall not perform work on Owner legal holidays without the prior written approval of Owner. Owner shall provide Contractor with a list of Owner legal holidays. No material shall be removed from the Work Site by Contractor outside of the approved work hours and days as set forth herein.

d. Section 2.1.5 shall be added as follows: After the effective date of this Second Amendment, prior to the dredging of any material from any area of the Work Site, the parties shall mutually visit the areas to be dredged and shall measure and agree on the volume available to be dredged. At such time that Contractor removes dried material from the Work Site it shall provide Owner, on a monthly basis, of copies of weigh scale tickets from all trucks used by Contractor to remove material from the Work Site during the prior month. Owner shall have the right to audit such tickets at any time that it has reasonable cause to believe that the amount of material being removed from the Work Site does not accurately compare with the amount of material dredged.

e. Section 2.1.6 shall be added as follows: After the effective date of this Second Amendment, prior to the removal of any material from any drying bed on the Work Site, the parties shall mutually visit the areas to be dredged and shall visually measure and estimate the volume available to be removed from the Work Site. At such time that Contractor removes dried material from the Work Site it shall provide Owner, on a monthly basis, of copies of weigh scale tickets from all trucks used by Contractor to remove material from the Work Site during the prior month. Owner shall have the right to audit such tickets at any time that it has reasonable cause to believe that the amount of material being removed from the Work Site does not accurately compare with the amount of material dredged. The weigh tickets shall govern the actual volume of material which was removed from the Work Site.

7. Section S.2 shall be amended by the addition of the following:

S.2.2 Work Relating to Basins.

S.2.2.1 Contractor may be allowed to dredge material directly from the Basins, upon agreement by Owner, and on mutually agreed terms determined by the parties. Notwithstanding the foregoing, if dredging from the Basins is agreed between the parties, no dredging shall be allowed at the Basins during the Owner's high demand season of June through August.

S.2.2.2. Contractor, may, upon receipt of Owner's written approval and upon mutual agreement of the parties for Contractor to perform such work, install above or below ground piping that will allow sludge residuals to be removed from the Basins, going under Route 116 via the existing culvert, following the brook and the bypass channel to the end of Drying Bed #1, and shall make appropriate connections to the drying bed piping manifolds, in accordance with Exhibit 2-1. The payment to Contractor for such piping installation work is reflected in Section 12.3. Contractor shall be responsible to procure all permits required for installation of the piping system (with the cooperation of the Owner, as necessary) and shall maintain the entire piping system, at its cost, during the Term. Contractor shall not remove such piping at the end of the Term and it shall become the property of Owner, so long as it has been paid for by Owner. If Owner approves this work, Exhibit 2-1 shall describe the work specifically and Contractor must submit a plan of proposed work, which plan and the cost set forth in Section 12.3.1.4 of this Second Amendment, must be specifically approved in writing by Owner and agreed by the parties prior to Contractor ordering materials or starting work.

S.2.3 Supplemental Cleaning of Lagoon 2. Contractor, at no cost to owner, shall provide a supplemental cleaning of Lagoon 2 between the effective date of the Second Amendment and the end of the Term. Contractor shall dewater and remove a maximum of 500 dry tons of dredged material from Lagoon 2 at its cost and shall remove such material from the Work Site at its sole cost.

S.2.4 Removal of Material from Work Site During Term of Second Amendment. All pricing set forth in this Second Amendment is based on the anticipated removal by Contractor of between 57,000 and 61,500 dry tons from the Work Site (including all lagoons, ponds, basins and drying beds identified herein) between the effective date of the Second Amendment and the end of the Term. Subject to Sections S.2.4.1 and S.2.4.2, it is generally anticipated that the Contractor shall be performing the maintenance services during the entire Term so as to achieve removal of such amount of material.

S.2.4.1 Notwithstanding anything to the contrary set forth in the Agreement or this Second Amendment, Contractor shall not be obligated to remove more than 61,500 dry tons of material from the Work Site between the effective date of the Second Amendment and the end of the Term.

