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Round 6 Groundwater Monitoring Report for Area A Landfill

Naval Submarine Base New London

Groton, Connecticut

Engineering Field Activity Northeast Naval Facilities Engineering Command

Contract Number N62472-90-D-1298

Contract Task Order 0257

May 2001

TETRA TECH NUS, INC.

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ROUND 6 GROUNDWATER MONITORING REPORT
FOR
AREA A LANDFILL

NAVAL SUBMARINE BASE - NEW LONDON
GROTON, CONNECTICUT

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
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1.0 INTRODUCTION

This Round 6 Groundwater Monitoring Report for the Area A Landfill at the Naval Submarine Base New London (NSB-NLON) in Groton, Connecticut was prepared for the U.S. Department of the Navy (Navy) by Tetra Tech NUS, Inc. (TtNUS) under the Comprehensive Long-Term Environmental Action Navy (CLEAN), Contract Number N62472-90-D-1298, Contract Task Order (CTO) 0257.

This document has been prepared in accordance with the Navy Installation Restoration Laboratory Quality Assurance Guide (Interim Guidance) of the Naval Facilities Engineering Service Center, (NFESC, February 1996).

1.1 SCOPE AND OBJECTIVE

An Interim Remedial Action (IRA) was completed in 1997 at the Area A Landfill site to address the risk from direct exposure to landfill material and to minimize the risk of migration of chemicals of concern (COCs) from the landfill to the surrounding areas via groundwater. The IRA consisted of capping the site with a multi-layer low-permeability cover system and installing a surface water and shallow groundwater interception and diversion system upgradient from the cover system. The groundwater monitoring is being conducted to evaluate the effectiveness of the IRA.

The objective of this Round 6 Groundwater Monitoring Report is to present the results of the sixth round of long-term groundwater monitoring at the Area A Landfill site. Three Phase I and Phase II Remedial Investigation (RI) monitoring wells and 11 monitoring wells installed in May 1999 were sampled and analyzed for a suite of analytes based on an evaluation of site history and previous analytical results. One seep sample and seven surface water samples located adjacent to monitoring wells were also obtained. Three additional surface water locations were to be sampled; however, due to a lack of surface water at these locations, samples were not obtained. Sampling and analyses were performed in accordance to the Groundwater Monitoring Plan (GMP) prepared for the Area A Landfill (TtNUS, January 1999). Because this is an interim report for the sixth round of groundwater monitoring, evaluation of monitoring results is limited to a comparison of these results to the criteria identified in the GMP for the Area A Landfill (TtNUS, January 1999).

1.2 BACKGROUND INFORMATION

1.2.1 Base Description

NSB-NLON is located in southeastern Connecticut in the Towns of Ledyard and Groton. It encompasses approximately 576 acres and lies on the east bank of the Thames River, approximately 6 miles north of

Long Island Sound. NSB-NLON is bounded to the east by Connecticut Route 12, to the south by Crystal Lake Road, and to the west by the Thames River (Figure 1-1). The northern border is a low, east-southeast trending ridge extending from the Thames River to Baldwin Hill.

NSB-NLON currently provides base command for naval submarine activities in the Atlantic Ocean. It also provides housing for Navy personnel and their families and supports submarine training facilities, military offices, medical facilities, and facilities for the submarine maintenance, repair, and overhaul.

1.2.2 Site Description and History

The Area A Landfill is located in the northeastern and north central part of NSB-NLON and encompasses approximately 13 acres (Figure 1-2). The Area A Landfill is relatively flat and is bordered by a steep, wooded hillside that rises to the south, a steep wooded ravine to the west, and the Area A Wetland to the north. Access to the west end of the landfill is via a gate off Wahoo Avenue and access to the east end of the landfill is via a paved road and gate adjacent to a parking lot and the Area A recreational facilities.

Before the Area A Landfill was opened, dredge spoil from the Thames River was deposited continuously along a major portion of the hillside and within the former valley, which is currently the Area A Wetland. The Area A Landfill reportedly opened sometime before 1957. However, a 1957 aerial photograph (USEPA, EPIC, 1957) shows no apparent landfilling activities, indicating a somewhat later start-up date. After the NSB-NLON incinerator closed in 1963, most of the wastes generated by submarine and base operations were disposed of in the landfill, including all non-salvageable materials.

The area fill method was reportedly used in landfill operations at the Area A Landfill. The area fill method consists of filling an area in a sequence of cells and lifts. Each lift is a specified thickness and consists of several cells. Each cell can be viewed as a rectangular area that is filled from back to front. The front area is the "working face" and is the location were new refuse is placed and is the area that is covered on a daily basis. The cover material used on the landfill was gravel obtained from the Groton water supply reservoir. The Area A Landfill closed in 1973.

After closure, a bituminous concrete pad approximately 160 x 100 feet in size was constructed in the southwest portion of the landfill for above-ground storage of industrial wastes. Steel drums, transformers, and electrical switches were stored on this pad. All of these materials have been properly disposed of off-site. This pad was also used for crane testing and test weights were stored there. The remainder of the Area A Landfill was unpaved and included a gravel covered parking lot (deployed parking) that was located in the central part of the landfill.

Site investigations were conducted at the Area A Landfill as part of a base-wide Phase I RI (Atlantic, August 1992) and a base-wide Phase II RI (B&R Environmental, March 1997). A site-specific Area A Landfill Focused Feasibility Study (FFS) (Atlantic, May 1995), and a Proposed Remedial Action Plan (PRAP), (Atlantic, June 1995) were also prepared. A Record of Decision (ROD) was prepared and signed by the Navy and United States Environmental Protection Agency (USEPA) Region I on September 26, 1995. The major components of the selected alternative as described in the ROD were as follows:

- Restricting access to the contaminated areas of the site using perimeter fencing and institutional controls.
- Capping the site with a low-permeability multi-layer cover system to prevent water infiltration into the landfill.
- Constructing an interception system to collect shallow groundwater and storm water and re-route these around the landfill
- Establishing landfill gas controls to manage landfill gas migration.
- Developing a groundwater monitoring plan to monitor the quality of groundwater after the landfill closure is completed.

A remedial design for the proposed landfill cover system was first prepared by Atlantic Environmental Services, Inc. (Atlantic) (Atlantic, July 1994) and subsequently amended and finalized by Brown & Root Environmental, Inc. (B&R Environmental) (B&R Environmental, December 1996b). As part of the re-design effort, a Geotechnical Field Investigation (HNUS, May 1995), an Area A East End Investigation (B&R Environmental, December 1996a), and a Groundwater/Leachate Modeling Study (B&R Environmental, October 1996) were also conducted.

Construction of the landfill cover system (including gas control and storm water and shallow groundwater interception systems) was completed as part of an Interim Remedial Action (IRA) in September 1997 by Foster Wheeler Environmental Corporation. Prior to commencement of construction, a large quantity of metal, concrete and wood debris, several thousand sandbags, the Deployed Parking lot, the electrical storage building (Building 496), the Master at Arms Building (Building 373), salt storage shed, and various other items that had been located on the surface of the landfill were removed or relocated. The majority of the surficial debris was disposed of off-site as scrap metal or at an off-site landfill. The debris that was salvageable by NSB-NLON was removed and relocated to other areas of NSB-NLON.

The preparation of the subgrade to the cover required excavation from the northern slope of the landfill and placement of the excavated material on the southern slope. Also, approximately 4,000 cubic yards of soil from the Rubble Fill Area at Bunker A 86 (Site 4) and 1,000 cubic yards of common fill were placed over the eastern portion of the landfill, beneath the area of the relocated Deployed Parking. The soils were then compacted. During the subgrade preparation activities, two storm water drainage structures located within the limits of the site were decommissioned. These structures consisted of open catch basins on the southern edge of the landfill that discharged into a reinforced concrete culvert running through the landfill and ultimately into the Area A Wetland. Both culverts were entirely filled with flowable concrete to eliminate potential voids in the subgrade due to pipe collapse. The catch basins were filled with materials unsuitable for placement in the landfill subgrade (e.g., tires, large metal and wood debris, large concrete debris, etc.) followed by encapsulation with flowable concrete fill.

1.2.3 Previous Site Investigations

Six field investigations have been conducted at the Area A Landfill. These include the following:

- Field investigation performed for the base-wide Phase I RI (Atlantic, August 1992)
- Supplemental field investigation performed for the Area A Landfill FFS (Atlantic, May 1995)
- Field investigation performed for the base-wide Phase II RI (B&R Environmental, March 1997)
- Geotechnical Field Investigation (HNUS, May 1995) and Area A East End Investigation (B&R Environmental, December 1996a) performed in support of the Area A Landfill Remedial Design (B&R Environmental, December 1996b)
- Field investigation performed for the Groundwater/Leachate Modeling Study, which supported the Area A Landfill Remedial Design (B&R Environmental, October 1996).

1.2.3.1 Base-Wide Phase I RI

Atlantic conducted a field investigation at the Area A Landfill in 1990 as part of the base-wide Phase I RI (Atlantic, August 1992). A total of 13 monitoring wells (2LMW7S, 2LMW7D, 2LMW8S, 2LMW8D, 2LMW9S, 2LMW9D, 2LMW13S, 2LMW13D, 2LMW14D, 2LMW17S, 2LMW17D, 2LMW18S, 2LMW18D) and 7 test borings (2LTB1 through 2LTB7) were installed. A total of 12 soil and 12 groundwater samples were collected from these monitoring wells and test borings. Soil samples were analyzed for Target Compound List (TCL) organics, Target Analyte List (TAL) inorganics, polychlorinated biphenyls (PCBs),

pesticides, and Toxicity Characteristics Leaching Procedure (TCLP) pesticides and metals. Groundwater samples were analyzed for the same parameters, except TCLP, plus radiological elements.

1.2.3.2 Area A Landfill FFS

Atlantic conducted a supplemental field investigation at the Area A Landfill in October and November 1993 to support the Area A Landfill FFS (Atlantic, May 1995). The main purpose of these field activities was to characterize the subsurface soil in the vicinity of the bituminous concrete pad located at the southwestern end of the landfill.

Twenty-four soil borings (2LTB8 through 2LTB31) were drilled to a depth of 16 feet or auger refusal. Based on field screening for volatile organic compounds (VOCs), with an HNu organic vapor analyzer and for PCBs with a field gas chromatograph, 13 subsurface soil sample were selected for analysis of TCL organics, PCBs, pesticides and TAL inorganics. Selected samples were also analyzed for organic content, cation exchange capacity, total organic carbon (TOC), dioxin and geotechnical parameters, including grain-size distribution, moisture content, and specific gravity. Two samples were also analyzed by the TCLP for all toxicity constituents.

1.2.3.3 Base-Wide Phase II RI

B&R Environmental conducted a field investigation at the Area A Landfill in 1994 as part of the base-wide Phase II RI (B&R Environmental, March 1997). A total of 10 monitoring wells (2LPW1S, 2LOW1S, 2LOW1D, 2LOW2S, 2LOW3S, 2LOW4S, 2LMW19S, 2LMW19D, 2LMW20S, 2LMW20D) were installed. Eleven soil samples were collected from two soil borings (2LTB13, 2LTB23). Two rounds of groundwater level measurements and groundwater sampling were conducted, including one in March 1994 and one in August 1994. Groundwater samples were analyzed for TCL organics, TAL inorganics, PCBs, and radiological elements.

1.2.3.4 Geotechnical Field Investigation

B&R Environmental conducted field activities at the Area A Landfill in February and March 1995 as part of the Geotechnical Field Investigation (HNUS, March 1995) performed in support of the remedial design for a landfill cover system. The purpose of the Geotechnical Field Investigation was to confirm the areal extent of the fill material and obtain additional geotechnical field data.

Twenty test pits (LF-TP01 to LF-TP13 and LF-TP15 to LF-TP21) were excavated along the edges of the Area A Landfill to allow for visual observation of subsurface conditions. The purpose of excavating these

test pits was primarily to determine the lateral extent of the fill material and, wherever practical (especially along the southern edge of the landfill), establish the depth and competence of bedrock.

Eight soil borings were drilled at strategic locations on the landfill plateau to establish the depth of bedrock and thickness of the fill and dredge spoil material. The soil borings were also used to collect six soil samples to be tested for geotechnical parameters (particle size, moisture content, classification, Atterberg limits, and triaxial compression) and three soil samples to be tested for analytical parameters (TCL organics, PCBs, and pesticides, and TAL inorganics). Four borings (LF-SB01 and LF-SB03 through LF-SB05) were advanced through the overburden to auger refusal at the bedrock. Two borings (LF-SB02, LF-SB06) were advanced through the overburden and approximately 5 feet into competent bedrock. Two borings (LF-TP01 and LF-TP07) were drilled through approximately 5 feet of bedrock at the bottom of previously excavated test pits.

1.2.3.5 Area A East End Investigation

B&R Environmental conducted field activities at the Area A Landfill in September 1995 as part of the Area A East End Investigation (B&R Environmental, December 1996a), performed in support of the remedial design for the landfill cover system. The purpose of the Area A East End Investigation was to verify that the fill used for the construction of the recreational facilities (Racquetball Building, tennis courts, and ball field) located at the extreme east end of Area A is of a different nature from that placed in the rest of the Area A Landfill, i.e., does not contain contaminated waste material, and therefore, does not need to be capped.

Six test trenches (LF-TP22 through LF-TP27) were excavated along the eastern boundary of the Area A Landfill cover system as designed to verify the eastern limit of contaminated fill material. The test trenches were field-screened for the presence of VOCs, and four soil samples were collected and analyzed TCL organics, PCBs, and pesticides; TAL inorganics and cyanide; and, total petroleum hydrocarbon (TPH).

Three soil borings (SB06 through SB08) were drilled in the vicinity of the Area A East End recreational facilities. These soil borings were advanced through the overburden to the bedrock to auger refusal. A total of six soil samples were collected from the fill and dredge spoil material and analyzed for TCL organics, PCBs, and pesticides; TAL inorganics and cyanide; and, TPH.

1.2.3.6 Groundwater/Leachate Modeling Study

B&R Environmental conducted field activities at the Area A Landfill in November/December 1995 as part of the Groundwater/Leachate Modeling Study (B&R Environmental, October 1996) performed in support

of the remedial design for the landfill cover system. The purpose of the Groundwater/Leachate Modeling Study was to evaluate the impact of the proposed landfill cover system on the saturated thickness of landfill material and on the flow and composition of the groundwater/leachate discharge from the landfill.

The modeling field investigation activities included the performance of the following activities:

- Surface infiltration tests at 10 locations (2LT1 thru 2LT10) throughout the surface of the landfill
- Installation of 13 overburden monitoring wells, including 6 in the landfill material (2LMW28F through 2LMW33F) and 7 in the underlying dredge spoil or alluvium (2LMW28DS, 2LMW29A, 2LMW30DS through 2LMW34DS).
- Installation of three bedrock wells, including two located upgradient from the Area A Landfill (2LMW35B and 2LMW36B) and one at the northeast end of the landfill (2LMW32B).
- Installation of 10 piezometers, including 7 (2LPZ1DS thru 2LPZ7DS) along the boundary between the Area A Landfill and Area A Wetland and 3 (2LPZ1F, 2LPZ2F, and 2LMW32PZ) at the northeast end of the landfill.
- Installation of eight staff gauges (SG07 thru SG14) along the boundary between the Area A Landfill and Area A Wetland.
- Slug testing of the newly installed wells and one piezometer (2LMW32PZ).
- Water level measurement for all newly installed monitoring wells, piezometers, and staff gauges as well as for all previously existing monitoring wells.
- Flow measurement and sampling of the groundwater seep (3MSP01) from the western face of the Area A Landfill into the Overbank Disposal Area (OBDA) (Site 3) of the adjoining Area A Downstream site. This sample was analyzed for TCL organics and TAL inorganics.

The Groundwater/Leachate Modeling Study provided a comprehensive analysis of the site geology and hydrogeology. The report provided surface contour maps of the four units (landfill material, dredge spoil, alluvium and bedrock) underlying the site; thickness maps for the landfill material and dredge spoil; surface contour maps for the water table and bedrock groundwater; geologic cross-sections; conceptual flow nets; and an analysis of vertical flow gradients.

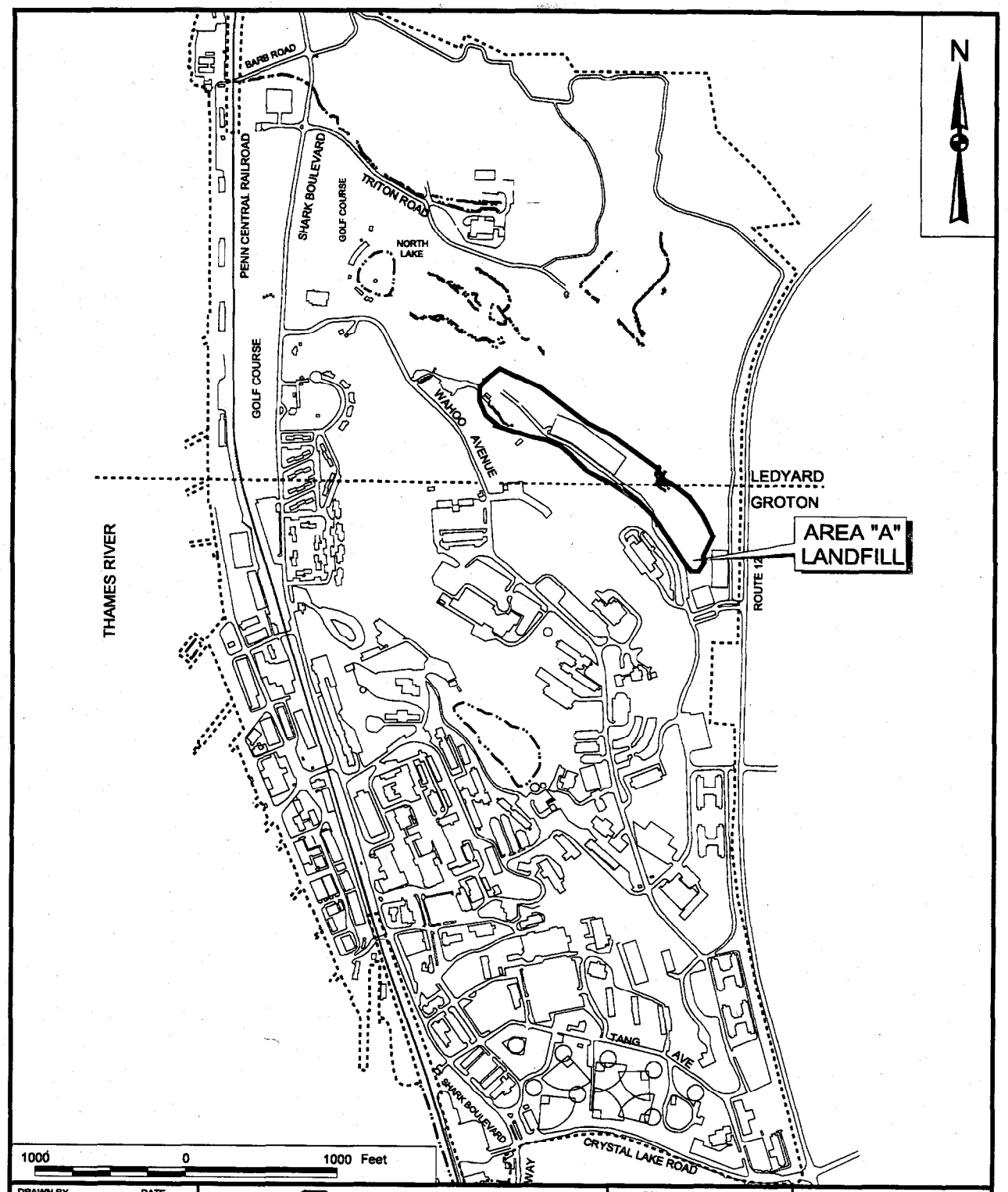
Additionally, the Groundwater/Leachate Modeling Study concluded that the Area A Landfill cover system would reduce the thickness of the saturated landfill material by approximately 0.1 foot along the Area A Wetland boundary, by approximately 0.5 foot at the eastern end of the landfill, by approximately 0.2 foot in the center of the landfill, and by over one foot at the western end of the landfill. The study concluded that the cover system would reduce the flux of groundwater COCs from the Area A Landfill to the Area A Wetland by 16 to 55 percent and that none of these COCs would exceed either the Federal AWQCs or the Connecticut's SWPCs.

