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Solvents Recovery Service of New England, Inc. Superfund Site

Southington, CT

Annual State of Compliance Report #3

October 31, 2010 through October 30, 2011

January 2012

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Acronyms and abbreviations used in this Annual Report and associated attachments:

1,1-DCE	1,1-dichloroethene
1,1,1-TCA	1,1,1-trichloroethane
1,2-DCA	1,2-dichloroethane
2,3,7,8-TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
ALEP	Action Level Exceedance Plan
AOC	Administrative Order on Consent
AQC	Air Quality Control System
ARARs	Applicable or Relevant and Appropriate Requirements
ATSDR	Agency for Toxic Substance and Disease Registry
B&M	Boston & Maine
BACT	Best Available Control Technology
BBL	Blasland, Bouck & Lee, Inc.
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
BTU	British Thermal Unit
°C	degrees Celsius
CA	chloroethane
CBYD	Call Before You Dig
cc	cubic centimeter
cDCE	cis-1,2-dichloroethene
CD	Consent Decree
CEMS	Continuous Emissions Monitoring System
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CH_4	methane
CL&P	Connecticut Light & Power
CO_2	carbon dioxide
COCs	Constituents of Concern
CT	carbon tetrachloride
CTDEP	Connecticut Department of Environmental Protection
CTDPH	Connecticut Department of Public Health
CVOCs	Chlorinated Volatile Organic Compounds
CWA	Clean Water Act
DCE	dichloroethene
DCM	dichloromethane
DCP	Demonstration of Compliance Plan
ddms	*de maximis* Data Management Solutions
DHC	Dehalococcoides
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen

DQA	Data Quality Assessment
DQOs	Data Quality Objectives
DRE	Destruction/Removal Efficiency
DRO	Diesel Range Organics
EISB	Enhanced In-Situ Bioremediation
ELUR	Environmental Land Use Restriction
°F	degrees Fahrenheit
$Fe(OH)_3$	ferrous hydroxide
f_{oc}	fraction of solid organic carbon in soil
FS	Feasibility Study
FSP	Field Sampling Plan
PMC	Pollutant Mobility Criteria applicable to designated Class “GA” groundwater areas
GAC	granular activated carbon
GCTEOS	Groundwater Containment and Treatment Evaluation and Optimization Study
gpm	gallons per minute
GRO	Gasoline Range Organics
GWPC	Groundwater Protection Criteria
GWTF	Groundwater Treatment Facility
H	Henry’s Law Constant
H_2	hydrogen
H_2O	water
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HCl	hydrochloric acid
HCTS	Hydraulic Containment and Treatment System
HDPE	High-Density Polyethylene
HLVs	Hazard Limiting Values
HZ	Heated Zone
ID	inner diameter
IFT	interfacial tension
IMS	Interim Monitoring and Sampling
IQAT	Independent Quality Assurance Team
IRIS	Integrated Risk Information System
ISTD	In-Situ Thermal Desorption
ISTR	In-Situ Thermal Remediation
J&E	Johnson & Ettinger
K_d	soil-water partition coefficient
kg	kilogram
K_{oc}	chemical-specific organic carbon partition coefficient
LAER	Lowest Achievable Emission Rate
lbs	pounds
LNAPL	light non-aqueous phase liquid

MAROS	Monitoring and Remediation Optimization System
MASC	Maximum Allowable Stack Concentration
MCLs	Maximum Contaminant Levels
MCLG	Maximum Contaminant Level Goal
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MIBK	4-methyl-2-pentanone (methyl isobutyl ketone)
mL	milliliter
MNA	Monitored Natural Attenuation
MOA	Memorandum of Agreement
N_2	nitrogen
NA	Natural Attenuation
NAPL	non-aqueous phase liquid
ng/L	nanograms per liter
NH_4^+	ammonia
NOAA	National Oceanic and Atmospheric Administration
NO_2^-	nitrite
NO_3^-	nitrate
NSR	New Source Review
NTCRA	Non-Time-Critical Removal Action
O_2	oxygen
O&M	Operations and Maintenance
OD	outer diameter
OH^-	hydroxyl radical
OIS	On-Site Interceptor System
OMM	Operation, Maintenance and Monitoring
ONOGU	Observed NAPL in the Overburden Groundwater Unit
ORP	oxidation-reduction potential
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Response
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCDDs	polychlorinated dibenzo-p-dioxins
PCDFs	polychlorinated dibenzofurans
PCE	tetrachloroethylene
PCR	Polymerase Chain Reaction
PEL	Permissible Exposure Limit
PFD	process flow diagram
PID	photoionization detector
PIPP	Pre-ISTR Preparation Plan
PLC	Programmable Logic Controller
POP	Project Operations Plan
ppb	parts per billion
PPE	personal protective equipment

ppm	parts per million
PSD	Prevention of Significant Deterioration
psig	pounds per square inch, gauge
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
R^2	correlation coefficient
RAOs	Response Action Objectives
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RDWP	Remedial Design Work Plan
RD/RA	Remedial Design/Remedial Action
Redox	Reduction-Oxidation
RDEC	Residential Direct Exposure Criteria
RH	Relative Humidity
RI	Remedial Investigation
ROD	Record of Decision
RSRs	Remediation Standard Regulations
SAP	Sampling and Analysis Plan
SCAP	Supplemental Containment Action Plan
SCM	Site Conceptual Model
SO_4^{2-}	sulfate
SOP	Standard Operating Procedure
SOW	Statement of Work
SPLP	Synthetic Precipitation Leaching Procedure
SRSNE	Solvents Recovery Service of New England, Inc.
SSO	Site Safety Officer
SVOCs	semi-volatile organic compounds
SWD	Southington Water Department
SWPC	Surface Water Protection Criteria
TAL	Target Analyte List
TCE	trichloroethylene
TCH	thermal conduction heating
TCLP	Toxicity Characteristic Leaching Procedure
TEFs	Toxic Equivalency Factors
TEQ	Toxic Equivalence Quotient
TEX	Toluene, Ethylbenzene and Xylenes
TSCA	Toxic Substances Control Act
TTZ	thermal treatment zone
ug/L	micrograms per liter
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UV	ultraviolet
VC	vinyl chloride

VI	Vapor Intrusion
VOC	volatile organic compound
WHO	World Health Organization

A. Introduction

On October 30, 2008, the United States Environmental Protection Agency (USEPA) lodged a Consent Decree (CD) with the United States District Court for the District of Connecticut in connection with Civil Actions No. 3:08cv1509 (SRU) and No. 3:08cv1504 (WWE). The CD was entered by the Court on March 26, 2009. The CD addresses Remedial Design/Remedial Action (RD/RA) activities for the Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site in Southington, Connecticut (Site). Appendix B to the CD is a Statement of Work (SOW) that defines the required RD/RA activities and deliverables.

Section VIII.B of the SOW requires the Settling Defendants to submit an Annual State of Compliance Report one year after lodging of the CD and annually thereafter, to USEPA for approval or modification, after reasonable opportunity for review and comment by Connecticut Department of Environmental Protection (CTDEP). Section 62.e of the CD requires a demonstration of the amounts of the Rolling Oversight Cost Cap and the Available Balance. This ***Annual State of Compliance Report #3*** (report) has been prepared on behalf of the SRSNE Site Group, an unincorporated association of Settling Defendants to the CD, to address these CD and SOW requirements. This report documents Site activities during the period of October 31, 2010 through October 30, 2011 (the "reporting period").

As specified in SOW Section VIII.B, this report includes a comprehensive evaluation of all monitoring required by this SOW, including, but not limited to:

- compliance with the Performance Standards of the Hydraulic Containment and Treatment System and Severed Plume;
- Institutional Controls;
- construction, operation and maintenance;
- habitat restoration;
- hydraulic containment;
- the Memorandum of Agreement with Southington Water Department / Town of Southington; and
- groundwater monitoring program, including monitored natural attenuation.

Also required in the report is an assessment of the progress being made towards achieving the Performance Standards, as well as recommendations for changes to any

monitoring program to address deficiencies identified during the evaluation. Proposals for reductions in monitoring, along with justifications, are provided as appropriate.

B. Background

The SRSNE Site is located on approximately 14 acres of land along Lazy Lane in Southington, Hartford County, Connecticut, approximately 15 miles southwest of the city of Hartford (Figure 1). The physical setting of the Site – including the regional geology, overburden geology, bedrock geology, hydrogeology, groundwater use and classification, drainage, and surface water use and classification – is summarized below. This information is also described in detail in prior report submittals, including the *Remedial Investigation Report* (Blasland, Bouck & Lee, Inc. [BBL] 1998) and the *Feasibility Study Report* (BBL and USEPA 2005), and the draft Remedial Design Work Plan (RDWP) (ARCADIS, April 2009).

The SRSNE Site includes portions of several properties/areas that are referred to within the RDWP consistent with terminology established in prior Site-related documents. These properties/areas include the former SRSNE Operations Area, the former Boston & Maine railroad right-of-way, the former Cianci Property, and the Town of Southington Well Field Property (Town Well Field Property). These areas are shown on Figure 2, and further described below:

- **Former SRSNE Operations Area:** The former SRSNE Operations Area comprises approximately 2.5 paved acres on a 3.7-acre lot South of Lazy Lane in the Quinnipiac River basin approximately 600 feet west of the Quinnipiac River channel. This is the area where SRSNE historically performed solvent recovery and related operations. The Operations Area is bordered on the east (downhill) by an abandoned railroad right-of-way and the former Cianci Property; to the north by commercial businesses; to the west (uphill) by private property; and to the south by private property, the Connecticut Light & Power (CL&P) electrical transmission line easement, and the Town Well Field Property.

- **Railroad Right-of-Way:** The railroad right-of-way is an approximately 50-foot wide corridor running north-south that separates the former Operations Area (to the west) from the former Cianci Property (to the east). The railroad was historically owned and operated by Boston & Maine, but is presently abandoned and the rails have been removed. CT DEP purchased the right-of-way in this area in support of extending the Farmington Canal Heritage Trail, a rails-to-trails greenway, from New Haven to the Massachusetts border (draft *Preliminary Reuse Assessment* [USEPA 2003]).

- **Former Cianci Property:** The former Cianci Property is a 10-acre parcel located immediately east of the Operations Area and railroad right-of-way. The Quinnipiac

River borders the eastern edge of the former Cianci Property. Lazy Lane is to the north, and the Town Well Field Property borders the property to the south.

- **Town Well Field Property:** The Town Well Field Property consists of approximately 28 acres of undeveloped land south of the former Cianci Property and southeast of the Operations Area. The well field is bounded to the east by the Quinnipiac River and to the south by the Quinnipiac River and Curtiss Street. The railroad right-of-way and the Delahunty Property border the western perimeter of the well field. The CL&P easement runs northwest-southeast through the northern portion of the Town Well Field Property.

  Town Production Wells No. 4 and 6 are approximately 2,000 and 1,400 feet south of the SRSNE Property, respectively. The Quinnipiac River divides the area between Wells No. 4 and 6. Production Well No. 6 is accessible using dirt roads originating from Lazy Lane or Curtiss Street, while Well No. 4 is only accessible from Curtiss Street. Production Well No. 4 was installed in August 1965 and provided drinking water to the Town of Southington from July 1966 to December 1977. Production Well No. 6 was installed in April 1976 and was pumped from May through October 1978, May through July 1979, and March 1980. Both wells have been inactive since that time.

  Within these areas, “the Site” includes areas where Site-related constituents have come to be present in soil (including wetland soil) and groundwater at concentrations exceeding SOW-specified cleanup levels. This includes observed and interpreted non-aqueous phase liquid- (NAPL-) containing areas, impacted soils in the Operations Area, railroad right-of-way, and Cianci Property, and areas of impacted groundwater in both the overburden and bedrock zones. These areas, shown on Figures 3A (overburden) and 3B (bedrock), are generally described as follows:

- **Overburden NAPL Area:** This is the area where NAPL has been observed or inferred to exist in overburden soils based on the findings of prior investigations. The estimated extent of the Overburden NAPL Area includes portions of the Operations Area, the railroad right-of-way, and a portion of the Cianci Property, as shown on Figure 3A. This area has been further delineated in the northwest corner of the former Operations Area as component of the pre-design investigations referenced in the RDWP.

- **Overburden Groundwater Area:** The Overburden Groundwater Area is the portion of the Site where dissolved volatile organic compounds (VOC) concentrations in the overburden aquifer exceed cleanup goals. While the overburden groundwater is typically considered in three zones (each approximately one-third of the saturated thickness), the composite extent of this area (based on *Feasibility Study Report* [BBL and USEPA 2005] data) is depicted on Figure 3A. The overburden groundwater VOC plume extends south to the Town Well Field Property. The extent

of the overburden groundwater area, particularly to the east of the Quinnipiac River, is subject to further assessment and delineation as part of the investigations referenced in the RDWP.

- **Bedrock NAPL Area:** The Bedrock NAPL Area is the area where NAPL has been observed or is inferred to exist based on prior site investigations. This includes a majority of the former SRSNE Operations Area and Cianci Property, as shown on Figure 3B.

- **Bedrock Groundwater Area:** This includes the portion of the Site where dissolved VOC concentrations in the bedrock aquifer exceed groundwater cleanup goals (based on *Feasibility Study Report* [BBL and USEPA 2005] data). The bedrock groundwater VOC plume extends south into the central portion of the Town Well Field Property (Figure 3B).

- **Severed Plume:** The portion of the affected groundwater zone that is outside the groundwater capture zone of the Non-Time-Critical Removal Action 1 (NTCRA 1) and NTCRA 2 extraction systems (described below), which contains Site-related constituents (primarily VOCs) above detectable levels is referred to as the severed plume. The approximate location and extent of the severed plume is shown on Figure 3A.

Other key Site features referenced include the Hydraulic Containment and Treatment System (HCTS). The HCTS consists of the on-site groundwater treatment system and the two groundwater extraction systems described as follows:

- **NTCRA 1 Groundwater Extraction System:** The NTCRA 1 groundwater extraction system ("NTCRA 1 system") is located within the NTCRA containment area on the Cianci Property east of the Operations Area (Figure 4). It consists of a steel sheet pile wall through the overburden to the top of bedrock, and 12 overburden groundwater extraction wells (RW-1 through RW-12) west (formerly upgradient) of the sheet pile wall. Groundwater is extracted from the wells to maintain hydraulic gradient reversal across the sheet pile wall. This system was installed in 1995 pursuant to Administrative Order on Consent (AOC) I-94-1045, effective October 4, 1994. Pumping from the NTCRA 1 system was initiated in July 1995.

  In December of 2009, de maximis submitted a letter to the Agencies summarizing changes to the NTCRA-1 Demonstration of Compliance Plan (DCP) as a result of the abandonment of monitoring well CPZ-9 (one of the ten NTCRA I compliance monitoring points) and decommission of recovery wells RW-5 and RW-6. Monitoring well abandonment activities at the site have been undertaken in accordance with Attachment N of the RDWP.

- **NTCRA 2 Groundwater Extraction System:** The NTCRA 2 groundwater extraction system ("NTCRA 2 system") consists of two overburden extraction wells (RW-13 and RW-14) and one bedrock extraction well (RW-1R) just north of the CL&P easement (Figure 4). These wells were installed pursuant to AOC 1-97-1000, effective February 18, 1997, and began operating in 1999, 2007, and 2001, respectively. The NTCRA 2 system includes a groundwater extraction well in the bedrock (RW-1R) and two overburden groundwater extraction wells (RW-13 and RW-14). This extraction well cluster is located in the Town Well Field Property north of the CL&P easement.

In 2011, the combined NTCRA 1 and NTCRA 2 groundwater extraction systems generally pumped between 20 and 35 gallons per minute. The capture zones created by the NTCRA 1 and 2 groundwater extraction systems are shown on Figure 3A (overburden) and Figure 3B (bedrock). The operation of the combined NTCRA 1 and NTCRA 2 systems has successfully contained the overburden and bedrock VOC plumes, creating the severed plume within the Town Well Field Property. Approximately 19,703,000 gallons of groundwater were extracted, treated and discharged during this monitoring period.

On-site Groundwater Treatment System: The combined operations of the extraction systems and the treatment facility were previously referred to as the "NTCRA 1 and NTCRA 2 Groundwater Extraction and Treatment System" or "NTCRA 1/2 Groundwater System." Following entry of the CD, continued operation of the NTCRA 1/2 Groundwater System became part of the ROD-specified remedial approach for groundwater, and the system is now referred to as the HCTS (SOW Section V.A).

Groundwater extracted from the NTCRA 1 and 2 systems is treated on site with a process that was originally constructed as part of the NTCRA 1 system (Figure 4). The groundwater extracted by the NTCRA-1 and 2 containment systems is pumped directly to the groundwater treatment facility. The treatment system consists of the following unit processes: metals pretreatment, filtration, ultraviolet oxidation (UV), and granular activated carbon adsorption. Vapor phase carbon adsorption is also used to capture contaminants that volatize during treatment. The system precipitates and extracts metals, reduces suspended solids, and destroys and captures volatile organic contaminants. Treated water is discharged to the Quinnipiac River in accordance with the Revised Connecticut Department of Environmental Protection (CTDEP) Substantive Requirements for Discharge of Pre-Treated Groundwater issued 6 November 1995. Approximately 16,626 pounds of VOCs have been removed from the groundwater since system startup.

C. Site Operational History

The SRSNE facility began operations in Southington in 1955 (ATSDR 1992). From approximately 1955 until the facility's closure in 1991, spent solvents were received from customers and distilled to remove impurities, and the recovered solvents were returned to the customer or sold to others for reuse. Based on a partial record of materials processed at the SRSNE facility (excluding pre-1967 operations files, which were destroyed in a fire), SRSNE handled in excess of 41 million gallons of waste solvents, fuels, paints, etc. Additional details regarding the operational history are provided in the *Remedial Investigation Report* (BBL 1998).

D. Regulatory Status

The SRSNE Site was added to the National Priorities List (NPL) on September 8, 1983. Since that time USEPA and the State of Connecticut have implemented a variety of enforcement, regulatory and response actions, culminating with the issuance of the Proposed Plan and Record of Decision (ROD) in September 2005. After issuing the ROD, the USEPA and SRSNE Site Group negotiated the terms of the CD.

Key regulatory milestones in the recent history of the Site, based on lists included on USEPA's project website (USEPA 2009) and in the fact sheet USEPA developed in support of the 2005 Proposed Plan (USEPA 2005b), are as follows:

Regulatory Milestone	Year
USEPA adds the Site to the NPL; SRSNE signs a consent decree with USEPA to install a groundwater recovery system and store/manage hazardous waste on site.	1983
USEPA and the State of Connecticut take enforcement action to require cleanup of the facility operations and the property.	1983-1988
USEPA initiates the Remedial Investigation for the Site, conducting three phases of investigation that are presented in a four-volume report (HNUS 1994).	1990
SRSNE operations cease.	1991
USEPA conducts a Time-Critical Removal Action to remove contaminated soils from the railroad grade drainage ditch and to remove some chemicals stored at the property to an off-site location.	1992
USEPA and the SRSNE Group enter into an Administrative Order on Consent (AOC) for Removal Action to construct and operate a pump and treat system to contain the principally contaminated overburden groundwater (the NTCRA 1 work). Other work conducted under this AOC included the construction of a mitigation wetland in the northeast corner of the Cianci Property, implementation of a full-scale	1994

phytoremediation study within the NTCRA 1 sheet pile wall, and extension of public water to three buildings adjacent to the Site.	
USEPA issues an Action Memorandum for a second NTCRA (NTCRA 2) to hydraulically contain VOC-impacted bedrock groundwater down gradient of the NTCRA 1 system.	1995
USEPA and the SRSNE Site Group enter into a second AOC for Removal Action and Remedial Investigation/Feasibility Study (RI/FS) to expand the groundwater containment system and complete site investigations. Work under this AOC resulted in the completion of the Site RI/FS, implementation of NTCRA 2, and the decontamination, demolition and removal of the remaining buildings and tanks from the Operations Area.	1996
SRSNE Site Group operates groundwater controls in the overburden and bedrock aquifers, completes remedial investigations, and conducts feasibility studies.	1996 - 2004
USEPA issues the Proposed Plan in June and holds two public meetings; the public comment period runs from June through August.	2005
USEPA issues the ROD for the Site, which describes the final remedy.	2005
USEPA and SRSNE Site Group sign CD to implement the RD/RA activities.	2008
Court enters CD; Remedial Design work initiated.	2009
Annual Report #1	2009
1st Five Year Review Report	2010
USEPA issues Remedial Design Work Plan Approval	2010
USEPA issues approval of PIPP 100% Design and RAWP	2010
Initiated Pre-ISTR Preparation Plan Construction Activities	2010
Annual Report #2	2010
ISTR Conceptual Design Approval	2011
Approval of ISTR 100% Wellfield Design	2011
Annual Report #3	2011

E. Selected Remedy

The overall purpose of RD/RA activities is to design and implement the selected remedial approach for the Site. The selected remedy, developed by combining components of different alternatives for source control and management of migration to obtain a comprehensive approach for Site remediation, was described in the ROD. Key elements are summarized as follows:

- Treat waste oil and solvents – where present as NAPL in the subsurface in the overburden aquifer (i.e., the Overburden NAPL Area) – using in-situ thermal treatment.

Following in-situ thermal treatment, cap the former SRSNE Operations Area. The cap will be low-permeability and multi-layered and is to be designed, constructed, and maintained to meet the requirements of Resource Conservation and Recovery Act

(RCRA) Subtitle C. As described in the "Re-use of Excavated Material from Railroad Right of Way for ISTR Area Fill" memorandum (de maximis, inc., April 29, 2010), soils excavated from the Rail Road Right of Way will be incorporated as fill material in the Thermal Treatment Zone (TTZ). Excavation of soil in a specific portion of the former railroad right-of-way to a depth of 4 feet – followed by backfill to match surrounding grade –will meet the direct exposure criteria (DEC) and pollutant mobility criteria (PMC) requirements of the Connecticut Remediation Standard Regulations with the understanding that an Activity and Use Limitation (ELUR) would subsequently be established for this area.

- Excavate soils exceeding cleanup levels from certain discrete portions of the former Cianci Property. The estimated limits of soil removal on the former Cianci Property (five discrete excavation areas) are shown on Figure G-1 of the *Post-Excavation Confirmatory Sampling Plan* (Attachment G to the RDWP); these limits are subject to modification based on additional sampling proposed as part of remedial design. Provided that concentrations of polychlorinated biphenyls (PCBs) do not warrant off-site disposal, soils excavated from the former Cianci Property (and from other areas excavated outside the cap limits as part of other RD/RA activities) may be relocated to the former SRSNE Operations Area for placement beneath the cap.

- Capture and treat (on site) groundwater in both the overburden and bedrock aquifers that exceeds applicable federal drinking water standards and risk-based levels. This will be achieved through continued operation, maintenance, and modification (as needed) of the HCTS.

- Monitored natural attenuation of the groundwater plume outside the capture zones (i.e., the severed plume, shown on Figure 3A of the RDWP) that exceeds cleanup levels.

- Monitor natural degradation of constituents in the groundwater plume inside the capture zones and within the Bedrock NAPL Area (shown on Figure 3B of the RDWP).

- Implement institutional controls (i.e., Environmental Land Use Restrictions) to minimize the potential for human exposure to Site-related constituents in the subsurface soils and to prohibit activities that might affect the performance or integrity of the cap.

- Monitor groundwater and maintain the cap over the long term.

F. Performance Standards

Section IV of the SOW establishes Performance Standards for the various affected media at the SRSNE Site. It also establishes Performance Standards for other aspects

of the RD/RA, including subsurface NAPL in the overburden and bedrock aquifers, performance of the multi-layer cap, hydraulic containment and treatment, the severed plume, habitat restoration, environmental monitoring, and institutional controls. These non-media-specific Performance Standards are summarized and addressed (to the extent applicable at this point in the RD/RA process) in the various task-specific work plans summarized in the RDWP.

Performance Standards for soil, wetland soil, and groundwater have been reviewed and compared to the current applicable USEPA and CTDEP standards and guidance. Based on this review, it was concluded that none of the USEPA or CTDEP criteria for Site-related constituent have been revised since the ROD was issued. However, the CTDEP has published a lower detection limit for 1,2,4-trichlorobenzene in water (0.5 micrograms per liter [ug/L] rather than the prior value of 2 ug/L). Because the detection limit is the cleanup level for groundwater (discussed below), this modification is noted on the copy of Table L-1 from the ROD that is provided as Appendix 1 to the RDWP. No other modifications were warranted to Tables L-1 or L-2 of the ROD to reflect current published guidance and standards.

The only monitoring to evaluate compliance with Performance Standards during this reporting period was that conducted for the HCTS, as discussed below in section I and in Attachment 2 to this report.

G. Summary of Activities Completed This Reporting Period

A summary of activities completed during this reporting period is provided within the attached Table 1.

H. Updated Schedule

An updated project schedule is included as Attachment 1 to this report.

I. Hydraulic Containment & Treatment System Operations and Maintenance

The HCTS achieved compliance during this reporting period with the Demonstration of Compliance Requirements (see Attachment B to the SOW). Details of the operation are provided as Attachment 2 to this report.

In addition to the parameters required by the Demonstration of Compliance Requirements, groundwater temperature data have been collected within the sheetpile wall to provide a baseline dataset of temperature variation over time. These data are being collected pursuant to Section 5.3.3 of Appendix N of the RDWP (Monitoring Well Network Evaluation and Groundwater Monitoring Program).

Map views and cross-sections to demonstrate hydraulic containment in accordance with EPA guidance from January 2008 entitled *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems* (EPA/600/R-08/003) are provided in Figures 5 through 9. These figures depict groundwater elevation contours measured on May 10-12, 2010 (i.e., the most current comprehensive groundwater gauging event), and generalized overburden and bedrock capture zone boundaries for the NTCRA 2 extraction wells, which are now part of the HCTS. The estimated capture zone boundaries are based on a combination of measured water level data, historical and recent groundwater modeling results and stagnation point calculations presented in the FS Report (BBL and USEPA, May 2005; Appendix A), and updated VOC concentration data at select monitoring wells (collected in May 2011). Although the extraction rates at the NTCRA 2 wells vary as a function of seasonal and long-term precipitation rates and well redevelopment events, the typical long-term average pumping rate has been approximately 20 to 30 gpm.

In April and May of 2011, average NTCRA-2 pumping rates were observed to be diminishing to approximately 20 gpm. To increase the NTCRA-2 recovery rate and maintain hydraulic control NTCRA 2 overburden extraction wells RW-13 and RW-14 were redeveloped in June 2011. Following redevelopment, the average NTCRA-2 recovery well yield increased above 30 gpm. The combined NTCRA 2 extraction rate during the reporting period averaged 28.5 gpm.

Figures 5 through 9 also show the locations of former Interim Monitoring and Sampling (IMS) wells that were used to monitor the VOC plume between the completion of the RI and the issuance of the ROD. These wells have the most complete data sets and provide the strongest assessment of statistical concentration trends. Updated VOC concentration trends at these wells were presented in the Draft 2011 MNA Report (ARCADIS, November 2011) and are summarized on Figures 5 through 9 (confidence interval of 90%). Middle overburden well MW-03 (Figure 6) and shallow bedrock well MW-127C (Figure 8) are the only monitoring wells south of the Connecticut Light & Power (CL&P) easement that contained VOC concentrations above the Interim Cleanup Levels (ICLs) before the start-up of the NTCRA 2 system, but they declined to below the ICLs following NTCRA 2 system start up. As shown on Figures 5 through 9, the VOC concentration trends at the former IMS wells are generally declining or have too many samples with no detected VOCs to support trend analysis.

The only groundwater monitoring location outside of the generalized capture zone that was not below the Action Levels (the more stringent of the Maximum Contaminant Level [MCL] or Groundwater Protection Criteria [GWPC]) for VOCs in May 2011 was deep bedrock well MW-707DR (Figure 9). Benzene was detected at a concentration of 2.5 micrograms per liter (ug/L) in the May 2011 sample, which is above the Action Level of 1.0 ug/L. This well was re-sampled in September 2011 to confirm the result; benzene was detected at a concentration of 0.67 ug/L, which is below the Action Level. Future additional sampling will provide a basis to assess groundwater quality trends at this

well. Thus, based on the most recent data, all of the wells south of the estimated NTCRA 2 capture zone boundary meet the Action Levels for VOCs.

Figure 10 shows a cross section location map and Figure 11 presents a north-south cross section drawn approximately parallel to the regional groundwater flow direction. Hydraulic head values and the generalized NTCRA 2 capture zone boundary are also shown on Figure 11.

J. Institutional Controls / Access Agreements

Institutional controls in the form of deed restrictions are already in place on the Operations Area and Cianci Properties that prohibit all uses except for those associated with environmental response actions, as further described in CD paragraph 26. No additional institution controls were implemented during this reporting period. In 2010, the SRSNE Site Group took control of the Voting Trusts that control the Operations Area Property and the Cianci Property, respectively, which allows the implementation of additional institutional controls on those properties when appropriate. Additional institutional controls will be implemented pursuant to the Institutional Control Plan that has been developed as required by SOW Section V.B.7.

Access agreements needed to conduct RD activities obtained from four (4) property owners during this reporting period. Access was granted to six properties in 2009; negotiations for access to the remaining four properties were obtained during 2010.

Following completion of the Overburden NAPL Delineation in the Northwest corner of the Operations area, the SRSNE Site Group purchased approximately 0.50 acres of property from Raymond and Yolanda Yorski. The property purchase was required to implement the ISTR portion of the remedy. The area purchased is shown on Figure 12.

K. Construction, Operation and Maintenance Activities

The following construction, Operation and Maintenance activities were completed during this reporting period:

- In August of 2010, Pre-ISTR Preparation Plan construction (PIPP) commenced.
- Completed soils excavation to a depth of four (4) feet below ground surface on West Side of the Rail Road Right of Way.
- Completed construction of thermal treatment equipment area.
- Completed 80% of PIPP grading activities in the Thermal Treat Zone.
- Upgraded water service to HCTS and installed water line to the thermal treatment system equipment area.

- Installed gas service piping from Lazy Lane to the thermal treatment system equipment area.

- Completed construction of thermal treatment discharge line to POTW.

- Provided easement for AT&T Fiber Optic Line on western edge of property. Installed conduit for Fiber Optic line within easement.

- All PIPP construction activities have ceased until the AT&T fiber optic line within the rail road right of way is relocated to the new easement constructed along the west side of the Site. A revised easement between the State of Connecticut and AT&T is forthcoming that will allow for the relocation of the line and PIPP construction activities to resume.

- All remaining work will be completed in the spring/summer of 2012.

L. Habitat Restoration

No habitat restoration activities were conducted during this reporting period. A pre-remediation assessment of the types, extent and condition of existing habitats on site was conducted in June 2009 pursuant to RDWP Attachment H (Habitat Restoration Work Plan).

M. Memorandum of Agreement (MOA) with Southington Water Department / Town of Southington

A draft MOA was prepared during the Annual Report #1 reporting period as required by SOW Section V.B.3. This draft MOA was submitted for EPA review on September 16, 2009 and resubmitted based upon EPA comments on June 23, 2010. EPA provided further comments on the MOA on October 28, 2011. The revised MOA was provided for further EPA review on November 15, 2011.

N. Groundwater Monitoring Program

A comprehensive groundwater monitoring program was scoped in *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Work Plan; Attachment N to the Remedial Design Work Plan [RDWP]; ARCADIS 2010). A summary of the planned sampling frequency is provided in the attached Table N-1 from the RDWP. The following groundwater activities have been performed to date:

- The first comprehensive groundwater sampling event occurred during May/June 2010 which supported the first Five-Year Review, submitted in 2010. This sampling event provided data for the draft 1st Monitored Natural Attenuation Report which was submitted in September 2010.

- In accordance with *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Work Plan; Attachment N to the Remedial Design Work Plan [RDWP]; ARCADIS 2010), the 2011 annual groundwater sampling event was performed in May 2011 and included sampling of groundwater at 33 monitoring wells. The 2011 Groundwater Sampling and Monitored Natural Attenuation Report (Attachment 3) summarizes the 2011 groundwater sampling event performed in accordance with the and presents the results and interpretation of data collected in support of MNA as a remedy for groundwater that contains Site related constituents of concern (COCs) at concentrations exceeding acceptable risk levels or regulatory limits.

O. Recommendations of Changes to any Monitoring Program

The following changes to the groundwater monitoring program have been recommended and/or implemented since the last Annual State of Compliance Report:

- Sulfide has not been detected in MNA-related analyses to date. Based on the highly reactive nature of sulfide and the lack of detectable concentrations of sulfide in site groundwater, along with the adequate characterization of site groundwater redox conditions using other MNA parameter data, sulfide was proposed for removal from the MNA parameter analyte list. This recommendation was originally made in the 2010 MNA Report (September 2010) and approved by the USEPA in an email to *de maximis* dated September 15, 2011.

- The proposal made in the 2010 MNA Report to eliminate monitoring for certain metals based on lack of or low detections in groundwater was retracted based on comments provided by the USEPA on September 15, 2011. Both total (unfiltered) and dissolved (filtered) metals analyses will be performed consistent with the Work Plan. However, only total (unfiltered) metals data will be used for comparison to groundwater standards. The dissolved (filtered) data will be used to assess redox conditions as part of the MNA evaluations.

- Two additional monitoring wells – middle overburden well MW-1001M and shallow bedrock well MW-1001R – were installed adjacent to the access road for Oak Hill Cemetery (east of Queen Street) in December 2011. These two wells will be added to the “C” well group, which is sampled as part of the comprehensive sampling event to support five-year reviews. In addition, both wells will be sampled approximately two weeks after development.

P. Groundwater Containment and Treatment Optimization Studies

No optimization studies were conducted during this reporting period.

Q. Costs Incurred this Reporting Period

Paragraph 62 of the CD sets forth "Additional Provisions Regarding Settling Defendants' Payments of U.S. Oversight Costs and State Oversight Costs." Pursuant to this paragraph, an interest bearing "Oversight Costs Payment Subaccount" of the Remedial Trust Account was established on April 27, 2009, in the amount of $5,700,000. The balance in this subaccount at the end of September 2011 was $ 5,662,250.94 . Other defined terms in this paragraph include:

- "Rolling Oversight Cap" – defined as 15% of the total costs incurred by the Settling Defendants in performing the Work through the end of the Oversight Billing Period.
- "Available Balance" equals the Rolling Oversight Cap less the sum of all Settling Defendants prior payments for U.S Oversight Cost and State Oversight Costs.

Paragraph 62.e states that the Settling Defendants shall have the burden of calculating annually the Rolling Oversight Cap and Available Balance. The following table summarizes annually the Rolling Oversight Cap and Available Balance:

Reporting Period	Total Project Costs	Rolling Oversight Cap Amount	Oversight Costs	Available Rolling Oversight Cap Amount
Annual Report #1*	$1,880,301	$282,045	None billed.	$282,045
Annual Report #2*	$3,446,824	$517,024	$84,290	$714,779
Annual Report #3	$4,065,239	$609,786	$82,851	$1,241,714
Totals:	**$9,392,365**	**$1,408,855**	**$167,141**	**$1,241,714**

* Cost Revised based on Trustee expenditure updates

The total Rolling Oversight Cap amount available is: **$1,241,714**

The total Rolling Costs Cap amount equals the available amount remaining from the Annual Report #2 period and the total amount available from the Annual Report #3 period.

R. References

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Tables

TABLE 1.0
Summary of Activities Completed
October 31, 2010 through October 30, 2011

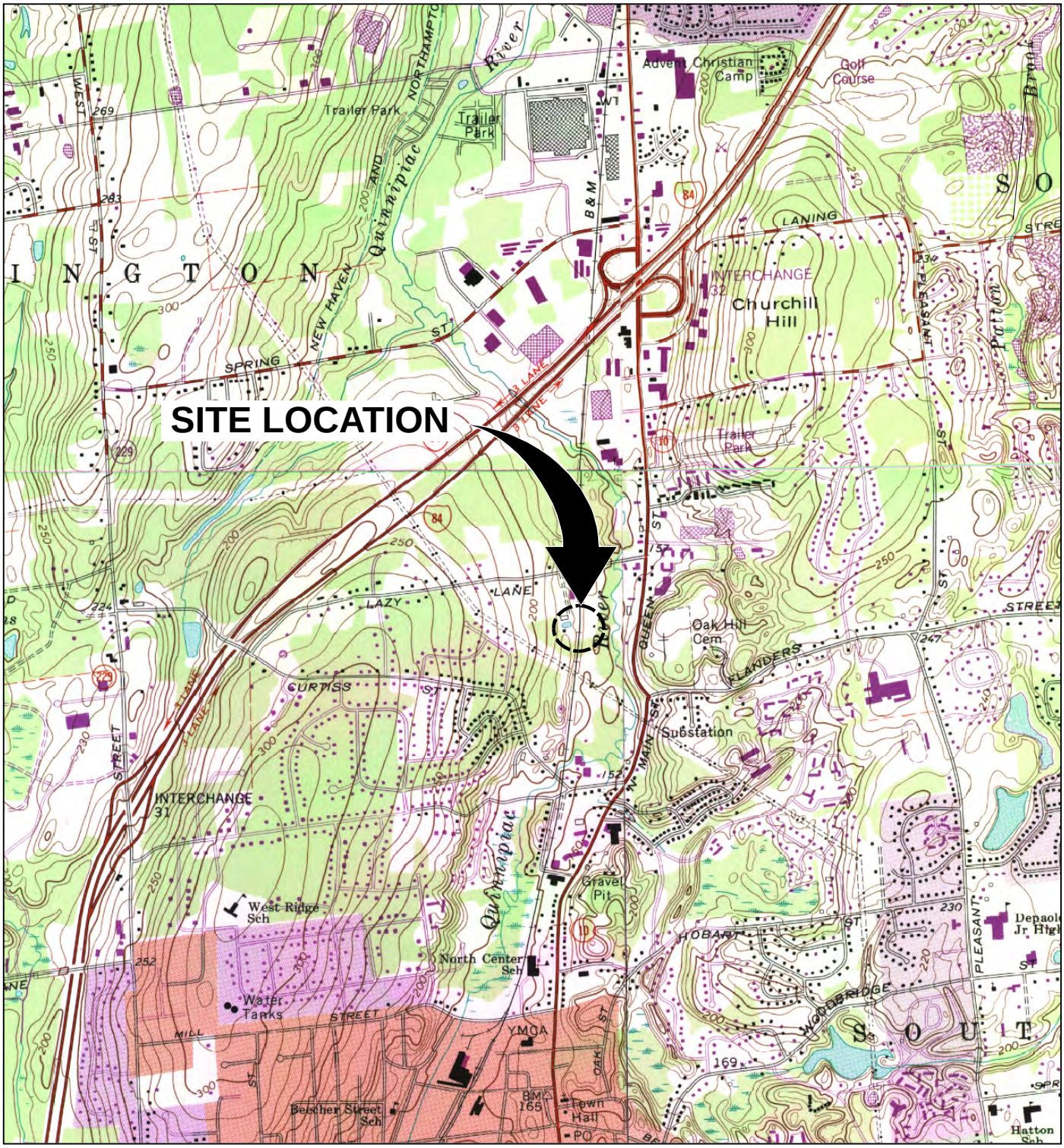
Document Name / Activity	Author(s)	Date Submitted	Date Approved	Type
Final RDWP and POP	ARCADIS	11/19/2010	pending	Deliverable under SOW
Response to Comments on ISTR Conceptual Design	TerraTherm	12/3/2010	7/7/2011	Deliverable under SOW
Annual State of Compliance Report #2	de maximis	12/20/2010	pending	Deliverable under SOW
PIPP Winter Stabilization Plan	de maximis	12/30/2010	pending	Deliverable under SOW
Vapor Intrusion Technical Memorandum	EPA	10/27/2010	1/19/2011	Conditional Approval
Data Comparison - Groundwater Sampling Techniques	ARCADIS	1/4/2011	N/A	Technical Memorandum
Updates to Existing MODFLOW Groundwater Flow Model	ARCADIS	1/5/2011	N/A	Technical Memorandum
Data Comparison - Groundwater Sampling Techniques	ARCADIS	2/10/2011	N/A	Technical Memorandum
Draft Institutional Controls Plan	de maximis/ARCADIS	2/18/2011	pending	Deliverable under SOW
Comments on Response to Comments on ISTR Conceptual Design	EPA	3/2/2011	7/7/2011	EPA comments
PIPP Sheetpile Wall Extension Design	ARCADIS	3/21/2011	4/22/2011	Deliverable under SOW
Data Comparison - HydraSleeve vs. Low-Flow Groundwater Sampling Techniques	ARCADIS	3/22/2011	N/A	Technical Memorandum
Response to Comments on Response to Comments on ISTR Conceptual Design	TerraTherm	4/6/2011	7/7/2011	Deliverable under SOW
Bedrock Outcrop Study	ARCADIS	4/20/2011	N/A	Technical Memorandum
Supplementary Vapor Intrusion Technical Memorandum	ARCADIS	6/6/2011	pending	Deliverable under SOW
Bedrock Modeling Memorandum	ARCADIS	6/6/2011	N/A	Technical Memorandum
Comments on Vapor Intrusion Technical Memorandum	EPA	6/15/2011	pending	EPA comments
ISTR Conceptual Design Approval	EPA	7/7/2011	7/7/2011	Approval
Technical Memorandum - Proposed Use of Hydrasleeve Sampling	ARCADIS	7/8/2011	7/8/2011	Technical Memorandum
Approval of ISTR 100% Wellfield Design	EPA	9/23/2011	9/23/2011	EPA Approval
Comments on Draft Memorandum of Agreement with Town and Southington Water Department	EPA	10/28/2011	pending	EPA comments

Table N-1.
Groundwater Monitoring Network and Sampling Events
SRSNE Superfund Site, Southington, CT

Well Group	# Wells	Sampling Period	Sampling Frequency	Analytical Parameters
"C" wells	81	first comprehensive event *	1 event	VOCs, alcohols, 1,4-dioxane, TAL metals, PAHs, PCBs
"R" wells	26			VOCs, alcohols, 1,4-dioxane, TAL metals, PAHs, PCBs, MNA parameters
"N" wells	10			VOCs, alcohols, 1,4-dioxane, TAL metals, PAHs, PCBs, MNA parameters
"M" wells	5			TAL metals, MNA parameters (background)
"B" wells	3			TAL metals (background)
"C" wells	81	subsequent comprehensive events	every 5 years	VOCs, 1,4-dioxane, TAL metals
"R" wells	26			VOCs, 1,4-dioxane, TAL metals, MNA parameters
"N" wells	10			VOCs, 1,4-dioxane, TAL metals, MNA parameters
"M" wells	5			TAL metals, MNA parameters
"B" wells	3			TAL metals
"R" wells	26	after first comprehensive event	annual	VOCs
			biennial	MNA parameters
"M" wells	5	after first comprehensive event	biennial	TAL metals (background)
			biennial	MNA parameters (background)
"N" wells - overburden	8	before thermal treatment	biennial	VOCs, MNA parameters
		during thermal treatment	annual	VOCs, MNA parameters
		after thermal, before equilibrium	3x / year	VOCs, MNA parameters
		after equilibrium	annual	VOCs
			biennial	MNA parameters
"N" wells - bedrock	2	before thermal treatment	annual	VOCs, MNA parameters
		during thermal treatment	annual	VOCs, MNA parameters
		after thermal, before equilibrium	3x / year	VOCs, MNA parameters
		after equilibrium	annual	VOCs
			biennial	MNA parameters
"W" wells	36	all comprehensive events	every 5 years	Water levels only - during all comprehensive events

Notes: 1) biennial = once every two years.
* - Shallow overburden wells MW-501C, MW-903S, and MW-904S will be re-sampled approximately 6 months after the first comprehensive sampling event.

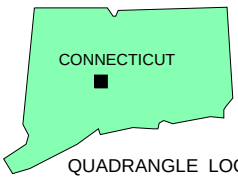
Figures



REFERENCE: SOUTHINGTON, CONN. USGS QUAD. 1968 PR 1992, MERIDEN, CONN. USGS QUAD. 1966 PR 1984, NEW BRITAIN, CONN. USGS QUAD. 1966 PR 1984, & BRISTOL, CONN. USGS QUAD 1967 PR 1984

2000' 0 2000'

APPROX. SCALE: 1" = 2000'



QUADRANGLE LOCATION

DRAFT

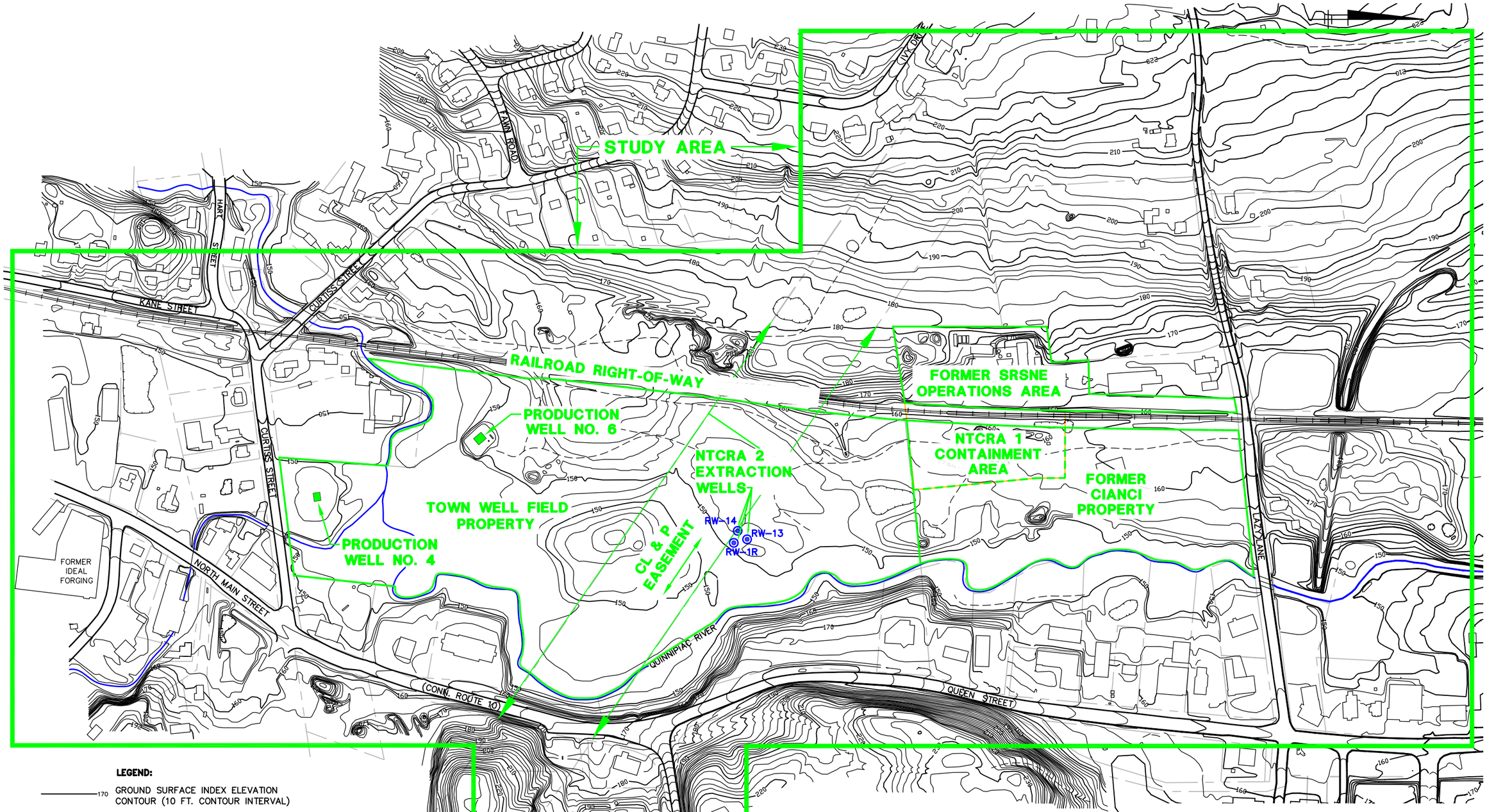
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
REMEDIAL DESIGN WORK PLAN

SITE LOCATION MAP

ARCADIS

FIGURE
1

02/27/09 SYRACUSE, NY-ENV/CAD DJH, LJP
B005463410000100001CDR\RDWP\54634N01.CDR



LEGEND:

170 GROUND SURFACE INDEX ELEVATION CONTOUR (10 FT. CONTOUR INTERVAL)

GROUND SURFACE INTERMEDIATE ELEVATION CONTOUR (2 FT. CONTOUR INTERVAL)

NOTE:

MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONNECTICUT" DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

DRAFT

0 300' 600'

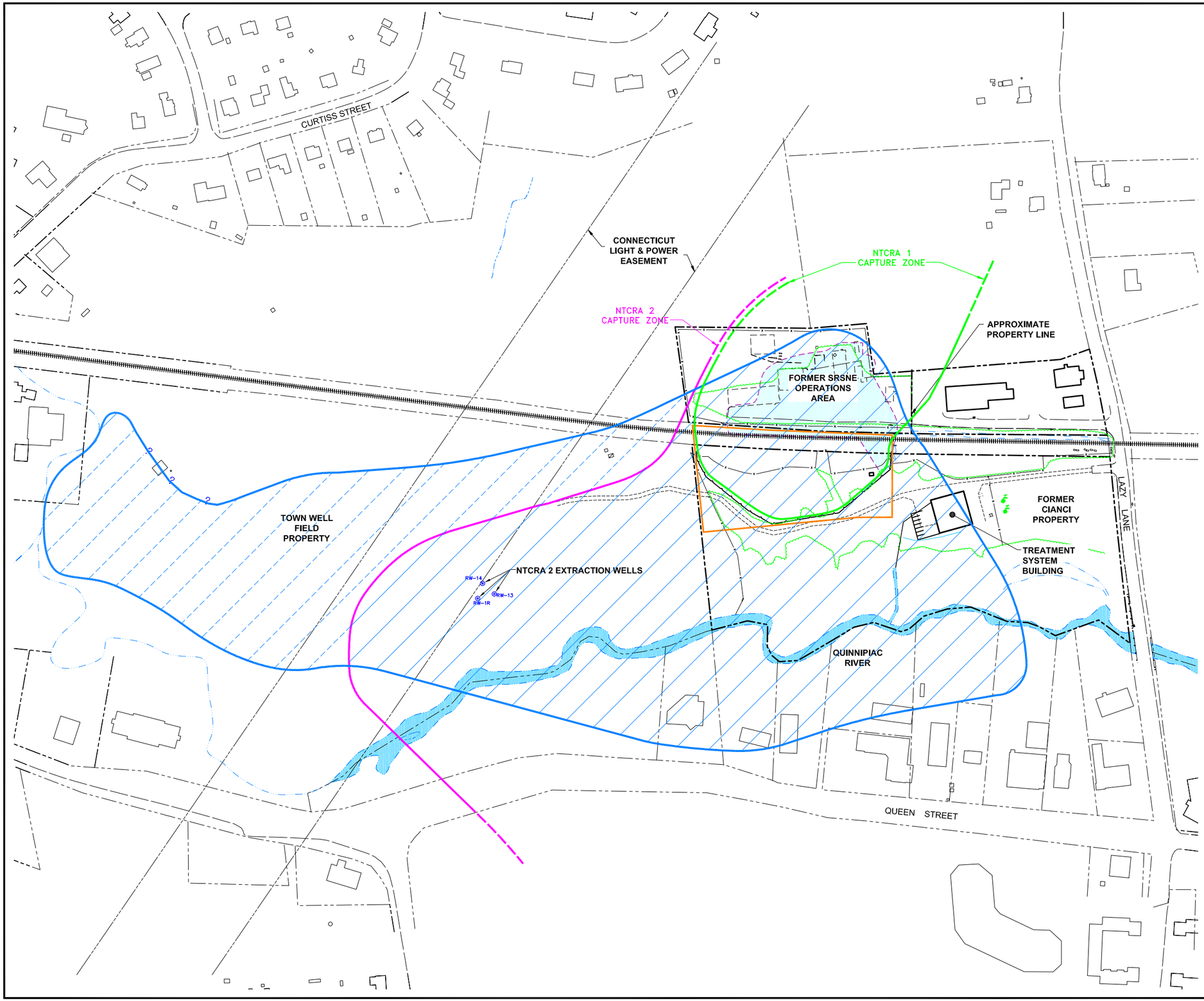
GRAPHIC SCALE

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
REMEDIAL DESIGN WORK PLAN

STUDY AREA

ARCADIS

FIGURE **2**



LEGEND:

- PROPERTY LINE
- PROPERTY LINE – ADJOINER
- BUILDING
- BUILDING – ADJOINER
- FORMER BUILDING
- RAILROAD
- ROAD
- GRAVEL ROAD
- DRAINAGE SWALE
- RIVER
- EASEMENT
- CHAINLINK FENCE
- SHEETPILE
- NTCRA 1 CONTAINMENT AREA
- OVERBURDEN GROUNDWATER AREA
- SEVERED PLUME
- OVERBURDEN NAPL AREA

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM A FIGURE CREATED BY CONKLIN & SOROKA, INC., ENTITLED "TOPOGRAPHIC SURVEY" DATED 1/13/09 AT A SCALE OF 1"=50'.
2. ALL LOCATIONS ARE APPROXIMATE.
3. THIS FIGURE PRESENTS AN OVERLAY OF THE ESTIMATED EXTENTS OF THE GROUNDWATER PLUME IN THREE MONITORED OVERBURDEN ZONES, BASED ON PLUME DELINEATION LIMITS PRESENTED IN THE MONITORED NATURAL ATTENUATION REPORT (ARCADIS 2010).

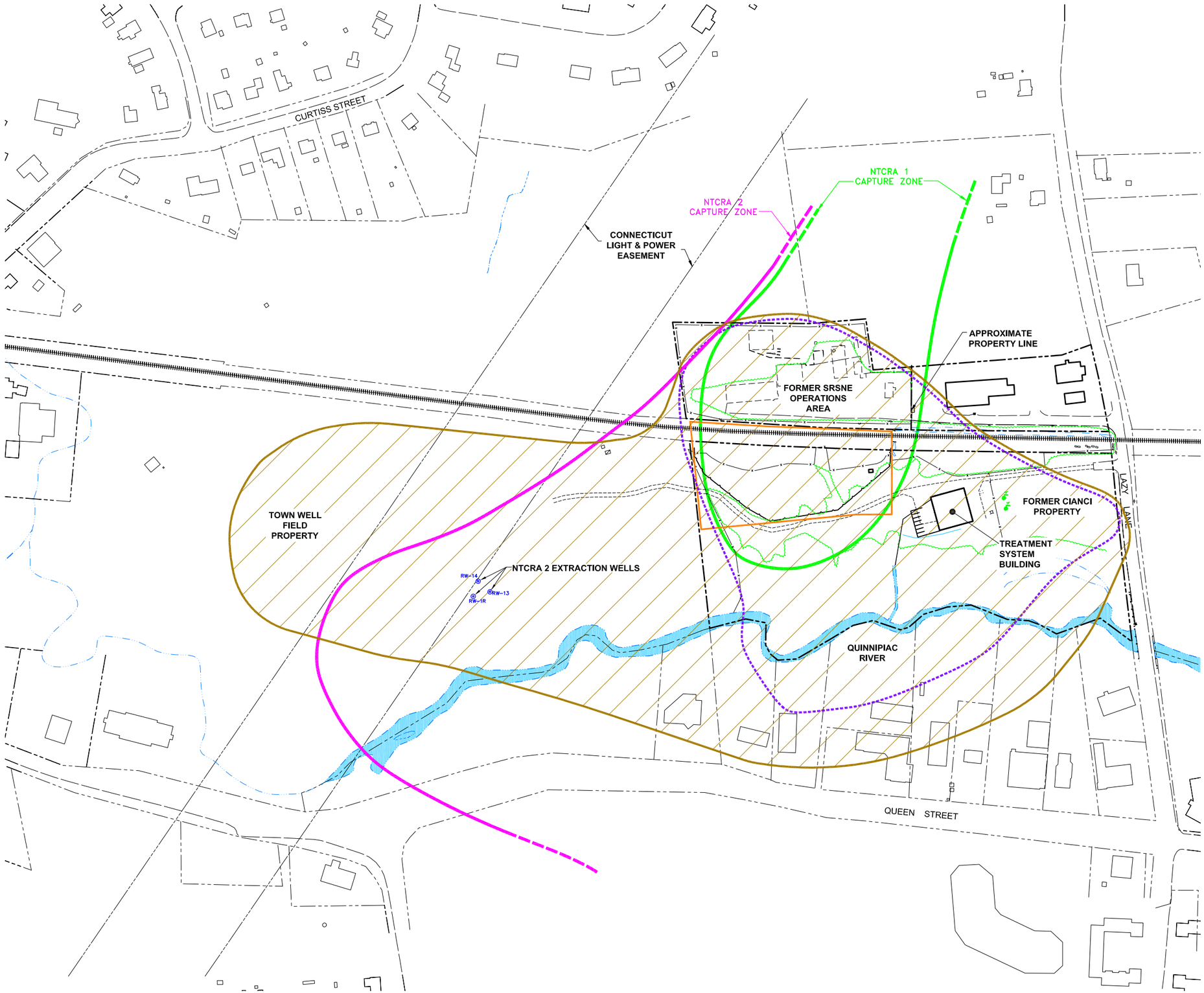
0 120' 240'
GRAPHIC SCALE

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
ANNUAL REPORT #2

ESTIMATED GROUNDWATER PLUME AND NAPL AREAS - OVERBURDEN

ARCADIS

FIGURE
3A



LEGEND:

- PROPERTY LINE
- PROPERTY LINE – ADJOINER
- BUILDING
- BUILDING – ADJOINER
- FORMER BUILDING
- RAILROAD
- ROAD
- GRAVEL ROAD
- DRAINAGE SWALE
- RIVER
- EASEMENT
- CHAINLINK FENCE
- SHEETPILE
- NTCRA 1 CONTAINMENT AREA
- BEDROCK NAPL AREA
- BEDROCK GROUNDWATER AREA

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM A FIGURE CREATED BY CONKLIN & SOROKA, INC., ENTITLED "TOPOGRAPHIC SURVEY" DATED 1/13/09 AT A SCALE OF 1"=50'.
2. ALL LOCATIONS ARE APPROXIMATE.
3. THIS FIGURE PRESENTS AN OVERLAY OF THE ESTIMATED EXTENTS OF THE GROUNDWATER PLUME IN TWO MONITORED BEDROCK ZONES, BASED ON PLUME DELINEATION LIMITS PRESENTED IN THE MONITORED NATURAL ATTENUATION REPORT (ARCADIS 2010).

0 120' 240'
GRAPHIC SCALE

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
ANNUAL REPORT #2

ESTIMATED GROUNDWATER PLUME AND NAPL AREAS - BEDROCK

ARCADIS

FIGURE
3B

CONNECTICUT LIGHT & POWER EASEMENT

PROPOSED CAP LIMITS (SEE NOTE 4)

OVERBURDEN NAPL AREA (SUBJECT TO IN-SITU THERMAL REMEDIATION) (SEE NOTE 4)

APPROXIMATE PROPERTY LINE

FORMER SRSNE OPERATIONS AREA

RAILROAD RIGHT-OF-WAY

RW-1 RW-2 RW-3 RW-4 RW-5 RW-6 RW-7 RW-8 RW-9 RW-10 RW-11 RW-12

NTCRA 1 CONTAINMENT AREA

EXCAVATION AREA 1

EXCAVATION AREA 4

FORMER CIANCI PROPERTY

TREATMENT SYSTEM BUILDING

LAZY LANE

CULVERT RELOCATION/ REPLACEMENT

TREATMENT SYSTEM DISCHARGE PIPE

NTCRA 2 EXTRACTION WELLS

RW-14 RW-13 RW-1R

CONTINUED OPERATION OF NTCRA 1/2 SYSTEM FOR GROUNDWATER EXTRACTION AND TREATMENT (HYDRAULIC CONTAINMENT AND TREATMENT SYSTEM)

EXCAVATION AREA 2

EXCAVATION AREA 3

EXCAVATION AREA 5

QUINNIPIAC RIVER

LEGEND:

- PROPERTY LINE
- PROPERTY LINE – ADJOINER
- BUILDING
- BUILDING – ADJOINER
- FORMER BUILDING
- RAILROAD
- ROAD
- GRAVEL ROAD
- DRAINAGE SWALE
- RIVER
- EASEMENT
- CHAINLINK FENCE
- AREA OF DISCRETE SOIL REMOVAL ON FORMER CIANCI PROPERTY (SEE NOTE 4)
- SHEETPILE
- WETLAND
- RW-1 NTCRA 1 OVERBURDEN EXTRACTION WELL

NOTES:

1. SITE PLAN TAKEN FROM DIVERSIFIED TECHNOLOGIES CORP., 556 WASHINGTON AVE., NORTH HAVEN, CT, DATED 6/93. TOPOGRAPHY REPORTED TO HAVE BEEN DIGITIZED FROM TOWN OF SOUTHINGTON TOPOGRAPH MAPS G-7, G-8, G-9; PHOTOGRAPHY DATED NOV. 1978, SCALE: 1"=100'. PROPERTY LINES REPORTED TO HAVE BEEN DIGITIZED AND LOT NUMBERS TAKEN FROM "PROPERTY MAP, TOWN OF SOUTHINGTON" MAPS 134 & 147, SCALE: 1"=100' BY DIVERSIFIED TECHNOLOGIES CORPORATION.
2. BENCHMARK #1 IS AT ELEVATION 164.03. PK NAIL; S'LY SIDE; POLE #9049.
3. WETLAND AREAS WERE TAKEN FROM THE FINAL REMEDIAL INVESTIGATION REPORT (HNUS 1994).
4. THE LIMITS OF REMEDIAL ACTIVITIES ARE PRELIMINARY AND ARE SUBJECT TO CONFIRMATION/MODIFICATION BASED ON REMEDIAL DESIGN ACTIVITIES.

DRAFT

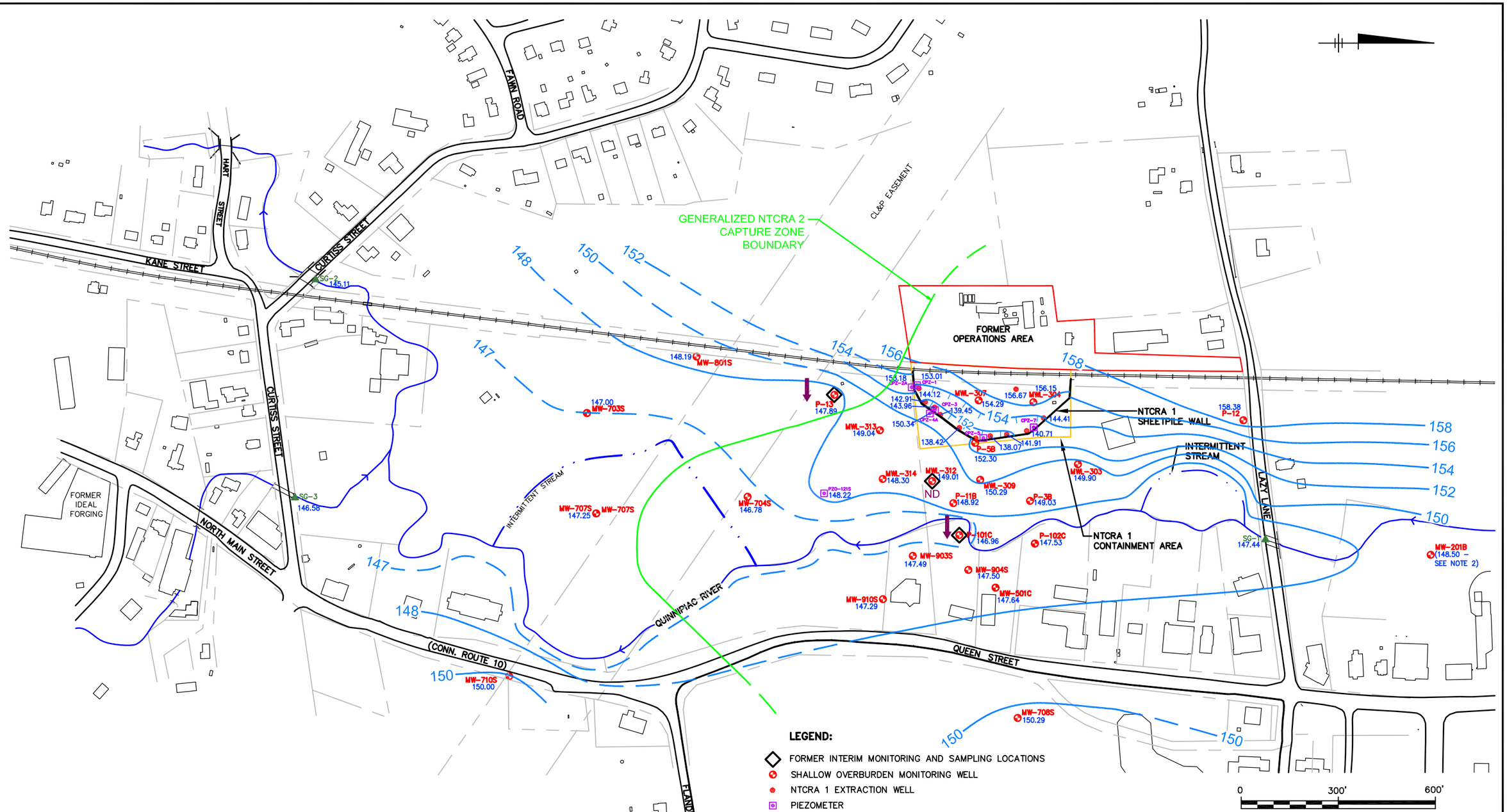
0 80' 160'
GRAPHIC SCALE

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
REMEDIAL DESIGN WORK PLAN

PLANNED REMEDIAL ACTIVITIES

ARCADIS

FIGURE
4



LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- SHALLOW OVERBURDEN MONITORING WELL
- NTCRA 1 EXTRACTION WELL
- PIEZOMETER
- STREAM/RIVER GAUGE POINT
- 150.29 HYDRAULIC HEAD VALUE
- 154 GROUNDWATER ELEVATION CONTOUR (FT–AMSL) CONTOUR INTERVAL = 2 FEET, UNLESS NOTED OTHERWISE

VOC CONCENTRATION TREND (90% C.I.)

- DECREASING
- ND EVENTS WITH NO DETECTED VOCs PRECLUDE TREND ANALYSIS

NOTES:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6–28–93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.
2. GROUNDWATER ELEVATION AT MW–201B ESTIMATED BASED ON HISTORICAL MEASUREMENTS.

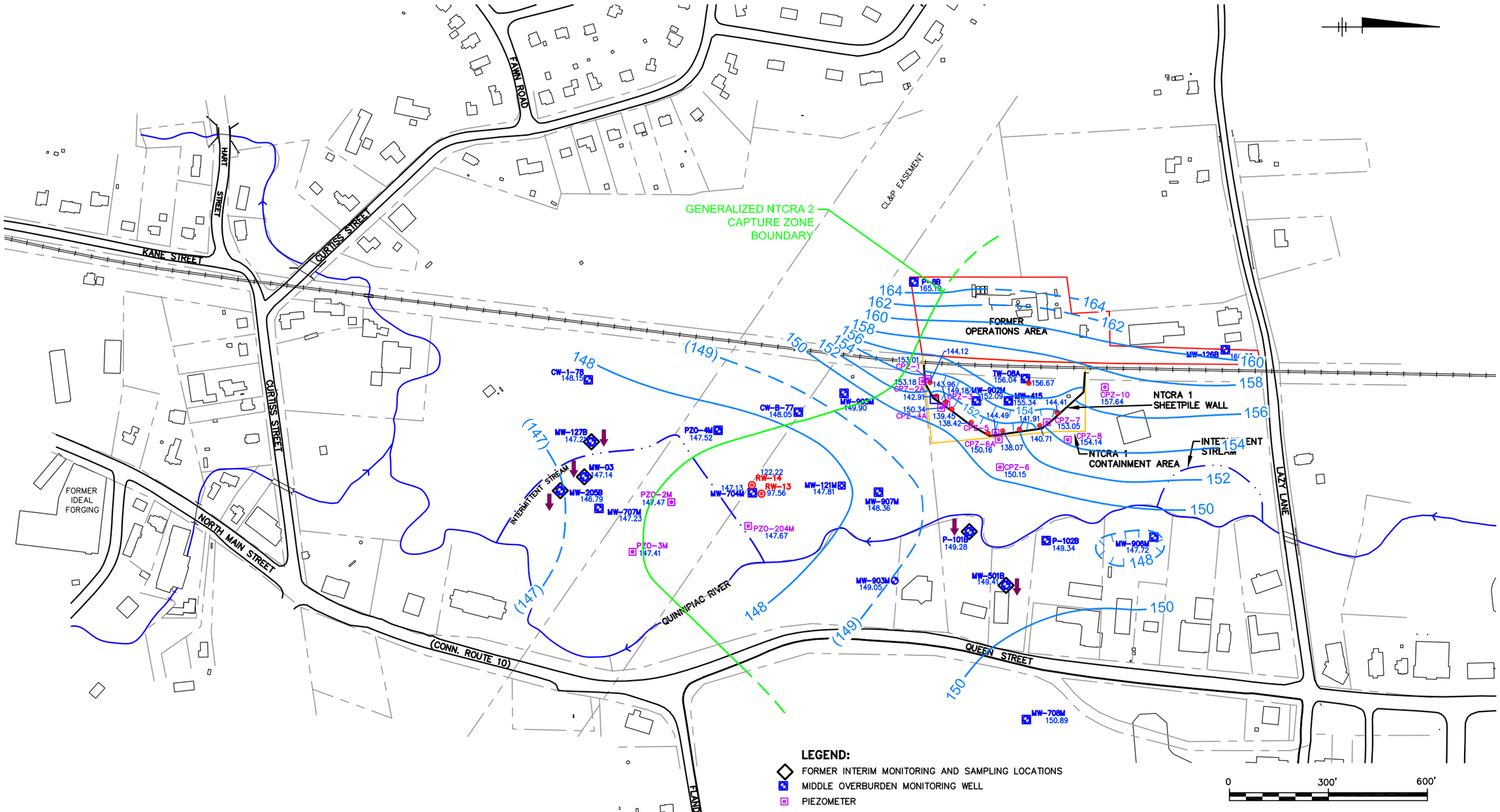
DRAFT

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
ANNUAL REPORT #3

SHALLOW OVERBURDEN GROUNDWATER ELEVATION CONTOURS, MAY 10-12, 2010

ARCADIS

FIGURE
5



LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- MIDDLE OVERBURDEN MONITORING WELL
- PIEZOMETER
- NTCRA 1 EXTRACTION WELL
- NTCRA 2 EXTRACTION WELL
- MW-205B — WELL ID
- 146.79 — HYDRAULIC HEAD VALUE
- 154 — GROUNDWATER ELEVATION CONTOUR (FT–AMSL) CONTOUR INTERVAL = 2 FEET, UNLESS NOTED OTHERWISE (DASHED WHERE INFERRED)
- VOC CONCENTRATION TREND (90% C.I.)
- DECREASING

NOTES:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6–28–93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.
2. HYDRAULIC HEAD VALUES ARE REPORTED IN FEET ABOVE MEAN SEA LEVEL (FT–AMSL) FOR MAY 2010 MEASUREMENT EVENT.
3. HEAD VALUES IN PARENTHESES WERE NOT USED FOR CONTOURING.