S.2.4.2 At such time that is five (5) years after the effective date of this Second Amendment or at such time that the Contractor has removed 45,000 dry tons of material from the Work Site, whichever occurs first, the parties shall meet so as to determine the likelihood of Contractor removing the target amount of 57,000-61,500 dry tons of material from the work site if working over the entire Term. If it does not seem likely that such target amount will be achieved over the Term, the parties, upon mutual agreement, may a) make an adjustment to the Term, for purposes of Contractor's work, by lengthening the Term; or b) they may shorten the time for Contractor's performance of work during the Term, such that, unless otherwise mutually agreed, only the maximum of 61,500 dry tons of material shall be removed from the work site by Contractor during the Term, in exchange for the payments as set forth in Section 12.3.1.3; or c) mutually agree otherwise to adjust the dry tons to be removed and, commensurately, the payments to be made under Section 12.3.1.3.

8. Article 1 – Definitions, in the First Amendment, shall be amended by the addition of the following Definitions:

1.35 *Intermediate Pond* – shall mean the small pond located between Lagoon 1a and 1b.

1.36 *Basins* – shall mean the two rectangular concrete residuals storage structures located at and behind the PJHPP.

PAYMENTS

9. Section 12.3.1 of the First Amendment shall be deleted and replaced with the following:

12.3.1.1 Generally. Maintenance services (dredging, drying, removal and utilization of residuals) shall be performed as needed so as to provide effectively empty lagoons, ponds and Basins as described in the Agreement at the end of the Term. "Empty" shall mean that sludge in the lagoons is removed to a reasonably low level in the lagoons, which shall be to a level just above rocks in the lagoon bottoms or to the maximum depth of the dredge boom. All pricing is based on anticipated removal of material from the Work Site in accordance with Section S.2.4. If the parties agree on terms relative to Contractor's dredging of the Basins, Contractor and Owner agree to cooperate so as to maximize the efficiency of Contractor dredging from the Basins by appropriately adjusting the water levels in the Basins such that the depth of material in the Basins will not significantly exceed the dredging depth capability of Contractor's dredging equipment.

12.3.1.2 Initial Payment. Within thirty days following execution of this Second Amendment, Owner shall make an initial payment to Contractor in the amount of \$1,500,000, and such shall be credited to the invoice attached as

Exhibit 2-2 (in the total amount of \$2,042,190.80), which shows payments to Contractor which are outstanding as of the effective date of this Second Amendment. Contractor shall not begin work under this Second Amendment until the \$1,500,000 payment has been received by Contractor. The parties acknowledge that the remaining balance of \$542,190.80 is being financed by Contractor and shall be repaid by Owner via the fixed annual payments to Contractor set forth in Section 12.3.1.3.

12.3.1.3 Annual Fixed Payments. In consideration of the maintenance services, Contractor's good faith effort to remove a minimum of 7,000 dry tons from the Work Site prior to August 15, 2013 and a minimum of 6,250 dry tons of material from the Work Site annually thereafter, and Contractor's financing of \$542,190.80 on behalf of Owner, Owner shall make a fixed annual payment to Contractor within thirty days of August 15 in the amount of \$1,691,985.70, starting on August 15, 2013. Thus payments due shall be as follows:

August 15, 2013	-	\$1,691,985.70
August 15, 2014	-	\$1,691,985.70
August 15 2015	-	\$1,691,985.70
August 15, 2016	-	\$1,691,985.70
August 15, 2017	-	\$1,691,985.70
August 15, 2018	-	\$1,691,985.70
August 15, 2019	-	\$1,691,985.70
August 15, 2020	-	\$1,691,985.70
August 15, 2021	-	\$1,691,985.70

TOTAL: \$15,227,871.28

See Exhibit 1, attached for demonstrative purposes only.

Section 12.3.1.4 Piping. If the parties mutually determine that the Contractor shall install a piping system, Owner shall pay Contractor an amount not to exceed \$400,000 for the installation of an above-ground piping system as described in in Section S.2.2.2. The fee for such work shall be invoiced upon completion of the piping work by Contractor, and paid in accordance with the terms of the Agreement. If the parties determine that some or all of the piping system shall be installed below ground, the parties shall negotiate a price for the work and such work shall commence only after an agreement on price has been reached and set forth in writing.