1.3 REPORT ORGANIZATION

This report has been prepared in the following format to address the requirements for long-term groundwater monitoring at the Area A Landfill. Section 1.0 is this brief introduction including the project scope and objective and a discussion of previous investigations. Section 2.0 describes Round 6 field activities. Section 3.0 presents and evaluates the analytical results from the Round 6 sampling effort.

DRAWN BY	DATE	Tetra Tech NUS, Inc.	CONTRACT NUMBER	OWNER NO.
J. BELLONE	2/16/00		5082	—
CHECKED BY	DATE	LOCATION MAP NSB-NLON GROTON, CONNECTICUT	APPROVED BY CAR	DATE 5/17/01
COST/SCHEDULE-AREA			APPROVED BY —	DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 1-1	REV 0

P:\GIS\50820370.APR\LOCATION MAP MGS 5-16-01



DRAWN BY J. BELLONE — DATE 2/16/00	Tetra Tech NUS, Inc.	CONTRACT NUMBER 5082	OWNER NO. —
CHECKED BY MLM — DATE 2/18/00	SITE MAP NSB NLON GROTON, CONNECTICUT	APPROVED BY CAR	DATE 5/17/01
COST/SCHEDULE-AREA		APPROVED BY —	DATE —
SCALE AS NOTED		DRAWING NO. FIGURE 1-2	REV 0

P:\GIS\NLON\7363ANNUAL.APR\AREA A LANDFILL SITE MAP MGS 5-15-01

2.0 FIELD INVESTIGATION ACTIVITIES

Field investigation activities performed as part of the sixth round of the groundwater monitoring at Area A Landfill included one round of water level measurements and a round of groundwater sampling of 14 existing monitoring wells, sampling of seven surface water locations, and sampling of one seep location. Two additional monitoring wells (3MW12S and 3MW12D) were to be sampled; however these wells have been destroyed or buried and cannot be located. Three additional surface water locations (SG15, SG16, SG17) were to be sampled; however, due to a lack of water, samples at these locations were not obtained. Round 6 field activities occurred in March 2001. Figure 2-1 illustrates the sampling locations. Copies of the field logbook, sample logsheets, calibration logs, field measurements, and sample chain-of custody records for Round 6 are provided in Appendices A through E.

2.1 WATER LEVEL MEASUREMENT

Prior to groundwater purging and sampling and surface water sampling, one round of water levels was measured from 14 monitoring wells. Water levels were also measured at 9 staff gauge locations; however, the survey data for the staff gauges is considered suspect due to some of the staff gauges being moved after installation. Therefore, the surface water elevation data were not used in preparing the potentiometric surface map. The one existing staff gauge (SG-06) was located at the top of the headwall along the southern side of the dike. The other existing staff gauge (SG-25, formerly SG-12) was located along the shoreline of the pond northeast of the crane test pad. Table 2-1 summarizes the water level measurements minus the staff gauge data. Figure 2-2 illustrates the potentiometric surface map for the shallow groundwater at the Area A Landfill. Groundwater level measurement sheets are provided in Appendix B.

2.2 GROUNDWATER SAMPLING

A total of 14 monitoring wells, comprised of 2LMW20S, 2WMW21S, 4MW1S, 2WMW38DS through 2WMW47DS, and 3MW37S, were sampled during the sixth round of groundwater monitoring. Low-flow purging and sampling techniques, as described in Sections 4.1.6 and 4.1.7 of the GMP (TtNUS, January 1999), were used during sampling.

The wells were purged using a peristaltic pump with disposable Teflon® tubing. Prior to purging, the initial static water level was measured in the well using a water-level indicator. During purging, the water level was measured every 5 to 10 minutes. The pumping rate was initially set at less than 0.3 liter per minute and reduced to 0.1 to 0.2 liter per minute. The pumping rate was adjusted to not allow drawdown

to exceed 0.3 foot during the purging (except for wells with low recharge rates). Copies of the low-flow purge data sheets are provided in Appendix D.

During purging, water quality parameters of pH, turbidity, specific conductance, temperature, Eh, salinity, and dissolved oxygen were measured and recorded every 5 to 10 minutes using a water quality meter and flow-through cell until all of the parameters stabilized and the minimum purge volume (equal to the stabilized drawdown volume plus the tubing volume) was removed. Stabilization of the above parameters is defined as follows:

- pH ± 0.2 standard units
- turbidity ± 10 % for values greater than 1 NTU
- specific conductance ± 10 %
- temperature ± 10 %
- Eh ± 10 mV
- dissolved oxygen ± 10 %.

Monitoring wells 2WMW38DS through 2WMW47DS were dewatered during purging due to the low recharge rate of the screened formation. The dewatered wells were sampled within the next 2 days. Well 2WMW38DS was sampled over 4 days due to insufficient recharge for supplying volume for the sample containers.

Following purging, samples were collected directly from the discharge end of the tubing. All sample containers were filled by allowing the discharge to flow gently down the inside of the container with minimal turbulence. Groundwater samples were analyzed for select TCL VOCs, SVOCs, PAHs, pesticides and PCBs; TAL metals (total and dissolved); TOC; chemical oxygen demand; and water chemistry parameters of total dissolved solids, alkalinity, chloride, sulfate, and hardness. Samples analyzed for VOCs were collected by drawing a column of water into the tubing with the pump; crimping the discharge end of the tubing; disconnecting the tubing from the well; releasing the tubing; and decanting the sample into the sample vials from an intake end of the tubing via gravity flow. For filtered inorganic samples, an in-line 0.45-micron filter was used, pre-rinsed with approximately 400 ml of deionized water and attached to the discharge end of the pump tubing. Copies of the groundwater sample logsheets and Chain of Custody Records are provided in Appendix D and E, respectively. Analytical results of the samples are discussed in Section 3.0.

2.3 SURFACE WATER SAMPLING

As detailed in Section 4.0 of the Groundwater Monitoring Plan for the Area A Landfill (TtNUS, January 1999), ten staff gauge locations and one seep sampling location were to be sampled as part of the sampling program. Due to the limited amount of surface water present within the wetland, the one seep and only seven of the surface water locations were sampled. Surface water samples were filled by directly filling sample containers in accordance with Section 4.1.3 of the GMP (TtNUS, January 1999). Surface water sample logsheets and chain of custody are provided in Appendices D and E, respectively. Analytical results of surface water samples are discussed in Section 3.

2.4 DECONTAMINATION AND INVESTIGATION-DERIVED WASTE

All water quality and water level meters were decontaminated by rinsing with deionized water prior to and after use.

Liquid IDW derived from the ongoing monitoring of groundwater at the Area A Landfill has been extensively tested for COCs during the past year of quarterly monitoring. The liquid IDW generated has been determined to be non-hazardous and is disposed directly to the OT-10 wastewater processing facility in compliance with the SUBASE NLON Pre-Treatment Permit from the Connecticut DEP.

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TABLE 2-1

WATER LEVEL ELEVATIONS (MARCH, 2001)
ROUND 6 GROUNDWATER WATER MONITORING REPORT
AREA A LANDFILL, NSB-NLON, GROTON, CONNECTICUT

Well/ Staff Gauge Number	Ground Surface Elevation[1] (feet msl)	Reference Elevation[1] (feet msl)	Depth to Water (feet)	Water Elevation (feet msl)	Screened Unit[3]
2LMW20S	87.19	86.83	--[5]	--	F/A
2WMW21S	74.59	76.31	3.97[2]	72.34	DS
2WMW38DS	72.29	74.06	5.57[2]	68.49	DS
2WMW39DS	71.59	73.53	3.00[2]	70.53	SS/DS
2WMW40DS	71.49	73.21	2.67[2]	70.54	DS
2WMW41DS	70.99	73.39	1.82[2]	71.57	DS
2WMW42DS	71.19	73.65	1.62[2]	72.03	DS
2WMW43DS	71.39	74.36	1.87[2]	72.49	DS
2WMW44DS	70.99	73.72	1.28[2]	72.44	DS
2WMW45DS	72.19	74.24	1.79[2]	72.45	DS
2WMW46DS	71.69	73.53	0.94[2]	72.59	DS
2WMW47DS	71.99	73.39	1.65[2]	71.74	SS/DS
3MW12D	41.09	43.54	Destroyed	--	BR
3MW12S	40.79	42.25	Destroyed	--	A
3MW37S	44.09	47.39	3.61[2]	43.78	A
4MW1S	127.99	129.55	5.22[2]	124.33	BR
2LOW1S	[4]	88.57	--	--	F/DS
2LMW28DS	[4]	87.61	--	--	DS
SG-15	71.29	74.03	Dry	--	--
SG-16	71.19	73.50	Dry	--	--
SG-17	71.19	73.57	Dry	--	--
SG-18	70.99	75.92	3.67	72.25	--
SG-19	70.99	75.83	3.53	72.30	--
SG-20	71.09	75.19	2.84	72.35	--
SG-21	70.39	75.32	2.80	72.52	--
SG-22	71.79	76.13	3.80	72.33	--
SG-23	71.09	75.83	3.52	72.31	--
SG-24	71.59	76.68	4.37	72.31	--

NOTES:
msl: mean sea level (1982 Base Traverse System)
-- Data not available
1 Reference elevation is top of well casing (1982 Base Traverse System)
2 Depth to water is from top of well casing. Measured March 6, 2001.
3 F = fill; DS = dredge spoil; A = alluvium; BR = bedrock; SS = surficial sand
4 No survey data available. Ground surface not resurveyed after landfill cap installed.
5 Area around flush mount was flooded, could not obtain water level

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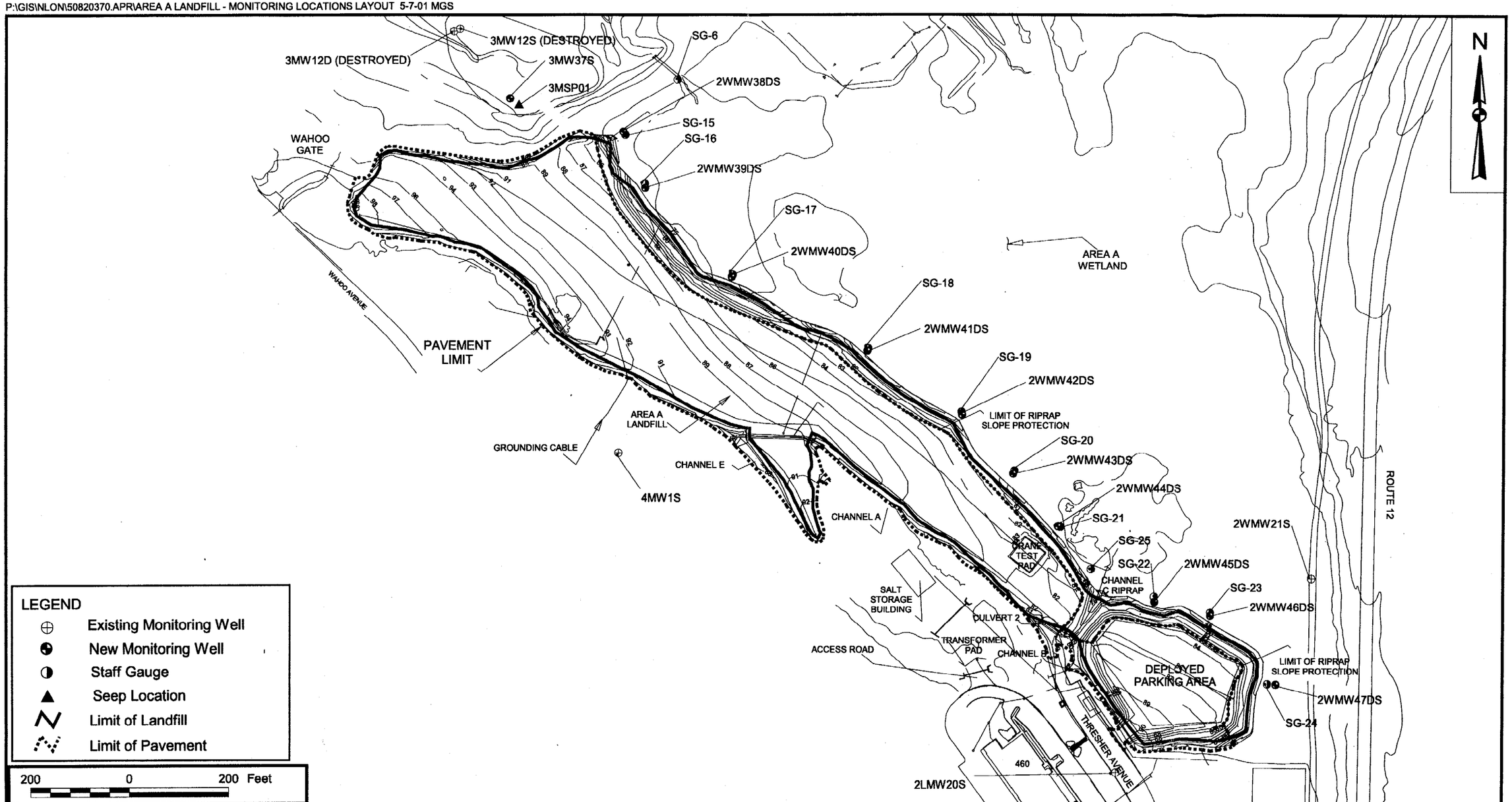
P:\GIS\NLON\50820370.APR\AREA A LANDFILL - MONITORING LOCATIONS LAYOUT 5-7-01 MGS



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

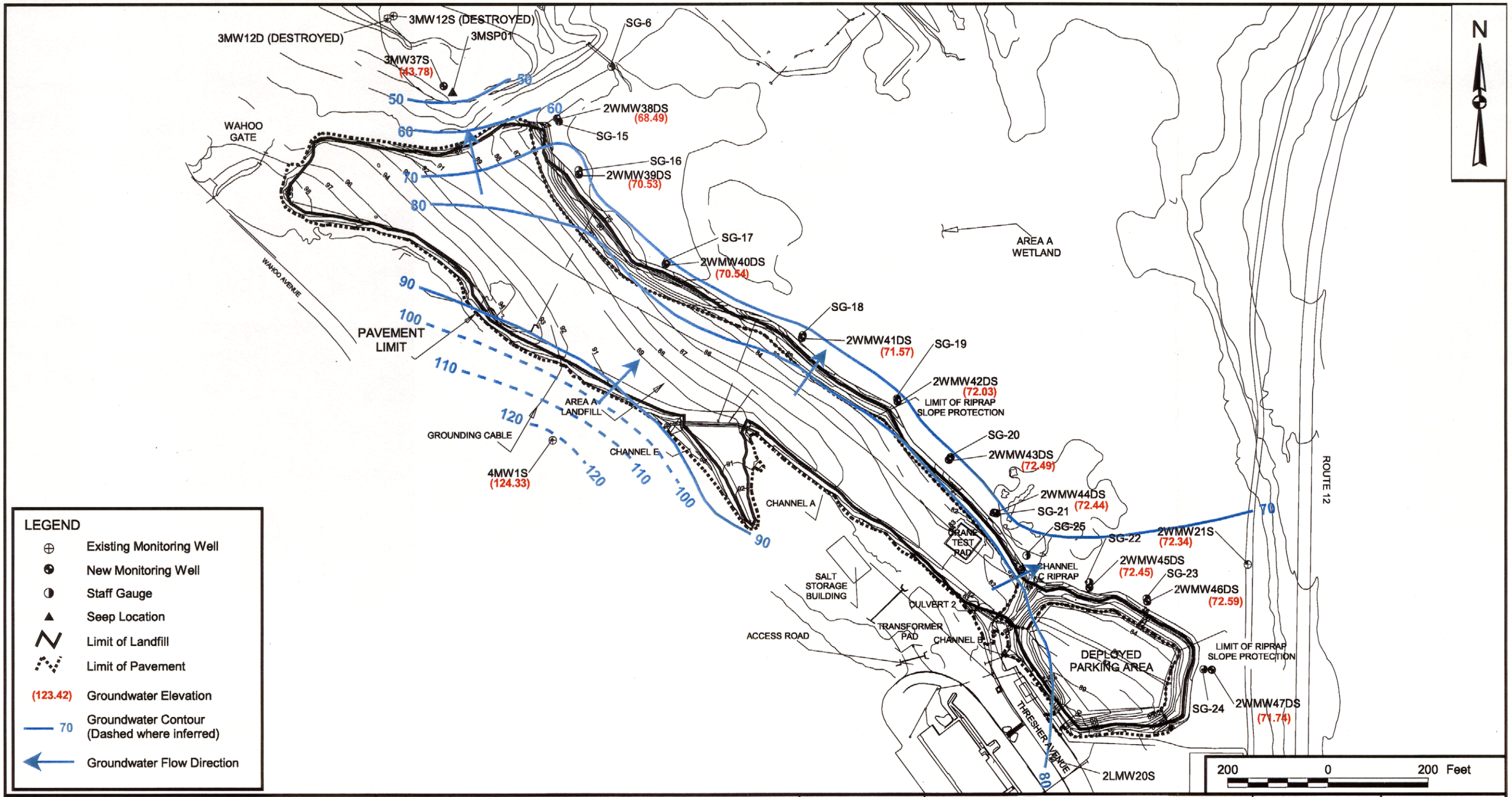
DRAWN BY J. BELLONE DATE 1/12/00
CHECKED BY DATE
COST/SCHEDULE-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

SAMPLING LOCATIONS FOR
ROUND 6 GROUNDWATER MONITORING
AREA A LANDFILL
NSB-NEW LONDON, GROTON, CONNECTICUT

CONTRACT NUMBER 7091
OWNER NUMBER —
APPROVED BY CAR DATE 5/17/01
APPROVED BY — DATE —
DRAWING NO. FIGURE 2-1
REV 0

P:\GIS\NLON\50820370.APR\AREA A LANDFILL - MONITORING LOCATIONS LAYOUT MGS 5-17-01



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY M. Spangenberg DATE 5-8-01
CHECKED BY DATE
COST/SCHEDULE-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

POTENTIOMETRIC SURFACE MAP
ROUND 6 GROUNDWATER MONITORING
AREA A LANDFILL
NSB-NEW LONDON, GROTON, CONNECTICUT

CONTRACT NUMBER 7091
OWNER NUMBER —
APPROVED BY CAR DATE 5/17/01
APPROVED BY — DATE —
DRAWING NO. FIGURE 2-2
REV 0

3.0 MONITORING RESULTS

The groundwater samples collected from 14 monitoring wells, seven surface water locations, and one seep location were analyzed for TCL organic compounds, TAL inorganic (total and dissolved) analytes, and water chemistry parameters. Monitoring focused on the following organic and inorganic chemicals of potential concern, as identified in the GMP (TtNUS, January 1999).

- Ethylbenzene
- 1,1,2,2-Tetrachloroethane
- Xylenes
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Bis(2-ethylhexyl)phthalate
- Phenanthrene
- Aroclor 1016
- Aroclor 1254
- Aroclor 1260
- Dieldrin
- Heptachlor
- Arsenic
- Beryllium
- Cadmium
- Chromium
- Copper
- Lead
- Zinc

The contaminants listed above have been detected either in groundwater at concentrations exceeding the Connecticut Department of Environmental Protection (CTDEP) Surface Water Protection Criteria (SWPCs) or in soil and landfill material at concentrations above their respective CTDEP Pollutant Mobility Criteria for GB groundwater.

