Glenn Springs Holdings, Inc.

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April 10, 2008

Mr. Michael Negrelli
Western New York Remediation Section
Emergency and Remedial Response Division
United States Environmental Protection Agency
Region II
290 Broadway, 20th Floor
New York, NY 10007-1866

Dear Mr. Negrelli:

Re: Quarterly Report – First Quarter 2008 (January through March)
Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site
Index Nos. II-CERCLA-80216, II-CERCLA-94-0210, and II-CERCLA-02-2001-2018

Consistent with Sections 42, 91, and 55 of the above-referenced orders and the USEPA approved 100% Biosparge System Design Report, this letter and attached Table 1 provide the Quarterly Progress Report covering January through March 2008. This report covers OU-1, OU-2 and OU-3. Please note that the next Quarterly Progress Report will be submitted by July 15, 2008 and will cover April through June 2008.

Quarterly Progress Report

The following activities were performed in January through March 2008.

Operable Unit-1 *(On-Site Soil)*

All work has been successfully completed. OU-1 is closed.

Operable Unit-2 (Soils Impacted by On-Site Release of PCBs)

All work has been successfully completed. OU-2 is closed.

Operable Unit-3 (Off-Site Groundwater)

Supplemental Treatment System

- Operation and monitoring of the GP-1/GP-3 supplemental treatment system continued.
- The carbon bed was changed out on January 15 and March 11, 2008.

- The potassium permanganate bed was changed out on February 6, 2008.
- Evaluations of possible upgrade alternatives for the supplemental treatment system are ongoing.

Biosparge System

- An evaluation of the first year of operation of Phase I of the biosparge system and the proposed modifications to the design and operations of the biosparge system was submitted on January 15, 2008. The design modifications will be applied to the remainder of the biosparge system which is still to be constructed and the operations modifications will be applied to the entire biosparge system.
- Based on the results of the first year of performance monitoring of the Phase I biosparge system, the following changes are recommended for the remainder of the biosparge system:
  - i) increase the diameter of the water and air injection wells from 1-inch to 1.25-inch;
  - ii) install the water injection well and shallow air injection well in separate sandpacked intervals;
  - iii) install a steel plate on the bottom of the air injection wells to prevent settling of the wells;
  - iv) install a spacer in the upper 0 to 20 feet of the injection well nests to maintain separation between the wells;
  - v) maintain the current weekly frequency of the 8-hour air injections to the extent practicable; and
  - vi) maintain the injection rate at the current 100 cfm.
- A reconnaissance survey of potential well locations was performed on January 29, 2008.
- Preparation of the bid documents for the remainder of the middle fence has begun.
- The Phase I system is operating with air injection occurring weekly at each well for eight hours rather than monthly for eight hours. The one exception is for IW16-DIA, which is experiencing a high back pressure, even after redevelopment. In order to resolve this situation, air in being injected via the liquid injection well using temporary connections. No water injection is occurring at this time. It is planned to convert the temporary connections to hard piping in the next quarter.
- The quarterly performance monitoring of the biosparge system was performed from January 22 to 28, 2008. The groundwater and soil gas analytical results and QA/QC review for the quarterly performance monitoring are attached.
- Injection of treated water from Northrop's Tower 96 (GP-1/GP-3) system started on January 22, 2007 at a flow rate of 10 gpm and has been ongoing since that time. The injection rate was increased to 15 gpm in July 2007 to overcome some of the back pressure created by the air injections.
- The backflow prevention device on the water supply line was inspected and certified to be functional on February 27, 2008.
- GSHI is working with Steel Equities (owner of the former Northrop Plant 12 property) where sections of the North fence line of the biosparge system will be installed. Installation of the subsurface components of the North fence line is being coordinated with Steele Equities ongoing development of the property.

- An update of the biosparge system was presented at the TAC meeting held on March 19, 2008.
- Approval was received March 21, 2008 from the Nassau County Department of Public Works for the discharge of monitoring well installation, development, and purge waters to the Cedar Creek Water Pollution Control Plant for a period of one year.
- Notification of the sixth quarterly Phase I biopsparge system sampling event scheduled to start the week of April 14, 2008 was emailed to the USEPA and their oversight contractor on March 26, 2008.

Summary of Biosparge Pilot System

To date the biosparge system has operated successfully. The oxygen levels in the formation are increasing. The VCM concentrations are decreasing. No detrimental side effects are evident. The injection well spacing appears to be correct. The water injections have also contributed to the oxygen levels in the formation.

Planned Second Quarter 2008 Activities

- The following activities are planned for the second quarter of 2008:

  i) With regard to IW16-DIL, it is planned to convert the temporary connections to permanent connections;

  ii) Quarterly sampling of the biosparge system is to be started the week of April 14, 2008;

  iii) Continue operation and monitoring of the GP-1/GP-3 supplemental system; and

  iv) Sumps 1 and 2 on the former Hooker/Ruco Site are to be back-filled by the new property owner once the property transfer is completed.

- The following activities are pending an approval or review by an outside party or Agency. The follow-up schedule is based on receipt of the review or approval.

  i) Awaiting USEPA review of the draft Declaration of Covenants and Restrictions for the Site, submitted on April 20, 2006 by Bayer;

  ii) Awaiting USEPA review of the Phase I As-Built drawings, O&M Manual, and HASP submitted February 1, 2007; and

  iii) Awaiting USEPA review of the proposed modifications for the physical and operational components of the biosparge system submitted on January 15, 2008. Following approval, GSHI will complete preparation of the bid documents for construction of the remainder of the middle fence. Construction could start in 2008 contingent upon timely USEPA acceptance. In accordance with the 100% Design Report, additional injection wells will be installed at 100-foot spacings west of IW-16 and east of IW-19 to a location where the groundwater VCM concentration is $\leq 40\ \mu g/L$. The number and locations of groundwater and vadose zone monitoring wells will be based on the number and locations of the additional injection wells installed.

Should you have any questions on the above, please do not hesitate to contact me at (972) 687-7504 or e-mail at rick_passmore@oxy.com.

Sincerely yours,

James Kay for

Rick Passmore
Senior Director Operations

KDS/lw/006883/2
Encl.

c.c.: P. Olivio (USEPA)
K. Lynch (USEPA)
M. E. Wieder (USEPA)
S. Scharf (NYSDEC – pdf on CD)
M. Popper (CDM)
T. Kelly (Nassau County)
W. Baldwin (Bayer)
J. Kay (CRA)
D. Reed (GSHI)

0 40 120ft

MW-64
GM-11S
HN-43I
MW-62
GM-10
MW-90
MULBERRY STREET
NEW SOUTH ROAD
WASHINGTON PARKWAY
MW-63
JEFRY AVENUE
MADISON AVENUE
SOUTH OYSTER BAY ROAD
GRUMMAN ROAD WEST
HAZEL STREET
IW-16
IW-17
IW-18
IW-19
MW-87
VZ-14
MW-83
VZ-10
MW-61
MW-81
VZ-15
VZ-11
MW-84
MW-82
VZ-16
MW-88
CONTROL BUILDING

LEGEND

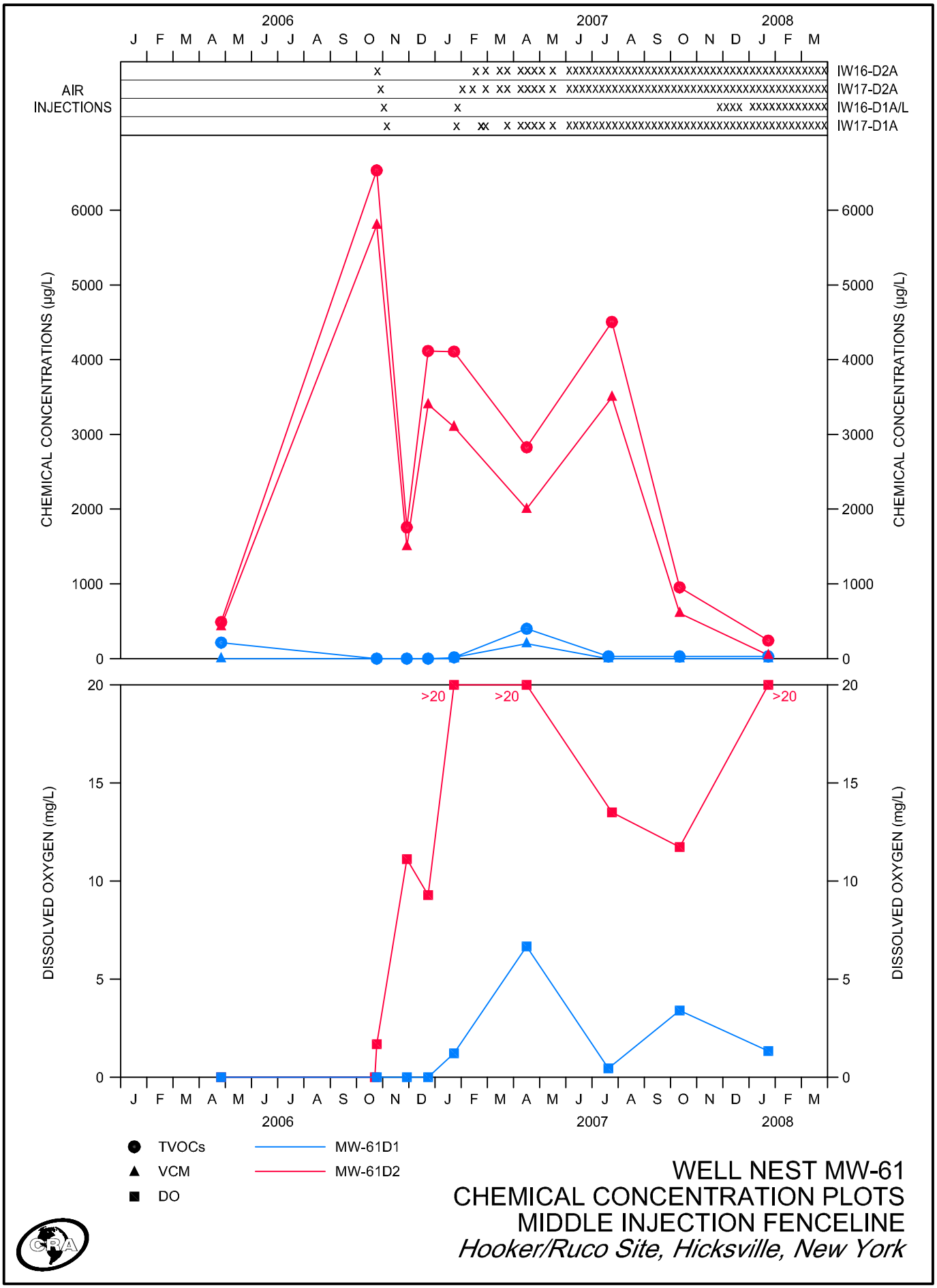
EXISTING INJECTION SYSTEM
FUTURE INJECTION SYSTEM
INJECTION WELL NEST
MW-80 EXISTING GROUNDWATER MONITORING WELL NEST
VZ-9 EXISTING SOIL VAPOR MONITORING WELL NEST
FUTURE GROUNDWATER / SOIL VAPOR MONITORING WELL NEST