- Section 12.3.2, relating to the dredging of Lagoon 2 and the payment therefore, shall remain unchanged except for the deletion of the last paragraph regarding a maximum removal of tons. The parties acknowledge that all dredging work called for under the Agreement and prior to the effective date of this Second Amendment was completed although all dredged material has not been completely removed from the Work Site, and that Owner is still paying for such

work under the terms of the Agreement with the following amounts still due and owing to Contractor:

July 1, 2013	\$1,000,000
July 1, 2014	\$1,000,000
July 1, 2015	\$1,000,000
July 1, 2016	\$1,000,000

11. Sections 3.H, 3.I and 3.J of the First Amendment shall be deleted. The first sentence of Section 2 of Exhibit IV to the First Amendment, the "City of Providence Contract Terms and Conditions" shall be amended to state as follows: The City of Providence may terminate this Contract for any or no reason by a notice in writing from the City of Providence to the Contractor provided not less than six (6) months prior to the intended date of termination for convenience.
12. In the event that the City of Providence terminates this Agreement for convenience in accordance with this Second Amendment, or if the Agreement is terminated due to the default of the City, the City of Providence shall pay Contractor for all work performed to the date of terminate. Additionally, all amounts financed by Contractor as referenced in Sections 12.3.1.2 and 12.3.1.3 shall accelerate and become due and owing on the date of termination.

NOTICE

13. In the First Amendment, Section K, 14.5 Notice, shall be amended to read, for the Contractor:

Synagro Northeast, LLC
680 Main Street, Suite 303
Watertown, CT 06795
Attn: Regional Vice President

With a copy to:
Synagro Technologies, Inc.
1800 Bering Drive, Suite 1000
Houston, TX 77057

Attn: General Counsel

Owner:

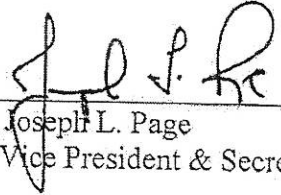
Boyce Spinelli
General Manager
Providence Water
552 Academy Avenue
Providence, RI 02908

With a copy to:
William E. O'Gara
Legal Advisor
317 Iron Horse Way, Suite 301
Providence, RI 02908

IN WITNESS WHEREOF, the Parties have caused this Second Amendment to be executed by their duly authorized representatives on the day and year first above written.

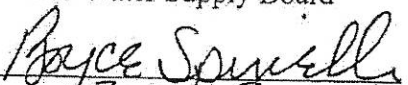
Contractor:

SYNAGRO NORTHEAST, LLC

By: 
Name: Joseph L. Page
Title: Vice President & Secretary

Owner:

THE CITY OF PROVIDENCE,
RHODE ISLAND, acting through its
Providence Water Supply Board

By: 
Name: Boyce Spinelli
Title: General Manager

LEGAL COUNSEL, Providence Water

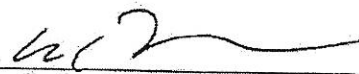
By: 
Name: William O'Gara
Title: Legal Counsel

Exhibit 1 Demonstration of Annualized Payments
Exhibit 2-1 Description of Piping Work
Exhibit 2-2 Invoice dated September, 2012