The Round 6 analytical results are summarized on Tables 3-1 and 3-2. Within each table, the analytical results are compared to the primary and secondary monitoring criteria, as established in the GMP (TtNUS, January 1999). Chemicals exceeding either primary or secondary monitoring criteria are noted by shading. Data validation letters and laboratory data sheets are attached to this report as Appendix F.

The results of this comparison may be summarized as follows:

- There were no detections of volatile organic compounds, pesticides, or PCBs in groundwater or surface water.

- The semivolatile organic compound phenanthrene was detected in the duplicate sample from monitoring well 2WMW21S (0.094 µg/L) and in surface water samples 3MSP01 (1.1 µg/L), SG18 (0.21 µg/L), and SG20 (0.14 µg/L), at concentrations in excess of the primary monitoring criterion of 0.077 µg/L, which is the Connecticut SWPC for substances in groundwater.

- Additional semivolatile organic compounds were detected in surface water sample 3MSP01. Benzo(A)anthracene was detected at 0.82 µg/L, benzo(A)pyrene (0.9 µg/L), benzo(B)fluoranthene (0.83 µg/L), and benzo(K)fluoranthene (0.44 µg/L). All concentrations were in excess of the primary

monitoring criterion of 0.3 µg/L, which is the Connecticut SWPC for substances in groundwater. This is the first such occurrence at this location.

- Arsenic was detected in eight of 16 groundwater samples in both the unfiltered and filtered samples as shown on Figure 3-1. The concentrations in the unfiltered samples ranged from 3.3 µg/L to 16.6 µg/L, while the concentrations in the filtered samples ranged from 4.8 µg/L to 24.1 µg/L. Most of these detections exceeded the primary criterion of 4 µg/L, which is the Connecticut SWPC for substances in groundwater. No detections exceeded the secondary criterion of 150 µg/L, which is the Federal Ambient Water Quality Criterion (AWQC) for protection of aquatic life (chronic, freshwater).

- Copper (6.7 µg/L) was detected in the unfiltered sample collected from monitoring well 2WMW43DS at a concentration in excess of the secondary monitoring criterion of 4.8 µg/L, which is the Federal AWQC for protection of aquatic life (chronic, freshwater).

- Zinc was detected in 5 of 8 surface water samples in both filtered and unfiltered samples as shown on Figure 3-2. The concentrations in the unfiltered samples ranged from 64.5 µg/L to 334 µg/L, while the concentrations in the filtered samples ranged form 53.6 µg/L to 342 µg/L. The concentrations in the filtered and unfiltered samples from SG21 and SG23 exceeded the primary criterion of 123 µg/L, which is the Connecticut SWPC for substances in groundwater. The concentrations detected in the filtered and unfiltered samples from 3MSD01 and the unfiltered samples from SG18 and SG22 exceeded the secondary criterion of 58.2 µg/L, which is the Connecticut Water Quality Criteria CWQC for protection of human heath from consumption of organisms.

- Lead was detected in one unfiltered (11.6 µg/L) surface water sample, 3MSP01 at a concentration in excess of the secondary monitoring criterion of 1.2 µg/L which is the CWQC for protection of human health form consumption of organisms.

As discussed in Section 1.2, because this is only an interim report, the evaluation of the analytical results is limited to the above comparison. No conclusions or recommendations are drawn from this comparison. Initial conclusions and recommendations were addressed in the Year 1 Summary Report based on the first four quarterly rounds of results.

TABLE 3-1

ROUND 6 GROUNDWATER ANALYTICAL RESULTS SUMMARY
INTERIM GROUNDWATER MONITORING REPORT
AREA A, NSB-NLON, GROTON, CONNECTICUT

Chemical	Primary Monitoring Criterion [1]	Secondary Monitoring Criterion	2LMW20S 2LGW20S-06 3/12/01	2WMW21S 2WGW21S-06 3/8/01	2WMW21S 2WGW21S-06-D 3/8/01	2WMW38DS 2WGW38DS-06 3/10/01	2WMW39DS 2WGW39DS-06 3/8/01
VOCs (ug/L)							
1,1,2,2-TETRACHLOROETHANE	110	NA	1 UJ	1 U	1 U	1 UJ	1 U
ETHYLBENZENE	580,000	NA	1 U	1 U	1 U	1 U	1 U
XYLENES, TOTAL	NA	NA	1 U	1 U	1 U	1 U	1 U
SVOCs (ug/L)							
BENZO(A)ANTHRACENE	0.3	NA	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U
BENZO(A)PYRENE	0.3	NA	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U
BENZO(B)FLUORANTHENE	0.3	NA	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U
BENZO(K)FLUORANTHENE	0.3	NA	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U
BIS(2-ETHYLHEXYL)PHTHALATE	59	NA	10 U	10 U	10 U	10 U	10 U
PHENANTHRENE	0.077	NA	0.2 U	0.06 J	0.094 J	0.2 U	0.2 U
Pesticides/PCBs (ug/L)							
AROCLOR-1016	0.5	0.014[2]	0.20 U	0.20 UJ	0.20 U	0.2 U	0.20 UJ
AROCLOR-1254	0.5	0.014[2]	0.20 U	0.20 UJ	0.20 U	0.2 U	0.20 UJ
AROCLOR-1260	0.5	0.014[2]	0.20 U	0.20 UJ	0.20 U	0.2 U	0.20 UJ
DIELDRIN	0.1	0.0019[3]	0.020 U	0.04 U	0.04 U	0.02 U	0.020 U
HEPTACHLOR	0.05	0.0038[2]	0.010 U	0.02 U	0.02 U	0.01 U	0.010 U
Inorganics (total/dissolved) (ug/L)							
ARSENIC	4	150[2]	2.6 U/2.6 U	3.3 J/4.8 J	2.6 U/3.8 J	3.0 J/2.6 U	2.6 U/2.6 U
BERYLLIUM	4	NA	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U
CADMIUM	6	0.62[3]	2.6 UJ/2.6 UJ	2.6 UJ/2.6 UJ	2.6 UJ/2.6 UJ	2.6 U/2.6 U	2.6 U/2.6 UJ
CHROMIUM[4]	110	11[2]	2.6 U/2.6 U	2.7 U/2.9 U	2.7 U/2.6 U	2.6 U/2.6 U	2.6 UJ/2.6 U
COPPER	48	4.8[3]	4.7 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U
LEAD	13	1.2[3]	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 UJ/2.0 UJ	2.0 U/2.0 U
ZINC	123	58.2[3]	49.1/22.8 U	2.8 U/2.0 U	2.0 U/2.6 U	3.8 J/2.0 U	3.6 U/3.6 U
Miscellaneous Parameters (mg/L)							
CHEMICAL OXYGEN DEMAND	NA	NA	10 U	168	152	38.4	39.3
CHLORIDE	NA	NA	99.4	1380	1360	186	439
SULFATE	NA	NA	10.2	17.7	17.3	38.7	1.9
TOTAL DISSOLVED SOLIDS	NA	NA	323	2430	2290	665 J	821
TOTAL ORGANIC CARBON	NA	NA	1.6 U	17.0	18.1	8.0 J	5.2 U

NOTES:
Bold numbers denote exceedance of primary and secondary monitoring criterion.
(1) Surface Water Protection Criteria for substances in groundwater. (CTDEP, January 1996)
(2) Federal Ambient Water Quality Criteria for protection of aquatic life (chronic, freshwater). (USEPA, 1999)
(3) Connecticut Water Quality Criteria for protection of human health from consumption of organisms. (CTDEP, 1997)
(4) Hexavalent Chromium
J Estimated Value
R Rejected Value
U Undetected
NA Not Available

TABLE 3-1

ROUND 6 GROUNDWATER ANALYTICAL RESULTS SUMMARY
INTERIM GROUNDWATER MONITORING REPORT
AREA A, NSB-NLON, GROTON, CONNECTICUT

Chemical	Primary Monitoring Criterion [1]	Secondary Monitoring Criterion	2WMW40DS 2WGW40DS-06 3/9/01	2WMW41DS 2WGW41DS-06 3/9/01	2WMW42DS 2WGW42DS-06 3/8/01	2WMW43DS 2WGW43DS-06 3/13/01	2WMW44DS 2WGW44DS-06 3/9/01
VOCs (ug/L)							
1,1,2,2-TETRACHLOROETHANE	110	NA	1 U	1 U	1 U	1 UJ	1 U
ETHYLBENZENE	580,000	NA	1 U	1 U	1 U	1 U	1 U
XYLENES, TOTAL	NA	NA	1 U	1 U	1 U	1 U	1 U
SVOCs (ug/L)							
BENZO(A)ANTHRACENE	0.3	NA	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ
BENZO(A)PYRENE	0.3	NA	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ
BENZO(B)FLUORANTHENE	0.3	NA	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ
BENZO(K)FLUORANTHENE	0.3	NA	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ
BIS(2-ETHYLHEXYL)PHTHALATE	59	NA	10 U	10 U	10 U	10 U	10 U
PHENANTHRENE	0.077	NA	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ
Pesticides/PCBs (ug/L)							
AROCLOR-1016	0.5	0.014[2]	0.20 U	0.20 U	0.20 UJ	0.2 U	0.20 U
AROCLOR-1254	0.5	0.014[2]	0.20 U	0.20 U	0.20 UJ	0.2 U	0.20 U
AROCLOR-1260	0.5	0.014[2]	0.20 U	0.20 U	0.20 UJ	0.2 U	0.20 U
DIELDRIN	0.1	0.0019[3]	0.020 U	0.020 U	0.020 U	0.02 U	0.020 U
HEPTACHLOR	0.05	0.0038[2]	0.010 U	0.010 U	0.010 U	0.01 U	0.010 U
Inorganics (total/dissolved) (ug/L)							
ARSENIC	4	150[2]	5.8 J/4.8 J	11.5/9.0	10.0/7.2	13.9 J/13.0 J	3.4 J/2.6 U
BERYLLIUM	4	NA	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U
CADMIUM	6	0.62[3]	5.2 UJ/2.6 UJ	2.6 UJ/2.6 UJ	2.6 UJ/2.6 UJ	2.6 U/5.2 U	2.6 UJ/2.6 UJ
CHROMIUM[4]	110	11[2]	2.6 U/2.6 U	2.6 U/2.6 U	2.6 U/2.6 U	8.0/3.2 J	2.6 U/2.6 U
COPPER	48	4.8[3]	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	6.7/4.7	2.0 U/2.0 U
LEAD	13	1.2[3]	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 UJ/2.0 UJ	2.0 U/2.0 U
ZINC	123	58.2[3]	3.9 U/3.0 U	4.1 U/19.6 U	5.2 U/2.0 U	29.5/10.4	3.3 U/6.2 U
Miscellaneous Parameters (mg/L)							
CHEMICAL OXYGEN DEMAND	NA	NA	1300	799	310	969	128
CHLORIDE	NA	NA	8500	7410	4310	14800	1590
SULFATE	NA	NA	824	217	108	126	13.3
TOTAL DISSOLVED SOLIDS	NA	NA	14400	12000	7280	25200	2960
TOTAL ORGANIC CARBON	NA	NA	13.0	19.1	10.6	12.6 J	8.9

NOTES:
Bold numbers denote exceedance of primary and secondary monitoring criterion.
(1) Surface Water Protection Criteria for substances in groundwater. (CTDEP, January 1996)
(2) Federal Ambient Water Quality Criteria for protection of aquatic life (chronic, freshwater). (USEPA, 1999)
(3) Connecticut Water Quality Criteria for protection of human health from consumption of organisms. (CTDEP, 1997)
(4) Hexavalent Chromium
J Estimated Value
R Rejected Value
U Undetected
NA Not Available

TABLE 3-1

ROUND 6 GROUNDWATER ANALYTICAL RESULTS SUMMARY
INTERIM GROUNDWATER MONITORING REPORT
AREA A, NSB-NLON, GROTON, CONNECTICUT

Chemical	Primary Monitoring Criterion [1]	Secondary Monitoring Criterion	2WMW45DS 2WGW45DS-06 3/11/01	2WMW46DS 2WGW46DS-06 3/11/01	2WMW47DS 2WGW47DS-06 3/9/01	3MW37S 3GW37S-06 3/12/01	4MW1S 4GW01S-06 3/11/01	4MW1S 4GW01S-06-D 3/11/01
VOCs (ug/L)								
1,1,2,2-TETRACHLOROETHANE	110	NA	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 UJ
ETHYLBENZENE	580,000	NA	1 U	1 U	1 U	1 U	1 U	1 U
XYLENES, TOTAL	NA	NA	1 U	1 U	1 U	1 U	1 U	1 U
SVOCs (ug/L)								
BENZO(A)ANTHRACENE	0.3	NA	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
BENZO(A)PYRENE	0.3	NA	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
BENZO(B)FLUORANTHENE	0.3	NA	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
BENZO(K)FLUORANTHENE	0.3	NA	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
BIS(2-ETHYLHEXYL)PHTHALATE	59	NA	10 U	10 U	4.1 J	10 U	10 U	10 U
PHENANTHRENE	0.077	NA	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Pesticides/PCBs (ug/L)								
AROCLOR-1016	0.5	0.014[2]	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
AROCLOR-1254	0.5	0.014[2]	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
AROCLOR-1260	0.5	0.014[2]	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
DIELDRIN	0.1	0.0019[3]	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
HEPTACHLOR	0.05	0.0038[2]	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Inorganics (total/dissolved) (ug/L)								
ARSENIC	4	150[2]	9.7/7.4	16.6/24.1	7.0/6.8	2.6 U/2.6 U	2.6 U/2.6 U	2.6 U/2.6 U
BERYLLIUM	4	NA	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U	0.13 U/0.13 U
CADMIUM	6	0.62[3]	2.6 UJ/5.2 UJ	2.6 UJ/2.6 UJ	3.9 U/2.6 UJ	2.6 UJ/2.6 U	2.6 UJ/2.6 UJ	2.6 UJ/2.6 UJ
CHROMIUM[4]	110	11[2]	2.6 U/2.6 U	2.6 U/2.6 U	2.6 U/2.6 U	2.6 U/2.6 UJ	2.6 U/2.6 U	2.6 U/2.6 U
COPPER	48	4.8[3]	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U
LEAD	13	1.2[3]	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U
ZINC	123	58.2[3]	6.1 U/3.9 U	16.2 U/2.0 U	7.2 U/11.4 U	2.4 U/4.3 U	11.1 U/44.3 J	11.1 U/10.1 U
Miscellaneous Parameters (mg/L)								
CHEMICAL OXYGEN DEMAND	NA	NA	246	982	230	65.1	13.8	18.3
CHLORIDE	NA	NA	1900	16700	1750	657	148	149
SULFATE	NA	NA	20.5	762	1.0 U	28.9	27.9	28.2
TOTAL DISSOLVED SOLIDS	NA	NA	3260	28000	3060	1010	294	316
TOTAL ORGANIC CARBON	NA	NA	10.4	12.4	5.9 U	2.7 U	0.73 U	0.73 U

NOTES:
Bold numbers denote exceedance of primary and secondary monitoring criterion.
(1) Surface Water Protection Criteria for substances in groundwater. (CTDEP, January 1996)
(2) Federal Ambient Water Quality Criteria for protection of aquatic life (chronic, freshwater). (USEPA, 1999)
(3) Connecticut Water Quality Criteria for protection of human health from consumption of organisms. (CTDEP, 1997)
(4) Hexavalent Chromium
J Estimated Value
R Rejected Value
U Undetected
NA Not Available

TABLE 3-2

ROUND 6 SURFACE WATER ANALYTICAL RESULTS SUMMARY
INTERIM GROUNDWATER MONITORING REPORT
AREA A, NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 2

Chemical	Primary Monitoring Criterion (1)	Secondary Monitoring Criterion	3MSP01 3MSP01-06 3/13/01	SG-18 SWSG18-06 3/13/01	SG-19 SWSG19-06 3/12/01	SG-19 SWSG19-06-D 3/12/01	SG-20 SWSG20-06 3/13/01
VOCs (ug/L)							
1,1,2,2-TETRACHLOROETHANE	110	NA	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
ETHYLBENZENE	580,000	NA	1 U	1 U	1 U	1 U	1 U
XYLENES, TOTAL	NA	NA	1 U	1 U	1 U	1 U	1 U
SVOCs (ug/L)							
BENZO(A)ANTHRACENE	0.3	NA	0.82	0.061 J	0.2 U	0.2 U	0.037 J
BENZO(A)PYRENE	0.3	NA	0.9	0.11 J	0.2 U	0.022 J	0.066 J
BENZO(B)FLUORANTHENE	0.3	NA	0.83	0.2 U	0.2 U	0.2 U	0.2 U
BENZO(K)FLUORANTHENE	0.3	NA	0.44	0.083 J	0.2 U	0.2 U	0.05 J
BIS(2-ETHYLHEXYL)PHTHALATE	59	NA	10 U	10 U	10 U	10 U	10 U
PHENANTHRENE	0.077	NA	1.1	0.21	0.2 U	0.067 J	0.14 J
Pesticides/PCBs (ug/L)							
AROCLOR-1016	0.5	0.014(2)	0.2 U	0.2 U	0.20 U	0.20 U	0.2 U
AROCLOR-1254	0.5	0.014(2)	0.2 U	0.2 U	0.20 U	0.20 U	0.2 U
AROCLOR-1260	0.5	0.014(2)	0.2 U	0.2 U	0.20 U	0.20 U	0.2 U
DIELDRIN	0.1	0.0019(3)	0.02 U	0.02 U	0.020 U	0.020 U	0.02 U
HEPTACHLOR	0.05	0.0038(2)	0.01 U	0.01 U	0.010 U	0.010 U	0.01 U
Inorganics (total/dissolved) (ug/L)							
ARSENIC	4	150(2)	3.9 J/2.6 U	2.7 J/2.6 U	2.6 U/2.6 UJ	2.6 U/2.6 U	3.0 J/2.6 U
BERYLLIUM	4	NA	0.14 J/0.15 J	0.42/0.32	0.13 U/0.13 U	0.13 U/0.13 U	0.17 J/0.15 J
CADMIUM	6	0.62(3)	2.6 U/2.6 U	2.6 U/2.6 U	2.6 U/2.6 U	2.6 UJ/2.6 UJ	2.6 U/2.6 U
CHROMIUM(4)	110	11(2)	4.1 J/2.6 U	2.6 U/2.6 U	2.6 UJ/2.6 U	2.6 U/2.6 U	2.6 U/2.6 U
COPPER	48	4.8(3)	2.0 U/2.0 UJ	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.1 J/2.0 U
LEAD	13	1.2(3)	11.6 J/2.0 UJ	2.0 UJ/2.0 UJ	2.0 U/2.0 U	2.0 U/2.0 U	2.0 UJ/2.0 UJ
ZINC	123	58.2(3)	116/65.6	64.5/56.7	32.9/37.1 J	38.0/35.8 J	35.1/25.3
Miscellaneous Parameters (mg/L)							
CHEMICAL OXYGEN DEMAND	NA	NA	31.7	10 U	13.8	10 U	10 U
CHLORIDE	NA	NA	14.1	87.6	116	116	66.3
SULFATE	NA	NA	7.9	6.6	10.5	10.8	5.7
TOTAL DISSOLVED SOLIDS	NA	NA	121	160	240 J	240 J	137
TOTAL ORGANIC CARBON	NA	NA	6.2 J	1.1 U	1.8 U	1.4 U	1.6 J

NOTES:
Bold numbers denote exceedance of primary and secondary monitoring criterion.
(1) Surface Water Protection Criteria for substances in groundwater. (CTDEP, January 1996)
(2) Federal Ambient Water Quality Criteria for protection of aquatic life (chronic, freshwater). (USEPA, 1999)
(3) Connecticut Water Quality Criteria for protection of human health from consumption of organisms. (CTDEP, 1997)
(4) Hexavalent Chromium
J Estimated Value
R Rejected Value
U Undetected
NA Not Available

