



February 6, 2015

Sent via electronic mail: njacampo@dec.ny.gov

Nick Acampora
Environmental Program Specialist II
Response Section Supervisor
New York State Department of Environmental Conservation
Division of Environmental Remediation
Spill Prevention and Response
50 Circle Road
SUNY @ Stony Brook
Stony Brook, NY 11790-3409

Re: Site Decommissioning Report
Northrop Grumman Systems Corporation
Plant 1 North Side Boiler Tanks (Spill #99-25519)

Dear Mr. Acampora:

Please find attached the Site Decommissioning Report for the above-referenced site. The site system and monitoring wells were decommissioned December 15-18, 2014 per the NYSDEC-approved work plan, as explained in the attached report. With the submission of this document, all matters related to Spill #99-25519 are considered fully addressed and fully complete.

If you have any questions on this submittal, I can be reached at 609-336-2590, extension 1214, or by email at adrake@handexmail.com.

Sincerely,

Andrew R. Drake
Senior Project Manager

ec: Edward Hannon - NGSC - edward.hannon@ngc.com
Frederick Weber - NGSC - fred.weber@ngc.com
Karen Gomez - NYSDEC - karen.gomez@dec.ny.gov
Steve Scharf - NYSDEC - steven.scharf@dec.ny.gov
Kevin Lumpe - Steel Equities - klumpe@steelequities.com
Joseph DeFranco - NCDH - JDeFranco@nassaucountyny.gov



Site Decommissioning Report

Northrop Grumman Systems Corporation
Plant 1 North Side Boiler Tanks
Grumman Road West
Bethpage, New York
NYSDEC Spill #99-25519

February 2015

Prepared For:

Northrop Grumman Systems Corporation
925 South Oyster Bay Road
Bethpage, New York

Prepared by:

Handex Consulting & Remediation-Northeast, LLC
P.O. Box 36
Windsor, NJ 08561-0036
NY Registration #NYRD10961

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Site Decommissioning Report

Former Plant 1 North Side Boiler Tanks – Northrop Grumman Bethpage

Spill #99-25519

February 2015

I. Introduction

On behalf of Northrop Grumman Systems Corporation (NGSC), Handex Consulting & Remediation (HCR) prepared the following Site Decommissioning Report to document the final decommissioning activities associated with Spill #99-25519.

On June 6, 2014, NGSC received notice from the New York State Department of Environmental Conservation (NYSDEC) that no further remediation is required at the subject site known as Spill #99-25519, Plant 1 North Side Boiler Tanks – Northrop Grumman Bethpage (see **Appendix A**).

On behalf of NGSC, HCR prepared and submitted a Site Decommissioning Work Plan (see **Appendix B**) to the NYSDEC on September 24, 2014 that was approved via electronic mail communication on September 24, 2014 (see **Appendix C**). This report documents the Site decommissioning field activities that were completed in December 2014 in accordance with the approved work plan, and included monitoring well decommissioning and system removal.

This report is intended as the final report for Spill #99-25519. The Site has been remediated to the satisfaction of the NYSDEC and this report documents the final decommissioning activities that complete the remediation of Spill #99-25519. Additional details of the Site decommissioning activities are provided below.

II. Monitoring Well Decommissioning

Monitoring Well Decommissioning Activities

Five PVC monitoring wells were previously installed at this Site (NYSDEC Spill #99-25519) - see **Figures 1** and **2**. On December 17, 2014 HCR decommissioned the five wells. The Site wells were typical PVC monitoring wells installed in the overburden and set in flush-mount well boxes. All the wells were located in an area already covered in concrete, therefore, the well boxes were left in place, and the well casings were cut approximately 0.5 feet below land surface (FBLS) and tremie grouted to 0.5 FBLS. The well boxes and the remaining top 0.5-foot area were filled with concrete to match the surrounding concrete cover. A table that summarizes the relevant well decommissioning data is provided in **Appendix D** and copies of the well decommissioning records are included in **Appendix E**.

III. System Decommissioning

System Decommissioning Activities

The SVE system was decommissioned on December 16-18, 2014. The remediation system decommissioning included removing the above-grade system components and shed, and cutting and capping all below-grade piping. The regenerative blower was staged on a pallet and returned to NGSC.

The power source to the shed was shut off at the breaker box located inside the adjacent boiler room. The breaker was removed from the breaker box, and the wiring from the breaker box to the shed was removed.

The shed and all above-grade piping were dismantled and disposed of in a roll-off dumpster, and transported as construction debris to an off-site facility by Basin Haulage of Middle Village, New York. A copy of the material receipt is provided in **Appendix F**. The surface was restored consistent with the surrounding area.