Providence Water - 10 Year Proposal Economics

	Current	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Total Tons in Lagoons (End of Year)	22,000	18,500	16,450	14,450	12,350	10,300	8,250	6,200	4,150	2,100		
Tons added each year	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	35,000
Tons to be removed from lagoons		7,000	5,950	5,550	5,550	5,550	5,550	5,550	5,550	5,550	5,600	57,000
Tons shipped offsite			7,000	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	57,000
Processing Rate Per Ton (with 2% CPI)	\$ 232.50	\$ 232.50	\$ 237.15	\$ 241.89	\$ 246.71	\$ 251.67	\$ 256.70	\$ 261.83	\$ 267.07	\$ 272.41	\$ 277.86	
Cost for Service (if Invoiced)		\$ 1,677,500.00	\$ 1,316,182.50	\$ 1,342,506.15	\$ 1,369,356.27	\$ 1,396,743.40	\$ 1,424,678.27	\$ 1,453,171.63	\$ 1,482,235.27	\$ 1,511,679.97	\$ 1,556,010.52	\$ 14,480,264.19
Tons Shipped Offsite			7,000.00	6,250.00	6,250.00	6,250.00	6,250.00	6,250.00	6,250.00	6,250.00	6,250.00	\$ 57,000.00
Cycle 3 - Third year billing - Payment schedule	\$ 2,043,714.25	\$ 1,500,000.00	\$ 60,412.69	\$ 60,412.69	\$ 60,412.69	\$ 60,412.69	\$ 60,412.69	\$ 60,412.69	\$ 60,412.69	\$ 60,412.69	\$ 60,412.69	\$ 2,043,714.25
Financing	7.3%		\$ 48,778.57	\$ 36,317.62	\$ 31,716.66	\$ 27,155.71	\$ 22,654.78	\$ 18,222.81	\$ 13,592.86	\$ 9,061.90	\$ 4,530.95	\$ 203,992.84
Total Due (Cycle 3)	\$ 1,500,000.00	\$ 1,500,000.00	\$ 1,071,912.6	\$ 96,660.31	\$ 92,129.36	\$ 87,598.41	\$ 83,067.45	\$ 78,536.50	\$ 74,005.55	\$ 69,474.60	\$ 64,943.65	\$ 2,247,607.09
Finance	\$ 543,714.25	\$ 483,301.56	\$ 422,886.86	\$ 362,476.17	\$ 302,063.47	\$ 241,650.78	\$ 181,238.08	\$ 120,825.39	\$ 60,412.69	\$ 0.00	\$ 0.00	
Processing (on-going) Maintenance Invoicing Total:		\$ 1,500,000.00	\$ 1,608,918.24	\$ 1,608,918.24	\$ 1,608,918.24	\$ 1,608,918.24	\$ 1,608,918.24	\$ 1,608,918.24	\$ 1,608,918.24	\$ 1,608,918.24	\$ 1,608,918.24	\$ 14,480,264.19
Cycle 3 Payments	\$ 1,500,000.00	\$ 83,067.45	\$ 83,067.45	\$ 83,067.45	\$ 83,067.45	\$ 83,067.45	\$ 83,067.45	\$ 83,067.45	\$ 83,067.45	\$ 83,067.45	\$ 83,067.45	\$ 2,247,607.09
Total Invoicing to Providence Water	\$ 1,500,000.00	\$ 3,691,985.70	\$ 1,691,985.70	\$ 1,691,985.70	\$ 1,691,985.70	\$ 1,691,985.70	\$ 1,691,985.70	\$ 1,691,985.70	\$ 1,691,985.70	\$ 1,691,985.70	\$ 1,691,985.70	\$ 16,722,821.28
Change Order Total												\$ 14,664,137.01

Processing rate per year: Tons removed from lagoons/baskets per year
 \$543,714.25 financial through 2021
 10 years of processing, 9 year fixed payments, or 514,480,464.19 divided by 9.
 Years 2-9 \$543,714.25 carry forward with financing costs, fixed rates per year.
 Total Payments \$ 16,722,821.28
 Change Order Total \$ 14,664,137.01

Exhibit 2-1

Dredging and Solids Removal From Basins

Synagro will design, install, operate, and maintain a system to remove solids directly from the Basins at the PJHPP, consisting of:

- Approximately 3,000LF of HDPE piping
- Piping to be above-ground with the exception of the road crossing (our intention is to utilize the existing culverts)
- Appropriately placed clean-out valves to facilitate cleaning of pipeline
- Appropriate connections from dredge assembly to piping assembly
- Appropriate connections from piping assembly to existing drying bed manifolds
- Ancillary equipment to ensure proper operation of system

Alternate designs, below grade piping, alternate materials, etc. will all be considered and offered at alternate pricing.