DRAFT

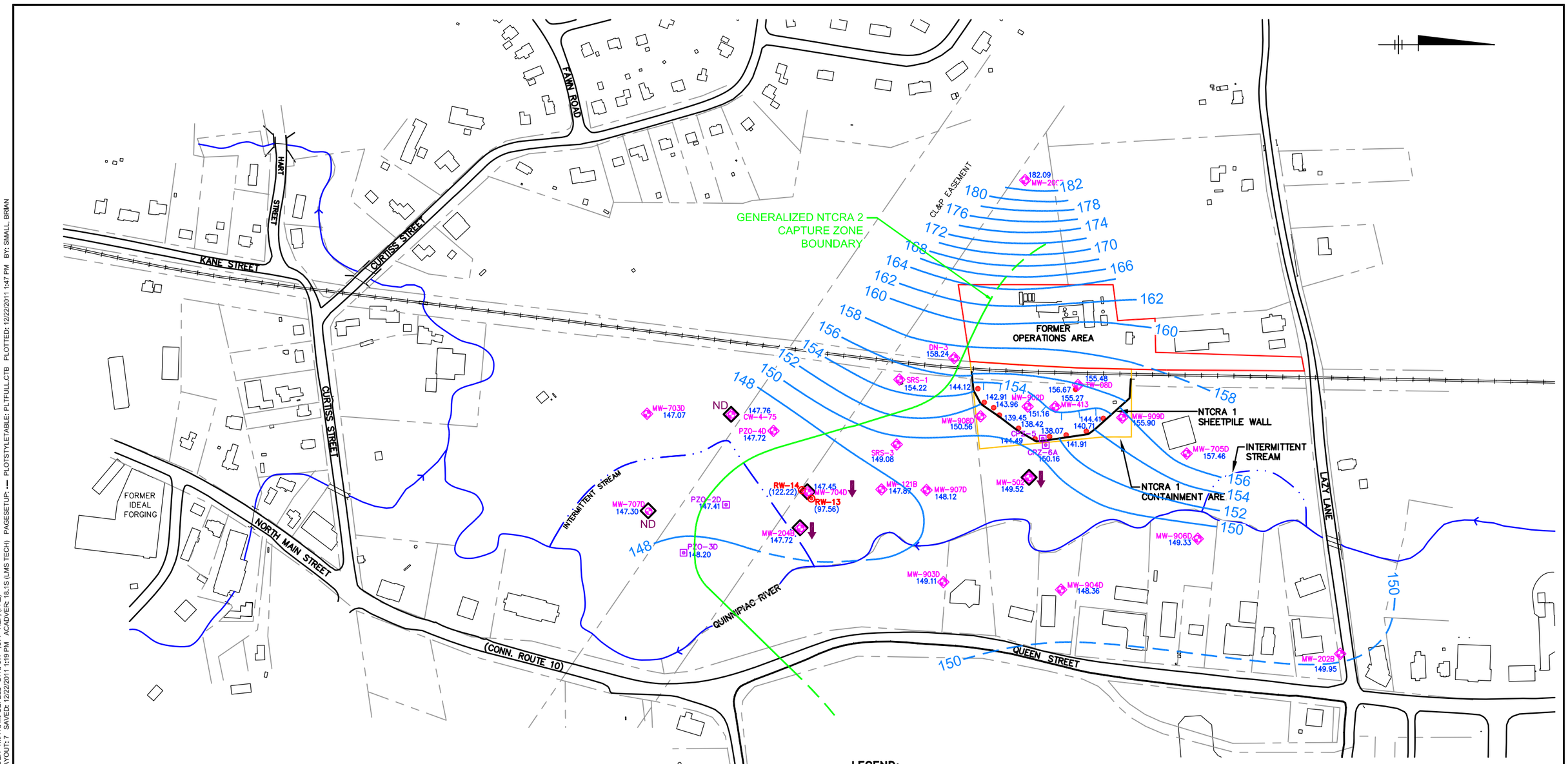
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
ANNUAL REPORT #3

MIDDLE OVERBURDEN GROUNDWATER ELEVATION CONTOURS, MAY 10-12, 2010

ARCADIS

FIGURE
6

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER PM: J. HOLDEN TM/TR: M. GEFELL LYR: ON=*;OFF=REF, (FRZ)
G:\ENVCAD\Manchester\ACTIB\005463400000\026000\54634W02.DWG LAYOUT: 6 SAVED: 12/22/2011 1:48 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/22/2011 1:54 PM BY: SMALL, BRIAN
XREFS: IMAGES: PROJECTNAME: ---
54634X01



LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- DEEP OVERBURDEN MONITORING WELL
- NTCRA 1 EXTRACTION WELL
- PIEZOMETER
- NTCRA 2 EXTRACTION WELL
- 149.11 HYDRAULIC HEAD VALUE
- 154 GROUNDWATER ELEVATION CONTOUR (FT–AMSL) CONTOUR INTERVAL = 2 FEET, UNLESS NOTED OTHERWISE
- VOC CONCENTRATION TREND (90% C.I.)
- DECREASING
- ND EVENTS WITH NO DETECTED VOCs PRECLUDE TREND ANALYSIS

NOTES:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6–28–93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.
2. HYDRAULIC HEAD VALUES ARE REPORTED IN FEET ABOVE MEAN SEA LEVEL (FT–AMSL) FOR MAY 2010 MEASUREMENT EVENT.
3. HEAD VALUES IN PARENTHESES WERE NOT USED FOR CONTOURING.

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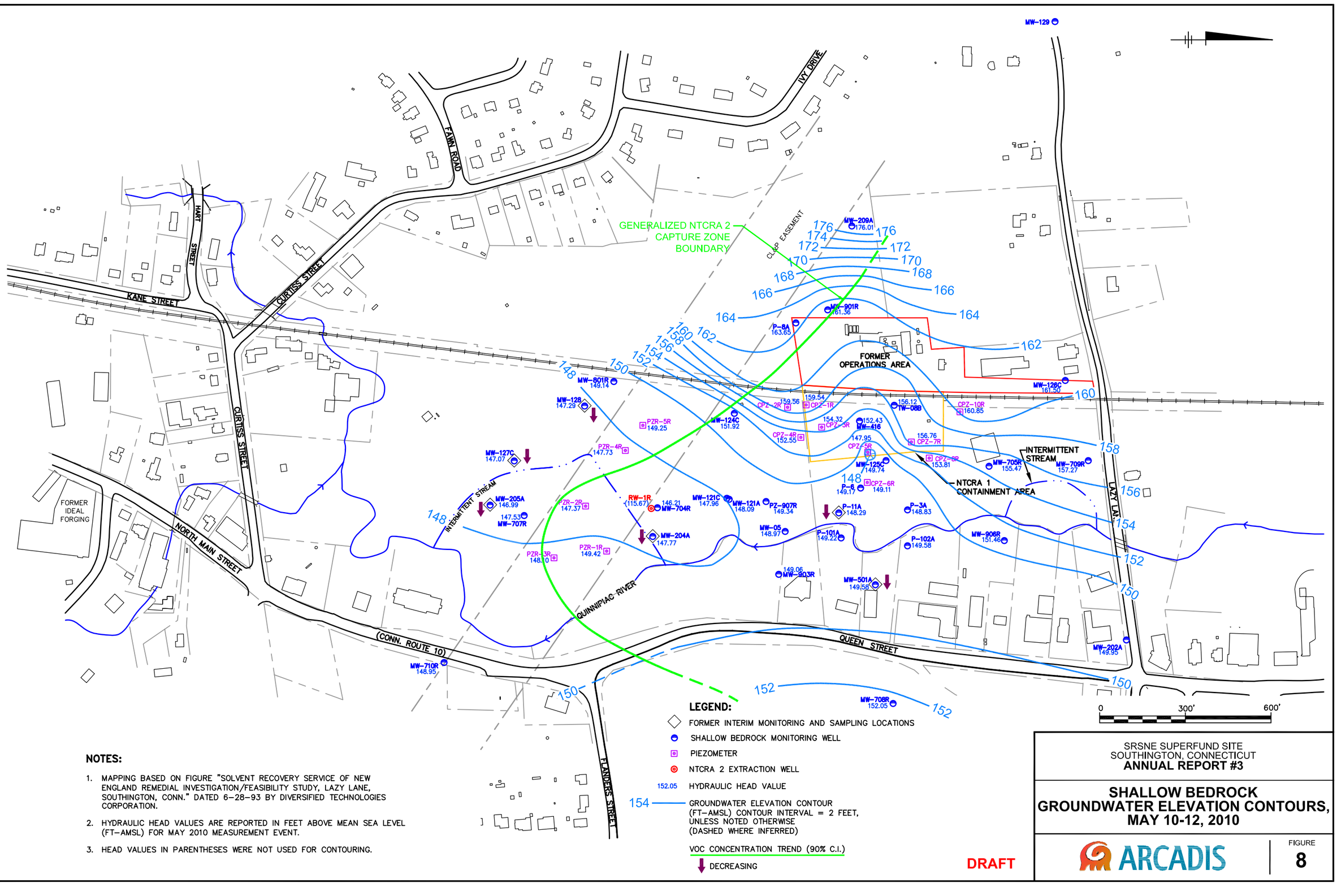
SOUTHINGTON, CONNECTICUT
ANNUAL REPORT #3

DEEP OVERBURDEN GROUNDWATER ELEVATION CONTOURS, MAY 10-12, 2010

ARCADIS

FIGURE
7



NOTES:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.
2. HYDRAULIC HEAD VALUES ARE REPORTED IN FEET ABOVE MEAN SEA LEVEL (FT-AMSL) FOR MAY 2010 MEASUREMENT EVENT.
3. HEAD VALUES IN PARENTHESES WERE NOT USED FOR CONTOURING.

LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- SHALLOW BEDROCK MONITORING WELL
- PIEZOMETER
- NTCRA 2 EXTRACTION WELL
- 152.05 HYDRAULIC HEAD VALUE
- 154 GROUNDWATER ELEVATION CONTOUR (FT-AMSL) CONTOUR INTERVAL = 2 FEET, UNLESS NOTED OTHERWISE (DASHED WHERE INFERRED)

VOC CONCENTRATION TREND (90% C.I.)

- DECREASING

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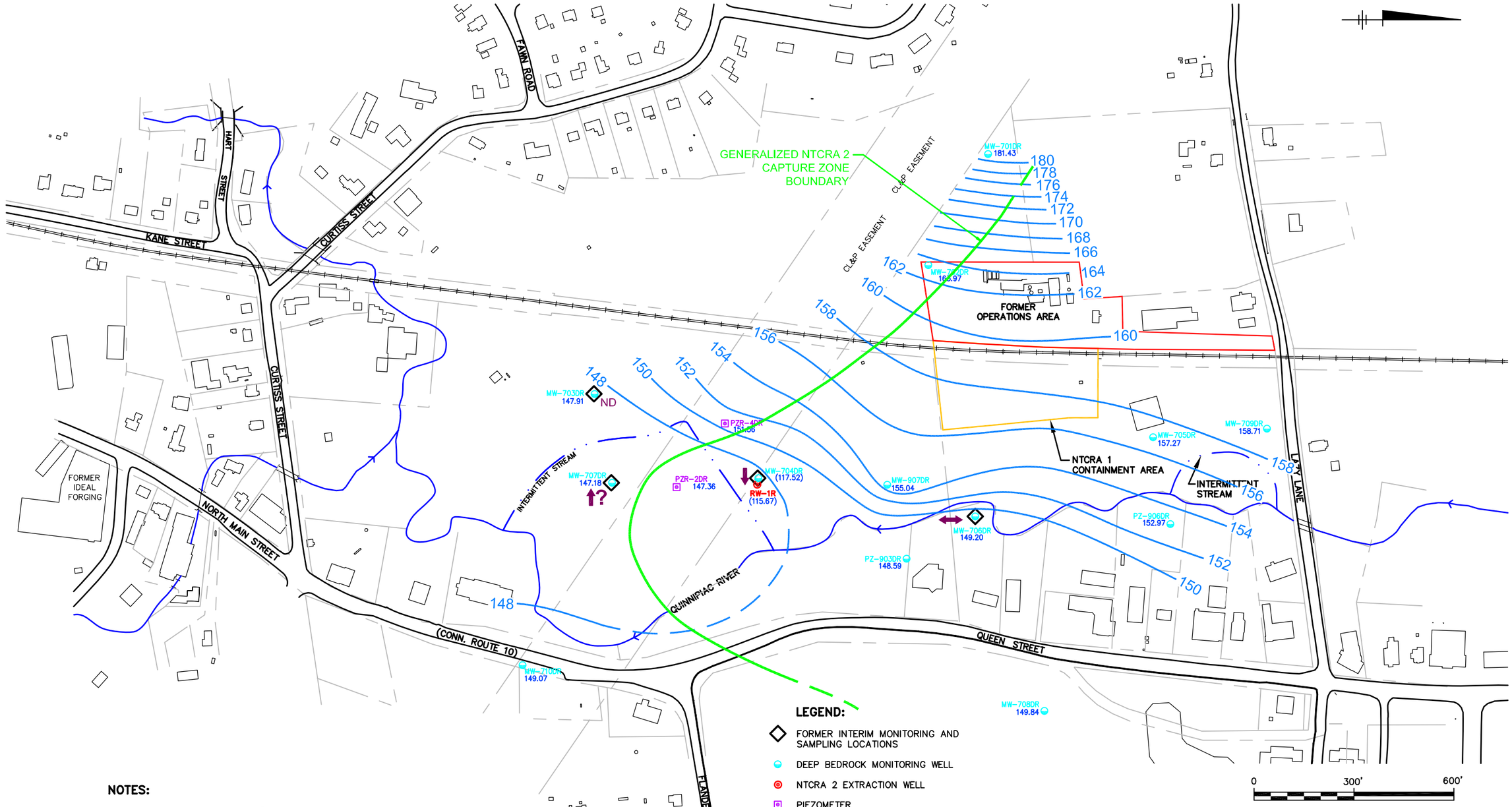
ANNUAL REPORT #3

SHALLOW BEDROCK GROUNDWATER ELEVATION CONTOURS, MAY 10-12, 2010

ARCADIS

FIGURE
8

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER PM/TM: M. GEFELL TR: M. SPURLIN LYR: ON=*;OFF=REF, (FRZ)
G:\ENVCAD\Manchester\ACTIB\005463400\00260\054634W04.DWG LAYOUT: 8 SAVED: 12/22/2011 1:53 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---
XREFS: IMAGES: PROJECTNAME: ---
54634X01
PLOTTED: 12/22/2011 1:53 PM BY: SMALL, BRIAN
PLOTSTYLETABLE: PLTFULL.CTB



NOTES:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.
2. HYDRAULIC HEAD VALUES ARE REPORTED IN FEET ABOVE MEAN SEA LEVEL (FT-AMSL) FOR MAY 2010 MEASUREMENT EVENT.
3. HEAD VALUES IN PARENTHESES WERE NOT USED FOR CONTOURING.

LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- DEEP BEDROCK MONITORING WELL
- NTCRA 2 EXTRACTION WELL
- PIEZOMETER
- 149.84 HYDRAULIC HEAD VALUE
- 154 GROUNDWATER ELEVATION CONTOUR (FT-AMSL) CONTOUR INTERVAL = 2 FEET, UNLESS NOTED OTHERWISE (DASHED WHERE INFERRED)

VOC CONCENTRATION TREND (90% C.I.)

- ↑? INCREASING OR NO TREND
- ↔ NO TREND
- ↓ DECREASING
- ND EVENTS WITH NO DETECTED VOCs PRECLUDE TREND ANALYSIS

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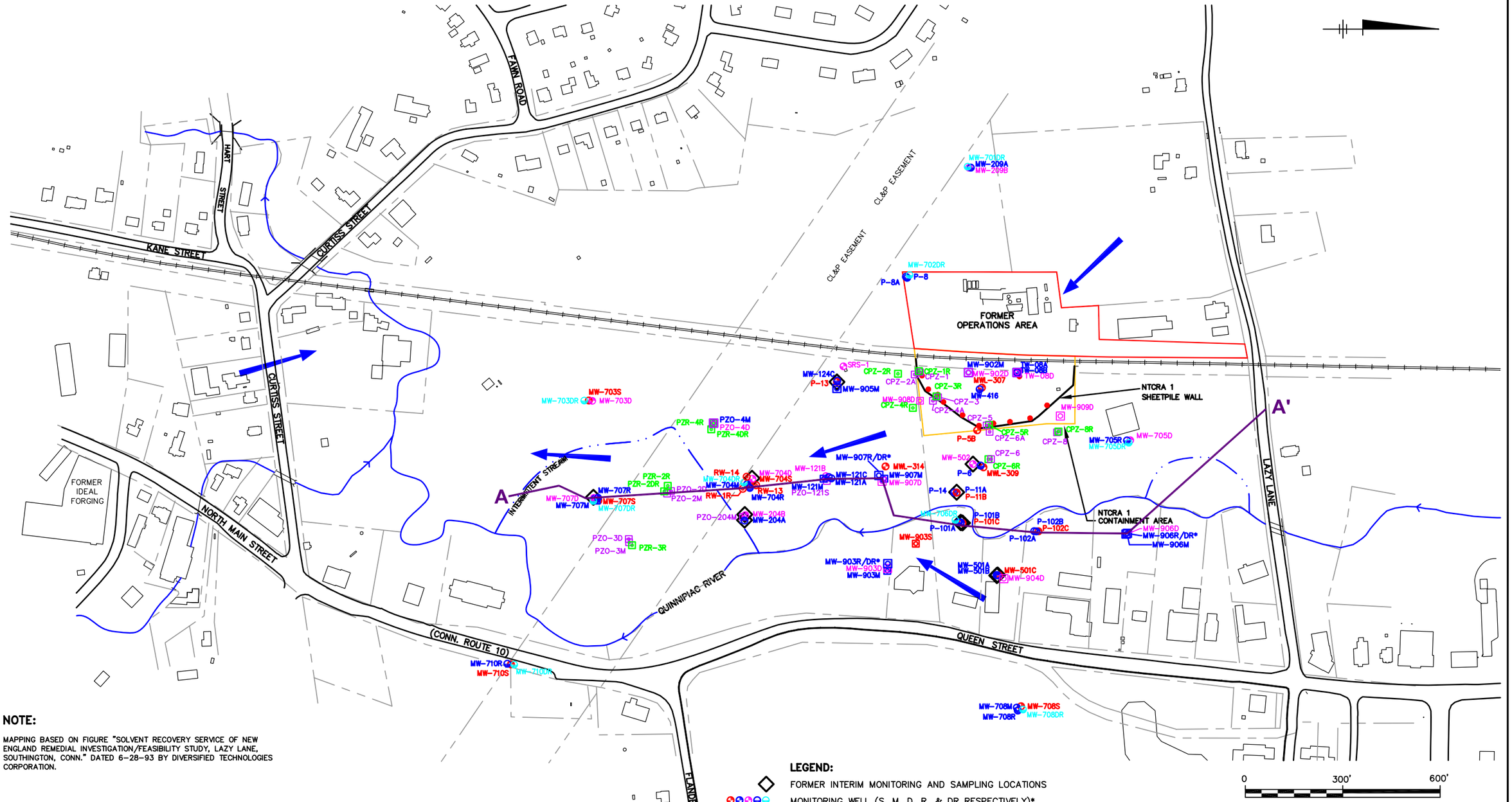
SOUTHINGTON, CONNECTICUT
ANNUAL REPORT #3

DEEP BEDROCK GROUNDWATER ELEVATION CONTOURS, MAY 10-12, 2010

ARCADIS

FIGURE
9

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER PM: J. HOLDEN TM/TR: M. GEFELL LYR: ON=*;OFF=*REF; (FRZ)
G:\ENVCAD\Manchester\ACTIB\00546340000\00260054634W05.DWG LAYOUT: 9 SAVED: 12/22/2011 1:57 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/22/2011 1:57 PM BY: SMALL, BRIAN
XREFS: 54634X01 IMAGES: PROJECTNAME: ---



NOTE:

MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- MONITORING WELL (S, M, D, R, & DR RESPECTIVELY)*
- NTCRA 1 EXTRACTION WELL
- NTCRA 2 EXTRACTION WELL
- PROPOSED MONITORING WELL
- PIEZOMETER (S, M, D, R, & DR RESPECTIVELY)*
- GENERALIZED GROUNDWATER FLOW DIRECTION
- * S=SHALLOW OVERBURDEN, M=MIDDLE OVERBURDEN, D=DEEP OVERBURDEN, R=SHALLOW BEDROCK, DR=DEEP BEDROCK
- A——A' CROSS SECTION LOCATION

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CROSS SECTION LOCATION MAP

ARCADIS

FIGURE
10

CITY: SYRACUSE, NY GROUP: ENVCAD DB: P. LISTER PM: J. HOLDEN TM/TR: M. GEFELL LYR: ON=*;OFF=*REF; (FRZ)
G:\ENVCAD\Manchester\ACTIVE\00546340000\0260\0546340V01.DWG LAYOUT: 10 SAVED: 12/22/2011 1:59 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/22/2011 3:43 PM BY: SMALL, BRIAN
XREFS: IMAGES: PROJECTNAME: ---
546340X01

CROSS SECTION A-A'

SOUTH
A

NORTH
A'

MW-205A, MW-205B
MW-707DR, MW-707R, MW-707D, MW-707M, MW-707S
PZO-2DR, PZO-2R, PZR-2D, PZR-2M
MW-704DR, RW-1R, MW-704R, RW-14, MW-704M, MW-704S, MW-704D, RW-13
MW-121A, MW-121C, MW-121B, MW-121M, PZO-121S
MW-907DR, MW-907R, MW-907D, MW-907M
MW-05
QUINNIPIAC RIVER (146.9)
MW-706DR, P-101A, P-101B, P-101C
QUINNIPIAC RIVER (146.9)
QUINNIPIAC RIVER (147.0)
PZ-102A, PZ-102B, PZ-102C
MW-906DR, MW-906R, MW-906D, PZ-906M
QUINNIPIAC RIVER
INTERMITTENT STREAM
MW-709DR, MW-709R
P-12

GROUND
TOP OF TILL
TOP OF BEDROCK
OUTWASH
TILL (GRAVELLY DRIFT)
TILL
BEDROCK (NEW HAVEN ARKOSE)

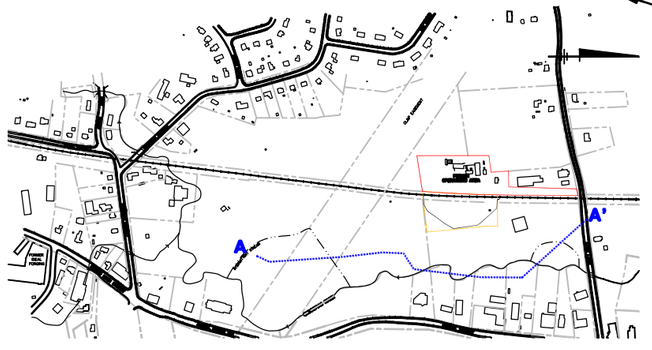
ELEVATION IN FEET

ESTIMATED NTCRA 2 CAPTURE ZONE BOUNDARY (LONG-TERM AVERAGE)

NOTES:

1. MONITORING WELLS AND HYDRAULIC HEAD DATA WITHIN 50 FEET OF THE CROSS SECTION LOCATION ARE INCLUDED.
2. HYDRAULIC HEAD VALUES ARE REPORTED IN FEET ABOVE MEAN SEA LEVEL (FT-AMSL) FOR MAY 2010 MEASUREMENT EVENT.
3. HEAD VALUES IN PARENTHESES WERE NOT USED FOR CONTOURING.

LOCATION MAP



1000' 0 1000'

LEGEND:

MW-205A — WELL NUMBER
MONITORING WELL
WATER TABLE
GEOLOGIC SURFACES
148 — HYDRAULIC HEAD CONTOURS (INTERVAL = 2 FEET)
146.8 — HYDRAULIC HEAD VALUE
SCREENED INTERVAL
BOTTOM OF BORING

0 200' 400'
HORIZONTAL SCALE

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SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
ANNUAL REPORT #3

GEOLOGIC CROSS SECTION A-A' WITH HYDRAULIC HEAD VALUES

ARCADIS

FIGURE
11

CITY: SYRACUSE_NY GROUP: ENVCAD DB: P_LISTER PM: J. HOLDEN TM/TR: M. GEFELL LYR: ON="OFF*REF*,(FRZ)
G:\ENVCAD\Manchester\ACTIVITY\B0054634\0000\0260\B0054634V0A.DWG LAYOUT: 11 SAVED: 12/22/2011 1:19 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/22/2011 2:00 PM BY: SMALL, BRIAN
XREFS: IMAGES: PROJECTNAME: --
54634X01

CONNECTICUT LIGHT & POWER EASEMENT

0.50-ACRE PARCEL RECENTLY ACQUIRED FROM YORSKI

APPROXIMATE PROPERTY LINE

FORMER SRSNE OPERATIONS AREA

FORMER CIANCI PROPERTY

12" pine

12" pine

TREATMENT SYSTEM BUILDING

LEGEND:

- PROPERTY LINE
- PROPERTY LINE – ADJOINER
- BUILDING
- BUILDING – ADJOINER
- FORMER BUILDING
- RAILROAD
- ROAD
- GRAVEL ROAD
- DRAINAGE SWALE
- EASEMENT
- CHAINLINK FENCE
- SHEETPILE
- NTCRA 1 CONTAINMENT AREA
- OVERBURDEN NAPL AREA

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM A FIGURE CREATED BY CONKLIN & SOROKA, INC., ENTITLED "TOPOGRAPHIC SURVEY" DATED 1/13/09 AT A SCALE OF 1"=50'.

2. ALL LOCATIONS ARE APPROXIMATE.

0 50' 100'
GRAPHIC SCALE

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
ANNUAL REPORT #2

AREA PURCHASED FOR RD/RA ACTIVITIES

ARCADIS

FIGURE
12

Attachments

DRAFT

Hydraulic Containment and Treatment System Annual Demonstration of Compliance Report No. 3

31 October 2010 Through 30 October 2011

Solvents Recovery Service of New England, Inc.
Superfund Site
Southington, Connecticut

Prepared for:
SRSNE PRP Group

Prepared by:

WESTON SOLUTIONS, INC.
Suite 3B
124 Hebron Avenue
Glastonbury, CT 06033
(860) 368-3200

30 NOVEMBER 2011

HYDRAULIC CONTAINMENT AND TREATMENT SYSTEM
ANNUAL DEMONSTRATION OF COMPLIANCE REPORT - NO. 3
31 OCTOBER 2010 THROUGH 30 OCTOBER 2011

SOLVENTS RECOVERY SERVICE OF NEW ENGLAND, INC.
SUPERFUND SITE
SOUTHINGTON, CONNECTICUT

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Tables

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1.0 INTRODUCTION

This Demonstration of Compliance Report (DCR) was prepared by Weston Solutions, Inc. (WESTON) on behalf of the Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site PRP Group. The DCR documents the effectiveness of the Non-Time-Critical Removal Action No. 1 and 2 (NTCRA-1 and NTCRA-2) hydraulic containment and treatment system at the SRSNE Site in Southington, Connecticut, based on data collected during the period of 31 October 2010 through 30 October 2011. The data presented in this DCR were obtained in accordance with the United States Environmental Protection Agency (USEPA) approved Demonstration of Compliance Plans (DCP) for NTCRA-1 and NTCRA-2 (BBL, June 1995 and November 1999), respectively. The data acquisition schedule, reporting and evaluation requirements for this and future DCRs were described in these DCPs.

This is the third annual DCR to be issued after lodging of the consent decree and submitted in accordance with the Remedial Design/Remedial Action (RD/RA) Statement of Work (SOW). This DCR follows 60 previously submitted DCRs prepared initially on a quarterly basis and subsequently changed to annual submissions in 2003.

1.1 NTCRA-1 BACKGROUND

The NTCRA-1 hydraulic containment system is installed in the containment area (Figure 1A), which was defined in the NTCRA-1 SOW. The containment system originally included an array of 12 overburden groundwater extraction wells (RW-1 through RW-12) and a downgradient barrier (steel sheet piling) that hydraulically and physically contains overburden groundwater entering the containment area from the SRSNE operations area.

The pre-design investigation results and the designs of the hydraulic barrier wall, extraction wells, and treatment system are described in detail in the NTCRA-1 100% Groundwater Containment and Treatment System Design Report (100% Design Report, BBL, January 1994). The NTCRA-1 system was constructed between February and July 1995 and brought online in accordance with the USEPA-approved schedule on 19 July 1995.

The NTCRA-1 hydraulic containment and monitoring network remained as originally constructed until November 2009 when select recovery wells, monitoring wells, and piezometers were abandoned in accordance with the Monitoring Well Network Evaluation, included as Attachment N to the Remedial Design Work Plan (Arcadis, April 2009). EPA was notified that the abandoned wells and piezometers would be removed from the NTCRA-1 monitoring program and DCP on 1 November 2009 (WESTON, December 2009). The second annual DCR (31 October 2009 to 30 October 2010) summarizes the recovery wells, monitoring wells, and piezometers abandoned under this program and the rationale for abandonment of each well. As indicated in the second annual DCR, all monitoring wells and piezometers were abandoned in November and December

2009, with exception to former recovery wells RW-5 and RW-6. These wells were permanently taken out of service in November 2009, but not abandoned until December 2010.

As a result of the recovery well abandonment activities discussed above, the NTCRA-1 containment system now consists of ten overburden groundwater extraction wells (RW-1 through RW-4, and RW-7 through RW-12).

1.2 NTRCA-2 BACKGROUND

The NTCRA-2 hydraulic containment system is installed south of the NTCRA-1 containment area (Figure 1A), as defined in the NTCRA-2 SOW. The NTCRA-2 containment area encompasses the majority of the northern portion of the Town of Southington well field property and includes the shallow and deep bedrock, extending to a depth of 100 feet below the top of bedrock in the northern portion of this property (Figure 1A). Further upgradient (north), the NTCRA-2 containment area extends over 170 feet below the top of bedrock and over 200 feet below ground surface (BBL, November 1999).

The NTCRA-2 hydraulic containment system initially included two groundwater extraction wells (RW-13 and RW-1R) that, in combination with the NTCRA-1 containment system, contain bedrock groundwater migrating from the SRSNE operations area (Figure 1A). The design of the overburden and bedrock extraction wells RW-13 and RW-1R, respectively, are described in the NTCRA-2 100% Design Report (BBL, November 1999). Overburden recovery well RW-13 has been on-line since 14 July 1999 and bedrock recovery well RW-1R has been on-line since 5 September 2001.

A third groundwater extraction well (RW-14) was added to the NTCRA-2 well field (Figure 1A) to further enhance long-term hydraulic containment of the overburden and bedrock groundwater in the NTCRA-2 well field. The design of the additional overburden extraction well is described in the RW-14 Completion Report (WESTON, November 2007). This new overburden recovery well has been on-line since 24 September 2007.

1.3 GROUNDWATER TREATMENT SYSTEM

The groundwater extracted by the NTCRA-1 and 2 containment systems is pumped directly to the groundwater treatment facility (Figure 1A). The treatment system consists of the following unit processes: influent equalization, metals pretreatment, filtration, ultraviolet oxidation (UV), and granular activated carbon adsorption. Vapor phase carbon adsorption is also used to capture contaminants that volatize during treatment. The system precipitates and extracts metals, reduces suspended solids, and destroys and captures volatile organic contaminants. Treated water is discharged to the Quinnipiac River in accordance with the Revised Connecticut Department of Environmental Protection (CTDEP) Substantive Requirements for Discharge of Pre-Treated Groundwater issued 6 November 1995.

1.4 REPORT ORGANIZATION

Section 2 of this report summarizes the acquisition and evaluation of field data used to verify the effectiveness of the hydraulic containment and treatment system and Section 3 provides an overview of operations and maintenance activities conducted at the site during this O&M period.

2.0 DATA ACQUISITION AND RESULTS

The data required to demonstrate the effectiveness of the hydraulic containment and treatment system were obtained in the form of hydraulic head measurements from wells and piezometers installed in the area of the containment system, flow measurements from the extraction well array, treatment system flow rates, and analytical results.

2.1 NTCRA-1 CONTAINMENT SYSTEM MONITORING

The satisfactory performance of the NTCRA-1 containment system is verified through two gradient tests that determine whether groundwater flow has been reversed. These tests are demonstrated by comparing hydraulic head measurements at several monitoring locations. The specific wells and piezometers used for these comparisons are discussed in Sections 2.1.1 and 2.1.2. The gradient tests are:

Reversal of Gradient Test No 1 (RGT-1): Confirms that overburden groundwater east and downgradient of the operations area is flowing in the direction of the groundwater extraction wells.

Reversal of Gradient Test No 2 (RGT-2): Confirms that overburden groundwater flow is reversed and maintained in the direction of the groundwater extraction wells within the area enclosed by the hydraulic divide installed adjacent to the hydraulic containment system. RGT-2 is more crucial to a demonstration of compliance as it requires that overburden groundwater elevations within the barrier are at least 0.3 feet lower than those outside the wall in NTCRA-1.

2.1.1 RGT-1 RESULTS

To confirm that overburden groundwater east and downgradient of the operations area and within the containment area is flowing in the direction of the groundwater extraction wells, hydraulic head measurements were collected at the following overburden wells/piezometers located in the vicinity of the groundwater containment system:

- Extraction Wells RW-1 through RW-4 and RW-7 through RW-12;
- Monitoring Wells MW-415, MWL-304, MWL-305, MWL-307, and MWL-308

Overburden groundwater elevations were also measured at the following wells to assess the hydraulic response in the area between the hydraulic barrier wall and the Quinnipiac River:

- MWL-302, MWL-306, MWL-309, MWL-311, and TW-7A.

Monthly overburden hydraulic head data measured at the specified wells and compliance monitoring points from 31 October 2010 through 30 October 2011 are presented in Table 1. The resulting groundwater contour maps are presented as Figures 1A through 12A. The contours indicate the horizontal hydraulic gradient between the SRSNE operations area and the extraction wells was eastward toward the extraction wells, fulfilling RGT-1.

The vertical hydraulic gradient between the overburden and bedrock in the vicinity of the hydraulic containment system is also evaluated to confirm satisfactory recovery well operation. Groundwater elevations were compared between bedrock well MW-416 and the adjacent overburden well (MWL-307) on the same dates. This comparison indicates that the vertical component of the hydraulic gradient between the bedrock and the overburden was generally downward from the overburden to the bedrock within the containment area.

Hydraulic head data is also compared at overburden compliance piezometers CPZ-1, CPZ-3, CPZ-5, CPZ-7, and CPZ-9 and adjacent bedrock piezometers CPZ-1R, CPZ-3R, CPZ-5R, CPZ-7R, and CPZ-9R. Monitoring indicates that the gradient was generally upward from the bedrock to the overburden in the vicinity of the pumping wells and the hydraulic barrier wall throughout the period covered by this DCR.

2.1.2 RGT-2 RESULTS

To confirm that groundwater flow is reversed and maintained in the direction of the groundwater extraction wells, hydraulic head measurements were collected weekly at eight fully penetrating overburden compliance piezometers (CPZ-1 2A, 3, 4A, 5, 6, 7, and 8). Compliance piezometers CPZ-9 and CPZ-10 were removed from RGT-2 because CPZ-9 was abandoned in December 2009. As stated in the DCP, the hydraulic gradient is considered reversed and inward across the hydraulic barrier wall when the hydraulic head data measured at each compliance piezometer located inside the hydraulic barrier wall (CPZ-1, CPZ-3, CPZ-5, and CPZ-7) is at least 0.3 feet lower than the head measured at the corresponding compliance piezometer located outside the hydraulic barrier wall (CPZ-2A, CPZ-4A, CPZ-6, and CPZ-8, respectively).

Based on weekly hydraulic head measurements, the required 0.3 feet head differential was achieved in all four pairs (CPZ-1/CPZ-2A, CPZ-3/CPZ-4A, CPZ-5/CPZ-6, and CPZ-7/CPZ-8) for thirty six (36) of the fifty two (52) weeks during the monitoring period. Compliance piezometer pairs CPZ-5/CPZ-6 and CPZ-7/CPZ-8 met the 0.3 feet head differential during the entire monitoring period. Compliance piezometer pair CPZ-1/CPZ-2A did not achieve the required 0.3 feet differential on seven weekly gauging rounds, and compliance piezometer pair CPZ-3/CPZ-4A did not achieve the required 0.3 feet differential on 14 weekly gauging rounds. See Table 5 for a summary of which weeks the 0.3 feet head differential was not maintained in one or both of these pairs. The cause of the loss of hydraulic gradient reversal at these two compliance pairs is believed to be caused by the excessively dry site conditions and a substantial localized elevation decrease in the overburden water table outside of the sheet pile wall.

In response to the decreasing and eventual loss of hydraulic gradient reversal during the summer of 2010, extraction well pumps RW-7 and RW-12 (located in close proximity to CPZ-1 and CPZ-3, respectively) were lowered to the lowest practical operating level within the recovery wells, but this adjustment was not effective in attaining hydraulic gradient reversal. All ten NTCRA-1 recovery wells were redeveloped in August 2010 to improve hydraulic control of the NTCRA-1 containment system. WESTON also redeveloped RW-7 and RW-12 again in May 2011 to maintain optimum performance of these two recovery wells and improve hydraulic containment in the area of CPZ-1 and CPZ-3.

To verify the continuity of gradient reversal, daily hydraulic head measurements are also recorded via a data logger at compliance piezometers CPZ-5 and CPZ-6.

Measurements collected in eight hour intervals (three times/day), as recorded by a data logger installed at compliance piezometers CPZ-5 and CPZ-6, also demonstrated compliance for the entire period covered in this report, with exception to one event of non-compliance encompassing a total of three days. A hydrograph of the data logger measurements from compliance pair CPZ-5 and CPZ-6 is presented as Figure 13 for the monitoring period.

A summary of NTCRA-1 non-compliance occurrences experienced between 31 October 2010 and 30 October 2011 is presented below, along with an explanation of the cause and corrective measures taken to correct the problem.

NTCRA-1 – Non-Compliance Summary – 31 October 2010 to 30 October 2011		
Date	**Cause**	**Corrective Actions**
27-29 August 2011	In response to severe weather forecasts as the result of tropical storm Irene, the NTCRA-1 & 2 extraction systems and the treatment system were intentionally shut down for both employee and site safety concerns.	No corrective action was warranted. This was a scheduled shutdown due to severe weather.

2.2 NTCRA-2 CONTAINMENT SYSTEM MONITORING

The satisfactory performance of the NTCRA-2 hydraulic containment system is verified through two containment tests that compare hydraulic head measurements in NTCRA-2. The specific locations used for hydraulic head comparisons are presented in Sections 2.2.1 and 2.2.2. The containment tests are:

Containment Test Part 1 (CT-1): Confirms that within the NTCRA-2 containment area, bedrock groundwater east and downgradient of the operations area is flowing in the direction of the hydraulic containment system.

Containment Test Part 2 (CT-2): Confirms that bedrock groundwater flow downgradient of the NTCRA-2 extraction system within the containment area is reversed and maintained in the direction of the hydraulic containment system.

2.2.1 CT-1 RESULTS

To confirm that VOC-impacted bedrock groundwater east and downgradient of the operations area and within the containment area is flowing in the direction of the extraction wells, hydraulic head measurements were obtained at the following pairs of wells/piezometers located upgradient of the hydraulic containment system:

- Shallow bedrock – MW-704R and MW-121A; and
- Deep Bedrock – MW-704DR and MW-705DR.

The hydraulic gradient is considered to be towards the extraction wells when the hydraulic head measured at the shallow (MW-704R) and deep (MW-704DR) bedrock monitoring wells located adjacent to extraction wells RW-13, RW-1R, and RW-14 is lower than hydraulic head measurements at wells MW-121A and MW-705DR, respectively.

Monthly rounds of hydraulic head data measurements collected from 31 October 2010 to 30 October 2011 are presented in Table 1. The resulting contour maps for shallow bedrock and deep bedrock monitoring wells and piezometers are presented as contours on Figures 1B through 12B and Figures 1C through 12C, respectively. The contours indicate that groundwater flow in the shallow and deep bedrock is inward toward the NTCRA-2 extraction wells, fulfilling Containment Test Requirement No.1.

2.2.2 CT-2 RESULTS

To confirm that bedrock groundwater flow downgradient of the extraction system within the containment area is reversed and maintained in the direction of the extraction wells, hydraulic head measurements were obtained at the following locations:

- Shallow bedrock – MW-704R, MW-204A, PZR-2R, and PZR-4R; and
- Deep Bedrock – MW-704DR, PZR-2DR, and PZR-4DR.

The hydraulic gradient is considered reversed and inward toward the containment area when the hydraulic head measured at the shallow and deep bedrock monitoring wells MW-704R and MW-704DR, which are located adjacent to extraction wells RW-13, RW-1R, and RW-14, is lower

than the hydraulic head measurements at the remaining shallow and deep bedrock monitoring wells and piezometers listed above. Measurements taken at these locations are presented in Table 1 and as groundwater contours in Figures 1B through 12B and 1C through 12C.

To verify the continuity of gradient reversal, daily hydraulic head measurements are recorded via a data logger at the following locations:

- Shallow bedrock – MW-704R and PZR-2R; and
- Deep Bedrock – MW-704DR and PZR-2DR.

Daily hydraulic head measurements recorded via data loggers installed in NTCRA-2 compliance pairs MW-704R and PZR-2R (shallow bedrock) and MW-704DR and PZR-2DR (deep bedrock) indicated that the NTCRA-2 containment system met CT-2 for the monitoring period, with the exception to three periods of non-compliance outlined herein encompassing a total of 9 days.

Hydrographs of the data logger measurements obtained for shallow and deep bedrock compliance points between 31 October 2010 and 30 October 2011 are included as Figures 14A and 14B, respectively.

A summary of NTCRA-2 non-compliance occurrences experienced during the monitoring period is presented below, along with an explanation of the cause and corrective measures taken to correct the problem.

NTCRA-2 – Non-Compliance Summary – 31 October 2010 to 30 October 2011

Date	Cause	Corrective Actions
6-9 March 2011	Loss of compliance occurred as a result of excessive heavy rains, which caused NTCRA-2 recovery well flooding. Because of the severe flooding, the NTCRA-2 recovery wells were shut down until flood conditions subsided.	Compliance was restored following the rain/flood event and restarting of the NTCRA-2 recovery wells. No corrective action was required.
6-7 June 2011	Recovery Wells RW-13 and 14 were out of service for redevelopment as part of planned recovery well maintenance.	No corrective action was warranted. This period of non-compliance was expected during recovery well redevelopment (maintenance) activities
28-30 August 2011	In response to severe weather forecasts as the result of tropical storm Irene, the NTCRA-1 and 2 extraction systems and the treatment system were intentionally shut down for both employee and site safety concerns.	No corrective action was warranted. This was a scheduled shutdown due to severe weather.

2.3 TREATMENT SYSTEM MONITORING

HCTS influent and effluent flow measurements and laboratory analytical data are obtained during the monitoring period. These flow and analytical data are presented and discussed in Sections 2.3.1 and 2.3.2, respectively.

2.3.1 HCTS INFLUENT AND EFFLUENT FLOW DATA

The influent and effluent flow rates of the groundwater treatment system were each recorded continuously using an in-line totalizing flow meter and strip chart recorder. The NTCRA-1 and NTCRA-2 recovery wells ran continuously throughout the monitoring period, with the exception of minor shutdowns during maintenance, individual recovery well failures, or HCTS alarm shutdowns. In June 2011, two NTCRA-1 recovery wells (RW-7 and 12) and two NTCRA-2 recovery wells (RW-13 and 14) were redeveloped to maintain drawdown and groundwater hydraulic control during the monitoring period.

Approximately 19,703,000 gallons of groundwater were extracted, treated and discharged during the monitoring period. Refer to Table 2 for a summary of influent and effluent flow rates and totals. Throughout the period covered in this report, the system treated and discharged an average of 37.3 gallons per minute.

2.3.2 HCTS INFLUENT AND EFFLUENT ANALYTICAL DATA

Samples of groundwater treatment system influent and effluent were collected twice per month and analyzed for metals, VOCs, alcohols, and total suspended solids. For the process effluent, the first round each month was also analyzed for total PCBs. Once every quarter, additional effluent samples were collected and tested for dioxins/furans. Analytical results from the influent and effluent sampling are summarized in Tables 3 and 4, respectively. The effluent sampling results are compared with the discharge limits established by the CTDEP in the Substantive Requirements for Discharge, dated 6 November 1995. As shown in Table 4, the treatment system effluent water quality was below discharge limits for the monitoring period.

In addition to the analyses discussed previously, effluent samples were collected and submitted for acute and chronic toxicity analysis in January, April, July, and October 2011. The submitted effluent samples passed the acute and chronic toxicity test for both Daphnia Pulex and fathead minnows.

Process influent and effluent sampling for 1,4 dioxane was monitored quarterly during the monitoring period to collect additional data concerning this compound. Currently no discharge limit exists for 1,4-dioxane. Quarterly sample results for the year are presented on the following table.

SRSNE - 1,4-Dioxane Sampling Summary		
Date	Influent (ppb)	Effluent (ppb)
4-Jan-11	<5	<5
6-Apr-11	<5	<5
6-Jul-11	53	41
3-Oct-11	36	9

3.0 Hydraulic Containment and Treatment System (HCTS) Operations and Maintenance Summary

The HCTS Operations and Maintenance (O&M) summary is divided into two sections. Section 3.1 highlights the major O&M related activities performed between 31 October 2010 and 30 October 2011. Section 3.2 discusses O&M issues that are on-going or anticipated during the future activities at the site.

3.1 OPERATIONS AND MAINTENANCE SUMMARY

The following briefly describes important HCTS operations and maintenance activities or capital improvements conducted during the reporting period.

1. **November and December 2010 - HCTS Modifications under the Pre-ISTR Preparation Plan (PIPP) Construction:** In accordance with the PIPP plans and specifications, the following modifications were implemented to the HCTS:

   - A temporary 2-inch diameter water service was added at the treatment system building. This temporary service was extended to the ISTR Contractor's process equipment area and will be utilized during thermal treatment and remediation of the overburden.

   - A temporary telecommunications service was added at the treatment system building. This temporary service was extended to the ISTR Contractor's process equipment area and will be utilized during thermal treatment and remediation of the overburden.

   - The NTCRA-1 influent force main between the array of 10 NTCRA-1 recovery wells and the treatment system building was relocated away from the thermal treatment zone (TTZ) to allow for continued operation of the NTCRA-1 recovery system during ISTR.

   - The NTCRA-1 influent force main connections to abandoned recovery wells (RW-5 and 6) were removed and capped.

- The NTCRA-1 recovery system electrical service between the array of 10 NTCRA-1 recovery wells and the treatment system building was relocated away from the TTZ to allow for continued operation of the NTCRA-1 recovery system during ISTR. During this work, the electrical power supplies for abandoned recovery wells (RW-5 and RW-6) were also disconnected and removed.

- Recovery wells RW-5 and RW-6 were abandoned. Equipment suitable for reuse and maintenance at other recovery wells (pumps, motors, panels, etc) were retained as stocked spares.

2. **February 2011 – New NTCRA-1 Electrical Disconnect:** A separate NTCRA-1 electrical service disconnect was added to the treatment system building electrical distribution network. Prior to installation of this disconnect, both the NTCRA-1 and 2 recovery systems would have to be shut down in order to lockout the NTCRA-1 recovery systems.

3. **February 2011 – Compressor System Alternator Replacement:** The compressors were running at the same time, so the alternator controlling the compressors was replaced to restore operation to normal.

4. **April and July 2011 – Primary Carbon System Carbon Replacement:** The primary and secondary liquid phase carbon media was replaced with reactivated carbon in April and July 2011, respectively. The covers in all four carbon vessels were replaced with new covers in July 2011 due to excessive corrosion of the existing covers.

5. **May 2011 – UV-2 Flow Meter Replacement:** The existing meter was reading low flow during normal operations resulting in system alarms. This meter was replaced to restore system operation to normal.

6. **June 2011 – Recovery Well Redevelopment:** Two NTCRA-1 recovery wells (RW-7 and RW-12) and two NTCRA-2 recovery wells (RW-13 and 14) were redeveloped in June 2011 to maintain hydraulic performance.

7. **Ultraviolet Oxidation System:** The following summarizes the major maintenance performed on the UV equipment during the monitoring period:

   - Five (5) UV lamps were replaced during the reporting period. All lamps were removed or replaced due to failure, excessive amperage draw, or excessive hours. Lamps that did not operate for the minimum 3000 hour manufacture warrantee period were replaced by the manufacturer on a pro-rated, performance (actual vs. warrantee) basis.

- Two (2) quartz tubes were replaced due to failure during the monitoring period.

At the end of this monitoring period, UV-1 had eight of twelve fully functional reactor circuits and UV-2 has seven of twelve functioning circuits. One additional reactor was taken off line because the reactor chamber (No. 23) was damaged during a lamp failure in 2008. It is believed that the ballast side of this reactor is functional.

3.2 FUTURE HCTS OPERATIONS AND MAINTENANCE ACTION ITEMS

WESTON will continue to evaluate the overall HCTS and make recommendations for process improvements or modifications in the coming year. These recommendations will be summarized in the Monthly Operations and Maintenance HCTS report submissions. At this time, there are no major action items or modifications planned.

[redacted]

Measuring Location	Location Elevation	30-Nov-10		29-Dec-10		24-Jan-11		24-Feb-11	
		Depth to Water	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*
CPZ-1	159.64	7.49	152.15	7.40	152.24	7.72	151.92	7.71	151.93
CPZ-1R	161.12	2.18	158.94	0.00	161.12	0.00	161.12	2.80	158.32
CPZ-2	158.64	6.29	152.35	5.68	152.96	6.71	151.93	6.60	152.04
CPZ-2A	158.82	6.08	152.74	5.59	153.23	6.48	152.34	6.48	152.34
CPZ-2R	160.97	1.96	159.01	0.00	160.97	0.70	160.27	2.30	158.67
CPZ-3	159.21	9.16	150.05	9.08	150.13	9.71	149.50	9.97	149.24
CPZ-3R	160.70	6.39	154.31	6.38	154.32	7.60	153.10	7.21	153.49
CPZ-4	158.80	8.18	150.62	8.60	150.20	9.41	149.39	8.97	149.83
CPZ-4A	159.44	9.34	150.10	9.32	150.12	10.08	149.36	9.70	149.74
CPZ-4R	158.76	6.64	152.12	5.92	152.84	7.08	151.68	6.95	151.81
CPZ-5	158.68	15.18	143.50	15.28	143.40	15.55	143.13	15.20	143.48
CPZ-5R	158.30	10.21	148.09	7.53	150.77	11.30	147.00	10.99	147.31
CPZ-6	154.48	3.97	150.51	5.02	149.46	5.23	149.25	4.62	149.86
CPZ-6A	158.05	7.55	150.50	8.42	149.63	8.58	149.47	8.22	149.83
CPZ-6R	154.39	5.63	148.76	6.09	148.30	6.92	147.47	6.02	148.37
CPZ-7	159.40	5.78	153.62	7.82	151.58	7.77	151.63	6.99	152.41
CPZ-7R	158.58	1.58	157.00	1.89	156.69	3.02	155.56	2.27	156.31
CPZ-8	160.11	5.45	154.66	6.50	153.61	6.61	153.50	5.80	154.31
CPZ-8R	160.62	6.53	154.09	7.30	153.32	7.70	152.92	7.30	153.32
CPZ-10	161.03	3.35	157.68	4.25	156.78	4.33	156.70	4.01	157.02
CPZ-10R	162.94	3.11	159.83	3.10	159.84	3.80	159.14	3.29	159.65
MW-121A	152.96	5.70	147.26	5.63	147.33	6.03	146.93	5.80	147.16
MW-125A	157.87	2.78	155.09	2.21	155.66	2.73	155.14	3.12	154.75
MW-125C	156.30	5.22	151.08	7.28	149.02	7.74	148.56	7.30	149.00
MW-204A	150.78	4.08	146.70	4.00	146.78	4.29	146.49	4.02	146.76
MW-415	160.75	4.68	156.07	5.79	154.96	5.96	154.79	5.49	155.26
MW-416	159.98	4.71	155.27	7.92	152.06	8.38	151.60	8.08	151.90
MW-704D	153.43	7.40	146.03	7.11	146.32	7.35	146.08	6.94	146.49
MW-704M	152.34	6.52	145.82	6.38	145.96	6.31	146.03	6.08	146.26
MW-704R	151.52	6.22	145.30	5.94	145.58	6.19	145.33	6.02	145.50
MW-704DR	152.84	32.30	120.54	33.28	119.56	33.42	119.42	32.62	120.22
MW-705DR	160.99	4.60	156.39	4.02	156.97	5.03	155.96	4.61	156.38
MWL-302	161.60	5.90	155.70	7.01	154.59	7.11	154.49	6.81	154.79
MWL-304	159.90	7.21	152.69	7.70	152.20	7.90	152.00	7.30	152.60
MWL-305	159.01	4.89	154.12	5.31	153.70	5.46	153.55	4.73	154.28
MWL-306	155.39	3.48	151.91	6.49	148.90	6.12	149.27	4.25	151.14
MWL-307	159.14	2.88	156.26	4.38	154.76	4.33	154.81	4.03	155.11
MWL-308	158.63	3.59	155.04	3.90	154.73	3.97	154.66	3.55	155.08
MWL-309	155.20	3.08	152.12	4.32	150.88	3.93	151.27	3.38	151.82
MWL-311	157.33	5.40	151.93	6.80	150.53	7.49	149.84	6.58	150.75
P-5A	157.61	8.31	149.30	9.16	148.45	9.61	148.00	9.30	148.31
P-5B	158.39	4.48	153.91	6.00	152.39	5.99	152.40	4.97	153.42
P-6	153.78	4.80	148.98	5.48	148.30	5.80	147.98	5.31	148.47
PZR-2R	153.78	6.90	146.88	6.97	146.81	7.33	146.45	7.04	146.74
PZR-2DR	154.67	7.88	146.79	8.11	146.56	8.29	146.38	8.02	146.65
PZR-4R	153.72	6.36	147.36	6.21	147.51	6.74	146.98	6.56	147.16
PZR-4DR	152.73	1.42	151.31	1.00	151.73	1.35	151.38	1.55	151.18
RW-1	157.61	16.15	141.46	17.02	140.59	18.23	139.38	15.70	141.91
RW-2	156.49	17.03	139.46	16.12	140.37	17.65	138.84	16.09	140.40
RW-3	157.35	16.44	140.91	15.03	142.32	16.80	140.55	17.12	140.23
RW-4	158.21	15.88	142.33	13.80	144.41	15.39	142.82	12.93	145.28
RW-7	157.09	17.44	139.65	16.04	141.05	18.80	138.29	17.61	139.48
RW-8	156.95	18.12	138.83	17.32	139.63	18.87	138.08	18.44	138.51
RW-9	156.72	18.06	138.66	23.12	133.60	18.99	137.73	21.04	135.68
RW-10	156.13	19.22	136.91	16.16	139.97	19.12	137.01	17.66	138.47
RW-11	157.82	17.04	140.78	17.33	140.49	17.06	140.76	17.66	140.16
RW-12	158.36	18.46	139.90	15.80	142.56	17.81	140.55	19.12	139.24
RW-13	149.36	37.15	112.21	43.28	106.08	48.18	101.18	51.66	97.70
RW-14	151.71	28.02	123.69	28.87	122.84	29.33	122.38	30.03	121.68
RW-1R	149.77	31.26	118.51	32.40	117.37	34.60	115.17	33.19	116.58
TW-7A	158.72	5.61	153.11	6.90	151.82	7.01	151.71	6.59	152.13
MW-702DR	181.38	15.81	165.57	15.45	165.93	19.10	162.28	16.60	164.78
P-8A	181.26	16.11	165.15	15.77	165.49	17.34	163.92	16.72	164.54
MW-707D	156.09	9.14	146.95	9.39	146.70	9.69	146.40	9.36	146.73
MW-707R	156.01	9.11	146.90	9.12	146.89	9.50	146.51	9.20	146.81
MW-707DR	156.80	9.92	146.88	10.01	146.79	10.46	146.34	10.26	146.54
PZ-02D	154.14	7.11	147.03	7.22	146.92	7.61	146.53	7.37	146.77
PZ-O2M	154.77	7.63	147.14	7.81	146.96	8.11	146.66	7.90	146.87
MW-3	153.79	6.91	146.88	7.10	146.69	7.91	145.88	7.16	146.63
MW-708R	224.95	75.90	149.05	75.38	149.57	75.12	149.83	74.99	149.96
MW-708DR	224.19	75.94	148.25	75.90	148.29	76.11	148.08	75.80	148.39
PZ-906DR	155.85	14.70	141.15	11.90	143.95	9.55	146.30	7.70	148.15

Measuring Location	Location Elevation	28-Mar-11		27-Apr-11		27-May-11		27-Jun-11	
		Depth to Water	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*
CPZ-1	159.64	6.76	152.88	6.81	152.83	6.70	152.94	6.61	153.03
CPZ-1R	161.12	0.00	161.12	0.00	161.12	0.00	161.12	0.00	161.12
CPZ-2	158.64	3.83	154.81	4.12	154.52	3.92	154.72	4.39	154.25
CPZ-2A	158.82	3.62	155.20	3.93	154.89	3.71	155.11	4.19	154.63
CPZ-2R	160.97	0.00	160.97	0.00	160.97	0.00	160.97	0.00	160.97
CPZ-3	159.21	9.82	149.39	9.91	149.30	9.94	149.27	10.80	148.41
CPZ-3R	160.70	4.50	156.20	4.99	155.71	4.28	156.42	5.21	155.49
CPZ-4	158.80	6.35	152.45	6.70	152.10	6.64	152.16	6.75	152.05
CPZ-4A	159.44	7.55	151.89	8.70	150.74	7.60	151.84	7.92	151.52
CPZ-4R	158.76	4.41	154.35	4.80	153.96	4.63	154.13	4.98	153.78
CPZ-5	158.68	15.18	143.50	15.96	142.72	10.95	147.73	13.68	145.00
CPZ-5R	158.30	9.37	148.93	9.70	148.60	7.71	150.59	9.70	148.60
CPZ-6	154.48	3.74	150.74	3.29	151.19	3.30	151.18	3.31	151.17
CPZ-6A	158.05	7.11	150.94	6.90	151.15	6.51	151.54	6.85	151.20
CPZ-6R	154.39	4.52	149.87	4.26	150.13	4.28	150.11	4.51	149.88
CPZ-7	159.40	7.52	151.88	6.79	152.61	5.60	153.80	6.28	153.12
CPZ-7R	158.58	0.00	158.58	0.00	158.58	0.00	158.58	0.00	158.58
CPZ-8	160.11	5.98	154.13	5.64	154.47	5.50	154.61	5.33	154.78
CPZ-8R	160.62	6.47	154.15	6.21	154.41	5.99	154.63	6.15	154.47
CPZ-10	161.03	3.63	157.40	3.38	157.65	3.30	157.73	3.42	157.61
CPZ-10R	162.94	1.10	161.84	1.08	161.86	1.02	161.92	1.11	161.83
MW-121A	152.96	4.01	148.95	3.73	149.23	3.99	148.97	4.18	148.78
MW-125A	157.87	1.16	156.71	1.05	156.82	1.01	156.86	1.12	156.75
MW-125C	156.30	6.32	149.98	6.28	150.02	5.32	150.98	5.88	150.42
MW-204A	150.78	2.64	148.14	2.58	148.20	2.52	148.26	2.89	147.89
MW-415	160.75	4.46	156.29	4.41	156.34	4.31	156.44	4.53	156.22
MW-416	159.98	6.70	153.28	7.02	152.96	5.61	154.37	6.50	153.48
MW-704D	153.43	5.65	147.78	5.54	147.89	5.50	147.93	6.03	147.40
MW-704M	152.34	4.80	147.54	4.72	147.62	4.61	147.73	5.21	147.13
MW-704R	151.52	4.61	146.91	4.43	147.09	4.41	147.11	5.26	146.26
MW-704DR	152.84	33.36	119.48	34.03	118.81	33.91	118.93	32.48	120.36
MW-705DR	160.99	2.32	158.67	2.65	158.34	2.51	158.48	2.91	158.08
MWL-302	161.60	6.67	154.93	6.28	155.32	5.97	155.63	5.84	155.76
MWL-304	159.90	6.68	153.22	6.51	153.39	6.25	153.65	6.51	153.39
MWL-305	159.01	4.63	154.38	3.74	155.27	3.69	155.32	4.27	154.74
MWL-306	155.39	4.75	150.64	3.69	151.70	3.93	151.46	4.03	151.36
MWL-307	159.14	3.00	156.14	3.03	156.11	3.09	156.05	3.21	155.93
MWL-308	158.63	2.81	155.82	2.80	155.83	2.69	155.94	2.99	155.64
MWL-309	155.20	3.76	151.44	3.11	152.09	3.25	151.95	3.02	152.18
MWL-311	157.33	5.29	152.04	5.24	152.09	5.28	152.05	5.38	151.95
P-5A	157.61	5.20	152.41	7.89	149.72	6.97	150.64	7.96	149.65
P-5B	158.39	7.92	150.47	4.29	154.10	4.37	154.02	4.28	154.11
P-6	153.78	3.88	149.90	3.65	150.13	3.60	150.18	3.71	150.07
PZR-2R	153.78	5.72	148.06	5.71	148.07	5.61	148.17	5.80	147.98
PZR-2DR	154.67	6.83	147.84	6.82	147.85	6.52	148.15	6.94	147.73
PZR-4R	153.72	4.97	148.75	5.11	148.61	4.91	148.81	5.11	148.61
PZR-4DR	152.73	0.00	152.73	0.00	152.73	0.00	152.73	0.00	152.73
RW-1	157.61	15.14	142.47	14.40	143.21	16.10	141.51	16.04	141.57
RW-2	156.49	17.21	139.28	16.90	139.59	12.90	143.59	15.32	141.17
RW-3	157.35	19.76	137.59	17.75	139.60	16.84	140.51	17.33	140.02
RW-4	158.21	17.90	140.31	14.96	143.25	14.10	144.11	14.97	143.24
RW-7	157.09	13.22	143.87	16.51	140.58	17.10	139.99	16.60	140.49
RW-8	156.95	18.76	138.19	19.31	137.64	18.40	138.55	19.04	137.91
RW-9	156.72	21.09	135.63	22.61	134.11	18.51	138.21	20.66	136.06
RW-10	156.13	15.46	140.67	18.12	138.01	18.56	137.57	18.90	137.23
RW-11	157.82	18.05	139.77	16.90	140.92	15.20	142.62	17.54	140.28
RW-12	158.36	14.63	143.73	17.10	141.26	18.26	140.10	16.98	141.38
RW-13	149.36	47.81	101.55	46.85	102.51	45.08	104.28	48.04	101.32
RW-14	151.71	30.10	121.61	28.20	123.51	29.48	122.23	14.40	137.31
RW-1R	149.77	31.90	117.87	32.88	116.89	30.99	118.78	31.18	118.59
TW-7A	158.72	5.91	152.81	5.58	153.14	5.35	153.37	5.35	153.37
MW-702DR	181.38	10.92	170.46	10.91	170.47	9.18	172.20	11.06	170.32
P-8A	181.26	10.90	170.36	10.68	170.58	8.55	172.71	10.68	170.58
MW-707D	156.09	8.37	147.72	8.38	147.71	8.32	147.77	8.32	147.77
MW-707R	156.01	7.99	148.02	7.97	148.04	7.89	148.12	8.04	147.97
MW-707DR	156.80	8.83	147.97	8.88	147.92	8.72	148.08	8.90	147.90
PZ-02D	154.14	6.16	147.98	6.20	147.94	6.12	148.02	6.18	147.96
PZ-O2M	154.77	6.73	148.04	6.71	148.06	6.63	148.14	6.71	148.06
MW-3	153.79	6.17	147.62	6.19	147.60	6.11	147.68	6.13	147.66
MW-708R	224.95	75.06	149.89	74.80	150.15	74.66	150.29	73.60	151.35
MW-708DR	224.19	78.83	145.36	75.32	148.87	74.90	149.29	74.36	149.83
PZ-906DR	155.85	6.27	149.58	7.62	148.23	6.02	149.83	4.61	151.24

Measuring Location	Location Elevation	27-Jul-11		31-Aug-11		27-Sep-11		25-Oct-11	
		Depth to Water	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*
CPZ-1	159.64	7.85	151.79	6.70	152.94	6.25	153.39	6.44	153.20
CPZ-1R	161.12	3.01	158.11	0.00	161.12	0.00	161.12	0.00	161.12
CPZ-2	158.64	6.82	151.82	4.90	153.74	4.74	153.90	4.62	154.02
CPZ-2A	158.82	6.70	152.12	4.68	154.14	4.50	154.32	4.48	154.34
CPZ-2R	160.97	2.80	158.17	0.00	160.97	0.00	160.97	0.00	160.97
CPZ-3	159.21	10.96	148.25	10.01	149.20	10.07	149.14	9.79	149.42
CPZ-3R	160.70	7.67	153.03	5.81	154.89	5.66	155.04	5.06	155.64
CPZ-4	158.80	10.07	148.73	6.39	152.41	7.41	151.39	7.50	151.30
CPZ-4A	159.44	10.18	149.26	7.80	151.64	8.28	151.16	8.17	151.27
CPZ-4R	158.76	7.10	151.66	5.54	153.22	5.20	153.56	4.96	153.80
CPZ-5	158.68	15.60	143.08	15.45	143.23	14.97	143.71	13.96	144.72
CPZ-5R	158.30	10.81	147.49	9.82	148.48	9.59	148.71	9.12	149.18
CPZ-6	154.48	5.49	148.99	3.35	151.13	3.90	150.58	3.69	150.79
CPZ-6A	158.05	8.36	149.69	6.91	151.14	7.15	150.90	6.99	151.06
CPZ-6R	154.39	6.35	148.04	4.31	150.08	4.97	149.42	4.72	149.67
CPZ-7	159.40	8.12	151.28	7.37	152.03	7.03	152.37	6.29	153.11
CPZ-7R	158.58	2.91	155.67	0.81	157.77	0.91	157.67	0.33	158.25
CPZ-8	160.11	6.30	153.81	5.44	154.67	5.51	154.60	5.56	154.55
CPZ-8R	160.62	7.60	153.02	6.28	154.34	6.41	154.21	6.22	154.40
CPZ-10	161.03	4.20	156.83	3.42	157.61	3.63	157.40	3.50	157.53
CPZ-10R	162.94	3.93	159.01	2.05	160.89	2.60	160.34	2.02	160.92
MW-121A	152.96	5.89	147.07	4.96	148.00	4.50	148.46	4.59	148.37
MW-125A	157.87	2.18	155.69	2.74	155.13	1.42	156.45	1.12	156.75
MW-125C	156.30	7.60	148.70	5.95	150.35	6.26	150.04	5.92	150.38
MW-204A	150.78	4.35	146.43	2.71	148.07	3.11	147.67	3.02	147.76
MW-415	160.75	5.90	154.85	4.88	155.87	4.88	155.87	4.85	155.90
MW-416	159.98	8.38	151.60	7.31	152.67	7.11	152.87	6.70	153.28
MW-704D	153.43	7.62	145.81	5.73	147.70	6.20	147.23	6.02	147.41
MW-704M	152.34	6.80	145.54	4.98	147.36	5.38	146.96	5.29	147.05
MW-704R	151.52	6.84	144.68	5.12	146.40	5.26	146.26	5.28	146.24
MW-704DR	152.84	32.56	120.28	32.18	120.66	32.74	120.10	32.70	120.14
MW-705DR	160.99	4.69	156.30	3.97	157.02	3.18	157.81	2.95	158.04
MWL-302	161.60	6.61	154.99	6.06	155.54	6.01	155.59	6.08	155.52
MWL-304	159.90	7.72	152.18	6.64	153.26	6.72	153.18	6.74	153.16
MWL-305	159.01	5.03	153.98	4.59	154.42	4.52	154.49	4.23	154.78
MWL-306	155.39	7.61	147.78	3.37	152.02	5.32	150.07	4.74	150.65
MWL-307	159.14	4.61	154.53	2.86	156.28	3.70	155.44	3.73	155.41
MWL-308	158.63	3.92	154.71	3.22	155.41	3.18	155.45	3.12	155.51
MWL-309	155.20	10.91	144.29	3.08	152.12	3.47	151.73	3.78	151.42
MWL-311	157.33	8.38	148.95	4.86	152.47	5.65	151.68	5.68	151.65
P-5A	157.61	9.43	148.18	7.94	149.67	8.22	149.39	7.91	149.70
P-5B	158.39	6.58	151.81	4.40	153.99	4.62	153.77	5.06	153.33
P-6	153.78	5.48	148.30	3.60	150.18	4.18	149.60	4.11	149.67
PZR-2R	153.78	7.33	146.45	5.40	148.38	6.10	147.68	5.99	147.79
PZR-2DR	154.67	8.26	146.41	6.44	148.23	7.11	147.56	6.97	147.70
PZR-4R	153.72	6.99	146.73	4.73	148.99	5.51	148.21	5.38	148.34
PZR-4DR	152.73	1.80	150.93	0.30	152.43	0.00	152.73	0.00	152.73
RW-1	157.61	15.95	141.66	16.04	141.57	16.20	141.41	15.36	142.25
RW-2	156.49	16.49	140.00	17.01	139.48	16.90	139.59	17.33	139.16
RW-3	157.35	17.03	140.32	16.67	140.68	16.94	140.41	18.02	139.33
RW-4	158.21	16.75	141.46	14.33	143.88	15.11	143.10	14.51	143.70
RW-7	157.09	16.45	140.64	17.12	139.97	16.84	140.25	16.94	140.15
RW-8	156.95	18.50	138.45	18.12	138.83	18.09	138.86	18.43	138.52
RW-9	156.72	19.91	136.81	19.56	137.16	23.16	133.56	18.77	137.95
RW-10	156.13	19.51	136.62	17.44	138.69	18.39	137.74	18.09	138.04
RW-11	157.82	17.04	140.78	15.12	142.70	18.04	139.78	17.66	140.16
RW-12	158.36	17.67	140.69	18.10	140.26	17.03	141.33	17.04	141.32
RW-13	149.36	53.03	96.33	46.21	103.15	44.74	104.62	52.21	97.15
RW-14	151.71	22.74	128.97	26.18	125.53	30.46	121.25	31.95	119.76
RW-1R	149.77	32.11	117.66	32.11	117.66	32.71	117.06	32.70	117.07
TW-7A	158.72	6.79	151.93	5.53	153.19	5.72	153.00	5.68	153.04
MW-702DR	181.38	19.72	161.66	12.04	169.34	14.54	166.84	12.41	168.97
P-8A	181.26	19.57	161.69	10.71	170.55	14.72	166.54	12.37	168.89
MW-707D	156.09	9.52	146.57	8.07	148.02	8.60	147.49	8.54	147.55
MW-707R	156.01	9.49	146.52	7.74	148.27	8.33	147.68	8.24	147.77
MW-707DR	156.80	10.49	146.31	8.45	148.35	9.25	147.55	9.10	147.70
PZ-02D	154.14	7.70	146.44	5.79	148.35	6.49	147.65	6.39	147.75
PZ-O2M	154.77	8.27	146.50	6.30	148.47	7.06	147.71	6.88	147.89
MW-3	153.79	7.38	146.41	5.81	147.98	6.41	147.38	6.40	147.39
MW-708R	224.95	73.80	151.15	73.22	151.73	74.01	150.94	74.06	150.89
MW-708DR	224.19	74.42	149.77	73.96	150.23	74.62	149.57	74.60	149.59
PZ-906DR	155.85	3.68	152.17	3.03	152.82	2.61	153.24	2.05	153.80

WESTON SOLUTIONS

TABLE 2

31 October 2010 through 30 October 2011

Influent and Effluent GWCT System Flow Data Summary

Date	Influent Flow Summary (NCTRA 1 and 2 Combined)			NCTRA-1 Flow Summary [2]	NCTRA-2 Flow Summary			Effluent Flow Summary (NTCRA 1 and 2 Combined)		
	Total Cumulative Flow (gallons)	*Total Flow Since Previous (gallons)*	*Avg. Rate Since Prev. (GPM)*	*Avg. Rate Since Prev. (GPM)*	*Total Cumulative Flow (gallons)*	*Total Flow Since Previous (gallons)*	*Avg. Rate Since Prev. (GPM)*	*Total Cumulative Flow (gallons)*	*Total Flow Since Previous (gallons)*	*Avg. Rate Since Prev. (GPM)*
10/29/2010	199,056,000	1,448,000	34.7	2.1	84,763,060	1,358,700	32.5	208,686,000	1,630,000	39.0
11/30/2010	200,446,000	1,390,000	30.2	2.6	86,034,960	1,271,900	27.6	210,595,000	1,909,000	41.4
12/30/2010	202,096,000	1,650,000	38.2	8.7	87,308,360	1,273,400	29.5	212,384,000	1,789,000	41.4
1/31/2011	203,477,000	1,381,000	30.0	-0.6	88,719,160	1,410,800	30.6	213,838,000	1,454,000	31.6
2/28/2011	204,593,000	1,116,000	27.7	1.1	89,789,460	1,070,300	26.5	215,032,000	1,194,000	29.6
3/31/2011	206,257,000	1,664,000	37.3	13.7	90,844,060	1,054,600	23.6	216,849,000	1,817,000	40.7
4/29/2011	207,475,000	1,218,000	29.2	6.8	91,777,960	933,900	22.4	218,283,000	1,434,000	34.3
5/31/2011	208,845,000	1,370,000	29.7	6.3	92,859,260	1,081,300	23.5	219,820,000	1,537,000	33.4
6/30/2011	210,377,000	1,532,000	35.5	0.7	94,362,510	1,503,250	34.8	221,523,000	1,703,000	39.4
7/29/2011	211,750,000	1,373,000	32.9	-4.6	95,925,660	1,563,150	37.4	223,080,000	1,557,000	37.3
8/31/2011	213,216,000	1,466,000	30.9	2.9	97,252,160	1,326,500	27.9	224,757,000	1,677,000	35.3
9/30/2011	214,849,000	1,633,000	37.8	6.8	98,591,160	1,339,000	31.0	226,598,000	1,841,000	42.6
10/31/2011	216,393,000	1,544,000	34.6	6.6	99,839,460	1,248,300	28.0	228,389,000	1,791,000	40.1
Yearly Averages [1]			**32.8**	**4.3**			**28.5**			**37.3**
Cumulative Totals:	**216,393,000**	**17,337,000**			**99,839,460**	**15,076,400**		**228,389,000**	**19,703,000**	

Notes:

1: The average yearly flows are calculated by dividing the total cumulative annual flow by the duration in minutes.