FIGURES



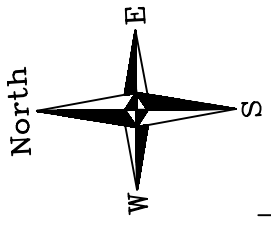
HCR
 HANDEX CONSULTING
 & REMEDIATION, LLC

PO Box 36, Windsor, NJ 08561
 T: 609-336-2590 F: 609-336-2589
 www.hcr-llc.com

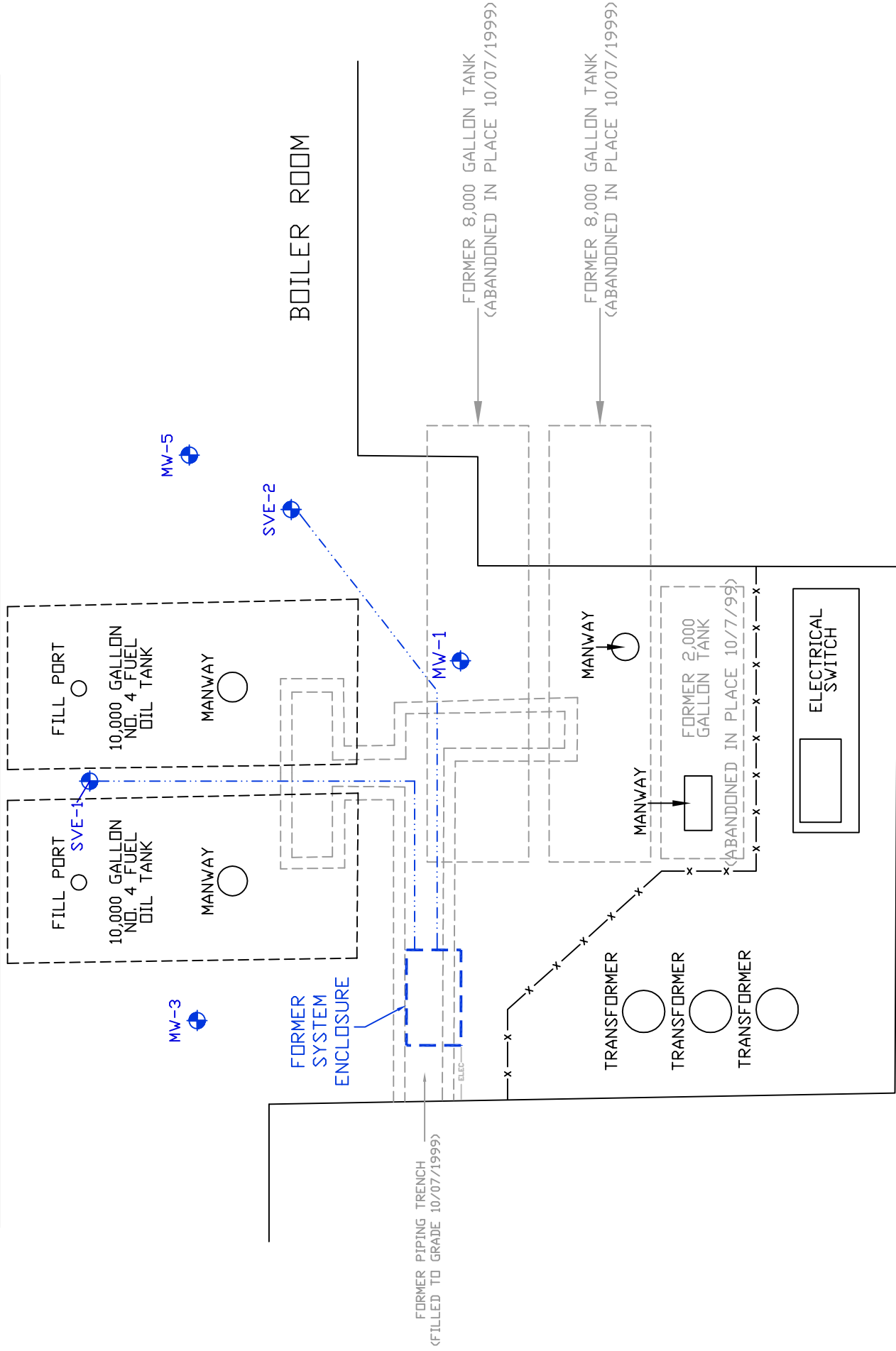
**NORTHROP GRUMMAN SYSTEMS CORPORATION
 BETHPAGE, NY**

**FIGURE 1
 AERIAL IMAGE**

NYSOIT 2013 6-inch Resolution 4-band Orthoimagery Long Island Zone
 Coordinate System: NAD 1983 StatePlane New York Long Island FIPS 3104 Feet
 Print Date: 01/07/2015

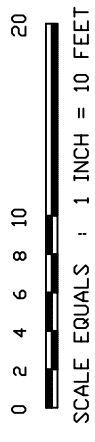


LONG ISLAND RAILROAD TRACKS



LEGEND

- MW-1
- DECOMMISSIONED MONITORING WELL LOCATION
- SVE-1
- DECOMMISSIONED UNDERGROUND PIPING
- FORMER ELECTRICAL CONDUIT
- DECOMMISSIONED VAPOR EXTRACTION POINT