figure 1

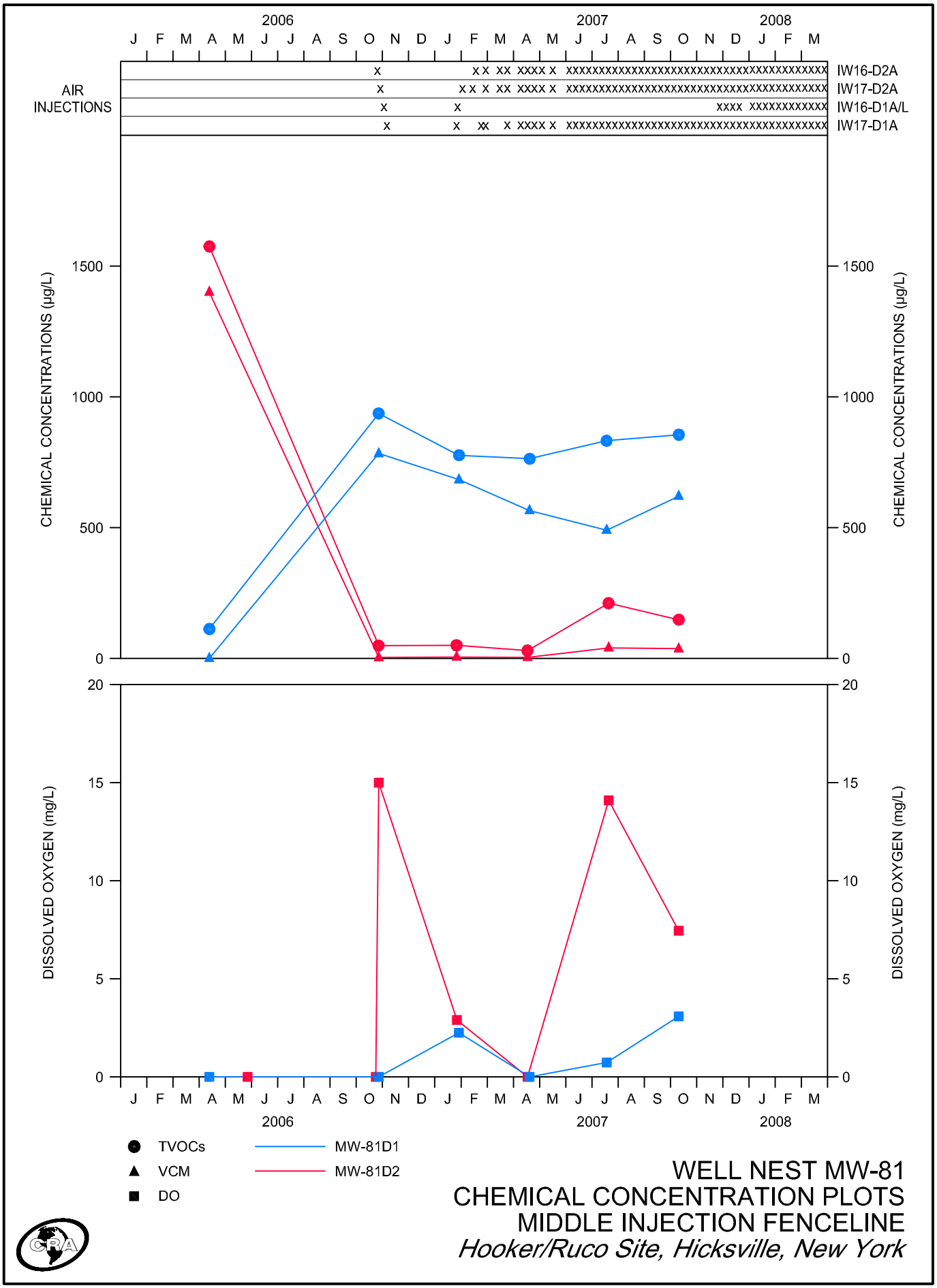
BIOSPARGE TREATMENT SYSTEM

Hooker/Ruco Site, Hicksville, New York

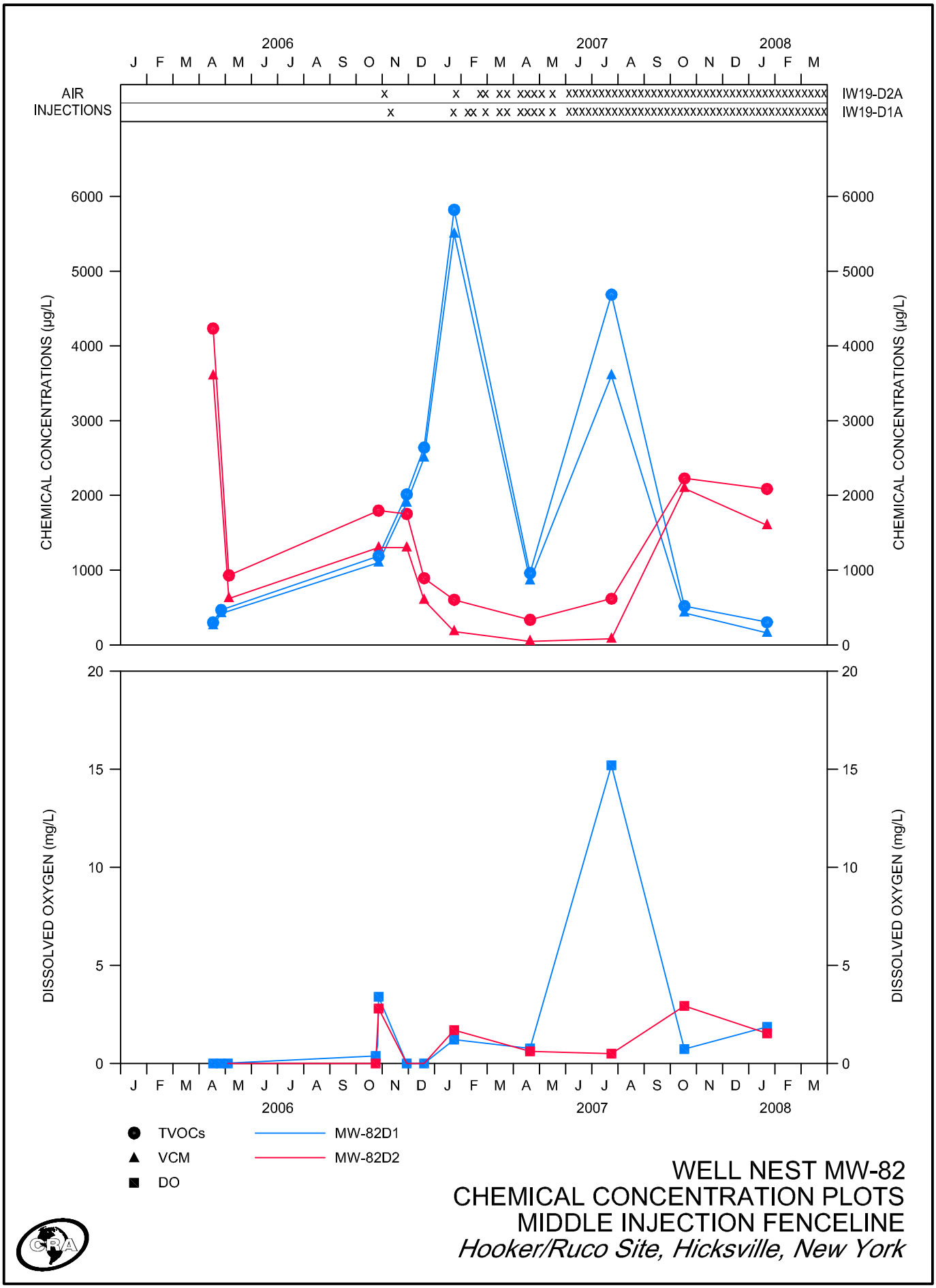
06883-95(NEGR002)GN-WA001 APR 04/2008



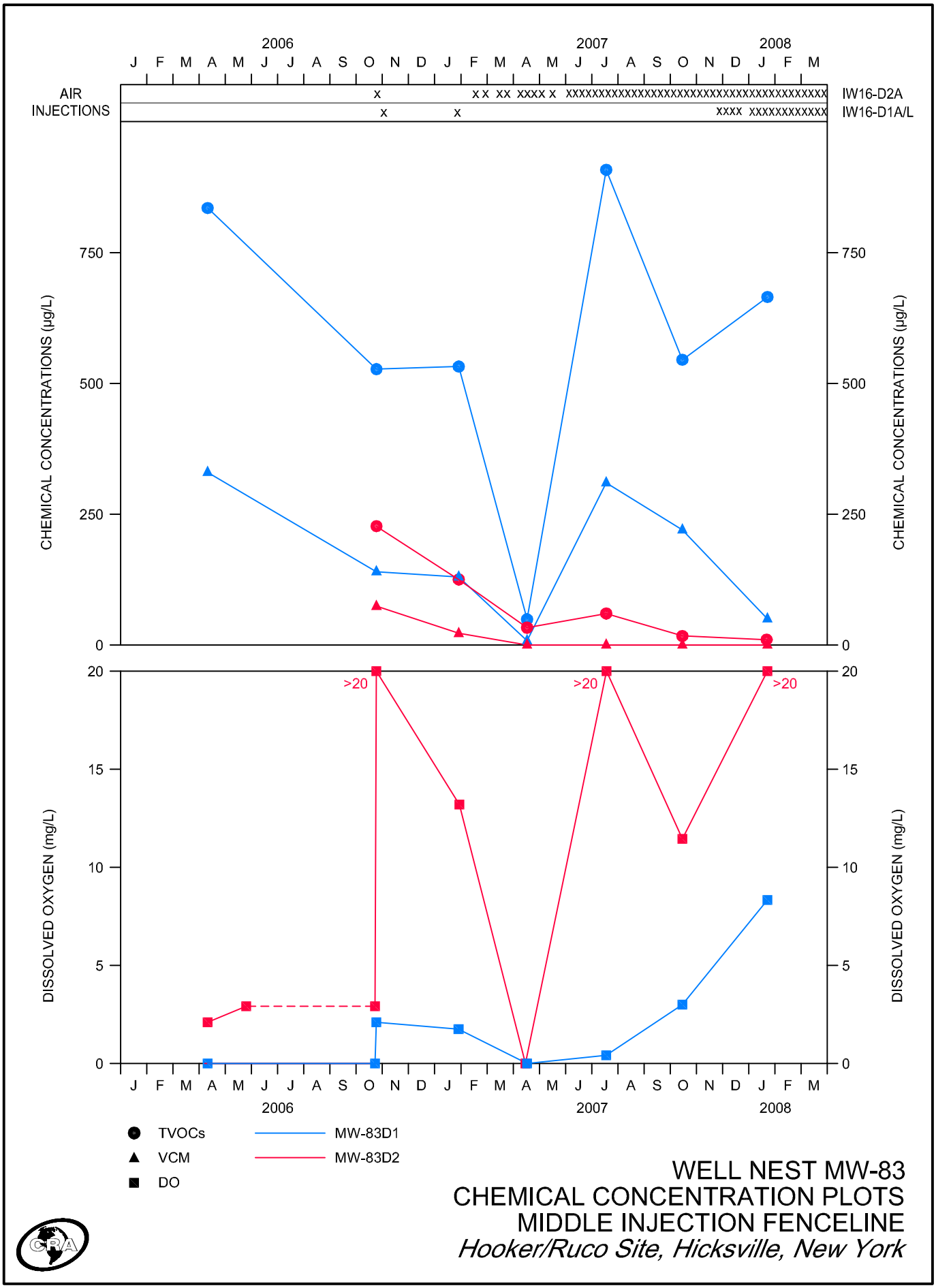
WELL NEST MW-61
CHEMICAL CONCENTRATION PLOTS
MIDDLE INJECTION FENCELINE
Hooker/Ruco Site, Hicksville, New York



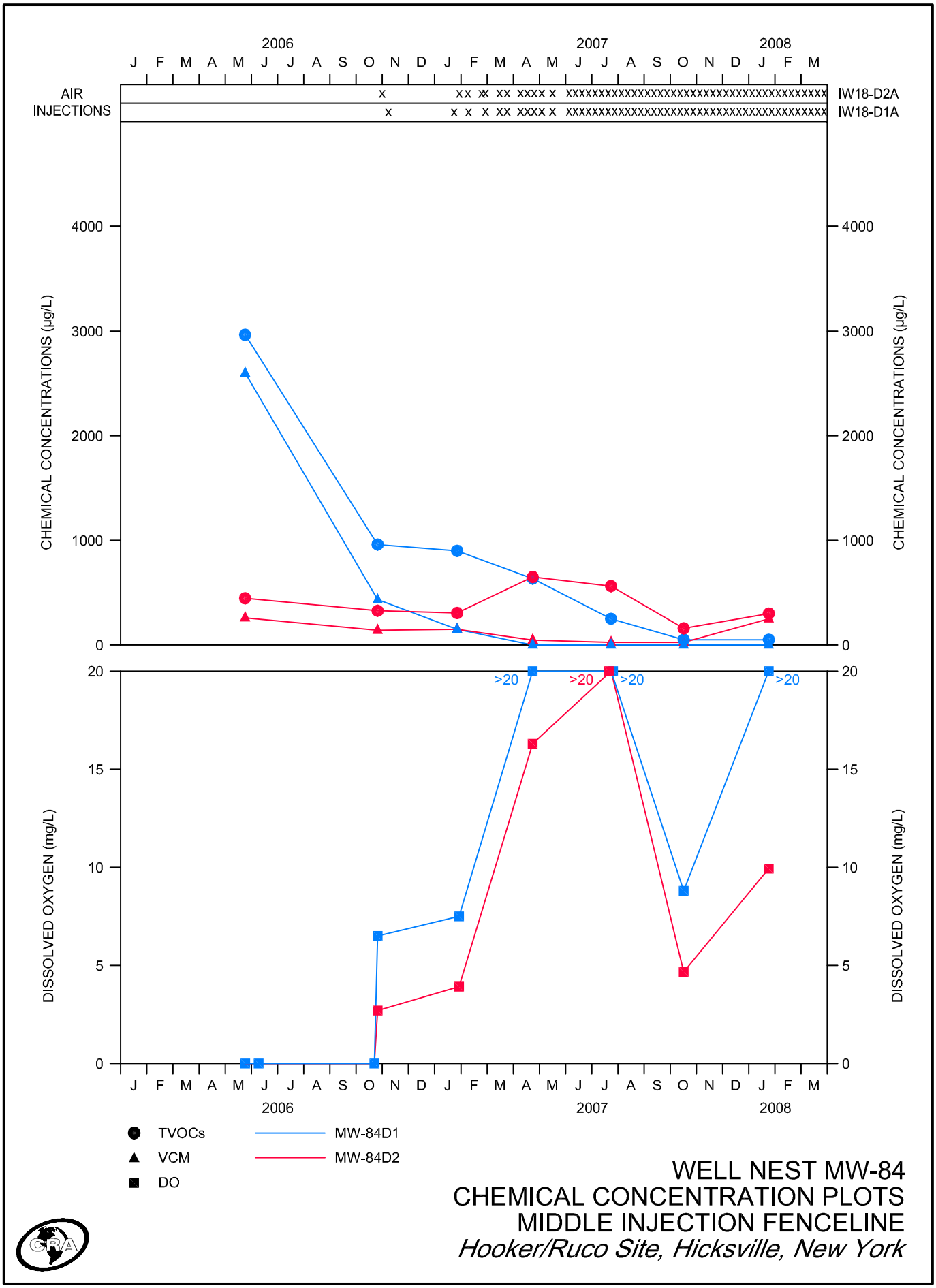
WELL NEST MW-81
CHEMICAL CONCENTRATION PLOTS
MIDDLE INJECTION FENCELINE
Hooker/Ruco Site, Hicksville, New York