2: The NTCRA-2 Flow Meter is reading higher than actual causing the calculated NTCRA-1 flow to be lower than actual.

Table 3

November 2010

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	11/2/2010	**11/15/2010**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	1.76	0.94
Ethylbenzene (mg/L)	0.61	0.3
Xylenes, Total (mg/L)	0.46	0.26
Vinyl chloride (mg/L)	0.54	0.43
1,1-Dichloroethene (mg/L)	0.02	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	1.09	0.47
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	0.04	0.02
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.03	0.03
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**4.55**	**2.45**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	4.76	3.07
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

December 2010

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	12/6/2010	**12/17/2010**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.37	0.72
Ethylbenzene (mg/L)	0.13	0.5
Xylenes, Total (mg/L)	0.09	0.39
Vinyl chloride (mg/L)	0.13	0.43
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.11	0.61
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	0.02
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.01	0.025
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**0.84**	**2.695**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	1.41	4.99
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

January 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	1/4/2011	**1/20/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	0.002	<0.01
Tetrachloroethene (mg/L)	<0.001	<0.01
Toluene (mg/L)	0.224	1.30
Ethylbenzene (mg/L)	0.069	0.46
Xylenes, Total (mg/L)	0.056	0.35
Vinyl chloride (mg/L)	0.056	0.40
1,1-Dichloroethene (mg/L)	<0.001	<0.01
Tetrahydrofuran (mg/L)	<0.05	<0.50
1,2-Dichloroethene[1] (mg/L)	0.09	0.80
1,2-Dichloroethane (mg/L)	<0.001	<0.01
1,1,1-Trichloroethane (mg/L)	0.004	0.03
1,1,2-Trichloroethane (mg/L)	<0.001	<0.01
Methylene chloride (mg/L)	0.003	0.02
Styrene (mg/L)	<0.001	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.050	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.050	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.050	<0.50
Total VOCs[2]	**0.504**	**3.36**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	0.02	<0.01
Iron, Total (mg/L)	2.42	3.68
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

February 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	2/4/2011	**2/18/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	1.25	2.25
Ethylbenzene (mg/L)	0.48	1.02
Xylenes, Total (mg/L)	0.36	0.77
Vinyl chloride (mg/L)	0.34	0.85
1,1-Dichloroethene (mg/L)	<0.01	0.02
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	1	1.12
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	0.04	0.07
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.03	0.04
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**3.5**	**6.14**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	0.02	<0.01
Iron, Total (mg/L)	5.34	6.37
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

March 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	3/4/2011	**3/18/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	1.52	2.39
Ethylbenzene (mg/L)	0.37	0.57
Xylenes, Total (mg/L)	0.22	0.38
Vinyl chloride (mg/L)	0.30	0.49
1,1-Dichloroethene (mg/L)	0.01	0.02
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.9	1.14
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	0.06	0.11
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.04	0.04
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**3.42**	**5.14**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	0.01
Iron, Total (mg/L)	3.53	5.78
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

April 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	4/6/2011	**4/21/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	2.43	1.51
Ethylbenzene (mg/L)	0.63	0.37
Xylenes, Total (mg/L)	0.38	0.21
Vinyl chloride (mg/L)	0.95	0.47
1,1-Dichloroethene (mg/L)	0.02	0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.81	1.11
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	0.06	0.11
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.04	0.03
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**5.32**	**3.82**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	3.29	4.41
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

May 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	5/5/2011	**5/20/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	2.41	2.34
Ethylbenzene (mg/L)	0.52	0.81
Xylenes, Total (mg/L)	0.25	0.44
Vinyl chloride (mg/L)	0.73	1.12
1,1-Dichloroethene (mg/L)	0.01	0.04
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.87	1.77
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	0.11	0.17
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.04	0.08
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**4.94**	**6.77**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	0.02
Iron, Total (mg/L)	7.39	8.71
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

June 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	6/3/2011	**6/17/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	0.02
Toluene (mg/L)	2.62	3.06
Ethylbenzene (mg/L)	0.56	0.68
Xylenes, Total (mg/L)	0.29	0.28
Vinyl chloride (mg/L)	0.49	0.62
1,1-Dichloroethene (mg/L)	0.02	0.02
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	1.14	1.52
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	0.04	0.07
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	<0.01	0.1
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**5.16**	**6.37**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	0.02
Iron, Total (mg/L)	11	5.31
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

July 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	7/6/2011	**7/14/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	3.02	0.35
Ethylbenzene (mg/L)	0.44	0.08
Xylenes, Total (mg/L)	0.19	0.05
Vinyl chloride (mg/L)	0.37	0.09
1,1-Dichloroethene (mg/L)	0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.77	0.12
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	0.02	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.14	0.05
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**4.96**	**0.74**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	0.01
Iron, Total (mg/L)	6.97	4.83
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

August 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	8/5/2011	**8/19/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	3.03	2.28
Ethylbenzene (mg/L)	0.79	0.56
Xylenes, Total (mg/L)	0.55	0.47
Vinyl chloride (mg/L)	0.56	0.96
1,1-Dichloroethene (mg/L)	0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	1.75	1.44
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	0.03	0.02
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.09	0.11
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**6.81**	**5.84**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	6.49	4.12
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

September 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	9/2/2011	**9/15/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	0.33	1.65
Ethylbenzene (mg/L)	0.06	0.36
Xylenes, Total (mg/L)	0.04	0.38
Vinyl chloride (mg/L)	0.08	0.57
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.20	0.89
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	<0.01	0.02
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.03	0.04
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**0.74**	**3.91**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	3.17	0.11
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

Table 3

October 2011

SRSNE HCTS - Influent Results

Parameter/ Concentration (mg/L)	Sample Dates	
	10/3/2011	**10/19/2011**
A. ORGANIC PARAMETERS		
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	<0.01	<0.01
Tetrachloroethene (mg/L)	<0.01	<0.01
Toluene (mg/L)	1.49	1.31
Ethylbenzene (mg/L)	0.34	0.37
Xylenes, Total (mg/L)	0.28	0.29
Vinyl chloride (mg/L)	0.45	0.32
1,1-Dichloroethene (mg/L)	<0.01	<0.01
Tetrahydrofuran (mg/L)	<0.50	<0.50
1,2-Dichloroethene[1] (mg/L)	0.67	0.62
1,2-Dichloroethane (mg/L)	<0.01	<0.01
1,1,1-Trichloroethane (mg/L)	0.02	<0.01
1,1,2-Trichloroethane (mg/L)	<0.01	<0.01
Methylene chloride (mg/L)	0.02	0.03
Styrene (mg/L)	<0.01	<0.01
Alcohols		
Ethanol (mg/L)	<5.0	<5.0
Methanol (mg/L)	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	<5.0	<5.0
Ketones		
Acetone (mg/L)	<0.50	<0.50
2-Butanone (Methyl Ethyl Ketone) (mg/L)	<0.50	<0.50
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	<0.50	<0.50
Total VOCs[2]	**3.27**	**2.94**
B. INORGANIC PARAMETERS		
Metals		
Copper, Total (mg/L)	<0.01	<0.01
Iron, Total (mg/L)	7.29	5.71
Lead, Total (mg/L)	<0.005	<0.005
Nickel, Total (mg/L)	<0.05	<0.05
Zinc, Total (mg/L)	<0.05	<0.05

NOTES:

mg/L = Milligrams per liter unless otherwise noted.

[1] = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

[2] = Total VOCs is the total sum of detected compounds (mg/l)

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		11/2/2010	11/15/2010
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.001	0.006
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	0.002
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.003	0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.004**	**0.009**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or 2.26 g/day	<0.01 mg/l or <2.26 g/day
Iron, Total (mg/l)	**5.0**	0.3	0.3
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.13 g/day	<0.005 mg/l or <1.13 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <11.29 g/day	<0.05 mg/l or <11.29 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	0.2
Total PCBs (µg/L)	**NL**	<1.0	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.9	6.87
Total Suspended Solids (mg/L)	**30**	<1	1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		12/6/2010	12/17/2010
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.009	0.011
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.002	0.003
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.011**	**0.014**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.26 g/day	<0.01 mg/l or< 2.26 g/day
Iron, Total (mg/l)	**5.0**	0.2	0.2
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.13 g/day	<0.005 mg/l or <1.13 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <11.29 g/day	<0.05 mg/l or <11.29 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1.0	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.76	6.62
Total Suspended Solids (mg/L)	**30**	<1	2
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		1/4/2011	1/20/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.018	0.018
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.004	0.005
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.022**	**0.024**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <1.72 g/day	<0.01 mg/l or <1.72 g/day
Iron, Total (mg/l)	**5.0**	0.17	0.20
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <0.86 g/day	<0.005 mg/l or <0.86 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <8.6 g/day	<0.05 mg/l or <8.6 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1.0	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	7.35	7.18
Total Suspended Solids (mg/L)	**30**	<1.0	<1.0
Dioxins (pg/L)	**NL**	<36	NS
Furans (pg/L)	**NL**	<51	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		2/4/2011	2/18/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.019	0.027
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.005	<0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	<0.001
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.024**	**0.027**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	0.01 mg/l or 1.61 g/day	<0.01 mg/l or <1.61 g/day
Iron, Total (mg/l)	**5.0**	0.19	0.91
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <0.81 g/day	<0.005 mg/l or <0.81 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <8.07 g/day	<0.05 mg/l or <8.07 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1.0	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	7.03	6.48
Total Suspended Solids (mg/L)	**30**	1	1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		3/4/2011	3/18/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.044	0.047
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.015	0.017
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.008	0.007
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.067**	**0.071**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.22 g/day	0.01 mg/l or 2.22 g/day
Iron, Total (mg/l)	**5.0**	0.24	0.4
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.11 g/day	<0.005 mg/l or <1.11 g/day
Nickel, Total (mg/l)	**0.5**	0.07	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <11.09 g/day	<0.05 mg/l or <11.09 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1.0	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.79	6.98
Total Suspended Solids (mg/L)	**30**	<1.0	1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		4/6/2011	4/21/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.046	0.065
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.019	0.03
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.005	0.005
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.07**	**0.10**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <1.87 g/day	<0.01 mg/l or <1.87 g/day
Iron, Total (mg/l)	**5.0**	0.27	0.24
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <0.94 g/day	<0.005 mg/l or <0.94 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <9.36 g/day	<0.05 mg/l or <9.36 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.77	6.60
Total Suspended Solids (mg/L)	**30**	2	<1.0
Dioxins (pg/L)	**NL**	<36	NS
Furans (pg/L)	**NL**	<51	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		5/5/2011	5/20/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.017	0.015
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.009	0.014
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.003	0.014
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.029**	**0.043**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <1.82 g/day	0.01 mg/l or 1.82 g/day
Iron, Total (mg/l)	**5.0**	0.65	0.6
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <0.91 g/day	<0.005 mg/l or <0.91 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <9.09 g/day	<0.05 mg/l or <9.09 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.80	6.68
Total Suspended Solids (mg/L)	**30**	1	2
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		6/3/2011	6/17/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	0.002
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	0.002	0.023
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	0.002
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.038	0.13
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.025	0.039
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	0.04
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.065**	**0.236**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.15 g/day	0.01 mg/l or 2.15 g/day
Iron, Total (mg/l)	**5.0**	1.07	0.08
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.07 g/day	<0.005 mg/l or <1.07 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <10.74 g/day	<0.05 mg/l or <10.74 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	7.21	7.05
Total Suspended Solids (mg/L)	**30**	1	1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		7/6/2011	7/14/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	0.002
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.267	0.186
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.019	0.017
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.023	0.023
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.309**	**0.228**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.03 g/day	<0.01 mg/l or <2.03 g/day
Iron, Total (mg/l)	**5.0**	0.41	0.23
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.02 g/day	<0.005 mg/l or <1.02 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <10.16 g/day	<0.05 mg/l or <10.16 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.84	6.97
Total Suspended Solids (mg/L)	**30**	1	<1
Dioxins (pg/L)	**NL**	<36	NS
Furans (pg/L)	**NL**	<51	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		8/5/2011	8/19/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.001	0.012
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	<0.001	0.001
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	<0.001	0.016
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.001**	**0.029**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <1.92 g/day	<0.01 mg/l or <1.92 g/day
Iron, Total (mg/l)	**5.0**	0.11	0.52
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <0.96 g/day	<0.005 mg/l or <0.96 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <9.62 g/day	<0.05 mg/l or <9.62 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	<0.2	<0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.89	6.81
Total Suspended Solids (mg/L)	**30**	<1	<1
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		9/2/2011	9/15/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	<0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.023	0.075
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.002	0.004
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.022	0.015
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.047**	**0.094**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or 2.32 g/day	<0.01 mg/l or <2.32 g/day
Iron, Total (mg/l)	**5.0**	0.13	0.10
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.16 g/day	<0.005 mg/l or <1.16 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <11.61 g/day	<0.05 mg/l or <11.61 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.77	6.75
Total Suspended Solids (mg/L)	**30**	<1	14
Dioxins (pg/L)	**NL**	NS	NS
Furans (pg/L)	**NL**	NS	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

SRSNE HCTS - Effluent Results

Parameter/ Concentration (mg/L)	Substantive Requirement Discharge Limits	Sample Dates	
		10/3/2011	10/19/2011
A. ORGANIC PARAMETERS			
Volatile Organic Compounds	*(mg/L)*	*(mg/L)*	*(mg/L)*
Trichloroethene (mg/L)	**0.973**	<0.001	<0.001
Tetrachloroethene (mg/L)	**0.106**	<0.001	<0.001
Toluene (mg/L)	**4.000**	<0.001	0.001
Ethylbenzene (mg/L)	**1.000**	<0.001	<0.001
Xylenes, Total (mg/L)	**0.500**	<0.001	<0.001
Vinyl chloride (mg/L)	**4.500**	<0.001	<0.001
1,1-Dichloroethene (mg/L)	**0.058**	<0.001	<0.001
Tetrahydrofuran (mg/L)	**0.500**	<0.050	<0.050
1,2-Dichloroethene[1] (mg/L)	**5.000**	0.149	0.202
1,2-Dichloroethane (mg/L)	**0.250**	<0.001	<0.001
1,1,1-Trichloroethane (mg/L)	**4.000**	0.007	0.006
1,1,2-Trichloroethane (mg/L)	**0.250**	<0.001	<0.001
Methylene chloride (mg/L)	**15.000**	0.009	0.002
Styrene (mg/L)	**0.500**	<0.001	<0.001
Alcohols			
Ethanol (mg/L)	**20.0**	<5.0	<5.0
Methanol (mg/L)	**10.0**	<5.0	<5.0
2-Butanol (sec-Butanol) (mg/L)	**30.0**	<5.0	<5.0
2-Propanol (Isopropanol) (mg/L)	**10.0**	<5.0	<5.0
Ketones			
Acetone (mg/L)	**35.0**	<0.05	<0.05
2-Butanone (Methyl Ethyl Ketone) (mg/L)	**10.0**	<0.05	<0.05
4-Methyl-2-pentanone (Methyl Isobutyl Ketone) (mg/L)	**2.0**	<0.05	<0.05
Total VOCs[2]		**0.165**	**0.211**
B. INORGANIC PARAMETERS			
Metals	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*	*(mg/L) or (g/day)*
Copper, Total (g/day)[3]	**15.8 g/day**	<0.01 mg/l or <2.19 g/day	<0.01 mg/l or <2.19 g/day
Iron, Total (mg/l)	**5.0**	0.18	0.16
Lead, Total (g/day)[3]	**3.2 g/day**	<0.005 mg/l or <1.09 g/day	<0.005 mg/l or <1.09 g/day
Nickel, Total (mg/l)	**0.5**	<0.05	<0.05
Zinc, Total (g/day)[3]	**40.3 g/day**	<0.05 mg/l or <10.93 g/day	<0.05 mg/l or <10.93 g/day
OTHER			
Hydrogen Peroxide (mg/L)	**1.0**	0.2	0.2
Total PCBs (µg/L)	**NL**	<1	NS
pH (s.u.)	**6.0 - 9.0 s.u.**	6.86	6.68
Total Suspended Solids (mg/L)	**30**	<1	<1
Dioxins (pg/L)	**NL**	<35	NS
Furans (pg/L)	**NL**	<52	NS

NOTES:

1 = 1,2-Dichloroethene represents total cis and trans 1,2-Dichloroethene.

2 = Total VOCs is the total sum of detected compounds (mg/l)

3 = Inorganic results reported in grams per day are based on average monthly effluent flow

NL = no limit specified.

NS = not sampled (total PCBs analysis required monthly; dioxin/furan analysis required quarterly).

mg/L = Milligrams per liter

µg/L = micrograms per liter

pg/L = picograms per liter

g/day = grams per day

s.u. = Standard pH units

TABLE 5

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31 October 2010 through 30 October 2011

Weekly NTCRA-1 Compliance Piezometer Pair Summary

Date	CPZ-1/CPZ-2A	CPZ-3/CPZ-4A	CPZ-5/CPZ-6	CPZ-7/CPZ-8
01-Nov-10	-0.53	-1.48	4.61	1.66
09-Nov-10	-1.06	-1.56	4.44	1.58
17-Nov-10	-1.52	-0.85	5.12	1.26
20-Nov-10	-0.38	-0.91	5.91	1.93
30-Nov-10	0.59	0.05	7.01	1.04
04-Dec-10	0.57	0.08	7.02	1.37
15-Dec-10	1.62	0.97	7.23	2.19
22-Dec-10	1.15	0.54	6.45	2.46
29-Dec-10	0.99	-0.01	6.06	2.03
03-Jan-11	0.43	0.28	6.71	1.83
10-Jan-11	0.53	0.00	6.10	1.70
16-Jan-11	0.61	0.06	6.12	1.76
24-Jan-11	0.42	-0.14	6.12	1.87
04-Feb-11	0.43	-0.12	5.89	1.88
09-Feb-11	0.32	-0.03	5.89	2.20
16-Feb-11	-0.04	0.18	5.96	2.03
24-Feb-11	0.41	0.50	6.38	1.90
02-Mar-11	1.42	1.59	7.20	2.15
09-Mar-11	2.39	3.19	8.25	2.76
15-Mar-11	2.12	2.33	7.87	2.02
23-Mar-11	2.55	3.01	7.58	1.78
28-Mar-11	2.32	2.50	7.24	2.25
04-Apr-11	2.11	2.31	7.18	2.21
09-Apr-11	1.76	2.08	7.05	2.05
18-Apr-11	1.67	1.90	7.88	2.20
27-Apr-11	2.06	1.44	8.47	1.86
02-May-11	1.86	2.12	7.02	2.30
13-May-11	1.86	1.92	7.13	2.40
18-May-11	1.05	1.75	7.40	1.36
27-May-11	2.17	2.57	3.45	0.81
01-Jun-11	1.07	2.28	4.79	1.19
06-Jun-11	1.75	2.05	4.67	1.75
13-Jun-11	1.36	2.69	6.00	1.76
20-Jun-11	1.07	2.46	5.34	1.70
27-Jun-11	1.60	3.11	6.17	1.66
04-Jul-11	0.89	2.24	7.39	1.65
13-Jul-11	0.41	1.49	6.57	2.46
20-Jul-11	0.59	1.44	6.40	2.28
27-Jul-11	0.33	1.01	5.91	2.53
01-Aug-11	0.38	0.80	5.88	2.06
08-Aug-11	0.26	0.92	6.35	2.43
16-Aug-11	0.29	1.18	7.33	2.48
22-Aug-11	0.45	0.77	6.87	2.38
31-Aug-11	1.20	2.44	7.90	2.64
06-Sep-11	0.87	1.83	6.91	2.61
13-Sep-11	1.57	2.37	7.93	2.51
19-Sep-11	1.04	2.17	5.58	1.69
27-Sep-11	0.93	2.02	6.87	2.23
03-Oct-11	0.95	2.42	6.74	1.92
10-Oct-11	0.73	1.94	6.80	1.92
18-Oct-11	1.00	1.68	5.81	2.19
25-Oct-11	1.14	1.85	6.07	1.44

Highlighted Cells - are weeks that the 0.30-foot hydraulic gradient reversal standard for a specific Compliance Piezometer Pair was not maintained during weekly gauging.

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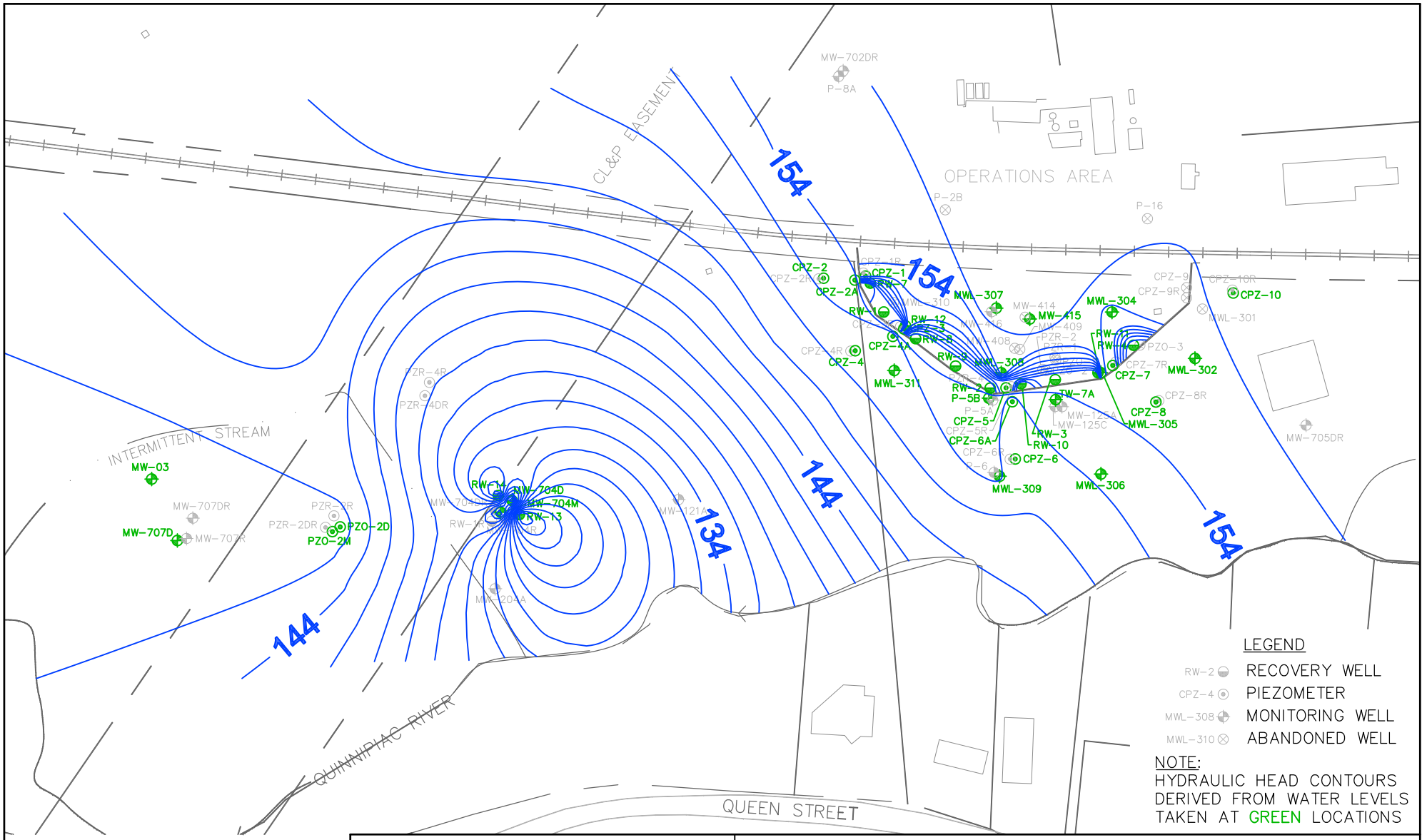

LEGEND

RW-2 RECOVERY WELL

CPZ-4 PIEZOMETER

MWL-308 MONITORING WELL

MWL-310 ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS NOVEMBER 30, 2010

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	DEC 2010			13056.001.013
CHECKED	DATE	SCALE	REVISION	FIGURE NO.
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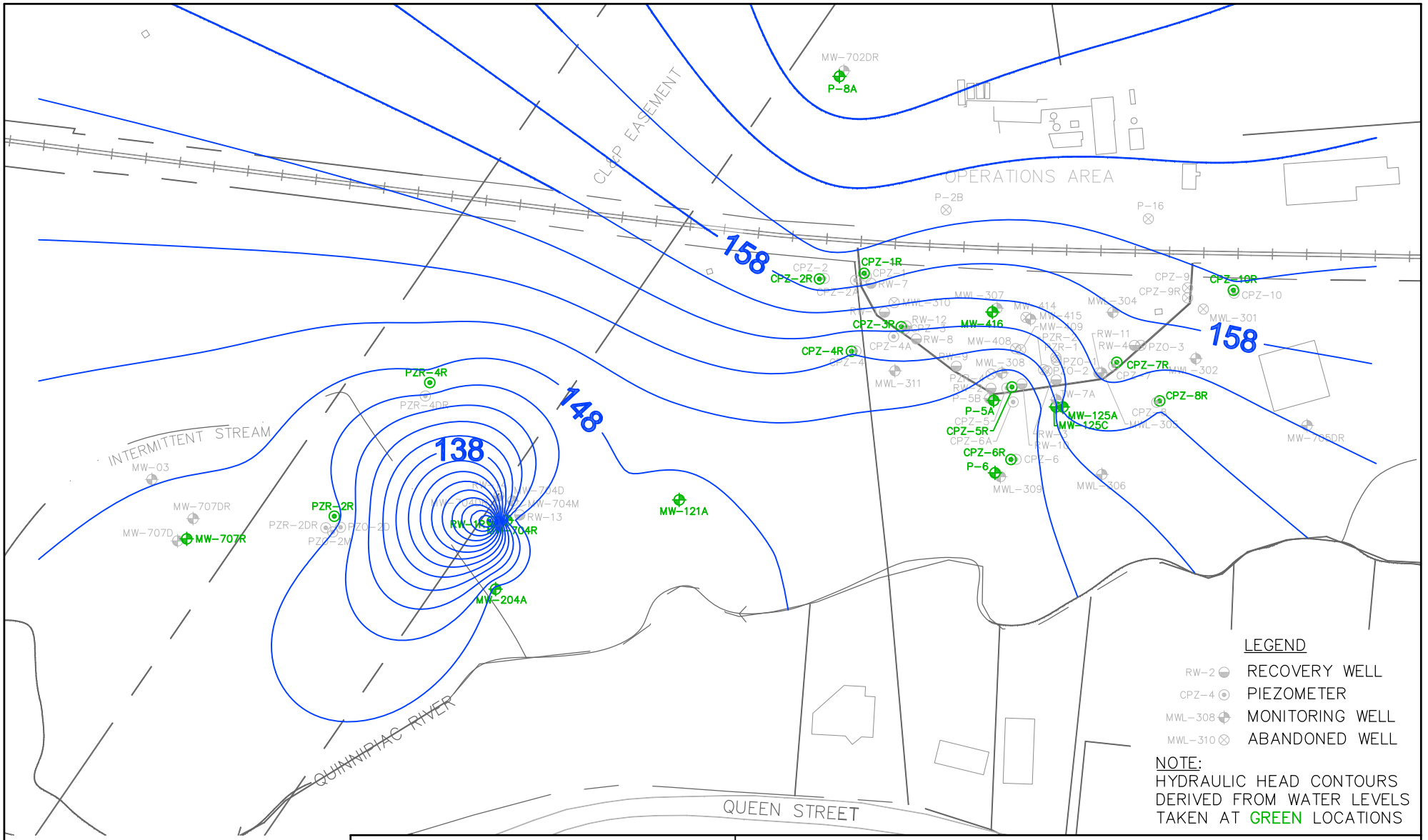

GRAPHIC SCALE

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APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS NOVEMBER 30, 2010

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	DEC 2010			13056.001.013
CHECKED	DATE	SCALE	REVISION	FIGURE NO.
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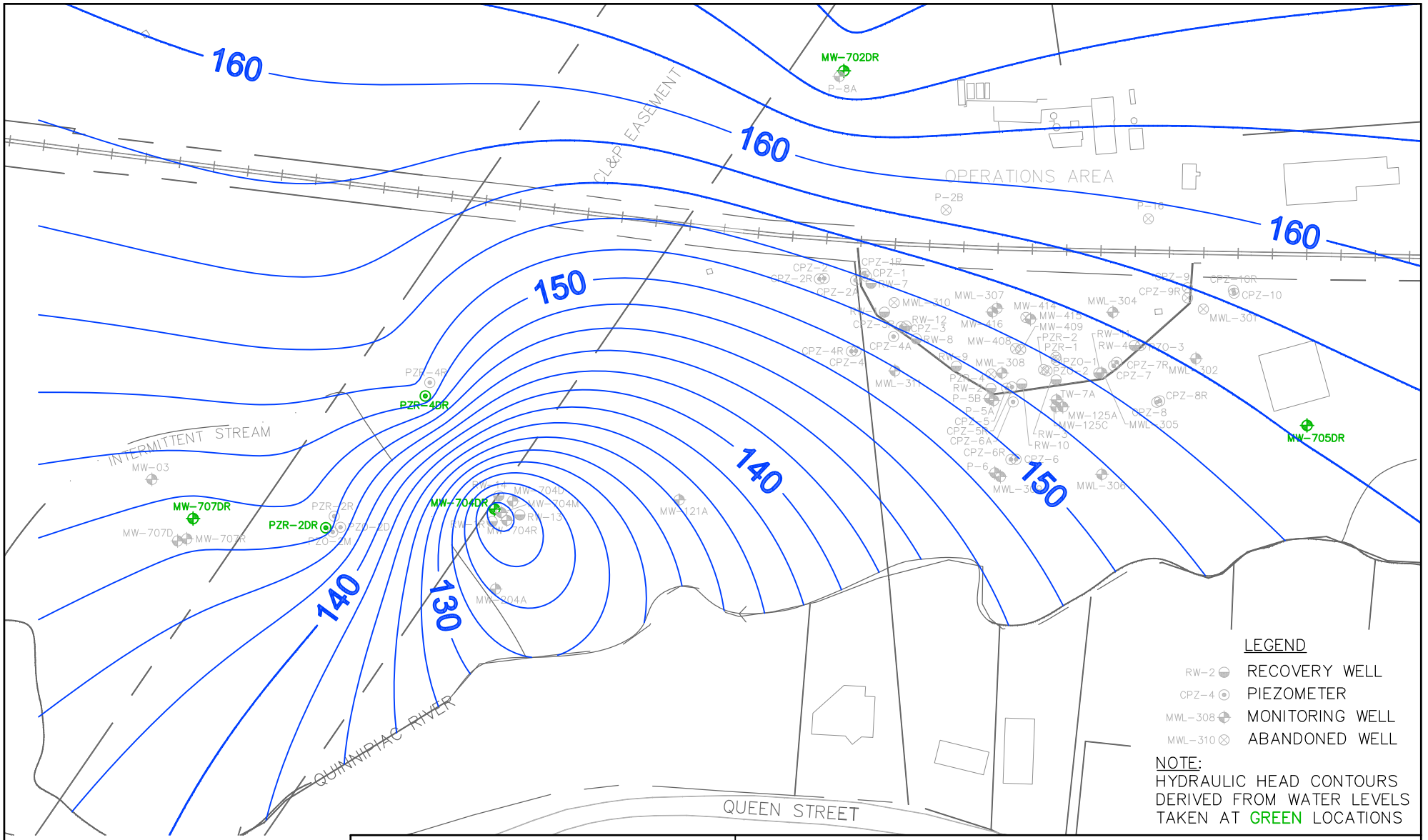

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS NOVEMBER 30, 2010

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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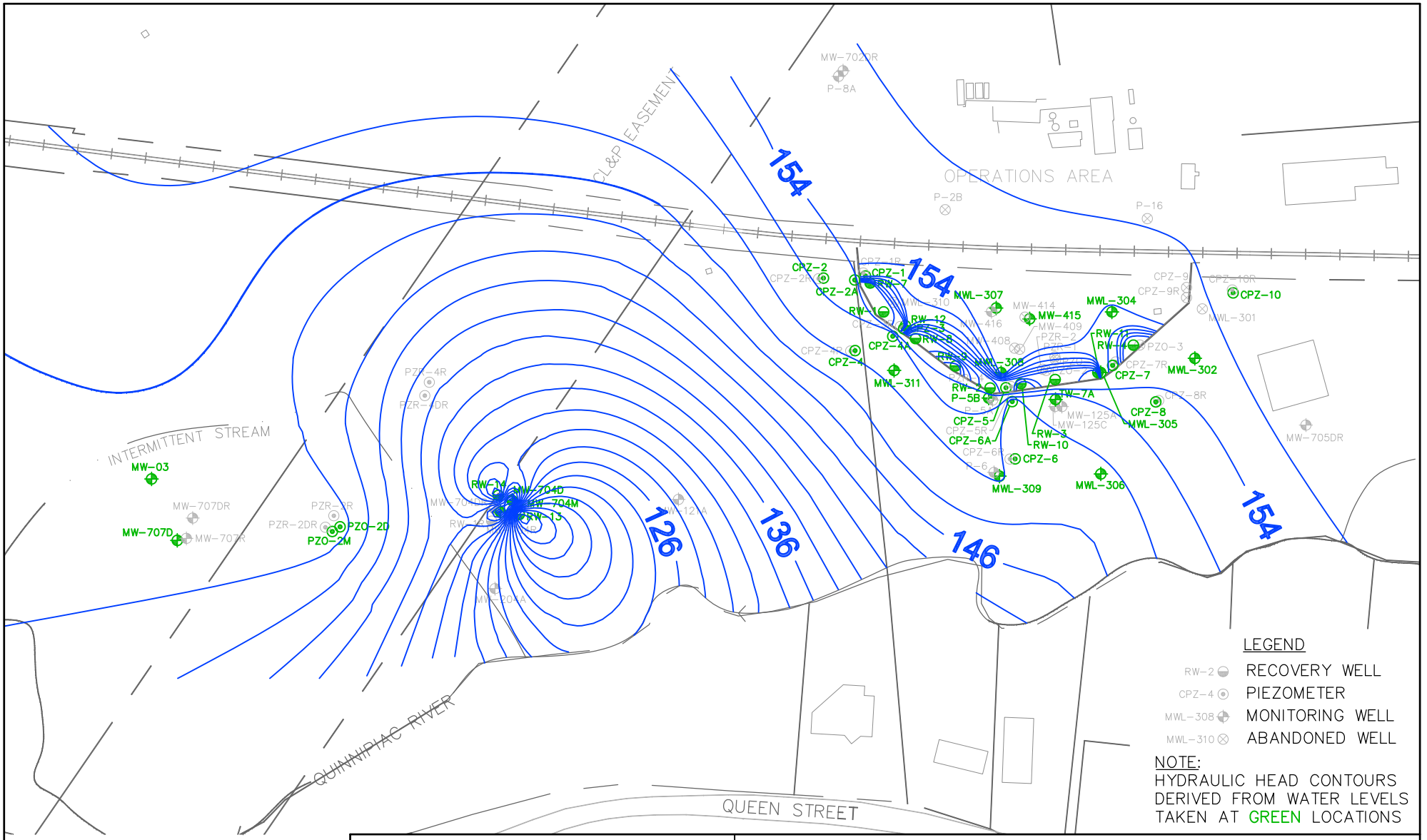

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS DECEMBER 29, 2010

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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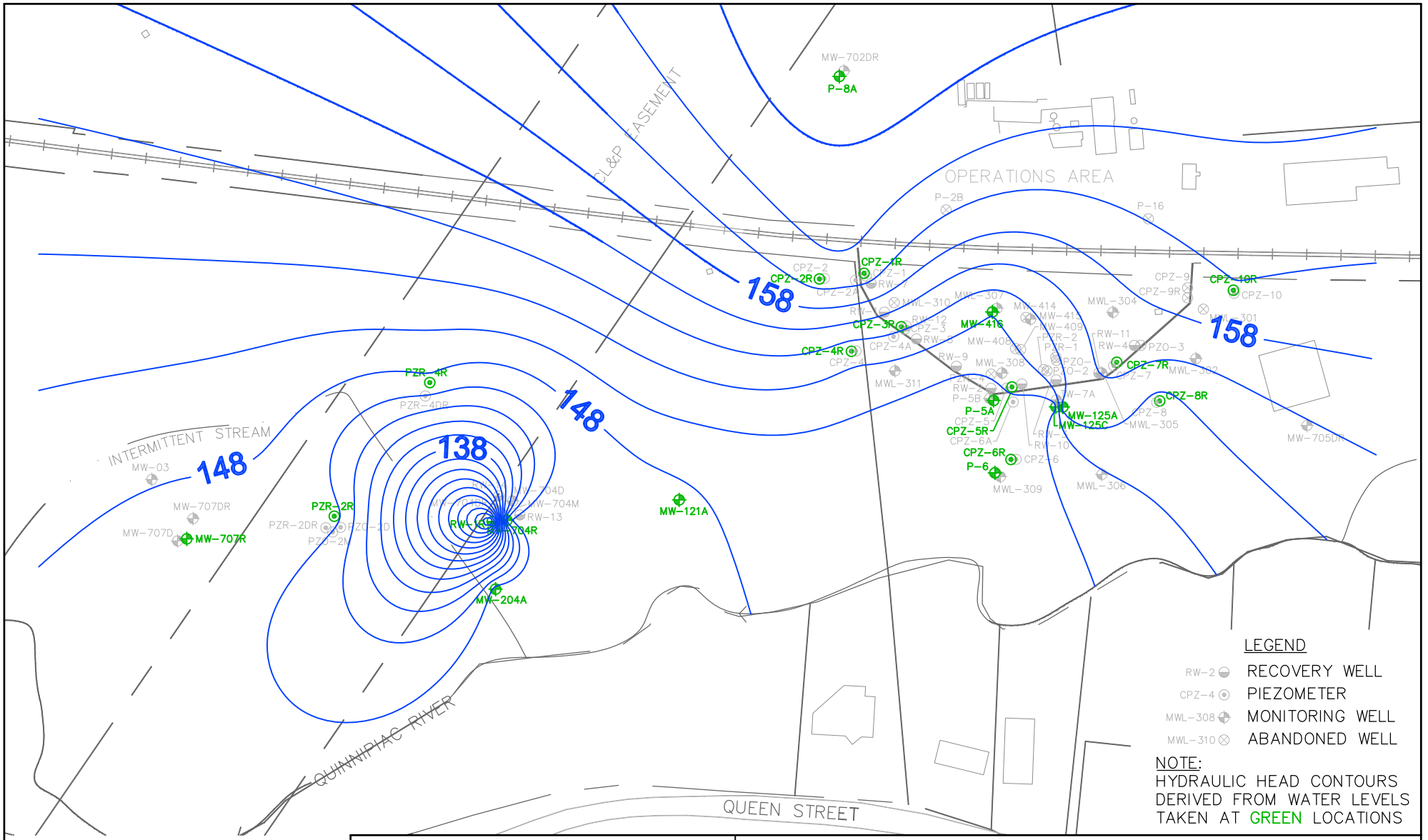

LEGEND

RW-2 RECOVERY WELL

CPZ-4 PIEZOMETER

MWL-308 MONITORING WELL

MWL-310 ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS DECEMBER 29, 2010

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	JAN 2011			13056.001.013
CHECKED	DATE	SCALE	REVISION	FIGURE NO.
		AS SHOWN		2B

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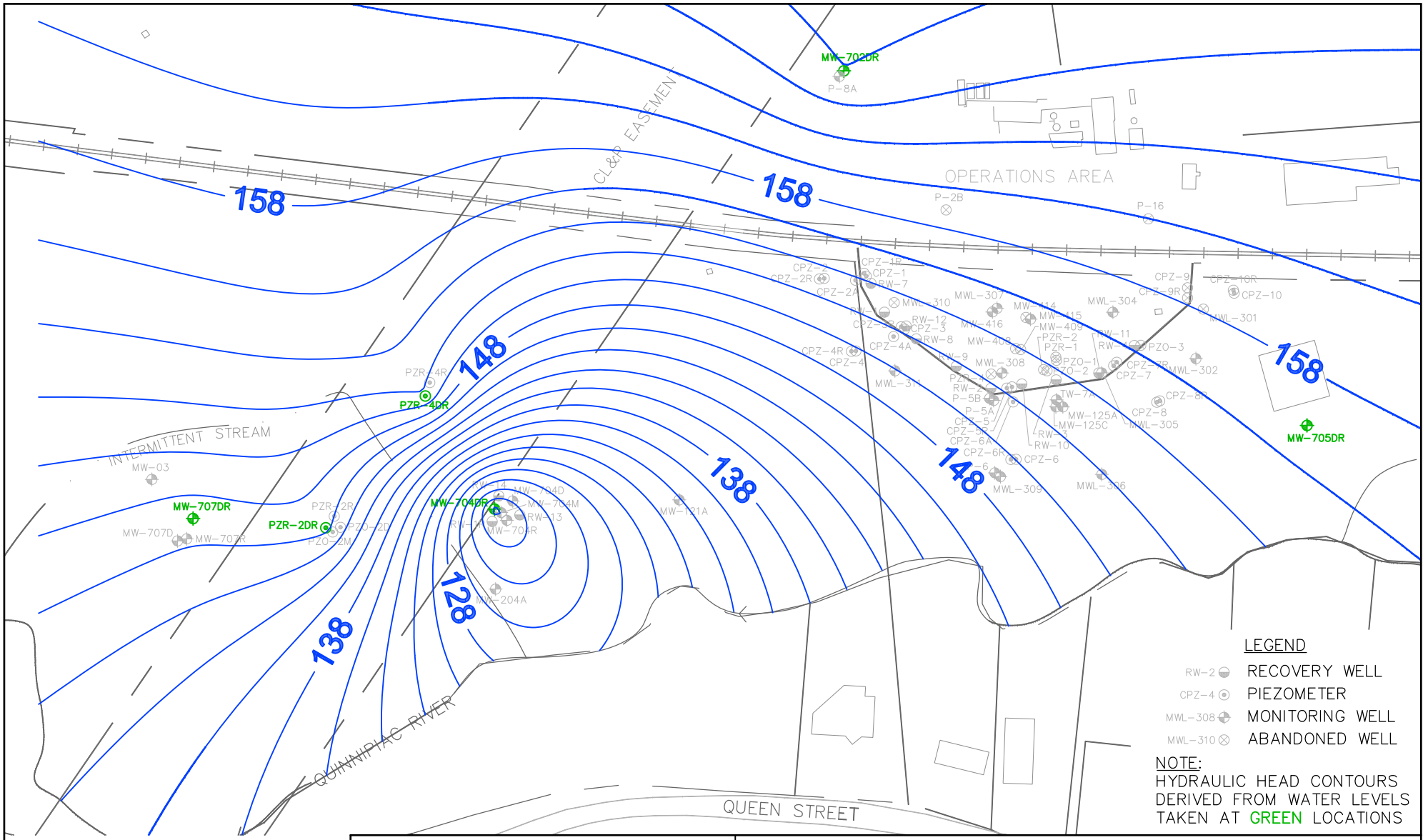

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS DECEMBER 29, 2010

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	JAN 2011			13056.001.013
CHECKED	DATE	SCALE	REVISION	FIGURE NO.
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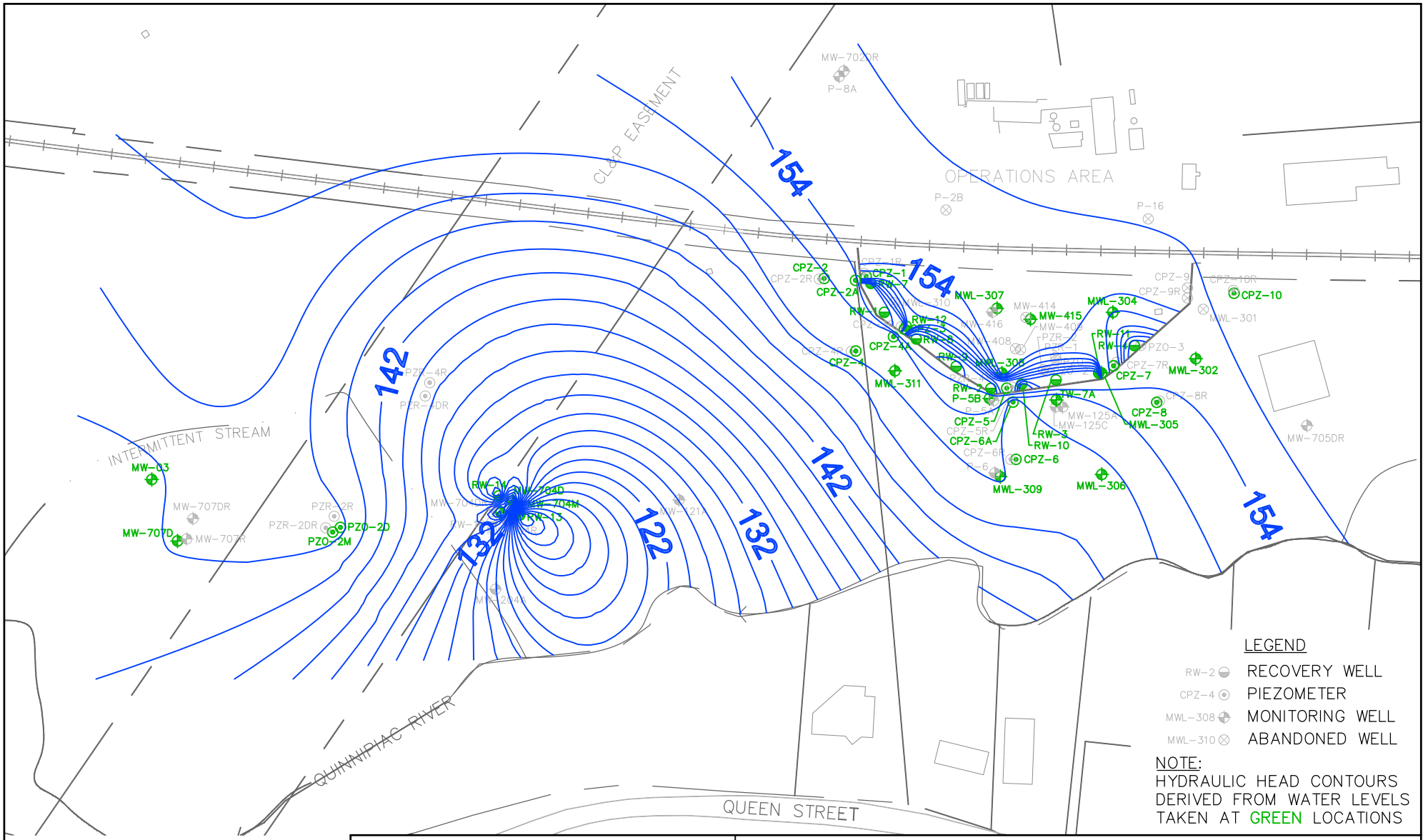

LEGEND

RW-2 RECOVERY WELL

CPZ-4 PIEZOMETER

MWL-308 MONITORING WELL

MWL-310 ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS JANUARY 24, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	FEB 2011			13056.001.013
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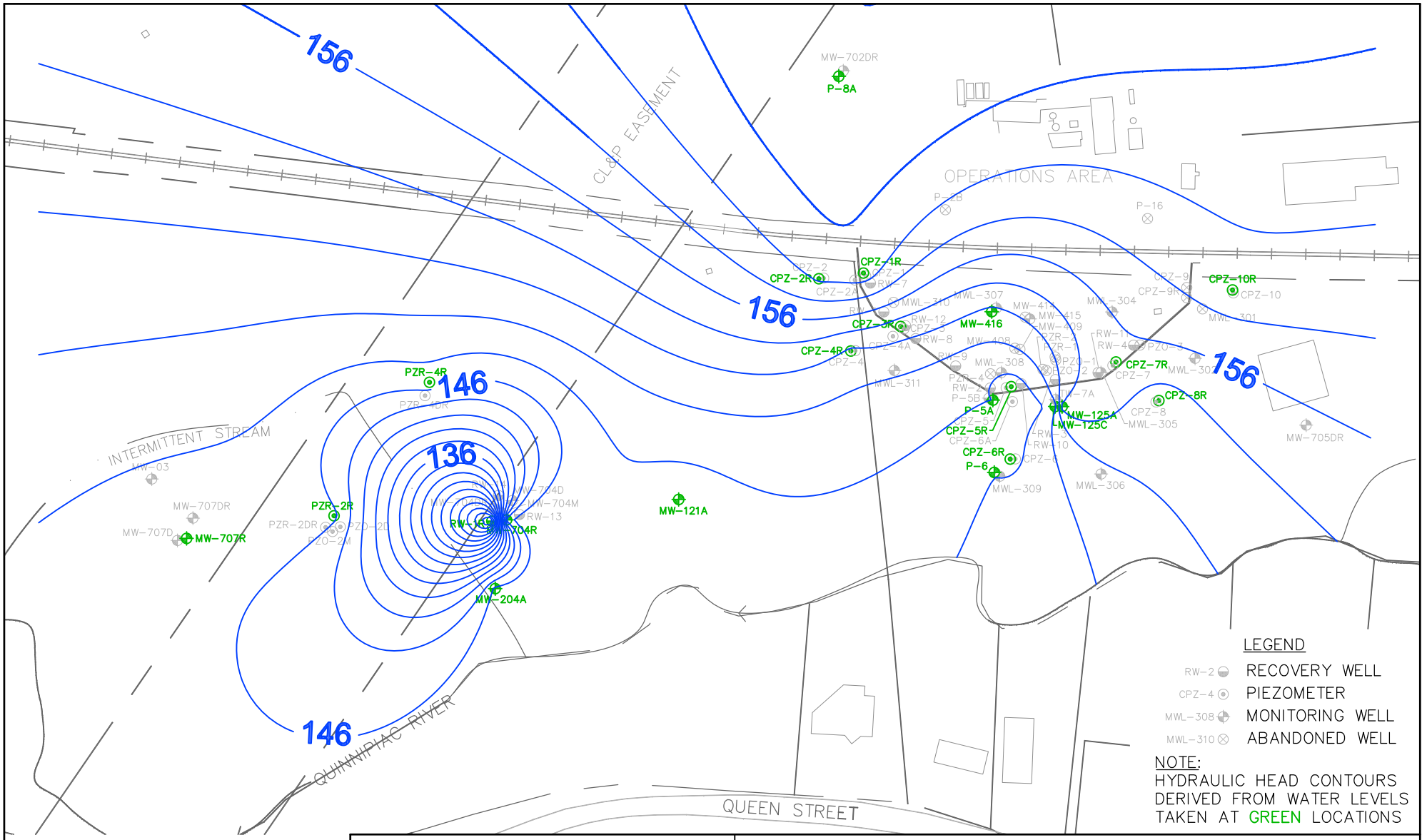

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS JANUARY 24, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

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CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	FEB 2011			13056.001.013
CHECKED	DATE	SCALE	REVISION	FIGURE NO.
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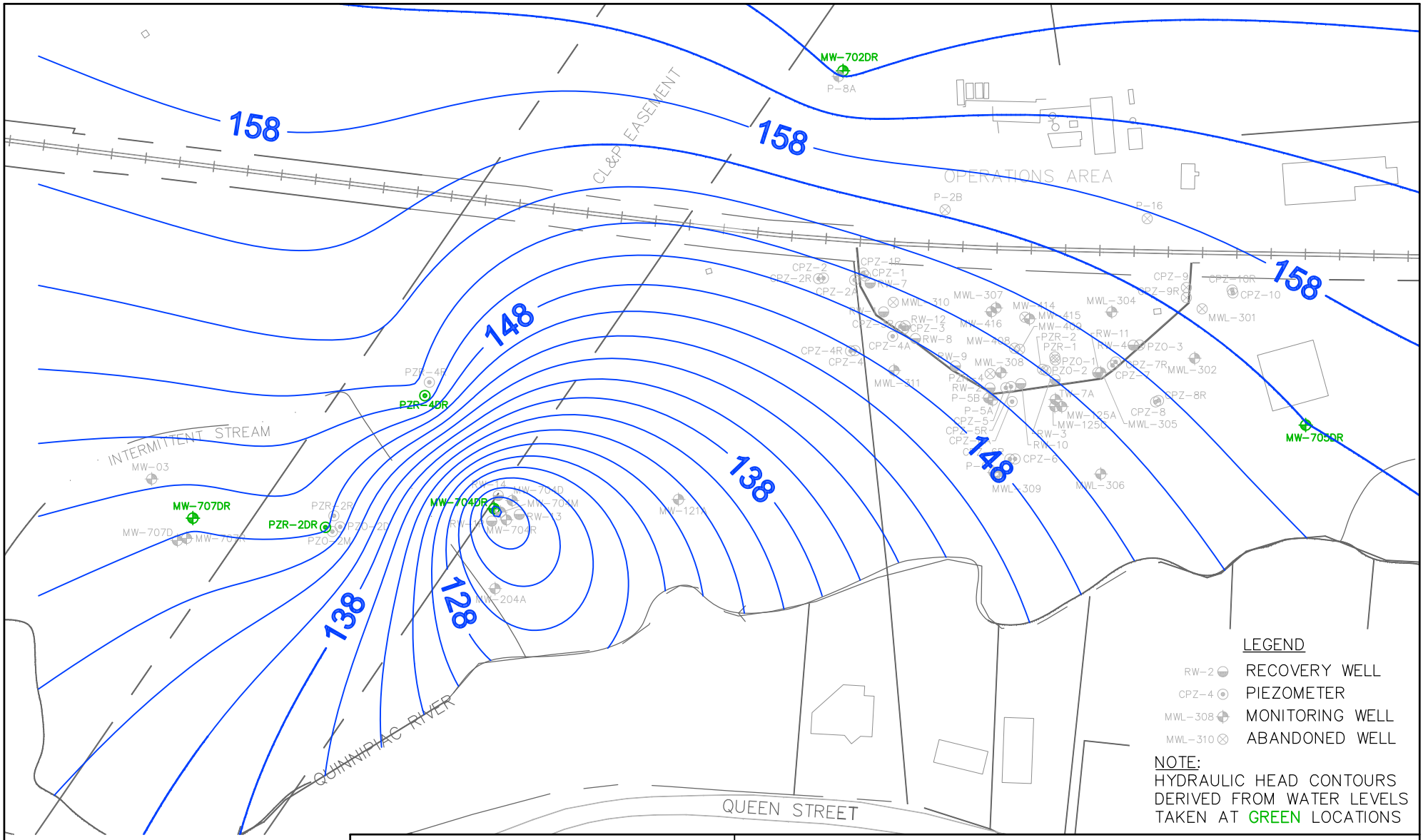

LEGEND

RW-2 RECOVERY WELL

CPZ-4 PIEZOMETER

MWL-308 MONITORING WELL

MWL-310 ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS JANUARY 24, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	FEB 2011			13056.001.013
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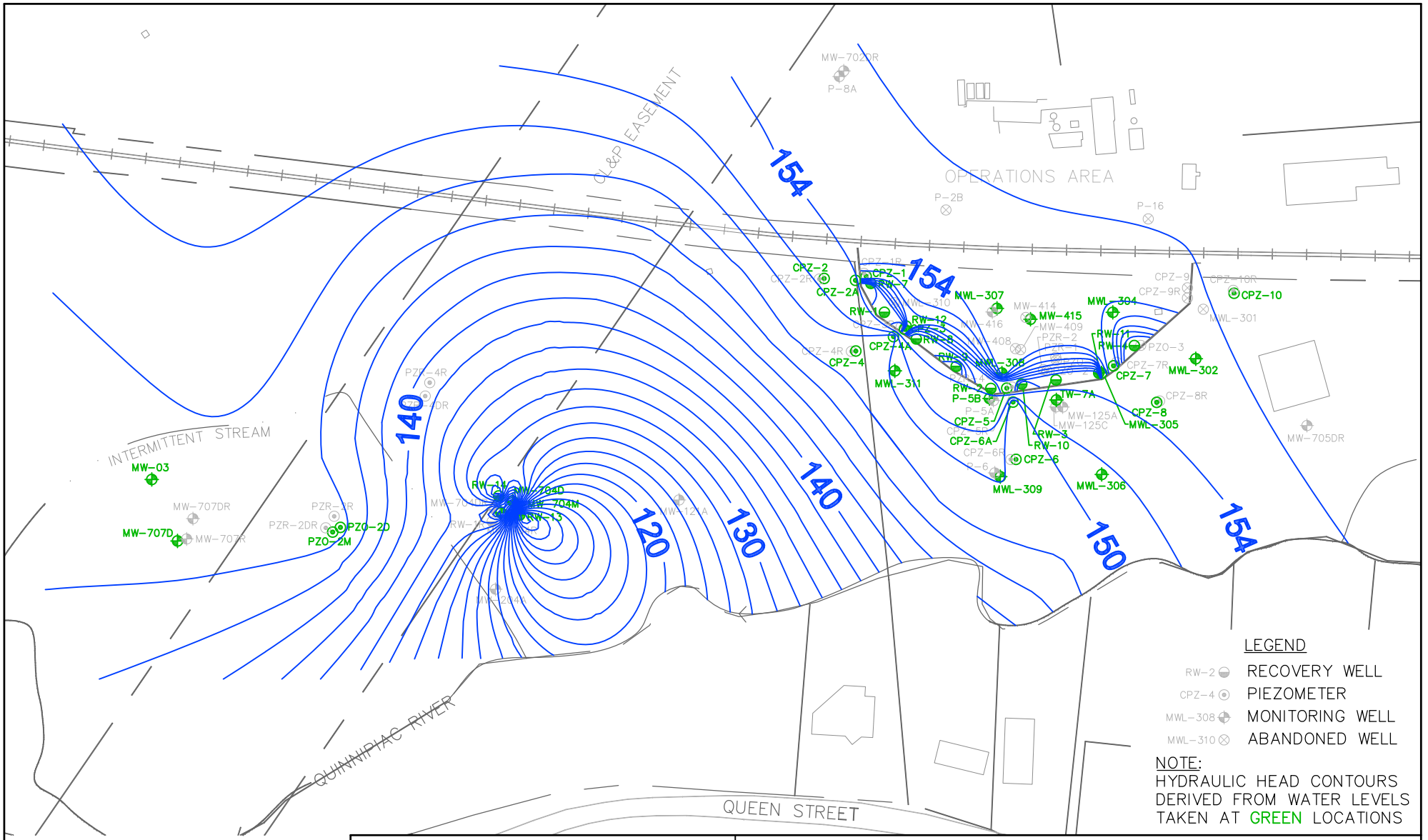

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS FEBRUARY 24, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	MAR 2011			13056.001.013
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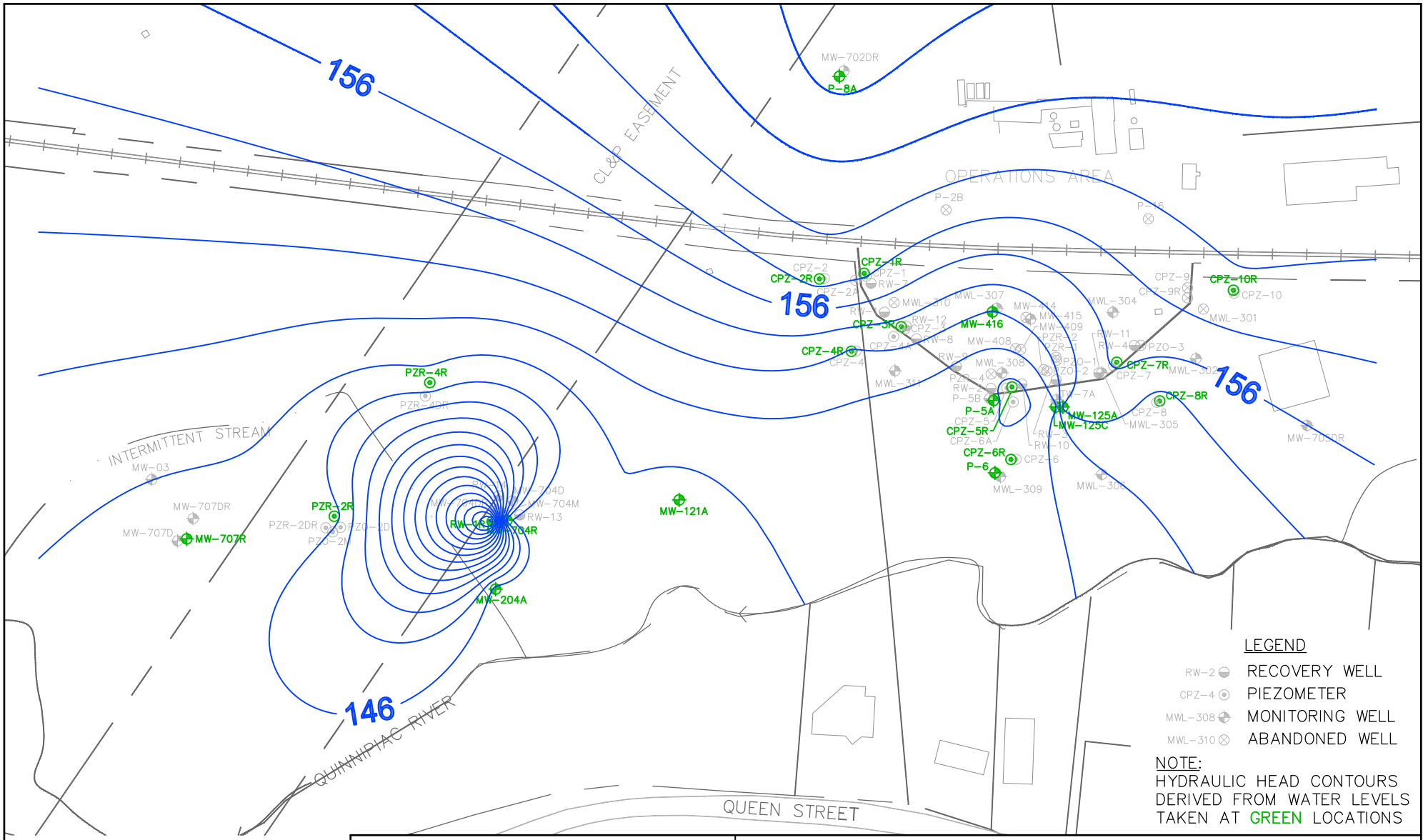

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS FEBRUARY 24, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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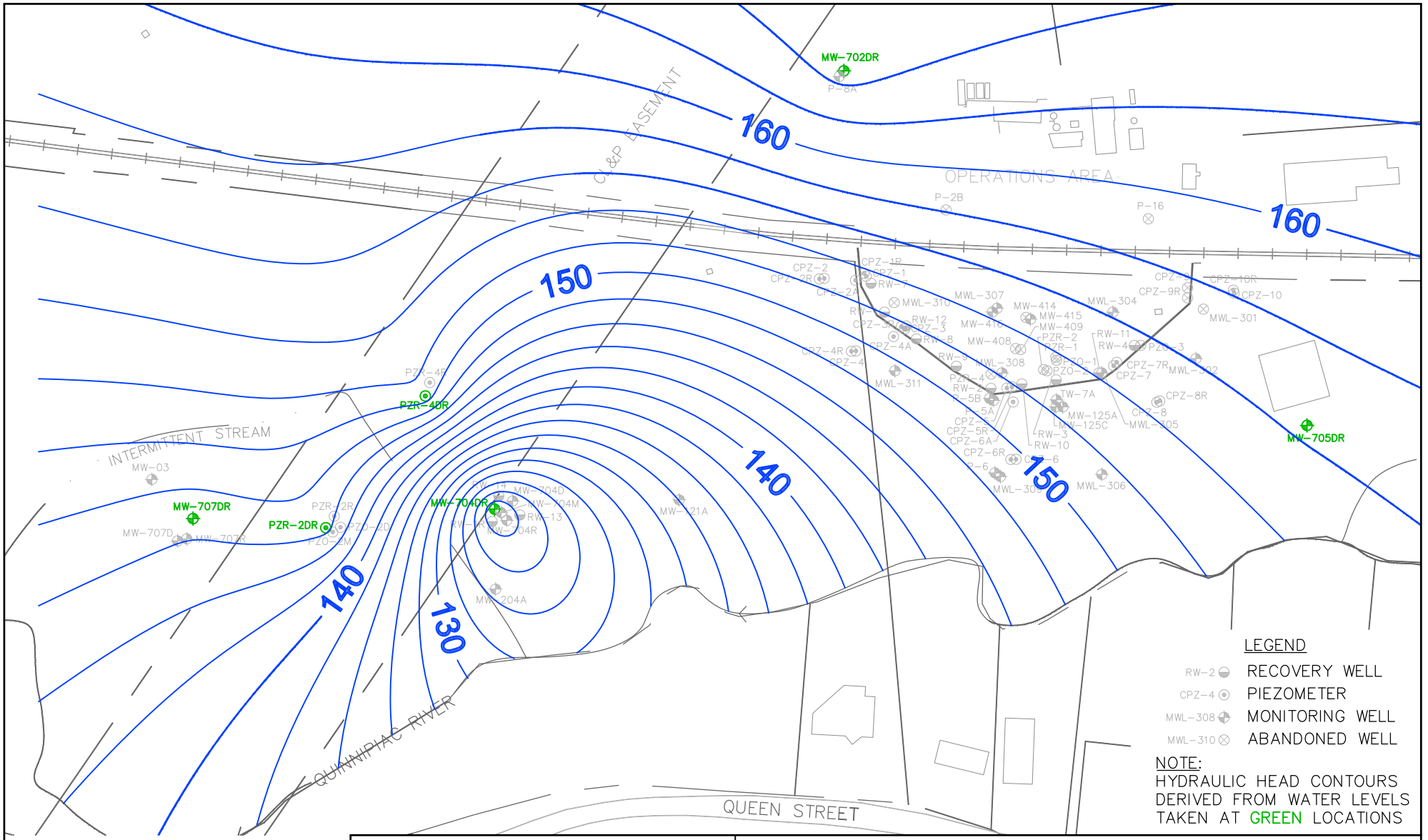

LEGEND

RW-2 RECOVERY WELL

CPZ-4 PIEZOMETER

MWL-308 MONITORING WELL

MWL-310 ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS FEBRUARY 24, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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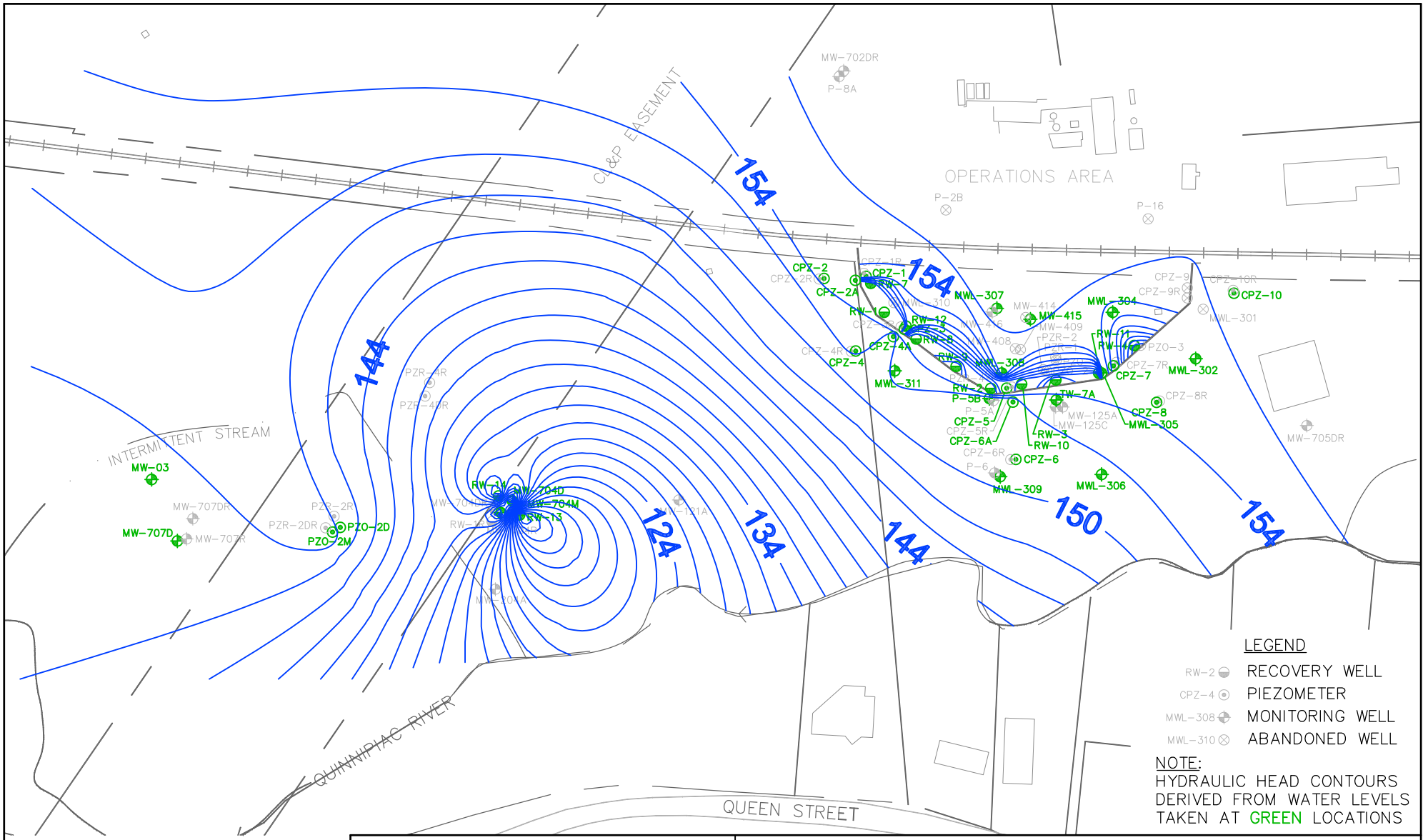