I.	NO.	BY	DATE	REVISION	APPD.

PROJECT:
 NORTHROP GRUMAN SYSTEMS CORPORATION
 PLANT 001
 BETHPAGE, NEW YORK

FIGURE 2 SITE MAP

DRAWN BY: F. DeVITA	SCALE: 1" = 10'	PROJECT NUMBER: 123307.001
REVISED BY: L. COUSINEAU	FILE NAME: FIG 1-SITE PLAN 123307-2.DWG	DATE: DECEMBER 30, 2014



HCR NORTHEAST, LLC
 PO BOX 36
 WINDSOR, NJ 08561
 PHONE: 609-336-2590
 www.hcr-llc.com

APPENDICES

Appendix A
NYSDEC NFA Notice

Nicastro, Lucy

From: Nick Acampora <njacampo@gw.dec.state.ny.us>
Sent: Friday, June 06, 2014 4:13 PM
To: Weber, Fred (AS) (fred.weber@ngc.com)
Cc: Drake, Andrew; Gomez, Karen
Subject: Spill #99-25519: Northrop Grumman Bethpage - Plant 1, North Side Boiler
Attachments: WELL abandon.pdf

Fred:

This is to acknowledge receipt of the First Quarter 2014 Status Report submitted by your consultant Handex for the above referenced site. Based on review of the report in conjunction with the file, the Department determined that you have completed the necessary cleanup and removal actions, and no further remedial activities are necessary.

Please refer to the attached observation well abandonment specification sheet for proper abandonment procedures. Once the monitoring wells have been abandoned, this office has no further requirement for the referenced spill at this time.

Nothing contained herein shall be construed as barring, diminishing, or in any way limiting Department's authority under the Navigation Law or the Environmental Conservation Law, including the authority to require additional remedial work, if necessary.

Should you have any questions, please contact me.

Nick Acampora
Environmental Program Specialist II
Response Section Supervisor
New York State Department of Environmental Conservation
Division of Environmental Remediation
Spill Prevention and Response
50 Circle Road
SUNY @ Stony Brook
Stony Brook, NY 11790-3409
Voice: (631) 444-0322
Fax: (631) 444-0328

>>> "Drake, Andrew" <ADrake@handexmail.com> 5/20/2014 6:49 AM >>>

Nick, attached please find the 1st Qtr Report for the North Side location. Please let us know if you have any questions.

Thanks,
Andy



Andy Drake, LSRP
Handex Consulting & Remediation-NE, LLC

Mailing Address:

PO Box 36
Windsor, NJ 08561

Office Location:

92 N Main St
Bldg. #20, Suite C, Windsor Industrial Park
Windsor, NJ 08561

Telephone: 609.336.2590 ext. 1214

Fax: 609.336.2589

Appendix B

Site Decommissioning Work Plan



Site Decommissioning Work Plan

Plant 1 North Side Boiler – Northrop Grumman Bethpage

Spill #99-25519

September 22, 2014

Introduction

On June 6, 2014, Northrop Grumman Systems Corporation (NGSC) received notice from New York State Department of Environmental Conservation (NYSDEC) that no further remediation is required at the subject site known as Spill #99-25519, Plant 1 North Side Boiler – Northrop Grumman Bethpage (see Appendix A). The following Work Plan provides details of the proposed site decommissioning activities that include properly decommissioning the site wells and removing the remediation system. Decommissioning the site wells will be conducted in accordance with NYSDEC specifications detailed in NYSDEC's guidance document *CP-43: Groundwater Monitoring Well Decommissioning Policy*, and/or the *Specifications – Sealing and Abandoning Site Wells* document provided by NYSDEC as an attachment to its June 6, 2014 correspondence (see Appendix A).

Planned Monitoring Well Decommissioning

The site wells are typical PVC monitoring wells installed in the overburden and set in flush-mount well boxes. Based on sampling results, no significant groundwater contamination remains in the overburden, and there is no known confining layer present, and no known issues with the well seal integrity of the existing wells. Based on these site conditions, *Grouting-In-Place* is the planned method for well decommissioning.

The wells will be tremie grouted from the bottom of the well in accordance with NYSDEC's referenced decommissioning policy. The flush-mount well boxes will be removed and the PVC casing will be cut and capped approximately two feet below grade. The surface will be restored consistent with the surrounding area.

A brief Site Decommissioning Report will be prepared to document the decommissioning activities, and will include Well Decommissioning Records for all decommissioned wells.



System Decommissioning

The remediation system decommissioning will include removing the above-grade system components and shed, and cutting and capping all below-grade piping below grade. The surface will be restored consistent with the surrounding area. The system decommissioning will be documented in the Site Decommissioning Report and will include a brief description of the system decommissioning activities.

Appendix A

Drake, Andrew

From: Nick Acampora <njacampo@gw.dec.state.ny.us>
Sent: Friday, June 06, 2014 4:13 PM
To: Weber, Fred (AS) (fred.weber@ngc.com)
Cc: Drake, Andrew; Gomez, Karen
Subject: Spill #99-25519: Northrop Grumman Bethpage - Plant 1, North Side Boiler
Attachments: WELL abandon.pdf

Fred:

This is to acknowledge receipt of the First Quarter 2014 Status Report submitted by your consultant Handex for the above referenced site. Based on review of the report in conjunction with the file, the Department determined that you have completed the necessary cleanup and removal actions, and no further remedial activities are necessary.