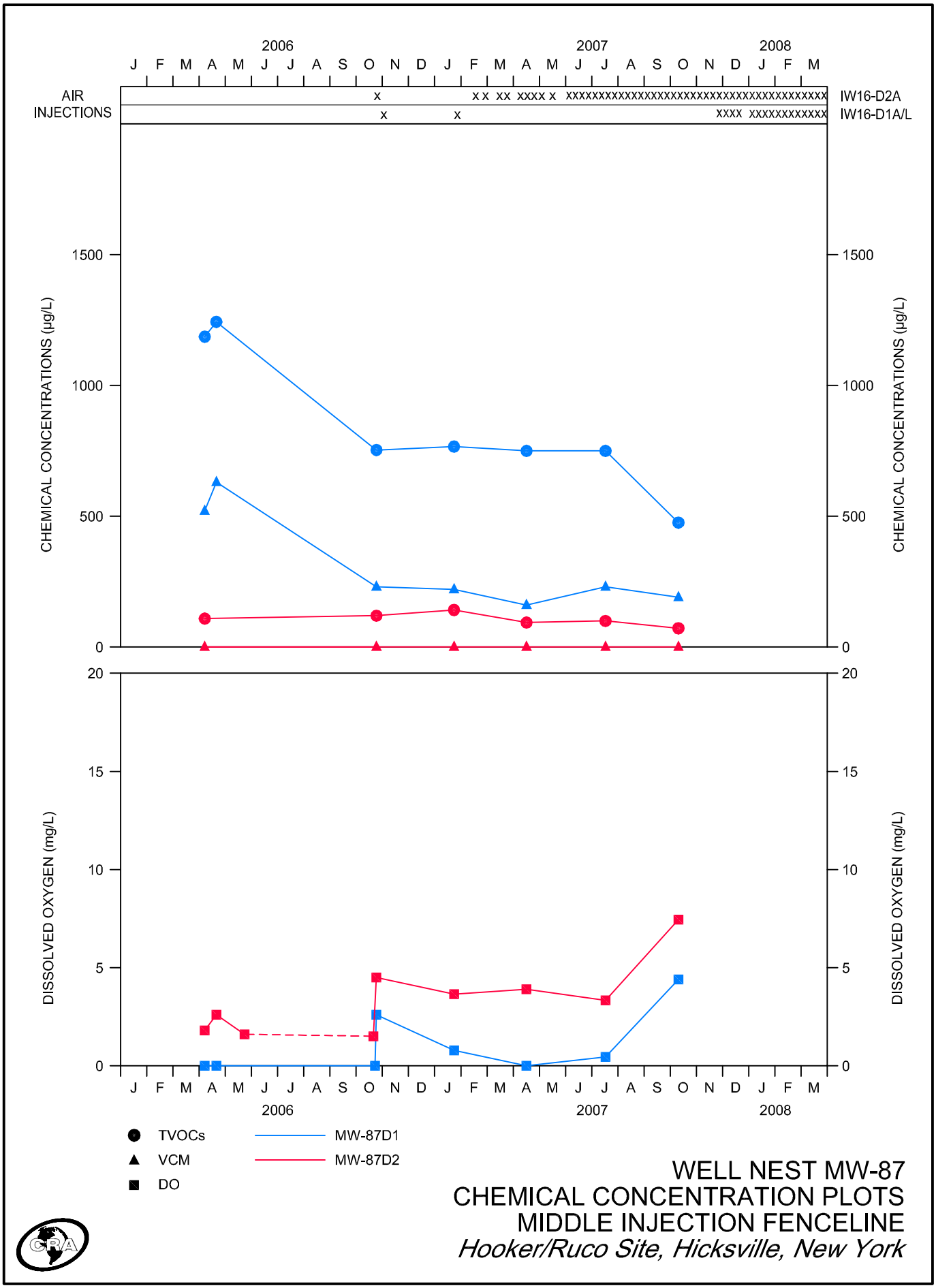
WELL NEST MW-82
CHEMICAL CONCENTRATION PLOTS
MIDDLE INJECTION FENCELINE
Hooker/Ruco Site, Hicksville, New York



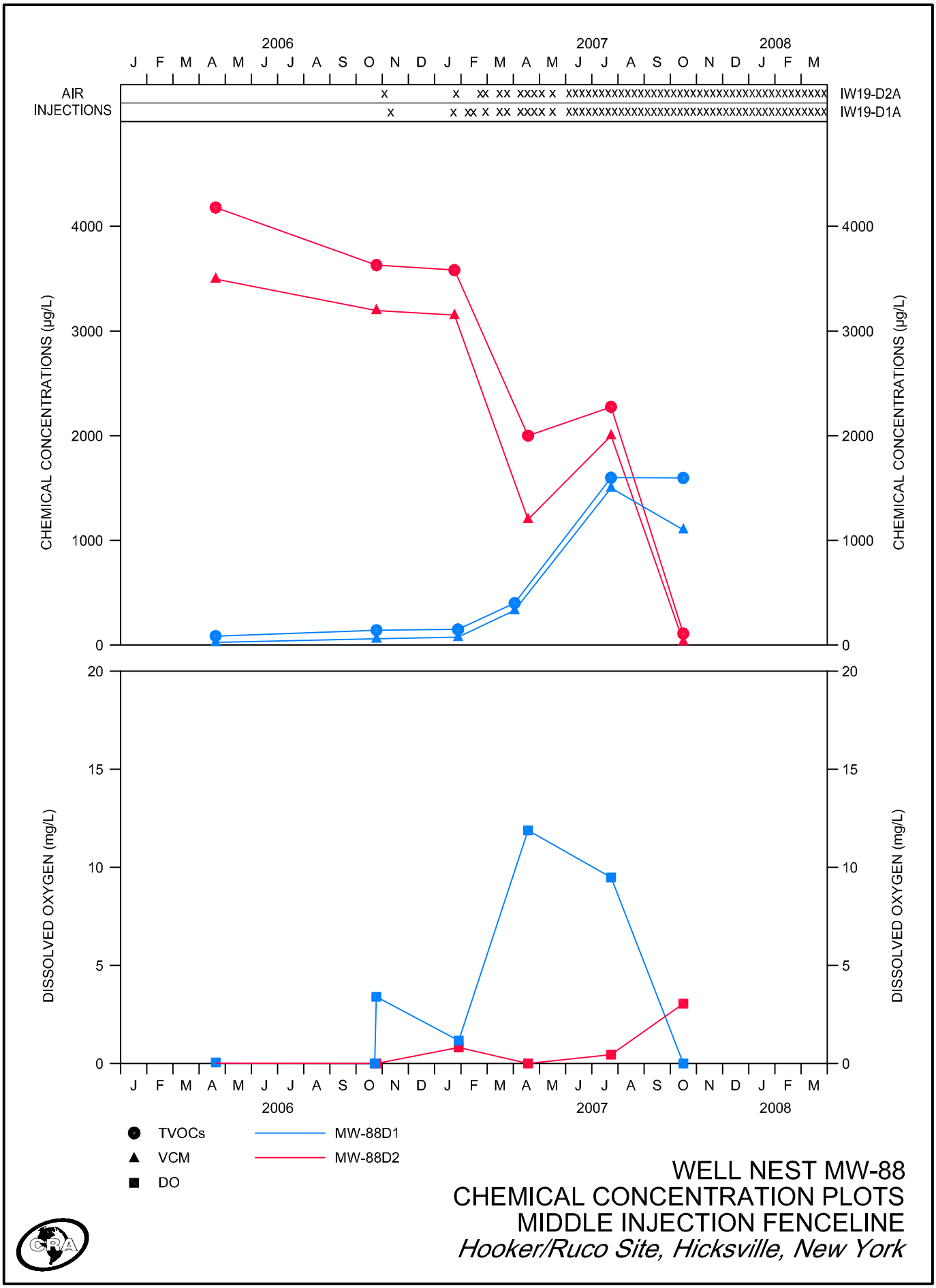
WELL NEST MW-83
CHEMICAL CONCENTRATION PLOTS
MIDDLE INJECTION FENCELINE
Hooker/Ruco Site, Hicksville, New York



WELL NEST MW-84
CHEMICAL CONCENTRATION PLOTS
MIDDLE INJECTION FENCELINE
Hooker/Ruco Site, Hicksville, New York



WELL NEST MW-87
CHEMICAL CONCENTRATION PLOTS
MIDDLE INJECTION FENCELINE
Hooker/Ruco Site, Hicksville, New York



WELL NEST MW-88
CHEMICAL CONCENTRATION PLOTS
MIDDLE INJECTION FENCELINE
Hooker/Ruco Site, Hicksville, New York

TABLE 1

MILLER SPRINGS REMEDIATION MANAGEMENT, INC.
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

Groundwater Investigations Beyond the Ruco Property (OU-3)

January through March 2008

Task and Activity	*Percentage of Activity Completed*	*Start Date*	*Scheduled Completion Date*	*Completion Date*
• Work Plan	100	July 1993		September 23, 1993
• Borehole/Well Installation (MW-50, MW-53, MW-54 and MW-55)	100	September 30, 1994		June 19, 1995
• Well Development, Sampling and Analysis	100	July 10, 1995		August 9, 1995
• Water Level Measurements	100	August 15, 1995		April, 1996
• Interim Report	100	May 23, 1995		June 15, 1995
• Interim Report - Addendum No. 1	100	July 28, 1995		August 2, 1995
• Grumman Production Wells Sample Collection and Analysis	100	August 1, 1995		October 4, 1995
• Well Installation (MW-51, MW-52, MW-56 and MW-57)	100	August 30, 1995		January 26, 1996
• Regional Groundwater Level Monitoring Event	100	October 3, 1995		October 3, 1995
• Well Development, Sampling and Analysis	100	January 22, 1996		July 5, 1996
• Grumman Groundwater Model	100	July 27, 1995		November 20, 1997
• Phase I Report	100	February 21, 1996		April 26, 1996
• Supporting Documentation Regarding the Effectiveness of In Situ Remediation	100	June 10, 1996		August 9, 1996
• Phase II Report	100	February 21, 1996		August 12, 1996
• Comments on DEC Draft Supplemental Feasibility Study	100	September 23, 1996		October 17, 1996
• Responses to Northrop Comments on the Phase I Report	100	April 17, 1997		June 6, 1997
• Comments on DEC Supplemental Feasibility Study	100	June 1, 1997		June 20, 1997
• Comments on Navy Regional Groundwater Feasibility Study	100	July 28, 1997		October 8, 1997
• Revised Pages for Navy Regional Groundwater Feasibility Study	100	July 28, 1997		November 3, 1997
• Comments on Groundwater Flow Model Report	100	November 20, 1997		December 5, 1997
• Comments on Draft Final Regional Groundwater Feasibility Study	100	March 27, 1998		May 1, 1998
• Comments on Northrop Letter Report	100	May 20, 1998		June 4, 1998
• Evaluation of MW-52 Area Groundwater Extraction System	100	July 1, 1998		July 29, 1998
• Remedial Investigation Report	100	December 1, 1998		January 21, 1999
• Feasibility Study Report	100	December 1, 1998		March 16, 1999
• Groundwater Treatability Study (GTS)	100	December 16, 1998		July 19, 1999
• Responses to EPA Comments on RI Report	100	May 25, 1999		June 11, 1999
• Responses to EPA Comments on FS Report	100	June 21, 1999		July 7, 1999
• Scope of Predesign Investigative Activities				
- Initial	100	June 1, 1999		June 11, 1999
- Revised	100	February 16, 2001		May 28, 2001

TABLE 1

MILLER SPRINGS REMEDIATION MANAGEMENT, INC.
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

Groundwater Investigations Beyond the Ruco Property (OU-3)