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS MARCH 28, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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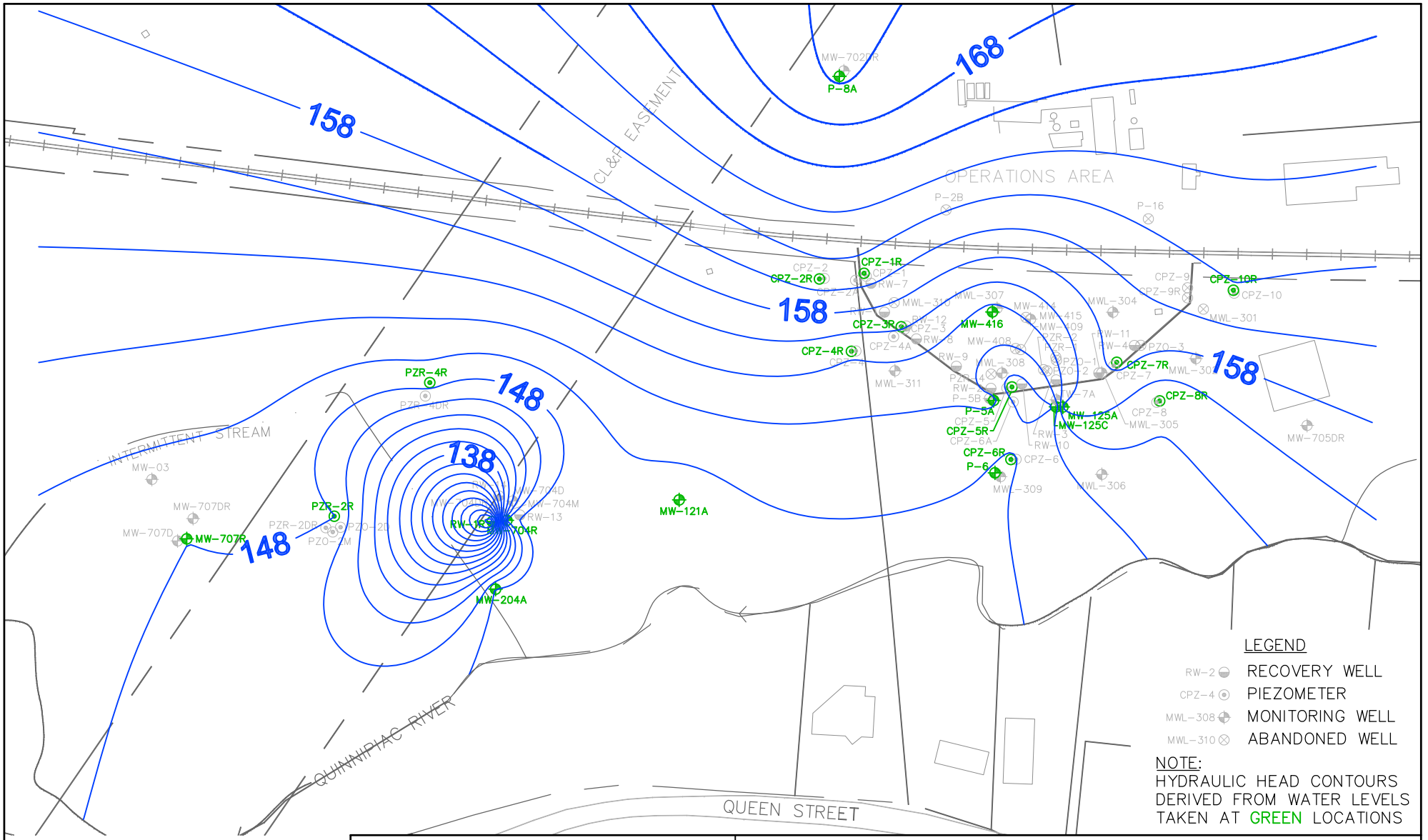

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS MARCH 28, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	APR 2011			13056.001.013
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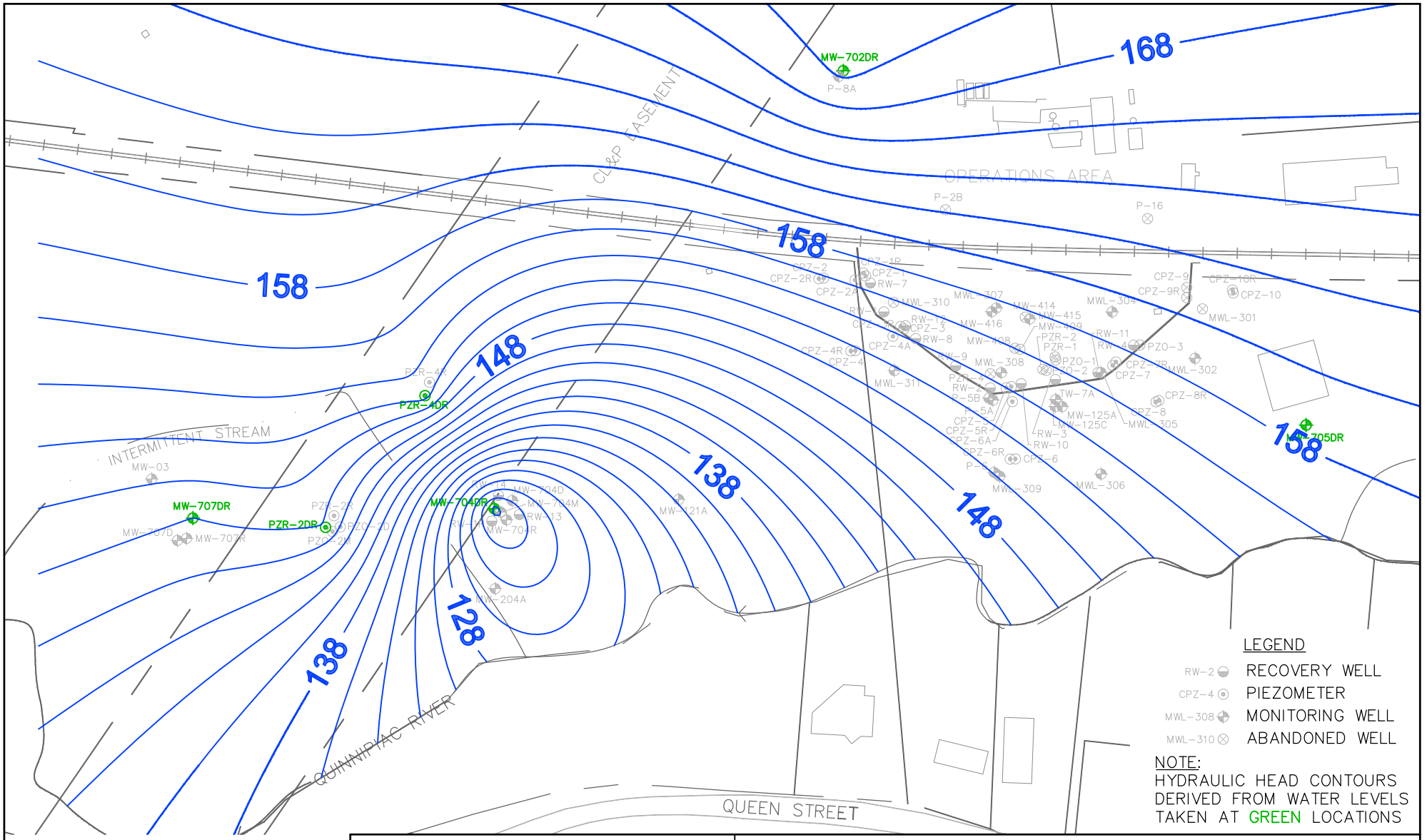

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS MARCH 28, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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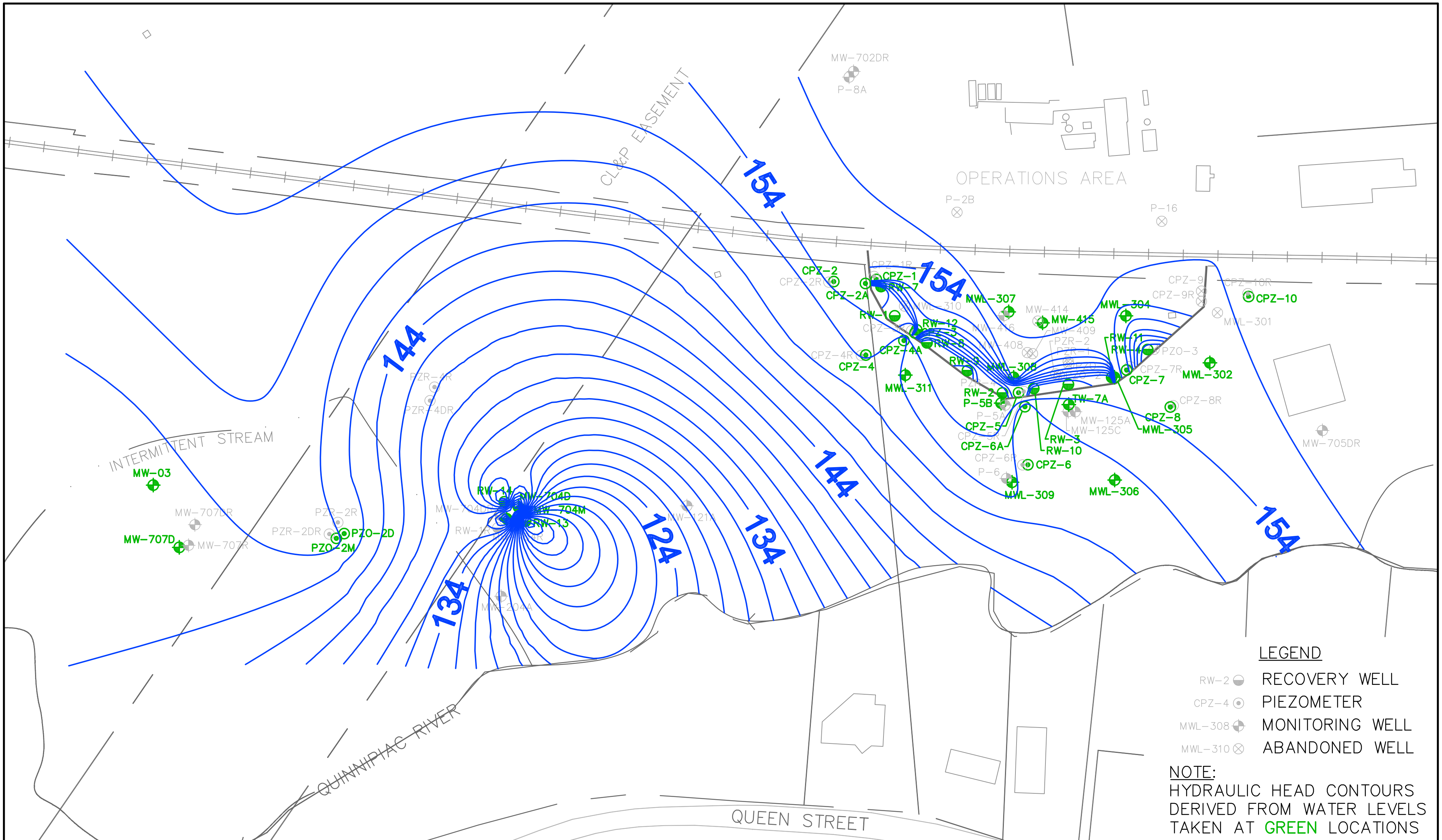

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS APRIL 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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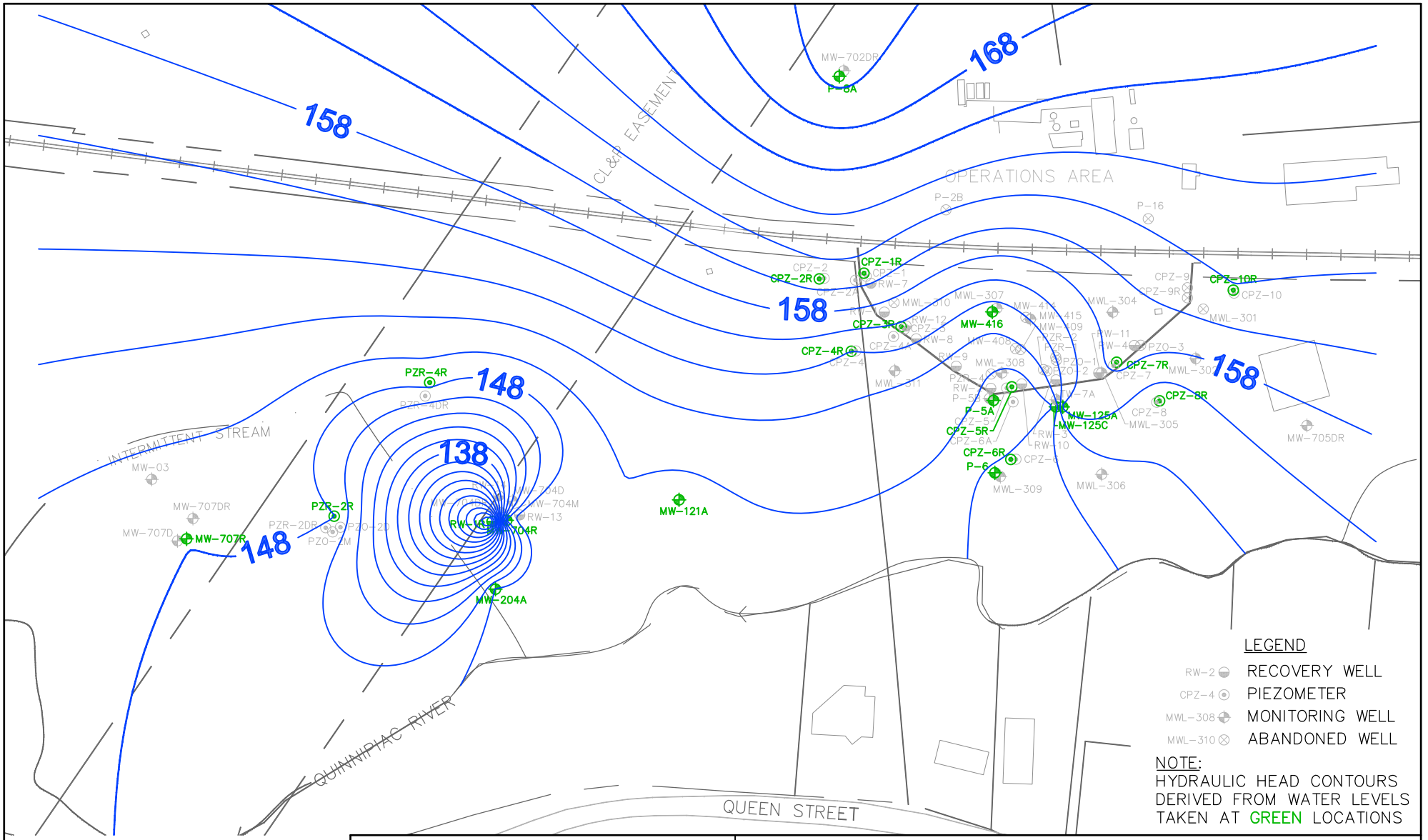

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS APRIL 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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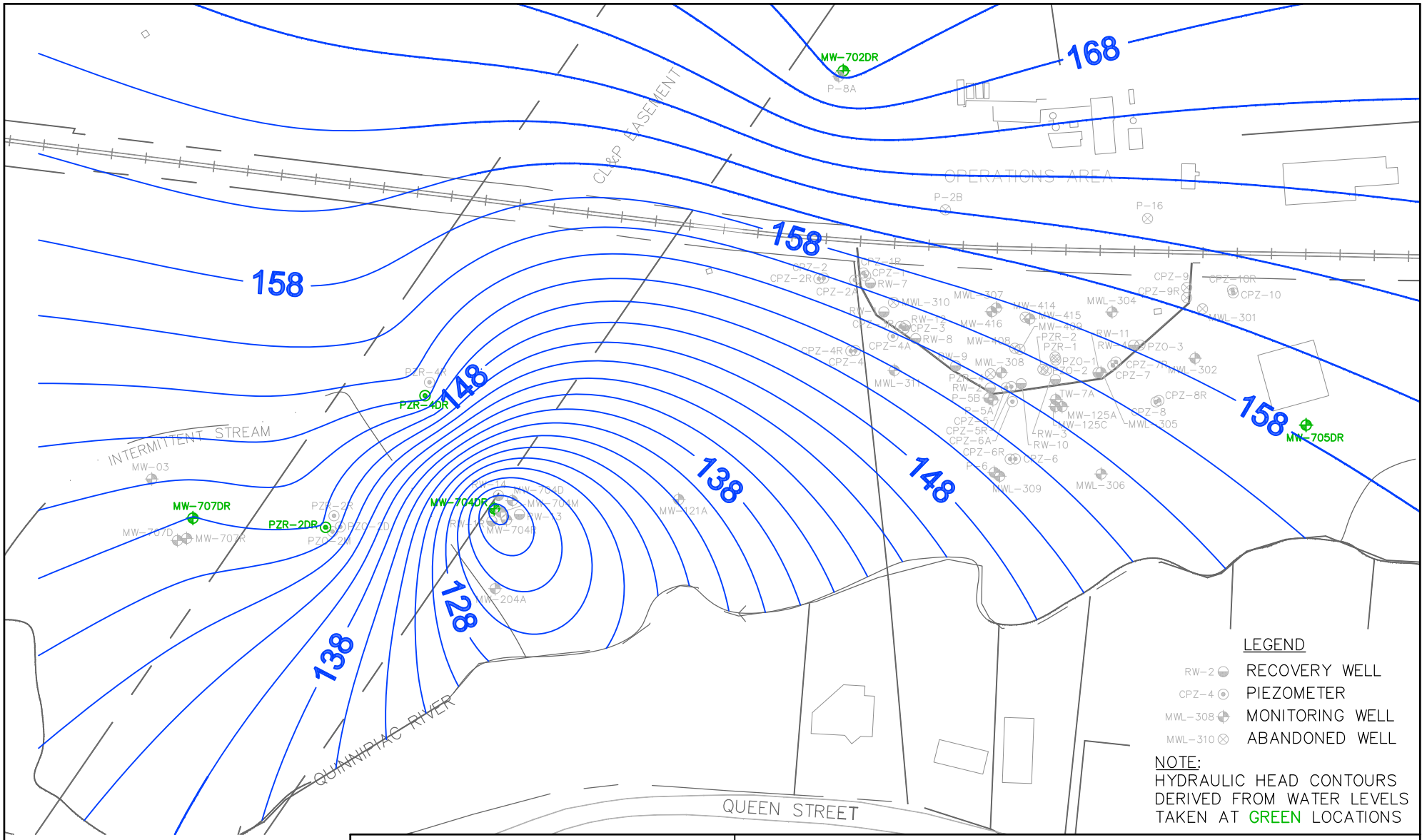

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS APRIL 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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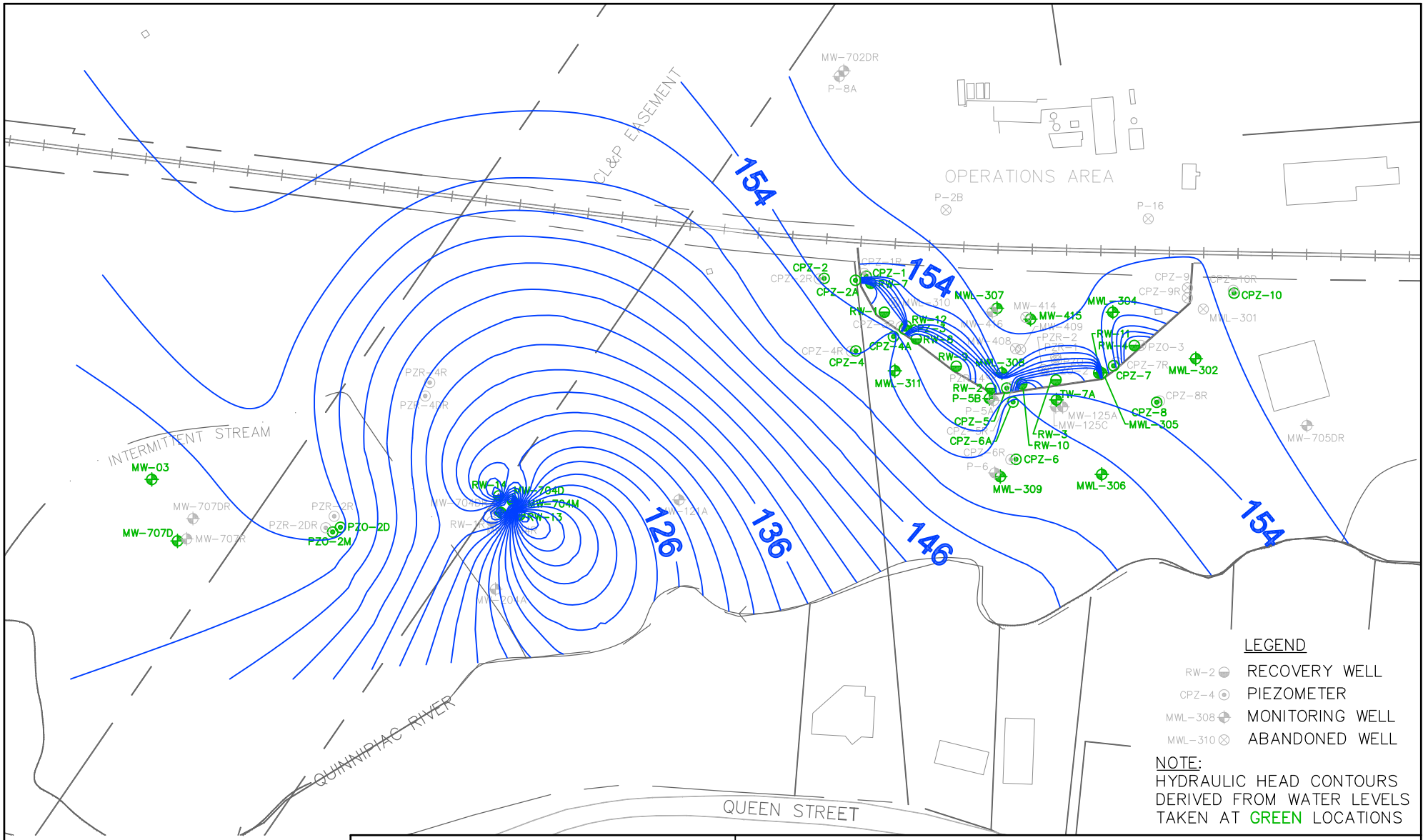

LEGEND

RW-2 RECOVERY WELL

CPZ-4 PIEZOMETER

MWL-308 MONITORING WELL

MWL-310 ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS MAY 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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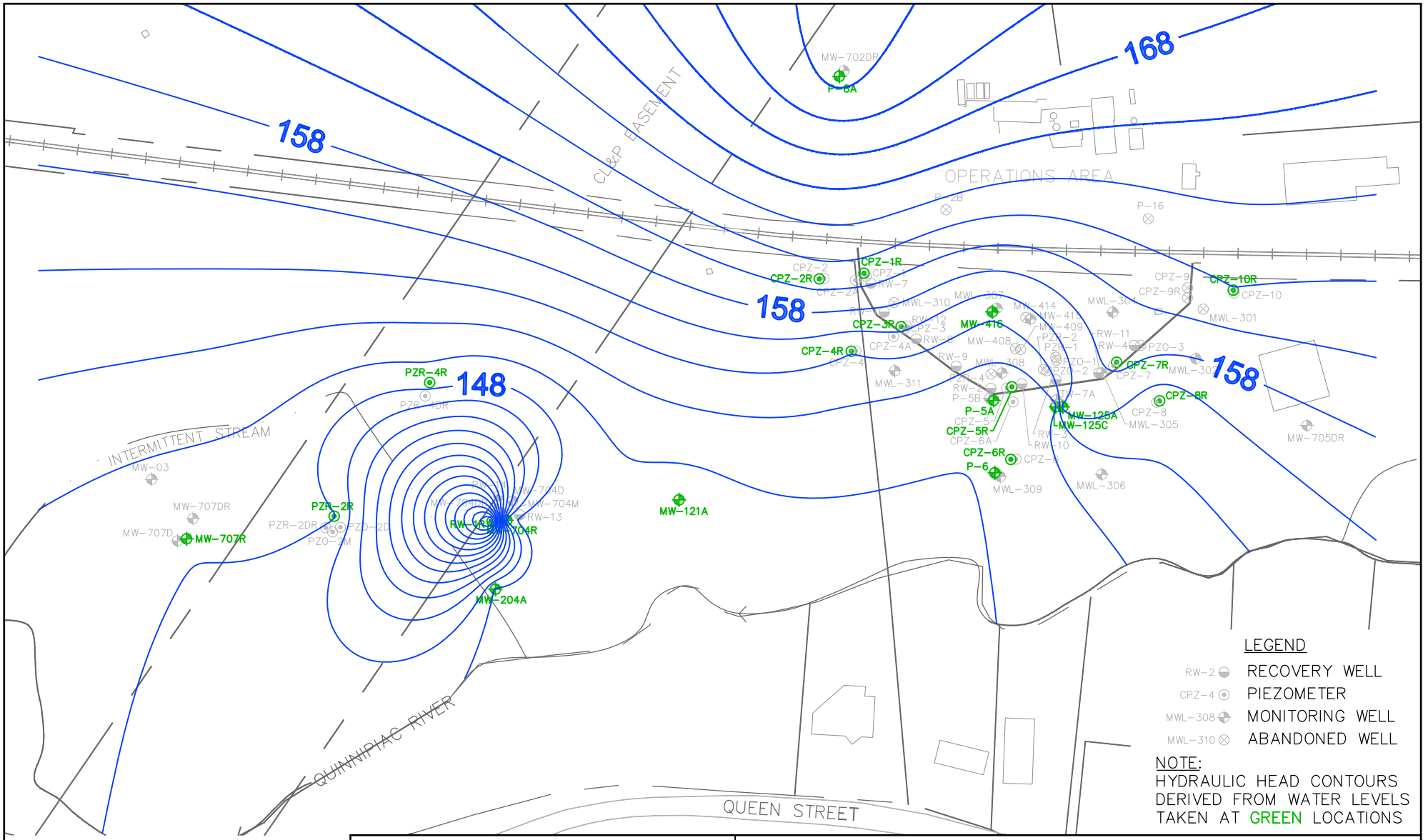

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS MAY 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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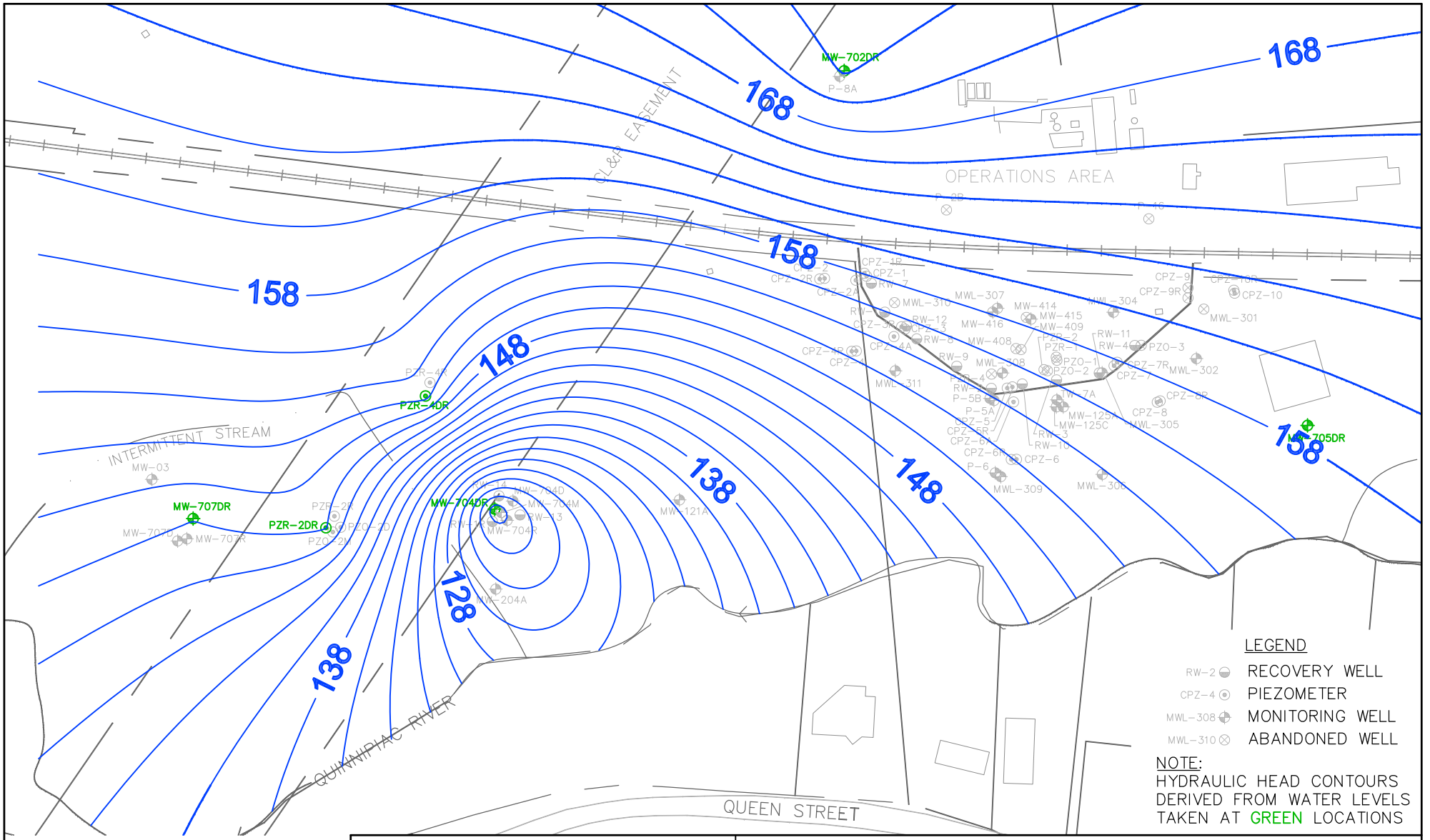

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS MAY 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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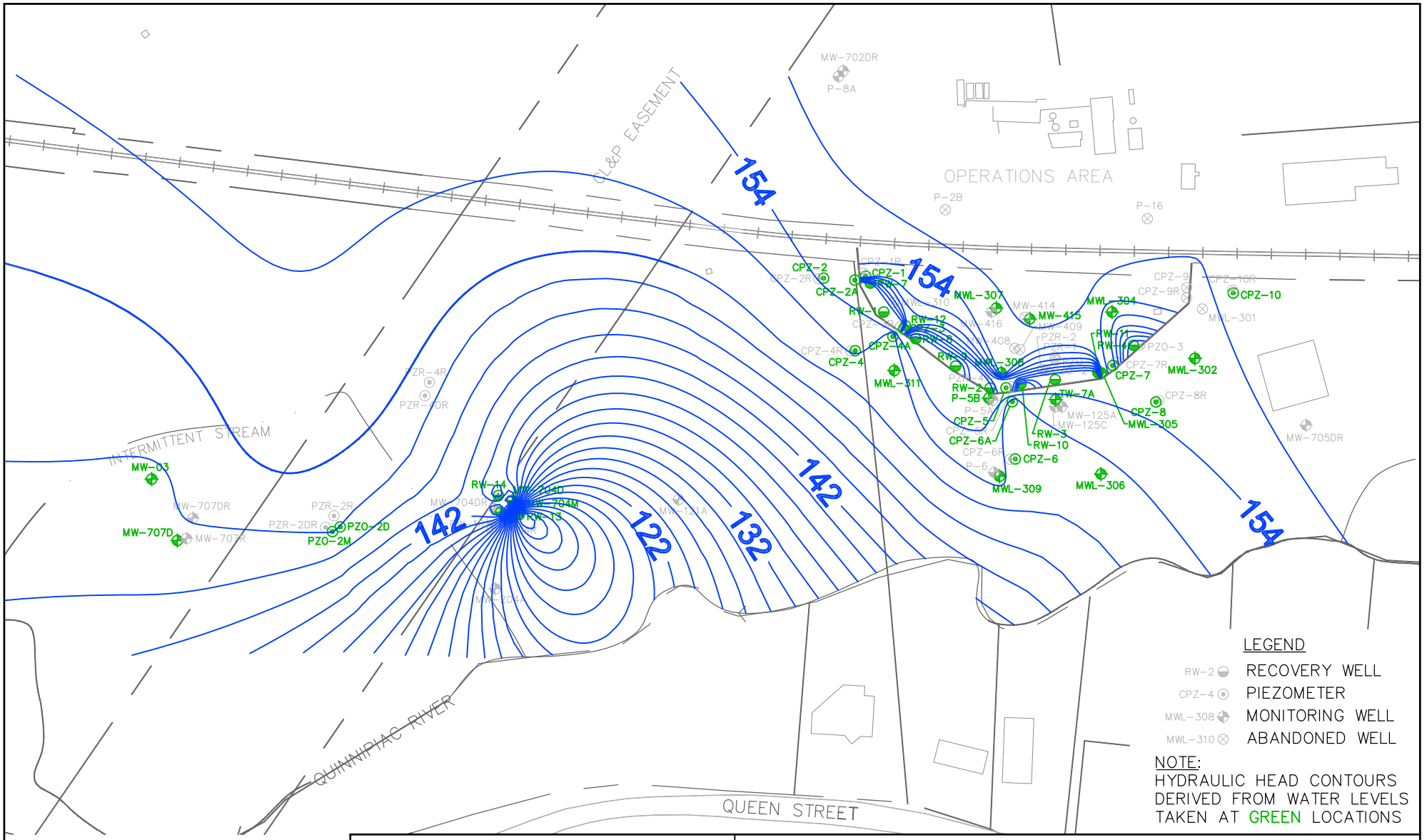

LEGEND

RW-2 RECOVERY WELL

CPZ-4 PIEZOMETER

MWL-308 MONITORING WELL

MWL-310 ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS JUNE 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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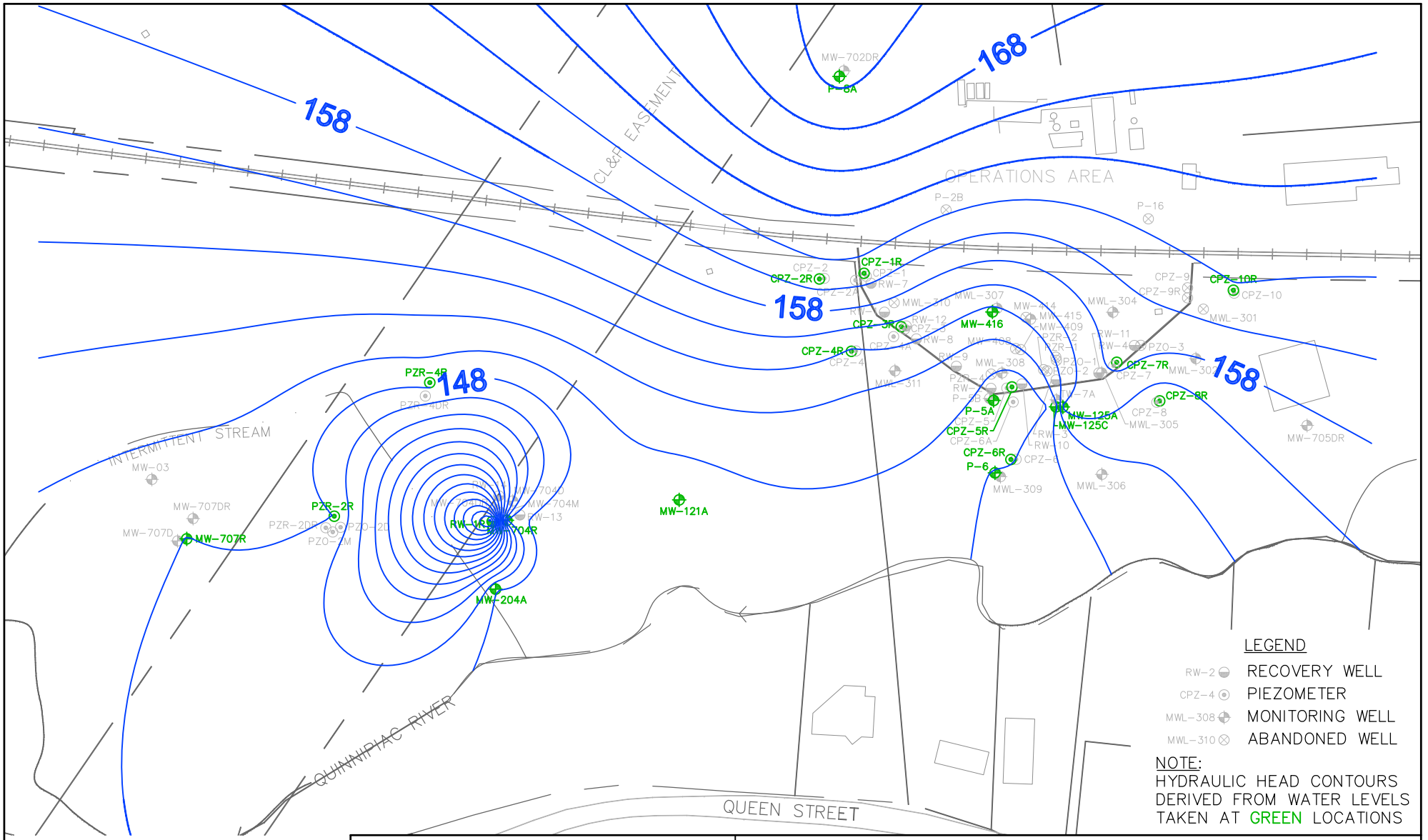

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS JUNE 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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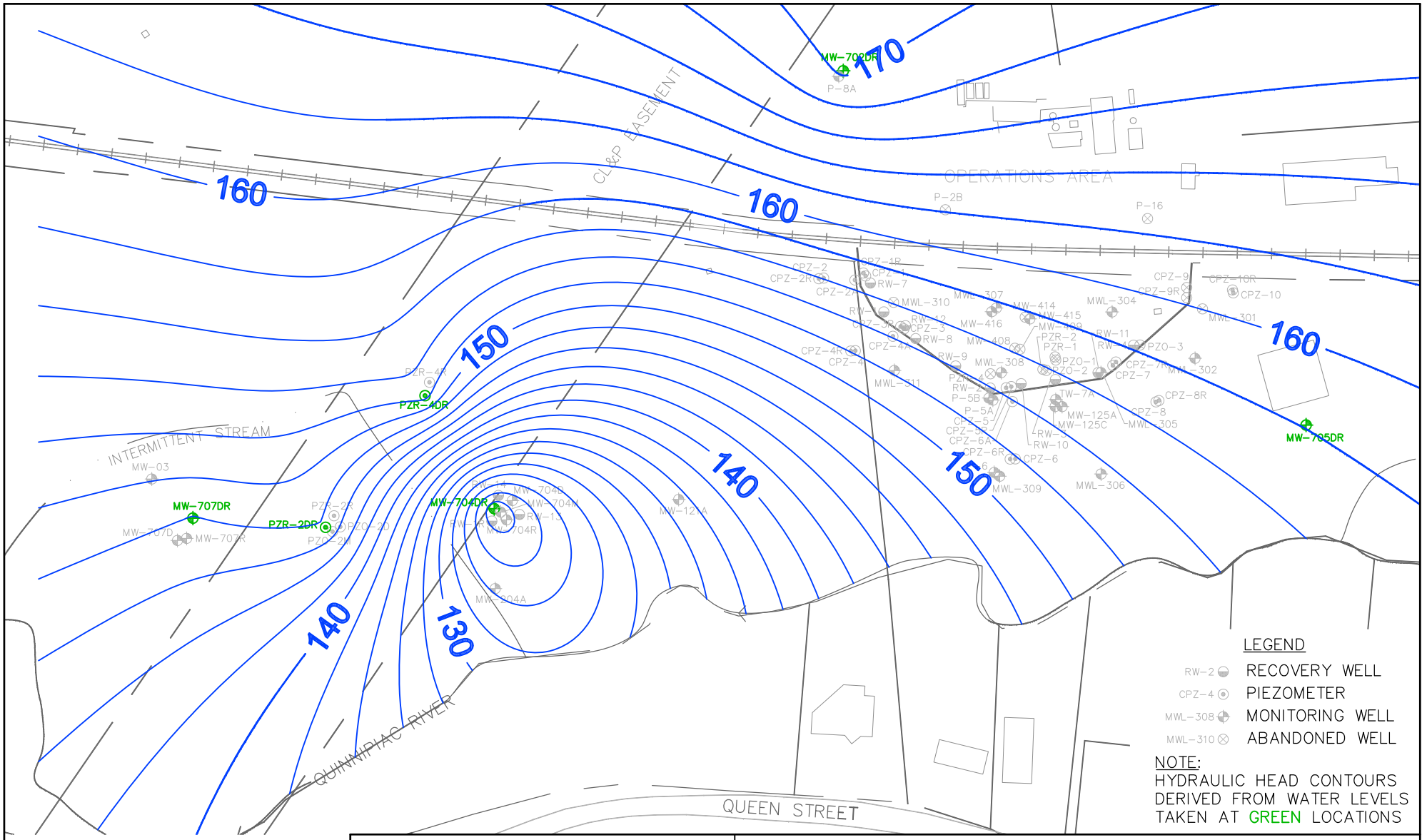

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS JUNE 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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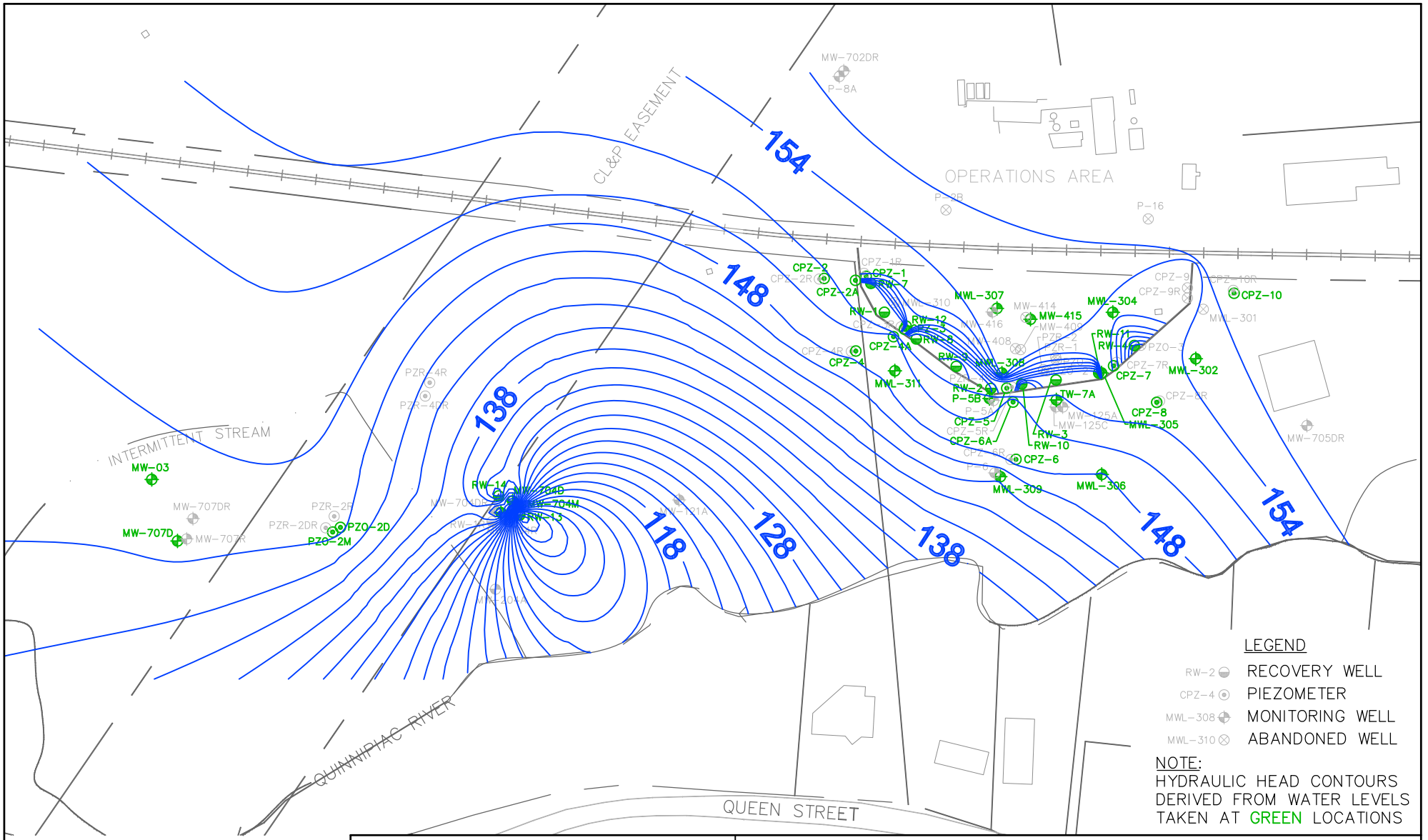

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS JULY 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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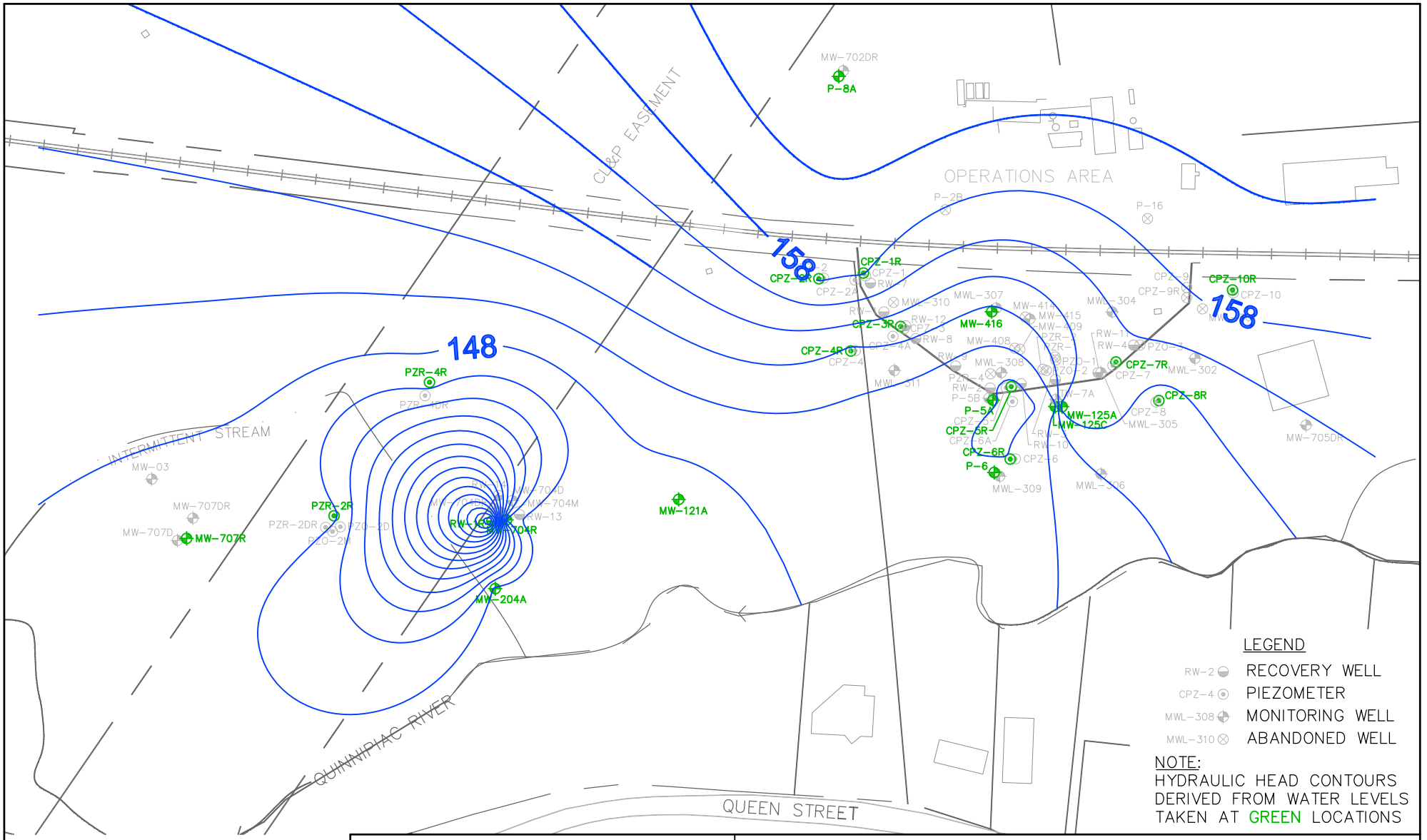

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS JULY 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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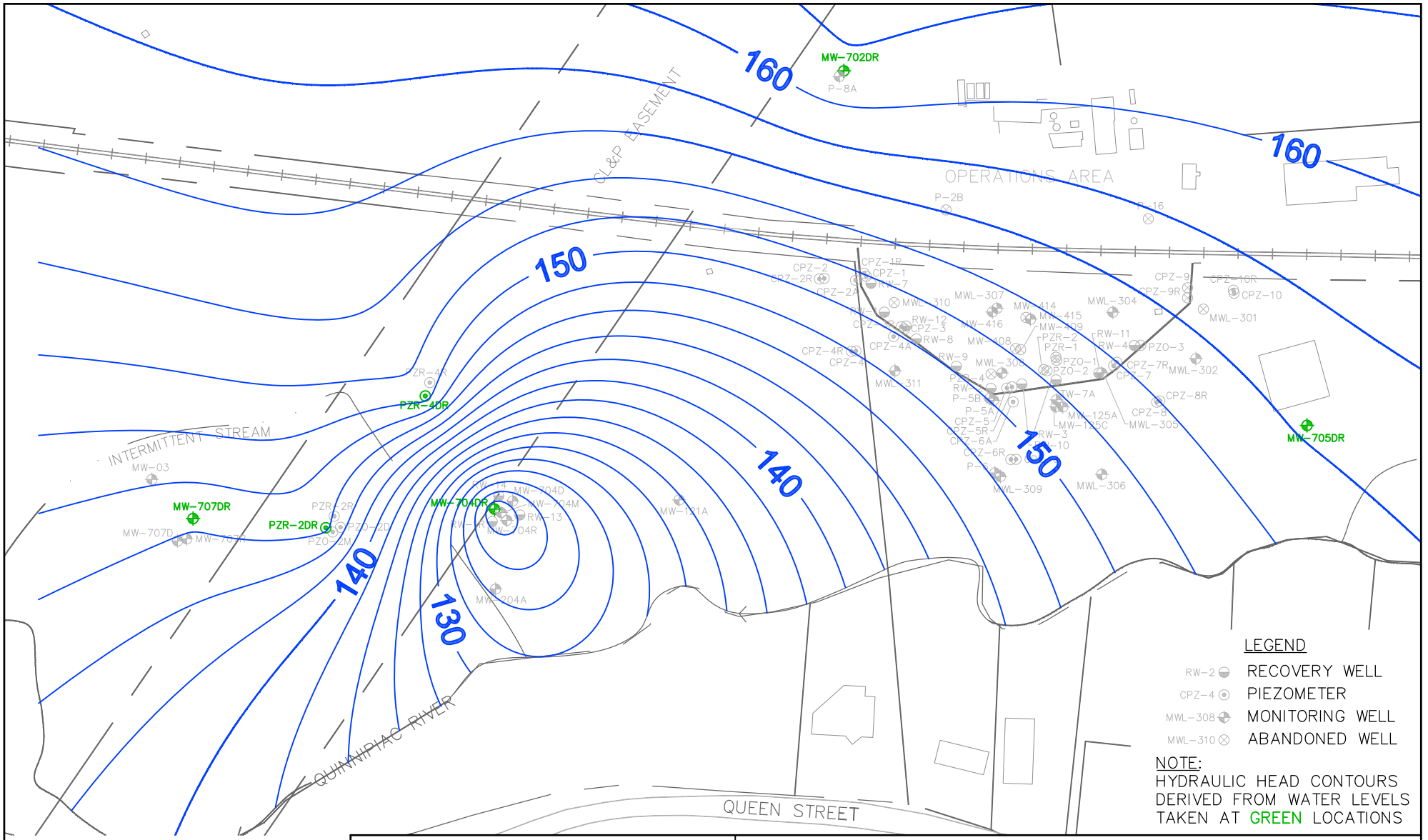

LEGEND

RW-2 RECOVERY WELL

CPZ-4 PIEZOMETER

MWL-308 MONITORING WELL

MWL-310 ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS JULY 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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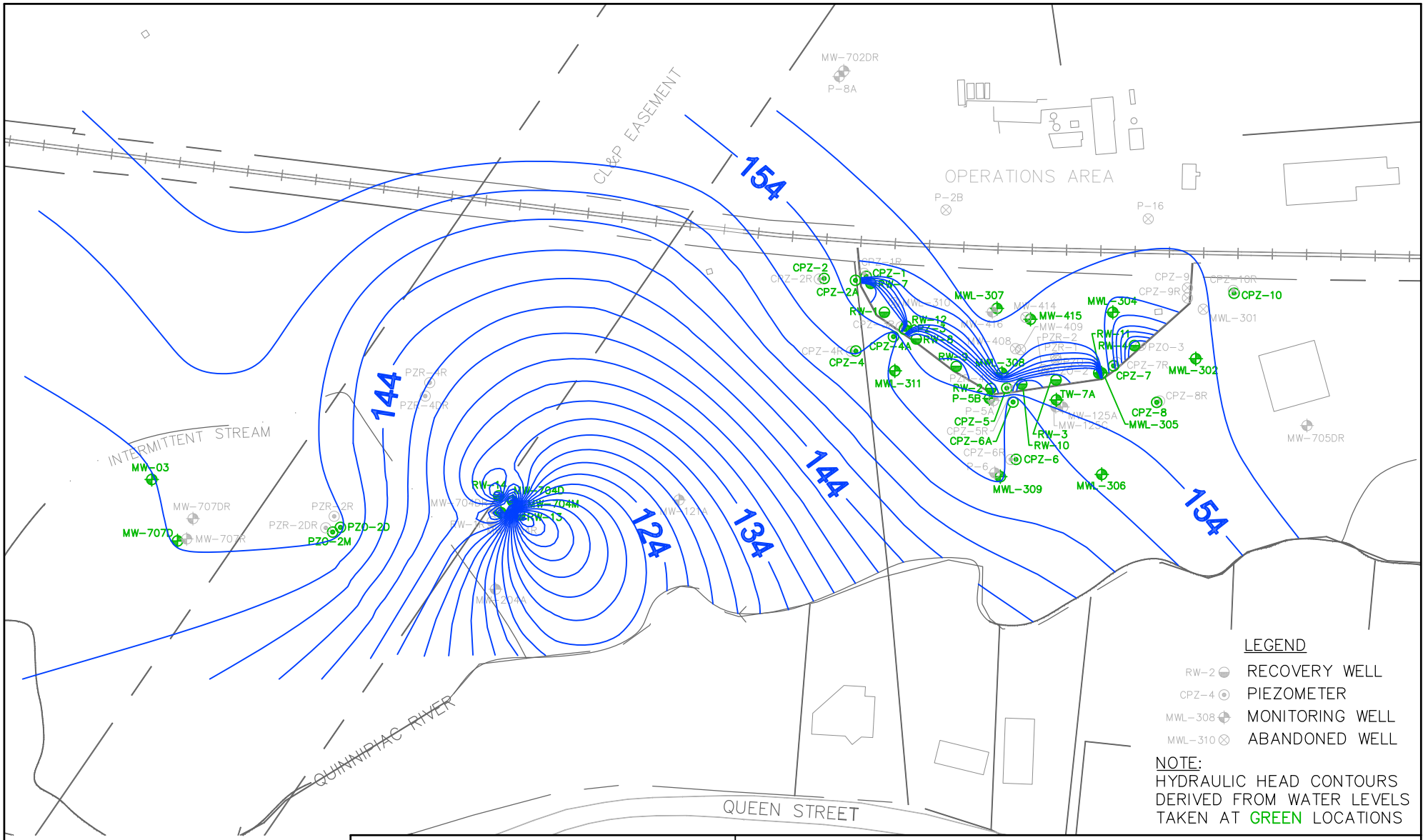

GRAPHIC SCALE

200 100 0 100 200

APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS AUGUST 31, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
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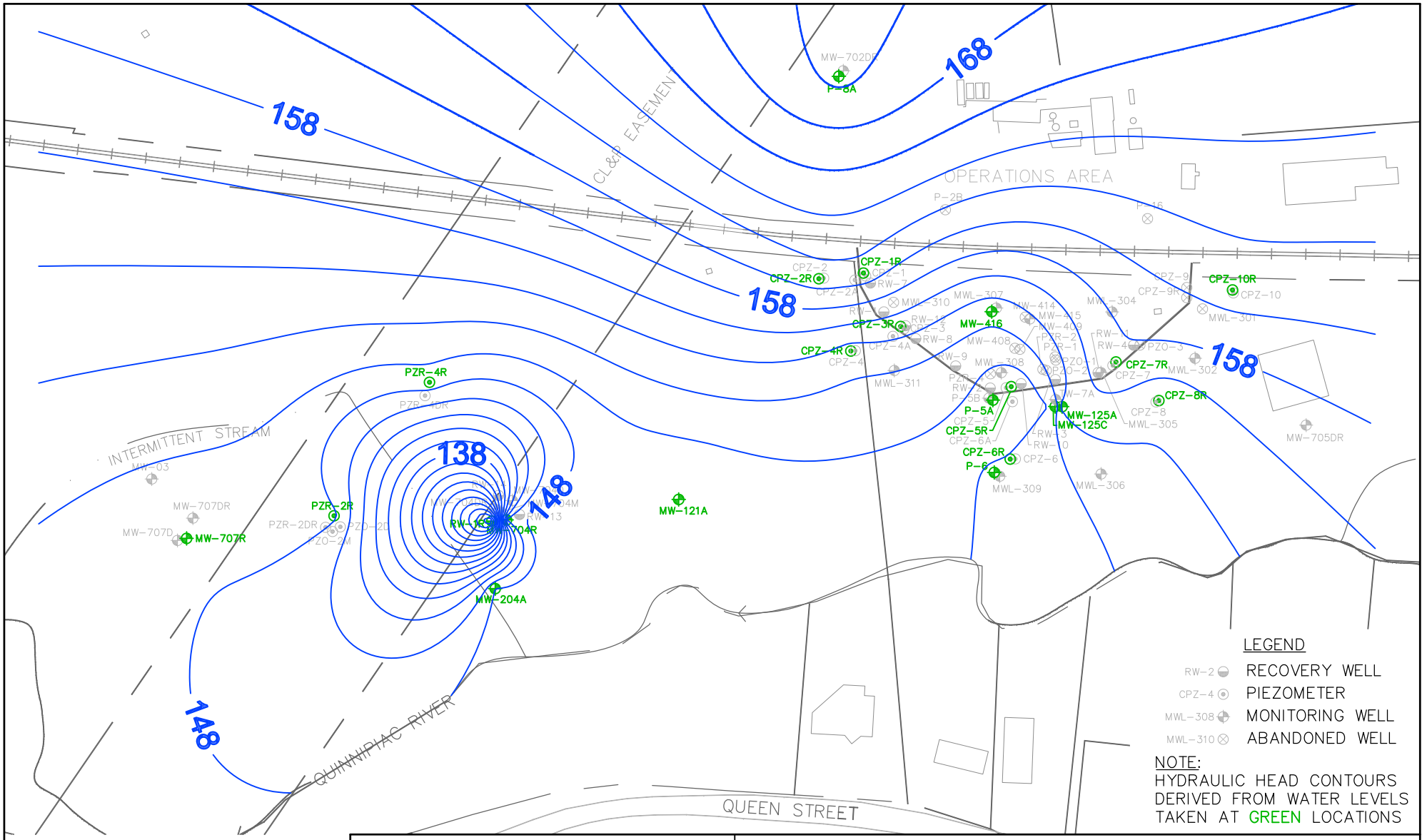

GRAPHIC SCALE

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APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS AUGUST 31, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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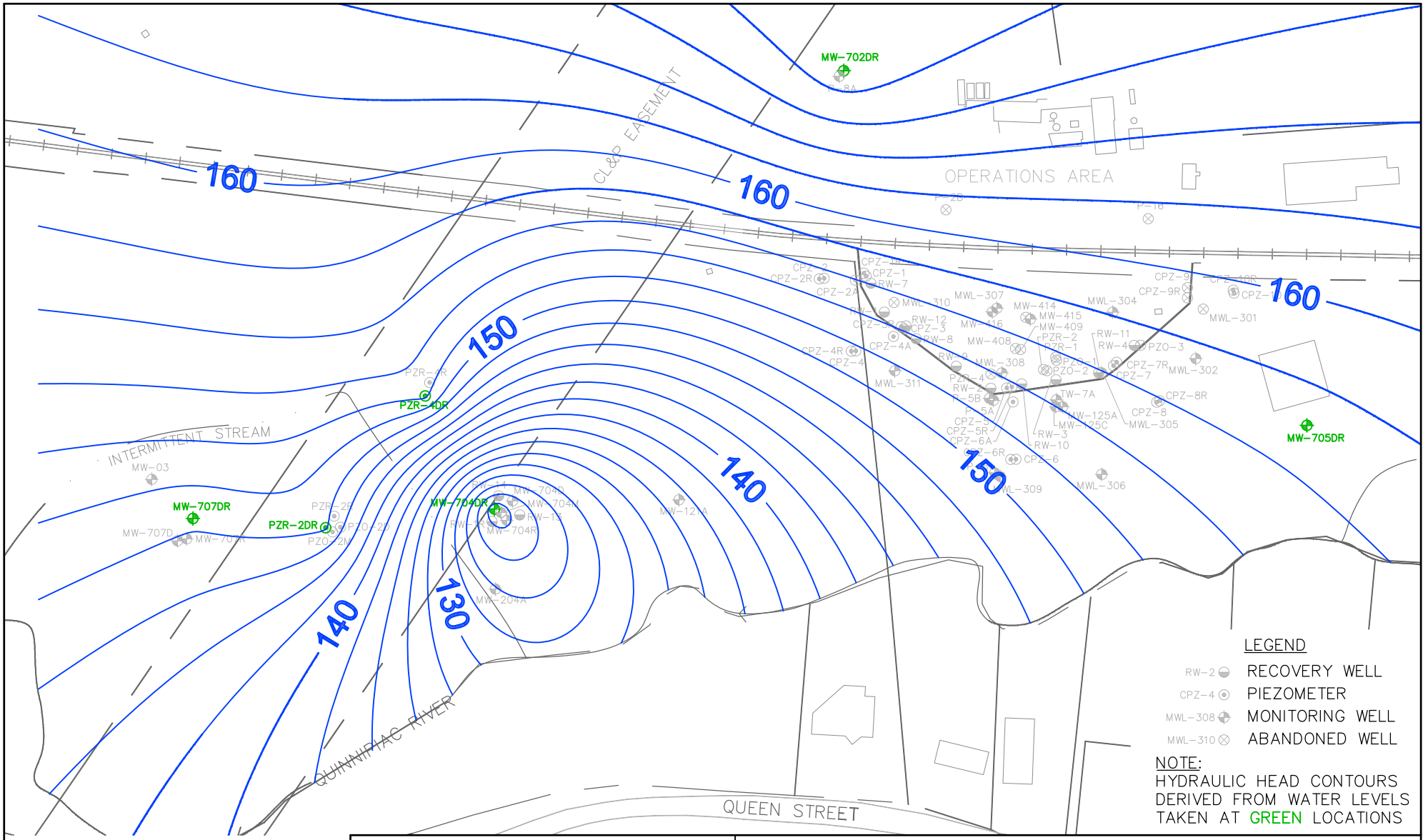

GRAPHIC SCALE

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APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS AUGUST 31, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	SEP 2011			13056.001.013
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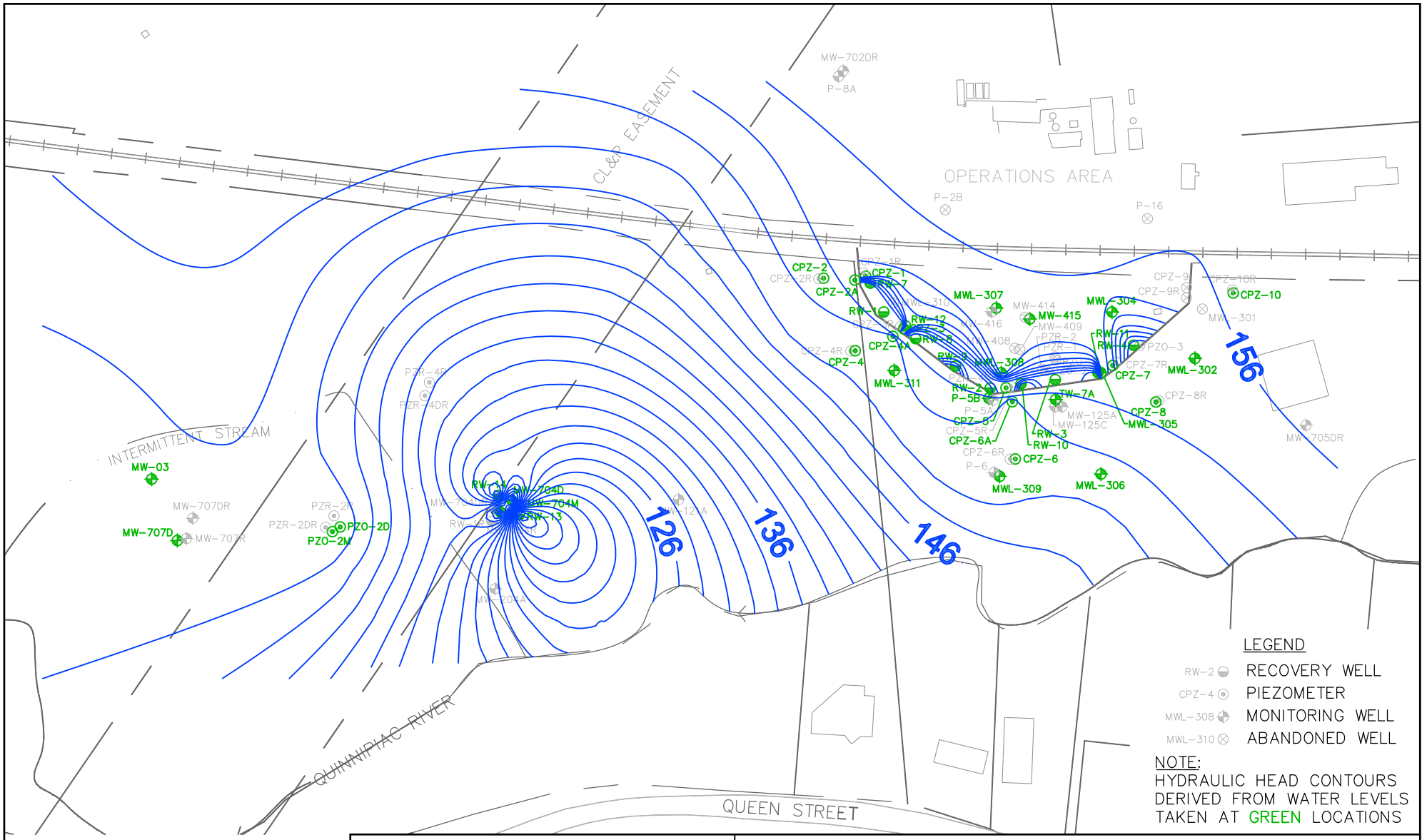

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APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS SEPTEMBER 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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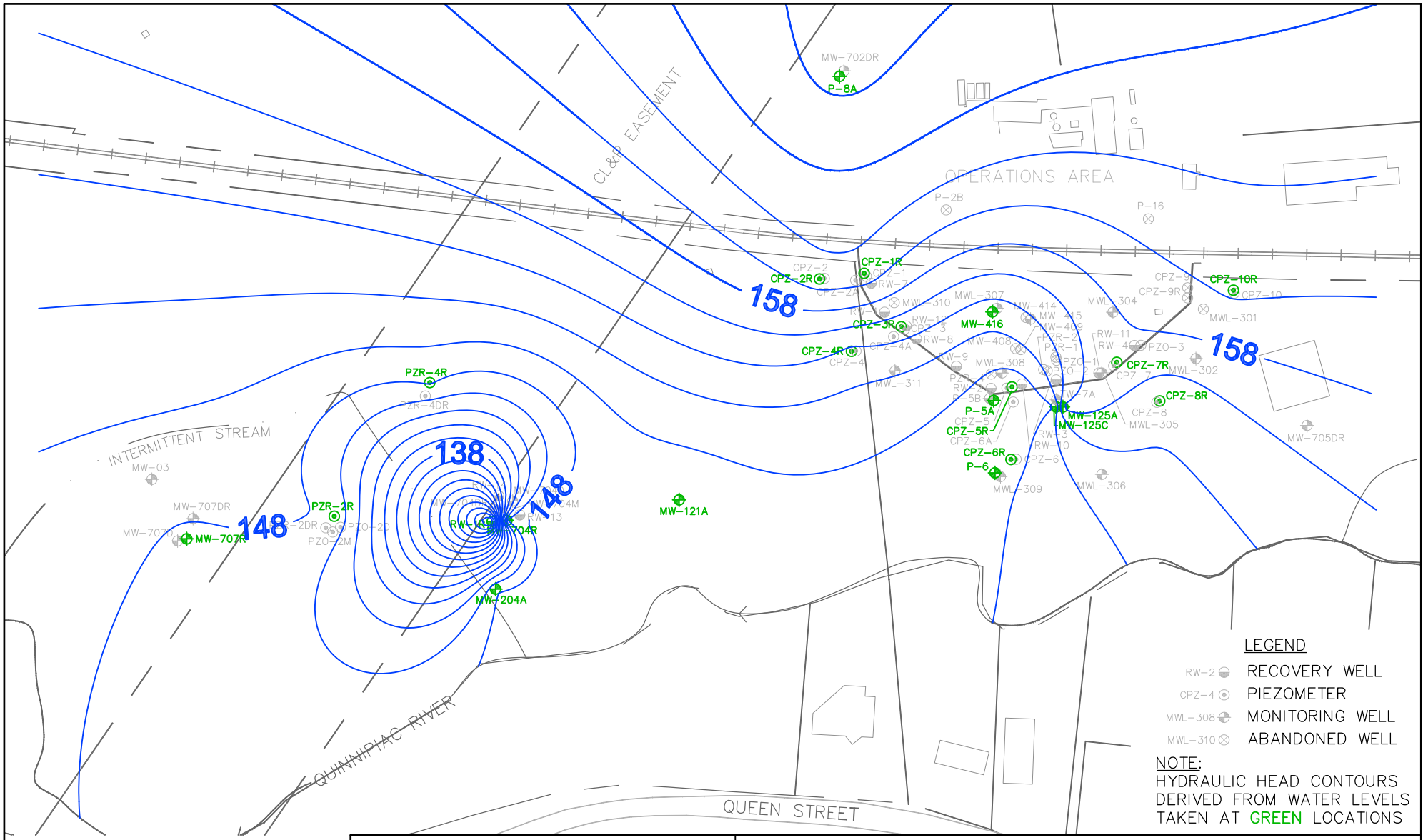