Please refer to the attached observation well abandonment specification sheet for proper abandonment procedures. Once the monitoring wells have been abandoned, this office has no further requirement for the referenced spill at this time.

Nothing contained herein shall be construed as barring, diminishing, or in any way limiting Department's authority under the Navigation Law or the Environmental Conservation Law, including the authority to require additional remedial work, if necessary.

Should you have any questions, please contact me.

Nick Acampora
Environmental Program Specialist II
Response Section Supervisor
New York State Department of Environmental Conservation
Division of Environmental Remediation
Spill Prevention and Response
50 Circle Road
SUNY @ Stony Brook
Stony Brook, NY 11790-3409
Voice: (631) 444-0322
Fax: (631) 444-0328

>>> "Drake, Andrew" <ADrake@handexmail.com> 5/20/2014 6:49 AM >>>

Nick, attached please find the 1st Qtr Report for the North Side location. Please let us know if you have any questions.

Thanks,
Andy



Andy Drake, LSRP
Handex Consulting & Remediation-NE, LLC

Mailing Address:

PO Box 36
Windsor, NJ 08561

Office Location:

92 N Main St
Bldg. #20, Suite C, Windsor Industrial Park
Windsor, NJ 08561

Telephone: 609.336.2590 ext. 1214

Fax: 609.336.2589

SPECIFICATIONS

SEALING AND ABANDONING SITE WELLS

1. The portion of the well occupied by the screen shall be filled with clean sand, but in no case shall this filling extend above the top of the screen.
2. The entire casing including riser pipe and annular spaces between the casing shall be filled with a cement/bentonite grout. The cement/bentonite grout shall not contain more than six gallons of water per bag. The grout shall be placed under pressure through pipes to the bottom of the space to be filled in order to prevent dilution of grout. The placing of the grout shall be continuous until grout appears at the top of the casing, at which time the grout pipe may be withdrawn.

3. **CASING SEAL**

After the grout has consolidated, as confirmed by visual inspection, the top of the casing must be closed and sealed. Steel casings are to be sealed with a welded steel plate. PVC casings are to be sealed with a permanently affixed PVC cap.

4. **SURFACE WELL SEAL**

Where monitoring wells are installed in manholes or curb boxes below grade, the manhole or box is to be filled with concrete after the well has been grouted and capped. The manhole or box cover may then be reinstalled. Where monitor wells were installed without a protective concrete collar (surface well seal), one shall be constructed upon abandonment. The disturbed soils at the top of the well, or an area two feet in diameter and one foot thick about the top of the well (whichever is larger) shall be filled with cement concrete.

5. **CASING REMOVAL**

Removal of the entire well casing is not necessary unless specifically required by the Department.

Appendix C

NYSDEC Site Decommissioning Approval

Nicastro, Lucy

From: Drake, Andrew
Sent: Wednesday, September 24, 2014 5:08 PM
To: Langevin, Levi; Nicastro, Lucy
Subject: FW: Decommissioning Work Plans - Spill #: 91-0667 & 99-25519 (Northrop Grumman)
Attachments: Spill # 99-25519 Site Decommissioning Work Plan Sep 2014.pdf; Spill # 91-06667 Site Decommissioning Work Plan Sep 2014.pdf

Follow Up Flag: Follow up
Flag Status: Completed

FYI

From: Acampora, Nick (DEC) [<mailto:nick.acampora@dec.ny.gov>]
Sent: Wednesday, September 24, 2014 3:05 PM
To: Drake, Andrew
Cc: Weber, Fred (AS) (fred.weber@ngc.com); Gomez, Karen (DEC)
Subject: RE: Decommissioning Work Plans - Spill #: 91-0667 & 99-25519 (Northrop Grumman)

Andrew:

This is to acknowledge receipt of your email and attachments regarding the above referenced sites. Based on review, this office has no objection to you proceeding as outlined when ready.

If you have any questions/comments regarding this matter, please let me know.

Nick Acampora
Environmental Program Specialist II
Response Section Supervisor
Office of Spill Prevention and Response
Division of Environmental Remediation
New York State Department of Environmental Conservation
50 Circle Road
SUNY @ Stony Brook
Stony Brook, NY 11790-3409
(631) 444-0322 Office
(631) 444-0328 Fax

From: Drake, Andrew [<mailto:ADrake@handexmail.com>]
Sent: Wednesday, September 24, 2014 9:18 AM
To: Acampora, Nick (DEC)
Cc: Weber, Fred (AS) (fred.weber@ngc.com)
Subject: Decommissioning Work Plans - Spill #: 91-0667 & 99-25519 (Northrop Grumman)

Nick, as a follow up to your earlier e-mails regarding no further remedial actions required at the two referenced sites, Northrop Grumman has requested I send you the attached Site Decommissioning Work Plans for your review and approval. Proposed actions include sealing and abandoning the site wells, and removing the remediation systems. Please let me know if you have any questions or comments on the attached plans.