January through March 2008

Task and Activity	*Percentage of Activity Completed*	*Start Date*	*Scheduled Completion Date*	*Completion Date*
• Revised RI Report	100	May 25, 1999		November 16, 1999
• Revised FS Report	100	July 7, 1999		December 22, 1999
• Responses to EPA Comments on GTS	100	October 14, 1999		November 3, 1999
• Responses to EPA Comments on FS Report Responses	100	October 14, 1999		November 3, 1999
• Obtain access agreements	100	June 1999		December 2001
• Final RI Report	100	March 15, 2000		July 21, 2000
• Final FS Report	100	April 10, 2000		July 25, 2000
• PRAP	100			July 28, 2000
• ROD	100			September 29, 2000
• Unilateral Administrative Order	100			April 26, 2001
• Evaluate VCM presence in GP-3	100			August 15, 2001
• Design Supplemental System for VCM in GP-3	100	August 15, 2001		December 2001
• EPA Conditional Approval for Predesign Activities	100			September 28, 2001
• Issued Request for Bid for Well Installation	100			October 26, 2001
• Contractor Arrangements	100			January 15, 2002
• Arrangements for Biosparge Testing of Existing Wells	100			April 12, 2002
• Biosparge Testing of Existing Wells	100	April 15, 2002		August 13, 2002
• Phase 1 Well Installation	100	February 4, 2002		June 28, 2002
• Upgrade of GP-1/GP-3 Treatment System	100	April 8, 2002		July 9, 2003
• Sample Wells	100	June 17, 2002		July 12, 2002
• Evaluate Pre-Design Information /Develop Scope of Biosparge Remedy	100			November 22, 2002
• Install 2 Additional Wells (MW-67/68)	100	December 18, 2002		February 14, 2003
• Sample Wells MW-67 & MW-68				March 25/26, 2003
• Responses to EPA comments on Predesign Information Report	100	March 6, 2003		March 27, 2003
• EPA Meeting				April 17, 2003
• Closed Well T-1	100			May 12, 2003
• MW-67/68 Installation Report	100			May 23, 2003
• Responses to EPA comments on March 27, 2003 Responses	100	June 25, 2003		July 29, 2003
• Pre-Final (95%) RD Report	100	July 7, 2003		October 31, 2003
• Responses to EPA comments on 95% RD Report	100	April 12, 2004		May 27, 2004
• Submitted Due Diligence Request to Northrop	100			May 10, 2004

TABLE 1

MILLER SPRINGS REMEDIATION MANAGEMENT, INC.
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

Groundwater Investigations Beyond the Ruco Property (OU-3)

January through March 2008

Task and Activity	*Percentage of Activity Completed*	*Start Date*	*Scheduled Completion Date*	*Completion Date*
• Follow up Due Diligence Clarification to Northrop 6/11 Data Package	100			June 25, 2004
• Offer to Northrop for Property Purchase	100			October 1, 2004
• Sample 13 Wells and Submit Results	100	August 23, 2004		October 14, 2004
• Responses to EPA Comments on 95% RD Report	100	November 17, 2004		December 6, 2004
• Revised Property Purchase offer submitted to Northrop	100	December 22, 2004		December 22,2004
• Prepare 100% RD Report	100	January 12, 2005		May 27, 2005
• Property Purchased	100			June 2005
• 100% Design Approved	100			July 7, 2005
• Obtain Building Permits	100	July 11, 2005		November 10, 2005
• Arrange Contractors	100	January 2005		July 22, 2005
• Well Installation	100	September 13, 2005		April 28, 2006
• Biosparge System Installation	100	November 2005		May 2006
• Closure of On-Site and Off-Site Wells	100	November 2005		May 10, 2006
• OU-1 Soil Borings	100	November 2005		January 11, 2006
• Background Groundwater Sampling	100	March 27, 2006		June 14, 2006
• Pre-Start Sampling	100			October 24, 25, and 26, 2006
• Final Inspection	100			October 27, 2006
• Biosparge System Start-Up	100			October 27, 2006
• First Monthly Sampling	100			November 28 to 30, 2006
• Second Monthly Sampling	100			December 20 and 21, 2006
• Noise Survey	100			January 18, 2007
• 2007 First Quarterly Sampling	100			January 23 to 30, 2007
• Submission of Phase I Construction Documents	100			February 1, 2007
• 2007 Second Quarterly Sampling	100			April 18 to 27, 2007
• 2007 Third Quarterly Sampling	100			July 16 to 27, 2007
• 2007 Fourth Quarterly Sampling	100			October 8 to 18, 2007
• Evalution/Recommendation for Design Modifications	100			January 15, 2008
• 2008 First Quarterly Sampling	100			January 22 to 28, 2008

TABLE 2

SUMMARY OF PURGING FINAL STABILIZATION PARAMETER VALUES
HOOKER RUCO SITE
HICKSVILLE, NEW YORK

Well	*Date Sampled*	*Drawdown from Initial Water Level* [(1)] *(feet)*	*Well Screen Volumes Purged*	*pH (S.U.)*	*Temperature (Celsius)*	*Conductivity (mS/cm)*	*ORP (mV)*	*DO (mg/L)*	*Turbidity (NTU)*	*Fe^{+2} (mg/L)*
MW-52 S	4/7/2006	0.03	4.3	5.62	14.3	0.199	-7	0.00	0.0	1.60
	3/13/2007	0.20	6.1	6.34	14.8	0.652	5	1.64	58.4	1.66
MW-52 I	4/13/2006	0.04	4.5	4.56	15.0	0.121	303	9.77	12.4	0.05
	3/14/2007	0.05	4.9	5.42	14.6	0.192	259	5.85	44.8	0.04
MW-52D	3/14/2007	0.00	5.3	5.67	14.7	0.314	226	3.07	307	0.11
MW-58 D	10/26/2006	0.01	3.4	5.69	16.8	0.192	21	2.42	58.1	4.30
MW-58 D1	10/26/2006	0.14	3.2	6.34	16.9	0.222	-101	2.58	68.6	8.80
MW-58 D2	10/25/2006	0.11	2.8	6.95	17.3	0.266	-198	0.00	15.1	5.16
MW-59 D1	10/25/2006	0.00	2.0	6.07	17.4	0.432	-20	0.58	261	3.24
MW-59 D2	10/25/2006	0.02	5.5	6.50	17.5	0.452	-99	0.47	240	2.00
MW-59 D	10/26/2006	0.07	4.5	10.29	17.1	0.364	-108	0.00	9.6	2.65
MW-61 I	4/28/2006	0.00	4.6	5.68	14.3	0.221	139	0.00	121	1.76
	5/8/2006	0.08	1.9	4.86	14.9	0.182	136	0.00	64.7	1.49
	5/18/2006	0.20	2.9	4.90	16.1	0.155	123	0.00	571	2.16
	5/30/2006	0.20	5.7	5.10	15.7	0.167	118	0.00	110	2.61
	10/24/2006	0.14	4.3	5.53	15.1	0.999	102	0.00	166	2.76
	10/25/2006	0.00	4.1	5.32	15.1	0.202	112	0.41	370	3.04
	10/26/2006	0.02	3.9	5.33	14.6	0.251	133	0.00	900	2.49
	11/29/2006	0.10	5.1	5.58	14.8	0.242	60	0.00	397	1.96
	11/29/2006	0.10	5.1	5.58	14.8	0.242	60	0.00	397	1.96
	12/21/2006	0.08	5.2	5.20	14.4	0.185	118	0.00	18.2	2.17
	1/24/2007	-0.05	4.5	5.54	14.9	0.275	101	1.93	46.4	1.84
	4/19/2007	0.00	6.1	5.88	14.7	0.320	124	3.21	254	0.03
	10/11/2007	0.22	10.7	5.61	15.6	0.193	50	3.56	33.6	3.12
	1/24/2008	-0.02	6.2	5.56	14.5	0.216	86	1.44	87.2	3.11
MW-61 D1	4/28/2006	0.00	4.7	6.07	14.5	0.210	122	0.00	356	1.78
	5/8/2006	0.05	5.7	5.07	15.0	0.210	101	0.00	172	2.77
	5/18/2006	0.16	2.9	5.18	16.2	0.170	91	0.00	>999	>3.30
	5/30/2006	0.25	4.5	5.27	15.9	0.196	93	0.00	138	4.66
	10/24/2006	0.01	4.4	5.49	15.2	0.999	110	0.00	72.4	2.30
	10/25/2006	0.08	4.1	5.33	15.1	0.201	107	0.65	129	3.74
	10/26/2006	0.03	3.9	5.41	14.9	0.273	109	0.00	86	2.99
	11/29/2006	0.00	3.6	5.72	14.9	0.246	54	0.00	310	1.92
	12/21/2006	0.08	5.8	5.29	14.6	0.192	90	0.00	80.7	2.59
	1/23/2007	0.00	8.1	5.73	14.3	0.389	54	1.21	137	1.84
	4/19/2007	0.14	8.1	6.19	14.6	0.304	79	6.66	95.9	0.26
	7/20/2007	0.23	11.7	5.31	16.4	0.163	83	0.44	20	3.30
	10/10/2007	0.00	4.9	5.84	15.5	0.198	26	3.39	27.2	4.20
	1/24/2008	0.18	5.4	5.58	14.4	0.244	78	1.33	38.7	3.21
MW-61 D2	4/28/2006	0.05	6.4	7.03	15.2	0.230	-186	0.00	413	2.00
	5/5/2006	0.00	10.5	6.65	15.1	0.370	-160	0.00	>999	10.08
	5/18/2006	0.30	4.9	6.63	16.1	0.294	-127	0.00	999	>3.30
	5/30/2006	0.00	4.4	6.32	15.8	0.249	-100	0.00	84.6	2.99
	10/24/2006	0.10	6.4	6.22	14.9	0.904	37	0.00	>999	0.15
	10/25/2006	0.20	4.4	5.77	15.1	0.236	27	1.42	316	5.46
	10/26/2006	0.25	4.2	5.63	14.9	0.233	62	1.94	550	4.04
	11/29/2006	0.00	4.4	6.25	14.8	0.253	110	11.12	>999	1.91
	12/21/2006	0.19	5.1	5.58	14.2	0.216	120	9.28	89.4	2.36
	1/23/2007	0.10	5.1	6.62	14.0	0.273	131	>20	>999	0.89
	4/23/2007	0.05	8.6	5.38	15.1	0.189	361	>20	231	0.21
	7/23/2007	0.04	5.1	5.19	17.6	0.219	71	13.45	>999	1.34
	10/11/2007	0.00	2.0	5.95	15.4	0.211	300	11.71	>999	0.21
	1/24/2008	-17.50	5.3	6.30	13.1	0.195	326	>20	228	0.78
MW-62I	5/16/2007	0.10	7.1	5.31	14.1	0.278	59	0.00	113	0.69
MW-62D	5/16/2007	0.15	5.4	10.56	14.9	0.119	-125	0.00	570	0.38
MW-63 D1	5/23/2006	0.20	2.4	5.03	15.9	0.152	230	0.00	0.0	2.13
MW-63 D2	5/24/2006	-0.21	5.5	5.30	15.0	0.152	246	0.41	6.5	0.06
	6/14/2006	0.05	5.1	5.01	16.3	0.171	222	0.92	3.5	NM
MW-63 S	5/19/2006	0.12	2.4	5.20	14.8	0.150	238	0.16	411	0.18
MW-63 I	5/23/2006	0.20	4.6	5.09	15.4	0.154	241	0.00	0.0	0.03
MW-64 S	3/23/2006	0.10	2.9	5.83	14.3	0.188	-18	0.00	13.8	4.71
	4/26/2007	0.00	5.3	6.71	14.2	0.304	-114	0.00	53.6	2.37
MW-64 I	3/24/2006	-0.01	3.6	5.87	14.1	0.203	-38	0.00	0.0	3.21
	4/26/2007	0.00	6.1	6.78	14.2	0.317	-121	0.00	17.5	1.87