TABLE 3-2

ROUND 6 SURFACE WATER ANALYTICAL RESULTS SUMMARY
INTERIM GROUNDWATER MONITORING REPORT
AREA A, NSB-NLON, GROTON, CONNECTICUT

Chemical	Primary Monitoring Criterion [1]	Secondary Monitoring Criterion	SG-21 SWSG21-06 3/11/01	SG-22 SWSG22-06 3/11/01	SG-23 SWSG23-06 3/11/01	SG-24 SWSG24-06 3/13/01
VOCs (ug/L)						
1,1,2,2-TETRACHLOROETHANE	110	NA	1 UJ	1 UJ	1 UJ	1 UJ
ETHYLBENZENE	580,000	NA	1 U	1 U	1 U	1 U
XYLENES, TOTAL	NA	NA	1 U	1 U	1 U	1 U
SVOCs (ug/L)						
BENZO(A)ANTHRACENE	0.3	NA	0.2 U	0.2 U	0.2 U	0.2 U
BENZO(A)PYRENE	0.3	NA	0.022 J	0.2 U	0.2 U	0.2 U
BENZO(B)FLUORANTHENE	0.3	NA	0.2 U	0.2 U	0.2 U	0.2 U
BENZO(K)FLUORANTHENE	0.3	NA	0.2 U	0.2 U	0.2 U	0.2 U
BIS(2-ETHYLHEXYL)PHTHALATE	59	NA	10 U	10 U	10 U	10 U
PHENANTHRENE	0.077	NA	0.041 J	0.2 U	0.2 U	0.2 U
Pesticides/PCBs (ug/L)						
AROCLOR-1016	0.5	0.014[2]	0.20 U	0.20 U	0.20 U	0.20 U
AROCLOR-1254	0.5	0.014[2]	0.20 U	0.20 U	0.20 U	0.20 U
AROCLOR-1260	0.5	0.014[2]	0.20 U	0.20 U	0.20 U	0.20 U
DIELDRIN	0.1	0.0019[3]	0.020 U	0.020 U	0.020 U	0.020 U
HEPTACHLOR	0.05	0.0038[2]	0.010 U	0.010 U	0.010 U	0.010 U
Inorganics (total/dissolved) (ug/L)						
ARSENIC	4	150[2]	2.6 U/2.6 U	2.6 U/2.6 U	2.6 U/2.6 U	2.6 U/2.6 U
BERYLLIUM	4	NA	0.13 U/0.13 U	0.13 U/0.13 U	0.43 U/0.13 U	0.43 U/0.13 U
CADMIUM	6	0.62[3]	2.6 UJ/2.6 UJ	2.6 UJ/3.3 U	2.6 UJ/2.6 UJ	2.6 UJ/2.6 UJ
CHROMIUM[4]	110	11[2]	2.6 U/2.6 U	2.6 U/2.6 U	2.6 U/2.6 UJ	2.6 U/2.6 U
COPPER	48	4.8[3]	2.0 U/2.0 U	2.4 U/2.0 U	2.0 U/2.0 U	2.1 U/2.1 U
LEAD	13	1.2[3]	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U	2.0 U/2.0 U
ZINC	123	58.2[3]	185/161 J	82.3/53.6 J	334/342 J	15.8 U/13.5 U
Miscellaneous Parameters (mg/L)						
CHEMICAL OXYGEN DEMAND	NA	NA	10 U	13.8	10 U	10 U
CHLORIDE	NA	NA	15.7	89.0	7.4	6.1
SULFATE	NA	NA	3.8	5.8	2.9	1.8
TOTAL DISSOLVED SOLIDS	NA	NA	46.0	255	99.0	10 U
TOTAL ORGANIC CARBON	NA	NA	2.7 U	2.8 U	0.52 U	4.5 U

NOTES:
Bold numbers denote exceedance of primary and secondary monitoring criterion.
(1) Surface Water Protection Criteria for substances in groundwater. (CTDEP, January 1996)
(2) Federal Ambient Water Quality Criteria for protection of aquatic life (chronic, freshwater). (USEPA, 1999)
(3) Connecticut Water Quality Criteria for protection of human health from consumption of organisms. (CTDEP, 1997)
(4) Hexavalent Chromium
J Estimated Value
R Rejected Value
U Undetected
NA Not Available

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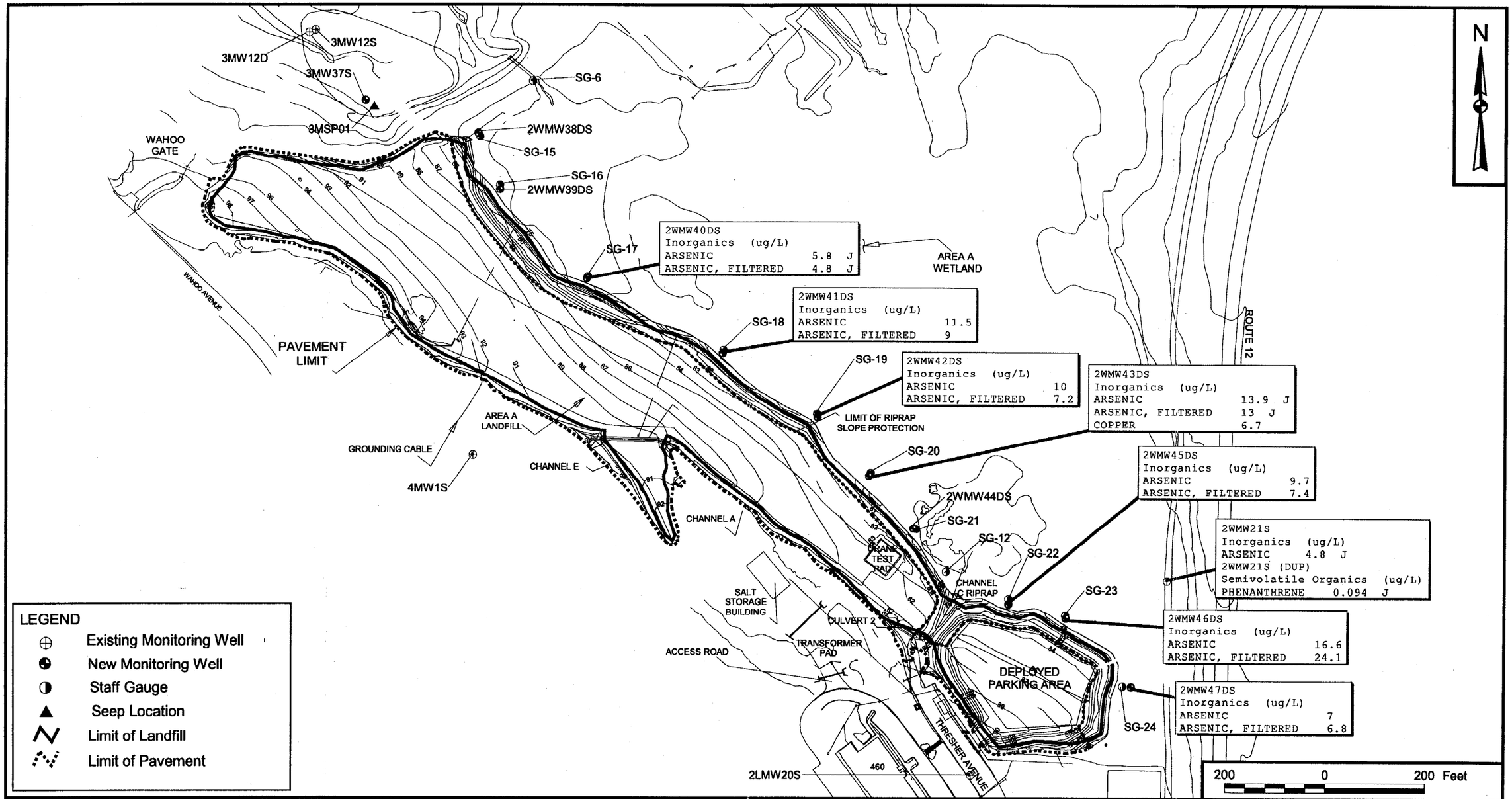
P:\GIS\NLON\50820390.APR\Area A Round 6 GW tags layout MGS 5-17-01



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY: M. Spengenberg — DATE: 5-16-01
CHECKED BY — DATE
COST/SCHEDULE-AREA
SCALE: AS NOTED

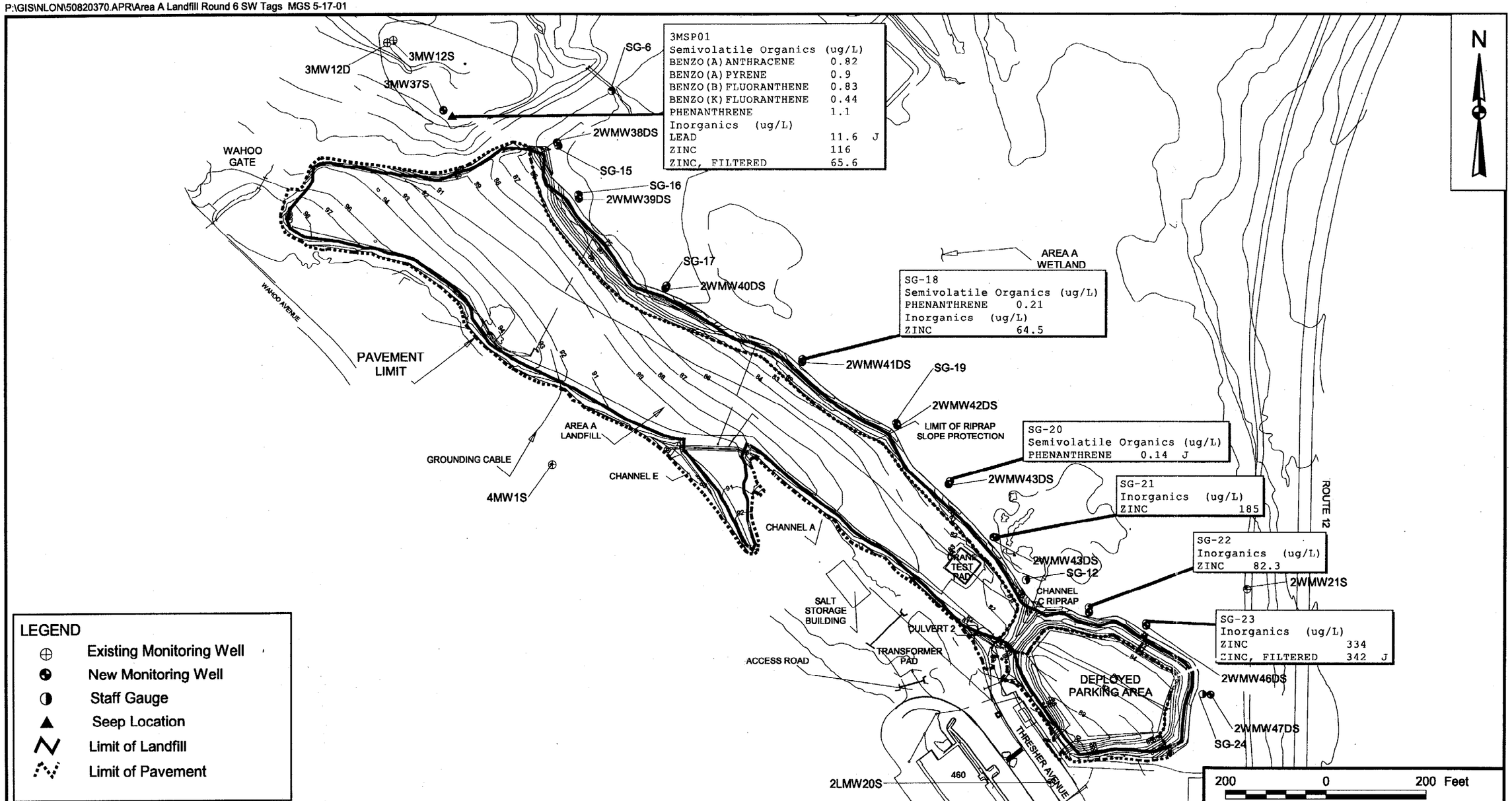
Tetra Tech NUS, Inc.

COC EXCEEDANCES OF MONITORING CRITERIA
ROUND 6 GROUNDWATER SAMPLING
AREA A LANDFILL
NSB-NLON, GROTON, CONNECTICUT

CONTRACT NUMBER: 7091
OWNER NUMBER: —
APPROVED BY: CAR — DATE: 5/17/01
APPROVED BY — DATE
DRAWING NO.: FIGURE 3-1
REV: 0

10910 RU7

P:\GIS\NLON\50820370.APR\Area A Landfill Round 6 SW Tags MGS 5-17-01



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY M. Spangenberg DATE 5-15-01
CHECKED BY DATE
COST/SCHEDULE-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

COC EXCEEDANCES OF MONITORING CRITERIA
ROUND 6 SURFACE WATER SAMPLING
AREA A LANDFILL
NSB-NLON, GROTON, CONNECTICUT

CONTRACT NUMBER 7091
OWNER NUMBER —
APPROVED BY CAR DATE 5/17/01
APPROVED BY — DATE —
DRAWING NO. FIGURE 3-2
REV 0

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APPENDIX A

FIELD ACTIVITIES LOG BOOK

NSB- NLON 5082

MONDAY 3.5.01 1244

WEATHER: SNOW & FRZ. RAIN PGH & GROTON 33°F

0700 KEITH SIMPSON & TERRY ROJAHN @ PGH AIRPORT TO RI PICK-UP 2 RENTED SUVs (AMS) TO SUBASE. BASE WAS CLOSED DUE TO SNOW/ICE

1215 CHECK-INTO BQ (NAVY HOTEL) CALLED DICK CONANT AT HOME, DICK CAME TO BLD 166 AND UNLOCKED THE BLD FOR US.

QUICK BLD INVENTORY THEN TO FEDEX TO PICK UP RENTED EQ. OUR ORDERED PUMP & PID DID NOT COME IN, CALLED TOM PATTON & SANDY D. LEFT MESSAGES FOR THEM TO CHECK

1700 KS & TR UNPACK & CAL. EQUIPMENT MAKE-UP BOTTLE SETS PREP. EQ..

1910 COMPLETE PREP WORK TO WAL-MART FOR SUPPLIES

1940 TO BQ

BASE CLOSED (SNOW) MONDAY & TUESDAY

KS / S. Simp 3.5.01

TIT: NSB NION 5082 135

1244

TUESDAY 3.6.01

WEATHER: 8" SNOW OVERNITE 33°F

1520 TO AREA A FOR SITE WIDE WLS, COMPLETE
1700 WL'S TR & KS TO BLD 166 UNLOAD TRUCK
1720 TR TO FEDEX TO PICK-UP PID & PUMPS
KS @ BLD 166 PAPER WORK
1810 TR RETURNS
1850 KS & TR TO BQ

Kirk S. Sanger 3.6.01

TITLE NSB-NLON

5082
1244

WO

— SUMMARY AREA A ROUND 6 MARCH 2001

SAMPLE POINT	DATE SAMPLED	QA	COMMENTS
3MW37S	3.12.01	—	
2WMW38DS	3.10.12.13.01	—	* PURGED 3.7.01 TAKES 2-6 DAYS TO SAMPLE VERY LOW RECOVERY
2WMW39DS	3.8.01	—	* " 3.7.01
2WMW40DS	3.9.01	—	* " 3.7.01
2WMW41DS	3.9.01	—	* " 3.7.01
2WMW42DS	3.8.01	—	* " 3.7.01
2WMW43DS	3.13.01	MS/MSD PEST/SVOC/PAH	* " 3.11.01
2WMW44DS	3.9.01	—	* " 3.8.01
2WMW45DS	3.11.01	—	* " 3.10.01
2WMW46DS	3.11.01	—	* " 3.10.01
2WMW47DS	3.9.01	—	* " 3.8.01
2CMW20S	3.12.01	—	FLUSH MT. IN BAD SHAPE
2WMW21S	3.8.01	DUP+MS/MSD	
4MW1S	3.11.01	DUP	
3MSP01	3.13.01	—	SEEP
SG15	—	—	DRY
SG16	—	—	DRY
SG17	—	—	DRY
SG18		—	✓
SG19	3.12.01	—	✓ → MS/MSD + DUP
SG20	3.13.01	~~DUP+ MS/MSD~~ KS	✓
SG21	3.11.01	—	✓
SG22	3.11.01	—	✓
SG23	3.11.01	—	✓
SG24	3.13.01	—	✓ DUG ON 3.12.01

✓ = SG LOCATION CHECKED AND SUFFICIENT WATER TO SAMPLE & SUMP DUG OUT, 3.10.01

* PURGED DRY 1ST DAY SAMPLED NEXT, SEE SAMPLE LOGS

SIGNA

DIS

TITLE NSB NLON

5082
1244

139

WED 3.7.01

WEATHER: CLEAR 30-40°F

0650 KS & TR @ BLD 166 PREP. FOR PURGING @ AREA A CAL. EQUIP.

1100 PURGED 38, 39 & 40 RETURN TO BLD 166 TR TO BOC GASSES FOR MORE (3) NITROGEN CYC SWITCH OUT EQ. PREP FOR SAMPLING @ DRMO

1525 PREP FOR PURGING @ AREA A KS & TR TO AREA A SET-UP ON 41 & 42 COMPLETE PURGING

1800 TO BLD 166 UNLOAD SUV PREP. BOTTLE SETS CLEAN & CHARGE EQUIPMENT

1910 DEPART TO BQ

3.7.01

THURSDAY 3-8-01 1244

WEATHER: SUNNY 28-36 °F

0635 KS TO AVIS @ NEW LONDON AIRPORT TO SWITCH SUV (NO 4X4).

0650 TR TO BLD 166 THEN AREA A FOR GW SAMPLING

0745 AFTER PASS & ID KS @ BLD 166 LOAD SUV TO AREA A FOR SAMPLING
TR SAMPLING 39DS KS PURGING 44DS

1020 TR COMPLETE SAMPLING 39 & 42 TO BLD 166 SWITCH-OUT FOR DRMO.

1050 KS COMPLETES PURGE @ 44 TO OT 10 & DUMP PURGE WATER THEN TO BLD 166 TO PREP. FOR DRMO SAMPLING.

1530 FROM BLD 166 TO AREA A (KS & TR) KS SET-UP ON 47 TR @ 2WMW21S
KS PUMPED 47 DRY WILL SAMPLE AFTER RECHARGE
@ 2WMW21S COLLECTED GWFD03080101+MS/MSD
LOAD SUV KS & TR TO BLD 166

1950 KS TO BQ
TR TO BLD 166 UNLOAD SUV

2055 TR TO BQ

KS TR

3-8-01

FRIDAY 3.9.01 1244

WEATHER: OVERCAST 32-38°F RAIN PM

0655 KS & TR TO BLD 166 PAPER WORK, FAX HOURS TO PGH OFFICE, CALL FEDEX FOR PICK-UP CAL. EQUIPMENT

0825 TO AREA A FOR GW SAMPLING, DUMPED PURGE WATER @ OT 10 SET-UP ON MW 38 AFTER = 48 HRS MW 38DS RECOVERED 3.25' WILL ALOW TO RECHARGE FOR 24 MORE HOURS

0840 TO MW 40DS TO SAMPLE COMPLETE 40DS TO

1035 47DS START SAMPLING. COMPLETE SAMPLING

1145 TO TR's LOCATION 44DS HELP TR CARRY EQUIP. TO TRUCK @ 44D (SAMPLING COMPLETE) TO LUNCH — RAIN STARTING @ 1125 — PACK SAMPLES FOR FEDEX SHIPPED 6 COOLERS

1400 TO DRMO — RAIN TURNING TO SNOW

KS

3-9-01

TITLE NSB NLON 5082

SAT. 3.10.01 1244

WEATHER: SUNNY 30-38°F

0655 KS & TR @ BLD 166 PAPER WORK, CAL. EQUIP. LOAD SUV TO AREA A START SAMPLING FOR 38DS

0750 TR SET-UP ON 38DS, KS DIGGING SAMPLE SUMPS FOR SW SAMPLING

0850 RETURN TO BLD 166 PREP FOR WORK @ DRMO

1000 LOAD SAMPLING EQUIP. TO AREA A & PURGE

1025 MWs 45 & 46 TO AREA A

1235 COMPLETE PURGE, LOAD SUV TO LUNCH

1305 TO BLD 166 PAPER WORK & PREP. FOR SAMPLING @ DRMO

3.10.01

TIT NSB-N10N

5082
1244

SUNDAY 3.11.01

WEATHER: SUNNY 33-42°F

0700 KS & TR @ BLD 166, CAL EQUIPMENT LOAD SUVs TO AREA A & PURGE/SAMPLE 1S & 20S

0830 20S COULD NOT BE SAMPLED SURFACE WATER FROM SNOW MELT FLOWING INTO VAULT. 1RS TO 43DS TO PURGE

1045 DRY. COMPLETE 43DS, STOP TO CHECK ON TR THEN TO BLD 166, PAPERWORK CLEAN EQUIP.

1145 KS & TR PICK-UP ICE THEN LUNCH

1235 @ BLD 166 LOAD SUV TO AREA A SAMPLE MWs 45DS & 46DS

1520 ALSO SAMPLED 3 SW LOCATIONS SG-21, 22 & 23

1700 RETURN TO BLD 166 CHARGE EQUIPMENT, SAMPLES ON ICE, PAPER WORK.

1730 TO BQ

Kirk E. Simpson

3.11.01

TITLE NSB-NLON 5082
1244

MONDAY 3.12.01
WEATHER: SUNNY 32-38°F

0650 KS & TR @ BLD 166 CAL. EQUIP. LOAD SUVs

0715 TO OT 10 & DUMP PURGE WATER, TO AREA A SAMPLE MW 37 & THE SEEP. TR SAMPLED 37 KS TO 21MW20S PURGE & SAMPLED WILL SAMPLE SEEP ~~AFTE~~ ES ON TUES.