LEGEND

- RW-2 RECOVERY WELL
- CPZ-4 PIEZOMETER
- MWL-308 MONITORING WELL
- MWL-310 ABANDONED WELL

NOTE:
HYDRAULIC HEAD CONTOURS DERIVED FROM WATER LEVELS TAKEN AT GREEN LOCATIONS

GRAPHIC SCALE
200 100 0 100 200
APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS SEPTEMBER 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
BEG	OCT 2011			13056.001.013
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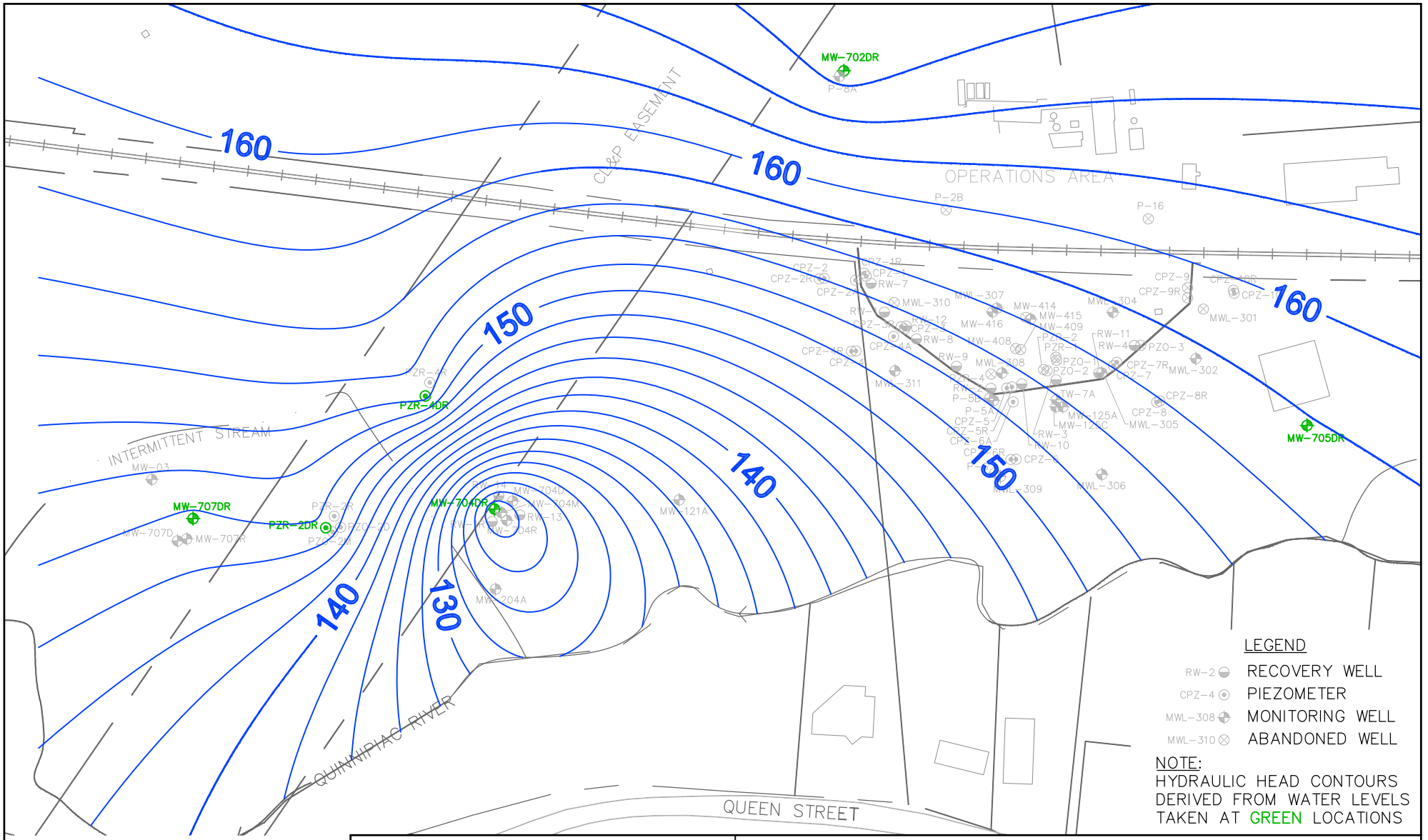

GRAPHIC SCALE

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APPROXIMATE SCALE IN FEET

DEEP BEDROCK HYDRAULIC HEAD CONTOURS SEPTEMBER 27, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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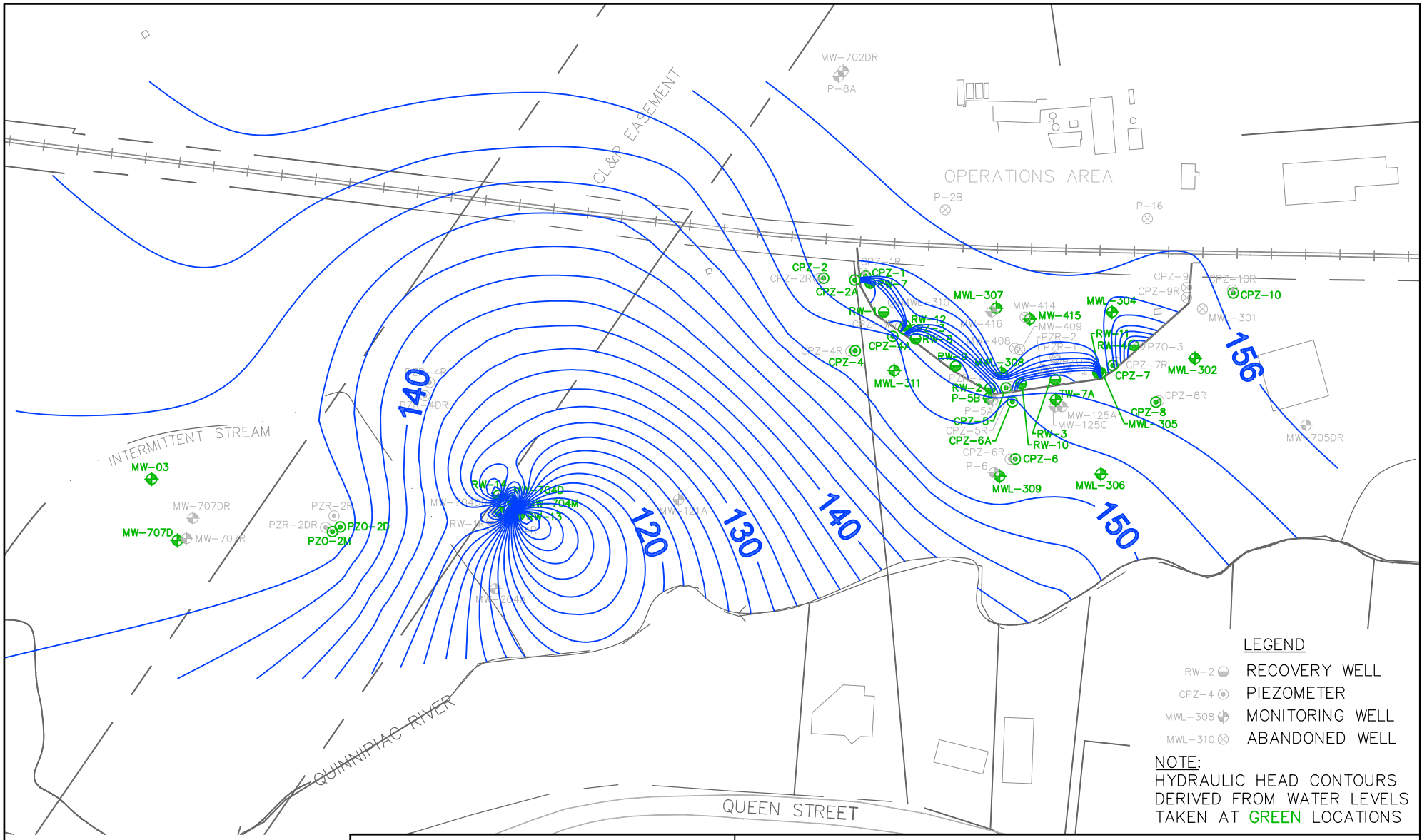

GRAPHIC SCALE

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APPROXIMATE SCALE IN FEET

OVERBURDEN HYDRAULIC HEAD CONTOURS OCTOBER 25, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

CONCORD NEW HAMPSHIRE

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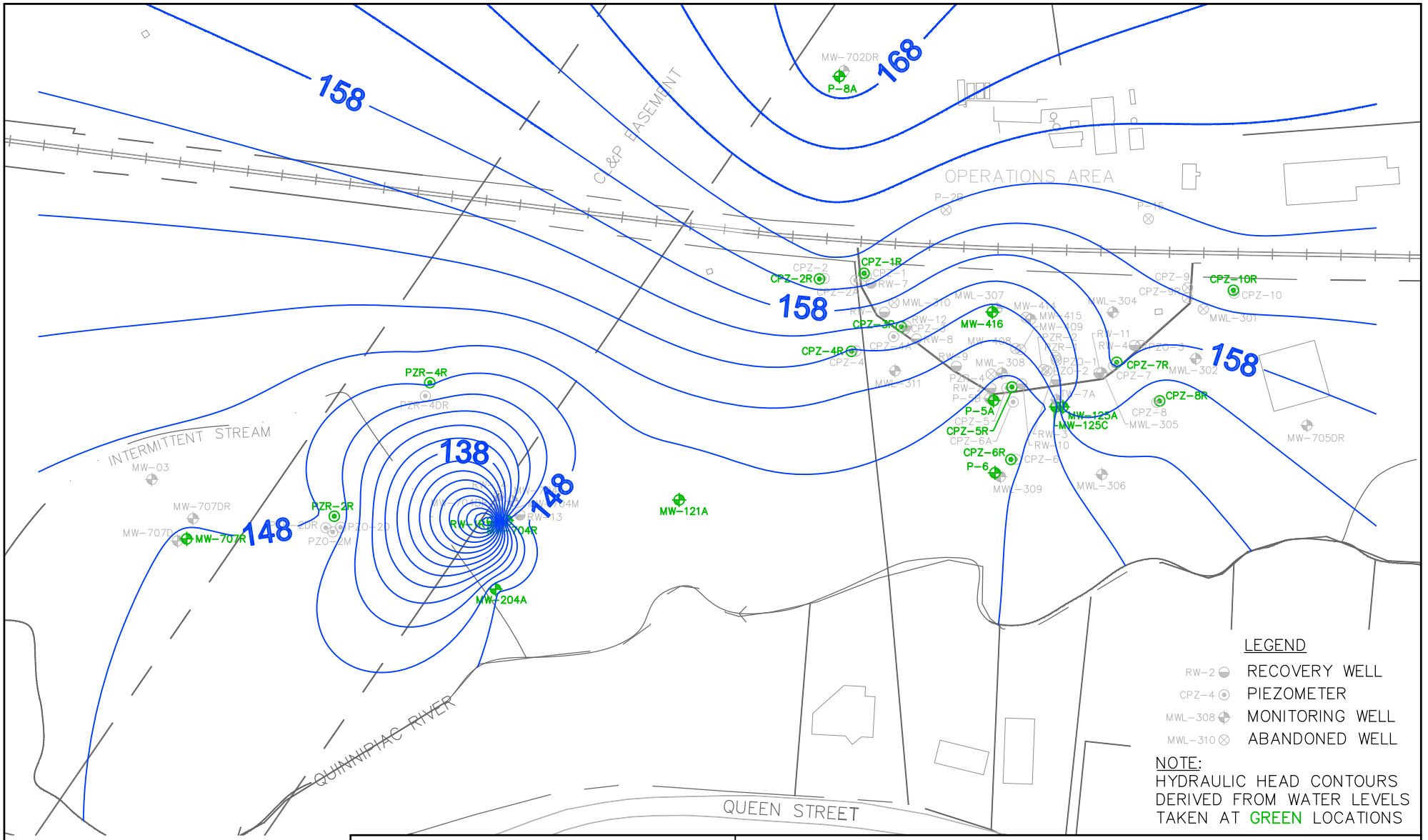

GRAPHIC SCALE

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APPROXIMATE SCALE IN FEET

SHALLOW BEDROCK HYDRAULIC HEAD CONTOURS OCTOBER 25, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

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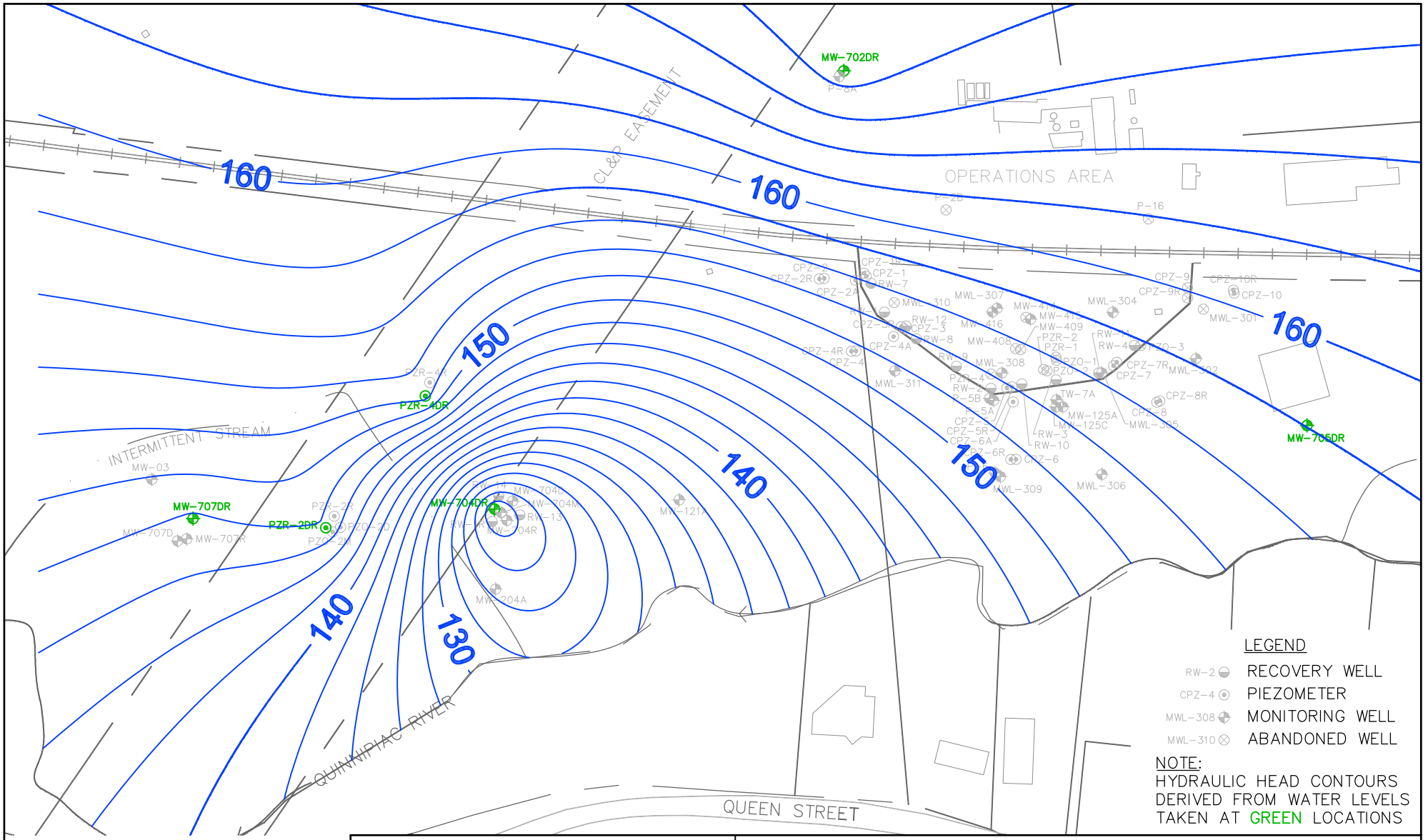

DEEP BEDROCK HYDRAULIC HEAD CONTOURS OCTOBER 25, 2011

SRSNE
SOUTHINGTON, CONNECTICUT

WESTON SOLUTIONS
CONCORD NEW HAMPSHIRE

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FIGURE 13

31 Oct. 2010 through 30 Oct. 2011

Hydraulic Gradient Between CPZ-05 and CPZ-06
NTCRA-1 Overburdern Compliance Pair

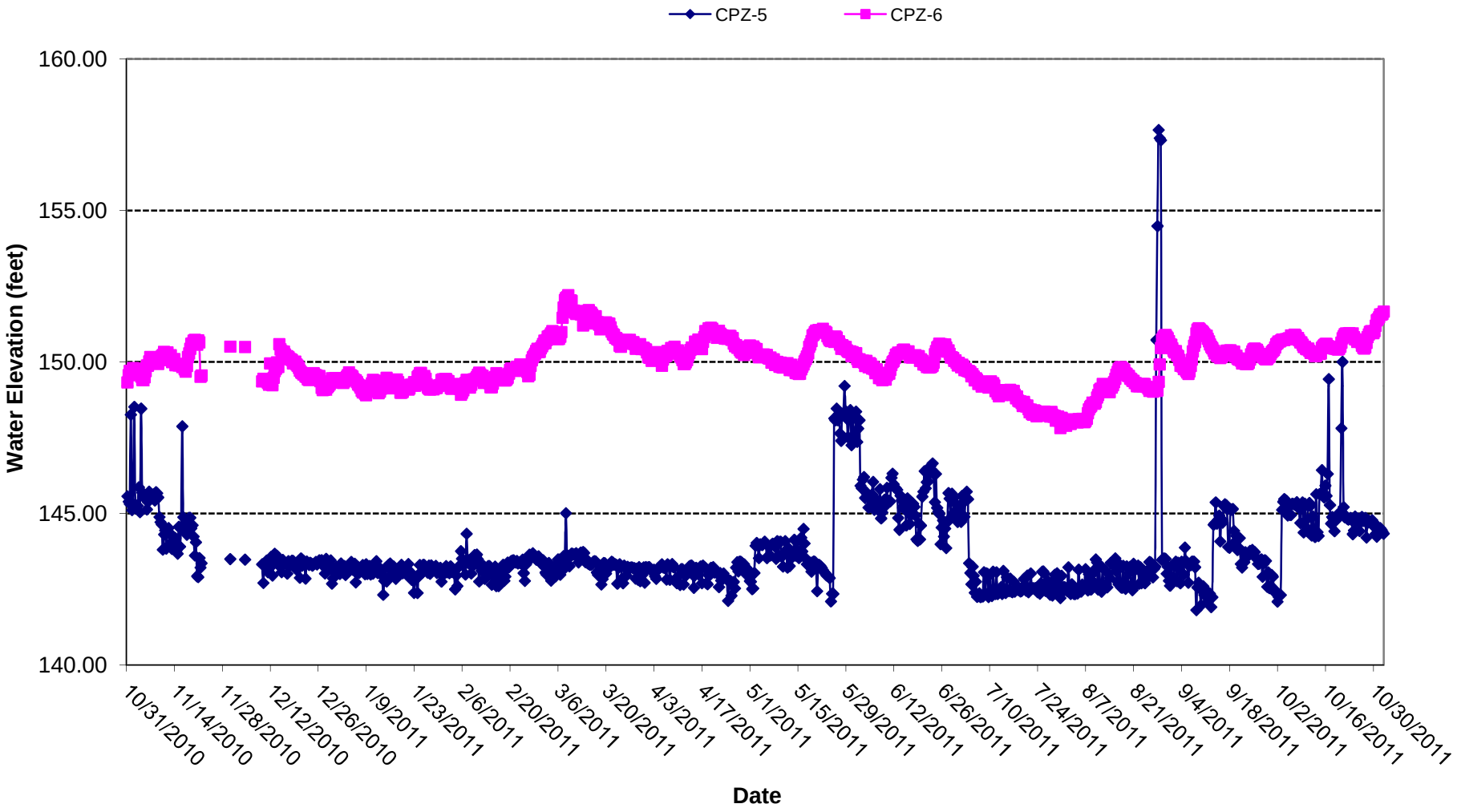


FIGURE 14A

31 Oct. 2010 through 30 Oct. 2011

Hydraulic Gradient Between MW-704R and PZR-2R
NTCRA-2 Shallow Bedrock Compliance Pair

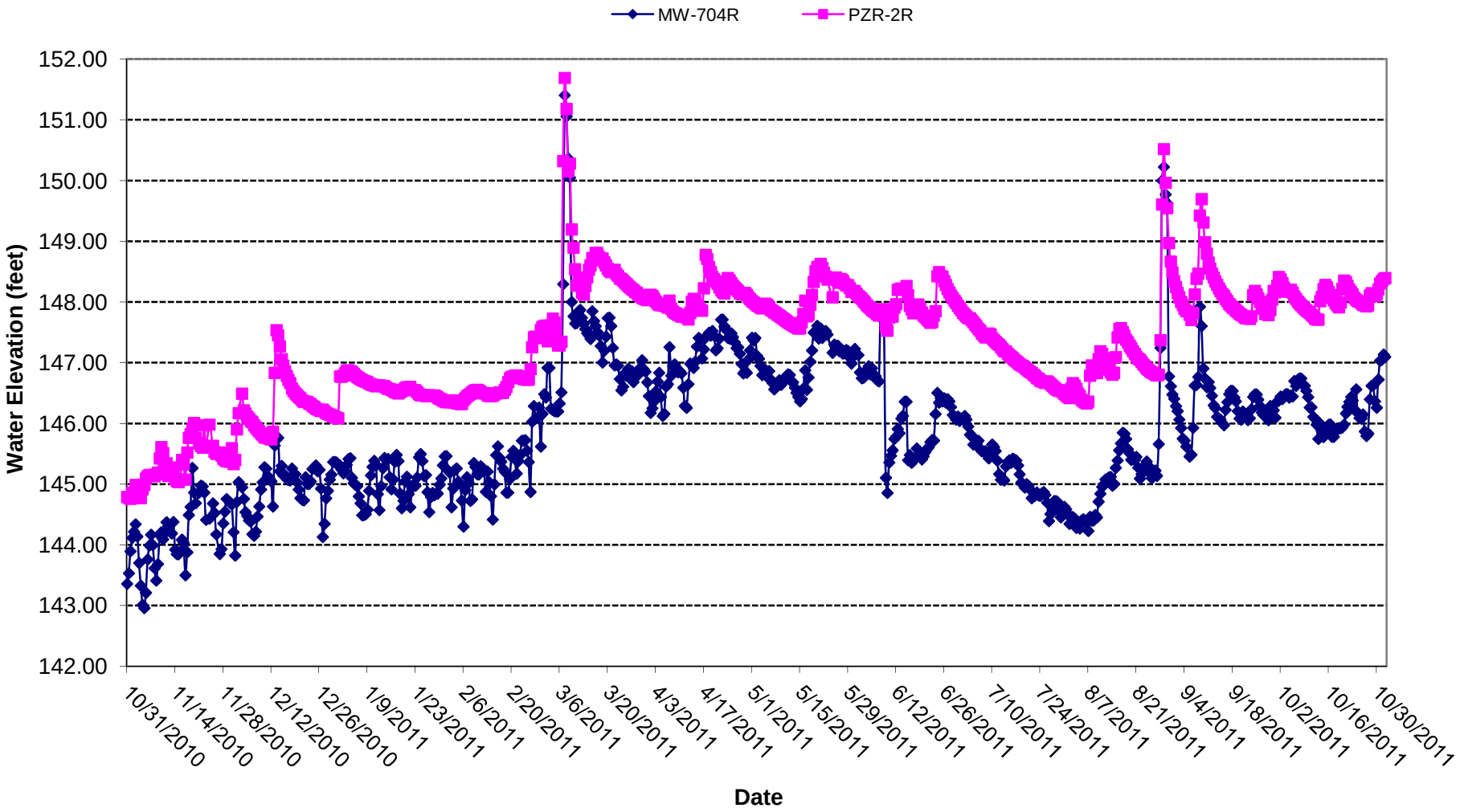
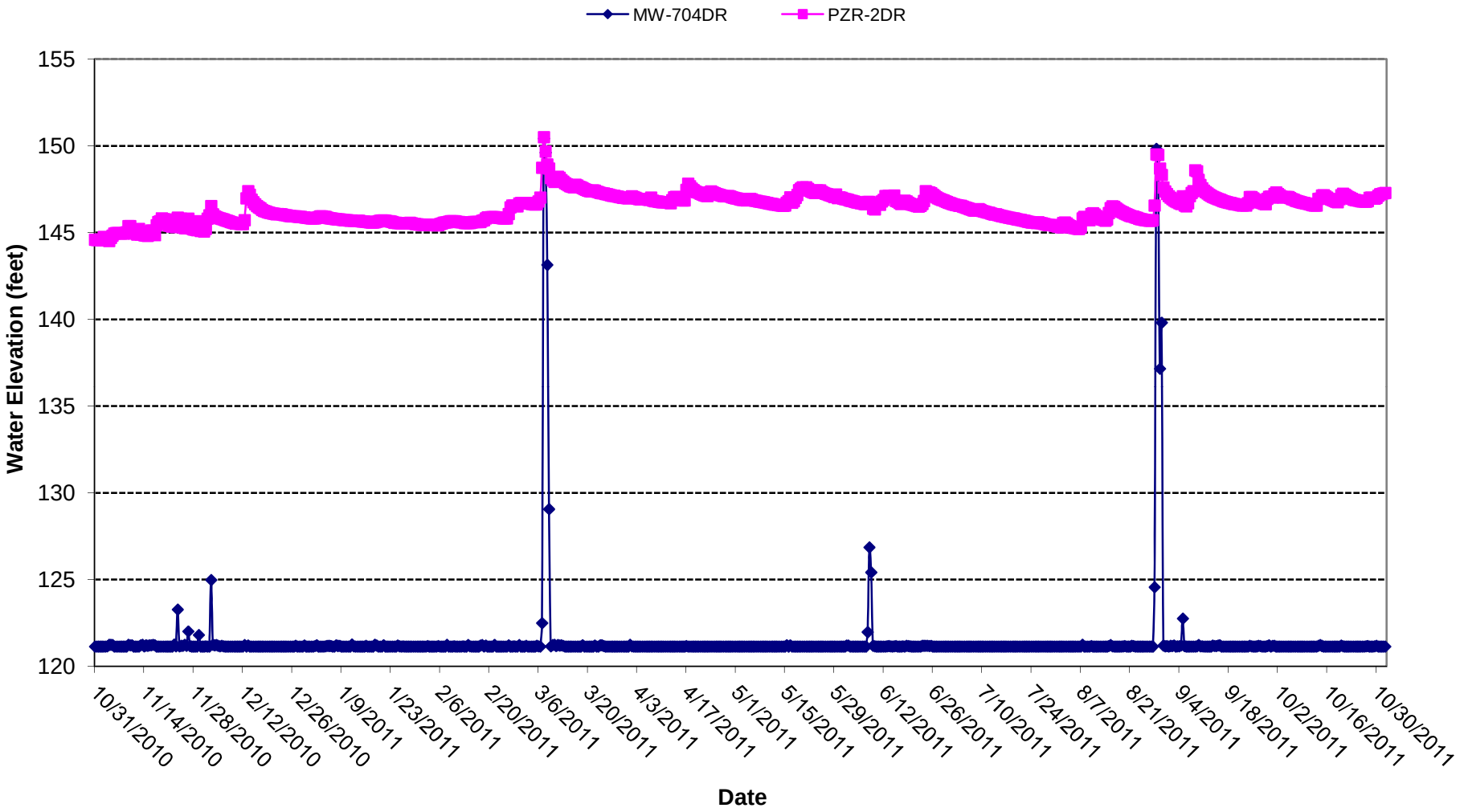


FIGURE 14B

31 Oct. 2010 through 30 Oct. 2011

Hydraulic Gradient Between MW-704DR and PZR-2DR
NTCRA-2 Deep Bedrock Compliance Pair



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SRSNE Site Group

2011 Groundwater Sampling and Monitored Natural Attenuation Report

Solvents Recovery Service of New England, Inc.
(SRSNE) Superfund Site
Southington, Connecticut

November 2011

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Disclaimer: *This document is a DRAFT document prepared by the Settling Defendants under a government Consent Decree. This document has not undergone formal review by the EPA and CT DEEP. The opinions, findings, and conclusions, expressed are those of the author and not those of the U.S. Environmental Protection Agency or the CT Department of Energy and Environmental Protection.*

2011 Groundwater Sampling and Monitored Natural Attenuation Report

Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Prepared for:
SRSNE Site Group

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Our Ref.:
B0054634.0000.02200

Date:
November 2011

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Executive Summary

This *2011 Groundwater Sampling and Monitored Natural Attenuation Report* (MNA Report) has been prepared to address certain requirements of the Statement of Work (SOW) for the Remedial Design/Remedial Action (RD/RA) activities at the Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site in Southington, Connecticut (Site). Specifically, this report summarizes the 2011 groundwater sampling event performed in accordance with the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Work Plan; Attachment N to the Remedial Design Work Plan [RDWP]; ARCADIS 2010), and presents the results and interpretation of data collected in support of MNA as a remedy for groundwater that contains Site-related constituents of concern (COCs) at concentrations exceeding acceptable risk levels or regulatory limits. Monitored natural attenuation is a component of the overall remedial strategy for Site groundwater as set forth in the United States Environmental Protection Agency's (USEPA's) 2005 Record of Decision (ROD) for the Site.

In accordance with the Work Plan, the 2011 annual groundwater sampling event was performed in May 2011 and included sampling of groundwater at 33 monitoring wells. Having been sampled for the full suite of potential site-related constituents in 2010 as part of the "comprehensive" event, the analytical suite for these wells in 2011 included only volatile organic compounds (VOCs), target analyte list (TAL) metals, and/or MNA parameters, as indicated in the Work Plan. Results indicate that:

- VOCs above USEPA Maximum Contaminant Levels (MCLs) or Connecticut Class GA Groundwater Protection Criteria (GWPC) are generally contained within the previously estimated containment boundary of the hydraulic containment and treatment system (HCTS). The exception is in monitoring well MW-707DR, a deep bedrock well located just beyond the southern extent of the capture zone boundary. Benzene was detected at a concentration of 2.5 micrograms per liter (μg/L) in the May 2011 sample, which is above the Action Level (the more stringent of the MCL or GWPC criteria) of 1.0 μg/L. This well was re-sampled in September 2011 to confirm this result; benzene was detected at a concentration of 0.67 μg/L, which is below the Action Level. Future additional sampling will provide a basis to assess groundwater quality trends at this well.

- No metals (either total or dissolved) exceeded their respective MCLs or GWPC. In fact, neither antimony nor cadmium was detected above the laboratory reporting limit in either the 2010 or 2011 sampling events.

This MNA Report fulfills the requirement set forth in Section VII.A.2 of the SOW and the reporting approach outlined in the MNA Plan that was presented as Attachment L to the RDWP (ARCADIS 2009). This MNA Report presents results of an evaluation of the effectiveness of MNA as a remedial measure for COCs in groundwater in the Site. As an extension of the prior evaluation (presented in the 2010 MNA Report), this evaluation considers groundwater monitoring results from the May 2011 annual groundwater monitoring event for VOCs, TAL metals and MNA parameters at a subset of monitoring wells; evaluation of current concentration trends for total VOCs in groundwater at select monitoring locations; estimates of bulk attenuation rates for total VOCs in groundwater; and presentation of HCTS COC mass extraction rates with time. Results of these evaluations indicated:

- Detected concentrations of VOCs, greater than MCLs or GWPC are contained within the previously estimated containment boundary of the HCTS. The exception is in monitoring well MW-707DR, as discussed above.

- Groundwater total VOC concentrations are generally declining or remaining constant with time throughout the Site groundwater COC plume.

- Estimated bulk VOC attenuation rates were comparable to attenuation rates for individual COCs presented in the FS (Blasland, Bouck & Lee, Inc. [BBL] and USEPA 2005).

- Compliance monitoring data from the HCTS indicate generally stable COC mass extraction rates since the early 2000s.

These results support continued use of MNA as a remedy for COCs in Site groundwater.

One modification to the MNA monitoring program will be implemented based on the results of the 2010 and 2011 MNA monitoring. Namely, sulfide was originally proposed for monitoring in support of the MNA evaluations; it is not a site-related COC or used for compliance monitoring. Sulfide was not detected

in MNA-related analyses to date. Based on the highly reactive nature of sulfide and the lack of detectable concentrations of sulfide in site groundwater, along with the adequate characterization of site groundwater redox conditions using other MNA parameter data, sulfide will be removed from the MNA parameter analyte list for subsequent MNA sampling events. This recommendation was originally made in the 2010 MNA Report, and was approved by the USEPA in an email to *de maximis* dated September 15, 2011.

The proposal made in the 2010 MNA Report to eliminate monitoring for certain metals based on lack of or low detections in groundwater has been retracted based on comments provided by the USEPA on September 15, 2011. Both total (unfiltered) and dissolved (filtered) metals analyses will be performed consistent with the Work Plan. However, only total (unfiltered) metals data will be used for comparison to groundwater standards. The dissolved (filtered) data will be used to assess redox conditions as part of the MNA evaluations.

1. Introduction

1.1 Purpose

This *2011 Groundwater Sampling and Monitored Natural Attenuation Report* (MNA Report) was prepared on behalf of the SRSNE Site Group, an unincorporated association of Settling Defendants to a Consent Decree (CD), to address certain requirements of the Statement of Work (SOW) for the Remedial Design/Remedial Action (RD/RA) at the Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site in Southington, Connecticut (Site) (Figure 1). The CD was lodged on October 30, 2008 with the United States District Court for the District of Connecticut in connection with Civil Actions No. 3:08cv1509 (SRU) and No. 3:08cv1504 (WWE) and was entered by the Court on March 26, 2009.

This MNA Report presents the results and evaluation of data collected during the May 2011 annual groundwater monitoring event conducted in accordance with the Remedial Design Work Plan (RDWP) and the MNA Plan (Attachment L to the RDWP [ARCADIS 2009]), and in fulfillment of the requirements of the SOW (Sections IV.B.5.e and IV.B.5.f). It also presents the results for September 2011 resampling at one well (MW-707DR) based on the May 2011 result at this well.

Section VII.A.2 of the SOW requires the submittal of annual MNA Reports as part of the Annual State of Compliance Reports. Monitored natural attenuation is a component of the overall remedial strategy set forth for the Site in the Record of Decision (ROD) (United States Environmental Protection Agency [USEPA] 2005) for groundwater containing Site-related constituents of concern (COCs) at concentrations exceeding acceptable risk levels or regulatory limits.

1.2 Scope

In accordance with the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Work Plan; Attachment N to the RDWP [ARCADIS 2010]), the 2011 annual groundwater sampling event was performed in May 2011 and included sampling of groundwater from 23 “R”, 5 “M”, 3 “B” and 2 “N”-designated monitoring wells. As further described in Section 2.1, the letter designations generally pertain to the locations of monitoring wells, although they are also indicative of a well group’s sampling frequency. Having been sampled for all parameters in 2010, the analytical suite for these wells in 2011 included only volatile organic compounds (VOCs), target analyte list (TAL)

metals, and/or MNA parameters, as indicated in the Work Plan for each well designation.

Monitored natural attenuation refers to the reliance on natural attenuation (NA) processes, within the context of a carefully controlled and monitored site cleanup approach, to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by more active methods. Natural attenuation is the reduction in mass or concentration of COCs in groundwater over time or distance from the source of the impact due to naturally occurring processes. Attenuation processes include nondestructive physical processes (e.g., advection, dilution, dispersion, volatilization, dissolution, and sorption) and destructive chemical and biological processes.

The MNA remedy at the Site applies to the underlying groundwater and residual non-aqueous phase liquid (NAPL) and addresses the following areas of the Site, in accordance with the SOW:

- Groundwater and saturated glacial deposits (gravel, sand, silt and clay) in the "Overburden Groundwater" unit that contain COC concentrations above acceptable risk levels or regulatory criteria; and

- Groundwater and fractured rock in the "Bedrock Groundwater" unit that contain COC concentrations above acceptable risk levels or regulatory criteria.

As part of the MNA remedy, COCs in overburden and bedrock groundwater are monitored. The Site COCs include VOCs including chlorinated ethenes and ethanes, ketones, aromatic compounds and 1,4-dioxane; TAL metals; semi-volatile organic compounds (SVOCs); and polychlorinated biphenyls (PCBs).

In addition to monitoring COC concentrations, the MNA Plan specifies long-term monitoring of a suite of geochemical parameters ("MNA parameters") to confirm geochemical evidence of NA and to verify that biochemical processes in support of COC degradation continue to occur in Site groundwater. The MNA parameters monitored at the Site include anions (sulfate, sulfide, chloride, nitrate, nitrite), total organic carbon (TOC), iron (ferric, ferrous), divalent manganese, light hydrocarbons (methane, ethane, ethene), dissolved oxygen (DO), oxidation/reduction potential (ORP), pH, alkalinity, and temperature.

1.3 Document Organization

The remainder of this MNA Report is organized into the following sections:

- **Section 2 – Annual Groundwater Sampling Event – 2011:** summarizes the groundwater sampling activities performed in May 2011 and evaluates the data.

- **Section 3 – MNA Background:** describes the MNA performance monitoring program at the Site, including the Site conceptual model, MNA remedy, and performance standards.

- **Section 4 – Performance Monitoring:** describes the MNA performance monitoring program at the Site, including monitoring locations, parameters, frequency and objectives.

- **Section 5 – MNA Evaluation:** evaluates Site data based on results from the May 2011 annual sampling event, and discusses the analysis of performance monitoring data, including the data quality assessment process, data interpretation approach, and statistical procedures.

- **Section 6 – Summary:** presents a summary of conclusions from the MNA evaluation and provides recommendations for action.

- **Section 7 – References:** lists the references cited within this MNA Report.

2. Annual Groundwater Sampling Event - 2011

2.1 Scope of Work

The 2011 annual groundwater sampling event was conducted to satisfy the requirements of SOW Sections IV.B.5.e and IV.B.5.f. A brief summary of the requirements of each of these sections is presented below:

- **IV.B.5.e** – annual monitoring of VOCs and MNA parameters at a select subset of monitoring wells in the bedrock aquifer in the area between the railroad tracks and the non-time critical removal action (NTCRA) 1 sheet pile wall (i.e., "N" wells).

- **IV.B.5.f** – annual monitoring of VOCs and biennial monitoring of MNA parameters at a select subset of monitoring wells in the overburden and bedrock aquifers in the area outside the NTCRA 1 sheet pile wall (i.e., "R" wells).

In addition to the SOW-required sampling, the background monitoring wells – specifically the "M" and "B" wells – were sampled for TAL metals. As outlined in SOW Section VIII.F, Interim Cleanup Levels (ICLs) for metals need to be established prior to submittal of the Demonstration of Compliance Report. To that end, metals will be analyzed on an annual basis to establish a dataset sufficient for determining the appropriate background metals concentrations at the Site.

2.2 Summary of Field Activities

The 2011 annual groundwater sampling event was conducted May 23-26, 2011. Procedures used for gauging and sampling monitoring wells were consistent with those outlined in the *Summary of Initial (2010) Comprehensive Groundwater Sampling Event* (ARCADIS January 2011). A tabular summary of the sampling event is provided below:

SOW Section	Well Group	# of Wells Intended	# of Wells Sampled	Analytical Parameters
IV.B.5.e	"N"	2	2	VOCs, MNA Parameters
IV.B.5.f	"R"	26	23	VOCs
VIII.F	"M"	5	5	TAL Metals
	"B"	3	3	

The rationale for deviations from the intended approach is summarized below:

- Monitoring wells CPZ-8R and MW-705DR ("R" wells) were not sampled due to the presence of dense non-aqueous phase liquid (DNAPL) in the wells at the time of sampling.

- Monitoring well MW-127C ("R" well) was not sampled due to flooding in the vicinity of this well, thereby making the well inaccessible at the time of the sampling event.

Field sampling forms and equipment calibration logs from the sampling event are included in Appendices A and B, respectively.

2.3 Results

Groundwater analytical results from the May 2011 annual groundwater monitoring event are provided in Tables 1 through 3 for VOCs, metals and MNA parameters, respectively. All groundwater data were validated consistent with the procedures outlined in the *Summary of Initial (2010) Comprehensive Groundwater Sampling Event* (ARCADIS January 2011). All qualifiers and modifications made via the validation process are reflected in Tables 1 through 3.

2.3.1 Groundwater Elevations

Synoptic groundwater elevation measurements are only collected in conjunction with five-year comprehensive monitoring events, and therefore were not collected during the May 2011 groundwater monitoring event. Groundwater gauging data from the initial comprehensive event (May-June

2010) were included in the *Summary of Initial (2010) Comprehensive Groundwater Sampling Event* (ARCADIS January 2011).

2.3.2 VOCs

Groundwater VOC concentrations from the May 2011 groundwater monitoring event are provided in Table 1. Groundwater VOC concentrations were compared against USEPA Maximum Contaminant Levels (MCLs) and Connecticut Class GA Groundwater Protection Criteria (GWPC), with the lower of the two criteria used as the criterion for the comparison. Groundwater VOC concentrations that exceeded their respective groundwater criterion are highlighted in Table 1. Groundwater VOC concentrations were also compared to the ICLs specified in Table L-1 of the ROD (USEPA 2005), and concentrations that exceeded their respective ICLs are highlighted in Table 1.

Concentrations of VOCs greater than MCLs or GWPC are generally contained within the previously estimated containment boundary of the Hydraulic Containment and Treatment System (HCTS). The exception is in monitoring well MW-707DR, a deep bedrock well located just beyond the southern extent of the capture zone boundary. Benzene was detected at a concentration of 2.5 micrograms per liter (μg/L) in the May 2011 sample, which is above the Action Level (the more stringent of the MCL or GWPC criteria) of 1.0 μg/L. This well was re-sampled in September 2011 to confirm this result; benzene was detected at a concentration of 0.67 μg/L (Table 1), which is below the Action Level. Future additional sampling will provide a basis to assess groundwater quality trends at this well.

2.3.3 SVOCs and PCBs

SVOC and PCB data are only collected in conjunction with five-year comprehensive monitoring events, and therefore were not included in the May 2011 groundwater monitoring event. Previously collected SVOC and PCB data (May-June 2010) were evaluated in the *Monitored Natural Attenuation Report* (ARCADIS September 2010).

2.3.4 Metals

Groundwater concentrations of TAL metals during the May 2011 groundwater monitoring event are provided in Table 2. Groundwater TAL metals concentrations were compared against MCLs and GWPC; ICLs have not yet been developed for metals in groundwater because they are a function of

background concentrations, which are still being established for the Site. No metals (either total or dissolved) exceeded their respective MCLs or GWPC.

2.3.5 MNA Parameters

Concentrations and distributions of electron acceptors, electron donors, and byproducts of microbially mediated reactions are evaluated to verify the types of geochemical and biodegradation processes active in Site groundwater. Concentrations of MNA parameters during the May 2011 annual groundwater monitoring event are provided in Table 3.

3. MNA Background

An MNA remedy requires a strong scientific basis supported by appropriate monitoring. When properly employed, MNA is an effective remedy – based on thorough analysis of site-specific data – to understand, monitor, predict, and document COC transport and NA processes.

3.1 Site Conceptual Model

For any MNA remedy to succeed, it is important to understand the Site Conceptual Model (SCM). The SCM combines available site information into a comprehensive picture of the nature and extent of the COCs and the processes controlling their transport and fate in the environment. The level of site characterization necessary to support a comprehensive evaluation of MNA can be more detailed than that needed to support active remediation.

The SCM, including information regarding the Site operational history, regulatory status, geology, hydrogeology, and surface water hydrology, and the distribution and mass of COCs in Site groundwater, including delineation of NAPL zones and dissolved-phase groundwater plume, and VOC mass estimates, is provided in Section 2 of the RDWP (ARCADIS 2009) and fulfills the requirements set forth in the SOW, Section V.C.1.I.

The MNA conceptual model for the Site may be described in terms of source condition, dissolved plume stability, and MNA processes, and is summarized as follows:

Source Condition: The source of groundwater-quality impacts was extensively characterized during the Remedial Investigation (RI; Blasland, Bouck & Lee, Inc. [BBL] 1998) and FS, and consists of zones containing NAPL in overburden soils and bedrock. The NAPL is a complex mixture of chlorinated and other solvents. The NAPL zones in overburden soils and bedrock contain mixtures of dissolved NAPL-related chlorinated ethenes, ethanes and methanes, as well as aromatic hydrocarbons, ketones, phthalates, ethers, furan and alcohols. These NAPL zones are currently hydraulically contained by the NTCRA 1 sheet-pile wall and overburden groundwater extraction wells and the NTCRA 2 overburden and bedrock extraction wells. Upon entry of the CD, the NTCRA 1 and NTCRA 2 systems became known as the HCTS. The NAPL zones have formed a dissolved-phase chemical plume that has been severed by the HCTS. The Overburden NAPL zone contains the majority of the Site VOCs, and will be treated with in-situ thermal remediation to remove the vast majority

of these VOCs, resulting in a greatly diminished source zone upgradient of the NTCRA 1 sheet-pile wall.

Dissolved Plume Stability: The dissolved-phase chemical plumes in overburden and bedrock groundwater within the source area are stable and are likely shrinking in time due to the combination of hydraulic containment and active *in situ* biodegradation processes in groundwater within the capture zone of the HCTS. *In situ* biodegradation processes within the capture zone of the HCTS were characterized as "robust" in the FS (BBL and USEPA 2005). The dissolved-phase chemical plume in overburden and bedrock groundwater in the severed portion of the plume, beyond the capture zone of the HCTS, are shrinking with time due to the combination of hydraulic containment of the higher concentration portions of the dissolved-phase chemical plume and NA processes. Evaluations of trends in total dissolved-phase VOC concentrations in groundwater within the HCTS containment boundary and the severed plume indicate statistically significantly decreasing concentration trends.

NA Processes: Natural attenuation processes that have contributed to plume stabilization and shrinkage within the overburden and bedrock include *in situ* abiotic and biodegradation reactions, sorption to aquifer solids, flow path mixing, and matrix diffusion. Reductive dechlorination is a prominent removal mechanism that continues to operate at the Site, as evidenced by the production of cis-1,2-dichloroethene (cDCE), vinyl chloride (VC), 1,1-dichloroethane (1,1-DCA), ethene, ethane, and chloride, which are dechlorination (i.e., "breakdown") products of tetrachloroethene (PCE), trichloroethene (TCE), and 1,1,1-trichloroethane (TCA). There are also anaerobic oxidation reactions occurring that remove cDCE, VC, and ethene by oxidation to carbon dioxide (CO_2).

3.2 Selection of MNA Remedy

As a result of the demonstrated efficacy of NA for treating COCs in Site groundwater, MNA was included as a component of several remedial alternatives evaluated in the FS (BBL and USEPA 2005). Based on evaluations presented in the FS, the USEPA selected MNA as a component of the remedial approach for the Site.

The ROD for the Site was issued by the USEPA in September 2005 (USEPA 2005). The selected remedy consists of MNA of the groundwater plume, including:

- Groundwater outside the capture zone of the HCTS until groundwater cleanup levels are achieved;

- Groundwater within the capture zone of the HCTS until groundwater cleanup levels are achieved; and

- Groundwater in the NAPL area of the overburden and bedrock aquifers, until groundwater cleanup levels are achieved.

3.3 Identified Data Gaps

The SOW identified two data gaps associated with implementing the MNA remedy component at the Site. The identified data gaps and the strategies used for addressing them are as follows:

- *Incomplete plume delineation in the severed plume*. This data gap has been partially addressed by the installation and sampling of additional groundwater monitoring wells near the eastern edge of the severed plume, east of the Quinnipiac River and in the Connecticut Light & Power (CL&P) Easement as presented in the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Attachment N to the RDWP). New plume delineation wells installed prior to the start of the May–June 2010 comprehensive groundwater sampling event include MW-903S, MW-903M, MW-903D, MW-903R, PZ-903DR, MW-904S, MW-904D, MW-906M, MW-906D, MW-906R, PZ-906DR, and MW-910S. Based on the presence of DNAPL at PZ-906DR, additional delineation east of this location is required and will be addressed under separate cover.

- *Long-term monitoring data demonstrating the effectiveness of MNA as a remedy component.* This data gap is being addressed through the preparation, submittal, approval, and implementation of the MNA Plan.

3.4 Objectives of MNA Performance Monitoring

The MNA Plan, in conjunction with the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Attachment N to the RDWP), describes the monitoring and analysis steps required to meet the following objectives of MNA performance monitoring, as specified in Section VII.A.1 of the SOW:

- Complete the delineation of COCs in groundwater in three dimensions;

- Assess the temporal and spatial variations in groundwater chemistry and geochemistry;
- Assess the progress in meeting the long-term remedial goal of groundwater restoration throughout the Site to its natural quality; and
- Evaluate the effectiveness of institutional controls.

Based on the results of MNA performance monitoring, decisions related to the MNA program, described in detail in the MNA Plan, may include:

- Continuation of the performance monitoring program without change.
- Continuation of the performance monitoring program with action.
- Modification of the institutional controls.

3.5 Performance Standards

The remedial action will be implemented in compliance with applicable or relevant and appropriate requirements (ARARs) identified in the ROD (USEPA 2005). These requirements include compliance with performance standards for the contaminated groundwater, soil and wetland soil, and for NAPL that is present in the subsurface in the overburden and bedrock. The following subsections discuss performance standards applicable to MNA and the means for demonstrating compliance with these standards.

3.5.1 MNA-Related Performance Standards

Performance standards pertaining to MNA at the Site, as set forth in the SOW, are described in detail in the MNA Plan for Groundwater, NAPL outside of the Overburden NAPL Area, and the Severed Plume.

3.5.2 Demonstration of Compliance Report

As specified in Section VIII.F of the SOW, a Demonstration of Compliance Report will be prepared in accordance with the evaluation procedures defined in 40 C.F.R. Section 264.97 when groundwater COC concentrations have remained within the interim cleanup levels for three consecutive years. If the USEPA, after reasonable opportunity for review and comment by the Connecticut Department of Energy and Environmental Protection (CT DEEP),

approves the Demonstration of Compliance Report and agrees that the interim cleanup levels have been achieved, a risk assessment of residual groundwater contamination will be performed.

4. Performance Monitoring

4.1 Introduction

The MNA Plan specified the performance monitoring program for Site groundwater as it relates to the MNA component of the remedy, while Section IV.B.5 of the SOW set forth requirements for an environmental monitoring program to be implemented to evaluate the performance of the HCTS and the overall effectiveness of the Site remedy, including the MNA component. These groundwater MNA monitoring requirements were summarized in the MNA Plan.

The following subsections describe the MNA program monitoring locations, monitoring frequency, monitoring parameters, and data quality objectives (DQOs) designed to meet the environmental monitoring program requirements set forth in Section IV.B.5 of the SOW. Groundwater monitoring is conducted to monitor changes in groundwater COC concentrations, changes in plume size and shape, and the effectiveness of NA processes in reducing concentrations of COCs in groundwater. Groundwater samples from May 2011 were collected in accordance with the monitoring frequency outlined in the MNA Plan.

4.2 Groundwater Performance Monitoring Locations

Groundwater performance monitoring locations were chosen to provide robust, three-dimensional coverage of COCs in overburden and bedrock groundwater at the Site, with monitoring well cluster locations providing vertical assessment of COC concentrations and groundwater geochemistry. Monitoring locations were identified in the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Attachment N to the RDWP) and are shown on Figures 2 through 6 of this MNA Report.

In accordance with the SOW, selected MNA monitoring locations include upgradient (background) sampling locations, in-plume sampling locations (HCTS capture zones and severed plume), side-gradient sampling locations outside of plume areas, and downgradient locations. Monitoring locations are designated by well groups (i.e., “N”) to define the purpose of each sampling location. Well group designations that are relevant to MNA monitoring are summarized in the MNA Plan and shown on Figures 2 through 6.

4.3 MNA Monitoring Parameters

The primary classes of data included in the MNA monitoring program are: Site-specific groundwater COCs; groundwater MNA parameters; groundwater hydraulic information; and HCTS COC mass removal estimates. Each of these primary data classes are described below.

Site-specific COCs are the chemical constituents that were identified during Site investigations and risk assessment and are required to be addressed by the response actions set forth in the ROD (USEPA 2005). Site-specific COCs for groundwater include selected VOCs, 1,4-dioxane, TAL metals, SVOCs, and PCBs.

Groundwater MNA parameters were selected to confirm dominant biotransformation processes, evaluate the potential for continued transformation of COCs, and identify zones of dominant geochemical conditions. These parameters include: iron (ferric and ferrous), divalent manganese, light hydrocarbons (methane, ethane, ethane), alkalinity, chloride, nitrate–nitrogen, nitrite–nitrogen, pH, sulfate, sulfide and TOC. In addition to laboratory-analyzed MNA parameters, the following MNA parameters are collected as field measurements: pH, DO, ORP, and temperature.

The hydraulic parameter of interest is groundwater elevation. Groundwater elevations are characterized in all five groundwater depth zones, and provide a basis to assess the horizontal and vertical components of hydraulic gradients that control three-dimensional migration of COCs. Synoptic groundwater elevation measurements are only collected in conjunction with five-year comprehensive monitoring events, and therefore were not collected during the May 2011 groundwater monitoring event.

Estimates of groundwater COC mass removal from the HCTS, obtained as part of the compliance monitoring program for the HCTS operations, are used to evaluate potential trends in COC mass removal from the HCTS and can be used to evaluate future efficacy of groundwater remedies, including MNA.

4.4 Monitoring Frequency

Monitoring frequencies were designed to meet requirements of the environmental monitoring program set forth in Section IV.B.5 of the SOW and

are summarized in the MNA Plan. Detailed monitoring frequency information is provided in the *Monitoring Well Network Evaluation and Groundwater Monitoring Program* (Attachment N to the RDWP). Any proposed changes to the long-term monitoring program will be submitted as part of the Annual State of Compliance Report(s).

4.5 MNA Monitoring Objectives

The MNA performance monitoring program set forth in the MNA Plan was designed to evaluate the MNA monitoring objectives listed below (USEPA 1999; USEPA 2004) and described in detail in the MNA Plan.

- Provide timely warning of potential impact to receptors
- Detect changes in plume size/concentration
- Determine temporal variability of data
- Detect changes in geochemistry that warn of potential changes in COC attenuation
- Yield data necessary to reliably evaluate progress toward COC reduction objectives

4.6 Data Quality Objectives

The DQO process is a systematic planning tool based on the scientific method that is used to establish criteria for data quality and to develop data collection designs (USEPA 1994). The DQOs for the data described in this MNA Report are provided in the *Quality Assurance Project Plan* (QAPP; Attachment C to the RD Project Operations Plan [POP]).

5. MNA Evaluation

This section evaluates the effectiveness of the MNA program based on the data collected to date (including the May 2011 groundwater monitoring event). Data analysis, interpretation and reporting methods were completed in accordance with the following regulatory guidance documents:

- *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* (USEPA 1998)
- *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites* (USEPA 1999)
- *Performance Monitoring of MNA Remedies for VOCs in Ground Water* (USEPA 2004)

In general, data interpretation included:

- Placing the MNA performance monitoring data in the context of time, location, sampling and analytical methods.
- Applying appropriate statistical tests to detect changes and trends in COC concentrations, and attainment of remedial objectives.

These data interpretation methods and results are presented in the following sections.

5.1 Total VOC Concentration Trends

Data collected during previous sampling events (RI and Interim Monitoring Sampling [IMS] events) and presented in the MNA Plan and 2010 MNA Report indicated an overall decline in groundwater concentrations with time, supporting the selection of MNA as a remedial measure for COCs in groundwater at the Site. This section builds upon results of the previous MNA evaluations discussed in detail in the MNA Plan and in the 2010 MNA report. Included in this section are a discussion of concentration trends for total VOCs in groundwater at select monitoring locations, estimates of attenuation rates for total VOCs in groundwater at locations with decreasing concentration trends,

and presentation of COC mass extraction rates and cumulative mass removal for the HCTS.

5.1.1 Trend Analysis

Trend analyses were previously conducted using total VOC concentration data collected at 25 IMS monitoring locations (within the NTCRA 2 portion of the HCTS, the severed plume, and the interior of the VOC plume) during the RI, IMS, and 2010 groundwater sampling events. These trend analyses have been updated with total VOC concentrations measured in samples collected during the May 2011 annual groundwater monitoring event, and the September 2011 re-sampling of MW-707DR. Because only 10 of the monitoring locations with long-term time-concentration data sets were sampled during the May 2011 sampling event, only those trend analyses were updated. The results of this trend analysis were similar to the results of the trend analysis conducted in 2010, which indicated that a majority of the IMS monitoring locations had statistically significant declining groundwater total VOC concentration trends.

Groundwater total VOC concentrations plotted versus time were updated for the 10 IMS monitoring locations that were sampled during the May 2011 annual groundwater sampling event (Figures 7 through 11). As shown on the figures, total VOC concentrations are generally declining or stable for all monitoring locations at all groundwater depth intervals, consistent with previous results.

To evaluate the statistical significance of the observed decreasing groundwater total VOC concentration trends, non-parametric Mann-Kendall and Sen's Slope trend analyses and parametric linear regression trend analyses were conducted. The Mann-Kendall test provides a yes/no decision for the existence of a slope that is significantly different from zero. The Sen's Slope test provides an estimate of the value and confidence level for the slope. The linear regression test estimates slope and confidence level and quantifies goodness of fit of the data to the estimated trend line. Trend analyses were conducted with ln-normalized total VOC concentrations using all three test methods for all sampling locations.

For the Mann-Kendall and linear regression trend tests, a 90% confidence level with a corresponding p-value less than or equal to 0.10 was used to determine statistical significance. Mann-Kendall and linear trend results with p-

values greater than 0.10 were not considered to be statistically significant. The trend direction was defined as decreasing if total VOC concentrations decreased with time (negative slope), and increasing if total VOC concentrations increased with time (positive slope); however, the trend was not considered significant unless the relationship for the test was significant at a confidence level of 90%. For the linear regression analysis, the correlation coefficient, or R^2, is a measure of how well the linear regression fits the data. Values close to 1 are considered to be a good fit, while R^2 values close to 0 are considered to be a poor fit. Concentrations were considered to be stable with time if the trend result was not significant.

5.1.1.1 Trend Analysis Results

During the May 2011 annual sampling event, a smaller subset of monitoring wells was sampled; therefore, only these trend analyses were updated. However, results of the statistical trend tests for wells that were not sampled in May 2011 are still presented for comparison. Results of the three trend test methods were generally consistent with the results from the 2010 trend analyses with respect to trend direction and significance (Table 4).

Results for the linear regression and Mann-Kendall tests indicated that 17 of the 21 monitoring locations (8 of the 10 wells sampled in May 2011) had decreasing total VOC concentration trends; 16 of 17 decreasing trends (6 of the 8 from May 2011) were significant based on the Mann-Kendall and/or the linear regression test (Table 4). The Sen's slope test identified 14 (7 from May 2011) significant decreasing total VOC concentration trends.

One location, MW-707DR, had an increasing total VOC concentration trend that was significant based on the Mann-Kendall and linear regression tests. However, 41% of the MW-707DR sample points had VOC concentrations that were below detection levels. This result is consistent with the 2010 total VOC concentration trend results which indicated increasing trend in total VOC concentrations at this location. The maximum total VOC concentration was 18 μg/L measured for a sample collected in April 2000, indicating generally low concentrations of VOCs in groundwater at this location. For the May 2011 sample, the total VOC concentration was 16.86 μg/L. However, recent detections of BTEX compounds in groundwater at this location are anomalous with respect to historic data. Because of the exceedance in the benzene concentration at this monitoring well, MW-707DR was re-sampled in

September 2011 (with the resulting benzene concentration below the Action Level). Although the total VOC concentration was less than in May 2011 (at 4.22 µg/L), the linear regression trend analysis, Mann-Kendall Test, and Sen's slope test performed on MW-707DR indicated a statistically increasing concentration trend.

Statistical trend tests conducted in 2010 for monitoring well MW-704D indicated a statistically significant decreasing trend; however, the linear regression and Mann-Kendall results for 2011 indicated that the decreasing trend was not significant. Monitoring well MW-703DR indicated no statistically significant trend; however, total VOC concentrations that were below detection levels for greater than 50% of the sample dates. Linear regression, Mann-Kendall, and Sen's slope tests indicate that MW-706DR does not have a significant trend; VOC concentrations in groundwater at this location are elevated and potentially indicate the presence of DNAPL in the vicinity of this deep bedrock monitoring location.

5.1.2 Total VOC Attenuation Rate

Results from the linear regression and Sen's Slope analyses were used to estimate attenuation rates for total VOCs in groundwater at the Site. Calculation of attenuation rates was performed in accordance with the USEPA guidance document on determining first-order attenuation rate constants for MNA studies (USEPA 2002). Following this guidance, the natural log of COC groundwater concentration versus time was used and a best-fit linear regression line was generated for total VOC concentrations for each monitoring location that had a statistically significant decreasing total VOC concentration trend. Slopes derived from the Sen's Slope test were also used to estimate attenuation rates. The slope of the linear regression line and the slope from the Sen's Slope test provide estimates of the total VOC attenuation rate constant (k_{point}) in groundwater at the respective monitoring locations.

$$k_{point} = [slope\ of\ best\text{-}fit\ regression\ line]$$

The half-life ($t_{1/2}$) for total VOC concentrations in groundwater was estimated for each sampling location from the equation:

$$t_{1/2} = 0.693 / k_{point}$$

where: 0.693 is the negative of the natural log of 0.5 (half of the starting total VOC concentration).

Estimated half-life values for total VOCs in groundwater range from 535 to 3,060 days (1.5 to 8.4 years) based on linear regression results and from 510 to 3,453 days (1.4 to 9.5 years) based on Sen's slope results. These estimated half-life values for total VOC concentrations compare well with literature values of attenuation rates presented for individual compounds in Appendix H of the FS (BBL and USEPA 2005) and indicate that overall COC concentrations in groundwater are attenuating.

5.2 Estimate of COC Mass Flux in Groundwater

As part of the compliance monitoring program, COC mass extraction rates and cumulative mass removal are monitored for the HCTS. With the exception of the severed plume and incidental discharge to surface water, the HCTS captures the entire dissolved phase groundwater COC plume at the Site. Therefore, the HCTS COC mass extraction rates and cumulative mass extraction data represent the total mass flux for the dissolved phase COC groundwater plume and can be used to monitor changes in groundwater total dissolved-phase COC mass flux with time.

Total VOC mass extraction rates and cumulative mass extraction for the HCTS were plotted for the July 1995 to August 2011 time period (Figure 12). Mass extraction rates are expressed in units of pounds per day and the cumulative mass extraction is expressed in units of pounds. Mass extraction rates have ranged between about 0.1 to 10 pounds per day and appear to be generally stable with time since about 2001. The total mass of VOCs removed to date by the HCTS is approximately 16,463 pounds. The mass of COCs removed via the HCTS is small compared with the estimated mass removal that is occurring via in situ degradation. As described in detail in the FS (BBL and USEPA 2005) and summarized in the MNA Plan (ARCADIS November 2010), the quantity of TCE and degradation products being biodegraded in situ was calculated to be approximately 17,000 to 41,000 pounds per year within the NTCRA 1 area alone.

The mass extraction data will continue to be collected as part of the HCTS compliance monitoring program and will be periodically evaluated as part of the MNA performance monitoring program.

5.3 Distribution of VOCs in NAPL and Groundwater

An assessment of the distribution of select VOCs in NAPL and groundwater samples was conducted as part of the 2010 comprehensive MNA report to gain insight into how VOC distributions in NAPL and Site groundwater varied by location and with time. VOCs evaluated in the assessment included:

- chlorinated ethenes (PCE, TCE, cDCE, 1,1-dichloroethene (1,1-DCE), and VC);
- chlorinated ethanes (TCA, 1,1-DCA, and chloroethane (CA));
- ketones (2-butanone (MIBK), 4-methyl-2-pentanone (MIBK), and acetone);
- toluene, ethylbenzene, and xylenes (TEX); and
- methylene chloride, styrene, tetrahydrofuran (THF), and 1,4-dioxane.

Data used for assessment of distribution of VOCs in NAPL and groundwater were presented in the 2010 comprehensive MNA report. The assessment concluded that NAPL samples were composed primarily of PCE, TCE, TCA, TEX, methylene chloride, and styrene, with lesser contributions from cDCE, 1,1-DCE, and 1,1-DCA. Ketones generally were not detected in NAPL samples. 1,4-dioxane were not analyzed for these samples. Overall, the results indicated that the detected groundwater constituents are generally consistent with NAPL constituents, with the exception of ketones. The general absence of detectable ketones in the NAPL samples likely relates to the elevated detection levels associated with the NAPL samples.

Molar VOC concentration plots were also presented in the 2010 comprehensive MNA report. In general, constituent concentrations in groundwater were greatest in the NTCRA 1 area with consistently decreasing primary constituent (e.g., TCE, TCA, ketones, and TEX) concentrations observed in directions downgradient from the NTCRA 1 area. These results clearly demonstrate that degradation of the parent compounds is occurring in Site groundwater.

Groundwater molar VOC concentration plots for select groundwater monitoring locations with samples collected during multiple sampling events illustrate that some locations have clear declining concentrations trends for most or all constituents. Shifts in the relative distribution of chlorinated VOCs (CVOCs) towards greater proportions of daughter products to parent demonstrate ongoing degradation of CVOCs in Site groundwater.

In summary, molar concentration plots of select CVOCs provide a means for readily comparing the distribution of COC concentrations in Site groundwater with distance from the source area, as well as with depth and with time at discrete locations. Molar concentration plots will be updated as part of the five-year comprehensive MNA event.

5.4 Evaluation of Monitoring Objectives

MNA monitoring objectives are assessed in the following subsections.

5.4.1 Evaluation of Changes in Environmental Conditions that May Reduce Efficiency of MNA

MNA data will be used to evaluate potential changes in environmental conditions that may reduce the efficiency of MNA. Currently, the only anticipated environmental changes that may reduce the efficiency of MNA are within the capture zone of the Site NTCRA 1 groundwater containment system due to the addition of heat and removal of electron donors during in-situ thermal treatment of the Overburden NAPL Area. Future MNA Reports will assess potential effects on MNA efficiency due to thermal treatment in the Overburden NAPL Area.

Changes in the composition and availability of electron donors with time may affect the efficiency of MNA. As electron donors, such as ketones, aromatic compounds, and alcohols are consumed, the efficiency of MNA may decline. As noted in the 2010 comprehensive MNA report, alcohols are currently only minimally detected in Site groundwater. As concentrations of these readily available electron donors decline, other electron donor sources may be available to support continued NA of COCs in Site groundwater. Other potential electron donor sources include natural organic matter in the aquifer matrix, natural organic matter in groundwater, as well as recycling of microbial biomass. The efficiency of MNA for remediation of COCs in Site groundwater

will continue to be monitored via the MNA remedial program using techniques set forth in the MNA Plan and in this MNA Report including, but not limited to:

- Defining changes in the VOC regulatory plume boundaries, including exceedance of MCLs and GWPC as well as exceedance of ICLs
- Evaluation of COC concentration trends with time
- Assessment of changes in the distribution of COCs, especially ketones, alcohols, and aromatic compounds
- Continued monitoring of groundwater redox conditions

If changes in the efficiency of MNA result in a loss of effectiveness of MNA as a remedy for COCs in Site groundwater, contingencies will be considered as described in the MNA Plan.

5.4.2 Evaluation of Potentially Toxic and/or Mobile Transformation Products

Potentially toxic transformation products include regulated chemical intermediates, such as cDCE, 1,1-DCE, 1,1-DCA, CA, and VC, and regulated transition metals (e.g., manganese and arsenic). Locations with concentrations of cDCE, 1,1-DCE, 1,1-DCA, CA, VC that exceed MCLs or GWPC are within the overburden and bedrock groundwater containment boundary. Metals detected in groundwater samples collected in 2011 did not exceed MCLs or GWPC screening levels (Table 2).

5.4.3 Evaluation of Plume Stability

In terms of plume stability, a dissolved-phase chemical plume in groundwater may be characterized as a:

- Shrinking plume, in which the plume volume decreases through time
- Stable plume, in which the plume volume does not change through time
- Growing plume, in which the plume volume increases through time

In general, shrinking plumes are indicated by decreasing chemical concentrations through time, growing plumes may be indicated by increasing or stable chemical concentrations through time, and stable plumes are indicated by plume volume estimates that do not change significantly through time. Currently available long-term monitoring data indicate that the plume of COCs in Site groundwater is shrinking or is stable.

5.4.4 Evaluation of No Unacceptable Impacts to Downgradient Receptors

Groundwater and surface water monitoring data collected during the RI and the IMS program indicate that there are no potential impacts to downgradient receptors. The water supply wells within the Town Well Field Property are dormant and are beyond the zone of COC concentrations in groundwater that are above drinking water standards. Therefore, there are no receptors within the vicinity of the groundwater plume with COC concentrations above drinking water standards. Monitoring of surface water in the Quinnipiac River demonstrated that surface water is not impacted by the Site COC-impacted groundwater plume. Monitoring of groundwater within the Town Well Field will continue as part of the MNA program.

5.4.5 Evaluation of New Releases of COCs

Evaluation of new releases of COCs is not needed because potential sources of new releases have been removed from the Site, the former source area is located within the capture zone of the HCTS, and the Overburden NAPL Area (also within the capture zone) is to be remediated via in-situ thermal remediation.

5.4.6 Evaluation of Institutional Controls

The *Institutional Controls Plan* (IC Plan), which is a remedial design submittal required by Section V.B.7 of the SOW, was submitted to the USEPA in February 2011. It describes the proposed scope and monitoring program associated with institutional controls to be implemented at the Site. Once the IC Plan is approved and institutional controls are established, any observed or pending changes in land or resource uses or ownership (e.g., property ownership change, housing developments, and well installations) will be evaluated in view of their current and possible future impact on the

effectiveness of the institutional controls and the performance monitoring operations.

5.4.7 COC Mass Flux / Mass Reduction

COC mass flux and mass reduction can be conservatively evaluated by monitoring groundwater COC mass recovery from the HCTS. Because extraction of groundwater COCs by the HCTS does not account for the mass of COCs degraded in situ, this method of estimating mass reduction provides a minimum estimate of mass reduction. With the exception of the severed plume and de minimis discharges to surface water immediately adjacent to the river, the Site-related groundwater plume is essentially contained within the HCTS capture zone. As a result, the groundwater extracted from via the HCTS represents the majority of the mass flux of COCs within the plume. Groundwater extraction rate and COC concentration information collected periodically during system operation, maintenance and monitoring (OMM) activities as part of the compliance monitoring program for the HCTS will be used to evaluate changes in COC mass flux with time. As shown on Figure 12, COC mass extraction rates have been relatively stable since the early 2000s.

5.5 Contingency Measures

An evaluation of contingency measures will be performed if progress in meeting long-term groundwater restoration goals is inadequate, as determined by the USEPA. While the specific measures to be undertaken may depend on several factors (e.g., the nature, location, apparent source, or timeframe at which the inadequacy is identified), examples of possible contingency measures are provided in the MNA Plan. Any contingency measure considered will first be approved by USEPA, in consultation with CT DEEP, prior to implementation.

6. Summary

The 2011 annual groundwater monitoring event was conducted May 23-36, 2011, and included the sampling of 33 monitoring wells for VOCs, MNA parameters and/or TAL metals. Results indicate that:

- VOCs above MCLs or GWPC are generally contained within the previously estimated containment boundary of the HCTS. The exception is in monitoring well MW-707DR, a deep bedrock well located just beyond the southern extent of the capture zone boundary. Benzene was detected at a concentration of 2.5 μg/L, which is above the Action Level (the more stringent of the MCL or GWPC criteria) of 1.0 μg/L. This well was re-sampled in September 2011 to confirm this result; benzene was detected at a concentration of 0.67 μg/L, which is below the Action Level. Future additional sampling will provide a basis to assess groundwater quality trends at this well.

- No metals (either total or dissolved) exceeded their respective MCLs or GWPC. In fact, neither antimony nor cadmium was detected above the laboratory reporting limit in either the 2010 or 2011 sampling events.

Section 5 presents an evaluation of the effectiveness of MNA as a remedial measure for COCs in groundwater in the Site, including presentation of groundwater monitoring results from the May 2011 annual groundwater monitoring event; evaluation of concentration trends for total VOCs in groundwater at select monitoring locations; estimates of bulk attenuation rates for total VOCs in groundwater; and presentation of HCTS COC mass extraction rates with time. Results of these evaluations indicate:

- Detected concentrations of VOCs, greater than MCLs or GWPC are contained within the previously estimated containment boundary of the HCTS. The exception is in monitoring well MW-707DR, as discussed above.

- Groundwater total VOC concentrations are generally declining with time throughout the Site groundwater COC plume.

- Estimated bulk VOC attenuation rates were comparable to attenuation rates for individual COCs presented in the FS (BBL and USEPA 2005).

- Compliance monitoring data from the HCTS indicate generally stable COC mass extraction rates since the early 2000s.

These results support continued use of MNA as a remedy for COCs in Site groundwater.

One modification to the MNA monitoring program will be implemented based on the results of the 2010 and 2011 MNA monitoring. Namely, sulfide was originally proposed for monitoring in support of the MNA evaluations; it is not a site-related COC or used for compliance monitoring. Sulfide was not detected in MNA-related analyses to date. Based on the highly reactive nature of sulfide and the lack of detectable concentrations of sulfide in site groundwater, along with the adequate characterization of site groundwater redox conditions using other MNA parameter data, sulfide will be removed from the MNA parameter analyte list for subsequent MNA sampling events. This recommendation was originally made in the 2010 MNA Report, and was approved by the USEPA in an email to de maximis dated September 15, 2011.

The proposal made in the 2010 MNA Report to eliminate monitoring for certain metals based on lack of or low detections in groundwater has been retracted based on comments provided by the USEPA on September 15, 2011. Both total (unfiltered) and dissolved (filtered) metals analyses will be performed consistent with the Work Plan. However, only total (unfiltered) metals data will be used for comparison to groundwater standards. The dissolved (filtered) data will be used to assess redox conditions as part of the MNA evaluations.