TABLE 2

SUMMARY OF PURGING FINAL STABILIZATION PARAMETER VALUES
HOOKER RUCO SITE
HICKSVILLE, NEW YORK

Well	*Date Sampled*	*Drawdown from Initial Water Level* [(1)] *(feet)*	*Well Screen Volumes Purged*	*pH (S.U.)*	*Temperature (Celsius)*	*Conductivity (mS/cm)*	*ORP (mV)*	*DO (mg/L)*	*Turbidity (NTU)*	*Fe^{+2} (mg/L)*
MW-64D	4/26/2007	0.00	2.7	6.72	14.6	0.324	-115	0.00	22.9	1.98
MW-66 D2	4/3/2006	0.03	5.2	5.23	15.2	0.197	-16	0.00	24.3	4.50
MW-67 S	3/28/2006	0.35	5.2	5.88	15.7	0.206	-117	0.00	271	13.08
MW-67 D	3/29/2006	0.47	4.3	5.64	17.1	0.223	86	0.50	>999	16.88
MW-68 S	4/6/2006	-0.10	5.1	8.87	17.4	0.144	-281	0.00	27.8	0.60
MW-68 D	3/31/2006	0.10	5.1	5.67	17.6	0.165	-150	0.00	440	9.72
MW-81 D1	4/12/2006	0.16	2.9	6.44	14.5	0.228	-65	0.00	132	1.47
	5/2/2006	0.05	2.9	5.44	15.1	0.303	-31	0.00	0.9	3.20
	5/17/2006	0.00	3.9	6.04	16.8	0.263	-75	0.00	86.4	2.81
	5/25/2006	0.07	2.5	5.62	15.6	0.268	-32	0.00	31.1	>3.3
	10/24/2006	0.08	4.0	5.72	14.5	0.420	15	2.26	14	3.23
	10/25/2006	0.21	0.7	5.77	15.3	0.349	-55	3.01	0.0	9.76
	10/26/2006	-0.08	1.3	6.02	14.7	0.321	-25	0.00	0.0	10.12
	1/29/2007	-0.07	6.1	6.19	13.1	0.429	-55	2.26	704	2.36
	4/19/2007	0.18	5.3	6.20	14.2	0.380	-128	0.00	629	2.06
	7/23/2007	0.07	5.3	6.13	15.9	0.247	-22	0.74	9.2	5.19
	10/9/2007	0.00	7.9	6.02	15.8	0.228	-77	3.08	5.1	4.98
MW-81 D2	4/12/2006	0.05	2.4	5.79	15.2	0.357	-51	0.00	4.1	5.04
	5/4/2006	0.00	5.8	6.12	16.8	0.204	-6	1.10	119	1.37
	5/18/2006	0.12	3.4	8.18	15.1	0.220	-58	0.00	906	>3.30
	5/26/2006	0.21	3.2	8.58	15.8	0.225	-129	0.00	>999	>3.3
	10/24/2006	0.09	3.2	6.33	14.5	0.263	78	16.87	396	2.37
	10/25/2006	-0.04	1.9	6.49	15.7	0.251	73	17.96	170	0.40
	10/26/2006	0.21	1.9	7.64	15.1	0.229	93	15.00	>999	0.74
	1/24/2007	-0.05	5.9	7.21	13.1	0.234	-39	2.90	>999	0.98
	4/18/2007	0.00	1.3	9.84	12.5	0.301	-110	0.00	519	2.71
	7/19/2007	0.08	2.6	6.03	17.6	0.181	48	14.10	121	1.48
	10/10/2007	0.18	7.5	6.72	15.3	0.180	35	7.45	413	9.39
MW-82 D1	4/17/2006	0.00	2.8	6.88	16.4	0.391	-126	0.00	10.8	1.28
	4/25/2006	0.12	4.9	6.23	17.2	0.351	-170	0.00	281	1.89
	5/11/2006	0.10	2.4	6.39	16.5	0.356	-190	0.00	150	4.32
	5/25/2006	0.00	6.6	6.27	17.8	0.341	-200	0.00	226	5.22
	5/31/2006	0.00	5.0	6.98	20.8	0.374	-214	0.00	297	5.28
	10/24/2006	0.23	0.9	6.44	14.5	0.411	-119	1.93	202	6.14
	10/25/2006	0.00	1.6	7.37	14.5	0.491	-154	0.00	9	9.36
	10/26/2006	0.02	1.0	6.63	16.0	0.317	-142	2.77	116	6.32
	11/30/2006	-0.30	2.6	7.39	15.8	0.463	-158	0.00	252	1.86
	12/20/2006	0.05	2.3	6.89	12.9	0.327	-149	0.00	146	1.98
	1/25/2007	0.05	5.7	7.25	12.9	0.440	-145	1.21	48.8	1.94
	4/20/2007	0.05	2.6	6.76	18.1	0.305	-153	0.76	357	2.79
	7/25/2007	0.05	3.0	5.39	23.0	0.186	95	15.15	73	2.58
	10/18/2007	0.04	3.6	6.04	18.1	0.219	125	0.73	339	5.25
	1/23/2008	0.00	4.2	6.13	13.3	0.239	-38	1.89	7.8	5.82
MW-82 D2	4/17/2006	0.08	3.6	6.14	16.2	0.256	-152	0.00	636	5.12
	4/24/2006	0.00	4.3	7.34	15.7	0.295	-367	0.00	315	1.64
	5/25/2006	0.00	2.9	6.06	17.2	0.239	-140	0.00	95	3.02
	6/5/2006	0.05	3.0	6.52	17.7	0.251	-139	0.00	65.1	6.40
	5/31/2006	0.00	3.9	6.54	16.7	0.239	-125	0.00	27.9	6.58
	10/24/2006	0.07	4.1	6.91	16.3	0.231	-166	0.38	234	10.44
	10/25/2006	-0.08	1.0	6.07	15.4	0.282	-95	1.98	6.8	11.64
	10/26/2006	0.14	1.3	6.23	17.5	0.260	-110	3.37	59	8.60
	11/30/2006	0.00	2.7	7.48	16.6	0.313	-179	0.00	37.9	2.31
	12/20/2006	0.00	3.4	7.11	14.1	0.226	-178	0.00	14.1	0.34
	1/25/2007	0.00	3.2	7.23	13.5	0.284	-147	1.70	66.1	2.01
	4/20/2007	0.00	3.4	6.87	18.9	0.182	-183	0.61	182	1.91
	7/25/2007	0.05	3.7	6.49	18.9	0.211	-192	0.50	47	6.56
	10/18/2007	0.05	5.2	9.88	20.6	0.499	-359	2.93	760	1.22
	1/23/2008	0.00	4.2	6.59	13.9	0.183	-147	1.51	61.5	4.74
MW-83 D1	4/11/2006	0.08	4.3	10.04	15.3	0.472	-195	0.00	648	0.20
	5/1/2006	0.07	4.5	10.35	17.1	0.518	-125	0.00	178	0.44
	5/16/2006	0.01	5.7	11.56	13.5	0.978	-235	0.00	>999	1.20
	5/24/2006	0.05	6.3	10.89	16.0	0.375	-211	0.00	350	1.36
	10/24/2006	0.20	1.0	11.70	13.1	1.190	70	0.00	108	1.94
	10/25/2006	0.11	2.0	12.80	14.4	0.990	-146	0.00	102	0.23
	10/26/2006	0.24	3.1	10.30	14.1	0.561	-64	2.06	9.9	0.06
	1/30/2007	0.03	5.3	11.07	13.4	0.342	6	1.74	79.4	0.01
	4/18/2007	0.00	4.9	10.70	12.7	0.256	-70	0.00	690	0.00
	7/17/2007	0.00	2.4	10.70	16.3	0.271	-14	0.41	12	0.04
	10/12/2007	0.00	12.4	10.10	15.3	0.226	64	3.00	127	0.13
	1/22/2008	0.03	4.4	10.52	13.5	0.283	174	8.34	0.0	0.12

TABLE 2

SUMMARY OF PURGING FINAL STABILIZATION PARAMETER VALUES
HOOKER RUCO SITE
HICKSVILLE, NEW YORK

Well	*Date Sampled*	*Drawdown from Initial Water Level* [1] *(feet)*	*Well Screen Volumes Purged*	*pH (S.U.)*	*Temperature (Celsius)*	*Conductivity (mS/cm)*	*ORP (mV)*	*DO (mg/L)*	*Turbidity (NTU)*	*Fe^{+2} (mg/L)*
MW-83 D2	5/2/2006	-0.25	3.6	6.00	15.0	0.235	50	1.70	0.0	0.49
	5/16/2006	0.08	4.5	6.88	15.0	0.224	42	2.02	0.0	0.02
	5/25/2006	0.13	2.4	6.61	15.5	0.216	73	2.91	0.0	0.00
	10/24/2006	0.09	4.9	6.56	13.7	0.226	241	>19.99	17.5	9.88
	10/25/2006	0.10	1.2	6.18	14.3	0.297	179	>20	92	0.00
	10/26/2006	0.10	1.5	6.46	13.1	0.216	171	>20	0.0	0.06
	1/29/2007	0.00	2.9	6.55	10.3	0.197	249	13.20	69.3	0.00
	4/18/2007	0.21	3.4	8.16	13.0	0.233	97	0.00	103	0.00
	7/17/2007	0.04	3.0	6.42	17.3	0.147	289	>19.99	25	0.08
	10/15/2007	0.15	13.0	5.92	15.6	0.140	279	11.44	0	0.23
	1/22/2008	0.11	5.3	6.76	13.3	0.174	328	>20	0.0	0.14
MW-84 D1	5/23/2006	0.09	1.7	6.25	16.1	0.301	-71	0.00	18.5	3.19
	5/26/2006	0.00	3.4	6.45	16.8	0.305	-118	0.00	91.9	4.50
	6/6/2006	0.15	4.1	6.55	16.6	0.280	-139	0.00	10.3	5.50
	6/8/2006	0.00	5.1	6.58	16.3	0.263	-163	0.00	10.4	2.35
	10/24/2006	0.00	4.7	5.46	15.7	0.197	50	7.89	54.7	1.44
	10/25/2006	0.06	1.3	6.32	15.4	0.296	86	8.03	0.0	1.37
	10/26/2006	0.04	2.9	6.19	15.8	0.300	78	6.51	77	1.19
	1/30/2007	0.00	3.6	6.16	13.1	0.254	160	7.53	188	1.24
	4/24/2007	0.00	3.6	6.49	16.5	0.249	282	>20	113	0.05
	7/24/2007	0.10	5.1	6.26	19.2	0.137	301	>20	6.9	0.05
	10/17/2007	0.21	4.9	6.45	15.8	0.143	304	8.81	85	0.62
	1/28/2008	0.07	4.5	6.46	13.9	0.157	303	>20	70.4	0.00
MW-84 D2	5/23/2006	0.15	3.9	6.74	17.4	0.246	-131	0.00	780	12.68
	5/30/2006	0.20	2.4	6.59	18.8	0.241	-152	2.70	595	3.18
	6/6/2006	0.00	5.7	7.17	16.8	0.219	-221	0.00	228	2.70
	6/8/2006	0.00	3.0	6.78	16.5	0.220	-162	0.00	230	3.78
	10/24/2006	0.00	6.8	8.47	14.9	0.295	-90	4.69	131	1.53
	10/25/2006	-0.02	1.0	8.68	15.1	0.395	-47	2.84	127	0.27
	10/26/2006	-0.01	5.0	8.00	15.5	0.393	-77	2.67	>999	0.64
	1/29/2007	0.00	1.9	9.97	12.2	0.322	7	3.91	199	0.18
	4/24/2007	0.10	6.7	10.22	16.5	0.339	138	16.31	470	0.30
	7/24/2007	0.10	8.9	10.33	20.6	0.313	139	>20	200	0.21
	10/17/2007	0.09	4.7	10.88	17.1	0.396	34	4.68	817	0.23
	1/28/2008	0.00	6.5	11.01	13.8	0.789	97	9.91	187	0.79
MW-87 D1	4/5/2006	-0.04	2.9	5.04	12.8	0.197	142	0.00	64	0.99
	4/20/2006	0.02	3.9	4.94	17.5	0.184	218	0.00	43.8	0.30
	5/4/2006	0.02	2.6	5.03	16.2	0.187	231	0.00	0.0	0.34
	5/15/2006	0.02	2.0	5.28	15.1	0.165	207	0.00	66.2	0.27
	10/24/2006	0.25	4.5	5.45	14.9	0.229	234	0.70	5.4	0.17
	10/25/2006	-0.01	2.8	5.23	15.9	0.224	221	0.00	0.0	0.35
	10/26/2006	0.03	2.1	5.26	15.0	0.192	226	2.63	22.2	0.05
	1/24/2007	0.10	2.1	5.31	14.7	0.200	248	0.78	11.0	0.10
	4/17/2007	0.10	5.3	5.47	14.5	0.999	169	0.00	62	0.14
	7/17/2007	0.00	4.0	5.30	17.2	0.186	223	0.44	54	0.09
	10/8/2007	0.00	5.7	5.30	19.1	0.229	203	4.39	17.3	0.40
MW-87 D2	4/5/2006	0.00	2.8	5.21	14.1	0.172	121	1.81	129	1.14
	4/25/2006	-0.05	5.1	5.40	15.5	0.163	149	2.62	42.8	0.20
	5/15/2006	0.32	4.3	5.80	15.4	0.152	104	1.59	54.8	NM
	5/24/2006	0.10	4.9	5.45	16.2	0.155	163	1.62	0.0	1.36
	10/24/2006	0.13	3.9	5.69	15.5	0.183	212	4.00	131	0.08
	10/25/2006	0.06	1.5	5.34	15.5	0.173	137	6.68	25.5	0.09
	10/26/2006	-0.03	2.1	5.37	15.2	0.160	226	4.53	0.0	0.02
	1/24/2007	0.00	4.7	5.61	13.3	0.186	131	3.64	160	0.25
	4/17/2007	0.00	5.3	5.83	14.5	0.228	106	3.89	0.9	0.09
	7/16/2007	0.00	2.0	5.65	17.8	0.168	145	3.31	5.1	0.07
	10/9/2007	0.18	2.9	5.57	16.2	0.172	287	7.45	60.1	0.12
MW-88 D1	4/19/2006	0.08	2.9	6.09	17.9	0.273	-90	0.00	>999	9.64
	4/26/2006	0.32	6.7	5.99	16.7	0.204	-53	0.00	589	4.96
	5/10/2006	0.25	4.2	5.68	15.4	0.200	-2	0.00	393	2.75
	5/30/2006	0.00	3.6	5.90	17.1	0.188	-65	3.13	408	3.62
	6/1/2006	0.10	5.0	6.13	19.9	0.188	-73	0.00	367	5.12
	10/24/2006	0.06	1.8	6.06	15.6	0.252	-43	0.00	88.6	11.04
	10/25/2006	0.09	1.4	5.86	15.3	0.233	-13	0.00	4.7	10.20
	10/26/2006	0.00	3.4	5.59	15.6	0.317	33	3.36	415	6.56
	1/30/2007	0.10	2.9	6.12	11.8	0.193	-45	1.16	257	2.01
	4/19/2007	0.03	4.9	5.84	15.4	0.187	172	11.88	334	1.84
	7/26/2007	0.22	2.0	5.75	22.4	0.249	232	9.48	284	0.74
	10/16/2007	0.00	2.5	6.35	17.7	0.226	3	0.02	92	5.47