Thanks,
Andy



Andy Drake, LSRP
Handex Consulting & Remediation-NE, LLC

Mailing Address:

PO Box 36
Windsor, NJ 08561

Office Location:

92 N Main St
Bldg. #20, Suite C, Windsor Industrial Park
Windsor, NJ 08561

Telephone: 609.336.2590 ext. 1214

Fax: 609.336.2589

Appendix D

Well Decommissioning Data Table

Well Decommissioning Data

Northrop Grumman Systems Corporation

Plant 1 North Side Boiler Tanks

Bethpage, New York

Well Name	Date Decommissioned	Casing Size (inches)	Well Depth (FBL)	Interval Grouted (FBL)	Volume of Grout (gallons)
MW-1	12/17/2014	4	55	0.5-55	40
MW-3	12/17/2014	2	57	0.5-57	11
MW-5	12/17/2014	2	55	0.5-55	11
SVE-1	12/17/2014	2	55	0.5-55	10
SVE-2	12/17/2014	2	55	0.5-55	11

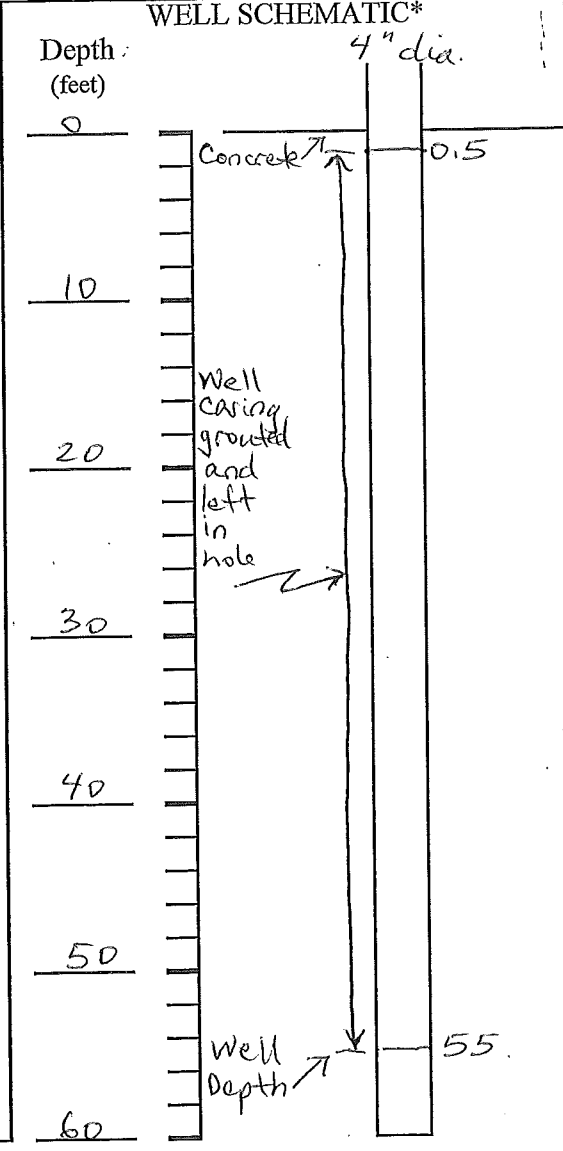
FBL: Feet below land surface

Appendix E
Well Decommissioning Records

**FIGURE 3
WELL DECOMMISSIONING RECORD**

Site Name: <u>Northrop Grumman Corporation</u>	Well I.D.: <u>MW-1</u>
Site Location: <u>15 Grumman Rd., Bethpage, NY.</u>	Driller: <u>Jason Erickson.</u>
Drilling Co.: <u>Handex Consulting & Remediation, LLC.</u>	Inspector:
	Date: <u>12-17-14</u>

DECOMMISSIONING DATA (Fill in all that apply)	
<u>OVERDRILLING</u>	
Interval Drilled	<input checked="" type="checkbox"/>
Drilling Method(s)	<input checked="" type="checkbox"/>
Borehole Dia. (in.)	<input checked="" type="checkbox"/>
Temporary Casing Installed? (y/n)	<input checked="" type="checkbox"/>
Depth temporary casing installed	<input checked="" type="checkbox"/>
Casing type/dia. (in.)	<input checked="" type="checkbox"/>
Method of installing	<input checked="" type="checkbox"/>
<u>CASING PULLING</u>	
Method employed	<input checked="" type="checkbox"/>
Casing retrieved (feet)	<input checked="" type="checkbox"/>
Casing type/dia. (in)	<input checked="" type="checkbox"/>
<u>CASING PERFORATING</u>	
Equipment used	<input checked="" type="checkbox"/>
Number of perforations/foot	<input checked="" type="checkbox"/>
Size of perforations	<input checked="" type="checkbox"/>
Interval perforated	<input checked="" type="checkbox"/>
<u>GROUTING</u>	
Interval grouted (FBLs)	<u>55-0.5</u>
# of batches prepared	<u>1</u>
For each batch record:	
Quantity of water used (gal.)	<u>32.</u>
Quantity of cement used (lbs.)	<u>376.</u>
Cement type	<u>1</u>
Quantity of bentonite used (lbs.)	<u>16</u>
Quantity of calcium chloride used (lbs.)	<u>—</u>
Volume of grout prepared (gal.)	<u>48.</u>
Volume of grout used (gal.)	<u>40</u>



COMMENTS: Well connected to treatment system @ 2.5 FBLs. Grouted well to 0.5 FBLs. 0 to 0.5 FBLs - concrete.