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ARCADIS

Tables

Table 1 – VOCs - Groundwater Sample Summary Results May/September 2011
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

				Sample Location	CPZ-4A		MW-03		MW-121B		MW-121C		MW-121C		MW-121M		MW-124C		MW-416		MW-502		MW-704D	
				Sample Date	5/24/2011		5/23/2011		5/25/2011		5/24/2011		5/24/2011		5/25/2011		5/23/2011		5/25/2011		5/24/2011		5/23/2011	
				Field Sample ID	CPZ-4A-05242011		MW-03-05232011		MW-121B-05252011		DUP-GW-05242011-#1		MW-121C-05242011		MW-121M-05252011		MW-124C-05232011		MW-416-05252011		MW-502-05242011		MW-704D-05232011	
				Well Group	R		R		R		R		R		R		R		N		R		R	
Analyte	**CAS No.**	**Unit**	**Standard**	**ICL**																				
VOCs (8260B)																								
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	1	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
1,1,1-Trichloroethane	71-55-6	ug/L	200	0.5	**1.7**		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**6.5**		**99**		2	U	0.5	U
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
1,1-Dichloroethane	75-34-3	ug/L	70	0.5	**2.1**		**1.1**		**0.49**	J	**1.9**		**2**		0.5	U	**1.7**		**23**		2	U	0.5	U
1,1-Dichloroethene	75-35-4	ug/L	7	0.5	**0.64**		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**4.6**		**47**		2	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	2	0.5	UJ	0.5	U	0.5	U	0.5	UJ	0.5	UJ	0.5	U	0.5	U	2.5	U	2	UJ	0.5	UJ
1,2-Dichlorobenzene	95-50-1	ug/L	600	0.5	0.5	U	0.5	U	**0.14**	J	0.5	U	0.5	U	**0.1**	J	0.5	U	2.5	U	2	U	0.5	U
1,2-Dichloroethane	107-06-2	ug/L	1	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
1,4-Dichlorobenzene	106-46-7	ug/L	75	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
2-Butanone (MEK)	78-93-3	ug/L	400	5	2	U	2	U	2	U	2	U	2	U	2	U	2	U	10	U	**66**		2	U
2-Hexanone	591-78-6	ug/L	140	5	2	U	2	U	2	U	2	U	2	U	2	U	2	U	10	U	8	U	2	U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	350	5	2	U	2	U	2	U	2	U	2	U	2	U	2	U	10	U	**28**		2	U
Acetone	67-64-1	ug/L	700	5	2	U J	2	U J	2.1	U	2	U J	2	U J	2.4	U	2	U J	19	U	**57**	J	2	U J
Benzene	71-43-2	ug/L	1	0.5	**3.3**		0.5	U	**21**		**15**		**15**		**6.2**		0.5	U	2.5	U	**29**		**4.7**	
Bromomethane	74-83-9	ug/L	9.8	0.5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	5	U	4	U	1	U
Carbon disulfide	75-15-0	ug/L	700	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
Carbon tetrachloride	56-23-5	ug/L	5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
Chlorobenzene	108-90-7	ug/L	100	0.5	**0.99**		0.5	U	**7.9**		**6**		**6.3**		**4.3**		0.5	U	2.5	U	**10**		**5.4**	
Chloroethane	75-00-3	ug/L	12.1	0.5	**41**		1	U	**54**		**29**		**28**		**81**		1	U	**28**		**23**		**35**	
Chloroform	67-66-3	ug/L	6	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
Chloromethane	74-87-3	ug/L	2.7	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	0.5	**1.5**		**0.4**	J	0.5	U	0.5	U	0.5	U	**0.38**	J	**5.9**		**300**		2	U	0.5	U
Ethylbenzene	100-41-4	ug/L	700	0.5	**1.9**		**0.29**	J	**0.61**		0.5	U	0.5	U	0.5	U	0.5	U	**1.2**	J	**21**		**0.14**	J
Hexachlorobutadiene	87-68-3	ug/L	0.45	0.45	0.5	U J	0.5	U J	0.5	U J	0.5	U J	0.5	U J	0.5	U J	0.5	U J	2.5	U J	2	U J	0.5	U J
Methylene Chloride	75-09-2	ug/L	5	0.5	0.39	UJ	2	U J	2	U	0.38	UJ	0.29	UJ	2	U	2	U J	10	U	7.5	UJ	0.3	UJ
Naphthalene	91-20-3	ug/L	280	0.5	0.5	UJ	0.5	U	0.5	U	0.5	UJ	0.5	UJ	0.5	U	0.5	U	2.5	U J	2	UJ	0.5	UJ
Styrene	100-42-5	ug/L	100	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
Tetrachloroethene	127-18-4	ug/L	5	0.5	0.5	U	0.5	U	**0.18**	J	0.5	U	0.5	U	**0.27**	J	0.5	U	**13**		2	U	0.5	U
Tetrahydrofuran	109-99-9	ug/L	4.6	0.5	**41**		2	U	**160**		**9**		**8.8**		**82**		2	U	**7**	J	**1400**		**12**	
Toluene	108-88-3	ug/L	1000	0.5	**0.76**		1.3	U	**4.5**		**0.71**		**0.68**		**0.61**		1.7	U	**15**		**8.2**		**0.95**	
trans-1,2-Dichloroethene	156-60-5	ug/L	100	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**1.3**	J	2	U	0.5	U
trans-1,3-Dichloropropene	10061-02-6	ug/L	0.5	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	2	U	0.5	U
Trichloroethene	79-01-6	ug/L	5	0.5	**0.66**		**0.72**		**0.18**	J	0.5	U	0.5	U	0.5	U	**1.1**		**240**		2	U	0.5	U
Vinyl chloride	75-01-4	ug/L	2	0.5	**1.1**		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**55**		2	U	0.5	U
Xylenes, Total	1330-20-7	ug/L	530	0.5	**4.7**		**1.9**		**7**		1	U	1	U	**3.3**		1	U	**10**		**52**		**1**	

Notes:
U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
E = Analyte exceeded calibration range
ug/L = micrograms per liter
VOCs = volatile organic compounds
Standard = GW-SRSNE Action Level (ARARs-Based Limits)
ICL = Interim Cleanup Standard based on table L-1 from Record of Decision Summary, September 2005
Bold = Analyte detected above the laboratory's Reporting Limit
Shaded Cell = Analyte detected above the Standard/Action Level

Table 1 – VOCs - Groundwater Sample Summary Results May/September 2011
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location					MW-704DR		MW-704M		MW-706DR		MW-707DR		MW-707DR		MW-907D		MW-907D		MW-907DR		MW-907M		MWL-309	
Sample Date					5/23/2011		5/25/2011		5/25/2011		5/24/2011		9/27/2011		5/25/2011		5/25/2011		5/25/2011		5/24/2011		5/24/2011	
Field Sample ID					MW-704DR-05232011		MW-704M-05252011		MW-706DR-05252011		MW-707DR-05242011		MW-707DR-09272011		DUP-GW-05252011-#1		MW-907D-05252011		MW-907DR-05252011		MW-907M-05242011		MWL-309-05242011	
Well Group					R		R		R		R		R		R		R		R		R		R	
Analyte	**CAS No.**	**Unit**	**Standard**	**ICL**																				
VOCs (8260B)																								
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	1	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U	0.5	U	100	U	0.5	U	0.5	U
1,1,1-Trichloroethane	71-55-6	ug/L	200	0.5	0.5	U	0.5	U	50	U	**3.8**		0.5	U	0.5	U J	**0.47**	J	**760**		0.5	U	0.5	U
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U	0.5	U	100	U	0.5	U	0.5	U
1,1-Dichloroethane	75-34-3	ug/L	70	0.5	**8.4**		0.5	U	50	U	**2.7**		**1.5**		**4.7**		**3.9**		100	U	0.5	U	**3.4**	
1,1-Dichloroethene	75-35-4	ug/L	7	0.5	**0.37**	J	0.5	U	**100**		**1**		**0.37**	J	0.5	U	0.5	U	**200**		0.5	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	2	0.5	U	0.5	U	50	U J	0.5	UJ	0.5	UJ	0.5	U J	0.5	U	100	U	0.5	U	0.5	UJ
1,2-Dichlorobenzene	95-50-1	ug/L	600	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U J	**0.25**	J	100	U	**0.52**		0.5	U
1,2-Dichloroethane	107-06-2	ug/L	1	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U	0.5	U	100	U	0.5	U	0.5	U
1,4-Dichlorobenzene	106-46-7	ug/L	75	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	**0.23**	J	0.5	U J	100	U	**0.89**		0.5	U
2-Butanone (MEK)	78-93-3	ug/L	400	5	2	U	2	U	200	U	2	U	2	U	2	U	2	U	400	U	2	U	2	U
2-Hexanone	591-78-6	ug/L	140	5	2	U	2	U	200	U	2	U	2	U	2	U	2	U	400	U	2	U	2	U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	350	5	2	U	2	U	**270**		2	U	2	U	2	U	2	U	**140**	J	2	U	2	U
Acetone	67-64-1	ug/L	700	5	2	U J	2	U	200	U J	2	U J	1.5	UJ	2	U J	2.6	U	400	U	**0.99**	J	2	U J
Benzene	71-43-2	ug/L	1	0.5	**2.6**		**0.85**		50	U	**2.5**		**0.67**		**29**		**27**		100	U	**72**		**0.4**	J
Bromomethane	74-83-9	ug/L	9.8	0.5	1	U	1	U	100	U	1	U	1	U	1	U	1	U	200	U	1	U	1	U
Carbon disulfide	75-15-0	ug/L	700	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U	0.5	U	100	U	0.5	U	0.5	U
Carbon tetrachloride	56-23-5	ug/L	5	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U	0.5	U	100	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	ug/L	100	0.5	**1**		**3.3**		50	U	0.5	U	0.5	U	**11**		**11**		100	U	**29**		**1.1**	
Chloroethane	75-00-3	ug/L	12.1	0.5	**17**		**15**		100	U	1	U	1	U	**72**		**71**		200	U	**140**	E	**8.9**	
Chloroform	67-66-3	ug/L	6	0.5	0.5	U	0.5	U	50	U	**0.12**	J	0.5	U	0.5	U	0.5	U	**38**	J	0.5	U	0.5	U
Chloromethane	74-87-3	ug/L	2.7	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U	0.5	U	100	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	0.5	**1**		**0.23**	J	**630**		**1.8**		**0.54**		**0.71**	J	**0.47**	J	**220**		**0.37**	J	**0.52**	
Ethylbenzene	100-41-4	ug/L	700	0.5	**0.49**	J	**0.37**	J	50	U	**0.3**	J	0.5	U	**3.1**		**2.6**		**140**		**4.5**		0.5	U
Hexachlorobutadiene	87-68-3	ug/L	0.45	0.45	0.5	U J	0.5	U J	50	U J	0.5	U J	0.5	UJ	0.5	U J	0.5	U J	100	U J	0.5	U J	0.5	U J
Methylene Chloride	75-09-2	ug/L	5	0.5	2	U J	2	U	290	UJ	0.24	UJ	2	UJ	2	UJ	2	U	400	U	2	U	0.23	UJ
Naphthalene	91-20-3	ug/L	280	0.5	0.5	U	**0.3**	J	50	U J	0.5	UJ	0.5	UJ	0.5	U J	**0.29**	J	100	U J	**3.9**	J	0.5	UJ
Styrene	100-42-5	ug/L	100	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U	0.5	U	100	U	0.5	U	0.5	U
Tetrachloroethene	127-18-4	ug/L	5	0.5	0.5	U	**0.12**	J	**260**		0.5	U	0.5	U	0.5	U J	**0.16**	J	**2200**		0.5	U	0.5	U
Tetrahydrofuran	109-99-9	ug/L	4.6	0.5	**6.7**		**5.3**		200	U	2	U	2	U	**430**	E	**430**	E	400	U	**4200**	E	**18**	
Toluene	108-88-3	ug/L	1000	0.5	**3.3**		**2.6**		**300**		**2.2**		**0.49**	J	**1.5**		**1.6**		**1900**		**1.6**		**1.8**	
trans-1,2-Dichloroethene	156-60-5	ug/L	100	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U	0.5	U	100	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	10061-02-6	ug/L	0.5	0.5	0.5	U	0.5	U	50	U	0.5	U	0.5	U	0.5	U	0.5	U	100	U	0.5	U	0.5	U
Trichloroethene	79-01-6	ug/L	5	0.5	**0.93**		**0.31**	J	**9300**		**0.24**	J	0.5	U	0.5	U J	**0.18**	J	**40000**	E	**0.64**		**0.31**	J
Vinyl chloride	75-01-4	ug/L	2	0.5	**0.62**		0.5	U	50	U	0.5	U	0.5	U	**0.7**		**0.56**		100	U	**0.3**	J	0.5	U
Xylenes, Total	1330-20-7	ug/L	530	0.5	**2.6**		**3.8**		100	U	**2.2**		**0.65**	J	**9.6**		**9**		**630**		**140**		1	U

Notes:
U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
E = Analyte exceeded calibration range
ug/L = micrograms per liter
VOCs = volatile organic compounds
Standard = GW-SRSNE Action Level (ARARs-Based Limits)
ICL = Interim Cleanup Standard based on table L-1 from Record of Decision Summary, September 2005
Bold = Analyte detected above the laboratory's Reporting Limit
Shaded Cell = Analyte detected above the Standard/Action Level

Table 1 – VOCs - Groundwater Sample Summary Results May/September 2011
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

					Sample Location	P-101B		P-101C		P-11A		P-13		PZO-2D		PZO-2M		PZR-2R		TW-08B	
					Sample Date	5/24/2011		5/24/2011		5/24/2011		5/23/2011		5/23/2011		5/24/2011		5/23/2011		5/25/2011	
					Field Sample ID	P-101B-05242011		P-101C-05242011		P-11A-05242011		P-13-05232011		PZO-2D-05232011		PZO-2M-05242011		PZR-2R-05232011		TW-08B-05252011	
					Well Group	R		R		R		R		R		R		R		N	
Analyte	**CAS No.**	**Unit**	**Standard**	**ICL**																	
VOCs (8260B)																					
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	1	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
1,1,1-Trichloroethane	71-55-6	ug/L	200	0.5	0.5	U	0.5	U	**49**		**7.5**		0.5	U	0.5	U	0.5	U	**15000**	
1,1,2-Trichloroethane	79-00-5	ug/L	5	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
1,1-Dichloroethane	75-34-3	ug/L	70	0.5	**1.2**		**12**		**17**		**1.6**		0.5	U	0.5	U	0.5	U	**4700**	
1,1-Dichloroethene	75-35-4	ug/L	7	0.5	0.5	U	0.5	U	**2.4**	J	0.5	U	0.5	U	0.5	U	0.5	U	**2500**	
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	2	0.5	UJ	0.5	UJ	2.5	UJ	0.5	U	0.5	U	0.5	UJ	0.5	UJ	1200	U
1,2-Dichlorobenzene	95-50-1	ug/L	600	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
1,2-Dichloroethane	107-06-2	ug/L	1	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
1,4-Dichlorobenzene	106-46-7	ug/L	75	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
2-Butanone (MEK)	78-93-3	ug/L	400	5	2	U	2	U	10	U	2	U	2	U	2	U	2	U	**6500**	
2-Hexanone	591-78-6	ug/L	140	5	2	U	2	U	10	U	2	U	2	U	2	U	2	U	5000	U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	350	5	2	U	2	U	10	U	2	U	2	U	2	U	2	U	**3100**	J
Acetone	67-64-1	ug/L	700	5	2	U J	2	U J	10	U J	2	U J	2	U J	2	U J	2	U J	**6600**	
Benzene	71-43-2	ug/L	1	0.5	**9.2**		**4.6**		**1.3**	J	0.5	U	0.5	U	0.5	U	**0.15**	J	**580**	J
Bromomethane	74-83-9	ug/L	9.8	0.5	1	U	1	U	5	U	1	U	1	U	1	U	1	U	2500	U
Carbon disulfide	75-15-0	ug/L	700	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
Carbon tetrachloride	56-23-5	ug/L	5	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
Chlorobenzene	108-90-7	ug/L	100	0.5	**2.6**		**1.5**		2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
Chloroethane	75-00-3	ug/L	12.1	0.5	**28**		**2.3**		5	U	1	U	1	U	1	U	1	U	**2000**	J
Chloroform	67-66-3	ug/L	6	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**550**	J
Chloromethane	74-87-3	ug/L	2.7	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	0.5	0.5	U	**5.7**		**380**		**0.91**		0.5	U	0.5	U	0.5	U	**470000**	E
Ethylbenzene	100-41-4	ug/L	700	0.5	**0.15**	J	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**2800**	
Hexachlorobutadiene	87-68-3	ug/L	0.45	0.45	0.5	U J	0.5	U J	2.5	U J	0.5	U J	0.5	U J	0.5	U J	0.5	U J	1200	U J
Methylene Chloride	75-09-2	ug/L	5	0.5	0.25	UJ	0.17	UJ	8.9	UJ	2	U J	2	U J	0.16	UJ	0.27	UJ	2300	U
Naphthalene	91-20-3	ug/L	280	0.5	0.5	UJ	0.5	UJ	2.5	UJ	0.5	U	0.5	U	0.5	UJ	0.5	UJ	1200	U J
Styrene	100-42-5	ug/L	100	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
Tetrachloroethene	127-18-4	ug/L	5	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**11000**	
Tetrahydrofuran	109-99-9	ug/L	4.6	0.5	**9.6**		**7.6**		**24**		2	U	2	U	2	U	2	U	5000	U
Toluene	108-88-3	ug/L	1000	0.5	**0.78**		**0.29**	J	**2**	J	0.76	U	0.5	U	**0.21**	J	**1.9**		**48000**	
trans-1,2-Dichloroethene	156-60-5	ug/L	100	0.5	0.5	U	**0.49**	J	**1.8**	J	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
trans-1,3-Dichloropropene	10061-02-6	ug/L	0.5	0.5	0.5	U	0.5	U	2.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1200	U
Trichloroethene	79-01-6	ug/L	5	0.5	0.5	U	**0.15**	J	**5.6**		**0.17**	J	**0.57**		**0.55**		0.5	U	**320000**	E
Vinyl chloride	75-01-4	ug/L	2	0.5	**0.59**		**18**		**100**		0.5	U	0.5	U	0.5	U	0.5	U	**21000**	
Xylenes, Total	1330-20-7	ug/L	530	0.5	**1.9**		1	U	5	U	1	U	1	U	1	U	1	U	**8800**	

Notes:

U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
E = Analyte exceeded calibration range
ug/L = micrograms per liter
VOCs = volatile organic compounds
Standard = GW-SRSNE Action Level (ARARs-Based Limits)
ICL = Interim Cleanup Standard based on table L-1 from Record of Decision Summary, September 2005
Bold = Analyte detected above the laboratory's Reporting Limit
Shaded Cell = Analyte detected above the Standard/Action Level

Table 2 – Metals - Groundwater Sample Summary Results May 2011
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

Sample Location				MW-126B		MW-126C		MW-209A		MW-209B		MW-701DR		MW-901D		MW-901D		MW-901R		P-12	
Sample Date				5/25/2011		5/26/2011		5/26/2011		5/26/2011		5/26/2011		5/26/2011		5/26/2011		5/26/2011		5/25/2011	
Field Sample ID				MW-126B-05252011		MW-126C-05262011		MW-209A-05262011		MW-209B-05262011		MW-701DR-05262011		DUP-GW-05262011-#1		MW-901D-05262011		MW-901R-05262011		P-12-05252011	
Well Group				M		B		B		B		M		M		M		M		M	
Analyte	**CAS No.**	**Unit**	**Standard**																		
Metals (6010B)																					
Aluminum (Dissolved)	7429-90-5	ug/L	--	250	U	250	U	250	U	**70.7**	J	250	U	**51.6**	J	**29.5**	J	250	U	250	U
Aluminum (Total)	7429-90-5	ug/L	--	**38.5**	J	**10.7**	J	250	U	**857**		**74.3**	J	**1070**	J	**2810**	J	**627**		**961**	
Antimony (Dissolved)	7440-36-0	ug/L	--	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U
Antimony (Total)	7440-36-0	ug/L	6	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U
Arsenic (Dissolved)	7440-38-2	ug/L	--	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U
Arsenic (Total)	7440-38-2	ug/L	10	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U
Barium (Dissolved)	7440-39-3	ug/L	--	**401**	J	**256**		**263**		**87.8**		**94.4**		**64.5**		**61.3**		**188**		**149**	J
Barium (Total)	7440-39-3	ug/L	1000	**411**	J	**255**		**273**		**119**		**90**		**78.3**		**99.1**		**194**		**169**	J
Beryllium (Dissolved)	7440-41-7	ug/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Beryllium (Total)	7440-41-7	ug/L	4	5	U	5	U	5	U	5	U	5	U	5	U	**0.3**	J	5	U	5	U
Cadmium (Dissolved)	7440-43-9	ug/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Cadmium (Total)	7440-43-9	ug/L	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Chromium (Dissolved)	7440-47-3	ug/L	--	5	U	5	U	5	U	5	U	**0.64**	J	5	U	5	U	5	U	5	U
Chromium (Total)	7440-47-3	ug/L	100	5	U	5	U	5	U	**1.3**	J	5	U	**1.1**	J	**3.3**	J	**1.2**	J	**0.97**	J
Cobalt (Dissolved)	7440-48-4	ug/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Cobalt (Total)	7440-48-4	ug/L	10	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Copper (Dissolved)	7440-50-8	ug/L	--	10	U	10	U	10	U	10	U	10	U	**1.9**	J	10	U	10	U	10	U
Copper (Total)	7440-50-8	ug/L	1300	10	U	**1.5**	J	10	U	10	U	10	U	**2.3**	J	**4.1**	J	10	U	10	U
Iron (Dissolved)	7439-89-6	ug/L	--	125	U	76.6	UJ	125	U	**68.2**	J	125	U	**39.5**	J	**28.2**	J	125	U	125	U
Iron (Total)	7439-89-6	ug/L	--	**42.5**	J	125	U J	125	U	**779**		**67.3**	J	**886**	J	**2260**	J	**515**		**1220**	
Lead (Dissolved)	7439-92-1	ug/L	--	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U
Lead (Total)	7439-92-1	ug/L	15	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U
Manganese (Dissolved)	7439-96-5	ug/L	--	**3.9**	J	8	U	8	U	**8.2**		**1.7**	J	**6.7**	J	**6.2**	J	**8.8**		8	U J
Manganese (Total)	7439-96-5	ug/L	500	19.2	U J	8	U	8	U	**40.5**		**8.3**		**50.8**	J	**145**	J	**40.3**		**49.6**	J
Nickel (Dissolved)	7440-02-0	ug/L	--	5	U	5	U	5	U	5	U	5	U	**2.3**	J	**2.6**	J	5	U	5	U
Nickel (Total)	7440-02-0	ug/L	100	5	U	5	U	5	U	**2.2**	J	5	U	**8.9**	J	**51.3**	J	**6**		5	U
Silver (Dissolved)	7440-22-4	ug/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Silver (Total)	7440-22-4	ug/L	36	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Thallium (Dissolved)	7440-28-0	ug/L	--	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U
Thallium (Total)	7440-28-0	ug/L	2	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U
Vanadium (Dissolved)	7440-62-2	ug/L	--	5	U	1.1	UJ	5	U	5	U	**8**	J	5	U	5	U	**1**	J	5	U
Vanadium (Total)	7440-62-2	ug/L	50	5	U	5	U J	5	U	5	U	**7**	J	**2.9**	J	**6.8**		**2.1**	J	**3.7**	J
Zinc (Dissolved)	7440-66-6	ug/L	--	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
Zinc (Total)	7440-66-6	ug/L	5000	25	U	25	U	25	U	**6.6**	J	25	U	**12.2**	J	**11.1**	J	**5.4**	J	25	U
Metals (7470A)																					
Mercury (Dissolved)	7439-97-6	ug/L	--	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Mercury (Total)	7439-97-6	ug/L	--	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U

Notes:
U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
ug/L = micrograms per liter
Standard = GW-SRSNE Action Level (ARARs-Based Limits)
Bold = Analyte detected above the laboratory's Reporting Limit
Shaded Cell = Analyte detected above the Standard/Action Level

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Table 3 – MNA Parameters - Groundwater Sample Summary Results May 2011
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

		Sample Location	MW-416		MW-416		TW-08B	
		Sample Date	5/25/2011		5/25/2011		5/25/2011	
		Field Sample ID	DUP-GW-05252011-#2		MW-416-05252011		TW-08B-05252011	
		Well Group	N		N		N	
Analyte	**CAS No.**	**Unit**						
MNA (Water)								
Bicarbonate Alkalinity as CaCO3	--	mg/L	**112**	--	**112**	--	**203**	--
Carbonate Alkalinity as CaCO3	--	mg/L	2	U	2	U	2	U
Hydroxide Alkalinity	--	mg/L	2	U	2	U	2	U
Phenolphthalein Alkalinity	--	mg/L	2	U	2	U	2	U
Chloride	16887-00-6	mg/L	**9.4**	--	**9.4**	--	**231**	--
Nitrate as N	14797-55-8	mg/L	**0.59**	--	**0.6**	--	0.1	U
Nitrite as N	14797-65-0	mg/L	0.1	U	0.1	U	1	U
Sulfate	14808-79-8	mg/L	**66.1**	--	**66.1**	--	**4.5**	--
Sulfide	18496-25-8	mg/L	0.01	U J	0.01	U J	0.1	UJ
Iron (Dissolved)	7439-89-6	ug/L	250	U	250	U	**8760**	--
Manganese (Dissolved)	7439-96-5	ug/L	**27.8**	--	**28.9**	--	**8340**	J
Total Organic Carbon - Quad	7440-44-0	mg/L	1	U	1	U	**19**	--
MNA (Water Gas)								
Ethane	74-84-0	ug/L	**1**	J	**4.1**	J	**59**	--
Ethene	74-85-1	ug/L	**3.9**	J	**20**	J	**3500**	J
Methane	74-82-8	ug/L	**90**	J	**120**	J	**2400**	M

Notes:
U = Analyte not detected above the laboratory reporting limit
J = Analyte result is estimated
M = Recovery/RPD poor for MS/MSD
mg/L = milligrams per liter
ug/L = micrograms per liter
Bold = Analyte detected above the laboratory's Reporting Limit

Table 4 - Statistical Summary of Groundwater Total VOC Concentration Trends
Solvents Recovery Service of New England, Inc. (SRSNE) Superfund Site
Southington, Connecticut

		Data Range					Linear Regression Analysis						Mann-Kendall Analysis			Sen's Slope Analysis	
Well	Constituent	Minimum Concentration (µg/L)	Maximum Concentration (µg/L)	% of Data Below Laboratory Minimum Detection Limit	Start Date	End Date	Correlation Coefficient, R^2	p-value of Correlation	Estimated Attenuation Half-life (days)	Trend Direction	Trend Significant?	Comments	p-value of Correlation	Trend Direction	Trend Significant?	Estimated Attenuation Half-life (days)	Trend Direction
Shallow Overburden Wells																	
P-13	Total VOCs	2.4	69	0	3/28/1995	5/23/2011	0.49	0.00	1,742	Decreasing	Yes		< 0.001	Decreasing	Yes	1,610	Decreasing
MWL-312	Total VOCs	<0.5	49	76	3/27/1995	5/20/2010	0.18	0.09	1,400	Decreasing	Yes 90% CI	76% of results below detection	0.245	Decreasing	No	NA	No Trend
P-101C	Total VOCs	41.5	479	0	3/27/1995	5/24/2011	0.55	<0.001	2,198	Decreasing	Yes		< 0.001	Decreasing	Yes	2,197	Decreasing
Middle Overburden Wells																	
MW-03	Total VOCs	0.7	120	0	12/5/1996	5/23/2011	0.28	0.03	1,157	Decreasing	Yes		0.021	Decreasing	Yes	916	Decreasing
MW-205B	Total VOCs	<0.5	24	12	3/23/1995	5/14/2010	0.26	0.04	1,644	Decreasing	Yes		0.008	Decreasing	Yes	1,690	Decreasing
P-101B	Total VOCs	12	187,400	0	3/27/1995	5/24/2011	0.65	<0.001	535	Decreasing	Yes		< 0.001	Decreasing	Yes	510	Decreasing
MW-127B	Total VOCs	<0.5	22	12	3/23/1995	5/19/2010	0.22	0.06	1,643	Decreasing	Yes 90% CI		0.059	Decreasing	Yes, 90% CI	1,824	No Trend
MW-501B	Total VOCs	1.8	65	0	3/24/1995	5/24/2010	0.55	<0.001	1,022	Decreasing	Yes		0.001	Decreasing	Yes	990	Decreasing
Deep Overburden Wells																	
MW-204B	Total VOCs	<0.5	87	18	3/28/1995	5/17/2010	0.23	0.05	1,251	Decreasing	Yes		0.002	Decreasing	Yes	642	Decreasing
MW-502	Total VOCs	630	118,160	0	3/21/1995	5/24/2011	0.63	<0.001	1,005	Decreasing	Yes		0.005	Decreasing	Yes	2,682	Decreasing
MW-704D	Total VOCs	7.0	665	0	12/18/1996	5/23/2011	0.06	0.36	NA	Decreasing	No		0.208	Decreasing	No	1,763	NS
MW-707D	Total VOCs	<0.5	21	56	12/6/1996	5/13/2010	<0.001	0.92	NA	No Trend	No	56% of results below detection	0.412	NS	No	NA	No Trend
Shallow Bedrock Wells																	
MW-127C	Total VOCs	20	147	0	3/23/1995	5/13/2010	0.42	0.01	2,611	Decreasing	Yes		0.019	Decreasing	Yes	3,150	Decreasing
MW-128	Total VOCs	3.0	15	0	3/23/1995	5/19/2010	0.46	0.003	3,060	Decreasing	Yes		0.001	Decreasing	Yes	2,310	Decreasing
MW-204A	Total VOCs	2.0	682	0	3/28/1995	5/15/2010	0.55	<0.001	773	Decreasing	Yes		< 0.001	Decreasing	Yes	654	Decreasing
MW-501A	Total VOCs	10	118	0	3/24/1995	5/21/2010	0.82	<0.001	1,590	Decreasing	Yes		< 0.001	Decreasing	Yes	1,507	Decreasing
P-11A	Total VOCs	223	11,550	0	3/27/1995	5/24/2011	0.12	0.17	NA	Decreasing	No		0.016	Decreasing	Yes	1,719	Decreasing
Deep Bedrock Wells																	
MW-703DR	Total VOCs	<0.5	8.0	81	12/9/1996	5/12/2010	<0.001	0.97	NA	No Trend	No	81% of results below detection	0.482	NS	No	NA	No Trend
MW-704DR	Total VOCs	38	455	0	12/17/1996	5/23/2011	0.37	0.01	2,726	Decreasing	Yes		0.010	Decreasing	Yes	3,453	Decreasing
MW-706DR	Total VOCs	4,409	11,240	0	12/10/1996	5/25/2011	0.01	0.72	NA	No Trend	No		0.388	NS	No	NA	NS
MW-707DR	Total VOCs	<0.5	18	39	12/30/1996	9/27/2011	0.25	0.03	NA	Increasing	Yes		< 0.001	Increasing	Yes	NA	Increasing

Notes and Assumptions:
µg/L = micrograms per liter
NS = not significant
NA = not applicable due to increasing trend or non-significant trend

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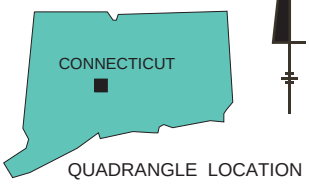
Figures

REFERENCE: SOUTHINGTON, CONN. USGS QUAD. 1968 PR 1992, MERIDEN, CONN. USGS QUAD. 1966 PR 1984, NEW BRITAIN, CONN. USGS QUAD. 1966 PR 1984, & BRISTOL, CONN. USGS QUAD 1967 PR 1984

2000' 0 2000'

APPROX. SCALE: 1" = 2000'



QUADRANGLE LOCATION

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

09/16/2010 SYRACUSE, NY-ENV/CAD DJHOWES, LJPOSENAUER
B005463410000102200\CDR\54634N01.CDR

KANE STREET
HART STREET
CURTISS STREET
FAWN ROAD
CLAP EASEMENT
FORMER OPERATIONS AREA
NTCRA 1 SHEETPILE WALL
INTERMITTENT STREAM
LAZY LANE
NTCRA 1 CONTAINMENT AREA
FORMER IDEAL FORGING
NORTH MAIN STREET
(CONN. ROUTE 10)
QUINNIPIAC RIVER
QUEEN STREET
FLANDERS STREET

SG-1
SG-2
SG-3
PZO-5
PZO-6S
PZO-121S
PZO-204S
WE-2
SRS-2
SRS-4
TW-11
P-13
P-12
P-9
P-7
P-5B
P-11B
P-3B
P-101C
P-102C
DP-1
DP-2
DP-3
DP-4
DP-5
DP-6
MW-08
MW-201B
MW-307
MW-304
MW-313
MW-311
MW-302
MW-303
MW-314
MW-312
MW-309
MW-306
MW-903S
MW-904S
MW-501C
MW-910S
MW-801S
MW-703S
MW-704S
MW-707S
MW-710S
MW-708S
CW-3-78
CW-3-75

NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

2. NON-GRAY WELLS AND PIEZOMETERS WITH NO BOLD BLACK LETTER PROPOSED FOR DORMANT STATUS.

KEY:

- **N** NTCRA 1 AREA MONITORING WELL
- **M** BACKGROUND MONITORING WELL FOR METALS SAMPLING ONLY
- **R** MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
- **C** MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
- **W** MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- SHALLOW OVERBURDEN MONITORING WELL
- NTCRA 1 EXTRACTION WELL
- PIEZOMETER
- NTCRA 1 WETLAND DRIVEPOINT
- STREAM/RIVER GAUGE POINT

0 300' 600'

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER MONITORING LOCATIONS SHALLOW OVERBURDEN

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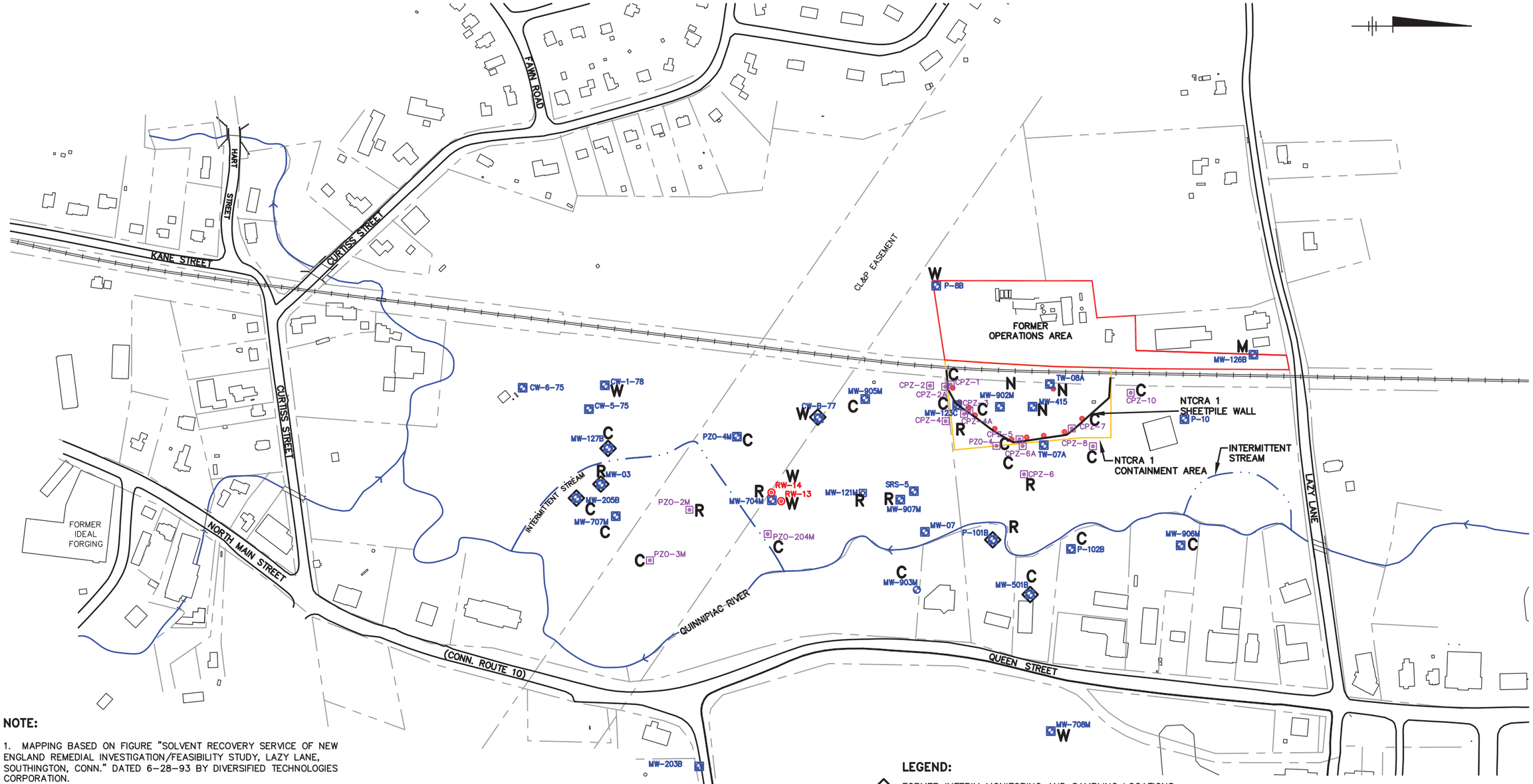
FIGURE 2



NOTE:

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KEY:

- **N** NTCRA 1 AREA MONITORING WELL
- **M** BACKGROUND MONITORING WELL FOR METALS SAMPLING ONLY
- **R** MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
- **C** MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
- **W** MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- MIDDLE OVERBURDEN MONITORING WELL
- PIEZOMETER
- NTCRA 1 EXTRACTION WELL
- NTCRA 2 EXTRACTION WELL

0 300' 600'

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER MONITORING LOCATIONS MIDDLE OVERBURDEN

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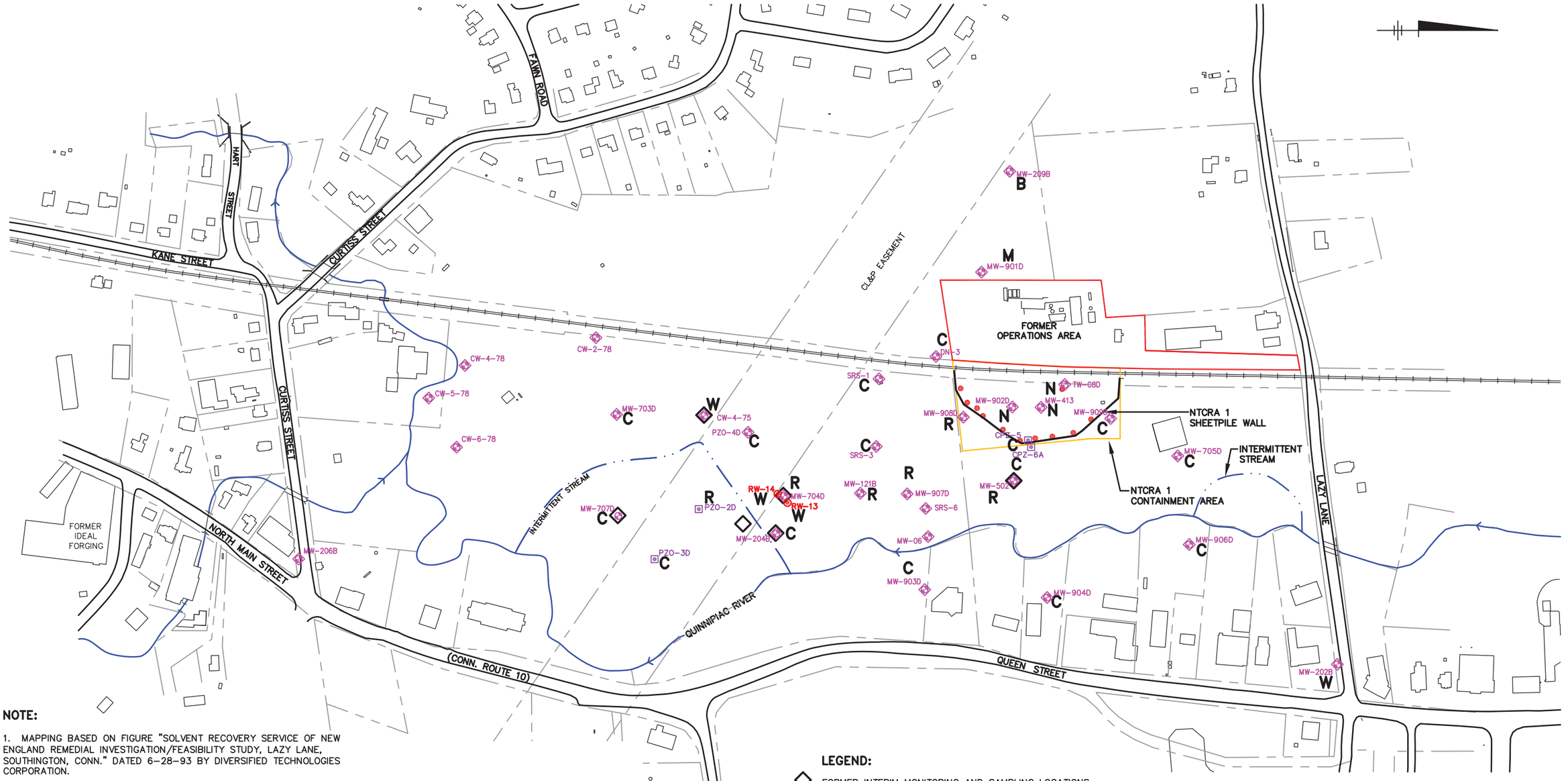
FIGURE 3



NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

2. NON-GRAY WELLS AND PIEZOMETERS WITH NO BOLD BLACK LETTER PROPOSED FOR DORMANT STATUS.

KEY:

- **N** NTCRA 1 AREA MONITORING WELL
- **M** BACKGROUND MONITORING WELL FOR METALS SAMPLING ONLY
- **R** MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
- **B** BACKGROUND MONITORING WELL FOR METALS AND MNA SAMPLING
- **C** MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
- **W** MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- DEEP OVERBURDEN MONITORING WELL
- NTCRA 1 EXTRACTION WELL
- PIEZOMETER
- NTCRA 2 EXTRACTION WELL

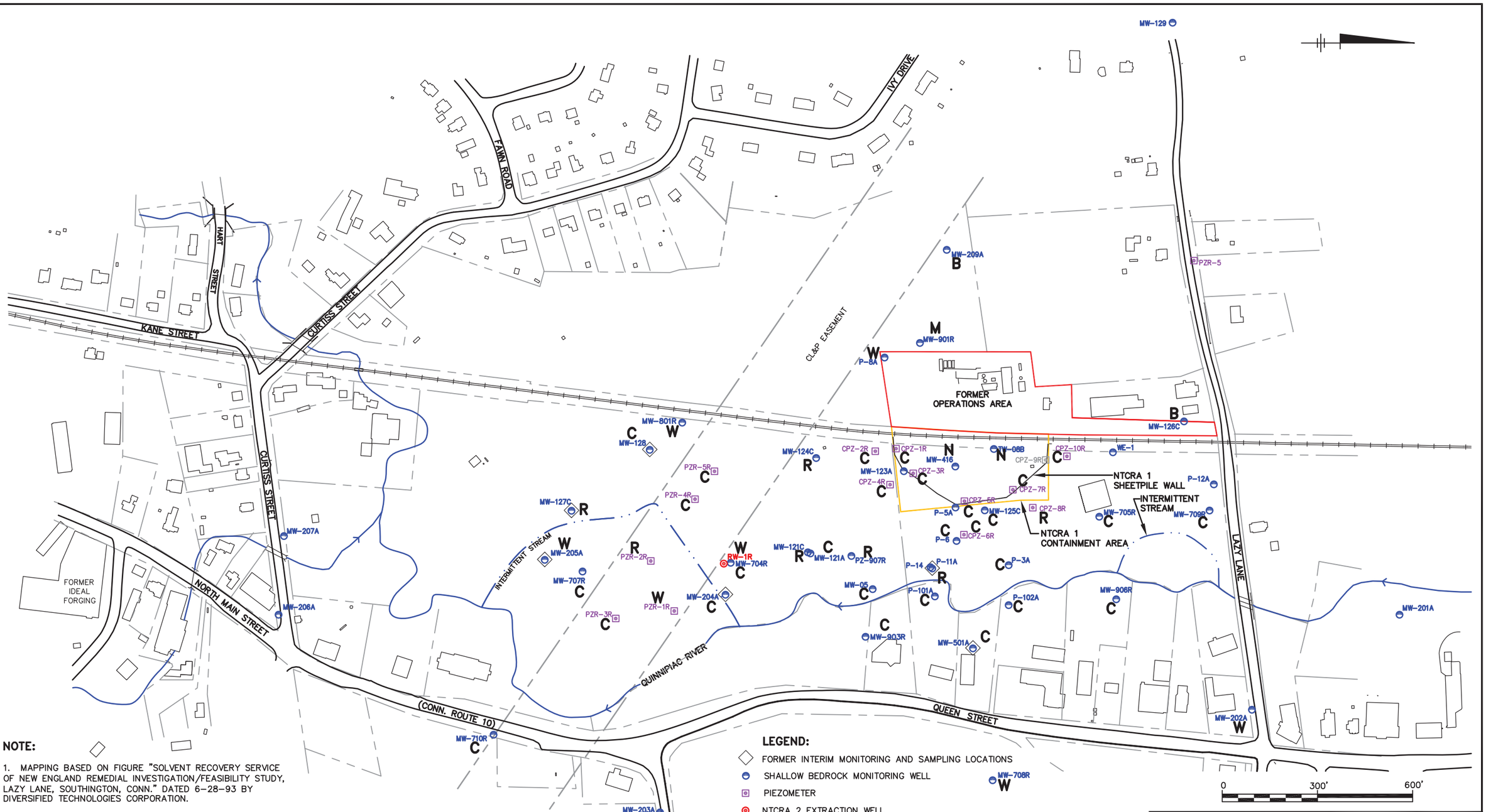
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER MONITORING LOCATIONS DEEP OVERBURDEN

ARCADIS

FIGURE
4

CITY: SYRACUSE_NY GROUP: ENVCAD DB: P. LISTER PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF; (FRZ)
G:\ENVCAD\Manchester\ACTIB0054634\0000110014154634C04.DWG LAYOUT: 4 SAVED: 9/16/2010 10:59 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 9/16/2010 12:12 PM BY: SMALL, BRIAN
XREFS: IMAGES: PROJECTNAME: ---
54634X01 Figure 29.jpg



NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.

2. NON-GRAY WELLS AND PIEZOMETERS WITH NO BOLD BLACK LETTER PROPOSED FOR DORMANT STATUS.

KEY:

- **N** NTCRA 1 AREA MONITORING WELL
- **M** BACKGROUND MONITORING WELL FOR METALS SAMPLING ONLY
- **R** MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
- **B** BACKGROUND MONITORING WELL FOR METALS AND MNA SAMPLING
- **C** MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
- **W** MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

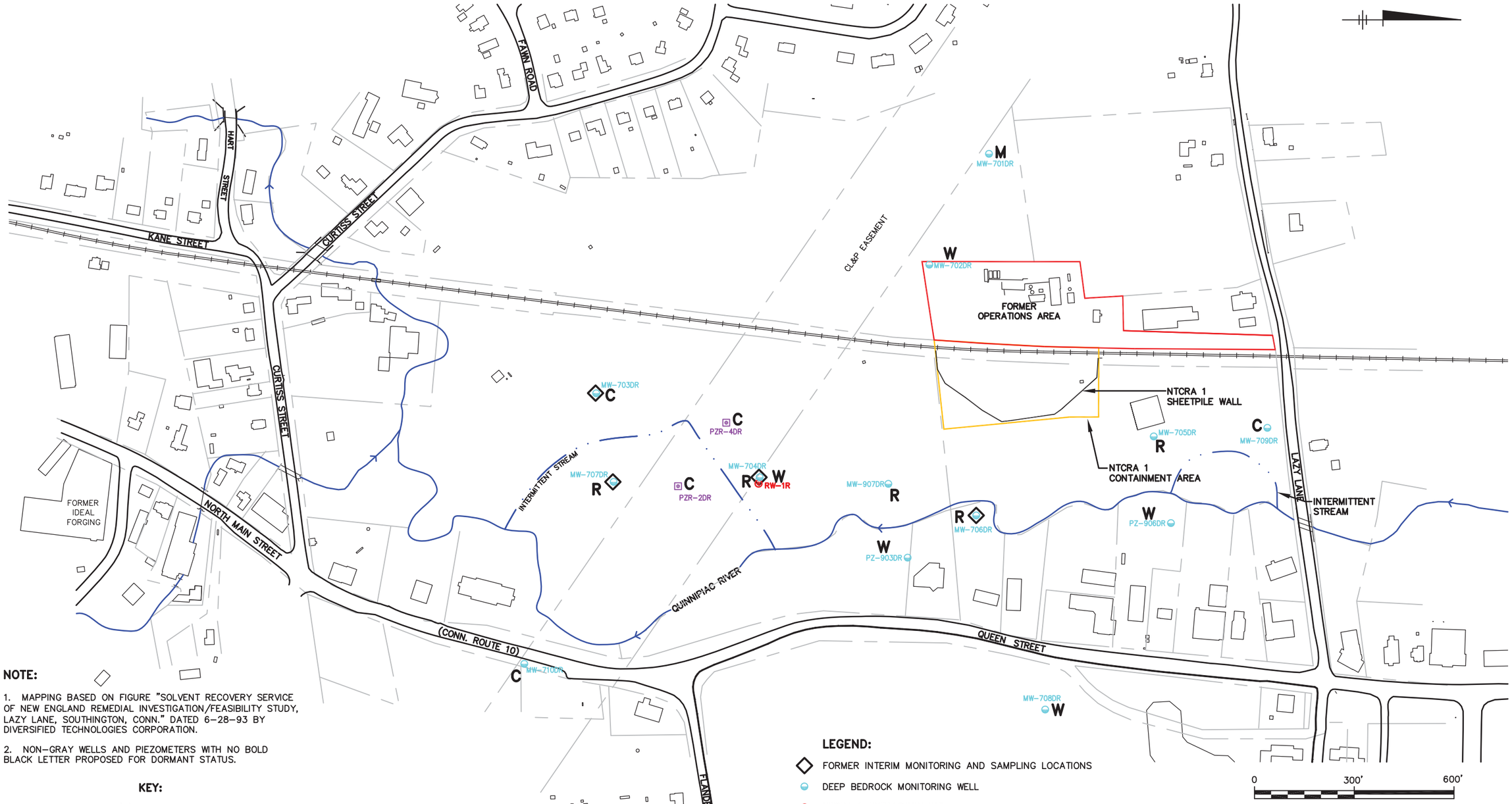
- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- SHALLOW BEDROCK MONITORING WELL (MW-708R W)
- PIEZOMETER
- NTCRA 2 EXTRACTION WELL

SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER MONITORING LOCATIONS SHALLOW BEDROCK

ARCADIS

FIGURE 5



NOTE:

1. MAPPING BASED ON FIGURE "SOLVENT RECOVERY SERVICE OF NEW ENGLAND REMEDIAL INVESTIGATION/FEASIBILITY STUDY, LAZY LANE, SOUTHINGTON, CONN." DATED 6-28-93 BY DIVERSIFIED TECHNOLOGIES CORPORATION.
2. NON-GRAY WELLS AND PIEZOMETERS WITH NO BOLD BLACK LETTER PROPOSED FOR DORMANT STATUS.

KEY:

- **M** BACKGROUND MONITORING WELL FOR METALS SAMPLING ONLY
- **R** MONITORING WELL FOR ROUTINE VOC AND MNA MONITORING
- **C** MONITORING WELL FOR COMPREHENSIVE SAMPLING ROUNDS ONLY
- **W** MONITORING WELL FOR WATER LEVEL MEASUREMENT ONLY

LEGEND:

- FORMER INTERIM MONITORING AND SAMPLING LOCATIONS
- DEEP BEDROCK MONITORING WELL
- NTCRA 2 EXTRACTION WELL
- PIEZOMETER

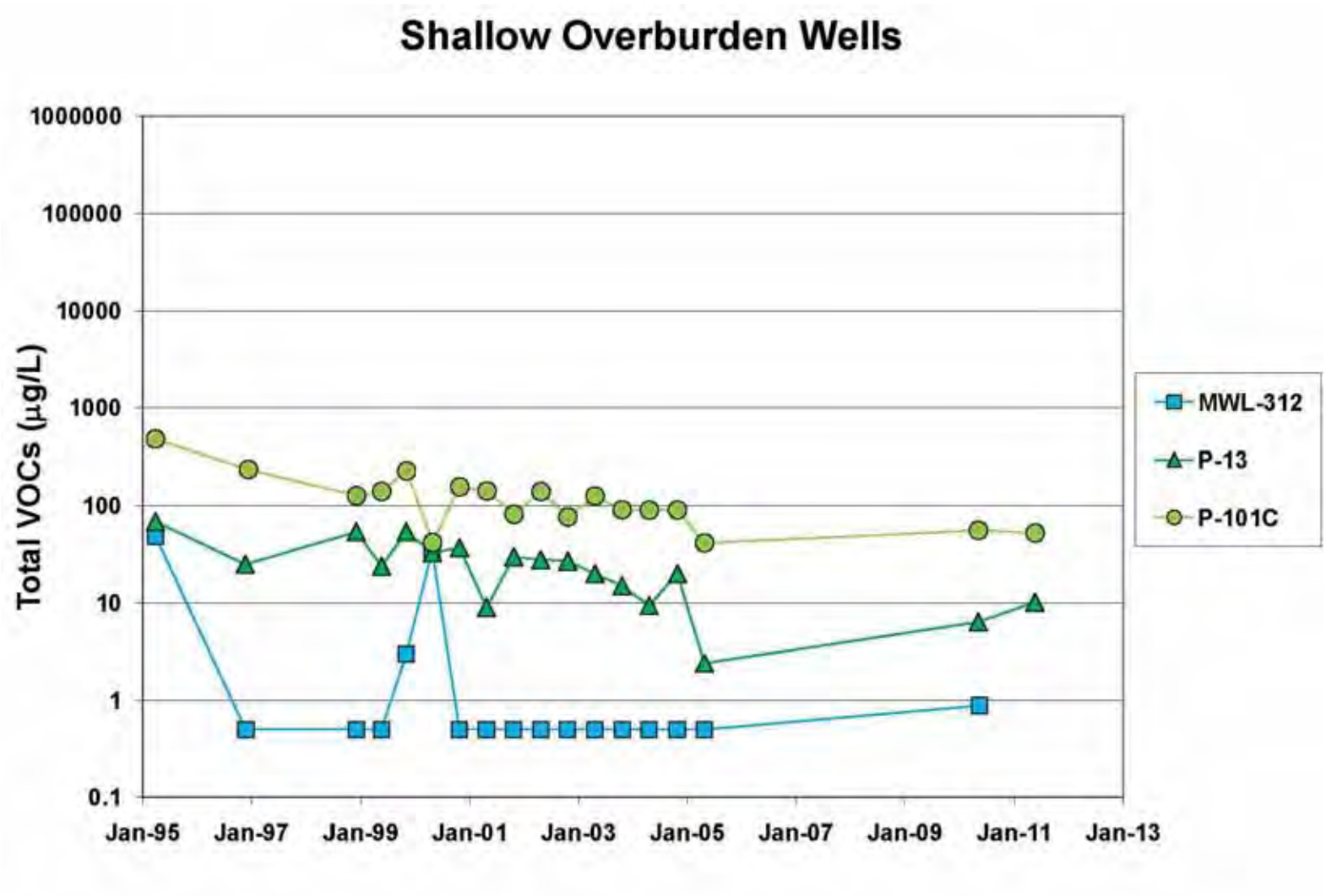
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER MONITORING LOCATIONS DEEP BEDROCK

ARCADIS

FIGURE
6

CITY: MANCHESTER, CT GROUP: ENVCAD DB: B.SMALL PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
G:\ENVCAD\Manchester\ACT\B0054634\0000\02200\B00546340000N01.dwg LAYOUT: 7 SAVED: 8/26/2011 8:51 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 8/26/2011 10:14 AM BY: SMALL, BRIAN



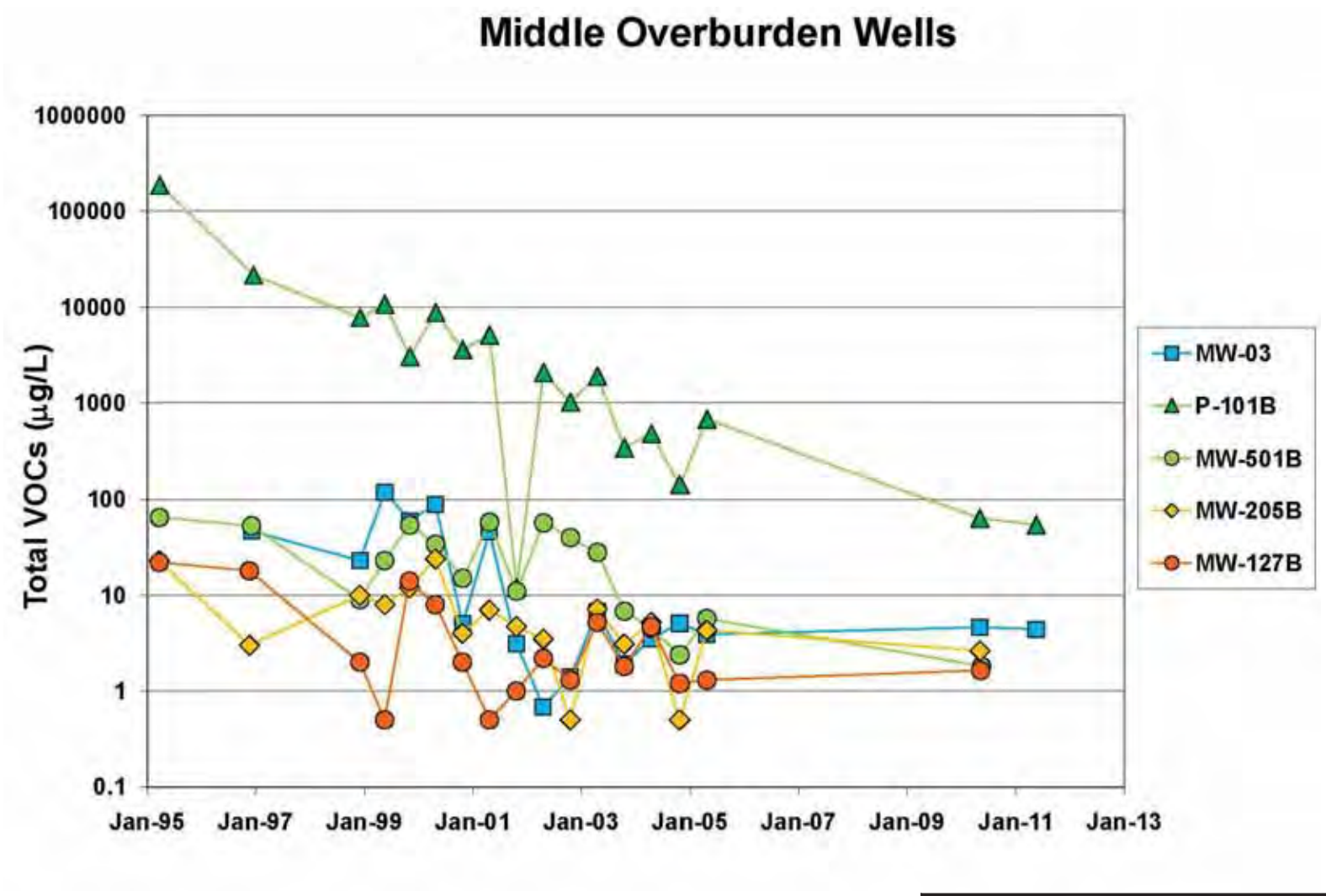
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
2011 MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME SHALLOW OVERBURDEN

ARCADIS

FIGURE
7

CITY: MANCHESTER, CT GROUP: ENVCAD DB: B.SMALL PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
G:\ENVCAD\Manchester\ACT\B0054634\0000\02200\B00546340000N01.dwg LAYOUT: 8 SAVED: 8/26/2011 8:51 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 8/26/2011 10:14 AM BY: SMALL, BRIAN



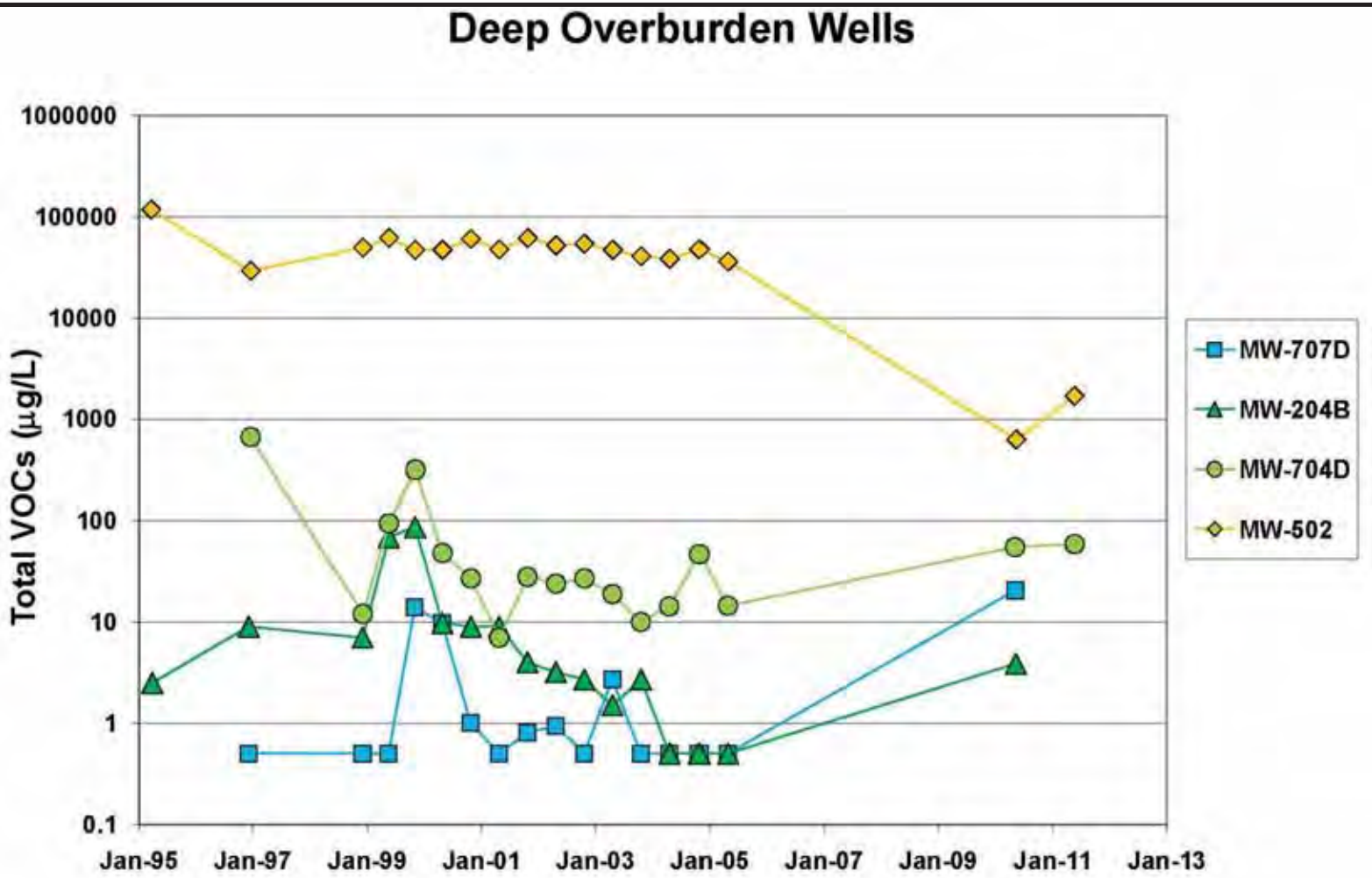
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
2011 MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME MIDDLE OVERBURDEN

ARCADIS

FIGURE
8

CITY: MANCHESTER, CT GROUP: ENVCAD DB: B.SMALL PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
G:\ENVCAD\Manchester\ACT\B0054634\0000\02200\B00546340000N01.dwg LAYOUT: 9 SAVED: 8/26/2011 8:51 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 8/26/2011 10:15 AM BY: SMALL, BRIAN



SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
2011 MONITORED NATURAL ATTENUATION REPORT

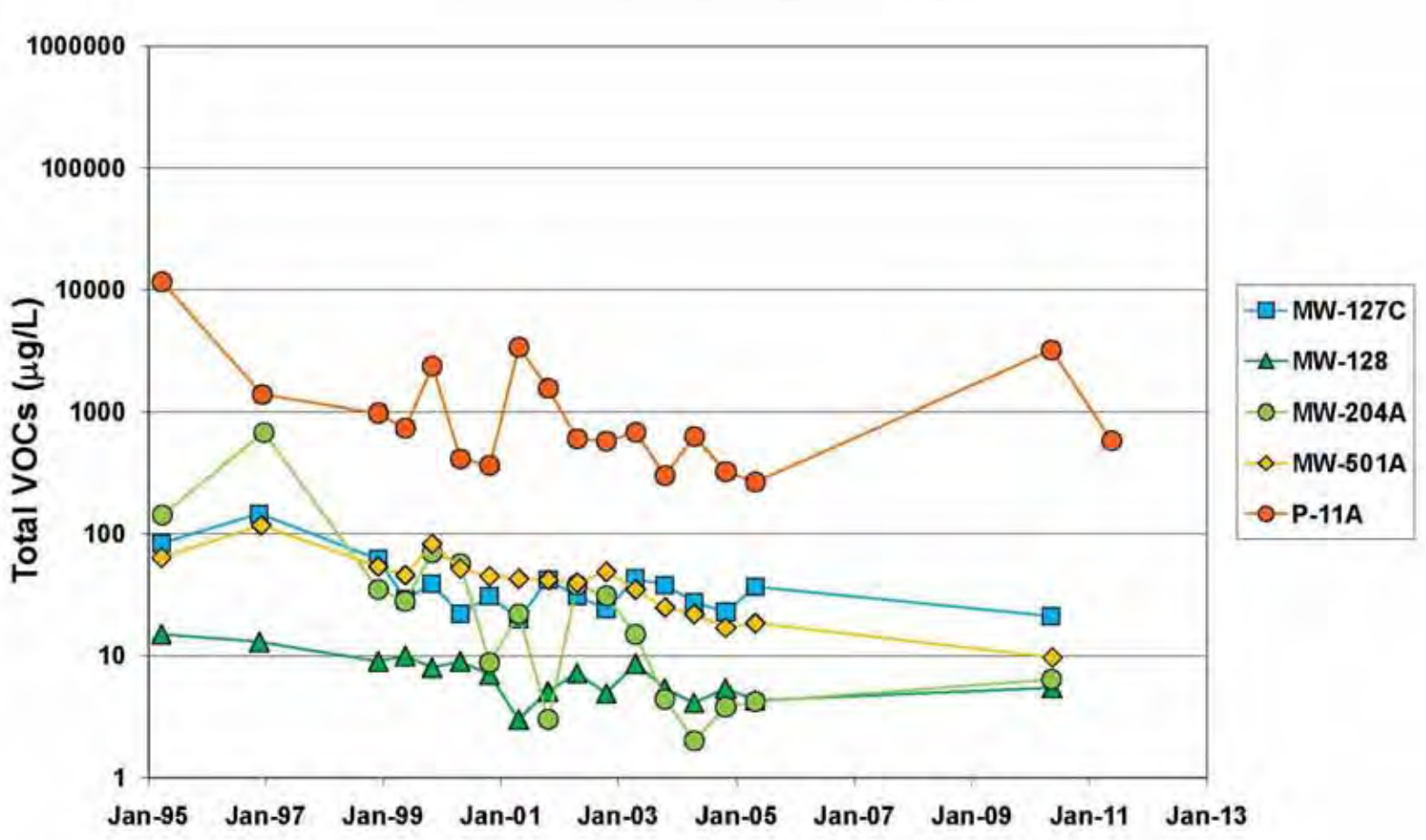
GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME DEEP OVERBURDEN

ARCADIS

FIGURE
9

CITY: MANCHESTER, CT GROUP: ENVCAD DB: B.SMALL PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
G:\ENVCAD\Manchester\ACT\B0054634\0000\02200\B00546340000N01.dwg LAYOUT: 10 SAVED: 8/26/2011 8:51 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 8/26/2011 10:15 AM BY: SMALL, BRIAN

Shallow Bedrock Wells



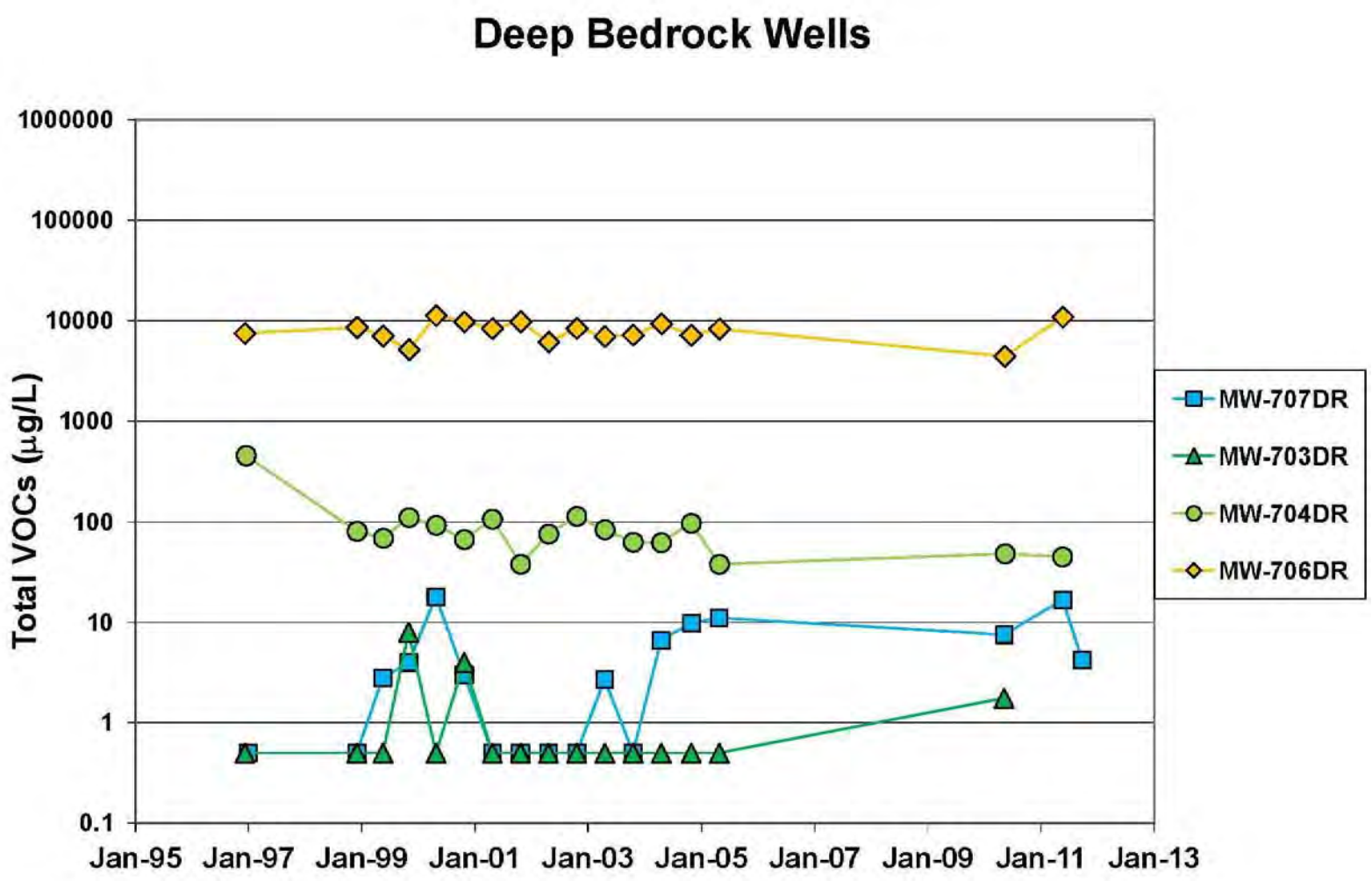
SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
2011 MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME SHALLOW BEDROCK