TABLE 2

SUMMARY OF PURGING FINAL STABILIZATION PARAMETER VALUES
HOOKER RUCO SITE
HICKSVILLE, NEW YORK

Well	*Date Sampled*	*Drawdown from Initial Water Level* [(1)] *(feet)*	*Well Screen Volumes Purged*	*pH (S.U.)*	*Temperature (Celsius)*	*Conductivity (mS/cm)*	*ORP (mV)*	*DO (mg/L)*	*Turbidity (NTU)*	*Fe^{+2} (mg/L)*
MW-88 D2	4/20/2006	0.00	3.7	6.25	17.4	0.244	-152	0.00	951	6.16
	5/10/2006	0.03	3.5	8.05	16.6	0.330	-331	0.00	>999	9.44
	6/1/2006	0.00	4.9	7.24	18.5	0.287	-210	0.00	>999	12.95
	6/7/2006	0.10	4.3	8.44	15.9	0.320	-380	0.00	>999	12.52
	10/24/2006	0.00	5.8	9.10	15.8	0.387	-282	1.44	>999	18.96
	10/25/2006	0.17	1.0	9.44	15.0	0.426	-253	1.97	>999	11.40
	10/26/2006	0.00	1.5	7.33	17.7	0.286	-212	0.00	>999	NM
	1/25/2007	0.00	8.5	9.17	11.3	0.323	-315	0.82	993	0.16
	4/19/2007	0.10	4.0	7.13	16.8	0.278	-219	0.37	>999	2.17
	7/26/2007	0.31	2.5	9.18	31.2	0.427	-333	0.44	>999	1.21
	10/16/2007	0.03	5.7	7.48	18.2	0.192	-291	3.04	145	9.39
MW-90 D1	6/13/2006	0.10	7.8	6.25	17.0	0.230	-112	0.00	76.8	4.10
	4/25/2007	0.00	4.9	6.07	16.1	0.231	-100	0.93	542	2.30
MW-90 D2	6/13/2006	0.05	7.8	5.91	18.4	0.191	-9	0.20	95.3	3.06
	4/25/2007	0.05	4.7	5.95	15.3	0.209	-47	1.38	102	1.76

Notes:

(1) Negative indicates groundwater level during purging higher than initial water level
NM Not measured

TABLE 3

PRIMARY DETECTED COMPOUNDS IN VADOSE ZONE AIR
BIOSPARGE SYSTEM
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

	VZ-10S			
Parameter	***11/28/2006***	***7/25/2007***	***10/15/2007***	***1/24/2008***
Acetone	12,000	51,000	4,500	14,200
Ethanol	ND	24	ND	54
Methyl Ethyl Ketone	160,000	1,220,000	144,000	277,000
Methyl Chloride	ND	ND	114	106
Tetrachloroethene	ND	1.9J	ND	ND
Tetrahydrofuran	100,000	480,000	56,500	96,600
Toluene	960	21	13	5.6J
Vinyl Chloride	ND	28	18	21

	VZ-10D			
Parameter	***11/28/2006***	***7/25/2007***	***10/15/2007***	***1/24/2008***
Acetone	ND/ND	9.8	16	3.5J/1.7J
Ethanol	ND/ND	23	8.4	13/11
Methyl Ethyl Ketone	22/22	104	629	88/41
Tetrachloroethene	1.1/0.92	2.6	9.2	14/9.4
Tetrahydrofuran	13/14	28	506	45/24
Toluene	ND/ND	ND	ND	0.38J/ND
Vinyl Chloride	0.68/ND	ND	ND	ND/ND

Notes:

(1) Units are ppbv.

TABLE 3

PRIMARY DETECTED COMPOUNDS IN VADOSE ZONE AIR
BIOSPARGE SYSTEM
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

	VZ-11S			
Parameter	***11/28/2006***	***7/25/2007***	***10/15/2007***	***1/24/2008***
Acetone	5.7	6.7	4.7	3.7J
Ethanol	6.1	7.0	1.5	16
Methyl Ethyl Ketone	100	119	96	360
Methyl Chloride	ND	ND	ND	ND
Tetrachloroethene	2.3	3.3	6.6	3.2J
Tetrahydrofuran	96	30	35	183
Toluene	4.3	0.2	ND	ND
Vinyl Chloride	ND	ND	ND	ND

	VZ-11D				
Parameter	***10/26/2006***	***11/28/2006***	***7/25/2007***	***10/15/2007***	***1/24/2008***
Acetone	ND	ND/12	32	213	61J
Ethanol	ND	4.1/5.4	14	5.9	24
Methyl Ethyl Ketone	7,600	780/700	5,540	49,800	4,880
Methyl Chloride	ND	ND	ND	58	4.4J
Tetrachloroethene	ND	4.8/4.6	0.7	5	5.6J
Tetrahydrofuran	1,900	190/140	912	15,500	1,560
Toluene	ND	ND1.3	0.4	ND	ND
Vinyl Chloride	ND	ND	ND	2.5	ND

Notes:

(1) Units are ppbv.
J Estimated Concentration

CONESTOGA-ROVERS
& ASSOCIATES

E-Mail Date: March 11, 2008
Revised: March 13, 2008
E-Mail To: Klaus Schmidtke
c.c.: Sheri Finn
E-Mail and Hard Copy if Requested

ANALYTICAL DATA ASSESSMENT AND VALIDATION
HOOKER-RUCO BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HICKSVILLE, NEW YORK
JANUARY 2008

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1.0 INTRODUCTION

Groundwater samples were collected at the former Hooker Ruco Site in Hicksville, New York (Site), in support of the biosparge system performance monitoring program. Analytical services were performed by H2M Labs, Inc., in Melville, New York (H2M). A summary of the sampling and analysis scheme is presented in Table 1.

A summary of the analytical data is presented in Tables 2A and 2B. The groundwater samples were analyzed for volatile organic compounds (VOCs), total organic carbon (TOC), nitrite, nitrate, phosphorus, and ammonia. The soil vapor samples were analyzed for VOCs, methane, and ethane.

The quality assurance/quality control (QA/QC) criteria by which these data have been assessed are outlined in the analytical methods. Additional validation guidelines were referenced from the following documents:

i) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", United States Environmental Protection Agency (USEPA) 540/R-94-012, February 1994; and

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", USEPA 540/R-94-013, February 1994.

Full raw data deliverables were provided by the laboratory. The data quality assessment and validation presented in the following subsections were performed based on the sample results and supporting QA/QC provided.

2.0 SAMPLE HOLDING TIMES

The method-specific holding time criteria are summarized in Table 5.1 of the Quality Assurance Project Plan (QAPP). All sample extractions and/or analyses were performed within the specified holding times.

All samples were properly preserved and cooled to 4°C (±2°C) after collection. All samples were received by the laboratory in good condition.

3.0 GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) TUNING AND MASS CALIBRATION - VOCs

Prior to analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, the VOC method requires the analysis of the specific tuning compound bromofluorobenzene (BFB). The resulting spectra must meet the criteria cited in the method before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Instrument tuning data were reviewed. Tuning compounds were analyzed at the required frequency throughout the VOC analysis period. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

4.0 INSTRUMENT CALIBRATION

4.1 GC/MS CALIBRATION – GROUNDWATER VOCs

4.1.1 TUNING AND MASS CALIBRATION

Prior to analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, the VOC method require the analysis of the specific tuning compounds BFB. The resulting spectra must meet the criteria cited in the method before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Instrument tuning data were reviewed. Tuning compounds were analyzed at the required frequency throughout the VOC analysis period. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation.

4.1.2 INITIAL CALIBRATION

To quantify compounds of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

i) all relative response factors (RRFs) must be greater than or equal to 0.05; and

ii) for average response factors are employed, percent relative standard deviation (%RSD) values must not exceed 30 percent.

The initial calibration data for VOCs were reviewed and met the above criteria for linearity and sensitivity for all compounds of interest with the exception of a high %RSD for acetone. The associated sample results were qualified as estimated (see Table 3).

4.1.3 CONTINUING CALIBRATION

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

i) all RRF values must be greater than or equal to 0.05; and

ii) percent difference (%D) values must not exceed 25 percent.

Calibration standards were analyzed at the required frequency and the results met the above criteria for instrument sensitivity and linearity of response with the exception of some high %D recoveries. Associated sample results have been qualified as estimated (see Table 4).

4.2 GC CALIBRATION – SOIL VAPOR

4.2.1 INITIAL CALIBRATION

To quantify compounds of interest in samples, calibration of the GC over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed and linearity is assessed against a %RSD criterion of 25 percent for average response factors or correlation coefficient criterion of 0.990 or greater for liner regression.

The initial calibration data for soil vapor were reviewed and met the above criteria for linearity and sensitivity for all compounds.

4.2.2 CONTINUING CALIBRATION

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

Calibration standards were analyzed at the required frequency and the results met the criteria of 25 %RPD for instrument sensitivity and linearity of response with the exception of some high %D recoveries. Associated sample results were qualified as estimated (see Table 4).

4.3 INSTRUMENTAL CALIBRATION – GENERAL CHEMISTRY

4.3.1 INITIAL CALIBRATION

Initial calibration of the instruments ensures that they are capable of producing satisfactory quantitative data at the beginning of a series of analyses. For general chemistry, calibration is performed based on the analysis of at least three standards and a blank. Resulting correlation coefficients for curves must be at least 0.995.

After calibration, an initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves. All analyte recoveries from the analyses of the ICVs must be within control limits of 85 to 115 percent.

Upon review of the data, it was determined that all inorganic calibration curves and ICVs were analyzed at the proper frequencies and that all of the above-specified criteria were met. The laboratory effectively demonstrated that instrumentation used for these analyses were properly calibrated prior to sample analyses.

4.3.2 CONTINUING CALIBRATION

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration verification (CCV) standards are analyzed on a regular basis. Each CCV is deemed acceptable if all analyte recoveries are within the control limits specified above for the ICVs. If some of the CCV analyte recoveries are outside the control limits, samples analyzed before and after the CCV, up until the previous and proceeding CCV analyses, are affected.

For this study, CCVs were analyzed at the proper frequency. All analyte recoveries reported for the CCVs were within the specified limits.

5.0 SURROGATE COMPOUND ANALYSES - VOCs

In accordance with the methods employed, all samples, blanks, and standards analyzed for VOCs are spiked with surrogate compounds prior to sample analysis. Surrogate recoveries provide a means to evaluate the effects of individual sample matrices on analytical efficiency and are assessed against method control limits.

Surrogates were added to all samples, blanks, and QC samples prior to analysis. Surrogate recoveries met the acceptance criteria for all samples demonstrating acceptable analytical accuracy in this sample matrix.

6.0 INTERNAL STANDARD (IS) RECOVERIES - VOCs

To ensure that changes in GC/MS response and sensitivity do not affect sample analysis results, IS compounds are added to all samples, blanks, and spike samples prior to VOC analysis. All results are calculated as a ratio of the IS response. The criteria by which the IS results are assessed are as follows:

i) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard; and

ii) the retention time of the IS must not vary more than ±30 seconds from the associated calibration standard.

The sample IS recoveries met the above criteria and were used to calculate all positive sample results with the exception of low 1,4-difluorobenzene and chlorobenzene-d5 recoveries. The associated sample results were qualified as estimated (see Table 5.)

7.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES VOCs

To evaluate the effects of sample matrices on the measurement procedures, and accuracy of a particular analysis, samples are spiked in duplicate with a known concentration of the analytes of concern and analyzed as MS/MSD samples. Spike recoveries are not assessed for samples having original concentrations significantly greater than the spike concentration (>four times).

Analytical precision is evaluated based on the relative percent difference (RPD) between the MS and MSD.

MS/MSDs were performed at the required frequency for VOCs. The results showed acceptable accuracy and precision on this sample matrix.

8.0 MATRIX SPIKE (MS) AND DUPLICATE ANALYSES - GENERAL CHEMISTRY

To evaluate the effects of sample matrices on the measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS samples. The established control limits for inorganic matrix spike recoveries are 75 to 125 percent. Spike recoveries are not assessed for samples having original concentrations significantly greater than the spike concentration (>four times).