1010 KS TO MW38DS TO CONTINUE SAMPLING, SAMPLED ≈ 2 1/2 QTS. TO MW 37 AND HELP TR CARRY SAMPLES PURGE WATER AND PUMP TO SUV

1140 TO BLD 166 ICE ON SAMPLES PAPER WORK TO LUNCH PICK-UP ICE TO BLD 166 PACKING SAMPLES FOR FED EX TO LAB.

1450 TO AREA A SAMPLED MW 43DS ALSO COLLECTED X VOL FOR MS/MSD FOR PEST/PCB, SVOC & PAHs ALSO SAMPLED SWSG-20 & COLLECTED DUP + MS/MSD AT THIS LOCATION

1745 TO BLD 166 ICE SAMPLES, EQ. ON CHARGE, PAPER
1815 WORK, RETURN TO AREA A NEED 1 MORE QT FROM MW 43

1835 COMPLETE SAMPLING TO BQ

[signature] 3.12.01

TUESDAY 3.13.01

WEATHER: RAIN 35°F

0655 PREP FOR SW SAMPLING (IN THE RAIN) CAL. EQ.
LOAD SUVs
CALLED MARK M. TO DISCUSS JOB PROGRESS
CALLED STL, LAB, TO CHECK ON VOL. FOR MS/MSD
0850 TO AREA A FOR SW SAMPLING SAMPLED 4
LOCATIONS SG-18, 20, 24 & THE SEEP
1040 RETURN TO BLD 166 PAPER WORK, PACKING
SAMPLES FOR FEDEX PICK-UP
CLEANING STORAGE ROOM IN BASEMENT OF 166
1200 LUNCH - PICK-UP ICE
1230 RETURN TO 166
KS TO AREA A SAMPLE MW 43DS
TR PACKING SAMPLES FOR SHIPPMENT TO LAB
1630 TR & KS CLEANING & PACKING RENTED EQ.
FOR RETURN.
1735 TO BQ

3.14.01

TITLE NSB NLON 5082

WED 3.14.01 1244

WEATHER: NICE 35-40°F SUNNY

0645 KS & TR CHECK OUT OF BQ TO BLD 166

0720 TR TO MW38 TO COMPLETE SAMPLING

KS PACKING EQ. FOR RETURN

1030 DEPART SITE TO AVIS THE FLT. TO PGH

END OF ROUND 6

Kel S. [illegible]

3.14.01

APPENDIX B

GROUNDWATER LEVEL MEASUREMENT SHEET

WATER LEVEL MEASUREMENT SHEET

Project Name: NSB-NLON, Area A
Location: Groton, CT
Weather Conditions: SNOW OVER NITE ≈8" CLEAR 30°F

Project No.: CTO 203 5082
Personnel: Simpson / Rojahn
Measuring Device: M-SCOPE
Remarks:

Well ID	Date	Time	Water Level *	Thickness of Free Product	PID Reading ppm RP	PID Reading ppm BZ	Comments
2WMW21S	3.6.01	1516	3.97	NA			
2WMW47DS	↓	1520	1.65	NA			
SG24	↓	1522	4.37	NA			FROZEN, BENT LOOSE 4.37 TO ICE
2LMW20S	↓	1535	—	NA			FLUSH MT. AREA FLOODED, COULD NOT MEASURE
2WMW46DS	↓	1545	0.94	NA			
SG23	↓	1546	3.52	NA			
2WMW45DS	↓	1550	1.79	NA			
SG22	↓	1552	3.80	NA			
2WMW44DS	↓	1559	1.29	NA			
SG21	↓	1600	2.80	NA			
2WMW43DS	↓	1605	1.87	NA			
SG20	↓	1607	2.84	NA			

* All measurements to the nearest 0.01 foot

Signature(s): [illegible]

WATER LEVEL MEASUREMENT SHEET

Project Name: NSB-NLON, Area A
Location: Groton, CT
Weather Conditions: SEE PG 1

Project No.: CTO 203 5082
Personnel: Simpson / Rojahn
Measuring Device: M-SCOPE
Remarks:

Well ID	Date	Time	Water Level *	Thickness of Free Product	PID Reading ppm RP	PID Reading ppm BZ	Comments
2WMW42DS	3.6.01	1610	1.62	NA			
SG-19		1612	3.53	NA			
2WMW41DS		1616	1.82	NA			
SG-18		1618	3.67	NA			
2WMW40DS		1624	2.67	NA			
SG-17		1625	DRY	NA			
4MW1S		1630	5.22	NA			
2WMW39DS		1629	3.00	NA			
2WMW38DS		1632	5.57	NA			
3MW37S		1645	3.61	NA			
SG-6		1650	19.95	NA			
				NA			

* All measurements to the nearest 0.01 foot

Signature(s): [illegible]

APPENDIX C

MONITORING INSTRUMENT CALIBRATION LOGS

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME: NSB NLON

INSTRUMENT NAME/MODEL: LaMOTTE 2020

SITE NAME: DRMO & AREA-A

MANUFACTURER: SAME

PROJECT No.: 7363 & 5082

SERIAL NUMBER: 1737-1600

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
3/6/01	SAME	T. RUJAHN	NA	NA	0.0 & 9.6	0.0 & 10	0.0 & 10	OK
3/7/01	"	TR	"	"	0.0 & 10	0.0 & 10	"	OK
3/8/01	"	TR	"	"	0.0 & 10	0.0 & 10	"	OK
3/9/01	"	TR	"	"	0.0 & 10	0.0 & 10	"	OK
03/10/01	"	TR	"	"	0.0 & 10	0.0 & 10	"	OK
03/11/01	"	TR	"	"	0.0 & 10	0.0 & 10	"	OK
3/12/01	"	KS	"	"	0 & 10	0 & 10	"	OK
3/13/01	"	TR	"	"	0.0 & 9.9	0 & 10	"	OK

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME: NSB NLON

INSTRUMENT NAME/MODEL: LA MOTTE 2020

SITE NAME: DRMO & AREA-A

MANUFACTURER: SAME

PROJECT No.: 7363 & 5082

SERIAL NUMBER: 1755-1600

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
3/6/01	SAME	T. RUJAHN	NA	NA	0.0 & 11	0.0 & 10	0.0 & 10	OK
3/7/01	"	TR	"	"	0.0 & 10	0.0 & 10	"	OK
3/8/01	"	TR	"	"	0.0 & 10	0.0 & 10	"	OK
3/9/01	"	TR	"	"	0.0 & 10	0.0 & 10	"	OK
3.10.01	"	RS	"	"	0 & 10	0 & 10	"	OK
3.11.01	"	TR	"	"	0 & 10	0 & 10	"	OK
3.12.01	"	RS	"	"	0 & 10	0 & 10	"	OK

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME: NSB NLON

SITE NAME: DRMO & AREA A

PROJECT No.: 7363 & 5092

INSTRUMENT NAME/MODEL: YSI 610-DM, SONDE 6820

MANUFACTURER: YSI

SERIAL NUMBER: SONDE SN 9760401 AB
610-DM SN 222144 R

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
3.6.01		KES						FULL CAL., AS PER MANUF.
3.7.01		KES						CHECK

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : NSB-NLON

INSTRUMENT NAME/MODEL: YSI 610 DM, SONDE 6820

SITE NAME: DRMO & AREA A

MANUFACTURER: YSI

PROJECT No.: 7363 & 5082

SERIAL NUMBER: SONDE SN 97K1095 AD
610-DM SN 318311R

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
3.6.01		KES						FULL CAL, AS PER MANUF.
3.7.01		KES						CHECK

APPENDIX D

GROUNDWATER SAMPLE LOGSHEETS AND LOW-FLOW PURGE DATA SHEETS

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 4-GW01S - ~~GW~~-06
Sample Location: 4MW01S
Sampled By: T. ROJAHN
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Eh mV	Salinity ppt
Date: 3/11/01								
Time: 0915								
Method: Peristaltic Pump	CLEAR	5.38	0.624	7.72	0.02	9.57	195	0.31

PURGE DATA:

Date: 3/11/01
Method: Peristaltic Pump
Monitor Reading (ppm): —
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 20.30
Static Water Level (WL): 5.36
One Casing Volume(gal): 9.3L
Start Purge (hrs): 0820
End Purge (hrs): 0910
Total Purge Time (min): 50
Total Vol. Purged (gal): 2.6

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	(2) ~~1~~ - Qt. Amber Glass	✓
TCL PAH	4° C	(1) ~~2~~ Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	(1)L ~~1-500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	(1)L ~~1-500 ml~~ PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	(1)L ~~1-500 ml~~ PE	✓

x2

OBSERVATIONS / NOTES:

Also collected 4-GW01S-06-F & ~~4-GW~~ (TR) GWFD-031101-01-F

Circle if Applicable:

MS/MSD —

Duplicate ID No.: GWFD-031101-01

Signature(s): Terry Rojahn

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 4MW015
DATE: 3/11/01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
0820	5.36	200								Start Purge
0830	5.36	150	5.60	0.642	0.83	11.79	7.36	148	0.31	2000ml CLEAR
0840	5.36	150	5.45	0.635	0.42	11.34	7.27	173	0.31	3500ml "
0850	5.39	200	5.39	0.628	0.16	9.32	7.62	189	0.31	5500ml "
0900	5.41	200	5.38	0.627	0.21	9.61	7.69	192	0.31	7500ml "
0910	5.42	200	5.38	0.624	0.02	9.37	7.72	195	0.31	9500ml "
0915										Start Sampling

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2LGW20S ~~GW-06~~
Sample Location: 2LMW20S
Sampled By: R. SIMPSON
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Eh mV	Salinity ppt
Date: 3·12·01								
Time: 0910								
Method: Peristaltic Pump	CLEAR	12.31	0.515	9.9	3.6	0.73	27	0.25

PURGE DATA:

Date: 3·12·01
Method: Peristaltic Pump
Monitor Reading (ppm):
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 18.90
Static Water Level (WL): 13.64
One Casing Volume(gal):
Start Purge (hrs): 0803
End Purge (hrs): 0910
Total Purge Time (min): 67
Total Vol. Purged (gal):

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 1- ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 1 - ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

FLUSH MNT. IS IN BAD SHAPE, PAD BUSTED & LOWER THAN ROAD, ≈ 3" OF WATER ON PAD & IN VAULT. PUMPED WATER OUT OF VAULT PRIOR TO START OF PURGE

WELL PAD SHOULD BE REPLACED

Circle if Applicable:

MS/MSD —
Duplicate ID No.: —

Signature(s): [signature]

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2LMW20S
DATE: 3.12.01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
0903	13.64									START PURGE
0907	13.85	120	12.22	0.663	65	4.44	10.0	0	0.32	
0915			12.32	0.620	38	2.38	9.8	13	0.30	CLEAR, NO ODOR
0825			12.31	0.550	19	1.09	9.6	27	0.27	
0835			12.36	0.525	16	0.95	9.8	22	0.26	
0845			12.33	0.544	11	0.74	9.7	19	0.26	
0850			12.36	0.528	6.9	0.78	9.9	24	0.26	
0855			12.33	0.516	4.2	0.74	10.0	26	0.25	
0900			12.31	0.515	3.6	0.73	9.9	27	0.25	END PURGE

SIGNATURE(S):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2W-GW215 ~~GW~~-06
Sample Location: 2WGW215
Sampled By: T. ROJAHN
C.O.C. No.: 030801-01
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 3-08-01	Color	pH	S.C.	Temp.	Turbidity	DO	Eh	Salinity
Time: 1815	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	ppt
Method: Peristaltic Pump	CLEAR	6.14	4.585	3.38	1.7	1.18	-234	2.40

PURGE DATA:

Date: 3-08-01
Method: Peristaltic Pump
Monitor Reading (ppm): —
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 17.3
Static Water Level (WL): 4.23
One Casing Volume(gal): 8.1 L
Start Purge (hrs): 1555
End Purge (hrs): 1810
Total Purge Time (min): 135
Total Vol. Purged (gal): 25 L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	(10) ~~3~~ 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	~~2~~ Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	(12) 1 - Qt. Amber Glass	✓
TCL PAH	4° C	~~2~~ Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	(3) L ~~1-500 mL~~ PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	(3) L ~~1-500 ml~~ PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	(6) ~~2~~ 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	(2) 1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	(2) L ~~1-500 ml~~ PE	✓

OBSERVATIONS / NOTES:

ALSO Collected GWFD-030801-01-F & 2W-GW215-06-01
SULFUR ODOR

Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	GWFD-030801-01

Signature(s): Terry Graham

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2WMW215
DATE: 3-08-01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
1555	4.23									→ Start Pump; Black Fines settling down
1605	5.13	150	6.79	44.02	7.8	0.08	7.52	-358	28.19	1500 Black Fines
1615	5.25	100	~~7.34~~ 6.75	42.70	6.2	0.07	7.34	-252	26.96	2500 " "
1625	5.32	100	6.68	38.95	6.2	2.25	7.22	-347	24.43	3500 " "
1635	5.48	100	6.61	35.70	6.9	4.21	7.11	-344	22.38	4500 " "
1645	5.65	100	6.55	33.60	34	3.61	6.86	-366	20.75	5500 " "
1655	5.83	100	6.48	31.55	52	3.11	6.82	-385	18.93	6500 " "
1705	6.35	250	6.37	21.50	7999	2.36	6.77	-500	12.30	9000 " " Note 1
1715	6.25	250	6.60	42.54	39.6	1.91	7.73	-436	27.16	11500 " "
1725	6.32	250	6.46	21.36	165	3.20	6.64	-444	12.57	14000 " "
1735	6.34	250	6.38	17.97	83	4.11	6.15	-465	10.53	16500 " "
1745	6.37	250	6.21	11.10	7.7	3.15	5.20	-251	8.15	19000 " " Note 2
1755	6.39	250	6.17	4.786	4.0	1.83	3.51	-242	2.53	21500 " "
1800	6.39	250	6.16	4.732	2.5	1.17	3.37	-239	2.51	22750 " "
1805	6.38	250	6.15	4.625	3.0	1.04	3.34	-236	2.45	24000 " "
1810	6.38	250	6.14	4.595	1.7	1.18	3.38	-234	2.40	25250 " "
1815										→ Start Sampling

Note 1 = Clean out near bottom of screen
Note 2 = Move intake to [illegible] screen [illegible]

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 3-GW375 ~~GW-06~~
Sample Location: 3MW375
Sampled By: T. ROJAHN
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 3/12/01	Color	pH	S.C.	Temp.	Turbidity	DO	Eh	Salinity
Time: 0905	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	ppt
Method: Peristaltic Pump	CLEAR	5.99	2.455	6.11	0.01	4.31	+70	1.25

PURGE DATA:

Date: 3/12/01
Method: Peristaltic Pump
Monitor Reading (ppm): —
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 8.45
Static Water Level (WL): 3.53
One Casing Volume(~~gal~~): 3.1L
Start Purge (hrs): 0813
End Purge (hrs): 0903
Total Purge Time (min): 50
Total Vol. Purged (~~gal~~): 4.6L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1L ~~1 - 500 ml~~ PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1L ~~1 - 500 ml~~ PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1L ~~1 - 500 ml~~ PE	✓

OBSERVATIONS / NOTES:

Also Collected 3-GW375-06-F
Intake @ MID SCREEN

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): Tony Rojahn

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 Job# 5082

WELL ID.: 3MW37S
DATE: 3/12/01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
									→	Start Purge
0813	3.53	100								
0823	3.92	100	6.24	2.552	3.35	8.15	6.20	+ 80	1.32	1000ml CLEAR
0833	3.73	100	6.11	2.507	0.01	5.34	5.91	+ 79	1.29	2000ml "
0843	3.77	100	6.05	2.468	0.02	4.42	5.92	+ 75	1.27	3000ml "
0853	3.78	80	6.02	2.457	0.00	4.37	6.08	+ 72	1.26	3800ml "
0903	3.78	80	5.99	2.455	0.01	4.31	6.11	+ 70	1.25	4600ml "
									→	Start sampling
0905										

SIGNATURE(S): T. R

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2WMW38DS GW-06
Sample Location: 2WMW38DS
Sampled By: K SIMPSON
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 3.10.12.14.01	Color	pH	S.C.	Temp.	Turbidity	DO	Eh	Salinity
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	ppt
Method: Peristaltic Pump	CLEAR	6.75	0.87	6.8	1.0	3.34	118.2	0.43

PURGE DATA:

Date: 3.7.01
Method: Peristaltic Pump
Monitor Reading (ppm): 0
Well Casing Diameter & Material
Type: 2" PVC IRS
Total Well Depth (TD): ~~12.51~~ 11.90
Static Water Level (WL): 5.58
One Casing Volume(gal): 1.0
Start Purge (hrs): 0800
End Purge (hrs): 0900
Total Purge Time (min): 60
Total Vol. Purged (gal): 1.7

See Attached Low Flow Purge Data Sheet for Purge Data

PURGED DRY 3.7.01
3.12.01 @ 1015 WL = 8.85 START SAMPLING

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	0800 HRS 3/10
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	0800 HRS 3/10
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	0800 HRS 3/10
TCL PAH	4° C	2 - Qt. Amber Glass	1015 HRS 3/12
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 ML 1- ~~500~~ ml PE	1015 HRS 3/12
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 ML 1 - ~~500~~ ml PE	0730 HRS 3/14
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	0800 HRS 3/10
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	1015 HRS 3/12
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 ML 1 - ~~500 ml~~ PE	1015 HRS 3/12

OBSERVATIONS / NOTES:

3.9.01 @ 0835 WL = 9.15'
3.10.01 @ 0755 WL = 8.27'
DRIED out Sampling 3/10/01

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2W NW 39 DS
DATE: 3.7.01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
0900	KS ~~E~~ 5.59	—	—	—	—	—	—	—	—	START PURGE
0906	6.76	100	7.04	0.733	1.3	7.60	6.4	317.9	0.36	CLEAR, NO ODOR
0915	7.31	↓	6.73	0.708	1.3	6.46	6.1	331.7	0.35	
0923	8.14	↓	6.63	0.719	1.2	5.06	6.1	277.0	0.35	
0933	9.95	↓	6.65	0.745	1.1	4.04	6.2	178.0	0.36	
0945	10.48	120	6.75	0.854	1.1	2.79	6.7	129.9	0.42	
0953	11.67	↓	6.75	0.874	1.0	3.34	6.8	118.2	0.43	DRY

DATE: 3/5/01 KS

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2W-GW39DS-06 ~~2W-GW39DS-GW-06~~ TR
Sample Location: 2W MW39DS
Sampled By: T. ROJAHN
C.O.C. No.: 030801-01
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 3/8/01	Color	pH	S.C.	Temp.	Turbidity	DO	Eh	Salinity
Time: 0735	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	ppt
Method: Peristaltic Pump	CLEAR	6.76	4.320	8.4	37	0.95	-110	2.30

PURGE DATA:

Date: 3/7/01
Method: Peristaltic Pump
Monitor Reading (ppm): —
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 16.70
Static Water Level (WL): 3.00
One Casing Volume(gal): 5.7L
Start Purge (hrs): 0912
End Purge (hrs): 0944
Total Purge Time (min): 92
Total Vol. Purged (gal): 3.9

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	(2) ~~4~~ - Qt. Amber Glass	✓
TCL PAH	4° C	(1) ~~2~~ - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 ML 1 - ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 ML 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 ML 1 - ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

Also Collected 2W-GW39DS-06-F

Circle if Applicable:

MS/MSD — Duplicate ID No.: —

Signature(s): Terry Rojahn

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2WMW39DS
DATE: 03-07-01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
0812	3.00	200	—	—	—	—	—	—	—	
0822	6.79	200	6.64	3.522	70	2.88	7.21	-80	1.95	3000 Clear w/BRN Partic.
0832	8.40	200	6.64	3.505	100	2.78	7.21	-78	1.84	5000 " w/ " "
0842	9.52	125	6.64	3.481	100	2.89	7.01	-74	1.83	6250 " w/ " "
0852	10.68	150	6.63	3.440	100	2.75	7.26	-71	1.81	7750 " w/ " "
0902	11.74	150	6.62	3.250	55	2.28	7.49	-73	1.70	9250 " SI Particulate
0912	13.05	150	6.61	3.534	20	1.48	7.68	-84	1.87	10750 " " "
0922	14.08	150	6.63	3.965	12	1.10	7.84	-95	2.10	12250 " Trace "
0932	15.33	150	6.67	4.320	22	1.04	8.17	-104	2.30	13750 " SI. "
0942	16.34	150	6.76	4.320	37	0.95	8.40	-110	2.30	15250 " " "
0944									→	Dry

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2W MW 40DS GW-06
Sample Location: 2W MW 40DS
Sampled By: K. SIMPSON
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA: ↓ 3.7.01 ↓

Date: 3.9.01	Color	pH	S.C.	Temp.	Turbidity	DO	Eh	Salinity
Time: 0930	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	ppt
Method: Peristaltic Pump	CLEAR	6.86	20.48	8.3	10.6	0.61	-320.5	12.25

PURGE DATA: ↓ 3.9.01 ↓

Date: 3.7.01	↳ VERY LT. YELLOW TR. BLACK FINES SLIGHT EFFERVESCE IN HCL, SULFUR ODOR
Method: Peristaltic Pump	
Monitor Reading (ppm):	TURB 9.6
Well Casing Diameter & Material	See Attached Low Flow Purge Data Sheet for Purge Data
Type: 2" PVC	
Total Well Depth (TD): 16.62	
Static Water Level (WL): 2.64	PURGED DRY 3.7.01
One Casing Volume(gal): 2.3	3.8.01 @ 0825 WL = 10.10'
Start Purge (hrs): 0920	
End Purge (hrs): 1037	
Total Purge Time (min): 77	
Total Vol. Purged (gal): 2.9	ALL WL MEASUREMENTS @ AREA A ARE TOP OF PVC

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 ML 1- ~~500 ml~~ PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 ML 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 ML 1 - ~~500~~ ml PE	✓
		LOW VOL ON 1 AMBER	PEST/PCBs
		≈ 1/2 FULL	

OBSERVATIONS / NOTES:

WL 3.9.01 @ 0850 = 7.08'
START SAMPLING 3.9.01 @ 0924 PUMP RATE 110 ML/MIN

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): K. Simpson

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2WMW40DS
DATE: 3.7.01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
0920	2.64	—	—	—	—	—	—	—	—	START PURGE
0925	4.60	140	6.62	31.23	6.9	0.57	7.4	-304.4	19.27	SULFUR ODOR +
0935	5.99	↓	6.50	29.03	5.2	0.62	7.4	-320.0	17.87	TR. BLACK FINES
0945	7.22	↓	6.50	25.78	4.5	0.71	7.6	-316.8	15.50	
0955	8.59	↓	6.50	21.62	3.8	0.42	7.9	-301.1	12.73	
1005	9.95	↓	6.79	15.40	4.1	0.36	7.8	-295.8	8.99	
1015	12.01	↓	6.79	17.25	4.6	0.41	8.0	-314.9	10.08	
1025	13.26	↓	6.78	17.65	7.9	0.43	8.1	-316.6	10.43	
1035	15.30	↓	6.86	20.48	10.6	0.61	8.3	-320.5	12.25	
1037	15.86	↓								DRY TO PUMP INLET
										LOWERED & PUMPED DRY

SIGNATURE(S): [illegible]

16.6 BTM

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2WGW41DS ~~GW-06~~
Sample Location: 2WMW41DS
Sampled By: R. SIMPSON
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Eh	Salinity
Date: 3-9-01 (T.R.)	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	ppt
Time: 0900								
Method: Peristaltic Pump		6.56	21.88	8.6	2.9	2.93	-323.5	13.01

PURGE DATA:

Date: 3-7-01 (K.S.)
Method: Peristaltic Pump
Monitor Reading (ppm): —
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 16.65
Static Water Level (WL): 2.15
One Casing Volume(gal): 2.4
Start Purge (hrs): 1610
End Purge (hrs): 1755
Total Purge Time (min): 105
Total Vol. Purged (gal): 4.2

→ CLEAR W/TR. BLACK FINES

See Attached Low Flow Purge Data Sheet for Purge Data

3-8-01 WL @ 0830 = 11.06'

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 ML 1- ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 ML 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 ML 1 ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

ALSO Collected 2WGW41DS-06-F
Significant off-gassing during VOC filling.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [illegible]

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2WMW41DS
DATE: 3·7·01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
										START PURGE
1610	2.15									
1616	3.59	150	6.74	27.37	23	1.52	7.9	-332.1	16.76	SULFUR ODOR
1625	4.98		6.77	24.97	12	0.22	8.2	-328.3	15.03	BLACK FINES
1635	6.57		6.56	21.00	6.4	0.42	7.9	-313.1	12.47	
1645	7.64		6.53	18.77	5.6	0.64	7.8	-320.6	11.16	
1655	9.15		6.56	14.02	4.9	0.63	7.7	-325.5	8.04	
1705	10.41		6.76	13.06	4.7	0.98	7.5	-312.7	7.50	
1715	11.61		6.65	13.91	4.5	0.91	7.7	-308.2	8.08	CLEARING
1725	12.79		6.77	15.67	5.0	1.30	8.0	-313.2	9.19	
1735	13.88		6.60	17.37	3.5	1.58	8.1	-311.2	10.15	
1745	15.01		6.60	19.00	3.1	2.45	8.4	-320.9	11.24	
1755	16.02		6.56	21.88	2.9	2.93	8.6	-323.5	13.01	DRY, TO PUMP INLET

SIGNATURE(S): [illegible]

16.65 BTM

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2WGW42DS ~~GW06~~ (02)
Sample Location: 2WMW42DS
Sampled By: T. ROJAHN
C.O.C. No.: 030801-01
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Eh mV	Salinity ppt
Date: 3/8/01								
Time: 0905								
Method: Peristaltic Pump	Blackish	6.71	26.70	8.26	32	0.08	-340	16.06

PURGE DATA:

Date: 3-07-01
Method: Peristaltic Pump
Monitor Reading (ppm): –
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 16.91
Static Water Level (WL): 2.05
One Casing Volume(gal): 9.3 L
Start Purge (hrs): 1620
End Purge (hrs): 1745
Total Purge Time (min): 85
Total Vol. Purged (gal): 3.7

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	(2) ~~1~~ Qt. Amber Glass	✓
TCL PAH	4° C	(1) ~~2~~ Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 ML 1- ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 ML 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 ML 1 - ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

Also Collected 2W-GW42DS-06-F

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): Terry Rojahn

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2WMW42DS
DATE: 3-07-01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
1620	2.05	200							→	Start Purge
1630	6.35	200	6.83	32.70	3.77	0.16	7.75	-368	19.19	2000 ml Clear w/Plastic
1640	8.20	150	6.62	17.67	2.62	0.16	6.82	-324	10.37	3500 ml " "
1650	9.91	150	6.61	18.17	7.21	0.35	7.01	-322	10.69	5000 ml " "
1700	10.88	150	6.60	17.79	9.09	0.38	7.13	-319	10.35	6500 ml " "
1710	11.96	150	6.69	14.38	15.00	0.33	6.95	-342	8.29	8000 ml " "
1720	13.27	150	6.71	16.55	35.00	0.30	7.20	-342	9.75	9500 ml Blackish
1730	14.58	150	6.73	20.86	24.9	0.08	7.25	-340	12.38	11000 ml Blackish
1740	16.10	200	6.71	26.70	32.0	0.08	8.26	-340	16.06	1300 ml "
1745									→	DRY

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2WGW43DS ~~GW-06~~
Sample Location: 2WMW43 DS
Sampled By: K. SIMPSON
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Eh mV	Salinity ppt
Date: 3.13-01								
Time: 1410								
Method: Peristaltic Pump	CLEAR	6.27	33.31	8.7	32	7.18	-346	20.74

PURGE DATA:

Date: 3.11.01
Method: Peristaltic Pump
Monitor Reading (ppm):
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 15.68
Static Water Level (WL): 1.97
One Casing Volume(gal): 2.2
Start Purge (hrs): 0852
End Purge (hrs): 1037
Total Purge Time (min): 105
Total Vol. Purged (gal): 3.5

COLOR TURNS DARK GRAY AS WL DROPS

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE EFFERVESCING IN HCL

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	4 ~~2~~ - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	4 ~~2~~ - Qt. Amber Glass	✓
TCL PAH	4° C	3 ~~2~~ - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 1- ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 1 ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 1 - ~~500~~ ml PE	✓
		X VOL FOR MS/MSD	
		ON SVOC, PEST/PCB & PAHs	

OBSERVATIONS / NOTES:

MS/MSD ON; SVOC, PEST/PCB & PAHs ONLY

Circle if Applicable:

MS/MSD YES

Duplicate ID No.: —

Signature(s): [illegible]

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2WMW43DS
DATE: 3-11-01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
										START PURGE
0852	197									CLEAR w/BLACK FINES
0856	3.66	125	6.40	32.57	18	2.41	7.2	-330	23.57	SULFUR ODOR
0905	4.69		6.34	35.94	19	1.36	7.3	-349	22.49	
0915	5.82		6.16	33.65	19	0.64	7.4	-337	20.94	
0925	6.78		6.25	29.37	19	4.05	7.4	-341	18.07	
0935	7.69		6.35	27.49	19	4.01	7.4	-332	16.77	
0945	8.71		6.68	26.97	21	4.88	7.6	-334	16.44	
0955	9.79		6.39	26.82	25	4.13	7.9	-337	16.35	
1005	11.03		6.37	27.00	25	5.86	8.1	-341	16.45	
1015	12.92		6.32	29.15	25	5.26	8.6	-343	17.88	
1025	13.76		6.32	29.98	28	6.46	8.6	-347	18.45	
1030	14.36		6.29	31.92	31	6.96	8.6	-347	19.76	
1035	15.04		6.27	33.31	32	7.18	8.7	-346	20.7	
1037	15.30									DRY, TO PUMP INLET

SIGNATURE(S):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2WGW44DS GW-06
Sample Location: 2WMW44DS
Sampled By: K. SIMPSON
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Eh mV	Salinity ppt
Date: 3/9/01								
Time: 1045								
Method: Peristaltic Pump		6.65	18.25	10.3	34	6.25	-324	10.84

PURGE DATA:

Date: 3.9.01
Method: Peristaltic Pump
Monitor Reading (ppm):
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 16.77
Static Water Level (WL): 1.35 T. PVC
One Casing Volume(gal):
Start Purge (hrs): 0850
End Purge (hrs): 1044
Total Purge Time (min): 114
Total Vol. Purged (gal):

Clear w/ Tx Black Fines

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 ML 1-~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 ML 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 ML 1 - ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

Also collected 2W-GW44DS-06-F
Significant off gasing while filling 40ml vials w/HCl

Circle if Applicable:

MS/MSD —
Duplicate ID No.: —

Signature(s): [illegible]

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2WMW44DS
DATE: 3.9.01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
0850	1.35	—	—	—	—	—	—	—	—	START PURGE
0958	2.92	150	6.84	37.19	27	1.92	7.7	-363	23.37	SULFUR ODOR,
0910	4.85		6.48	34.75	18	0.87	7.9	-337	21.71	BLACK FINES
0920	6.33		6.46	32.35	11	4.49	8.3	-334	20.10	
0930	7.27		6.57	27.74	15	7.84	8.6	-341	16.93	
0940	8.11		6.44	19.99	19	6.74	8.8	-334	12.04	
0950	9.46		6.46	10.56	36	5.54	8.9	-326	6.01	
1000	10.80		6.50	12.01	48	4.40	9.1	-322	6.83	
1010	12.13		6.52	13.75	65	5.67	9.3	-323	7.92	
1020	13.68		6.56	15.68	63	6.27	9.5	-318	9.13	
1030	14.65		6.59	18.04	65	5.86	9.9	-318	10.65	
1040	15.96		6.65	18.25	34	6.25	10.3	-324	10.84	
1044	16.07		—	—	—	—	—	—	—	DRY, TO PUMP INLET

SIGNATURE(S): [illegible]

BTM : 16.77

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: ZW- GW45D5 ~~GW-06~~
Sample Location: ZW-W45D5
Sampled By: T. ROJAHN
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 3/11/01	Color	pH	S.C.	Temp.	Turbidity	DO	Eh	Salinity
Time: 1325	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	ppt
Method:Peristaltic Pump	Black Fines	6.55	39.59	9.30	33	2.82	-359	25.40

PURGE DATA:

Date: 3-10-01	→ Blackish
Method:Peristaltic Pump	
Monitor Reading (ppm): —	See Attached Low Flow Purge Data Sheet for Purge Data
Well Casing Diameter & Material Type: 2" PVC	
Total Well Depth (TD): 16.75'	
Static Water Level (WL): 1.75'	
One Casing Volume(~~gal~~): 9.3 L	
Start Purge (hrs): 1045	
End Purge (hrs): 1155	
Total Purge Time (min): 70	
Total Vol. Purged (~~gal~~): 12.0 L	

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	(1) L ~~1 - 500 ml~~ PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	(1) L ~~1 - 500 ml~~ PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	(1) L ~~1 - 500 ml~~ PE	✓

OBSERVATIONS / NOTES:

Significant off gasing was observed while filling VOA vials

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Troy Gal

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2WMW45DS
DATE: 3-10-01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
10:45	1.75	150								Start Purge Sulfur odor
1055	4.74	150	6.68	42.63	2.4	0.01	8.28	-379	26.90	1500 TC Black Fines → CLEAR
1105	6.68	150	6.61	24.22	2.2	4.37	7.97	-382	24.15	3000 ml CLEAR
1115	8.38	150	6.50	20.10	55	3.63	7.94	-370	11.56	4500 ml Black Fines
1125	9.88	150	6.38	16.37	83	2.45	7.71	-360	9.50	6000 ml " "
1135	11.65	200	6.42	21.10	56	2.29	7.68	-357	12.70	8000 ml " "
1145	14.03	200	6.53	29.27	24	2.17	8.31	-359	18.22	10000 ml " "
1155	15.82	200	6.55	39.59	33	2.82	9.30	-359	25.40	12000 ml " "
1150										DRY

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2WGW46DS GW-06
Sample Location: 2WMW46DS
Sampled By: R. SIMPSON
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Eh mV	Salinity ppt
Date: 3.11.01 Time: 1325 Method: Peristaltic Pump	CLEAR	6.65	37.46	8.3	33	6.84	-357	23.59

PURGE DATA:

Date: 3.10.01
Method: Peristaltic Pump
Monitor Reading (ppm):
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 17.32
Static Water Level (WL): 1.03
One Casing Volume(gal): 2.7
Start Purge (hrs): 1046
End Purge (hrs): 1218
Total Purge Time (min): 92
Total Vol. Purged (gal): 3.0

TURB. 3.11.01 @ 1340 = 5.7 NTU
SULFUR ODOR

See Attached Low Flow Purge Data Sheet for Purge Data

SOME EFFERVESCING IN HCL

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 ML 1- ~~500 ml~~ PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 ML 1 - ~~500 ml~~ PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 ML 1 - ~~500 ml~~ PE	✓

OBSERVATIONS / NOTES:

WL 3.11.01 @ 1305 = 5.81

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [illegible]

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 Job# 5082

WELL ID.: 2WMW46DS
DATE: 3.10.01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
1046	1.03	—	—	—	—	—	—	—	—	START PURGE.
1052	2.82	125	7.14	36.26	7.7	3.77	7.9	-341	22.72	BLACK COLOR, SULFUR
1100	4.45	6.75	~~7.53~~ KS	37.30	7.0	0.10	7.5	-365	23.38	ODOR
1110	6.51		6.74	37.31	14	1.07	7.4	-377	23.43	CLEARING AFTER 7 MINS.
1120	8.30		6.62	37.29	28	1.05	7.3	-364	23.41	
1130	9.53		6.61	37.29	31	5.02	7.5	-369	23.41	
1140	10.78		6.64	37.26	30	3.93	7.7	-368	23.39	
1150	12.06		6.62	37.34	32	6.52	7.7	-372	23.44	
1200	13.33		6.61	37.37	34	6.13	8.0	-363	23.46	
1210	14.67		6.62	37.29	33	7.84	8.2	-365	23.45	
1218	15.78		6.65	37.46	33	6.84	8.3	-357	23.59	
~~1216~~ KS										DRY TO PUMP INLET @ 1218

SIGNATURE(S): [illegible]

TD = 17.32

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NSB-NLON / AREA A
Project No.: CTO 203 5082

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: 2WGW47DS GW-06
Sample Location: 2W MW47DS
Sampled By: R. SIMPSON
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA: 3.8.01

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Eh mV	Salinity ppt
Date: 3.9.01								
Time: 1045								
Method: Peristaltic Pump	CLEAR	6.36	19.57	8.2	260	5.49	-379	11.46

PURGE DATA: 3.9.01

Date: 3.8.01
Method: Peristaltic Pump
Monitor Reading (ppm):
Well Casing Diameter & Material
Type: 2" PVC
Total Well Depth (TD): 16.20
Static Water Level (WL): 1.19
One Casing Volume(gal): 2.5
Start Purge (hrs): 1548
End Purge (hrs): 1808
Total Purge Time (min): 140
Total Vol. Purged (gal): 6.1 → MEASURED

PUMP RATE 3.9.01 = 120 ML/M
TURB = 31
NO ODOR TR BLACK FINES
See Attached Low Flow Purge Data Sheet for Purge Data

T. PVC

WL 3.9.01 @ 1040 = 1.13'

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 ML 1- ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 ML 1 ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 ML 1 - ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