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Jason D. Erickson (HCR)
Drilling Contractor

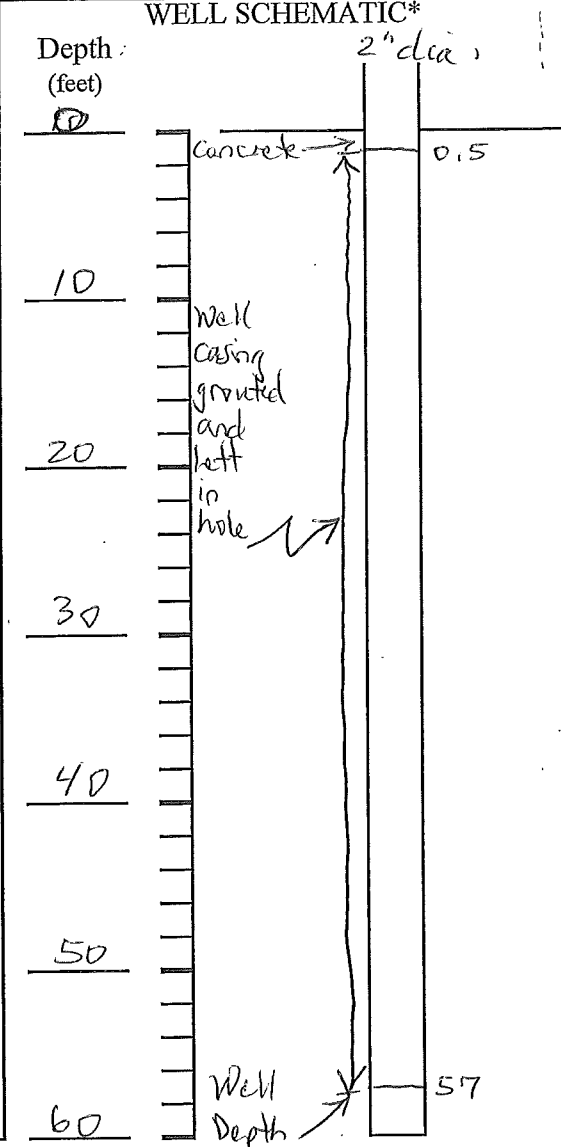
Department Representative

FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: <u>Northrop Grumman Corporation</u>	Well I.D.: <u>MW-3</u>
Site Location: <u>15 Grumman Rd., Bethpage, NY.</u>	Driller: <u>Jason Erickson.</u>
Drilling Co.: <u>Handex Consulting & Remediation, LLC.</u>	Inspector:
	Date: <u>12-17-14</u>

DECOMMISSIONING DATA
(Fill in all that apply)

<u>OVERDRILLING</u>	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
<u>CASING PULLING</u>	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in.)	
<u>CASING PERFORATING</u>	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
<u>GROUTING</u>	
Interval grouted (FBLs)	<u>57-0.5</u>
# of batches prepared	<u>1</u>
For each batch record:	
Quantity of water used (gal.)	<u>8</u>
Quantity of cement used (lbs.)	<u>94</u>
Cement type	<u>1</u>
Quantity of bentonite used (lbs.)	<u>4</u>
Quantity of calcium chloride used (lbs.)	<u>—</u>
Volume of grout prepared (gal.)	<u>12</u>
Volume of grout used (gal.)	<u>11</u>



COMMENTS: Well connected to treatment system
@ 2.5 FBLs: Grouted well to 0.5 FBLs.
0 to 0.5 FBLs: concrete