Providence Water Docket 4406

**Data Requests of the
Division of Public Utilities and Carriers
Set 1**

DIV 1-30. Please provide any studies, analyses and/or other supporting documentation for the claimed costs of the unidirectional flushing program.

Response: PW has entered into a contract with the consulting firm of Weston & Sampson for development and implementation of a unidirectional flushing program. Weston & Sampson is experienced in this field and is currently providing such services for Boston Water & Sewer. The contract entails both the design and development of a formal flushing program with structured unidirectional flushing sequences, as well as the field performance of the flushing operations. The contract is for a per year cost of \$420,000 for performing these services on 200 miles of water main, or approximately 1/5 of the PW system per year. Attached is a copy of the contract.

PW has allocated the cost of the development of the formal UDF program to capital, at the approximate cost of \$130,000 per year over a four year period. The remaining \$290,000 of consulting costs for the actual field operation of the flushing program has been allocated to Operations. In earlier planning relative to the program, \$380,000 in consultant field operation costs had been estimated, which is the figure presented in Schedule HJS-2 of this filing. This cost will be adjusted to the \$290,000 figure in rebuttal testimony.

Providence Water Docket 4406

Data Requests of the Division of Public Utilities and Carriers Set 1

In addition to the consulting services, it is necessary for PW to hire two new employees to work with the consultant to implement the UDF program. Each new employee would be paired with a consultant crew. Both crews will be working primarily at night, flushing water mains during the flushing season (which typically runs from April through November, weather permitting). During the winter months, the two employees will be doing field reconnaissance, checking valve and hydrant accessibility and operations, and planning work for the upcoming flushing season. Duties to be performed by these employees are further elaborated upon in pages 3 and 4 of the Consultant Contract. Plans were to hire these two individuals in the PW Utility Worker classification, at an annual cost each of \$42,515 in salary plus 50% pension and fringe benefits, for an annual cost for these two employees of \$127,545. Due to the nature of the work and hours required for these positions, PW has negotiated with the Local Union bargaining unit for new positions, titled "Flushing Technicians", to perform these duties. The salary scale for these positions is slightly higher than that of the Utility Worker position, and this salary adjustment will be incorporated into Schedule HJS-2 in rebuttal testimony.

SCOPE OF WORK
UNI-DIRECTIONAL FLUSHING PROGRAM

ARTICLE I - OBJECTIVES

Providence Water Supply Board (PWSB) intends to develop and implement a uni-directional flushing (UDF) program. PWSB does not currently perform system wide flushing; therefore PWSB intends to perform a one year pilot program to establish best UDF practices for the PWSB system.

During the pilot program PWSB will engage the services of a professional consulting engineering and water system services company, Weston & Sampson (W&S), to complete the following tasks:

- Develop a UDF pilot program with Innovyze InfoWater Suite UDF Program for up to five areas of the distribution system including approximately 200 total miles of water main.
- Create a set of flushing sequences for implementation of the flushing of the water distribution system.
- Provide up to 2 person flushing crew to perform UDF in the five pilot areas with PWSB field staff.
- Provide computerized real time reports to PWSB staff with data from area flushed each day.
- Develop a simplified process to allow for future synchronization between PWSB's GIS, hydraulic water model, and UDF sequences.

ARTICLE II – UDF PROGRAM PREPARATION WORK SCOPE

This phase of the project will involve providing professional engineering services to develop PWSB's UDF Program for five Pilot Areas of the distribution system. W&S will provide project, planning, engineering, administration, management and hydraulic modeling services for developing PWSB's UDF Program for the five area pilot program including the services described below.