ARCADIS

FIGURE
10

CITY: MANCHESTER, CT GROUP: ENVCAD DB: B.SMALL PM: M. GEFELL TM: M. GEFELL TR: R. STEVENSON LYR: ON=*;OFF=REF, (FRZ)
G:\ENVCAD\Manchester\ACT\B0054634\0000\02200\B00546340000N01.dwg LAYOUT: 11 SAVED: 8/29/2011 1:16 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 11/10/2011 2:43 PM BY: SMALL, BRIAN

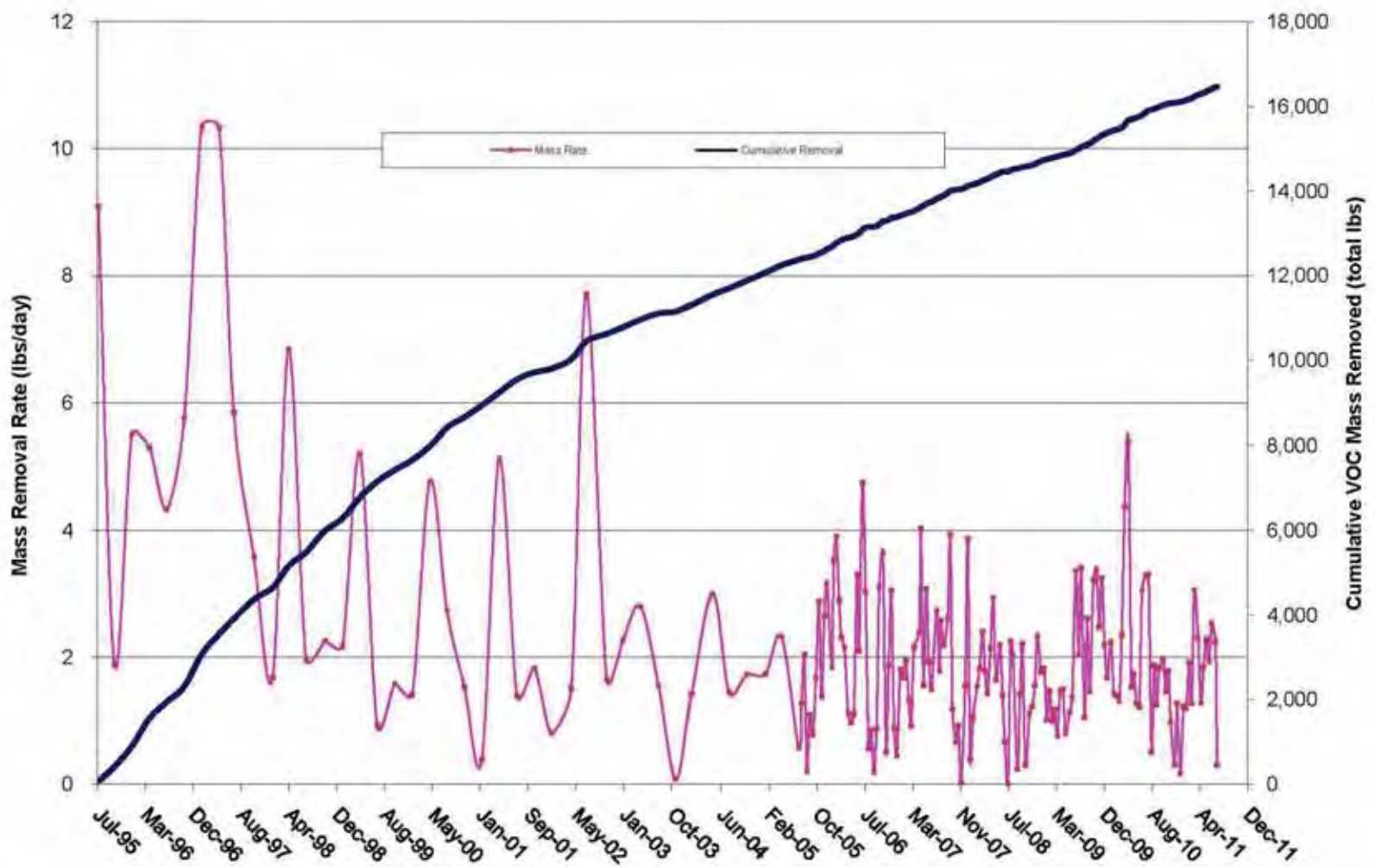


SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
2011 MONITORED NATURAL ATTENUATION REPORT

GROUNDWATER TOTAL VOC CONCENTRATIONS WITH TIME DEEP BEDROCK

ARCADIS

FIGURE
11



SRSNE SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
2011 MONITORED NATURAL ATTENUATION REPORT

TOTAL MASS OF VOCs REMOVED BY NTCRA 1 AND NTCRA 2 GROUNDWATER EXTRACTION WELLS

ARCADIS

FIGURE
12

Appendices

ARCADIS

Appendix A

Field Sampling Forms

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	CPZ-4A
Sample ID	CPZ-4A-05242011		
Sample Date	05/24/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 10:21 End 10:25	Recorded By	Edward Cimilluca
Weather	Cloudy	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2177
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	27.15 (5/24/2011)
Depth to Water (ft bmp)	7.30
PID Reading(ppm)	2.30

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/11797			
Purge Method	BP:QED 12368			
Screen Interval (ft bmp)	Top	8.30	Bottom	23.30
Pump Intake Depth (ft bmp)		19.01		19.60
Purge Time	Begin	8:58	End	10:22

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
8:59	0.25	130.00	N/A	16.13	6.65	0.418 mS/cm	52.20	2.67	110.00	7.45
9:01	2.42	130.00	N/A	16.21	6.63	0.419 mS/cm	-56.80	2.74	121.00	7.45
9:04	5.98	130.00	N/A	16.54	6.59	0.414 mS/cm	61.20	1.69	109.00	7.45
9:09	10.17	130.00	N/A	16.52	6.58	427 uS/cm	69.40	1.55	88.00	7.45
9:14	15.17	130.00	N/A	16.27	6.57	0.426 mS/cm	-64.00	1.21	87.00	7.45
9:19	20.22	130.00	N/A	16.24	6.56	0.425 mS/cm	-67.90	0.37	92.00	7.45
9:24	25.18	130.00	N/A	16.45	6.56	0.426 mS/cm	-74.80	0.89	84.30	7.45
9:29	30.22	130.00	N/A	16.52	6.55	0.427 mS/cm	-71.20	0.53	85.00	7.45
9:34	35.18	130.00	N/A	16.41	6.54	0.425 mS/cm	-63.20	0.64	81.00	7.45
9:39	40.18	130.00	N/A	16.66	6.53	0.425 mS/cm	-75.70	0.53	78.00	7.45
9:44	45.37	130.00	N/A	17.18	6.53	0.429 mS/cm	-73.20	0.67	75.00	7.45
9:50	51.55	130.00	N/A	17.35	6.53	0.421 mS/cm	-82.70	0.72	70.00	7.45
9:54	55.45	130.00	N/A	17.43	6.53	0.433 mS/cm	-74.90	0.68	64.00	7.45
10:00	61.92	130.00	N/A	16.84	6.51	0.430 mS/cm	-89.70	0.40	62.00	7.45
10:04	65.23	130.00	N/A	16.43	6.51	0.423 mS/cm	-93.60	0.70	58.00	7.45
10:09	70.37	130.00	N/A	16.26	6.49	0.421 mS/cm	-96.30	0.70	54.00	7.45
10:14	75.20	130.00	N/A	16.42	6.57	0.421 mS/cm	-96.31	0.69	55.00	7.45
10:20	81.17	130.00	N/A	16.37	6.50	0.420 mS/cm	-97.22	0.71	53.00	7.45

Sampling Personnel: Edward Cimilluca Signature:

Well Casing Volumes

Gal./Ft. 1-1/4" = 0.06 1-1/2" = 0.09 2" = 0.16 2-1/2" = 0.26 3" = 0.37 3-1/2":= 0.50 4" = 0.65 6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

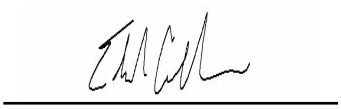
Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	CPZ-4A
Sample ID	CPZ-4A-05242011		
Sample Date	05/24/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 10:21 End 10:25	Recorded By	Edward Cimilluca
Weather	Cloudy	Replicate No.	N/A

Collected Sample Condition Color: clear Odor: NA Appearance: organic matter

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Edward Cimilluca Signature:



Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

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Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-121C
Sample ID	MW-121C-05242011		
Sample Date	05/24/2011	Sampled By	Diane Champagne
Sample Time	Begin 14:16 End 14:16	Recorded By	Diane Champagne
Weather	OVERCAST 60'	Replicate No.	DUP-GW-05242011-#1

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2159
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	70.40 (5/24/2011)
Depth to Water (ft bmp)	3.95
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/13878			
Purge Method	BP:QED 10717			
Screen Interval (ft bmp)	Top	58.70	Bottom	68.70
Pump Intake Depth (ft bmp)		63.00		70.40
Purge Time	Begin	11:38	End	14:25

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
11:49	10.72	120.00	N/A	17.88	7.12	536 uS/cm	-70.60	13.02	77.30	4.06
11:55	16.88	120.00	N/A	16.88	6.83	583 uS/cm	-59.70	18.17	165.00	4.07
12:01	23.15	120.00	N/A	16.76	6.81	588 uS/cm	-63.00	15.97	144.00	4.06
12:05	27.20	120.00	N/A	17.26	6.84	585 uS/cm	-68.40	15.97	95.70	4.08
12:11	32.48	120.00	N/A	16.31	6.86	584 uS/cm	-70.30	15.96	78.10	4.06
12:15	36.93	120.00	N/A	15.94	6.83	584 uS/cm	-71.10	14.78	68.40	4.08
12:20	41.92	120.00	N/A	15.78	6.76	578 uS/cm	-68.70	13.47	54.70	4.06
12:25	47.40	120.00	N/A	15.40	6.76	576 uS/cm	-70.30	13.00	46.00	4.08
12:30	52.18	120.00	N/A	15.19	6.77	574 uS/cm	-72.40	13.37	39.70	4.09
12:35	57.30	120.00	N/A	15.21	6.75	571 uS/cm	-72.80	12.90	34.30	4.06
12:40	62.07	120.00	2.50	15.46	6.80	570 uS/cm	-77.00	15.99	29.70	4.06
12:45	67.28	120.00	N/A	15.07	6.81	567 uS/cm	-77.30	15.12	27.30	4.08
12:50	71.85	120.00	N/A	14.88	6.77	560 uS/cm	-75.90	12.76	23.90	4.08
12:55	77.42	120.00	N/A	14.82	6.77	556 uS/cm	-77.00	13.82	20.50	4.08
13:00	81.90	120.00	N/A	15.07	6.78	553 uS/cm	-78.70	14.47	20.70	4.06
13:05	86.78	120.00	N/A	14.73	6.79	551 uS/cm	-79.60	13.40	18.90	4.06
13:10	92.32	120.00	3.50	14.63	6.76	546 uS/cm	78.30	13.26	20.10	4.06
13:16	98.30	120.00	N/A	14.61	6.76	544 uS/cm	-78.90	13.39	17.00	4.06

Sampling Personnel: Diane Champagne Signature:

Well Casing Volumes

Gal./Ft. 1-1/4" = 0.06 1-1/2" = 0.09 2" = 0.16 2-1/2" = 0.26 3" = 0.37 3-1/2":= 0.50 4" = 0.65 6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-121C
Sample ID	MW-121C-05242011		
Sample Date	05/24/2011	Sampled By	Diane Champagne
Sample Time	Begin 14:16 End 14:16	Recorded By	Diane Champagne
Weather	OVERCAST 60'	Replicate No.	DUP-GW-05242011-#1

13:20	101.58	120.00	N/A	14.57	6.75	541 uS/cm	-78.90	15.06	16.40	4.06
13:25	107.18	120.00	N/A	14.33	6.76	543 uS/cm	-79.90	17.28	14.50	4.06
13:30	112.17	120.00	N/A	14.56	6.76	542 uS/cm	-80.30	16.28	11.80	4.06
13:35	117.02	120.00	N/A	15.48	6.79	541 uS/cm	-81.70	14.08	12.70	4.06
13:40	121.70	120.00	N/A	15.30	6.79	543 uS/cm	-83.20	11.90	12.90	4.06
13:45	127.28	120.00	N/A	15.09	6.78	539 uS/cm	-82.50	8.60	12.30	4.06
13:50	131.90	120.00	N/A	15.01	6.79	537 uS/cm	-82.50	6.30	12.20	4.06
13:56	137.90	120.00	N/A	14.69	6.79	537 uS/cm	-82.80	5.41	11.20	4.06
14:00	142.18	120.00	5.00	14.58	6.79	536 uS/cm	-83.80	5.10	11.50	4.06
14:05	147.23	120.00	N/A	14.38	6.79	534 uS/cm	-84.00	5.68	10.51	4.06
14:10	151.95	120.00	N/A	14.28	6.71	530 uS/cm	-79.80	5.42	10.18	4.06
14:15	156.60	120.00	N/A	14.07	6.74	531 uS/cm	-81.70	5.64	10.84	4.06

Collected Sample Condition Color clear Odor None Appearance NA

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Diane Champagne Signature:

Well Casing Volumes

Gal./Ft. 1-1/4" = 0.06 1-1/2" = 0.09 2" = 0.16 2-1/2" = 0.26 3" = 0.37 3-1/2":= 0.50 4" = 0.65 6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-124C
Sample ID	MW-124C-05232011		
Sample Date	05/23/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 14:50 End 14:55	Recorded By	Edward Cimilluca
Weather	Rain	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/01g0418 af
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	46.60 (5/23/2011)
Depth to Water (ft bmp)	3.60
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/11797			
Purge Method	BP:QED 9131			
Screen Interval (ft bmp)	Top	35.90	Bottom	45.90
Pump Intake Depth (ft bmp)		40.90		40.90
Purge Time	Begin	14:00	End	14:50

Field Parameter Measurements During Purging

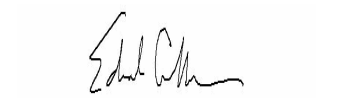
Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
14:00	-0.50	150.00	N/A	15.26	7.53	0.294 mS/cm	323.10	10.86	18.20	3.10
14:05	4.87	150.00	N/A	15.27	7.54	0.294 mS/cm	322.70	10.87	16.80	3.12
14:10	10.03	150.00	N/A	14.80	7.56	0.297 mS/cm	332.40	9.65	12.10	3.20
14:15	14.75	150.00	N/A	15.10	7.56	0.299 mS/cm	338.00	9.28	10.11	3.34
14:20	19.52	150.00	N/A	15.31	7.56	0.301 mS/cm	343.00	9.13	9.60	3.38
14:25	24.22	150.00	N/A	15.43	7.57	0.301 mS/cm	345.00	9.05	8.40	3.39
14:30	29.85	150.00	N/A	15.71	7.55	0.303 mS/cm	348.40	8.95	8.90	3.41
14:35	34.22	150.00	N/A	15.84	7.55	0.304 mS/cm	350.80	8.88	7.10	3.43
14:40	39.07	150.00	N/A	15.87	7.54	0.304 mS/cm	358.80	8.82	8.30	3.45
14:45	44.87	150.00	N/A	15.81	7.53	0.303 mS/cm	360.60	8.83	8.00	3.47
14:50	49.22	150.00	N/A	15.80	7.54	0.303 mS/cm	361.20	8.85	7.70	3.49

Collected Sample Condition Color clear Odor None Appearance NA

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Edward Cimilluca Signature:



Well Casing Volumes

Gal./Ft. 1-1/4" = 0.06 1-1/2" = 0.09 2" = 0.16 2-1/2" = 0.26 3" = 0.37 3-1/2":= 0.50 4" = 0.65 6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-126B
Sample ID	MW-126B-05252011		
Sample Date	05/25/2011	Sampled By	Diane Champagne
Sample Time	Begin 15:38 End 15:38	Recorded By	Diane Champagne
Weather	HOT SUN 85*	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2159
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	12.20 (5/26/2011)
Depth to Water (ft bmp)	5.55
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/13878			
Purge Method	BP:QED 12368			
Screen Interval (ft bmp)	Top 7.50	Bottom 12.50		
Pump Intake Depth (ft bmp)	9.30	N/A		
Purge Time	Begin 14:15	End 15:51		

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
14:16	0.95	N/A	N/A	13.52	7.04	478 uS/cm	76.70	6.29	8.57	5.55
14:20	5.38	120.00	N/A	13.52	6.87	485 uS/cm	70.40	5.32	8.57	5.55
14:29	14.58	120.00	N/A	18.34	7.07	468 uS/cm	66.20	4.89	4.04	5.55
14:34	19.15	80.00	N/A	19.47	7.01	488 uS/cm	68.10	2.66	4.47	5.55
14:46	30.83	60.00	N/A	20.59	7.07	497 uS/cm	67.50	4.87	3.88	5.55
14:55	40.10	60.00	N/A	20.20	7.15	484 uS/cm	70.60	3.55	3.23	5.56
15:05	50.45	60.00	N/A	18.66	7.26	477 uS/cm	75.10	2.09	2.07	5.55
15:16	60.73	60.00	2.50	18.15	7.07	482 uS/cm	76.10	1.24	0.89	5.55
15:26	70.65	60.00	N/A	18.02	7.09	485 uS/cm	75.00	1.29	0.95	5.56
15:36	80.82	60.00	3.00	18.74	7.15	483 uS/cm	72.70	1.28	0.78	5.55

Collected Sample Condition Color: light reddish-brown Odor: None Appearance: NA

Parameter	Container	Number	Preservative
TAL Metals (Dissolved)	PP 500 ml	1	HNO3
TAL Metals (Total)	PP 500 ml	1	HNO3

Comments

Sampling Personnel: Diane Champagne Signature: 

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-126C
Sample ID	MW-126C-05262011		
Sample Date	05/26/2011	Sampled By	Diane Champagne
Sample Time	Begin 10:42 End 10:42	Recorded By	Diane Champagne
Weather	FOGGY 60'S	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2159
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	33.60 (5/26/2011)
Depth to Water (ft bmp)	0.10
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/13878			
Purge Method	BP:QED 17017			
Screen Interval (ft bmp)	Top	24.00	Bottom	34.00
Pump Intake Depth (ft bmp)		29.00		N/A
Purge Time	Begin	9:01	End	10:54

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
9:06	5.77	240.00	N/A	13.92	7.16	410 uS/cm	5.70	11.21	36.50	0.10
9:12	10.97	240.00	N/A	13.53	6.40	333 uS/cm	19.20	3.59	32.70	0.10
9:15	14.53	240.00	N/A	13.69	6.18	331 uS/cm	21.00	3.74	23.10	0.10
9:20	18.88	240.00	1.00	13.78	6.01	325 uS/cm	24.10	4.52	21.80	0.10
9:25	24.40	240.00	N/A	13.65	5.99	324 uS/cm	24.70	4.26	18.40	0.10
9:30	29.03	240.00	2.00	13.66	5.94	320 uS/cm	31.90	6.68	18.50	0.10
9:35	34.07	240.00	N/A	13.90	5.94	314 uS/cm	35.10	7.52	12.30	0.10
9:40	38.98	240.00	N/A	14.05	5.96	310 uS/cm	38.40	8.22	9.49	0.10
9:45	44.50	240.00	3.00	14.07	5.99	305 uS/cm	43.20	8.55	7.79	0.10
9:51	50.18	240.00	N/A	14.25	6.04	300 uS/cm	49.10	6.52	6.32	0.10
9:55	54.77	240.00	N/A	14.72	6.10	293 uS/cm	54.00	4.99	4.42	0.10
10:01	60.12	240.00	4.20	14.21	6.14	295 uS/cm	62.80	4.66	4.56	0.10
10:07	66.72	240.00	N/A	14.23	6.17	292 uS/cm	70.50	3.30	3.11	0.10
10:10	69.40	240.00	N/A	14.32	6.19	291 uS/cm	73.20	3.02	3.62	0.10
10:15	74.53	240.00	N/A	14.30	6.18	291 uS/cm	80.80	2.35	2.87	0.10
10:20	79.08	240.00	N/A	14.31	6.21	290 uS/cm	84.60	2.11	2.27	0.10
10:25	84.43	240.00	N/A	14.49	6.21	288 uS/cm	88.60	2.32	2.49	0.10
10:30	89.70	240.00	6.50	14.59	6.20	287 uS/cm	91.70	2.19	2.19	0.10

Sampling Personnel: Diane Champagne Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-126C
Sample ID	MW-126C-05262011		
Sample Date	05/26/2011	Sampled By	Diane Champagne
Sample Time	Begin 10:42 End 10:42	Recorded By	Diane Champagne
Weather	FOGGY 60'S	Replicate No.	N/A

10:36	95.47	240.00	N/A	14.45	6.20	286 uS/cm	95.40	2.15	2.17	0.10
10:40	99.50	240.00	8.00	14.53	6.19	286 uS/cm	97.50	2.12	2.30	0.10

Collected Sample Condition Color: light reddish-brown Odor: None Appearance: NA

Parameter	Container	Number	Preservative
TAL Metals (Total)	PP 500 ml	1	HNO3
TAL Metals (Dissolved)	PP 500 ml	1	HNO3

Comments

Sampling Personnel: Diane Champagne Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

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Version 1.01

ARCADIS
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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-416
Sample ID	MW-416-05252011		
Sample Date	05/25/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 15:57 End 16:07	Recorded By	Edward Cimilluca
Weather	Light rain	Replicate No.	DUP-GW-05252011-#2

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2177
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	51.60 (5/25/2011)
Depth to Water (ft bmp)	7.15
PID Reading(ppm)	27.00

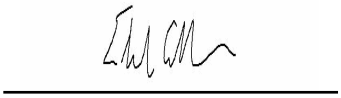
Field Parameters

Water Quality Meter # 2	LaMotte 2020e/11797			
Purge Method	BP:QED			
Screen Interval (ft bmp)	Top	29.40	Bottom	49.40
Pump Intake Depth (ft bmp)		42.00		42.00
Purge Time	Begin	14:09	End	16:07

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
14:10	1.20	150.00	N/A	26.57	7.18	0.466 mS/cm	318.30	1.88	61.00	7.16
14:15	6.17	150.00	N/A	26.43	7.11	0.457 mS/cm	364.40	1.71	34.00	7.17
14:20	10.97	150.00	N/A	26.36	7.05	0.455 mS/cm	392.00	1.62	28.00	7.18
14:25	16.08	150.00	N/A	26.12	7.00	0.452 mS/cm	410.00	1.50	22.00	7.18
14:30	21.10	150.00	N/A	25.80	6.98	0.488 mS/cm	421.60	1.39	15.00	7.18
14:35	26.07	150.00	N/A	25.67	6.94	0.446 mS/cm	421.30	1.28	18.00	7.19
14:40	31.27	150.00	N/A	25.71	6.94	0.445 mS/cm	416.00	1.18	12.00	7.19
14:44	35.85	N/A	N/A	25.73	6.93	0.443 mS/cm	415.00	1.10	12.00	7.19
14:51	42.23	150.00	N/A	25.47	6.90	0.440 mS/cm	416.30	1.00	10.00	7.20
14:56	47.42	150.00	N/A	25.41	6.97	0.438 mS/cm	410.20	0.92	10.00	7.20
15:00	51.83	150.00	N/A	25.16	6.91	0.435 mS/cm	414.00	0.85	11.00	7.21
15:05	56.05	150.00	N/A	24.82	6.86	0.432 mS/cm	418.30	0.79	11.00	7.20
15:10	61.17	150.00	N/A	24.53	6.86	0.429 mS/cm	419.50	0.73	12.00	7.21
15:15	66.30	150.00	N/A	23.70	6.84	0.420 mS/cm	419.20	0.64	11.00	7.21
15:21	72.03	150.00	N/A	23.97	6.82	0.421 mS/cm	423.60	0.59	9.00	7.21
15:27	77.98	150.00	N/A	24.36	6.83	0.424 mS/cm	423.10	0.55	10.00	7.22
15:32	83.12	150.00	N/A	24.65	6.83	0.427 mS/cm	425.70	0.52	10.00	7.22
15:36	87.23	150.00	N/A	24.75	6.84	0.427 mS/cm	426.10	0.49	9.00	7.21

Sampling Personnel: Edward Cimilluca Signature:



Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version

1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-416
Sample ID	MW-416-05252011		
Sample Date	05/25/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 15:57 End 16:07	Recorded By	Edward Cimilluca
Weather	Light rain	Replicate No.	DUP-GW-05252011-#2

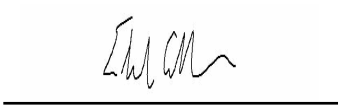
15:40	91.42	150.00	N/A	25.00	6.90	0.428 mS/cm	423.70	0.47	9.00	7.22
15:47	98.03	150.00	N/A	24.90	6.84	0.428 mS/cm	424.30	0.43	8.00	7.22
15:51	102.82	150.00	N/A	24.76	6.78	0.426 mS/cm	430.10	0.41	9.00	7.22
15:57	107.98	150.00	N/A	24.70	6.78	0.425 mS/cm	430.50	0.38	8.00	7.22

Collected Sample Condition Color clear Odor Yes Appearance NA

Parameter	Container	Number	Preservative
TOC	CG 40 ml	2	H2SO4
Sulfide	PP 125 ml	1	ZA + NaOH
Dissolved Fe & Mn	PP 125 ml	1	HNO3
Alkalinity, Chloride, Sulfate, Nitrate-N, Nitrite-N	PP 1 L	1	None
VOCs	CG 40 ml	3	HCL
Dissolved Gases	CG 40 ml	2	TSP

Comments

Sampling Personnel: Edward Cimilluca Signature:



Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-901D
Sample ID	MW-901D-05262011		
Sample Date	05/26/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 11:05 End 11:15	Recorded By	Edward Cimilluca
Weather		Replicate No.	Dup-gw-05262011-#1

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/01g0418 af
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	14.80 (5/26/2011)
Depth to Water (ft bmp)	8.10
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/11797			
Purge Method	BP:QED 9131			
Screen Interval (ft bmp)	Top	8.00	Bottom	13.00
Pump Intake Depth (ft bmp)		12.47		12.47
Purge Time	Begin	10:00	End	11:15

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
10:00	0.15	100.00	N/A	20.64	6.31	0.183 mS/cm	208.40	11.41	15.00	8.10
10:06	6.30	90.00	N/A	20.78	6.30	0.172 mS/cm	217.70	11.13	11.00	8.11
10:10	10.35	100.00	N/A	20.76	6.28	0.169 mS/cm	225.00	11.06	29.00	8.12
10:15	14.58	100.00	N/A	20.63	6.28	165 uS/cm	235.70	10.76	34.00	8.17
10:23	22.75	100.00	N/A	20.24	6.27	160 uS/cm	268.00	10.54	40.00	8.25
10:27	27.13	100.00	N/A	20.19	6.25	158 uS/cm	290.00	10.50	44.00	8.31
10:33	33.27	100.00	N/A	20.41	6.25	0.157 mS/cm	313.40	10.26	42.00	8.52
10:38	37.55	100.00	N/A	20.19	6.24	0.155 mS/cm	325.40	10.49	40.00	8.61
10:43	42.72	100.00	N/A	19.06	6.19	0.149 mS/cm	342.10	10.59	39.00	8.71
10:49	49.30	100.00	N/A	17.88	6.16	0.144 mS/cm	362.00	10.62	40.00	8.81
10:54	54.33	100.00	N/A	17.70	6.12	0.142 mS/cm	365.10	10.51	40.00	8.91

Collected Sample Condition Color: brown Odor: None Appearance: NA

Parameter	Container	Number	Preservative
TAL Metals (Dissolved)	PP 500 ml	1	HNO3
TAL Metals (Total)	PP 500 ml	1	HNO3

Comments

WI dropping. water has more sediment than initial purge. screen clogging?

Sampling Personnel: Edward Cimilluca Signature:

Well Casing Volumes

Gal./Ft. 1-1/4" = 0.06 1-1/2" = 0.09 2" = 0.16 2-1/2" = 0.26 3" = 0.37 3-1/2":= 0.50 4" = 0.65 6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-901R
Sample ID	MW-901R-05262011		
Sample Date	05/26/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 13:07 End 13:06	Recorded By	Edward Cimilluca
Weather	Muggy	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2177
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	42.30 (5/26/2011)
Depth to Water (ft bmp)	8.60
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/11797			
Purge Method	BP:QED 17017			
Screen Interval (ft bmp)	Top	25.00	Bottom	40.00
Pump Intake Depth (ft bmp)		34.94		34.94
Purge Time	Begin	11:58	End	12:53

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
12:00	1.33	200.00	N/A	10.81	6.26	0.224 mS/cm	268.20	10.20	15.00	8.70
12:05	6.63	200.00	N/A	11.12	6.20	0.225 mS/cm	302.20	10.80	10.00	8.70
12:10	11.40	200.00	N/A	11.00	6.16	0.224 mS/cm	319.00	10.10	10.00	8.70
12:17	18.98	200.00	N/A	10.95	6.10	0.222 mS/cm	335.20	9.94	8.00	8.70
12:20	21.35	200.00	N/A	11.06	6.07	0.211 mS/cm	343.20	9.93	5.00	8.70
12:28	29.92	200.00	N/A	11.08	5.93	0.182 mS/cm	377.60	10.00	5.00	8.70
12:35	36.77	200.00	N/A	12.70	5.92	0.181 mS/cm	400.60	9.95	5.00	8.70
12:40	41.78	200.00	N/A	13.10	6.00	0.180 mS/cm	407.50	10.10	4.00	8.70
12:45	46.42	200.00	N/A	13.30	5.98	0.178 mS/cm	405.90	9.96	4.00	8.70
12:50	51.38	200.00	N/A	13.35	5.99	0.180 mS/cm	406.90	9.92	5.00	8.70

Collected Sample Condition Color clear Odor None Appearance NA

Parameter	Container	Number	Preservative
TAL Metals (Dissolved)	PP 500 ml	1	HNO3
TAL Metals (Total)	PP 500 ml	1	HNO3

Comments

Sampling Personnel: Edward Cimilluca Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-907D
Sample ID	MW-907D-05252011		
Sample Date	05/25/2011	Sampled By	Diane Champagne
Sample Time	Begin 12:32 End 12:32	Recorded By	Diane Champagne
Weather	Sun 70's	Replicate No.	DUP-GW-05252011-#1

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2159
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	52.63 (5/25/2011)
Depth to Water (ft bmp)	5.79
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/13878			
Purge Method	BP:QED 14967			
Screen Interval (ft bmp)	Top 40.00	Bottom 50.00		
Pump Intake Depth (ft bmp)	45.00	N/A		
Purge Time	Begin 11:24	End 12:39		

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
11:25	1.58	100.00	N/A	11.52	6.86	721 uS/cm	-75.00	17.91	33.70	5.81
11:31	7.13	100.00	N/A	14.36	6.77	707 uS/cm	-79.10	17.97	41.40	5.80
11:35	11.88	100.00	N/A	14.16	6.83	723 uS/cm	-85.30	14.51	36.80	5.79
11:40	16.07	100.00	N/A	14.24	6.83	731 uS/cm	86.30	13.92	32.30	5.79
11:45	21.32	100.00	N/A	14.71	6.83	730 uS/cm	-84.80	13.62	29.60	5.79
11:50	26.20	100.00	N/A	14.27	6.80	730 uS/cm	-82.40	13.82	28.70	5.79
11:55	31.03	100.00	N/A	14.47	6.79	733 uS/cm	80.70	13.40	13.10	5.79
12:00	36.38	100.00	2.00	14.49	6.79	733 uS/cm	-78.60	13.36	8.09	5.79
12:05	41.50	100.00	N/A	14.89	6.81	731 uS/cm	-78.20	13.60	7.32	5.79
12:10	46.03	100.00	N/A	15.70	6.86	734 uS/cm	-83.90	13.53	5.23	5.78
12:15	51.03	100.00	2.30	15.79	6.93	733 uS/cm	-88.80	13.09	4.54	5.78
12:21	57.72	100.00	N/A	16.51	6.79	734 uS/cm	-82.00	13.26	4.51	5.78
12:26	62.38	100.00	2.50	14.37	6.77	742 uS/cm	-77.80	13.11	4.95	5.78
12:30	66.65	100.00	N/A	13.88	6.70	728 uS/cm	-72.50	13.28	4.85	5.78

Collected Sample Condition Color light reddish-brown Odor None Appearance NA

Sampling Personnel: Diane Champagne Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-907D
Sample ID	MW-907D-05252011		
Sample Date	05/25/2011	Sampled By	Diane Champagne
Sample Time	Begin 12:32 End 12:32	Recorded By	Diane Champagne
Weather	Sun 70's	Replicate No.	DUP-GW-05252011-#1

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Diane Champagne

Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-907DR
Sample ID	MW-907DR-05252011		
Sample Date	05/25/2011	Sampled By	Diane Champagne
Sample Time	Begin 10:52 End 10:52	Recorded By	Diane Champagne
Weather	Sun 60's	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2159
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	174.20 (5/25/2011)
Depth to Water (ft bmp)	0.00
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/13878			
Purge Method	BP:QED 10717			
Screen Interval (ft bmp)	Top 159.00	Bottom 174.00		
Pump Intake Depth (ft bmp)	150.00	N/A		
Purge Time	Begin 9:20	End 11:01		

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
9:25	5.00	120.00	N/A	12.95	8.63	2,800 uS/cm	-19.90	-0.16	3.27	0.78
9:35	14.68	120.00	0.75	13.55	8.53	2,722 uS/cm	-24.30	0.34	2.81	1.41
9:47	26.52	120.00	N/A	13.96	8.50	2,704 uS/cm	-23.80	0.26	3.30	1.43
9:55	34.80	120.00	1.50	14.28	8.51	2,697 uS/cm	-23.70	0.08	9.52	1.45
10:07	46.82	120.00	N/A	14.05	8.50	2,674 uS/cm	-21.70	0.21	1.80	1.43
10:15	54.42	120.00	2.00	14.32	8.51	2,667 uS/cm	-21.50	0.14	1.33	1.44
10:25	64.48	120.00	N/A	14.39	8.52	2,678 uS/cm	19.70	0.05	1.23	1.44
10:35	74.45	120.00	2.50	14.76	8.52	2.671 mS/cm	-18.70	0.08	1.23	1.44
10:40	79.65	120.00	N/A	14.90	8.53	2,667 uS/cm	-17.40	0.02	0.88	1.50
10:45	84.63	120.00	N/A	14.94	8.54	2,665 uS/cm	-17.40	0.03	0.90	1.55
10:50	89.65	120.00	N/A	15.12	8.54	2,661 uS/cm	-17.00	0.01	0.83	1.55

Collected Sample Condition Color clear Odor None Appearance NA

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments Purge 2.45 gallons prior to stability readings
Screen volume pumped at 10:35 begin stability readings 10:40

Sampling Personnel: Diane Champagne Signature: 

Well Casing Volumes

Gal./Ft. 1-1/4" = 0.06 1-1/2" = 0.09 2" = 0.16 2-1/2" = 0.26 3" = 0.37 3-1/2":= 0.50 4" = 0.65 6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MWL-309
Sample ID	MWL-309-05242011		
Sample Date	05/24/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 12:52 End 12:55	Recorded By	Edward Cimilluca
Weather	Cloudy, Rain	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2177
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	14.30 (5/24/2011)
Depth to Water (ft bmp)	2.60
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/11797			
Purge Method	BP:QED 12368			
Screen Interval (ft bmp)	Top	1.00	Bottom	11.00
Pump Intake Depth (ft bmp)		9.31		8.60
Purge Time	Begin	11:49	End	12:53

Field Parameter Measurements During Purging

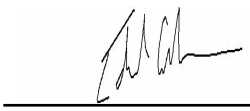
Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
11:50	0.38	100.00	N/A	21.48	6.80	0.500 mS/cm	208.30	3.66	422.00	2.65
11:55	5.33	100.00	N/A	21.86	6.82	0.467 mS/cm	238.00	4.29	400.00	3.10
12:00	10.20	100.00	N/A	21.53	6.79	0.467 mS/cm	260.00	4.48	312.00	3.60
12:05	15.25	100.00	N/A	21.60	6.79	0.467 mS/cm	276.60	4.46	292.00	3.95
12:10	20.13	100.00	N/A	21.63	6.81	0.466 mS/cm	286.40	4.16	271.00	4.40
12:15	25.18	100.00	N/A	21.57	6.82	0.470 mS/cm	293.60	4.80	233.00	4.85
12:20	30.13	100.00	N/A	21.40	6.83	0.478 mS/cm	295.80	4.69	173.00	5.10
12:25	35.20	100.00	N/A	21.09	6.84	0.481 mS/cm	297.70	4.27	202.00	5.30
12:30	40.12	100.00	N/A	20.95	6.84	0.488 mS/cm	298.10	3.98	185.00	5.50
12:35	45.13	100.00	N/A	20.88	6.84	0.494 mS/cm	297.20	4.73	170.00	5.70
12:40	50.38	100.00	N/A	20.90	6.84	0.494 mS/cm	296.70	4.75	143.00	5.90
12:45	55.15	100.00	N/A	20.89	6.84	0.495 mS/cm	298.40	4.76	138.00	6.10
12:50	60.15	100.00	N/A	20.91	6.84	0.494 mS/cm	297.50	4.76	142.00	6.30

Collected Sample Condition Color clear Odor None Appearance Cloudy

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Edward Cimilluca Signature:



Well Casing Volumes

Gal./Ft. 1-1/4" = 0.06 1-1/2" = 0.09 2" = 0.16 2-1/2" = 0.26 3" = 0.37 3-1/2":= 0.50 4" = 0.65 6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	P-11A
Sample ID	P-11A-05242011		
Sample Date	05/24/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 15:41 End 15:45	Recorded By	Edward Cimilluca
Weather	Cloudy	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2177
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	67.30 (5/24/2011)
Depth to Water (ft bmp)	3.70
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/11797			
Purge Method	BP:QED 12368			
Screen Interval (ft bmp)	Top	58.00	Bottom	68.00
Pump Intake Depth (ft bmp)		64.59		64.59
Purge Time	Begin	14:51	End	15:42

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
14:56	4.35	150.00	N/A	14.81	6.92	0.291 mS/cm	-74.20	3.13	275.00	3.70
15:00	8.52	150.00	N/A	14.97	6.81	0.290 mS/cm	-75.80	2.94	77.00	3.70
15:05	13.53	150.00	N/A	15.30	6.75	2.980 mS/cm	-79.70	2.33	26.70	3.70
15:10	18.47	150.00	N/A	15.07	6.70	0.302 mS/cm	-84.60	1.76	19.00	3.70
15:14	22.37	150.00	N/A	14.92	6.68	0.305 mS/cm	-87.60	1.47	17.00	3.70
15:20	28.32	150.00	N/A	14.76	6.65	0.307 mS/cm	-90.60	1.16	13.00	3.70
15:25	33.50	150.00	N/A	14.60	6.64	0.308 mS/cm	-91.80	1.07	13.00	3.70
15:30	38.47	150.00	N/A	14.69	6.64	0.307 mS/cm	-92.20	1.35	12.00	3.70
15:36	44.42	150.00	N/A	14.70	6.64	0.307 mS/cm	92.10	1.35	12.00	3.70
15:40	48.27	150.00	N/A	14.58	6.64	0.308 mS/cm	-93.10	1.35	13.00	3.70

Collected Sample Condition Color clear Odor None Appearance NA

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Edward Cimilluca Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	P-13
Sample ID	P-13-05232011		
Sample Date	05/23/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 11:50 End 11:55	Recorded By	Edward Cimilluca
Weather	Cloudy, Muggy, Scattered Showers	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/01g0418 af
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	17.15 (5/23/2011)
Depth to Water (ft bmp)	8.66
PID Reading(ppm)	0.00

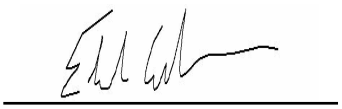
Field Parameters

Water Quality Meter # 2	LaMotte 2020e/11797			
Purge Method	BP:QED 9131			
Screen Interval (ft bmp)	Top	4.90	Bottom	14.90
Pump Intake Depth (ft bmp)		11.78		12.73
Purge Time	Begin	10:15	End	11:50

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
10:15	-0.65	125.00	N/A	14.11	7.95	0.245 mS/cm	283.70	9.17	361.00	8.66
10:20	4.90	125.00	N/A	14.10	7.97	0.234 mS/cm	284.10	9.60	310.00	8.66
10:25	9.93	125.00	N/A	14.11	7.81	0.237 mS/cm	284.10	9.10	206.70	8.66
10:30	14.52	125.00	N/A	14.06	7.79	0.240 mS/cm	284.50	9.04	151.20	8.66
10:35	19.78	125.00	N/A	14.09	7.81	0.236 mS/cm	285.10	9.08	113.00	8.66
10:40	24.82	125.00	N/A	13.95	7.86	0.234 mS/cm	293.70	9.06	100.60	8.66
10:45	29.38	125.00	N/A	13.93	7.89	0.234 mS/cm	301.30	9.05	91.80	8.66
10:50	35.08	125.00	N/A	13.93	7.73	0.224 mS/cm	321.90	9.10	83.20	8.66
10:55	40.13	125.00	N/A	13.39	7.72	0.213 mS/cm	323.90	9.12	85.10	8.66
11:00	44.35	125.00	N/A	13.96	7.53	0.209 mS/cm	337.20	9.20	79.40	8.66
11:05	50.15	125.00	N/A	14.07	7.36	0.196 mS/cm	341.30	9.15	80.70	8.66
11:10	54.37	125.00	N/A	14.09	7.27	184 uS/cm	345.90	9.15	74.30	8.66
11:15	60.15	125.00	N/A	14.10	7.19	0.187 mS/cm	356.20	9.21	69.00	8.66
11:20	64.97	125.00	N/A	14.09	7.12	0.180 mS/cm	360.00	9.25	66.20	8.66
11:25	69.57	125.00	N/A	14.08	7.10	0.178 mS/cm	364.00	9.28	58.60	8.66
11:30	75.10	125.00	N/A	14.17	6.99	0.152 mS/cm	383.00	9.60	35.10	8.66
11:35	80.17	125.00	N/A	14.17	6.81	0.147 mS/cm	386.00	9.72	25.40	8.66
11:40	84.97	125.00	N/A	14.13	6.69	0.141 mS/cm	389.00	9.85	26.10	8.66

Sampling Personnel: Edward Cimilluca Signature:



Well Casing Volumes

Gal./Ft. 1-1/4" = 0.06 1-1/2" = 0.09 2" = 0.16 2-1/2" = 0.26 3" = 0.37 3-1/2":= 0.50 4" = 0.65 6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	P-13
Sample ID	P-13-05232011		
Sample Date	05/23/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 11:50 End 11:55	Recorded By	Edward Cimilluca
Weather	Cloudy, Muggy, Scattered Showers	Replicate No.	N/A

11:45	89.37	125.00	N/A	14.09	6.67	0.140 mS/cm	391.00	9.88	25.90	8.66
11:50	94.78	125.00	N/A	14.10	6.67	0.139 mS/cm	390.60	9.88	24.30	8.66

Collected Sample Condition Color clear Odor None Appearance NA

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Edward Cimilluca Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	PZO-2D
Sample ID	PZO-2D-05232011		
Sample Date	05/23/2011	Sampled By	Diane Champagne
Sample Time	Begin 12:16 End 12:16	Recorded By	Diane Champagne
Weather	Overcast 51	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2159
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	86.00 (5/26/2011)
Depth to Water (ft bmp)	5.95
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/13878			
Purge Method	BP:QED 14967			
Screen Interval (ft bmp)	Top	75.00	Bottom	85.00
Pump Intake Depth (ft bmp)		80.00		80.00
Purge Time	Begin	10:36	End	12:14

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
10:37	0.28	240.00	N/A	10.90	5.71	330 uS/cm	237.00	17.80	29.70	5.96
10:42	5.58	240.00	N/A	10.41	6.24	327 uS/cm	249.30	16.39	279.00	5.96
10:48	11.42	240.00	N/A	10.34	6.60	330 uS/cm	248.10	16.08	242.00	5.96
10:52	15.73	240.00	N/A	10.35	6.75	330 uS/cm	246.00	19.59	232.00	5.96
10:57	20.52	240.00	N/A	10.39	6.75	328 uS/cm	245.40	21.67	176.00	5.96
11:02	26.18	240.00	N/A	10.36	6.89	328 uS/cm	244.40	22.40	126.00	5.95
11:07	31.22	240.00	N/A	10.00	7.10	326 uS/cm	244.40	22.06	98.90	5.95
11:16	40.18	240.00	N/A	10.37	7.22	322 uS/cm	243.30	21.33	68.80	5.95
11:23	46.35	240.00	N/A	10.38	7.18	324 uS/cm	242.50	20.17	53.10	5.94
11:28	51.37	240.00	N/A	10.36	7.15	323 uS/cm	242.30	19.80	39.00	5.95
11:33	56.60	240.00	N/A	10.41	7.20	326 uS/cm	242.70	19.73	31.50	5.99
11:38	61.67	240.00	5.00	10.36	7.27	327 uS/cm	242.40	19.35	31.00	5.99
11:43	66.82	240.00	N/A	10.39	7.33	327 uS/cm	242.40	19.32	29.50	6.00
11:48	71.70	240.00	N/A	10.39	7.37	327 uS/cm	242.10	19.25	21.30	6.01
11:53	76.35	240.00	N/A	10.40	7.40	327 uS/cm	242.60	19.11	17.20	6.02
11:58	82.13	240.00	N/A	10.43	7.43	328 uS/cm	242.90	18.77	14.40	6.00
12:03	86.65	240.00	N/A	10.42	7.40	329 uS/cm	242.20	19.35	13.70	6.01
12:08	91.63	240.00	N/A	10.45	7.42	328 uS/cm	242.90	19.32	13.70	5.96

Sampling Personnel: Diane Champagne Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	PZO-2D
Sample ID	PZO-2D-05232011		
Sample Date	05/23/2011	Sampled By	Diane Champagne
Sample Time	Begin 12:16 End 12:16	Recorded By	Diane Champagne
Weather	Overcast 51	Replicate No.	N/A

12:13	96.53	240.00	N/A	10.50	7.43	329 uS/cm	242.90	19.39	13.80	5.96

Collected Sample Condition Color orange Odor None Appearance NA

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Diane Champagne Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	PZO-2M
Sample ID	PZO-2M-05242011		
Sample Date	05/24/2011	Sampled By	Diane Champagne
Sample Time	Begin 10:12 End 10:15	Recorded By	Diane Champagne
Weather	CLOUD 60'S	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2159
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	58.40 (5/24/2011)
Depth to Water (ft bmp)	6.38
PID Reading(ppm)	0.00

Field Parameters

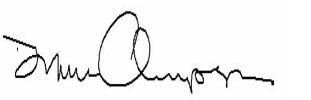
Water Quality Meter # 2	LaMotte 2020e/13878			
Purge Method	BP:QED 10219			
Screen Interval (ft bmp)	Top 46.00	Bottom 56.00		
Pump Intake Depth (ft bmp)	51.00	N/A		
Purge Time	Begin 8:51	End 10:09		

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
8:55	3.92	320.00	N/A	11.45	7.94	259 uS/cm	104.30	5.96	144.00	6.38
9:00	8.70	320.00	N/A	11.27	7.67	258 uS/cm	113.70	18.81	85.90	6.38
9:05	14.07	320.00	0.00	11.13	7.52	257 uS/cm	122.50	26.39	67.10	6.38
9:10	18.82	320.00	N/A	11.06	7.34	257 uS/cm	128.70	30.07	46.70	6.38
9:16	24.68	320.00	3.00	11.10	7.35	257 uS/cm	134.00	32.32	33.20	6.38
9:20	28.47	320.00	N/A	11.20	7.31	257 uS/cm	135.60	32.74	25.90	6.38
9:26	34.48	320.00	N/A	11.29	7.31	257 uS/cm	136.70	33.81	17.30	6.38
9:30	38.88	320.00	4.50	11.26	7.32	256 uS/cm	138.10	34.20	12.50	6.38
9:35	43.62	320.00	N/A	11.23	7.37	256 uS/cm	140.00	35.04	9.82	6.38
9:41	49.72	320.00	6.00	11.29	7.33	256 uS/cm	141.20	35.18	8.38	6.38
9:47	56.35	320.00	N/A	11.16	7.32	256 uS/cm	143.30	35.45	6.03	6.38
9:50	58.50	320.00	7.00	11.23	7.31	256 uS/cm	143.60	35.51	4.82	6.38
9:55	63.50	320.00	N/A	11.23	7.37	256 uS/cm	144.70	35.01	3.96	6.38
10:00	68.45	320.00	8.00	11.10	7.39	256 uS/cm	145.80	35.25	3.86	6.38
10:05	73.63	320.00	N/A	11.23	7.36	256 uS/cm	147.20	34.69	4.12	6.38

Collected Sample Condition Color clear Odor None Appearance NA

Sampling Personnel: Diane Champagne Signature:



Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	PZO-2M
Sample ID	PZO-2M-05242011		
Sample Date	05/24/2011	Sampled By	Diane Champagne
Sample Time	Begin 10:12 End 10:15	Recorded By	Diane Champagne
Weather	CLOUD 60'S	Replicate No.	N/A

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Diane Champagne

Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

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Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	PZR-2R
Sample ID	PZR-2R-05232011		
Sample Date	05/23/2011	Sampled By	Diane Champagne
Sample Time	Begin 17:09 End 17:09	Recorded By	Diane Champagne
Weather	RAIN 55	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2159
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	144.60 (5/26/2011)
Depth to Water (ft bmp)	6.50
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/13878			
Purge Method	BP:QED 17017			
Screen Interval (ft bmp)	Top 120.50	Bottom 140.50		
Pump Intake Depth (ft bmp)	130.50	N/A		
Purge Time	Begin 13:43	End 17:08		

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
13:43	0.10	120.00	N/A	12.19	6.90	876 uS/cm	231.70	12.10	7.17	4.60
13:53	9.93	55.00	N/A	12.16	6.91	668 uS/cm	203.60	4.70	115.00	N/A
14:05	22.27	55.00	N/A	12.94	7.26	687 uS/cm	164.00	3.03	80.10	7.80
14:15	32.30	55.00	N/A	13.28	7.42	895 uS/cm	150.50	6.68	52.80	N/A
14:25	42.22	50.00	N/A	13.72	7.53	898 uS/cm	143.30	8.08	49.50	8.80
14:35	52.37	50.00	1.25	13.54	7.51	900 uS/cm	143.00	5.27	36.80	N/A
14:46	62.95	50.00	N/A	13.56	7.52	900 uS/cm	141.10	4.46	36.80	10.45
14:55	71.87	50.00	N/A	13.63	7.50	899 uS/cm	134.40	3.77	36.00	10.91
15:05	82.48	50.00	1.60	13.53	7.50	899 uS/cm	131.20	3.30	34.60	11.35
15:15	92.65	50.00	N/A	13.36	7.47	898 uS/cm	130.00	2.91	34.20	12.30
15:25	102.12	50.00	N/A	13.30	7.42	896 uS/cm	126.90	2.61	36.50	N/A
15:35	112.27	50.00	2.00	13.41	7.39	895 uS/cm	122.30	2.38	37.00	13.80
15:46	122.95	50.00	2.25	13.56	7.34	892 uS/cm	118.70	2.23	36.30	14.19
15:55	132.60	50.00	N/A	13.53	7.31	891 uS/cm	115.40	2.13	31.90	14.80
16:05	142.57	50.00	2.60	13.53	7.25	889 uS/cm	114.50	2.08	31.90	15.37
16:15	152.17	50.00	N/A	13.44	7.20	887 uS/cm	113.90	2.08	28.90	N/A
16:28	164.92	50.00	N/A	13.52	7.17	886 uS/cm	112.00	2.09	28.90	16.71
16:36	173.37	50.00	N/A	13.64	7.15	885 uS/cm	109.40	2.11	28.20	17.00

Sampling Personnel: Diane Champagne Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	PZR-2R
Sample ID	PZR-2R-05232011		
Sample Date	05/23/2011	Sampled By	Diane Champagne
Sample Time	Begin 17:09 End 17:09	Recorded By	Diane Champagne
Weather	RAIN 55	Replicate No.	N/A

16:45	181.70	50.00	3.29	13.53	7.11	885 uS/cm	106.50	2.15	20.70	17.50
16:56	192.70	50.00	N/A	13.52	7.12	884 uS/cm	103.20	2.22	20.50	18.06
17:05	202.32	50.00	3.75	13.51	7.09	884 uS/cm	100.90	2.25	21.80	18.40

Collected Sample Condition Color: light reddish-brown Odor: None Appearance: NA

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments: *REMOVED TRANSDUCER.STATIC WATER LEVEL 6.50. INITIAL WATER LEVEL AFTER PUMP INSTALLATION IS 3.25.PURGED SCREEN VOLUME PRIOR TO STABILIZATION READINGS. SCREEN VOLUME REMOVED AT

Sampling Personnel: Diane Champagne Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	TW-08B
Sample ID	TW-08B-05252011		
Sample Date	05/25/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 9:52 End 10:39	Recorded By	Edward Cimilluca
Weather	Light rain	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/2177
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	29.30 (5/25/2011)
Depth to Water (ft bmp)	4.55
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/11797			
Purge Method	BP:QED 12368			
Screen Interval (ft bmp)	Top	21.50	Bottom	31.50
Pump Intake Depth (ft bmp)		29.09		29.09
Purge Time	Begin	8:50	End	12:11

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
8:51	0.17	150.00	N/A	18.37	6.30	1.049 mS/cm	-52.30	3.38	25.00	4.55
8:55	4.18	150.00	N/A	18.70	6.30	1.056 mS/cm	-50.40	2.93	10.00	4.55
9:00	9.23	150.00	N/A	19.07	6.31	1.064 mS/cm	-41.50	1.92	6.00	4.55
9:05	14.27	150.00	N/A	19.25	6.29	1.067 mS/cm	-42.80	1.66	5.00	4.55
9:10	19.82	150.00	N/A	19.35	6.24	1.068 mS/cm	-39.70	1.51	0.00	4.55
9:15	25.02	150.00	N/A	19.13	6.14	1.060 mS/cm	-35.00	1.60	4.00	4.55
9:20	29.37	150.00	N/A	18.72	6.01	1.049 mS/cm	-31.00	1.42	4.00	4.55
9:25	34.82	150.00	N/A	18.21	5.75	1.036 mS/cm	-20.00	1.06	3.00	4.55
9:30	39.70	150.00	N/A	18.01	5.63	1.028 mS/cm	-15.10	0.98	3.00	4.55
9:35	44.20	150.00	N/A	17.83	5.55	1.023 mS/cm	-10.00	0.93	3.00	4.55
9:40	49.22	150.00	N/A	17.76	5.36	1.021 mS/cm	-3.20	0.76	3.00	4.55
9:46	55.78	150.00	N/A	17.84	5.34	1.023 mS/cm	-1.90	0.73	2.00	4.55
9:50	59.43	150.00	N/A	17.92	5.38	1.024 mS/cm	-2.10	0.71	2.00	4.55

Collected Sample Condition Color clear Odor Yes Appearance NA

Sampling Personnel: Edward Cimilluca Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

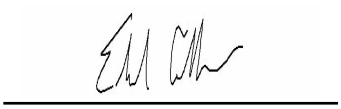
Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	TW-08B
Sample ID	TW-08B-05252011		
Sample Date	05/25/2011	Sampled By	Edward Cimilluca
Sample Time	Begin 9:52 End 10:39	Recorded By	Edward Cimilluca
Weather	Light rain	Replicate No.	N/A

Parameter	Container	Number	Preservative
Alkalinity, Chloride, Sulfate, Nitrate-N, Nitrite-N	PP 1 L	1	None
Sulfide	PP 125 ml	1	ZA + NaOH
Dissolved Gases	CG 40 ml	2	TSP
TOC	CG 40 ml	2	H2SO4
Dissolved Fe & Mn	PP 125 ml	1	HNO3
VOCs	CG 40 ml	3	HCL

Comments

Sampling Personnel: Edward Cimilluca

Signature: 

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version

1.01

YSI Ser#'s 13003
08860

Lamotte 2020 Ser#: 10416

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNF
Well Number MW-03 Date 5/23/11
Field Personnel Ramoth
Sampling Organization O&M INC
Identify MP TOC

Depth to 52.5 / 82.5 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 67.5
Purging Device; (pump type) Microperge ID: 10346
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1050	5.97	1.5/2.0	100	1000	10.84	0.301	6.78	188.7	1.77	5.16	
1055	5.97	1.5/2.0	100	1500	10.75	0.298	6.69	190.1	1.61	3.90	
1100	5.97	1.5/2.0	100	2000	10.72	0.296	6.65	191.2	1.50	2.98	
1105	5.97	1.5/2.0	100	2500	10.70	0.295	7.15	188.1	1.39	2.67	
1110	5.97	1.5/2.0	100	3000	10.73	0.295	7.24	178.7	1.34	2.65	
1115	5.97	1.5/2.0	100	3500	10.79	0.296	7.29	171.8	1.26	2.63	
1120	5.97	1.5/2.0	100	4000	10.65	0.295	7.36	162.9	1.16	1.23	
1125	5.97	1.5/2.0	100	4500	10.62	0.295	7.45	165.4	0.97	1.64	
1130	5.97	1.5/2.0	100	5000	10.63	0.296	7.51	172.0	0.88	1.52	
1135	5.97	1.5/2.0	100	5500	10.65	0.295	7.52	170.0	0.86	1.55	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

88.5
- 5.97
76.53

90.16 gal

$.75^2 * 3.14159$

4.712506

0.16 gal p/ft
3.6 gal.

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name)_____
Well Number MW-03 Date 5/23/11
Field Personnel_____
Sampling Organization_____
Identify MP_____

Depth to _____/_____ of screen
(below MP) top bottom
Pump Intake at (ft. below MP)_____
Purging Device; (pump type)_____
Total Volume Purged _____

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C ✓	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU ✓	Comments
1140	5.97	1.5/2.0	100	6000	10.58	0.295	7.55	168.1	0.87	1.52	
1145	5.97	1.5/2.0	100	6500	10.63	0.295	7.58	169.1	0.84	1.48	
1150	5.97	1.5/2.0	100	7000	10.58	0.296	7.52	161.1	0.82	1.46	
~~1220~~ 1225	5.97	1.5/2.0	100	7500	~~10~~ 11.37	0.299	7.71	159.9	0.83	2.11	Sampled
~~1225~~	5.97	1.5/2.0	100	8000	11.39	0.300	7.72	160.7	0.84	2.00	
1230	5.97	1.5/2.0	100	8500	11.37	0.300	7.72	162.4	0.85	2.58	
~~1235~~	5.97	1.5/2.0	100	9500	11.29	0.299	7.73	160.0	0.88	2.58	
1250	5.97	1.5/2.0	100	10500	11.35	0.299	7.75	177.9	0.91	2.72	
1300	5.97	1.5/2.0	100	11500	11.51	0.300	7.75	182.3	0.91	2.86	
1310	5.97	1.5/2.0	100	12500	11.56	0.300	7.75	186.4	0.91		
Stabilization Criteria				2.95 gallons to leave	3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Pg 3 of 3

Location (Site/Facility Name)_____
Well Number MW-03 Date 5/23/11
Field Personnel_____
Sampling Organization_____
Identify MP_____

Depth to _____/_____ of screen
(below MP) top bottom
Pump Intake at (ft. below MP)_____
Purging Device; (pump type)_____
Total Volume Purged _____

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1320	5.97	1.5/2.0	70	11900	11.60	0.300	7.77	192.0	0.91	2.35	
1330	5.97	1.5/2.0	70	12600	11.58	0.300	7.78	194.6	0.92	1.95	
1340	5.97	1.5/2.0	70	13300	11.54	0.300	7.78	197.0	0.92	0.66	3.5 Gallons
1350	5.97	1.5/2.0	70	14000 (3.69 gallons)	11.54	0.300	7.78	200.	0.93	0.63	
											Sampled @ 1355

Stabilization Criteria Purge 3.6 gal 3% 3% ±0.1 ± 10 mv 10% 10%

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI 5603/08861
Taft 10416

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS NE
Well Number MW-121 B Date 05/25/2011
Field Personnel Pematti
Sampling Organization O&M, Inc.
Identify MP TOC

Depth to 42 / 52 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 47
Purging Device; (pump type) 17017
Total Volume Purged 23720

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU	Comments
11:10	4.15	10/5	280	1400	14.07	0.594	7.17	-112.4	53.10	38.4	
11:15	4.15	10/5	280	2800	15.90	0.630	7.02	-102.2	49.84	34.6	
1120	4.15	10/5	280	4200	16.90	0.650	7.01	-103.1	48.90	31.0	
1125	4.15	10/5	280	56000	14.13	0.622	6.98	-100.6	51.83	25.2	
1130	4.15	10/5	280	6800	13.80	0.616	6.93	-98.4	51.31	19.4	
1135	4.15	10/5	280	8200	14.20	0.619	6.91	-98.5	50.41	13.6	
1140	4.15	10/5	280	9600	14.16	0.618	6.91	-98.7	50.40	8.8	
1145	4.15	10/5	280	11000	13.12	0.620	6.88	-96.6	51.05	5.29	
1150	4.15	10/5	280	12400	14.16	0.618	6.86	-95.9	49.83	5.42	
1155	4.15	10/5	280	13800	14.41	0.641	6.92	-99.8	48.66	5.36	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI: 5603 / 08861

Turb Meter: 10416

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS NE
Well Number MW-121B Date 05/25/2011
Field Personnel REMOTI
Sampling Organization O&M, Inc.
Identify MP TOC

Depth to 42 / 52 of screen (below MP) top bottom
Pump Intake at (ft. below MP) 47
Purging Device; (pump type) 17017
Total Volume Purged 23720

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU ✓	Comments
1200	4.15	10/6	280	15200	16.55	0.652	6.94	-101.3	47.89	4.95	
1205	4.15	10/5	280	16600	15.94	0.649	6.94	-100.5	48.17	5.23	
1210	4.15	10/5	280	18000	16.27	0.655	6.92	-98.8	45.92	5.14	
1215	4.15	10/5	280	19400	16.43	0.675	6.93	-99.7	45.42	5.13	
1220	4.15	10/5	280	20800	16.21	0.680	6.94	-100.4	45.01	5.01	
											Sampled @ 1230
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI #'s 5603/0884
Turb #'s 10416

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS NE
Well Number MW-121M Date 05/25/2011
Field Personnel J. Remotti
Sampling Organization O&M, INC.
Identify MP TOC

Depth to 21 / 31 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 26'
Purging Device; (pump type) 913
Total Volume Purged 37420

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min 1700	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU	Comments
~~0850~~ ~~#10~~	4.63	10/5	340	3400	11.33	0.356	7.01	-107.1	65.82	112.2	
~~0855~~ ~~#15~~	5.25	10/5	340	5100	11.34	0.382	7.07	-119.5	65.89	90.6	
0900	5.25	10/5	340	6800	11.38	0.391	7.10	-101.9	66.22	45.9	
0905	5.25	10/5	340	8500	11.32	0.391	7.12	-100.2	66.70	19.2	
0910	5.25	10/5	340	10200	11.28	0.390	7.14	-99.9	66.94	17.0	
0915	5.25	10/5	340	11900	11.49	0.398	7.15	-99.5	67.60	15.8	
0920	5.25	10/5	340	13600	11.29	0.394	7.17	-105.0	68.08	11.7	
0925	5.25	10/5	340	15300	11.29	0.396	7.17	-107.2	67.46	9.6	
0930	5.25	10/5	340	17000	11.29	0.398	7.17	-109.9	67.00	12.6	
0935	5.25	10/5	340	18700	11.29	0.400	7.18	-110.5	66.44	16.2	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS NE
Well Number MW-121M Date 05/25/2011
Field Personnel J. Reinotti
Sampling Organization OEM, Inc.
Identify MP ~~OEM, I.~~ TOC

Depth to 21 / 31 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 26'
Purging Device; (pump type) 9131
Total Volume Purged 31430

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min 1700	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU ✓	Comments
0940	5.25	10/5	20400	340	11.34	0.405	7.19	-111.1	65.86	19.6	
0945	5.25	10/5	22100	340	11:47	0.409	7.20	-111.3	65.81	20.1	
0950	5.25	10/5	23800	340	11.51	0.411	7.21	-110.3	65.62	20.6	
0955	5.25	10/5	25500	340	11.44	0.411	7.22	-106.8	65.25	21.6	
1000	5.25	10/5	27200	340	11.84	0.414	7.22	-106.8	64.26	18.3	
1005	5.25	10/5	28900	340	11.33	0.397	7.23	-110.8	64.83	18.9	
1010	5.25	10/5	30600	340	11.21	0.397	7.23	-110.2	64.95	19.6	
											Sampled @ 1020
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI #'s 5603/ 68861
Turb #: 10416

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

PG 1 OF 1

Location (Site/Facility Name) SRS NE
Well Number MW-209 Date 05/26/11
Field Personnel Remotti
Sampling Organization QEM, Inc.
Identify MP TOC

Depth to 18 / 38 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 28
Purging Device; (pump type)
Total Volume Purged 17.400

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min 1400	Cum. Volume Purged liters	Temp. °C ✓	Spec. Cond.[2] µS/cm ✓	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
0935	20.83	10/5	1400	800							
0940	20.83	10/5	280	2200	10.90	0.343	5.54	248.3	42.65	37.4	
0945	20.83	10/5	280	3600	10.70	0.337	5.61	238.6	41.76	34.9	
0950	20.83	10/5	280	5000	10.72	0.336	5.80	221.5	41.26	23.2	
0955	20.83	10/5	280	6400	10.71	0.335	5.82	220.2	41.06	17.9	
1000	20.83	10/5	280	8000	10.70	0.335	5.86	215.6	40.86	12.0	
1005	20.83	9/6	280	9400	10.85	0.336	5.90	211.8	40.89	6.09	
1010	20.83	9/6	280	10800	10.70	0.335	5.93	209.5	40.91	3.97	
1015	20.83	9/6	280	12200	10.71	0.356	5.95	208.2	40.96	4.19	
1020	20.83	9/6	280	13600	10.73	0.335	5.97	207.4	41.23	1.84	3.59 Bbl Purged.
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	Sampled @ 1030

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) MW-209 B
Well Number MW 209 B Date 5/26/11
Field Personnel Penatti
Sampling Organization O&M, Inc.
Identify MP TOC

Depth to 12 / 15 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 13.5
Purging Device; (pump type) 12368
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
											14.8 - 17.1 = WC
											Bailed & Sampled
											@ 1135
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI #'s 5603/08861
Turb #'s 10416

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SESCO
Well Number MW-502 Date 05/24/2011
Field Personnel S Remoth.
Sampling Organization O&M, Inc.
Identify MP TOC

Depth to 15 / 35 of screen (below MP) top bottom
Pump Intake at (ft. below MP) 25
Purging Device; (pump type) 10219
Total Volume Purged 15660

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C ✓	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU ✓	Comments
1225	5.80	1¼	~~160~~	1300	1499	0.566	6.78	-117.4	13.21	310	1 l = 0.264172052 gl
1230	5.04	1¼	146	2000	1504	0.567	6.78	-120.5	13.33	261	
1235	5.04	1¼	140	2700	1496	0.563	6.78	-126.9	13.91	235	
1240	5.04	1¼	146	3400	1466	0.557	6.78	-132.3	14.06	216	
1245	5.04	1¼	140	4100	1455	0.554	6.78	-134.8	14.14	198	
1250	5.04	1¼	140	4800	1423	0.549	6.78	-135.6	14.16	174	
1255	5.04	1¼	140	5500	1496	0.556	6.80	-137.6	13.79	165	
1300	5.04	1¼	140	6200	1508	0.557	6.81	-136.7	13.81	161	
1305	5.04	1¼	140	6900	14.96	0.556	6.79	-138.2	14.17	160	
1310	5.04	1¼	140	7600	12.99	0.532	6.79	-188.1	14.01	160	2 Gallons @ 7600ml
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI #'s 5603/08861
TURB. #'s 10416

PSR.02

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS NE
Well Number MW-502 Date 05/24/2011
Field Personnel J. Remuth
Sampling Organization OHM, Inc.
Identify MP TOC

Depth to 15 / 35 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 25
Purging Device; (pump type) 10219
Total Volume Purged 15660

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1315	5.04	11/4	140	8300	13.05	0.530	6.80	-138.9	13.98	158	I.D = 0.264/72052
1320	5.04	11/4	140	9000	12.95	0.528	6.80	-138.8	14.06	133	
1325	5.04	11/4	140	9700	12.99	0.528	6.80	-136.4	13.97	92.8	
1330	5.04	11/4	140	10400	13.19	0.532	6.80	-134.7	13.92	90.1	
1335	5.04	11/4	140	11100	14.02	0.540	6.81	-124.8	13.56	87.6	
1340	5.04	11/4	140	11800	13.88	0.539	6.81	-122.4	13.62	84.3	
1345	5.04	11/4	140	12500	14.15	0.543	6.81	-119.9	13.55	87.1	
1350	5.04	11/4	140	13200	14.05	0.537	6.81	-121.6	13.71	90.0	MS/MSD Collected
1355	5.04	11/4	140	13900	13.86	0.533	6.80	-125.0	13.64	87.8	3.67 Gal. Purged
											Sampled @ 1405
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI : 10267
wand : 8874
Lamotte : 9917
Pump : 14957

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW-701 OR Date 5/26/11
Field Personnel Brandon T
Sampling Organization ecmax
Identify MP TOR

Depth to 93.3 / 107.8 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 100.8
Purging Device; (pump type) bladder
Total Volume Purged 11500

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
0930	~~15.49~~ 15.21	10/5	100	500	12.72	0.274	7.83	102.5	9.21	1.55	
0935	15.40	10/5	100	1000	12.48	0.240	7.82	104.7	8.66	1.42	
0940	15.43	10/5	100	1500	12.42	0.220	7.64	82.5	4.73	5.45	
0945	~~15.47~~ 15.43	10/5	100	2000	12.49	0.219	7.60	51.1	3.77	15.4	
0950	15.43	10/5	100	2500	12.48	0.211	7.69	~~53.5~~	4.47	10.11	
0955	15.43	10/5	100	3000	12.71	0.210	7.72	58.7	4.70	7.98	
1000	15.43	10/5	100	3500	12.33	0.209	7.80	67.0	5.24	6.79	
1005	15.43	10/5	100	4000	12.59	0.210	7.80	71.5	5.36	5.61	
1010	15.43	10/5	100	4500	12.25	0.210	7.81	75.5	5.64	4.84	
1015	15.43	10/5	100	5000	12.26	0.214	7.81	79.9	5.52	4.84	
Stabilization Criteria					, 3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW-701 OR Date ~~10/5~~ ~~5/25~~ 5/26/11
Field Personnel Brenda F
Sampling Organization Geomatrix
Identify MP TOR

Depth to 93.3 / 107.8 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 100.8
Purging Device; (pump type)
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1020	15.43	10/5	100	5500	12.61	0.218	7.85	84.4	5.85	4.44	
1025	15.43	10/5	100	6000	12.37	0.220	7.87	86.1	5.97	4.29	
1030	15.43	10/5	100	6500	12.58	0.221	7.87	88.1	5.99	4.29	
1035	15.43	10/5	100	7000	12.25	0.224	7.88	90.5	6.04	4.39	
1040	15.43	10/5	100	7500	12.26	0.225	7.98	94.0	6.09	5.21	
1045	15.43	10/5	100	8000	12.31	0.226	8.00	94.9	6.05	4.31	
1050	15.43	10/5	100	8500	12.25	0.225	8.05	96.6	6.10	4.10	
1055	15.43	10/5	100	9000	12.46	0.229	8.05	97.5	6.08	4.42	
1100	15.43	10/5	100	9500	12.97	0.233	8.05	97.6	6.04	4.23	volume purged
1105	~~15.43~~ 15.43	10/5	100	10000	12.95	0.234	8.06	98.2	6.10	4.50	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number MW-701 OR Date 5/26/11
Field Personnel Brandon P
Sampling Organization CH mk
Identify MP TOR

Depth to 93.3 / 107.8 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 100.8
Purging Device; (pump type) bladder
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1110	15.43	10/5	100	10500	12.92	0.235	8.06	99.5	6.09	4.08	
1115	15.43	10/5	100	11000	12.91	0.236	8.05	100.0	6.10	4.50	stable
1120											sample
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI #'s 5603 / 08861
Lamotte 2020e:
Pump #: [illegible]

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-704D Date 5/23/11
Field Personnel J. Ramotti
Sampling Organization O&M, Inc.
Identify MP TOC

Depth to 53 / 63 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 58
Purging Device; (pump type) bladder Pump.
Total Volume Purged 28120

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C ✓	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU ✓	Comments
1555	~~5~~.37	10/5	400	4000 ~~8~~	10.54	0.405	7.27	-5.7	6.18	5.26	
1600	5.37	10/5	400	6000	~~10~~.61	~~0~~.409	7.29	-23.9	4.67	6.66	
1605	5.37	10/5	400	8000	10.58	~~0~~.410	~~7~~.30	-30.6	3.93	2.86	
1610	5.37	10/5	400	10000	10.52	0.410	7.30	-40.5	3.54	2.54	
1615	5.37	10/5	400	12000	10.50	0.410	7.31	-62.5	2.57	4.37	
1620	5.37	10/5	400	14000	10.54	0.410	7.31	-66.3	2.45	3.56	
1625	5.37	10/5	400	16000	10.53	0.410	7.31	-66.7	2.38	3.42	
1630	5.37	10/5	400	18000	10.52	0.410	7.31	-72.4	2.27	3.73	
~~1635~~	~~5.37~~	10/5	~~400~~	~~20000~~							Sampled @ 1635
~~1640~~	~~5.37~~	~~10/5~~	~~400~~	~~22000~~							
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI : 8874 wand Serial: 10267 1 of 4

Lamotte: 13873

Pump ID: 12368

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-704 DR Date 5/23/11
Field Personnel Boarman P.
Sampling Organization Navy
Identify MP Top of riser

Depth to 102 / 132 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 117
Purging Device; (pump type) Bladder
Total Volume Purged 19.5 L = 5.15 gallons

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1100	33.21	8/7	100	500	10.89	0.565	7.59	165.5	2.81	172	
1105	33.42		100	1000	10.99	0.525	7.43	143.0	2.36	222	
1110	33.63		100	1500	10.76	0.522	7.47	115.2	1.68	167	
1115	34.13		100	2000	10.74	0.519	7.49	86.3	1.20	184	decided to back pressure to reduce flow down
1120	34.75	5/10	50	2250	11.26	0.525	7.49	78.3	1.06	237	
1125	35.02		50	2500	11.14	0.531	7.50	72.1	1.05	223	
1130	35.24		50	2750	11.02	0.527	7.50	63.7	0.94	217	
1135	35.31		50	3000	10.97	0.525	7.52	59.7	0.9	227	
1140	35.45		50	3250	10.94	0.532	7.52	57.2	0.85	219	
1145	35.48		50	3500	10.97	0.538	7.52	57.1	0.78	260	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

2 of 4

0.16 gallons/ft
x 30 ft
4.8 gallons to purge

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-704 OR Date 5/23/11
Field Personnel Brandon P
Sampling Organization de max
Identify MP TOR

Depth to 142 / 132 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 117
Purging Device; (pump type) bladder
Total Volume Purged 19.5

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1150	35.48	5/10	~~3750~~ 50	3750	10.48	0.544	7.53	60.9	0.75	226	
1155	35.49	5/10	50	4000	10.95	0.545	7.53	62.1	0.76	220	
1200	35.48	5/10	50	4250	10.96	0.538	7.53	56.3	0.66	188	
1205	35.49	5/10	50	4500	11.00	0.536	7.52	58.1	0.66	179	
1210	35.33	5/10	50	5000	11.22	0.509	7.51	64.2	0.65	154	change to 10 minutes each reading. 6/p
1225	35.27	5/10	50	5500	11.32	0.498	7.51	68.4	0.64	146	
1230	35.03	5/10	50	6000	11.31	0.486	7.47	72.1	0.62	107.9	
1235	35.07	5/10	100	7000	11.94	0.492	7.49	80.6	0.78	129	increased pressure & rate purge
1255	34.95	5/10	100	8000	11.21	0.477	7.48	62.2	0.55	95.6	
1305 ~~1235~~	34.94	5/10	100	9000	11.25	0.478	7.48	56.4	0.60	82.8	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

pump: 12368

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-704 OR Date 5/23/11
Field Personnel Brandon Bradbrook
Sampling Organization de nst
Identify MP TOR

Depth to 102 / 132 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 117
Purging Device; (pump type) bladder
Total Volume Purged 19.5

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1315	34.85	5/10	100	10000	11.29	0.473	7.47	53.8	0.53	65.1	
1325	34.85	5/10	100	11000	11.33	0.473	7.47	52.2	0.52	58.3	
1335	34.63	5/10	100	12000	11.65	0.477	7.47	47.6	0.57	57.1	
1345	34.58	5/10	100	13000	11.60	0.476	7.47	49.2	0.55	54.8	
1355	34.52	5/10	100	14000	11.59	0.474	7.47	51.5	0.53	44.2	
1405	34.55	5/10	100	15000	11.60	0.472	7.47	50.9	0.54	40.0	
1415	34.43	5/10	100	16000	11.52	0.467	7.46	48.3	0.69	40.4	
1425	34.32	5/10	100	17000	11.32	0.465	7.47	45.9	0.55	37.7	well screen volume purged change to 5 min intervals
1430	34.27	5/10	100	17500	11.54	0.466	7.47	44.0	0.57	40.7	/
1435	34.30	5/10	100	18000	11.43	0.465	7.45	40.1	0.55	36.5	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

12568

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SASNF
Well Number MW-704 OS Date 5/23/11
Field Personnel Brandon P
Sampling Organization de max
Identify MP TOC

Depth to 102 / 132 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 117
Purging Device; (pump type) bladder
Total Volume Purged 19.5

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1440	34.24	5/10	100	18500	11.45	0.463	7.45	31.4	0.49	34.0	
1445	34.14	5/10	100	19000	11.46	0.463	7.44	29.2	0.47	32.4	
1450	34.11	5/10	100	19500	11.47	0.463	7.44	28.6	0.47	33.4	
1455											Sample Parameters Stabilized
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Pump: Micro
YSI : 8874
1026?
Lamotte : 9917

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-704 M Date 5/25/11
Field Personnel Brandon P
Sampling Organization de maximis
Identify MP TOR

Depth to 37 / 47 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 42
Purging Device; (pump type) micro
Total Volume Purged 900 mL

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
0930	4.52 ~~4.34~~	1/2	90	450	13.22	0.470	7.51	-36.0	2.26	17.8	
0935	4.52	1/2	90	900	12.87	0.464	7.49	-39.7	1.82	6.09	
0940	4.52	1/2	90	1350	12.77	0.462	7.49	-39.8	1.38	3.68	
0945	4.52	1/2	90	1800	12.70	0.461	7.49	-43.8	1.23	2.90	
0950	4.52	1/2	90	2250	12.77	0.461	7.47	-49.5	1.03	5.22	
0955	4.52	1/2	90	2700	12.85	0.460	7.47	-55.4	0.97	4.90	
1000	4.52	1/2	90	3150	12.83	0.460	7.47	-55.5	0.93	5.11	
1005	4.52	1/2	90	3500	12.86	0.460	7.48	-56.0	0.92	4.12	
1010	4.52	1/2	90	3950	12.86	0.460	7.47	-55.9	0.92	3.97	
1015	4.52	1/2	90	4400	12.86	0.460	7.47	-56.2	0.93	3.66	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1020 sample MS05

1020 ——

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Sonde: 810267
wind: 8874
Pump: 10219
Conalte: 9917

initial DTW ws. 0"

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) ~~F~~ SASOL
Well Number MW-706 DS Date ~~5/24/11~~ 5/25/11
Field Personnel Brandon P
Sampling Organization de max
Identify MP TOR

Depth to 116.5 / 126.5 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 121.5
Purging Device; (pump type) bladder
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1250	0.3	10/5	200	1000	13.96	1.647	8.95	6.1	2.98	37.7	
1255	0.3	10/5	200	2000	13.43	1.648	8.98	-1.0	2.01	37.7	
1300	0.3	10/5	200	3000	13.25	1.654	9.00	-9.7	1.62	34.6	
1305	0.8	10/5	200	4000	13.25	1.607	9.00	-15.3	2.54 ~~2.37~~	28.3	
1310	0.8	10/5	200	5000	13.03	1.478	9.00	-3.1	2.27	13.7	
1315	1.76	10/5	200	6000	12.55	1.396	8.99	13.4	2.66	19.3	
1320	1.84	10/5	200	7000	12.75	1.406	8.99	16.3	1.38	15.5	
1325	2.11	10/5	~~200~~ 150	~~8000~~ 7750	12.77	1.396	8.99	17.5	0.53	8.97	dialed pressure down due to
1330	2.31	10/5	150	8500	13.03	1.399	8.99	20.1	0.57	8.55	draw down.
1335	2.35	10/5	150	9250	13.05	1.378	8.99	22.8	0.57	7.05	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Sonde: 10267
Wand: 8874
Pump: 10219
Lamotte: 9917

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number MW-706 OR Date 5/25/11
Field Personnel Brandon P
Sampling Organization de max
Identify MP TOR

Depth to 116.5 / 126.5 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 121.5
Purging Device; (pump type) bladder
Total Volume Purged 12000 mL

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1340	2.35	10/5	150	10000	13.08	1.382	8.99	24.8	0.63	7.56	
1345	2.35	10/5	150	10750	13.03	1.373	8.99	25.5	0.61	8.06	
1350	2.37	10/5	150	11500	13.11	1.377	8.98	25.1	0.59	7.82	
1355											Stable. Sample
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI Serial #'s: 5003/03821
Turb #: 10416

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS NE
Well Number 787-DR Date 05/24/11
Field Personnel J. REMOTI
Sampling Organization O&M, INC
Identify MP TOC.