Analytical precision is evaluated based on the analysis of duplicate samples. Laboratory duplicate results are assessed against a maximum RPD of 20 percent.

MS and duplicate analyses were performed at the required frequency for all general chemistry parameters. The results showed acceptable accuracy and precision on this sample matrix.

9.0 LABORATORY CONTROL SAMPLE (LCS) ANALYSES

The LCS serves as a monitor of the overall performance of all steps in the analysis, including the sample preparation. LCSs are analyzed using the same sample preparation, analytical methods, and QA/QC procedures employed for the investigative samples.

LCSs were prepared and analyzed for all general chemistry, soil vapor and groundwater VOC parameters. Most LCS results showed good overall analytical accuracy. Associated sample results for low groundwater VOC and soil vapor recoveries were qualified as estimated to reflect the potential low bias (see Table 6). Detected results for high groundwater VOC and soil vapor recoveries were qualified as estimated (see Table 6).

10.0 METHOD BLANK ANALYSES

Method blanks are prepared from deionized water and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the procedures. Additionally, continuing calibration blanks (CCBs) are routinely analyzed after each CCV for the inorganic parameters.

For this study, method blanks were analyzed at a minimum frequency of one per analytical batch and CCBs were analyzed for inorganic parameters after each CCV. The data were non-detect for the analytes of interest with the exception of ethanol and methylene chloride. Associated sample results were either non-detect or considerably greater than the concentrations found in the blank and no qualification of data was necessary.

11.0 TENTATIVELY IDENTIFIED COMPOUNDS (TICs) – SOIL VAPOR

Chromatographic peaks for VOC analyses, which are not target compounds, surrogates, or internal standards, are potential TICs. The 10 largest TICs for the VOC analysis with areas greater than 10 percent of the area of the nearest IS are tentatively identified and quantitated.

A summary of the soil vapor TICs reported is presented in Table 7. TICs, which were present in laboratory blanks or were identified as aldol condensation products, were disregarded and are not included on the table.

12.0 FIELD QA/QC SAMPLES

The field QA/QC consisted of four trip blanks, one rinse blank, and one field duplicate sample.

The trip blanks, equipment blanks and rinse blank were non-detect for the compounds of interest with the exception of some VOCs. The associated VOC sample results were considerably greater than the concentrations found in the blanks and no qualification of data was necessary.

The field duplicate sample was collected as summarized in Table 1 and submitted "blind" to the laboratory for analysis. All sample results outside estimated ranges of detection showed acceptable sampling and analytical precision.

13.0 CONCLUSION

Based on the preceding assessment, the data summarized in Tables 2A and 2B are acceptable with the specific qualifications noted herein.

TABLES

TABLE 1

SAMPLING AND ANALYSIS SUMMARY
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

				Analysis/Parameters				
Sample ID	*Location ID*	*Collection Date (mm/dd/yy)*	*Collection Time (hr:min)*	*VOCs*	*TOC, NO_2, NO_3, NH_3, Phosphorus*	*Methane/Ethane*	*TO-15+TICs*	*Comments*
G-012208-SD-001	MW-83 D1	01/22/08	12:10	x	x			
G-012208-SD-002	MW-83 D2	01/22/08	16:10	x	x			
trip blank	–	01/22/08	–	x				Trip Blank
G-012308-SD-003	MW-82 D1	01/23/08	11:20	x	x			
G-012308-SD-004	MW-82 D1	01/23/08	11:30	x	x			Field Duplicate of G-012308-SD-003
G-012308-SD-005	MW-82 D2	01/23/08	14:30	x	x			
RB-012308-SD-006	Equipment Blank	01/23/08	15:45	x	x			Equipment Blank
trip blank	–	01/23/08	–	x				Trip Blank
G-012408-SD-007	MW-61 I	01/24/08	11:00	x	x			MS/Dup
G-012408-SD-008	MW-61 D1	01/24/08	13:10	x	x			
G-012408-SD-009	MW-61 D2	01/24/08	15:55	x	x			
Trip Blank	–	01/24/08	–	x				Trip Blank
G-012808-SD-010	MW-84 D1	01/28/08	12:50	x	x			
G-012808-SD-011	MW-84 D2	01/28/08	16:40	x	x			
PURGE WATER TANK	wastewater composite	01/28/08	17:10	x				
trip Blank	–	01/28/08	–	x				Trip Blank
SG-012408-SD-001	VZ-10 S	01/24/08	10:00			x	x	
SG-012408-SD-002	VZ-10 D	01/24/08	10:30			x	x	
SG-012408-SD-003	VZ-10 D	01/24/08	10:35			x	x	
SG-012408-SD-004	VZ-11 S	01/24/08	11:25			x	x	
SG-012408-SD-005	VZ-11 D	01/24/08	12:05			x	x	

Notes:

-	Not applicable.
Dup	Duplicate.
MS	Matrix Spike.
NH_3	Total Ammonia.
NO_2	Nitrate.
NO_3	Nitrite.
TICs	Tentatively Identified Compounds.
TOC	Total Organic Carbon.
VOCs	Volatile Organic Compounds.

TABLE 2A

ANALYTICAL RESULTS SUMMARY - GROUNDWATER
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

Sample Location		*MW-61D1*	*MW-61D2*	*MW-61I*	*MW-82D1*	*MW-82D1*	*MW-82D2*
Sample ID		*G-012408-SD-008*	*G-012408-SD-009*	*G-012408-SD-007*	*G-012308-SD-003*	*G-012308-SD-004*	*G-012308-SD-005*
Sample Date		*1/24/2008*	*1/24/2008*	*1/24/2008*	*1/23/2008*	*1/23/2008 (Duplicate)*	*1/23/2008*
Parameters	*Units*						
Volatile Organic Compounds							
1,1,1-Trichloroethane	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5 U	1	5 U	4	4	1
1,1-Dichloroethene	ug/L	5 U	5 U	5 U	3	3	1
1,2-Dichloroethane	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	ug/L	2	28	3	340	340	56
1,2-Dichloropropane	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone (Methyl Ethyl Ketone)	ug/L	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U
2-Hexanone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Benzene	ug/L	0.7 U	0.7 U	0.7 U	2	2	0.7 U
Bromodichloromethane	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane (Methyl Bromide)	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	2	5 U	2	5 U	5 U	5 U
Chloroethane	ug/L	5 U	5 U	5 U	10	10	5 U
Chloroform (Trichloromethane)	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane (Methyl Chloride)	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	2	27	3	400	400	54
cis-1,3-Dichloropropene	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5 U	26	5 U	14	14	150
Toluene	ug/L	2	5 U	5 U	1	1	5 U
trans-1,3-Dichloropropene	ug/L	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	5 U	140	5 U	48	49	84
Vinyl chloride	ug/L	3	46	4	1600	1600	160
Xylene (total)	ug/L	5 U	5 U	5 U	3	3	5 U
General Chemistry							
Ammonia	mg/L	0.54	1.06	0.56	0.1 U	0.1 U	0.59
Nitrate (as N)	mg/L	0.1 U	2.77	0.1 U	0.1 U	0.1 U	1.40
Nitrite (as N)	mg/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Phosphorus	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Total Organic Carbon (TOC)	mg/L	6.0	1 U	5.1	2.4	1.9	2.2

TABLE 2A

ANALYTICAL RESULTS SUMMARY - GROUNDWATER
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

Sample Location		*MW-83D1*	*MW-83D2*	*MW-84D1*	*MW-84D2*	*WASTECOMP*
Sample ID		*G-012208-SD-001*	*G-012208-SD-002*	*G-012808-SD-010*	*G-012808-SD-011*	*PURGE WATER TANK*
Sample Date		*1/22/2008*	*1/22/2008*	*1/28/2008*	*1/28/2008*	*1/28/2008*
Parameters	***Units***					
Volatile Organic Compounds						
1,1,1-Trichloroethane	ug/L	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5 U	5 U	5 U	2	5 U
1,1-Dichloroethene	ug/L	2	5 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	ug/L	38	5 U	5 U	18	17
1,2-Dichloropropane	ug/L	5 U	5 U	5 U	5 U	5 U
2-Butanone (Methyl Ethyl Ketone)	ug/L	5 U	5 U	5 UJ	5 UJ	5 UJ
2-Hexanone	ug/L	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ug/L	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	5 UJ	5 UJ	5 UJ	7 J	7 J
Benzene	ug/L	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Bromodichloromethane	ug/L	5 U	5 U	5 U	5 U	5 U
Bromoform	ug/L	5 U	5 U	5 U	5 U	5 U
Bromomethane (Methyl Bromide)	ug/L	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5 U	5 U	5 U	5 U	5 U
Chloroethane	ug/L	10	5 U	5 U	5 U	5 U
Chloroform (Trichloromethane)	ug/L	5 U	5 U	5 U	5 U	5 U
Chloromethane (Methyl Chloride)	ug/L	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	36	1	5 U	17 J	16 J
cis-1,3-Dichloropropene	ug/L	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5 U	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5 U	5 U	5 U	5 U	5 U
Styrene	ug/L	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	140	3	19	27	6
Toluene	ug/L	3	2	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5 U	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	420	12	32	250 J	25
Vinyl chloride	ug/L	51	2 U	2 U	5	34
Xylene (total)	ug/L	5 U	5 U	5 U	5 U	5 U
General Chemistry						
Ammonia	mg/L	0.29	0.1 U	0.24	0.89	-
Nitrate (as N)	mg/L	1.45	4.19	4.90	1.54	-
Nitrite (as N)	mg/L	0.1 U	0.1 U	0.1 U	0.34	-
Phosphorus	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	-
Total Organic Carbon (TOC)	mg/L	1 U	1 U	1 U	1 U	-

Notes:

- \- Not analyzed.
- J Estimated.
- U Not detected.
- UJ Not detected, estimated reporting limit.

TABLE 2B

ANALYTICAL RESULTS SUMMARY - SOIL VAPOR
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

Sample Location		*VZ-10 (D)*	*VZ-10 (D)*	*VZ-10 (S)*	*VZ-11 (D)*	*VZ-11 (S)*
Sample ID		*SG-012408-SD-002*	*SG-012408-SD-003*	*SG-012408-SD-001*	*SG-012408-SD-005*	*SG-012408-SD-004*
Sample Date		*1/24/2008*	*1/24/2008*	*1/24/2008*	*1/24/2008*	*1/24/2008*
Parameters	*Units*					
Volatile Organic Compounds						
1,1,1-Trichloroethane	ppbv	0.26 J	0.31 J	10 U	10 UJ	1 U
1,1,2,2-Tetrachloroethane	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
1,1,2-Trichloroethane	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
1,1-Dichloroethane	ppbv	0.5 U	0.5 U	10 U	10 U	1 U
1,1-Dichloroethene	ppbv	0.5 U	0.5 U	10 U	10 U	1 U
1,2,4-Trichlorobenzene	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 UJ
1,2,4-Trimethylbenzene	ppbv	1.20 J	0.40 J	10 U	10 UJ	1 UJ
1,2-Dibromoethane (Ethylene Dibromide)	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
1,2-Dichlorobenzene	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 UJ
1,2-Dichloropropane	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
1,2-Dichlorotetrafluoroethane (CFC 114)	ppbv	0.5 U	0.5 U	10 U	10 U	1 U
1,3,5-Trimethylbenzene	ppbv	0.30 J	0.5 UJ	10 UJ	10 UJ	1 UJ
1,3-Butadiene	ppbv	0.5 U	0.5 U	10 U	10 U	1 U
1,3-Dichlorobenzene	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 UJ
1,4-Dichlorobenzene	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 UJ
1,4-Dioxane	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
2-Butanone (Methyl Ethyl Ketone)	ppbv	87.7	41.3	277000	4880	360
2-Hexanone	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
4-Ethyl toluene	ppbv	0.25 J	0.5 UJ	10 UJ	10 UJ	1 UJ
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
Acetone	ppbv	3.45 J	1.68 J	14200	61.2 J	3.72 J
Benzyl Chloride	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 UJ
Bromodichloromethane	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
Bromoform	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 UJ
Bromomethane (Methyl Bromide)	ppbv	0.5 U	0.5 U	10 U	10 U	1 U
Carbon disulfide	ppbv	0.5 U	0.5 U	69.2	6.0 J	1 U
Chlorobenzene	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
Chloroethane	ppbv	0.5 U	0.5 U	11.0	10 U	1 U
Chloroform (Trichloromethane)	ppbv	0.5 U	0.5 U	10 U	10 U	1 U
Chloromethane (Methyl Chloride)	ppbv	0.5 U	0.5 U	106	4.4 J	1 U
cis-1,2-Dichloroethene	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
cis-1,3-Dichloropropene	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
Cyclohexane	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
Dibromochloromethane	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
Dichlorodifluoromethane (CFC-12)	ppbv	0.5 U	1.11	10 U	10 U	0.56 J
Ethanol	ppbv	13.0	10.9	54.4	24.0	16.1
Ethylbenzene	ppbv	0.29 J	0.5 U	10 U	10 UJ	1 U
Hexachlorobutadiene	ppbv	0.5 UJ	0.5 UJ	10 UJ	10 UJ	1 UJ
Hexane	ppbv	0.5 U	0.5 U	10 U	10 U	1 U
Isopropyl alcohol (Manufacturing-Strong Acid)	ppbv	0.80	0.98	25.0	10 U	0.88 J
Isopropylbenzene	ppbv	0.5 UJ	0.5 UJ	10 UJ	10 UJ	1 UJ
m&p-Xylene	ppbv	3.86	0.32 J	10 U	10 UJ	0.68 J
Methyl Tert Butyl Ether	ppbv	0.5 U	0.5 U	10 U	10 U	1 U
Methylene chloride	ppbv	0.88	0.33 J	6.4 J	5.2 J	1 U
N-Heptane	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
n-Propylbenzene	ppbv	0.5 UJ	0.5 UJ	10 UJ	10 UJ	1 UJ
o-Xylene	ppbv	1.13	0.5 U	10 U	10 UJ	1 U
Styrene	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
Tetrachloroethene	ppbv	14.4	9.39	10 U	5.6 J	3.18 J
Tetrahydrofuran	ppbv	45.0	24.3	96600	1560	183
Toluene	ppbv	0.38 J	0.5 U	5.6 J	10 UJ	1 U
trans-1,2-Dichloroethene	ppbv	0.5 U	0.5 U	10 U	10 U	1 U
trans-1,3-Dichloropropene	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
Trichloroethene	ppbv	1.63	2.04	10 U	10 UJ	1 U
Trichlorofluoromethane (CFC-11)	ppbv	0.61	0.63	10 U	10 U	1 U