- 1) Obtain PWSB's GIS and the hydraulic model pipe network model to review for discrepancies.
 - a. Review the water system GIS including the pipe, valve, hydrant and hydrant lateral layers to fully understand the data accuracy and required edits necessary to improve the hydraulic model and create the UDF Program.
 - b. Review the existing InfoWater Suite Software hydraulic model dataset to fully understand the hydraulic modeling parameters (diameter, C-value, hydraulic grade lines) and boundary conditions (pressure zones, booster stations, tanks, and connections with the neighboring water systems).
 - c. Report to PWSB staff data discrepancies in the existing hydraulic model and water system GIS in order to model the latest information on the modeling parameters and boundary conditions. Correct simple data discrepancies.
 - d. Utilize PWSB's ID numbers for the pipe segments, nodes, valves, hydrants and hydrant laterals. The ID number established will be the key attribute in the GIS data that will remain consistent and will allow exchange of data between the hydraulic model and the UDF

Program. This common ID link will make future updates to the GIS, hydraulic model, and UDF program simple and cost-effective.

- 2) GIS, Hydraulic Model and UDF Program Associations and Development.
 - a. Verify the PWSB's current GIS hydrant and valve layer associations with the hydraulic model.
 - b. Create the UDF Program using the Info Water UDF extension.
- 3) Evaluate the system and make recommendation for 5 Pilot areas for first year UDF program.
 - a. Meet with representatives of the PWSB staff to discuss recommendations for five (5) pilot areas. Revise pilot area limits based on discussions with PWSB staff.
- 4) Configure flushing table/map output to meet PWSB preferences for visual output files and data collection.
 - a. Meet with representatives of the PWSB staff to discuss the Enhanced UDF Program preferences. Provide output configuration to meet the preferences.
- 5) Develop flushing zones and individual flushing sequences using InfoWater UDF. Optimize flushing sequences to achieve optimal scouring velocities, minimize the number valve operations required, and minimize water usage.
 - a. Utilize InfoWater UDF Suite Software to create the UDF program. The InfoWater UDF Suite works as an extension to the InfoWater Suite hydraulic modeling software.
 - b. Prepare the UDF program for five pilot areas (approximately 200 total miles of the PWSB's Water Distribution System. The UDF program will include:
 - i. Developing strategic flushing sequences for water pipe segments to maximize pipe lengths and minimize hydrants/valves operation for meeting the targeted velocity of greater than or equal to 5 feet per second (fps).
 - ii. Developing flushing zones that will start from the water supply sources (meters, tanks and/or large water mains) to the extremities in the water distribution system.
 - iii. Developing organized flushing sequences to maximize efficiency during UDF implementation by minimizing valve and hydrants operations for flush sequences.
 - iv. Developing flush sequences to minimize flush water volume. This will result in water savings; and reduce environmental impacts and handling of discharged water.
 - v. Developing flush sequences to meet target (scouring) velocity. This will result in fewer negative impacts on water distribution system that lead to rusty water complaints from customers.
 - vi. Developing GIS-based color-coded field maps of each flush sequence, showing pipe segments, valves, and hydrants.
 - vii. Developing field tables showing sequencing of necessary valve closures and hydrant openings to accomplish the flushing, required flow rates and durations for pipes being flushed.
 - viii. Recommending times for flushing in areas with potential customer concerns.
- 6) Develop recommendations for water quality sampling and testing program associated with UDF program.

7) Project Deliverables

The following describes the deliverable requirements for the contract based upon the project objectives and scope of work described herein.

Deliver one (1) set of flushing maps and data sheets for each pilot area.

- UDF Program data in InfoWater UDF Suite Software format (one electronic copy on CD, DVD or flash drive).
- Color-coded flushing sequence color maps and field journals (one hard copy and one electronic copy on CD, DVD or flash drive) in PDF format.

8) Computer Application Programs, Datasheets and Reports

The following computer application programs, datasets, and reports shall be provided by PWSB to W&S under this contract.

- ArcGIS Geographical Information System (GIS) dataset to include the complete PWSB water distribution system, including all water mains, valves and hydrants.
- Innovyze's InfoWater Water Distribution System Hydraulic Model and Management Software dataset to include the complete PWSB calibrated water system hydraulic model.
- PWSB Hydrant Survey and Inspection Report.