NO MS/MSD COLLECTED

Circle if Applicable:

MS/MSD ~~YES~~ KS

Duplicate ID No.: —

Signature(s): [illegible]

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NSB-NLON / AREA A - ROUND 6
PROJECT NUMBER: CTO 203 job# 5082

WELL ID.: 2WMW47DS
DATE: 3·8·01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	S. Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celcius)	Eh mV	Sal. ppt	Comments
1548	1.19	—	—	—	—	—	—	—	—	START PURGE
1555	2.33	100	6.64	30.19	6.9	1.27	6.5	-333	18.46	BLACK FINES
1605	3.10	↓	6.53	26.66	4.8	1.44	6.4	-324	16.09	SULFUR ODOR
1615	3.55		6.39	22.34	9.7	2.10	6.3	-323	13.40	
1625	3.85		6.24	18.95	15	2.63	6.3	-369	11.08	
1635	3.91		6.09	16.38	51	4.30	5.9	-419	16.42	
1645	4.03		6.04	13.53	90	3.89	5.9	-432	7.79	TURNING BLACK
1655	4.38	225	6.06	10.50	110	4.05	5.8	-392	5.99	TURN UP PUMP TO
1705	5.41	↓	6.03	5.399	92	4.49	6.0	-384	2.92	PUMP DRY & SAMPLE
1715	6.20		6.01	5.115	39	4.61	5.9	-357	2.75	FRIDAY 3.9.01
1725	7.95	275	6.11	4.587	43	5.65	5.6	-259	2.44	
1735	10.00		6.06	5.160	50	6.16	5.5	-211	2.75	
1745	11.78		6.11	7.960	41	5.66	6.1	-229	4.50	
1755	13.50		6.17	12.88	30	5.97	6.9	-249	7.53	
1805	15.29		6.36	19.57	260	5.49	8.2	-379	11.46	
1809	15.97	↓								DRY TO PUMP INLET

SIGNATURE(S): [illegible] BIM - 16.2

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NSB_NLON / Area A
Project No.: CTO 203 5082

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: WETLAND
[] QA Sample Type:

Sample ID No.: SWSG-18 06
Sample Location: 2W MW41 DS
Sampled By: SIMPSON/ROJAHN
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3.13.01 / Time: 0920 / Depth: 3" BELOW SURF. / Method: DIRECT FILL	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity ppt	Eh mV
	CLEAR	6.57	0.285	1.0	11	12.41	0.13	104

SAMPLE COLLECTION INFORMATION:

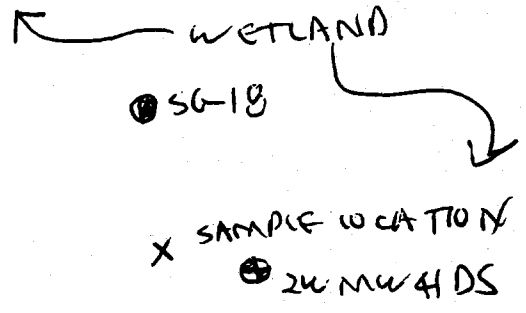
Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 1 - ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

SOME ORGANIC MATERIAL IN SAMPLE

HIGH WATER LEVEL

MAP:



GABION BASKETS
RIP-RAP
ASPHALT

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NSB_NLON / Area A
Project No.: CTO 203 5082

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: WETLAND
[] QA Sample Type:

Sample ID No.: SWSG-24 06
Sample Location: WELL 47 DS
Sampled By: SIMPSON/ROJAHN
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity ppt	Eh mV
Date: 3.13.01 Time: 0910 Depth: 3" BELOW SURF. Method: DIRECT FILL	CLEAR	7.55	0.037	0.5	6.4	14.47	0.02	89

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 1- ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 1 - ~~500~~ ml PE	✓

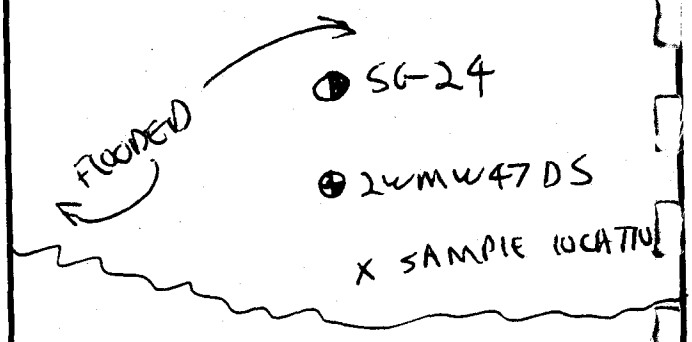
OBSERVATIONS / NOTES:

SOME ORGANIC MATERIAL IN SAMPLE
HIGH WATER LEVEL (RAIN) ≈ 5" OVER WELL PAD

TD = 12" OF WATER @ SAMPLE LOCATION

MAP:

DEPLOYED PARKING
RIP - RAP
GABION BASKETS



Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NSB_NLON / Area A
Project No.: CTO 203 5082

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: WETLAND
[] QA Sample Type:

Sample ID No.: SWSG 19 06
Sample Location: SG-19
Sampled By: SIMPSON/ROJAHN
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity ppt	Eh mV
Date: 3-12-01 Time: 1510 Depth: 3" BELOW SURF. Method:	CLEAR	6.56	0.389	2.8	2.9	8.59	0.19	-66

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	10 ~~6~~ - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	6 ~~2~~ - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	6 ~~4~~ - Qt. Amber Glass	✓
TCL PAH	4° C	4 ~~2~~ - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	3 (000) ~~1~~ - ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	3 (000) ~~1~~ - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	6 ~~2~~ - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	2 ~~1~~ - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	2 (000) ~~1~~ - ~~500~~ ml PE	✓
		X VOL FOR: SAMPLE,	
		DUP + MS/MSD	

OBSERVATIONS / NOTES:

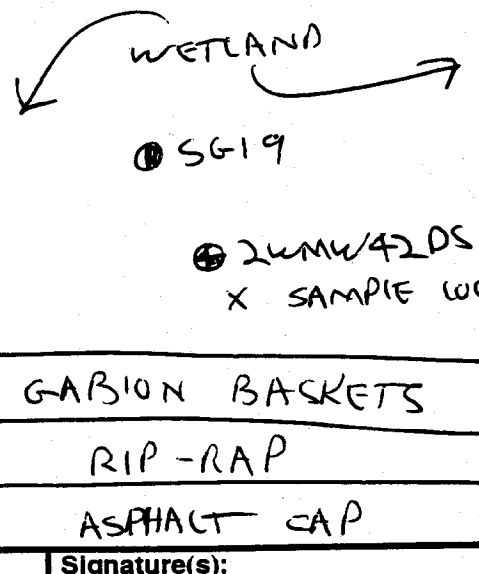
TD OF WATER 12"

SOME ORGANIC MATERIAL IN SAMPLE

WATER ≈ 6" ABOVE WELL PAD.

SLIGHT FLOW NOTED TOWARDS DIKE

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
YES	SWFD 031201 01

Signature(s):

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NSB_NLON / Area A
Project No.: CTO 203 5082

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: WETLAND
[] QA Sample Type:

Sample ID No.: SWSG-23 06
Sample Location: 2WMW46 DS
Sampled By: SIMPSON/ROJAHN
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity ppt	Eh mV
Date: 3·11·01 Time: 1525 Depth: 12" * Method: DIRECT FILL	CLEAR	8.03	0.069	0.8	5.0	6.28	0.03	-45

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 1- ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 1 - ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

DUG SAMPLE PIT ≈ 19" Ø X 10" DEEP ON 3.9.01

TRACE ORGANIC MATERIAL IN SAMPLE

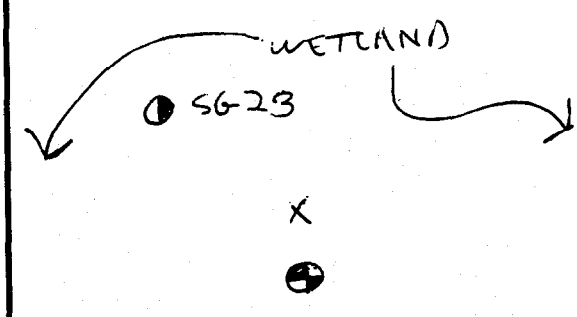
WATER ON ALL SIDES OF WELL PAD

* TD = 12" SAMPLE COLLECTE 3" BELOW SURFACE

STANDING WATER, NO FLOW NOTED

SOME ICE/SNOW @ SAMPLE LOCATION

MAP:



GABION BASKETS

RIP-RAP

DEPLOYED PARKING

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NSB_NLON / Area A
Project No.: CTO 203 5082

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: WETLAND
[] QA Sample Type:

Sample ID No.: SWSG2006
Sample Location: MW43
Sampled By: SIMPSON/ROJAHN
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity ppt	Eh mV
Date: 3.13.01 Time: 0950 Depth: 3" BELOW SURF. Method: DIRECT FILL	CLEAR	6.67	0.380	1.7	12	7.29	0.18	39

SAMPLE COLLECTION INFORMATION:

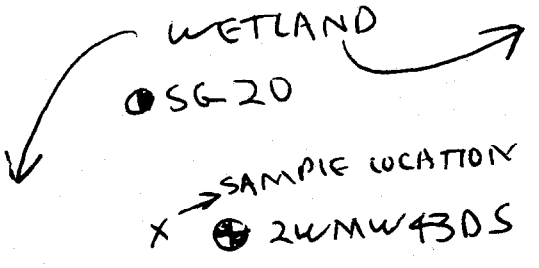
Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	—
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	—
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	—
TCL PAH	4° C	2 - Qt. Amber Glass	—
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	—
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	—
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	—
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 1 - ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

SOME ORGANIC MATERIAL IN SAMPLE

WATER & ICE ≈ 6" ABOVE WELL PAD

MAP:



GABION BASKETS

RIP-RAP

ASPHALT

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NSB_NLON / Area A
Project No.: CTO 203 5082

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: WETLAND
[] QA Sample Type:

Sample ID No.: 3MSP 01 06
Sample Location: SEEP
Sampled By: SIMPSON/ROJAHN
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity ppt	Eh mV
Date: 3.13.01 Time: 1008 Depth: 2" BELOW SURFACE Method: DIRECT FILL	CLOUDY	6.52	0.172	3.5	42	14.27	0.08	66

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	—
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	—
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	—
TCL PAH	4° C	2 - Qt. Amber Glass	—
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 1- ~~500~~ ml PE	—
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	—
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	—
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 1 - ~~500~~ ml PE	✓

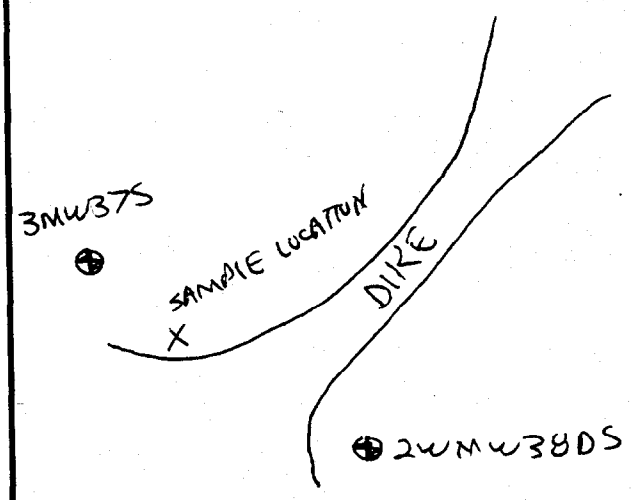
OBSERVATIONS / NOTES:

SOME ORGANIC MATERIAL IN SAMPLE

SAMPLE @ ORIGINAL (SURVEYED) LOCATION

FLOW = APPROX. 25 GPM

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NSB_NLON / Area A
Project No.: CTO 203 5082

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: WETLAND
[] QA Sample Type:

Sample ID No.: SWSG22 06
Sample Location: 2WMW45DS
Sampled By: SIMPSON/ROJAHN
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity ppt	Eh mV
Date: 3-11-01 Time: 1555 Depth: 3" Method: DIRECT FILL	CLEAR	7.03	0.491	3.5	10	1.27	0.24	-68

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 1- ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 1 - ~~500~~ ml PE	✓

OBSERVATIONS / NOTES:

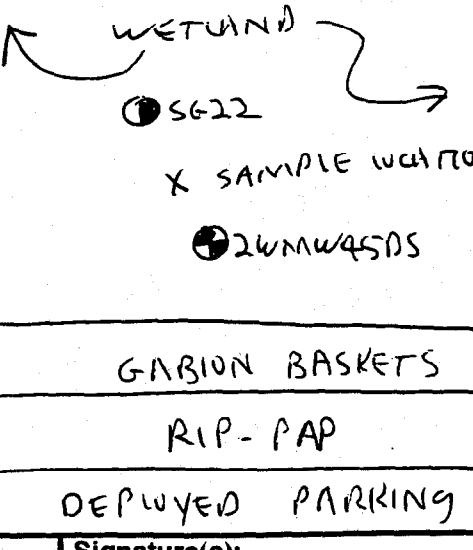
DUG SAMPLE PIT ≈ 19" Ø X 10" DEEP ON 3.9.01

TRACE ORGANIC MATERIAL IN SAMPLE

SOME ICE/SNOW ON SURFACE WATER

STANDING WATER NO FLOW NOTED

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NSB_NLON / Area A
Project No.: CTO 203 5082

[] Stream
[] Spring
[] Pond
[] Lake
[X] Other: WETLAND
[] QA Sample Type:

Sample ID No.: SWSG-21 06
Sample Location: 2WMW44DS
Sampled By: SIMPSON/ROSMAN
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity ppt	Eh mV
Date: 3 11.01 Time: 1620 Depth: 3" BELOW SURF. Method: DIRECT FILL	CLEAR	7.15	0.097	1.2	4.7	11.25	0.05	5.0

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOLATILES	HCL / 4° C	3 - 40 ml Vial	✓
TCL SEMIVOLATILES	4° C	2 - Qt. Amber Glass	✓
TCL PEST/PCBs	4° C	1 - Qt. Amber Glass	✓
TCL PAH	4° C	2 - Qt. Amber Glass	✓
TAL METALS (TOTAL) + Hardness	HNO_3 / 4° C	1000 1- ~~500~~ ml PE	✓
TAL METALS (DISSOLVED)	HNO_3 / 4° C	1000 1 - ~~500~~ ml PE	✓
Total Organic Carbon (TOC)	HCL / 4° C	2 - 40 mL Glass	✓
Chemical Oxygen Demand (COD)	H_2SO_4 / 4° C	1 - 250 mL PE	✓
Alkalinity, Chloride, Sulfate, TDS	4° C	1000 1 - ~~500~~ ml PE	✓

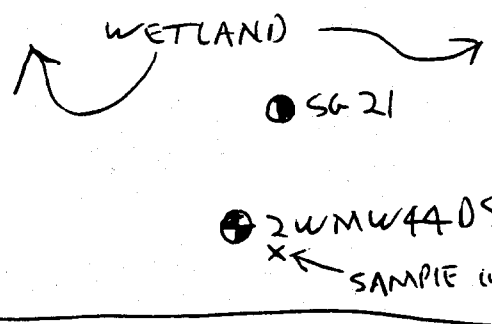
OBSERVATIONS / NOTES:

AREA OF PONDED WATER
NO DIGGING REQUIRED

TRACE ORGANIC MATERIAL IN SAMPLE
12" DEEP
ICE/SNOW ON WATER SURFACE

NO FLOW STANDING WATER

MAP:



GABION BASKETS
RIP - RAP
ASPHALT
CRANE TEST PAD

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

APPENDIX E

CHAIN OF CUSTODY RECORDS

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 031001-03 | PAGE 1 OF 1

PROJECT NO: CTO 208 # 5082	SITE NAME: NSB-NION
PROJECT MANAGER AND PHONE NUMBER	MARKE MENGEL 412 921 8723
LABORATORY NAME AND CONTACT:	STL / VERONICA BORTOT
SAMPLERS (SIGNATURE)	
FIELD OPERATIONS LEADER AND PHONE NUMBER	REITH SIMPSON 412 921 8131
ADDRESS	450 WILLIAM PITT WAY
CARRIER/WAYBILL NUMBER	FEDEX AB# 8169 3433 4423
CITY, STATE	PGH, PA 15239

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2001	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	TCL VOC	TCL SVOC	TCL PEST/PCB	TCL PAH	TAL METALS, HARDNESS	TAL DIS. METALS	TOC	ALK, CHLOR, SULFATE, TDS	COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)						G	G	G	G	P	P	G	P	P
PRESERVATIVE USED						HCL	/	/	/	HNO_3	HNO_3	HCL	H_2SO_4	/
3/10	0800	2WGW38DS-06	GW	G	9	3	2	2				2		
3/12	1015	2WGW39DS-06	GW	G	4				1	1			1	1
3/14	0730	2WGW38DS06F	GW	G	1						1			
3/13	1410	2WGW43DS06	GW	G	19	3	4	4	3	1		2	1	1	RUN MISMISDON SVOC, PEST/PCB, PAH
↓	1410	2WGW43DS06F	GW	G	1						1			
3/10	0730	TB031001 02	AQ	G	2	2								TRIP BLANK

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	3.19.01	1640	1. RECEIVED BY	3.19.01	1640
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

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FORM NO. TINUS-001

AREA A

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER 030901-01 | PAGE 1 OF 1

PROJECT NO: CTO 203 #5082	SITE NAME: NSB NLON	PROJECT MANAGER AND PHONE NUMBER: MARK MENGEL (412) 921-8723	LABORATORY NAME AND CONTACT: STL / VERONICA BORTOT
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER AND PHONE NUMBER: KEITH SIMPSON (412) 921-8131	ADDRESS: 450 WILLIAM PITT WAY
		CARRIER/WAYBILL NUMBER: FED. EX / AB# 8169 3433 4331	CITY, STATE: PITTSBURGH PA 15238

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2001	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	TCL VOC	TCL SVOC	TCL PEST/PCB	TCL PAH	TAL METALS + HARDNESS	TAL DIS. METALS	TOC	COD	Alk., chlor, sul. & TDS	COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)						G	G	G	G	P	P	G	P/P		
PRESERVATIVE USED						HCl	/	/	/	HNO3	HNO3	HCl	H2SO4	/	
03/09	1045	2W-GW47DS-06	GW	G	13	3	2	2	1	1	—	2	1	1	
03/09	1045	2W-GW47DS-06-F	GW	G	1	—	—	—	—	—	1	—	—	—	
03/09	1045	2W-GW44DS-06	GW	G	13	3	2	2	1	1	—	2	1	1	
03/09	1045	2W-GW44DS-06-F	GW	G	1	—	—	—	—	—	1	—	—	—	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY Terry Rogalski	3-09-01	1630	1. RECEIVED BY FEDERAL EXPRESS	3-09-01	1630
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

ACCOMPANIES SAMPLE | YELLOW (FIELD COPY) | PINK (FILE COPY)

FORM NO. TTNUS-001 3/9

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 031001-01 | PAGE 1 OF 1

PROJECT NO: CTO 203 5082
SITE NAME: NSB-NION
PROJECT MANAGER AND PHONE NUMBER: MARK MENGEL 412 921 8723
LABORATORY NAME AND CONTACT: STL/VERONICA BORTOT
SAMPLERS (SIGNATURE): Terry Roach, Keith S. Simpson
FIELD OPERATIONS LEADER AND PHONE NUMBER: KEITH SIMPSON 412 921 7090
ADDRESS: 450 WILLIAM PITT WAY
CARRIER/WAYBILL NUMBER: FEDEX AB# 8169 3433 4364
CITY, STATE: PGH PA 15238