TABLE 2B

ANALYTICAL RESULTS SUMMARY - SOIL VAPOR
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

	Sample Location	*VZ-10 (D)*	*VZ-10 (D)*	*VZ-10 (S)*	*VZ-11 (D)*	*VZ-11 (S)*
	Sample ID	*SG-012408-SD-002*	*SG-012408-SD-003*	*SG-012408-SD-001*	*SG-012408-SD-005*	*SG-012408-SD-004*
	Sample Date	*1/24/2008*	*1/24/2008*	*1/24/2008*	*1/24/2008*	*1/24/2008*
Parameters	***Units***					
Volatile Organic Compounds						
Trifluorotrichloroethane (Freon 113)	ppbv	2.33	2.49	10 U	10 UJ	1 U
Vinyl acetate	ppbv	0.5 U	0.5 U	10 U	10 UJ	1 U
Vinyl chloride	ppbv	0.5 U	0.5 U	20.6	10 U	1 U
Gas						
Ethane	ppmv	5 U	5 U	9 U	5 U	5 U
Methane	ppmv	5 U	5 U	9 U	8.6	5 U

Notes:
- \- Not analyzed.
- J Estimated.
- U Not detected.
- UJ Not detected, estimated reporting limit.

TABLE 3

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING INITIAL CALIBRATION RESULTS
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

Parameter	*Compound*	*Calibration Date*	*%RSD*	*Associated Sample ID*	*Sample Results*	*Units*	*Qualifier*
VOCs	Acetone	01/31/08	37	G-012208-SD-001	5 U	ug/L	UJ
				G-012208-SD-002	5 U	ug/L	UJ
				G-012308-SD-003	5 U	ug/L	UJ
				G-012308-SD-004	5 U	ug/L	UJ
				G-012308-SD-005	5 U	ug/L	UJ
				G-012408-SD-007	5 U	ug/L	UJ
				G-012408-SD-008	5 U	ug/L	UJ
				G-012408-SD-009	5 U	ug/L	UJ
				G-012808-SD-010	5 U	ug/L	UJ
				G-012808-SD-011	7	ug/L	J
				PURGE WATER TANK	7	ug/L	J

Notes:
%RSD Percent Relative Standard Deviation.
J Estimated.
U Not detected.
UJ Not detected, estimated reporting limit.
VOCs Volatile Organic Compounds.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING CONTINUING CALIBRATION RESULTS
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

Parameter	*Calibration Date*	*Compound*	*%D*	*Associated Sample ID*	*Sample Results*	*Units*	*Qualifier*
VOCs	02/03/07	2-Butanone	39	G-012408-SD-007	5 U	ug/L	UJ
				G-012408-SD-008	5 U	ug/L	UJ
				G-012408-SD-009	5 U	ug/L	UJ
VOCs	02/06/07	2-Butanone	34	G-012808-SD-010	5 U	ug/L	UJ
				G-012808-SD-011	5 U	ug/L	UJ
				PURGE WATER TANK	5 U	ug/L	UJ
VOCs	02/06/07	Acetone	26	SG-012408-SD-002	3	ppbv	J
				SG-012408-SD-003	1.7	ppbv	J
				SG-012408-SD-005	61	ppbv	J
VOCs	02/06/07	n-Propylbenzene	30	SG-012408-SD-001	10 U	ppbv	UJ
				SG-012408-SD-002	0.5 U	ppbv	UJ
				SG-012408-SD-003	0.5 U	ppbv	UJ
				SG-012408-SD-005	10 U	ppbv	UJ
VOCs	02/06/07	4-Ethyltoluene	27	SG-012408-SD-001	10 U	ppbv	UJ
				SG-012408-SD-002	0.25 J	ppbv	*
				SG-012408-SD-003	0.5 U	ppbv	UJ
				SG-012408-SD-005	10 U	ppbv	UJ
VOCs	02/06/07	1,3,5-Trimethylbenzene	27	SG-012408-SD-001	10 U	ppbv	UJ
				SG-012408-SD-002	0.3 J	ppbv	*
				SG-012408-SD-003	0.5 U	ppbv	UJ
				SG-012408-SD-005	10 U	ppbv	UJ
VOCs	02/06/07	1,2,4-Trimethylbenzene	29	SG-012408-SD-001	10 U	ppbv	UJ
				SG-012408-SD-002	1.2	ppbv	J
				SG-012408-SD-003	0.4 J	ppbv	*
				SG-012408-SD-005	10 U	ppbv	UJ
VOCs	02/06/07	Isopropylbenzene	26	SG-012408-SD-001	10 U	ppbv	UJ
				SG-012408-SD-002	0.5 U	ppbv	UJ
				SG-012408-SD-003	0.5 U	ppbv	UJ
				SG-012408-SD-005	10 U	ppbv	UJ

Notes:

*	Value previously qualified as estimated by the laboratory
%D	Percent Difference.
J	Estimated.
U	Not detected.
UJ	Not detected, estimated reporting limit.
VOCs	Volatile Organic Compounds.

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING INTERNAL STANDARD (IS) RECOVERIES
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

Parameter	*Sample ID*	*IS*	*IS Area Count (percent)*	*Control Limits (percent)*	*Analytes*	*Sample Results*	*Units*	*Qualifier*
VOCs	SG-012408-SD-005	1,4-Difluorobenzene	59	60 - 140	Ethylbenzene	10 U	ug/L	UJ
		Chlorobenzene-d5	54	60 - 140	Styrene	10 U	ug/L	UJ
					Benzyl Chloride	10 U	ug/L	UJ
					cis-1,3-Dichloropropene	10 U	ug/L	UJ
					trans-1,3-Dichloropropene	10 U	ug/L	UJ
					n-Propylbenzene	10 U	ug/L	UJ
					1,4-Dichlorobenzene	10 U	ug/L	UJ
					1,2-Dibromoethane	10 U	ug/L	UJ
					Vinyl acetate	10 U	ug/L	UJ
					4-Methyl-2-Pentanone	10 U	ug/L	UJ
					1,3,5-Trimethylbenzene	10 U	ug/L	UJ
					Toluene	10 U	ug/L	UJ
					Chlorobenzene	10 U	ug/L	UJ
					Cyclohexane	10 U	ug/L	UJ
					1,2,4-Trichlorobenzene	10 U	ug/L	UJ
					1,4-Dioxane	10 U	ug/L	UJ
					Dibromochloromethane	10 U	ug/L	UJ
					Tetrachloroethene	5.6 J	ug/L	*
					N-Heptane	10 U	ug/L	UJ
					cis-1,2-Dichloroethene	10 U	ug/L	UJ
					1,3-Dichlorobenzene	10 U	ug/L	UJ
					2-Hexanone	10 U	ug/L	UJ
					4-Ethyl toluene	10 U	ug/L	UJ
					1,1,1-Trichloroethane	10 U	ug/L	UJ
					Bromoform	10 U	ug/L	UJ
					Bromodichloromethane	10 U	ug/L	UJ
					Trifluorotrichloroethane	10 U	ug/L	UJ
					1,2-Dichloropropane	10 U	ug/L	UJ
					1,1,2-Trichloroethane	10 U	ug/L	UJ
					Trichloroethene	10 U	ug/L	UJ
					1,1,2,2-Tetrachloroethane	10 U	ug/L	UJ
					Hexachlorobutadiene	10 U	ug/L	UJ
					o-Xylene	10 U	ug/L	UJ
					1,2-Dichlorobenzene	10 U	ug/L	UJ
					1,2,4-Trimethylbenzene	10 U	ug/L	UJ
					Isopropylbenzene	10 U	ug/L	UJ
					m&p-Xylene	10 U	ug/L	UJ

Notes:

* Value previously qualified as estimated by the laboratory.
J Estimated.
U Not detected.
UJ Not detected, estimated reporting limit.
VOCs Volatile Organic Compounds.

TABLE 6

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE RESULTS
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

Parameter	*Compound*	*Percent Recovery*	*Control Limits (percent)*	*Associated Sample ID*	*Sample Results*	*Units*	*Qualifier*
VOCs	cis-1,2-Dichloroethene	121	78 - 116	G-012808-SD-011	17	ug/L	J
				PURGE WATER TANK	16	ug/L	J
VOCs	Trichloroethene	128	57 - 115	G-012808-SD-011	250	ug/L	J
VOCs	Acetone	144	70 - 130	SG-012408-SD-002	3.5	ppbv	J
				SG-012408-SD-003	1.7	ppbv	J
				SG-012408-SD-005	61	ppbv	J
VOCs	4-Ethyltoluene	68	70 - 130	SG-012408-SD-001	10 U	ppbv	UJ
				SG-012408-SD-002	0.25 J	ppbv	*
				SG-012408-SD-003	0.5 U	ppbv	UJ
				SG-012408-SD-005	10 U	ppbv	UJ
VOCs	Hexachlorobutadiene	65	70 - 130	SG-012408-SD-001	10 U	ppbv	UJ
				SG-012408-SD-002	0.5 U	ppbv	UJ
				SG-012408-SD-003	0.5 U	ppbv	UJ
				SG-012408-SD-005	10 U	ppbv	UJ
VOCs	Acetone	144	70 - 130	SG-012408-SD-004	3.7	ppbv	J
VOCs	Bromoform	66	70 - 130	SG-012408-SD-004	1 U	ppbv	UJ
VOCs	Tetrachloroethene	62	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	n-Propylbenzene	54	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	4-Ethyltoluene	49	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	1,3,5-Trimethylbenzene	67	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	1,2,4-Trimethylbenzene	67	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	Isopropylbenzene	50	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	1,3-Dichlorobenzene	67	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	1,4-Dichlorobenzene	67	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	1,2-Dichlorobenzene	68	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	Benzyl chloride	68	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	Hexachlorobutadiene	46	70 - 130	SG-012408-SD-004	3.2	ppbv	J
VOCs	1,2,4-Trichlorobenzene	58	70 - 130	SG-012408-SD-004	3.2	ppbv	J

Notes:

* Value previously qualified as estimated by the laboratory.
J Estimated.
U Not detected.
UJ Not detected, estimated reporting limit.
VOCs Volatile Organic Compounds.

TABLE 7

TENTATIVELY IDENTIFIED COMPOUNDS
BIOSPARGE SYSTEM PERFORMANCE SAMPLING
GLENN SPRINGS HOLDINGS, INC.
HOOKER-RUCO SITE
HICKSVILLE, NEW YORK
JANUARY 2008

Sample Identification	*Volatile Organics*	*Estimated Concentration (ppbv)*	*Semi-Volatile Organics*	*Estimated Concentration (ppbv)*
SG-012408-SD-001	Unknown	60J	-	-
	Thiirane	470J	-	-
	2-Butanol	190J	-	-
	Unknown Alkane	52J	-	-
	Cyclohexanone	660J	-	-
SG-012408-SD-002	Unknown	8J	-	-
	Unknown Alkane	1J	-	-
	Cyclohexanone	9J	-	-
SG-012408-SD-003	Unknown	7J	-	-
	Unknown Alkane	1J	-	-
	Cyclohexanone	8J	-	-
SG-012408-SD-004	Unknown	6J	-	-
	Cyclohexanone	40J	-	-
SG-012408-SD-005	Cyclohexanone	130J	-	-

Notes:
- Not applicable.
J Estimated.