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

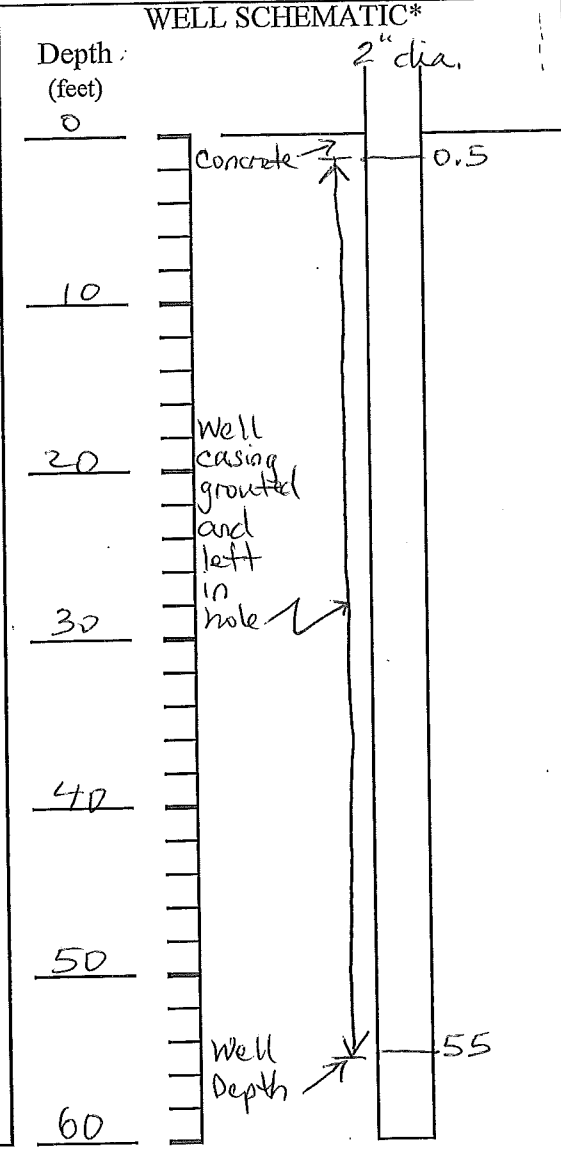
Jason D. Erickson (HER)
Drilling Contractor

Department Representative

FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: <u>Northrop Grumman Corporation</u>	Well I.D.: <u>MW-5</u>
Site Location: <u>15 Grumman Rd., Bethpage, NY.</u>	Driller: <u>Jason Erickson.</u>
Drilling Co.: <u>Handex Consulting & Remediation, LLC.</u>	Inspector:
	Date: <u>12-17-14</u>

DECOMMISSIONING DATA (Fill in all that apply)	
<u>OVERDRILLING</u>	
Interval Drilled	<input checked="" type="checkbox"/>
Drilling Method(s)	<input checked="" type="checkbox"/>
Borehole Dia. (in.)	<input checked="" type="checkbox"/>
Temporary Casing Installed? (y/n)	<input checked="" type="checkbox"/>
Depth temporary casing installed	<input checked="" type="checkbox"/>
Casing type/dia. (in.)	<input checked="" type="checkbox"/>
Method of installing	<input checked="" type="checkbox"/>
<u>CASING PULLING</u>	
Method employed	<input checked="" type="checkbox"/>
Casing retrieved (feet)	<input checked="" type="checkbox"/>
Casing type/dia. (in)	<input checked="" type="checkbox"/>
<u>CASING PERFORATING</u>	
Equipment used	<input checked="" type="checkbox"/>
Number of perforations/foot	<input checked="" type="checkbox"/>
Size of perforations	<input checked="" type="checkbox"/>
Interval perforated	<input checked="" type="checkbox"/>
<u>GROUTING</u>	
Interval grouted (FBLs)	<u>55-0.5</u>
# of batches prepared	<u>1</u>
For each batch record:	
Quantity of water used (gal.)	<u>8</u>
Quantity of cement used (lbs.)	<u>94</u>
Cement type	<u>1</u>
Quantity of bentonite used (lbs.)	<u>4</u>
Quantity of calcium chloride used (lbs.)	<u>-</u>
Volume of grout prepared (gal.)	<u>12.</u>
Volume of grout used (gal.)	<u>11</u>



COMMENTS: Well connected to treatment system @ 2.5 FBLs. Grouted well to 0.5 FBLs, 0 to 0.5 FBLs - concrete

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Jason W. Erickson (HCA)
Drilling Contractor

Department Representative

FIGURE 3

WELL DECOMMISSIONING RECORD

Site Name: <u>Northrop Grumman Corporation</u>	Well I.D.: <u>SYE-1</u>
Site Location: <u>15 Grumman Rd., Bethpage, NY.</u>	Driller: <u>Jason Erickson.</u>
Drilling Co.: <u>Handex Consulting & Remediation, LLC.</u>	Inspector:
	Date: <u>12-17-14</u>

DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<p>OVERDRILLING</p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p>	<p>Depth (feet)</p> <p>0</p> <p>10</p> <p>20</p> <p>30</p> <p>40</p> <p>50</p> <p>60</p> <p>Concrete → 0.5</p> <p>Well casing grouted and left in place →</p> <p>Well Depth → 55</p> <p>2" dia.</p>
<p>CASING PULLING</p> <p>Method employed <input type="checkbox"/></p> <p>Casing retrieved (feet) <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p>	
<p>CASING PERFORATING</p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p>	
<p>GROUTING</p> <p>Interval grouted (FBLs) <u>55-0.5</u></p> <p># of batches prepared <u>1</u></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <u>8</u></p> <p>Quantity of cement used (lbs.) <u>94</u></p> <p>Cement type <u>1</u></p> <p>Quantity of bentonite used (lbs.) <u>4</u></p> <p>Quantity of calcium chloride used (lbs.) <u>—</u></p> <p>Volume of grout prepared (gal.) <u>12</u></p> <p>Volume of grout used (gal.) <u>10</u></p>	

COMMENTS: Well connected to treatment system @ 2.5 FBLs. Grouted well to 0.5 FBLs. 0-to 0.5 FBLs - concrete