Depth to 162' / 192' of screen (below MP) top bottom
Pump Intake at (ft. below MP) 177'
Purging Device; (pump type) 17017
Total Volume Purged 28870

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
0905	~~6.21~~ 5.44	8/7	250	3750	11.82	0.691	6.85	-159.2	11.88	86.5	
0910	5.94	8/7	250	5000	11.28	0.695	6.95	-200.9	10.22	53.3	
0915	5.94	8/7	250	6250	11.11	0.674	7.36	-244.0	9.99	53.0	
0920	5.94	8/7	250	7500	10.98	0.677	7.41	-248.1	9.96	57.7	
0925	5.94	8/7	250	8750	10.96	0.722	7.48	-252.8	10.13	58.7	
0930	5.94	8/7	250	10,000	10.91	0.795	7.53	-272.7	10.16	56.0	
0935	5.94	8/7	250	11,250	10.94	0.864	7.59	-276.0	10.43	52.8	
0940	5.94	8/7	250	12,500	10.85	0.917	7.64	-275.8	10.64	52.8	
0945	5.94	8/7	250	13,750	10.96	0.915	7.67	-270.2	10.96	47.0	
0950	5.94	8/7	250	15,000	10.99	0855	7.74	-259.5	11.49	49.9	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number 707-DR Date 05/24/2011
Field Personnel J. REMOTI
Sampling Organization O&M, INC.
Identify MP TOC

Depth to 162 / 192 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 177
Purging Device; (pump type) 17017
Total Volume Purged 28870

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C ✓	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU ✓	Comments
0955	5.94	8/7	250	16250	10.82	0.820	7.78	-247.6	11.97	46.1	1ℓ = 0.264172052 gal
1000	5.94	8/7	250	17500	10.79	0.736	7.79	-243.8	12.42	50.9	
1005	5.94	8/7	250	18750	10.89	0.683	7.81	-236.1	12.75	51.6	
1010	5.94	8/7	250	20000	10.83	0.659	7.82	-230.4	12.83	49.6	~ 5.28 Gallons as of now.
1015	5.94	8/7	250	21250	10.99	0.605	7.81	-213.3	12.79	47.9	
1020	5.94	8/7	250	22500	11.04	0.596	7.82	-210.3	14.53	63.3	
1025	5.94	8/7	250	23750	11.02	0.586	7.81	-202.4	14.69	45.2	
1030	5.94	8/7	250	25000	10.99	0.580	7.80	-200.3	14.77	44.0	
1035	5.94	8/7	250	26250	11.02	0.578	7.80	-197.3	14.77	44.0	Sampled @ 1045
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI #'s: 5603/08861
TURB #: 10416

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

PG 1 OF 2 1

Location (Site/Facility Name) SRS INE
Well Number MW-907-M Date 05/24/2011
Field Personnel J. REMOTI
Sampling Organization O&M, INC.
Identify MP T.O.C.

Depth to 28.1 / 38.1 of screen (below MP) top bottom
Pump Intake at (ft. below MP) 33.1
Purging Device; (pump type) 14967
Total Volume Purged 18160

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C ✓	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU	Comments
1510	5.18	10/5	360	1800	12.20	0.935	6.81	-96.5	12.82	3946	1l = 0.264172052
1515	5.18	10/5	360	3600	11.75	0.939	6.83	-103.5	12.70	1278	
1520	5.18	10/5	360	5400	11.34	0.909	6.85	-107.6	12.31	865	
1525	5.18	10/5	360	7200	10.98	0.896	6.86	-111.2	12.41	756	
1530	5.18	10/5	360	9000	10.74	0.888	6.87	-113.7	13.45	610	
1535	5.18	10/5	360	10800	10.66	0.886	6.87	-114.6	12.26	356	
1540	5.18	10/5	360	12600	10.64	0.892	6.88	-115.5	12.78	369	
1545	5.18	10/5	360	14400	10.67	0.884	6.88	-115.8	12.47	354	
1550	5.18	10/5	360	16200	10.70	0.891	6.88	-115.7	12.02	342	
1555	5.18	10/5	360	18000	10.87	0.891	6.87	-115.6	11.87	329	Sampled @ 1605
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

YSI: 5603/0886
Turb: 10416

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS-NE
Well Number P-12 Date 05/25/11
Field Personnel Ramothi
Sampling Organization OFM, Inc
Identify MP TOC

Depth to 9 / 14 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 11.5'
Purging Device; (pump type) 9131
Total Volume Purged 27600

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min 1600	Cum. Volume Purged liters	Temp. °C ✓	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU	Comments
1350	6.18	10/5	160	1600	13.21	0.338	6.38	76.3	42.90	130	
1355	6.28	10/5	160	2400	13.17	0.333	6.28	99.9	41.62	107.1	
1400	6.18	9/6	320	3200	13.86	0.335	6.25	124.3	40.76	99.5	
1405	6.18	9/6	320	4800	11.83	0.318	6.21	137.7	40.93	104.4	
1410	6.18	9/6	320	6400	12.80	0.323	6.20	135.8	39.67	86.4	
1415	6.18	9/6	320	8000	12.41	0.321	6.20	133.5	39.44	76.9	
1420	6.18	9/6	320	9600	12.26	0.321	6.19	131.5	38.84	92.5	
1425	6.18	9/6	320	11200	12.76	0.323	6.23	127.9	37.75	118.0	
1430	6.18	9/6	320	12800	13.29	0324	6.24	117.3	37.84	102.4	
1435	6.18	9/6	320	14400	13.37	0.324	6.23	121.2	37.72	84.8	
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS-NE
Well Number P-12 Date 05/25/2011
Field Personnel Remotti
Sampling Organization O&M Inc.
Identify MP TOC

Depth to 9 / 14 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 11.5'
Purging Device; (pump type) 9131
Total Volume Purged 27,600

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters/600	Temp. °C ✓	Spec. Cond.[2] µS/cm ✓	pH ✓	ORP[3] mv ✓	DO mg/L ✓	Turb-idity NTU ✓	Comments
1440	6.18	9/6	320	16000	13.66	0.328	6.24	123.9	37.91	866	
1445	6.18	9/6	320	17600	13.49	0.325	6.23	126.2	37.84	107.4	Re-Calibrated Turb
1450	6.18	9/6	320	19200	13.54	0.325	6.22	128.1	37.82	89.7	
1455	6.18	9/6	320	20800	12.94	0.322	6.22	128.2	38.28	92.1	
1500	6.18	9/6	320	22400	12.63	0.321	6.20	129.3	37.48	90.8	
1505	6.18	9/6	320	24,000	12.56	0.319	6.22	125.4	37.40	87.7	
											Sampled @ 1510
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

8789

initial depth = ~~0~~ 0.6'

sonde: 10267
wand: 8874
pump: 14967
Lanotte: 9917

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRS
Well Number P-107B Date 5/24/17
Field Personnel Brandon P
Sampling Organization de max
Identify MP TOR

Depth to 34 / 44 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 39
Purging Device; (pump type) bladder
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1050	0.8	10/5	400	400	12.14	0.362	7.02	58.1	0.74	37.1	
1055	0.8	10/5	400	2000	12.03	0.360	7.18	30.2	0.61	33.5	
1100	0.8	10/5	400	4000	12.01	0.357	6.89	8.1	0.66	25.5	
1105	0.8	10/5	400	6000	12.10	0.356	6.88	-9.7	0.61	24.8	
1110	0.8	10/5	400	8000	12.20	0.355	6.91	-31.9	0.71	27.4	
1115	0.8	10/5	400	10000	11.86	0.350	6.97	-50.9	0.73	23.1	
1120	0.8	10/5	400	12000	11.92	0.349	7.00	-53.6	0.72	22.9	
1125	0.8	10/5	400	14000	11.93	0.349	7.00	-55.6	0.69	21.9	
1130	0.8	10/5	400	16000	11.94	0.348	7.01	-54.6	0.70	22.1	
											sample
Stabilization Criteria					3%	3%	±0.1	± 10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Sonde: 10267
Wand: 9874
Pump: 9131
Lamotte: 9917

initial depth : 2.4'

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) SRSNE
Well Number P-101C Date 5/24/11
Field Personnel Brandon P
Sampling Organization de max
Identify MP TOR

Depth to 3 / 13 of screen
(below MP) top bottom
Pump Intake at (ft. below MP) 8
Purging Device; (pump type) bladder
Total Volume Purged

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Turb-idity NTU	Comments
1240	3.48	8/4	200	200	11.26	0.261	7.45	169.0	1.97	100.1	
1245	3.81	8/4	200	1200	11.05	0.257	7.41	163.6	1.75	80.3	
1250	3.93	8/4	200	2200	10.91	0.349	7.39	154.6	2.00	67.2	
1255	4.00	8/4	200	3200	10.68	0348	7.30	153.5	1.59	69.5	
1300	4.00	8/4	200	4200	10.60	0.348	7.30	150.1	2.01	55.6	
1305	4.00	8/4	200	5200	10.50	0.349	7.31	144.0	1.69	48.1	
1310	4.00	8/4	200	6200	10.32	0.256	7.30	137.7	2.13	55.4	
1315	4.00	8/4	200	7200	10.31	0.257	7.29	136.6	2.16	42.9	
1320	4.00	8/4	200	8200	10.53	0.259	7.29	135.0	2.19	42.0	
1325	4.00	8/4	200	9200	10.60	0.261	7.29	133.9	2.16	39.5	
Stabilization Criteria					✓ 3%	✓ 3%	±0.1 ✓	± 10 mv ✓	10% ✓	10% ✓	

* 1330 SAMPLE

1330 sample *

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-707DR
Sample ID	MW-707DR-09272011		
Sample Date	09/27/2011	Sampled By	Michael Skowronek
Sample Time	Begin 13:40 End 13:43	Recorded By	Michael Skowronek
Weather	Cool, Humid, Muggy	Replicate No.	N/A

Instrument Identification

Water Quality Meter # 1	YSI 600 XL/02j0792aj p;4135
Casing Material	N/A
Casing Diameter (in)	2.00
Sounded Depth (ft bmp)	194.76 (9/27/2011)
Depth to Water (ft bmp)	9.26
PID Reading(ppm)	0.00

Field Parameters

Water Quality Meter # 2	LaMotte 2020e/1366-3811p;18832			
Purge Method	BP:QED 14091			
Screen Interval (ft bmp)	Top	162.00	Bottom	192.00
Pump Intake Depth (ft bmp)		177.00		177.00
Purge Time	Begin	9:48	End	13:44

Field Parameter Measurements During Purging

Time	Cuml. Prg. Time (min)	Flow Rate	Cuml. Vol. Purged (gal)	TEMP. (°C)	pH (s.u.)	Specific Conductivity	ORP (mV)	DO (mg/L)	TURB (NTUs)	DTW (ft)
9:57	9.67	100.00	0.13	12.75	7.11	0.581 mS/cm	-196.50	2.10	79.30	9.30
10:02	14.50	100.00	0.26	12.61	7.34	1.911 mS/cm	-241.60	0.74	70.20	9.31
10:07	19.57	100.00	0.39	14.54	7.46	2.133 mS/cm	-253.60	0.79	69.00	9.33
10:12	24.55	100.00	0.52	15.56	7.50	2.269 mS/cm	-262.80	0.52	79.00	9.35
10:18	30.03	100.00	0.65	16.61	7.51	2.322 mS/cm	-269.00	0.47	81.20	9.38
10:23	35.92	100.00	0.78	17.91	7.53	2.335 mS/cm	-269.70	0.57	80.30	9.40
10:29	41.82	100.00	0.91	16.36	7.56	2.344 mS/cm	-270.30	0.58	90.20	9.42
10:33	45.08	100.00	1.04	16.31	7.57	2.333 mS/cm	-270.30	0.58	85.30	9.43
10:38	50.05	100.00	1.17	16.27	7.61	2.269 mS/cm	-266.80	0.59	75.70	9.44
10:43	55.33	100.00	1.30	16.76	7.67	2.200 mS/cm	-264.40	0.58	91.80	9.50
10:48	60.23	100.00	1.43	17.32	7.71	2.135 mS/cm	-260.00	0.59	85.20	9.55
10:55	67.37	100.00	1.56	18.02	7.76	2.041 mS/cm	-253.80	0.60	90.70	9.55
10:58	70.20	80.00	1.67	18.31	7.83	1.933 mS/cm	-248.50	0.62	90.70	9.56
11:03	75.55	80.00	1.78	18.01	7.90	1.753 mS/cm	-234.20	0.66	85.20	9.57
11:09	81.10	80.00	1.89	15.77	7.98	1.450 mS/cm	-223.10	0.71	79.30	9.57
11:13	85.27	80.00	2.00	15.88	8.00	1.363 mS/cm	-218.00	0.70	75.70	9.57
11:18	90.65	80.00	2.11	16.53	8.00	1.322 mS/cm	-208.10	0.69	72.30	9.58
11:24	96.28	80.00	2.22	17.18	7.99	1.333 mS/cm	-206.10	0.69	70.40	9.58

Sampling Personnel: Michael Skowronek Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-707DR
Sample ID	MW-707DR-09272011		
Sample Date	09/27/2011	Sampled By	Michael Skowronek
Sample Time	Begin 13:40 End 13:43	Recorded By	Michael Skowronek
Weather	Cool, Humid, Muggy	Replicate No.	N/A

11:28	100.23	80.00	2.33	17.70	7.98	1.345 mS/cm	-198.50	0.68	71.70	9.58
11:33	105.08	80.00	2.44	16.67	7.97	1.265 mS/cm	-204.60	0.69	65.30	9.59
11:39	111.02	80.00	2.55	16.14	7.95	1.198 mS/cm	-188.60	0.65	60.70	9.59
11:43	115.40	80.00	2.66	16.61	7.94	1.184 mS/cm	-185.00	0.63	63.80	9.59
11:48	120.08	80.00	2.77	17.26	7.93	1.179 mS/cm	-177.20	0.61	59.00	9.60
11:53	125.47	80.00	2.88	17.56	7.91	1.177 mS/cm	-179.80	0.59	55.30	9.60
11:58	130.22	80.00	2.99	17.68	7.90	1.176 mS/cm	-160.50	0.59	57.30	9.60
12:04	136.05	80.00	3.10	17.77	7.88	1.175 mS/cm	-151.00	0.57	55.00	9.60
12:08	140.28	80.00	3.21	17.86	7.87	1.171 mS/cm	-153.20	0.57	52.10	9.60
12:13	145.25	80.00	3.32	17.86	7.86	1.162 mS/cm	-159.20	0.56	55.80	9.60
12:18	150.05	80.00	3.43	17.87	7.35	1.151 mS/cm	-149.70	0.56	49.70	9.60
12:23	155.40	80.00	3.54	17.57	7.84	1.138 mS/cm	-158.90	0.56	48.10	9.60
12:27	159.90	80.00	3.65	17.57	7.83	1.141 mS/cm	-154.20	0.56	45.20	9.60
12:33	165.48	80.00	3.76	17.76	7.82	1.144 mS/cm	-142.10	0.55	43.30	9.60
12:39	171.77	80.00	3.87	17.96	7.80	1.157 mS/cm	-149.00	0.53	51.00	9.60
12:43	175.08	80.00	3.98	18.08	7.81	1.159 mS/cm	-141.30	0.53	49.50	9.60
12:48	180.05	80.00	4.09	18.12	7.80	1.161 mS/cm	-150.60	0.52	43.10	9.60
12:53	185.37	80.00	4.20	18.08	7.79	1.154 mS/cm	-152.50	0.50	40.20	9.60
12:59	191.10	80.00	4.31	17.94	7.78	1.147 mS/cm	-149.50	0.50	40.90	9.60
13:03	195.73	80.00	4.42	17.89	7.76	1.138 mS/cm	-152.30	0.49	42.50	9.60
13:08	200.57	80.00	4.53	17.81	7.74	1.124 mS/cm	-158.30	0.48	35.30	9.61
13:13	205.05	80.00	4.64	17.82	7.72	1.111 mS/cm	-164.90	0.47	36.90	9.61
13:18	210.68	80.00	4.75	17.76	7.69	1.101 mS/cm	-184.10	0.45	35.40	9.61
13:23	215.85	80.00	4.86	17.72	7.67	1.095 mS/cm	-194.00	0.45	33.30	9.61
13:28	220.15	80.00	4.97	17.56	7.64	1.090 mS/cm	-211.30	0.43	30.20	9.61
13:33	225.02	80.00	4.85	17.44	7.62	1.091 mS/cm	-206.50	0.42	28.90	9.61
13:38	230.38	80.00	4.97	17.48	7.61	1.090 mS/cm	-207.80	0.41	27.30	9.61

Sampling Personnel: Michael Skowronek Signature:

Well Casing Volumes

Gal./Ft. 1-1/4" = 0.06 1-1/2" = 0.09 2" = 0.16 2-1/2" = 0.26 3" = 0.37 3-1/2":= 0.50 4" = 0.65 6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

Version 1.01

ARCADIS
Infrastructure, environment, buildings

Low-Flow Groundwater Sampling Log

Project	SRSNE	Site Location	Southington, CT
Project No.	B0054634.0000.01900	Well ID	MW-707DR
Sample ID	MW-707DR-09272011		
Sample Date	09/27/2011	Sampled By	Michael Skowronek
Sample Time	Begin 13:40 End 13:43	Recorded By	Michael Skowronek
Weather	Cool, Humid, Muggy	Replicate No.	N/A

Collected Sample Condition Color: brown Odor: None Appearance: NA

Parameter	Container	Number	Preservative
VOCs	CG 40 ml	3	HCL

Comments

Decreased pump rate to 80 ml/min to reduce turb and drawdown

Sampling Personnel: Michael Skowronek Signature:

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	1-1/2" = 0.09	2" = 0.16	2-1/2" = 0.26	3" = 0.37	3-1/2":= 0.50	4" = 0.65	6"=1.47

°C	Degrees Celsius	in	Inches	N/A	Not Applicable
bmp	Below measuring point	mg/L	Milligrams per liter	NTUs	Nephelometric Turbidity Units
DO	Dissolved oxygen	min	Minutes	ORP	Oxidation reduction potential
DTW	Depth to water	mL	Milliliter	ppm	Parts per million
ft	Feet	mL/min	Milliliters per minute	s.u.	Standard Units
gal	Gallons	mS/cm	Millisiemens per centimeter	uS/cm	Microsiemens per centimeter
gpm	Gallons per minute	mV	Millivolts		

Material Code

AG - Amber Glass CG - Clear Glass PE - Polyethylene PP - Polypropylene T - Teflon S - Silicone O - Other

Purging Code

B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; SP=Sample Port; CV=Collection Valve; O=Other

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Appendix B

Equipment Calibration Logs

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[redacted] Dave C

YSI & Turbidity Meter Calibration Log

DATE: 5/23/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600XL	Serial Number: 2159 / 07F100591
Brand: LaMotte	Model: 2020e	Serial Number: 9917

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	7.23 / 4.00	4.00	4.00	4.00	
7.00	7.12 / 7.00	7.00	6.81	7.00	
10.00	9.62 / 10.00	10.00	9.96	10.00	
Turbidity (NTUs)		Recal			
0	0	0	0.00	0	
1	1033 / 10.0	1.0	1.76 / 1.00	1	
10	1260.8 / 1260	8.84	10.89 / 10.00	10	
	HH 11.7 / 9.84	HH			
Conductivity					
10 µS/cm	10,000	10 µS/cm	9.769	10 µS/cm	
10 mS/cm	9.60 / 10	10 mS/cm	8.725	10 mS/cm	
Dissolved Oxygen (mg/L)					
Zero DO Solution	2.0% / 0.19 mg/L	Zero DO Solution	0.22 mg/L	Zero DO Solution	
		759.2 99.9%			
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	240.4 / 244.1	242.7			
(Light's Solution)	443.5				
Temperature (°C)	16.06				

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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MS - Did not use

YSI & Turbidity Meter Calibration Log

DATE: 5/23/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 650MDS/600XL	Serial Number: 11451/1611 07F100532 01B0120
Brand:	Model:	Serial Number:

CALIBRATION RECORD

Morning Calibration			Afternoon Check		Evening Check	
Standard		Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)						
4.00	5.97	4.00	4.00		4.00	
7.00	7.04	7.00	7.00		7.00	
10.00	9.98	10.00	10.00		10.00	
Turbidity (NTUs)						
0			0		0	
1			1		1	
10		[illegible]	10		10	
Conductivity						
10 µS/cm		.091/.100	10 µS/cm		10 µS/cm	
10 mS/cm		9.029/10.00	10 mS/cm		10 mS/cm	
Dissolved Oxygen (mg/L)						
Zero DO Solution		1.2	Zero DO Solution		Zero DO Solution	
REDOX (mV)			Chart [1]		Chart [1]	
(Zobell Solution)		243.4/244.8				
(Light's Solution)		446/8				
Temperature (°C)		17.07				

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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EC

YSI & Turbidity Meter Calibration Log

DATE: 5/23/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 650MDS/600XL	Serial Number: 01G0418 AE/ 2177/2687 01K0643 AB
Brand: LaMotte	Model: LaMotte 2020e	Serial Number: 11797

CALIBRATION RECORD

Morning Calibration			Afternoon Check		Evening Check	
Standard		Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)						
4.00		4.10/4.00	4.00		4.00	4.56
7.00		6.74/7.00	7.00		7.00	7.18
10.00		10.40/10.07	10.00		10.00	7.98
Turbidity (NTUs)						
0	0.08	0	0		0	0
1	0.97	1	1		1	1.17
10	8.99	10	10		10	9.90
Conductivity						
10 µS/cm		0.697 mS/cm	10 µS/cm		10 µS/cm	0.216 mS
10 mS/cm		9.402/10.00	10 mS/cm		10 mS/cm	8.698
Dissolved Oxygen (mg/L)						
Zero DO Solution		0.01	Zero DO Solution		Zero DO Solution	0.5
REDOX (mV)			Chart [1]		Chart [1]	
(Zobell Solution)		236.3/247.3				239.7
(Light's Solution)		466.1				464.5
Temperature (°C)		17.63				17.32

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

James Renetti

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YSI & Turbidity Meter Calibration Log

DATE: 5/23/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600XL / Gemini3	Serial Number: 5603 / 08861
Brand: Comette	Model: 20202	Serial Number: 10916

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	403/4.00	4.00	4.14	4.00	
7.00	6.96/7.00	7.00	7.12	7.00	
10.00	9.89/10.00	10.00	10.10	10.00	
Turbidity (NTUs)					
0	0/0	0	0.00	0	
1	1/1	1	1.81	1	
~~10~~ 126	~~25/126~~ 10/10	10	10.30	10	
Conductivity					
10 µS/cm	8996/10000	10 µS/cm	8744	10 µS/cm	
10 mS/cm	10.000	10 mS/cm	8.744	10 mS/cm	
Dissolved Oxygen (mg/L)					
Zero DO Solution	0.22	Zero DO Solution	3.89	Zero DO Solution	
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	242/244	241	243		
(Light's Solution)	490/495		450		
495					
Temperature (°C)	15.77		17.80		

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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Brandon Fitzsimmons

YSI & Turbidity Meter Calibration Log

DATE: 5/23/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600 XL	Serial Number: 8874 / 10267
Brand: Lamotte	Model: 2020 e	Serial Number: 13873

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	430 pm Standard	Reading
pH (S.I. units)					
4.00	4.02/4.00	4.00		4.00	4.02
7.00	7.04/7.00	7.00		7.00	7.07
10.00	9.97/10.00	10.00		10.00	9.97
Turbidity (NTUs)					
0	0.00	0		0	-0.29
1	1.00	1		1	0.64
~~10~~ 10	~~12.6~~ 10	10		10	9.88
Conductivity					
10 µS/cm	9530/10000	10 µS/cm		10 µS/cm	10,000
10 mS/cm		10 mS/cm		10 mS/cm	
Dissolved Oxygen (mg/L)					
Zero DO Solution ~~2.00~~		Zero DO Solution		Zero DO Solution	0.16
~~BP: 762.4~~ 0.17 mg/L					
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	245.2/240.0				237.5
(Light's Solution)	466				440
Temperature (°C)	17.43				18.60

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

Runoff

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DATE: 05/24/2011

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600XL / 650 MDS	Serial Number: 5603 / 08861
Brand: LAMOTTE	Model: 2020e	Serial Number: 10416

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.94/4.00	4.00	4.01	4.00	
7.00	7.14/7.000	7.00	7.04	7.00	
10.00	9.97/10.00	10.00	10.08	10.00	
Turbidity (NTUs)					
0	0.32/0.00	0	0.00	0	
1	0.98/1.00	1	1.07	1	
10	14.00/10.00	10	10.20	10	
Conductivity					
10 µS/cm	10015/9999	10 µS/cm	9872	10 µS/cm	
10 mS/cm	10.0515/9.99	10 mS/cm	98.72	10 mS/cm	
Dissolved Oxygen (mg/L)					
Zero DO Solution	0.58	Zero DO Solution	0.72	Zero DO Solution	
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	244.8		233.3		
(Light's Solution)	445.0		448.2		
Temperature (°C)	18.37		21.93		

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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BP

YSI & Turbidity Meter Calibration Log

DATE: 5/24/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 650 MDS / 600XL	Serial Number: 8874 / 10267
Brand: LaMotte	Model: 2020e	Serial Number: 9917

CALIBRATION RECORD

Morning Calibration			Afternoon Check		Evening Check	
Standard		Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)						
4.00	4.27	4.00	4.00		4.00	3.87
7.00	6.71	7.00	7.00		7.00	7.01
10.00	10.05	10.01	10.00		10.00	~~10.00~~ 9.97
Turbidity (NTUs)						
0	0.12	0.00	0		0	0.13
1	1.05	0.90	1		1	1.21
10	~~12.7~~ 12.7	~~10.00~~ 9.94	10		10	13.1
Conductivity						
10 µS/cm	0.075	0.10	10 µS/cm		10 µS/cm	0.10
10 mS/cm	9.715	10.00	10 mS/cm		10 mS/cm	10.02
Dissolved Oxygen (mg/L)						
Zero DO Solution	0.51		Zero DO Solution		Zero DO Solution	-9.5 (changed units)
	753.7 mmHg					
REDOX (mV)			Chart [1]		Chart [1]	
(Zobell Solution)	239.1 / 240.1					240.0 ~~247.0~~ 479.6
(Light's Solution)	459.7					
Temperature (°C)	19.10					22.59

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

EC

DATE: 5/24/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 650 MDS 600 XL 01K0643	Serial Number: 01G0418AF
Brand: LaMotte 2020e	Model:	Serial Number:

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4	4.00		4.00	4.06
7.00	7	7.00		7.00	6.91
10.00	10	10.00		10.00	9.76
Turbidity (NTUs)					
0	0	0		0	0.26
1	1	1		1	1.12
10	10	10		10	9.98
Conductivity					
10 µS/cm	~~84~~	10 µS/cm		10 µS/cm	
10 mS/cm	9.875 / 10.0	10 mS/cm		10 mS/cm	9.403
Dissolved Oxygen (mg/L)					
Zero DO Solution	0.06	Zero DO Solution		Zero DO Solution	
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	240				237.3
(Light's Solution)	~~466.3~~				461.9
Temperature (°C)	18.19				22.60

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ARCADIS
Infrastructure, environment, facilities

YSI & Turbidity Meter Calibration Log

DC

DATE: 5/23/11
5/24/11 MS

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600XL	Serial Number: 07F100597/2154
Brand: LaMotte	Model: 2020e	Serial Number: 13873

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.81/ 3.99	4.00	4.01	4.00	
7.00	7.17/ 7.00	7.00	7.11	7.00	
10.00	7.92/ 10.00	10.00	10.02	10.00	
Turbidity (NTUs)					
0	0	0	0/0	0	
1	0.42 /0.52	1	0.16/ - ERROR 2 when calibrating		
10	9.25/ 9.97	10	14.1/ 9.91	10	
				NTU "outside of range"	
Conductivity					
10 µS/cm	10.12/ 10.00	10 µS/cm	9.616	10 µS/cm	
10 mS/cm	8.878/ 9.981	10 mS/cm	9.441	10 mS/cm	
Dissolved Oxygen (mg/L)					
Zero DO Solution	750.9 - Barometer 98.7%	Zero DO Solution	-3.12	Zero DO Solution	
	zero = 0.19				
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	237.5	229.8			
(Light's Solution)	441.1				
Temperature (°C)	20°				

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

ERROR 2 Calibrating Turbidity 1.0 - 'Outside of range'

ARCADIS
Design & consultancy for natural and built assets

YSI & Turbidity Meter Calibration Log

DC

DATE 5/25/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 2159/ 07F100897	Serial Number: 600XL
Brand: Lamotte	Model: 2020e	Serial Number: 13873

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.57/ 4.00	4.00		4.00	4.26
7.00	6.87/ 7.00	7.00	6.85	7.00	6.85
10.00	9.08/ 10.00	10.00	10.13	10.00	10.15
Turbidity (NTUs)					
0	0/0	0		0	-0.32
1	0.60/ 0.92	1		1	0.16
10	18.4/ 9.95	10		10	9.79
Conductivity					
10 µS/cm	9.560/ 9.997	10 µS/cm		10 µS/cm	10.08
10 mS/cm	8.378/ 9.878	10 mS/cm		10 mS/cm	9.173
Dissolved Oxygen (mg/L)					
Zero DO Solution	754.4 MM HG 0.26	Zero DO Solution		Zero DO Solution	0.23
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	237.5	236.7/ 237.5		228.2	
(Light's Solution)	443.8				
Temperature (°C)	18.41				

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

Remotti

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YSI & Turbidity Meter Calibration Log

DATE: 05/25/2011

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600XL / 650 MDS	Serial Number: 5603 / 08861
Brand: Lamotte	Model: 2020e	Serial Number: 10416

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.98/4.00	4.00		4.00	4.00
7.00	7.07/7.00	7.00		7.00	6.98
10.00	~~9.99~~/10.00	10.00		10.00	9.91
Turbidity (NTUs)					
0	0/0	0		0	0.16
1	1.02/1.00	1		1	0.71
10	10.87/	10		10	10.19
Conductivity					
10 µS/cm	9946.	10 µS/cm		10 µS/cm	10050 ~~1005~~
10 mS/cm	4.946	10 mS/cm		10 mS/cm	4.21
Dissolved Oxygen (mg/L)					
Zero DO Solution	0.05	Zero DO Solution		Zero DO Solution	0.00
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	244/244				241.3
(Light's Solution)	445				444.1
Temperature (°C)	18.22				20.18

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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EL

YSI & Turbidity Meter Calibration Log

DATE: 5/25/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 650 MDS / 600 XL	Serial Number: 2177 / Q681
Brand: LaMotte	Model: 2020E	Serial Number: 11797

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4	4.00		4.00	3.53
7.00	7	7.00		7.00	6.07
10.00	10	10.00		10.00	8.56
Turbidity (NTUs)					
0	0	0		0	0.16
1	1	1		1	1.10
10	10	10		10	9.12
Conductivity					
10 µS/cm		10 µS/cm		10 µS/cm	
10 mS/cm	9.768 / 10	10 mS/cm		10 mS/cm	9.137
Dissolved Oxygen (mg/L)					
Zero DO Solution	0.06	Zero DO Solution		Zero DO Solution	0.42
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	240				232.8
(Light's Solution)	466.2				453.8
Temperature (°C)	18.21				19.15

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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JP

YSI & Turbidity Meter Calibration Log

DATE: 5/25/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 650 MDS	Serial Number: 8874 10267
Brand: Lamotte	Model: 2020e	Serial Number: 9917

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.53 / 4.00	4.00		4.00	4.06
7.00	7.19 / 7.00	7.00		7.00	7.25
10.00	9.89 / 10.00	10.00		10.00	10.45
Turbidity (NTUs)					
0	-0.07 / 0.00	0		0	0.74
1	1.22 / 0.99	1		1	1.50
10	12.2 / 9.96	10		10	13.8
Conductivity					
10 µS/cm	0.064 / 0.101	10 µS/cm		10 µS/cm	0.03
10 mS/cm	10.04 / 10.00	10 mS/cm		10 mS/cm	13.98
Dissolved Oxygen (mg/L)					
Zero DO Solution	0.11	Zero DO Solution		Zero DO Solution	0.32
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	241.3 / 240.0				238.5
(Light's Solution)	493				494.4
Temperature (°C)	18.21				21.23

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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EC

YSI & Turbidity Meter Calibration Log

DATE: 5/26/11

INSTRUMENT IDENTIFICATION

Brand: YSI 650 MDS	Model: 650 MDS 600XL	Serial Number: 06G0418AC
Brand: LaMotte 2020e	Model:	Serial Number: #2681

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4	4.00		4.00	4.01
7.00	7	7.00		7.00	7.11
10.00	10	10.00		10.00	10.40
Turbidity (NTUs)					
0	0	0		0	0.11
1	1	1		1	1.19
10	10	10		10	9.75
Conductivity					
10 µS/cm		10 µS/cm		10 µS/cm	
10 mS/cm	9.673/10	10 mS/cm		10 mS/cm	9.864
Dissolved Oxygen (mg/L)					
Zero DO Solution	0.04	Zero DO Solution		Zero DO Solution	0.10
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	240.1				222.0
(Light's Solution)	467.3				466.2
Temperature (°C)	18.39				19.61

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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YSI & Turbidity Meter Calibration Log

Jones

DATE: 5/26/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: 600XL / 650MDS	Serial Number: 5603 / 08861
Brand: Lamotte	Model: 2020	Serial Number: 10416

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.02/4.00	4.00	3.95	4.00	
7.00	7.03/7.00	7.00	6.88	7.00	
10.00	10.02/10.00	10.00	9.78	10.00	
Turbidity (NTUs)					
0	0.0/0.0	0	0.2	0	
1	0.56/1.00	1	.96	1	
10	10.58/10.00	10	10.21	10	
Conductivity					
10 µS/cm	0.088/.090	10 µS/cm	.10	10 µS/cm	
10 mS/cm	9.97/10.00	10 mS/cm	9.69	10 mS/cm	
Dissolved Oxygen (mg/L)					
Zero DO Solution	0.0	Zero DO Solution	0.11	Zero DO Solution	
REDOX (mV) (237.5)		Chart [1]		Chart [1]	
(Zobell Solution)	233/240		246.8		
(Light's Solution)	444		456		
Temperature (°C)	19.8		22.6		

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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YSI & Turbidity Meter Calibration Log

DATE: 5/26/11

INSTRUMENT IDENTIFICATION

DMC

Brand: YSI	Model: 600XL	Serial Number: 2159/ OTF 100597
Brand: Lamotte	Model: 2020c	Serial Number: 13873

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	4.56/ 3.99	4.00	4.04	4.00	
7.00	7.34/ 7.00	7.00	6.94	7.00	
10.00	9.31/ 9.98	10.00	9.88	10.00	
Turbidity (NTUs)					
0	0/0	0	0.00	0	
1	0.64/ 0.82	1	0.69	1	
10	16.4/ 9.97	10	10.14	10	
Conductivity					
10 µS/cm	10.34/ 10.00	10 µS/cm	10.54	10 µS/cm	
10 mS/cm	9.087/ 9.999	10 mS/cm	9.990	10 mS/cm	
Dissolved Oxygen (mg/L)		100.7%			
Zero DO Solution	0.08	Zero DO Solution	0.11	Zero DO Solution	
		756.1			
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	237.5	237.6			
(Light's Solution)	451.4	Light	450.1		
Temperature (°C)	18.32	Afternoon	240.3		

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

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YSI & Turbidity Meter Calibration Log

DATE: 5/24/11

INSTRUMENT IDENTIFICATION

Brand: YSI	Model: ~~650~~ 650 MDS	Serial Number: 8874 10267
Brand: Lamotte	Model: 2020e	Serial Number: 9917

CALIBRATION RECORD

Morning Calibration		Afternoon Check		Evening Check	
Standard	Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)					
4.00	3.54/4.00	4.00		4.00	4.18
7.00	6.91/7.00	7.00		7.00	7.15
10.00	10.09/10.00	10.00		10.00	10.07
Turbidity (NTUs)					
0	0/0	0		0	1.07
1	1.33/1.00	1		1	1.30
10	9.82/9.96	10		10	~~11.89~~ 10.08
Conductivity					
10 µS/cm	0.09/CAL	10 µS/cm		10 µS/cm	0.095
10 mS/cm	12.8/10.8	10 mS/cm		10 mS/cm	11.87
Dissolved Oxygen (mg/L)					
Zero DO Solution	0.12	Zero DO Solution		Zero DO Solution	0.19
REDOX (mV)		Chart [1]		Chart [1]	
(Zobell Solution)	~~230~~ 237				249.9
(Light's Solution)	243				499.8
Temperature (°C)	19.07				21.8

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.

Pine Environmental Services, Inc
24 Tower Office Park, Woburn, MA 01801
800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

YSI 600 XL Packing List

Pine No: 1611

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
650 MDS Display	—	✓		
Manual	—	✓		
Quick reference card	—	✓		
Field cable	—	✓		
Stand (base, claw, and rod)	—	✓		
Probe guard w/ weight	—			
Storage/ calibration cup w/ sponge	—	✓		
Flow through cell	—	✓		
2 of each barb size (1/4, 3/8, and 1/2)	—	✓		
DO probe reconditioning kit	—	✓		
C alkaline batteries (4)	—	✓		
6-series communications cable	—	✓		
YSI Ecowatch software	—	✓		
Calibration kit (pH, conductivity, and ORP)	—	✓		
NIST traceable calibration sheet	—	✓		

Prepared By: MB

QC By: _____

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 1611
Description YSI 600 XL
Calibrated 5/19/2011

Manufacturer YSI
Model Number 600 XL
Serial Number/ Lot Number 01B0120AA
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21.4
Humidity % 47

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.00	10.00	0.00%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.413	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	240.00	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	100.10	100.10	0.10%	Pass

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 1611
Description YSI 600 XL
Calibrated 5/19/2011

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA 1.413 CONDUCTIVITY	MA 1.413 CONDUCTIVITY SOLUTION	Aurical	1.413	8428		10/20/2011
MA ORP	MA ORP SOLUTION 240 mV	Hanna		2741		10/1/2015
MA PH10	MA PH10 SOLUTION	Aurical	PH10	8421		10/18/2011
MA PH4 STD	MA PH4 SOLUTION	VWR		2011507		10/31/2012
MA PH7 STD	MA PH7 SOLUTION	VWR		2101037		12/31/2012
MA ZERO D.O.	MA ZERO DO SODIUM SULFITE			44328		

Notes about this calibration
Zero D.O. Check 0.11mg/L

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

Pine Environmental Services, Inc
24 Tower Office Park, Woburn, MA 01801
800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

YSI 600 XL Packing List

Pine No: 8874

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
650 MDS Display	✓	✓		
Manual	–	✓		
Quick reference card	–	✓		
Field cable	–	✓		
Stand (base, claw, and rod)	–	✓		
Probe guard w/ weight	–	✓		
Storage/ calibration cup w/ sponge	–	✓		
Flow through cell	–	✓		
2 of each barb size (1/4, 3/8, and 1/2)	–	✓		
DO probe reconditioning kit	–	✓		
C alkaline batteries (4)	–	✓		
6-series communications cable	–	✓		
YSI Ecowatch software	–	✓		
Calibration kit (pH, conductivity, and ORP)	–	✓		
NIST traceable calibration sheet	–	✓		

Prepared By: MB

QC By: MB

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 8874
Description YSI 600 XL
Calibrated 5/19/2011

Manufacturer YSI
Model Number 600 XL
Serial Number/ Lot Number 06F2353AC
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21
Humidity % 46

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	9.99	9.99	-0.10%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.413	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	240.00	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	100.60	100.60	0.60%	Pass

Group # 5
Group Name Disolved Oxygen Zero

Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 8874
Description YSI 600 XL
Calibrated 5/19/2011

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA 1.413 CONDUCTIVITY	MA 1.413 CONDUCTIVITY SOLUTION	Aurical	1.413	8428		10/20/2011
MA ORP	MA ORP SOLUTION 240 mV	Hanna		2741		10/1/2015
MA PH10	MA PH10 SOLUTION	Aurical	PH10	8421		10/18/2011
MA PH4 STD	MA PH4 SOLUTION	VWR		2011507		10/31/2012
MA PH7 STD	MA PH7 SOLUTION	VWR		2101037		12/31/2012
MA ZERO D.O.	MA ZERO DO SODIUM SULFITE			44328		

Notes about this calibration
Zero D.O. Check 0.18mg/L

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications. but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

Pine Environmental Services, Inc
24 Tower Office Park, Woburn, MA 01801
800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

YSI 600 XL Packing List

Pine No: 2159

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
650 MDS Display	✓	✓		
Manual	✓	✓		
Quick reference card	✓	✓		
Field cable	✓	✓		
Stand (base, claw, and rod)	✓	✓		
Probe guard w/ weight	✓	✓		
Storage/ calibration cup w/ sponge	✓	✓		
Flow through cell	✓	✓		
2 of each barb size (1/4, 3/8, and 1/2)	✓	✓		
DO probe reconditioning kit	✓	✓		
C alkaline batteries (4)	✓	✓		
6-series communications cable	✓	✓		
YSI Ecowatch software	✓	✓		
Calibration kit (pH, conductivity, and ORP)	✓	✓		
NIST traceable calibration sheet	✓	✓		

Prepared By: MB

QC By: MD

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.

24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 2159
Description YSI 600 XL
Calibrated 5/19/2011

Manufacturer YSI
Model Number 600 XL
Serial Number/ Lot Number 01F0657
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 20.9
Humidity % 46

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.00	10.00	0.00%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.413	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	240.00	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	100.30	100.30	0.30%	Pass

Group # 5
Group Name Disolved Oxygen Zero

Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 2159
Description YSI 600 XL
Calibrated 5/19/2011

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA 1.413 CONDUCTIVITY	MA 1.413 CONDUCTIVITY SOLUTION	Aurical	1.413	8428		10/20/2011
MA ORP	MA ORP SOLUTION 240 mV	Hanna		2741		10/1/2015
MA PH10	MA PH10 SOLUTION	Aurical	PH10	8421		10/18/2011
MA PH4 STD	MA PH4 SOLUTION	VWR		2011507		10/31/2012
MA PH7 STD	MA PH7 SOLUTION	VWR		2101037		12/31/2012
MA ZERO D.O.	MA ZERO DO SODIUM SULFITE			44328		

Notes about this calibration
Zero D.O. Check 0.19mg/L

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

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Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

Pine Environmental Services, Inc
24 Tower Office Park, Woburn, MA 01801
800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

YSI 600 XL Packing List

Pine No: 2687

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
650 MDS Display	—	✓		
Manual	—	✓		
Quick reference card	—	✓		
Field cable	—	✓		
Stand (base, claw, and rod)	—	✓		
Probe guard w/ weight	—	✓		
Storage/ calibration cup w/ sponge	—	✓		
Flow through cell	—	✓		
2 of each barb size (1/4, 3/8, and 1/2)	—	✓		
DO probe reconditioning kit	—	✓		
C alkaline batteries (4)	—	✓		
6-series communications cable	—	✓		
YSI Ecowatch software	—	✓		
Calibration kit (pH, conductivity, and ORP)	—	✓		
NIST traceable calibration sheet	—	✓		

Prepared By: MB

QC By: MB

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 2687
Description YSI 600 XL
Calibrated 5/19/2011

Manufacturer YSI
Model Number 600 XL
Serial Number/ Lot Number 01K0643AB
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21
Humidity % 46

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.00	10.00	0.00%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.413	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	240.00	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	100.30	100.30	0.30%	Pass

Group # 5
Group Name Disolved Oxygen Zero

Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 2687
Description YSI 600 XL
Calibrated 5/19/2011

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA 1.413 CONDUCTIVITY	MA 1.413 CONDUCTIVITY SOLUTION	Aurical	1.413	8428		10/20/2011
MA ORP	MA ORP SOLUTION 240 mV	Hanna		2741		10/1/2015
MA PH10	MA PH10 SOLUTION	Aurical	PH10	8421		10/18/2011
MA PH4 STD	MA PH4 SOLUTION	VWR		2011507		10/31/2012
MA PH7 STD	MA PH7 SOLUTION	VWR		2101037		12/31/2012
MA ZERO D.O.	MA ZERO DO SODIUM SULFITE			44328		

Notes about this calibration
Zero D.O. Check 0.15mg/L

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

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24 Tower Office Park, Woburn, MA 01801
800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

YSI 600 XL Packing List

Pine No: 5603

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
650 MDS Display	–	✓		
Manual	–	✓		
Quick reference card	–	✓		
Field cable	–	✓		
Stand (base, claw, and rod)	–	✓		
Probe guard w/ weight	–	✓		
Storage/ calibration cup w/ sponge	–	✓		
Flow through cell	–	✓		
2 of each barb size (1/4, 3/8, and 1/2)	–	✓		
DO probe reconditioning kit	–	✓		
C alkaline batteries (4)	–	✓		
6-series communications cable	–	✓		
YSI Ecowatch software	–	✓		
Calibration kit (pH, conductivity, and ORP)	–	✓		
NIST traceable calibration sheet	–	✓		

Prepared By: MB

QC By: Joe

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 5603
Description YSI 600 XL
Calibrated 5/19/2011

Manufacturer YSI
Model Number 600 XL
Serial Number/ Lot Number 04E8624AA
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21.5
Humidity % 48

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.00	10.00	0.00%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.413	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	240.00	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	100.00	100.00	0.00%	Pass

Group # 5
Group Name Disolved Oxygen Zero

Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 5603
Description YSI 600 XL
Calibrated 5/19/2011

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA 1.413 CONDUCTIVITY	MA 1.413 CONDUCTIVITY SOLUTION	Aurical	1.413	8428		10/20/2011
MA ORP	MA ORP SOLUTION 240 mV	Hanna		2741		10/1/2015
MA PH10	MA PH10 SOLUTION	Aurical	PH10	8421		10/18/2011
MA PH4 STD	MA PH4 SOLUTION	VWR		2011507		10/31/2012
MA PH7 STD	MA PH7 SOLUTION	VWR		2101037		12/31/2012
MA ZERO D.O.	MA ZERO DO SODIUM SULFITE			44328		

Notes about this calibration

Zero D.O. Check 0.

0.05mg/L

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

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INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 11797
Description LaMotte 2020E
Calibrated 5/17/2011

Manufacturer LaMotte
Model Number 2020E
Serial Number/ Lot Number ME 13071
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 20
Humidity % 40

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.00 / 1.00	NTU	1.00	NTU	0.99	0.99	-1.00%	Pass
10.00 / 10.00	NTU	10.00	NTU	10.00	10.00	0.00%	Pass

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA TURBIDITY 10 NTU	MA TURBIDITY STANDARD 10 NTU	Ricca		1012020		11/30/2011
MA TURBIDITY 1NTU	MA TURBIDITY STANDARD 1 NTU	Ricca		1102591		2/28/2012

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

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800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

Lamotte 2020e Packing List

Pine No: 11797

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
Lint free lens paper (4 Kim Wipes)	✓	✓		
Manual	✓	✓		
0 NTU vial w/ tube positioning ring	✓	✓		
1 NTU vial w/ tube positioning ring	✓	✓		
10 NTU vial w/ tube positioning ring	✓	✓		
2 sample vials w/ tube positioning rings	✓	✓		
9 V alkaline battery (1)	✓	✓		
Water Sample Bottle w/ spout	✓	✓		
NIST traceable calibration sheet	✓			

Optional Accessory	Prepared	QC Check	Received by Customer	Return to Pine
Extra sample vials 0	0			

Prepared By: MB
QC By: MK

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For Technical Support call 800-519-PINE

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 7476
Description LaMotte 2020E
Calibrated 5/17/2011

Manufacturer LaMotte
Model Number 2020E
Serial Number/ Lot Number ME 10581
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 20.1
Humidity % 40

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.00 / 1.00	NTU	1.00	NTU	1.01	1.01	1.00%	Pass
10.00 / 10.00	NTU	10.00	NTU	10.00	10.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA TURBIDITY 10 NTU	MA TURBIDITY STANDARD 10 NTU	Ricca		1012020		11/30/2011
MA TURBIDITY 1NTU	MA TURBIDITY STANDARD 1 NTU	Ricca		1102591		2/28/2012

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

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800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

Lamotte 2020e Packing List

Pine No: 7476

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
Lint free lens paper (4 Kim Wipes)	–	✓		
Manual	–	✓		
0 NTU vial w/ tube positioning ring	–	✓		
1 NTU vial w/ tube positioning ring	–	✓		
10 NTU vial w/ tube positioning ring	–	✓		
2 sample vials w/ tube positioning rings	–	✓		
9 V alkaline battery (1)	–	✓		
Water Sample Bottle w/ spout	–	✓		
NIST traceable calibration sheet	–	✓		

Optional Accessory	Prepared	QC Check	Received by Customer	Return to Pine
Extra sample vials 0	0			

Prepared By: MB
QC By: MB

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INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 10416
Description LaMotte 2020E
Calibrated 5/19/2011

Manufacturer LaMotte
Model Number 2020E
Serial Number/ Lot Number ME-11673
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21.7
Humidity % 49

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.00 / 1.00	NTU	1.00	NTU	0.99	0.99	-1.00%	Pass
10.00 / 10.00	NTU	10.00	NTU	9.99	9.99	-0.10%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA TURBIDITY 10 NTU	MA TURBIDITY STANDARD 10 NTU	Ricca		1012020		11/30/2011
MA TURBIDITY 1NTU	MA TURBIDITY STANDARD 1 NTU	Ricca		1102591		2/28/2012

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

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781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

Lamotte 2020e Packing List

Pine No: 10416

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
Lint free lens paper (4 Kim Wipes)	~	✓		
Manual	~	✓		
0 NTU vial w/ tube positioning ring	~	✓		
1 NTU vial w/ tube positioning ring	~	✓		
10 NTU vial w/ tube positioning ring	~	✓		
2 sample vials w/ tube positioning rings	~	✓		
9 V alkaline battery (1)	~	✓		
Water Sample Bottle w/ spout	~	✓		
NIST traceable calibration sheet	~	✓		

Optional Accessory	Prepared	QC Check	Received by Customer	Return to Pine
Extra sample vials 0	0	0		

Prepared By: MB

QC By: DG

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For Technical Support call 800-519-PINE

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 9917
Description LaMotte 2020E
Calibrated 5/19/2011

Manufacturer LaMotte
Model Number 2020E
Serial Number/ Lot Number ME11939
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21.3
Humidity % 47

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.00 / 1.00	NTU	1.00	NTU	1.00	1.00	0.00%	Pass
10.00 / 10.00	NTU	10.00	NTU	9.99	9.99	-0.10%	Pass

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA TURBIDITY 10 NTU	MA TURBIDITY STANDARD 10 NTU	Ricca		1012020		11/30/2011
MA TURBIDITY 1NTU	MA TURBIDITY STANDARD 1 NTU	Ricca		1102591		2/28/2012

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

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781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

Lamotte 2020e Packing List

Pine No: 9917

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
Lint free lens paper (4 Kim Wipes)	✓	✓		
Manual	✓	✓		
0 NTU vial w/ tube positioning ring	✓	✓		
1 NTU vial w/ tube positioning ring	✓	✓		
10 NTU vial w/ tube positioning ring	✓	✓		
2 sample vials w/ tube positioning rings	✓	✓		
9 V alkaline battery (1)	✓	✓		
Water Sample Bottle w/ spout	✓	✓		
NIST traceable calibration sheet	✓	✓		

Optional Accessory	Prepared	QC Check	Received by Customer	Return to Pine
Extra sample vials 0	0			

Prepared By: MB
QC By: MS

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INSTRUMENT CALIBRATION REPORT

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24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 13873
Description LaMotte 2020E
Calibrated 5/19/2011

Manufacturer LaMotte
Model Number 2020E
Serial Number/ Lot Number ME 14123
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21.3
Humidity % 47

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.00 / 1.00	NTU	1.00	NTU	1.01	1.01	1.00%	Pass
10.00 / 10.00	NTU	10.00	NTU	10.01	10.01	0.10%	Pass

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA TURBIDITY 10 NTU	MA TURBIDITY STANDARD 10 NTU	Ricca		1012020		11/30/2011
MA TURBIDITY 1NTU	MA TURBIDITY STANDARD 1 NTU	Ricca		1102591		2/28/2012

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Marianne Bolduc

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781-932-9698(Phone)
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pine-ma@pine-environmental.com

Lamotte 2020e Packing List

Pine No: 13873

Standard Items	Prepared QC Check	Received by Customer	Return to Pine
Lint free lens paper (4 Kim Wipes)	–	✓	
Manual	–	✓	
0 NTU vial w/ tube positioning ring	–	✓	
1 NTU vial w/ tube positioning ring	–	✓	
10 NTU vial w/ tube positioning ring	–	✓	
2 sample vials w/ tube positioning rings	–	✓	
9 V alkaline battery (1)	✓	✓	
Water Sample Bottle w/ spout	✓	✓	
NIST traceable calibration sheet	✓	✓	

Optional Accessory	Prepared QC Check	Received by Customer	Return to Pine
Extra sample vials 0	0		

Prepared By: MB

QC By: MB

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INSTRUMENT CALIBRATION REPORT

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24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 15391
Description MiniRae 3000
Calibrated 5/19/2011

Manufacturer Rae Systems
Model Number PGM-7320
Serial Number/ Lot Number 592-902334
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21.4
Humidity % 41

Calibration Specifications

Group # 1
Group Name Isobutylene
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	PPM	100.00	PPM	100.00	100.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA 100 PPM ISO 0321FA11	MA ISO 100	Porta Gas	GP11010	0321FA11		6/1/2015

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Amy Adams

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

Pine Environmental Services, Inc
24 Tower Office Park, Woburn, MA 01801
800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

MiniRae 3000 Packing List

Pine No: 15391

Standard Items	**Prepared**	**QC Check**	**Received by Customer**	**Return to Pine**
Protective rubber boot	✓	✓		
Manual	✓	✓		
Quick reference card	✓	✓		
Charger	✓	✓		
Probe tip	✓	✓		
Hydrophobic filters (2)	✓	✓		
Alkaline battery holder	✓	✓		
AA alkaline batteries (4)	✓	✓		
NIST traceable calibration sheet	✓	✓		

Optional Accessory	**Prepared**	**QC Check**	**Received by Customer**	**Return to Pine**
100 ppm Isobutylene calibration gas	✓	✓		
Gas regulator	✓	✓		
Tedlar bag	✓	✓		
Datalogging software	○			
Communications cable	○			

Prepared By: [signature]
QC By: [signature]
Date:

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For Technical Support call 800-519-PINE

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 12602
Description MiniRae 3000
Calibrated 5/19/2011

Manufacturer Rae Systems
Model Number PGM-7320
Serial Number/ Lot Number 592-001144
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21.4
Humidity % 41

Calibration Specifications

Group # 1
Group Name Isobutylene
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	PPM	100.00	PPM	100.00	100.00	0.00%	Pass

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA 100 PPM ISO 0321FA11	MA ISO 100	Porta Gas	GP11010	0321FA11		6/1/2015

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Amy Adams

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24 Tower Office Park. Woburn, MA 01801
800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

MiniRae 3000 Packing List

Pine No: 12602

Standard Items	**Prepared**	**QC Check**	**Received by Customer**	**Return to Pine**
Protective rubber boot	—	✓		
Manual	—	✓		
Quick reference card	—	✓		
Charger	—	✓		
Probe tip	—	✓		
Hydrophobic filters (2)	—	✓		
Alkaline battery holder	—	✓		
AA alkaline batteries (4)	—	✓		
NIST traceable calibration sheet	—	✓		

Optional Accessory	**Prepared**	**QC Check**	**Received by Customer**	**Return to Pine**
100 ppm Isobutylene calibration gas	✓	✓		
Gas regulator	—	✓		
Tedlar bag	—	✓		
Datalogging software	O			
Communications cable	O			

Prepared By: [signature]
QC By: MS
Date:

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For Technical Support call 800-519-PINE

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 15392
Description MiniRae 3000
Calibrated 5/19/2011

Manufacturer Rae Systems
Model Number PGM-7320
Serial Number/ Lot Number 592-902237
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21.4
Humidity % 41

Calibration Specifications

Group # 1
Group Name Isobutylene
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	PPM	100.00	PPM	100.00	100.00	0.00%	Pass

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA 100 PPM ISO 0321FA11	MA ISO 100	Porta Gas	GP11010	0321FA11		6/1/2015

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Amy Adams

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24 Tower Office Park, Woburn, MA 01801
800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

MiniRae 3000 Packing List

Pine No: 15392

Standard Items	**Prepared**	**QC Check**	**Received by Customer**	**Return to Pine**
Protective rubber boot	—	✓		
Manual	—	✓		
Quick reference card	—	✓		
Charger	—	✓		
Probe tip	—	✓		
Hydrophobic filters (2)	—	✓		
Alkaline battery holder	—	✓		
AA alkaline batteries (4)	—	✓		
NIST traceable calibration sheet	—	✓		

Optional Accessory	**Prepared**	**QC Check**	**Received by Customer**	**Return to Pine**
100 ppm Isobutylene calibration gas	—	✓		
Gas regulator	—	✓		
Tedlar bag	—	✓		
Datalogging software	O			
Communications cable	O			

Prepared By: [signature]
QC By: [signature]
Date:

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For Technical Support call 800-519-PINE

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 15881
Description MiniRae 3000
Calibrated 5/19/2011

Manufacturer Rae Systems
Model Number PGM-7320
Serial Number/ Lot Number 592-903591
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 21.4
Humidity % 41

Calibration Specifications

Group # 1
Group Name Isobutylene
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	PPM	100.00	PPM	100.00	100.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
MA 100 PPM ISO 0321FA11	MA ISO 100	Porta Gas	GP11010	0321FA11		6/1/2015

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Amy Adams

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24 Tower Office Park, Woburn, MA 01801
800-519-PINE(Toll-Free)
781-932-9698(Phone)
781-932-9729(Fax)
pine-ma@pine-environmental.com

MiniRae 3000 Packing List

Pine No: 15881

Standard Items	Prepared	QC Check	Received by Customer	Return to Pine
Protective rubber boot	✓	✓		
Manual	✓	✓		
Quick reference card	✓	✓		
Charger	✓	✓		
Probe tip	✓	✓		
Hydrophobic filters (2)	✓	✓		
Alkaline battery holder	✓	✓		
AA alkaline batteries (4)	✓	✓		
NIST traceable calibration sheet	✓			

Optional Accessory	Prepared	QC Check	Received by Customer	Return to Pine
100 ppm Isobutylene calibration gas	✓	✓		
Gas regulator	✓	✓		
Tedlar bag	✓			
Datalogging software	○			
Communications cable	○			

Prepared By: _____

QC By: _____

Date:

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For Technical Support call 800-519-PINE

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 17017
Description QED SamplePro 1.75
Calibrated 5/18/2011

Manufacturer QED
Model Number SamplePro 1.75
Serial Number/ Lot Number S/N 11396
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 19
Humidity % 55

Calibration Specifications

Group # 1
Group Name
Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Ronald Dalli

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 14967
Description QED SamplePro 1.75
Calibrated 5/18/2011

Manufacturer QED
Model Number SamplePro 1.75
Serial Number/ Lot Number S/N 11868
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 19
Humidity % 55

Calibration Specifications

Group # 1
Group Name
Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Ronald Dalli

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INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 10219
Description QED SamplePro 1.75
Calibrated 5/18/2011

Manufacturer QED
Model Number SamplePro 1.75
Serial Number/ Lot Number S/N 11220
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 19
Humidity % 55

Calibration Specifications

Group # 1
Group Name
Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Ronald Dalli

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INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 12368
Description QED SamplePro 1.75
Calibrated 5/18/2011

Manufacturer QED
Model Number SamplePro 1.75
Serial Number/ Lot Number S/N11521
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 19
Humidity % 55

Calibration Specifications

Group # 1
Group Name
Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Ronald Dalli

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Please call 866-960-7463 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
24 Tower Office Park
Woburn, MA 01801
Toll-free: (800) 519-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 9131
Description QED SamplePro 1.75
Calibrated 5/18/2011

Manufacturer QED
Model Number SamplePro 1.75
Serial Number/ Lot Number S/N 10403
Location Massachusetts
Department

State Certified
Status Pass
Temp °C 19
Humidity % 55

Calibration Specifications

Group # 1
Group Name
Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Ronald Dalli

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Please call 866-960-7463 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID 18832
Description LaMotte 2020WE
Calibrated 9/22/2011

Manufacturer LaMotte
Model Number 2020WE
Serial Number/ Lot Number 1366-3811
Location New Jersey
Department

State Certified
Status Pass
Temp °C 24.6
Humidity % 70

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.00 / 1.00	NTU	1.00	NTU	0.98	1.00	0.00%	Pass
10.00 / 10.00	NTU	10.00	NTU	9.93	10.00	0.00%	Pass

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NJ 1 NTU	Turbidity Standard 1 NTU	Ricca	1 NTU	1102591	3/15/2011	2/29/2012
NJ 10 NTU STANDARD	TURBIDITY STANDARD 10 NTU	Ricca	10 NTU	1012020	5/1/2011	11/30/2011

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated William Bass

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

ARCADIS

YSI & Turbidity Meter Calibration Log

DATE: 9/27/11

INSTRUMENT IDENTIFICATION

PINE #

Brand:	YSI 650 MDS	Model:	650 MDS 600 XL	Serial Number:	02J0792 AJ 4135 01B0120 1611
Brand:	LaMotte	Model:	2020we	Serial Number:	1366-3811 18832

CALIBRATION RECORD

Morning Calibration			Afternoon Check		Evening Check	
Standard		Calibration Successful	Standard	Reading	Standard	Reading
pH (S.I. units)						
4.00	3.94 /	4.00	4.00	4.02	4.00	
7.00	7.04 /	7.00	7.00	7.03	7.00	
10.00	9.94 /	9.99	10.00	10.01	10.00	
Turbidity (NTUs)						
0	0.08	0.00	0	0.05	0	
~~10~~ 1	0.87	0.94	~~10~~ 1	1.08	10	
~~100~~ 10	10.30	10.01	10	10.02		
Conductivity (µmhos/cm)						
1.413	1.366		1.413	1.419	1.413	
	1.413					
Dissolved Oxygen (mg/L)						
Barametric Pressure 0.03			Not Applicable 0.04		Not Applicable	
in.H_2O*25.4= 757.5 mmHg						
REDOX (mV)			Chart [1]		Chart [1]	
(Zobel Solution) 240.5 / 237.1				233.8		
Temperature (°C) 19.52				20.16		

[1] The REDOX of the Zobel solution is temperature dependent, a chart is provided with the meter to check the reading for the appropriate temperature. REDOX must be calibrated by the manufacturer.