9) Innovyze Software License for UDF

W&S will obtain from Innovyze, a software license for one year. The cost of the license will be paid from contingency budget.

10) W&S will provide recommendation for flushing vehicles, equipment and tools.

ARTICLE III –UDF PILOT PROGRAM IMPLEMENTATION (FIELD WORK)

W&S will perform the following tasks as part of the UDF pilot program implementation process in conjunction with PWSB field staff:

Implement the UDF for one (1) complete flushing cycle, consisting of approximately 200 miles of water mains in up to five areas over a one year season in 2013.

Conduct UDF during the Spring, Summer and Fall season (March through November). Work may be performed at night to minimize customer disruption.

PWSB will provide:

- Utilize torque limiting valve exercisers (if necessary) or open valves by hand to ensure that valves are operated safely and within torque tolerance.
- Gauge and monitor condition of hydrant flow utilizing pitometer-flow diffusers.
- Observe hydrant flow continuously, (i.e., we will not leave flowing hydrant unattended).
- Collect water main flushing data using iDataCollect to achieve data validation and accuracy.
- Field staff to open/close valves

- Work rules for W&S staff.
- De-chlorination equipment.
- Water quality sample bottles.
- Laboratory testing services.
- Data management system for water quality sample results.

W&S will collect the following on-site data during flushing:

- Flushing team information
- Date and time of flushing event
- Hydrant number and location
- Hydrant outlet size used for flushing
- Hydrant type
- Hydrant static and residual pressure, (PSI)
- Hydrant measured flow, (US G/Min)
- Valve operation sequence
- Flushing time
- Visual water quality
- Start and stop time per hydrant flush.
- Collect water quality samples.
- Attend to flushing hydrants while flowing.

Attempted but unsuccessfully flushed sequences are not counted against W&S flushing goals.

W&S will utilize our iDataCollect software to capture all field flushing data (listed above). iDataCollect will send and receive updates through the 3G/4G networks that are available on the mobile device(s). Updated forms, option lists, and assignments will be downloaded to the devices, while completed data entry forms will be uploaded to our server. iDataCollect will automatically date and time stamp the zone, sequence, and valve attributes.

All flushing data to PWSB shall be in an electronic format. Comments will be entered directly into iDataCollect specific to the zone, sequence and/or valve for review by PWSB staff.

To ensure proper opening and closing of valves within a sequence, W&S's flushing crew will utilize a method of painting the valve with a red 'X' to signify valves in the closed position. When the valve is re-opened the 'X' is covered by a green circle for obvious visual inspection that the sequence is returned to its normal state once flushing is complete.

W&S will utilize electronic mapping, data collection reporting, and data management procedures throughout the life of the project. We will create and maintain a project website to enable the PWSB to view the extent of project completion and certain details of the project data. We will prepare specific data management procedures and protocols that will be used throughout the project. The project website will include:

- Real-time reporting of crew locations
- Google mapping view for easy review
- Current status reporting, miles flushed counter
- Incident or emergency reporting via instant email
- Valve and hydrant repair work needed

- Downloadable progress reporting (PDF, Excel)

Weston & Sampson believes that the PWSB is not currently required to de-chlorinate waters discharged by water main flushing activities under its existing National Pollution Discharge Elimination System (NPDES) Permit.

PWSB RESPONSIBILITIES FIELD UDF TASK

PWSB shall:

- Ensure hydrants and valve operating nuts in the field are accessible to UDF crew.
- Provide advance notification to the public of flushing work to be performed by W&S.
- Arrange and pay for police details as required for W&S UDF crew to complete work.
- Repair defective or non-functional hydrants and/or valves found during the flushing program in a timely manner.
- Secure all necessary permits, if required, from the City of Providence or other communities to complete the UDF Field work.
- Provide any temporary parking restriction signs.
- Arrange and pay for any street sweeping.
- Provide vehicles, safety equipment, tools and iPads.