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Jason D. Erickson (HCR)
Drilling Contractor

Department Representative

FIGURE 3

WELL DECOMMISSIONING RECORD

Site Name: <u>Northrop Grumman Corporation</u>	Well I.D.: <u>SYE-2</u>
Site Location: <u>15 Grumman Rd., Bethpage, NY.</u>	Driller: <u>Jason Erickson.</u>
Drilling Co.: <u>Handex Consulting & Remediation, LLC.</u>	Inspector:
	Date: <u>12-17-14</u>

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING

Interval Drilled	<input checked="" type="checkbox"/>
Drilling Method(s)	<input checked="" type="checkbox"/>
Borehole Dia. (in.)	<input checked="" type="checkbox"/>
Temporary Casing Installed? (y/n)	<input checked="" type="checkbox"/>
Depth temporary casing installed	<input checked="" type="checkbox"/>
Casing type/dia. (in.)	<input checked="" type="checkbox"/>
Method of installing	<input checked="" type="checkbox"/>

CASING PULLING

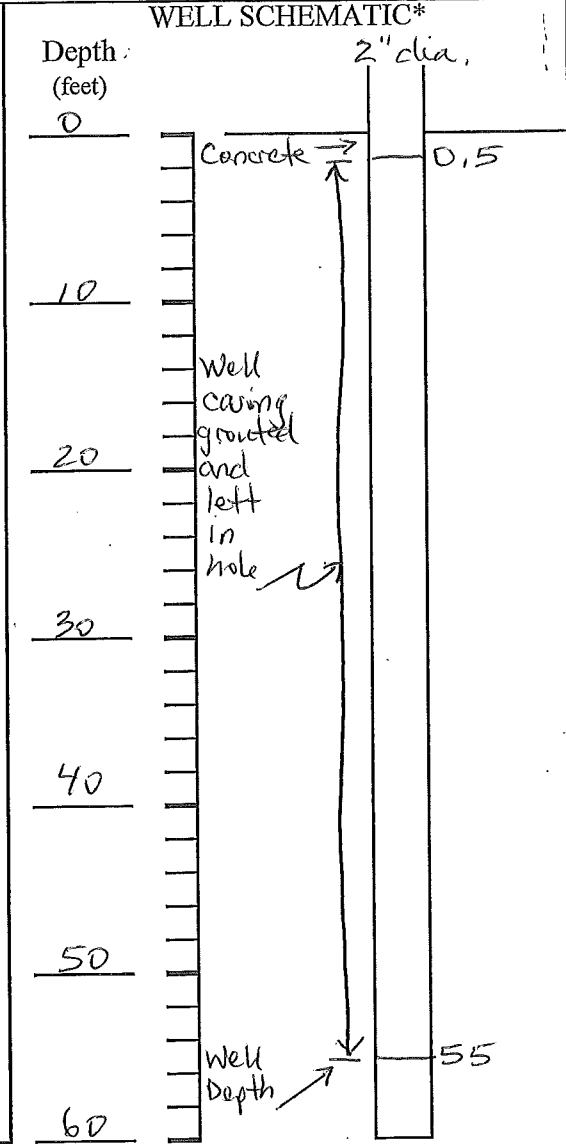
Method employed	<input checked="" type="checkbox"/>
Casing retrieved (feet)	<input checked="" type="checkbox"/>
Casing type/dia. (in)	<input checked="" type="checkbox"/>

CASING PERFORATING

Equipment used	<input checked="" type="checkbox"/>
Number of perforations/foot	<input checked="" type="checkbox"/>
Size of perforations	<input checked="" type="checkbox"/>
Interval perforated	<input checked="" type="checkbox"/>

GROUTING

Interval grouted (FBLs)	<u>55 - 0.5</u>
# of batches prepared	<u>1</u>
For each batch record:	
Quantity of water used (gal.)	<u>8</u>
Quantity of cement used (lbs.)	<u>94</u>
Cement type	<u>1</u>
Quantity of bentonite used (lbs.)	<u>4</u>
Quantity of calcium chloride used (lbs.)	<u>—</u>
Volume of grout prepared (gal.)	<u>12</u>
Volume of grout used (gal.)	<u>11</u>



COMMENTS: Well connected to treatment system @ 2.5 FBLs. Grouted well to 0.5 FBLs. 0 to 0.5 FBLs - concrete

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Jason W. Erickson (HCR)
Drilling Contractor

Department Representative

Appendix F
Material Receipt

BASIN HAULAGE INC.
P.O. BOX 790058
MIDDLE VILLAGE, NY 11379
BIC # 00265

Phone: 718-366-6513
 Fax: 718-456-8436

Haridex Consulting

12/15 2014

Re 15 Grommets (R)

Date	Loads	Yards	Charge	Tax	Total
<i>12/15/14</i>	<i>20yr Dmg (1/2 truck)</i>		<i>1000</i>	<i>-</i>	
	<i>(1/2 Demo)</i>				<i>8575</i>
		<i>3 1/2 % Adt CD</i>	<i>38</i>	<i>10</i>	
			<i>1,126.85</i>		