REPORTING

Progress Reports will be provided on a weekly basis for the first month of the Pilot Program and on a monthly basis for the remainder of time flushing activities are being conducted. A final summary report will be prepared and presented at the completion of the Pilot flushing season

NOTIFICATIONS

All hydrants have branch valves. For hydrants and/or valves that are not functional, the PWSB shall be notified by:

1. email
2. phone call to the night operations manager
3. hydrants that are found to be faulty will be painted white and reported to PWSB for repair

PWSB will be provided with 2-weeks' notice for notifying public for the next area to be flushed.

W&S will outfit the vehicles used in the UDF Program with two (2) 12-inch by 24-inch magnetic signs, one (1) sign on each side of the vehicle.

UDF SCHEDULING

W&S shall submit and update monthly a bar graph or chart showing the Pilot Area field work duration, sequencing of tasks, and estimated number of weeks to complete the UDF Program.

ARTICLE IV - COMPENSATION AND PAYMENT

W&S agrees to provide to the PWSB the services described in Article II and III. The PWSB agrees to pay to W&S, in full compensation of work performed, including expenses incurred, the rates as set forth in Uni-Directional Flushing Program Fee Estimate dated January 9, 2013, a copy of which is attached hereto and incorporated into this Agreement.

Invoicing will be based on actual time worked at hourly rates proposed by W&S, Blanket Contract No. 96199 in November of 2011. W&S will invoice for direct costs (copying, printing, photographs, and software purchase) at actual cost without mark up.

No reimbursement will be allowed for travel mileage or meals. The following not to exceed budgets for Articles II, III and Contingency shall not be exceeded without written approval from the PWSB Project Manager.

Article II – UDF Program	\$110,500
Article III – UDF Pilot Field Work	\$256,000
Contingency	<u>\$ 53,500</u>
 Total Project	 \$420,000

The project upset limit of \$420,000 shall not be exceeded without a written amendment to the original purchase order and this agreement.

ARTICLE V - GENERAL PROVISIONS

DURATION

The duration of this contract shall commence upon the date of contract execution, expected January 1, 2013 through December 31, 2013.

GENERAL AND CONTRACT REQUIREMENTS

The general and contract requirements of the PWSB RFQ Project 96199 apply to this agreement.

ATTACHMENT 1-UNI-DIRECTIONAL FLUSHING PROGRAM FEE BREAKDOWN
Providence Water

Weston & Sampson

1/8/2013

TASK NO.	TASK DESCRIPTION	Person-Hours											Billing Costs		
		BWA PIC	W/J PM	Y/K Pr Eng	ENG ENG	MDK GIS	Admin ADMIN	RAN Field	UDF 1 Field	UDF 2 Field	TOTAL HOURS	EXPENSES	TOTAL COST		
	Hourly Rate	\$ 170	\$ 170	\$ 115	\$ 85	\$ 130	\$ 70	\$ 130	\$ 75	\$ 65					
UDF PROGRAM PREPARATION															
1	Project management, meetings and plan	16	20	24	24	4	4	12					104	\$425	\$13,705
2	Review GIS & Hydraulic Model	2	2	16	8	4							32		\$3,720
3	Create UDF model	2	2	24	8	2							38	\$125	\$4,505
4	Test Sequences	4	4	40	32	4	4	4					92	\$580	\$10,580
5	Create 1800 sequences	20	8	228	324	24	16	12					632	\$2,200	\$66,520
6	Data management and report	8	8	16	36	20	4	4					96	\$450	\$11,470
	SUBTOTAL														\$110,500
UDF PROGRAM IMPLEMENTATION															
1	Flushing 8 months								1432	1432			2934	\$2,080	\$211,660
2	Project management and meetings	16	64	4	16		24	24					148	\$440	\$20,660
3	Data management and reporting	16	16	60	32	32	24	16					196	\$700	\$23,680
	SUBTOTAL														\$256,000
CONTINGENCIES															
1	Labor & Expenses	6	4	16	40	4		8					78	\$45,000	\$53,500
	SUBTOTAL														\$53,500
	TOTAL HOURS	90	128	428	520	94	76	150	1432	1432	1432	4350		\$52,000	\$420,000