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2001	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	TCL VOC	TCL SVOC	TCL PEST/PCB	TCL PAH	TAL METALS + HARDNESS	TAL METALS DISSOLVED	TOC	COD	ALK, CHLOR, SULFATE, TDS	COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)						G	G	G	G	P	P	G	P	P	
PRESERVATIVE USED						HCL	/	/	/	HNO3	HNO3	HCL	H2SO4	/	
3/10	0700	TB 031001 01	AQ	G	2	2									TRIP BLANK
3/11	0000	GW FD 031101-01	GW	G	14	3	2	2	1	1	1	2	1	1	DUP OF 4GW01S
	0915	4GW01S-06	GW	G	14	3	2	2	1	1	1	2	1	1	
	1325	2W GW45DS-06	GW	G	14	3	2	2	1	1	1	2	1	1	
	1325	2W GW 46DS-06	GW	G	14	3	2	2	1	1	1	2	1	1	
	1525	SW ~~GW~~ KS SG 23-06	SW	G	14	3	2	2	1	1	1	2	1	1	
	1555	SW SG 22-06	SW	G	14	3	2	2	1	1	1	2	1	1	
	1620	SW SG 21-06	SW	G	14	3	2	2	1	1	1	2	1	1	
3/12	0905	3GW 37S-06	GW	G	14	3	2	2	1	1	1	2	1	1	
	0910	2LGW 20S-06	GW	G	14	3	2	2	1	1	1	2	1	1	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: Keith S. Simpson	3-12-01	1635	1. RECEIVED BY: FEDEX	3-12-01	1635
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: NOTE: ALL DIS. METALS IDs END IN "F" (FILTERED)

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FORM NO. TtNUS-001

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 031201-01

PAGE 1 OF 1

PROJECT NO: CTO 208 # 5092

SITE NAME: NSB-NIOW

PROJECT MANAGER AND PHONE NUMBER: MARK MENGEL 412 921 8723

LABORATORY NAME AND CONTACT: STL / VERONIC BORTOT

SAMPLERS (SIGNATURE): [signature]

FIELD OPERATIONS LEADER AND PHONE NUMBER: KEITH SIMPSON 412 921 8131

ADDRESS: 450 WILLIAM PITT WAY

CARRIER/WAYBILL NUMBER: FEDEX AB# 8169343343 86

CITY, STATE: PGH, PA 15238

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2001	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	TCL VOC	TCL SVOC	TCL PEST/PCB	TCL PAH	TAL METALS + HARDNESS	TAL DIS. METALS	TPC	ACK, CHLORIDE, SULFATE	TDS	COMMENTS
				CONTAINER TYPE PLASTIC (P) or GLASS (G)		G	G	G	G	P	P	G	P	P	
				PRESERVATIVE USED		HCL	/	/	/	HNO3	HNO3	HCL	H2SO4	/	
3/12	1435	TB031201 01	AQ	G	2	2									TRIP BLANK
↓	000	SWFD 03120101	SW	G	14	3	2	2	1	1	1	2	1	1	DUP OF SWSG-19
↓	1510	SW SG19-06	SW	G	28	7	4	4	3	2	2	4	1	1	RUN ALSO MS/MSD
3/13	0910	SW SG-24-06	SW	G	14	3	2	2	1	1	1	2	1	1	
↓	0920	SW SG-18-06	SW	G	14	3	2	2	1	1	1	2	1	1	
↓	0950	SW SG-20-06	SW	G	14	3	2	2	1	1	1	2	1	1	
↓	1008	3M SP 01-06	SP	G	14	3	2	2	1	1	1	2	1	1	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY [signature]	3.13.01	1635	1. RECEIVED BY FEDEX	3.13.01	1635
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: NOTE: ALL SOLVED METALS IDS ENDING IN "F" (FILTERED)

(ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK COPY

FORM NO. TtNUS-001 3/00

AREA - A

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER 030801-01 | PAGE 1 OF 1

PROJECT NO: GT0203 # 5082	SITE NAME: NSB NLON	PROJECT MANAGER AND PHONE NUMBER: MARK MENGEL 412 921 8723	LABORATORY NAME AND CONTACT: STL - VERONICA BORTOT
SAMPLERS (SIGNATURE): [signature] Terry Rogalski		FIELD OPERATIONS LEADER AND PHONE NUMBER: KEITH SIMPSON 412 921 8131	ADDRESS: 450 WILLIAM PITT WAY
		CARRIER/WAYBILL NUMBER: FED EX / AB # 8169 3433 4331	CITY, STATE: PITTSBURGH PA 15238

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2001	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	TCL VOC	TCL SVOC	TCL PEST/PCB	TCL PAH	TAL METALS + HARDNESS	TAL DIS. METALS	TOC	COD	ALK, CHLOR, SULF, TDS	COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)						G	G	G	G	P	P	G	P	P	
PRESERVATIVE USED						HCL	-	-	-	HNO3	HNO3	HCL	H2SO4	-	
03/08	0700	TB-030801-01	AQ	G	2	2									TRIP BLANK
03/08	0735	2W-GW39DS-06	GW	G	14	3	2	2	1	*2	-	2	1	1	
03/08	0735	2W-GW39DS-06-F	GW	G	2	-	-	-	-	-	*2	-	-	-	
03/08	0905	2W-GW42DS-06	GW	G	14	3	2	2	1	*2	-	2	1	1	
03/08	0905	2W-GW42DS-06-F	GW	G	2	-	-	-	-	-	*2	-	-	-	
03/08	1815	2W-GW21S-06	GW	G	22	7	4	2	1	2	-	4	1	1	DO MS/MSD
03/08	1815	2W-GW21S-06-F	GW	G	2	-	-	-	-	-	2	-	-	-	DO MS/MSD
03/08	0000	GWFD-030801-01	GW	G	13	3	2	2	1	1	-	2	1	1	FROM GW21S
03/08	0000	GWFD-030801-01-F	GW	G	1	-	-	-	-	-	1	-	-	-	" "
03/09	0900	2W-GW41DS-06	GW	G	13	3	2	2	1	1	-	2	1	1	
03/09	0900	2W-GW41DS-06-F	GW	G	1	-	-	-	-	-	1	-	-	-	
03/09	0930	2W-GW40DS-06	GW	G	13	3	2	2	1	1	-	2	1	1	
03/09	0930	2W-GW40DS-06-F	GW	G	1	-	-	-	-	-	1	-	-	-	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: Terry Rogalski	3.9.01	1630	1. RECEIVED BY: FEDEX	3-09-01	1630
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS *(2) 500ml HDPE Containers

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

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FORM NO. TINUS-001

APPENDIX F

DATA VALIDATION LETTERS AND LABORATORY DATA SHEETS

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. MENGEL** **DATE:** **APRIL 16, 2001**

FROM: **ERIN M. FAUST** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – TAL METALS AND MISCELLANEOUS PARAMETERS**
CTO-203 NSB NEW LONDON
SAMPLE DELIVERY GROUP (SDG) – NL006

SAMPLES: 20/Aqueous/

2LGW20S-06	2WGW21S-06	2WGW39DS-06
2WGW40DS-06	2WGW41DS-06	2WGW42DS-06
2WGW44DS-06	2WGW47DS-06	2WGW45DS-06
2WGW46DS-06	3GW37S-06	4GW01S-06
GWFD030801-01	GWFD031101-01	SWFD031201-01
SWSG19-06	SWSG24-06	SWSG21-06
SWSG22-06	SWSG23-06	

Overview

The sample set for CTO 203, NSB New London, SDG NL006, consists of twenty (20) aqueous environmental samples. Six (6) field duplicate pairs (GWFD030801-01 / 2WGW21S-06, GWFD030801-01-F / 2WGW21S-06-F, GWFD031101-01 / 4GW01S-06, GWFD031101-01-F / 4GW01S-06-F, SWFD031201-01 / SWSG19-06 and SWFD031201-01-F / SWSG19-06-F) are included within this SDG.

All samples were analyzed for total target analyte list (TAL) metals, dissolved TAL metals, hardness, total organic carbon (TOC), chemical oxygen demand (COD), alkalinity, chloride, sulfate and total dissolved solids (TDS). Samples designated –F were analyzed for dissolved metals. The samples were collected by TetraTech NUS from March 8 through 13, 2001 and analyzed by Severn Trent Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Metals analyses were conducted using Contract Laboratory Program (CLP) method ILM04.0. Analyses for hardness were conducted using Standard Methods, 18th Edition, method 2340B. TOC analyses were conducted using EPA method 415.1. COD analyses were conducted using EPA method 410.4. Analyses for alkalinity were conducted using EPA method 310.1. Analyses for chloride and sulfate were conducted using EPA method 300.0. TDS analyses were conducted using EPA method 160.1.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA). Sulfate and chloride analyses were conducted using Ion Chromatography (IC).

These data were evaluated based on the following parameters:

* • Data Completeness
  • Holding Times
  • Calibration Recoveries
  • Laboratory Blank Analyses
* • Laboratory Control Sample Results
  • ICP Interference Check Sample Results
  • Matrix Spike Results
  • Laboratory Duplicate Results
  • Field Duplicate Results
  • ICP Serial Dilution Results
  • Sample Quantitation
* • Detection Limits

* - All quality control criteria were met for this parameter.

Holding Times

The 7-day holding time for TDS analyses was exceeded by one day for samples SWFD031201-01 and SWSG19-06. The positive results reported for TDS for both of these samples were qualified as estimated, "J".

Calibration Recoveries

The contract required detection limit (CRDL) percent recovery (%R) for selenium was < 80% quality control limit. All nondetected results reported for selenium were qualified as estimated, "UJ".

The CRDL percent recoveries for cadmium were both above and below the 80-120% quality control limits. All nondetected results reported for cadmium were qualified as estimated, "UJ".

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method / preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum	128 µg/L	640 µg/L
Barium	2.1 µg/L	10.5 µg/L
Beryllium	1.7 µg/L	8.5 µg/L
Cadmium	2.8 µg/L	14.0 µg/L
Calcium	148 µg/L	740 µg/L
Chromium	4.8 µg/L	24.0 µg/L
Cobalt	4.8 µg/L	24.0 µg/L
Copper	3.3 µg/L	16.5 µg/L
Iron	63.2 µg/L	316 µg/L
Magnesium	162 µg/L	810 µg/L
Manganese	2.2 µg/L	11.0 µg/L
Potassium	931 µg/L	4655 µg/L
Selenium	4.2 µg/L	21.0 µg/L

Silver	5.5 µg/L	27.5 µg/L
Sodium	121 µg/L	605 µg/L
Vanadium	4.0 µg/L	20.0 µg/L
Zinc[1]	6.2 µg/L	31.0 µg/L
TOC[1]	1.2 mg/L	6.0 mg/L

[1] Maximum concentration present in a laboratory preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the blank action levels for all of the above analytes except calcium, silver and sodium were qualified, "U", as a result of blank contamination.

ICP Interference Check Sample Results

The interfering analyte iron was present in samples 2WGW40DS-06 and 2WGW40DS-06-F at concentrations, which were comparable to the level of iron in the Interference Check Sample (ICS) solution. Several analytes namely barium, cadmium, cobalt, manganese and sodium were present in the ICS solution at concentrations which exceeded two times the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for barium and cadmium in the affected samples. The nondetected results reported for cadmium were qualified as estimated, "UJ". The positive results reported for barium were qualified as estimated, "J".

The interfering analyte magnesium was present in samples 2WGW41DS-06, 2WGW41DS-06-F, 2WGW42DS-06 and 2WGW42DS-06-F at concentrations, which were comparable to the level of magnesium in the Interference Check Sample (ICS) solution. Several analytes namely barium, cadmium, cobalt, manganese and sodium were present in the ICS solution at concentrations which exceeded two times the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for cadmium in the affected samples. The nondetected results reported for cadmium were qualified as estimated, "UJ".

The interfering analytes calcium and magnesium were present in samples 2WGW46DS-06 and 2WGW46DS-06-F at concentrations, which were comparable to the levels of calcium and magnesium in the Interference Check Sample (ICS) solution. Several analytes namely barium, cadmium, cobalt, manganese and sodium were present in the ICS solution at concentrations which exceeded two times the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for cadmium in the affected samples. The nondetected results reported for cadmium were qualified as estimated, "UJ".

The interfering analyte iron was present in samples 2WGW47DS-06 and 2WGW47DS-06-F at concentrations, which were comparable to the level of iron in the Interference Check Sample (ICS) solution. Several analytes namely barium, cadmium, cobalt, manganese and sodium were present in the ICS solution at concentrations which exceeded two times the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for cadmium in the affected samples. The nondetected result reported for cadmium in sample 2WGW47DS-06-F was qualified as estimated, "UJ". The result reported for cadmium in sample 2WGW47DS-06 was qualified "U" as a result of laboratory blank contamination; therefore, no further validation action was taken.

Matrix Spike Results

The Matrix Spike (MS) percent recovery for selenium was < 75% quality control limit, affecting the total metals matrix. All nondetected results reported for total selenium were qualified as estimated, "UJ".

Laboratory Duplicate Results

Laboratory duplicate imprecision (RPD>20%) was noted for sodium, affecting the dissolved metals matrix. All positive results reported for dissolved sodium were qualified as estimated, "J".

ICP Serial Dilution Results

The ICP serial dilution percent difference for sodium was >15% quality control limit, affecting both the total and dissolved metals matrices. All positive results reported for sodium were qualified as estimated, "J".

Field Duplicate Results

Field duplicate imprecision (>2X CRDL) was noted for zinc, affecting the dissolved metals matrix. All positive results reported for dissolved zinc were qualified as estimated, "J".

Sample Quantitation

Due to uncertainty near the IDL, all positive results less than two times the IDL for antimony, arsenic, nickel and thallium were qualified as estimated, "J".

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method / preparation blanks. Cadmium and selenium were qualified due to calibration noncompliance. The holding time was exceeded for TDS for two samples. Laboratory duplicate imprecision was noted for sodium, affecting the dissolved metals matrix.

Other Factors Affecting Data Quality: Antimony, arsenic, nickel and thallium were qualified due to uncertainty near the IDL. Selenium was qualified due to MS noncompliance, affecting the total metals matrix. Sodium was qualified due to ICP serial dilution noncompliance in both the total and dissolved metals matrices. Field duplicate imprecision was noted for zinc, affecting the dissolved metals matrix. The interfering analytes iron, calcium and/or magnesium were present in several samples.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", February 1989 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

TetraTech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCD% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2LGW20S-06			2LGW20S-06-F			2WGW21S-06			2WGW21S-06-F		
SAMPLE DATE:	03/12/01			03/12/01			03/08/01			03/08/01		
LABORATORY ID:	C1C130227009			C1C130227009			C1C100172003			C1C100172003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	196	U	A	14.7	U		34.4	U	A	32.3	U	A
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	2.6	U		2.6	U		3.3	J	P	4.8	J	P
BARIUM	70.1			67.2			19.5			19.9		
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	UJ	C	2.6	UJ	C	2.6	UJ	C	2.6	UJ	C
CALCIUM	53700			53200			33100			36500		
CHROMIUM	2.6	U		2.6	U		2.7	U	A	2.9	U	A
COBALT	4.1	U		4.1	U		5.3	U	A	4.6	U	A
COPPER	4.7	U	A	2.0	U		2.0	U		2.0	U	
IRON	1190			754			44000			42800		
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	6250			6060			79800			91100		
MANGANESE	313			306			449			445		
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	5760			5480			27400			30500		
SELENIUM	3.8	UJ	CD	3.8	UJ	C	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	39200	J	I	38800	J	FI	740000	J	I	670000	J	FI
THALLIUM	6.0	U		6.4	J	P	6.0	U		6.0	U	
VANADIUM	4.3	U	A	2.6	U	A	4.0	U	A	5.3	U	A
ZINC	49.1			22.8	U	A	2.8	U	A	2.0	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW39DS-06	2WGW39DS-06-F	2WGW40DS-06	2WGW40DS-06-F
SAMPLE DATE:	03/08/01	03/08/01	03/09/01	03/09/01
LABORATORY ID:	C1C100172001	C1C100172001	C1C100172006	C1C100172006
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	14.7	U		14.7	U		426	U	A	14.7	U	
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	2.6	U		2.6	U		5.8	J	P	4.8	J	P
BARIUM	58.4			51.4			45.5	J	K	46.9	J	K
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	U		2.6	UJ	C	5.2	UJ	CK	2.6	UJ	CK
CALCIUM	40800			39300			163000			166000		
CHROMIUM	2.6	UJ	C	2.6	U		2.6	U		2.6	U	
COBALT	4.1	U		4.1	U		4.1	U		4.1	U	
COPPER	2.0	U		2.0	U		2.0	U		2.0	U	
IRON	10300			8100			11400			5600		
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	11700			12500			492000			501000		
MANGANESE	773			710			310			288		
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	11400			12200			181000			182000		
SELENIUM	3.8	UJ	CD	3.8	UJ	C	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	267000	J	I	274000	J	FI	4890000	J	I	5360000	J	FI
THALLIUM	6.0	U		6.0	U		6.8	J	P	6.0	U	
VANADIUM	3.3	U	A	2.6	U		9.5	U	A	8.6	U	A
ZINC	3.6	U	A	3.6	U	A	3.9	U	A	3.0	U	A

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW41DS-06			2WGW41DS-06-F			2WGW42DS-06			2WGW42DS-06-F		
SAMPLE DATE:	03/09/01			03/09/01			03/08/01			03/08/01		
LABORATORY ID:	C1C100172005			C1C100172005			C1C100172002			C1C100172002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	97.9	U	A	14.7	U		101	U	A	14.7	U	
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	11.5			9.0			10.0			7.2		
BARIUM	41.2			42.5			42.5			42.6		
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	UJ	CK	2.6	UJ	CK	2.6	UJ	CK	2.6	UJ	CK
CALCIUM	169000			173000			127000			144000		
CHROMIUM	2.6	U		2.6	U		2.6	U		2.6	U	
COBALT	4.1	U		4.1	U		4.1	U		4.1	U	
COPPER	2.0	U		2.0	U		2.0	U		2.0	U	
IRON	21700			13700			10700			3340		
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	481000			497000			276000			351000		
MANGANESE	545			500			458			378		
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	171000			181000			105000			131000		
SELENIUM	3.8	UJ	CD	3.8	UJ	C	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	4570000	J	FI	4510000	J	FI	2600000	J	I	3390000	J	FI
THALLIUM	6.0	U		6.0	U		6.0	U		6.0	U	
VANADIUM	10.6	U	A	8.2	U	A	8.2	U	A	8.3	U	A
ZINC	4.1	U	A	19.6	U	A	5.2	U	A	2.0	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW44DS-06			2WGW44DS-06-F			2WGW45DS-06			2WGW45DS-06-F		
SAMPLE DATE:	03/09/01			03/09/01			03/11/01			03/11/01		
LABORATORY ID:	C1C100172008			C1C100172008			C1C130227003			C1C130227003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	77.3	U	A	14.7	U		37.4	U	A	14.7	U	
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	3.4	J	P	2.6	U		9.7			7.4		
BARIUM	34.4			32.2			12.9			11.2		
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	UJ	C	2.6	UJ	C	2.6	UJ	C	5.2	UJ	C
CALCIUM	88100			86700			55800			52100		
CHROMIUM	2.6	U		2.6	U		2.6	U		2.6	U	
COBALT	4.2	U	A	4.1	U		4.1	U		4.6	U	A
COPPER	2.0	U		2.0	U		2.0	U		2.0	U	
IRON	27300			21000			67600			58000		
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	97700			98700			110000			103000		
MANGANESE	825			808			562			514		
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	36700			36800			43500			40300		
SELENIUM	3.8	UJ	CD	4.4	U	A	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	794000	J	I	816000	J	FI	1020000	J	I	965000	J	FI
THALLIUM	6.0	U		6.0	U		6.0	U		6.0	U	
VANADIUM	3.5	U	A	2.6	U		6.1	U	A	3.6	U	A
ZINC	3.3	U	A	6.2	U	A	6.1	U	A	3.9	U	A

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW46DS-06			2WGW46DS-06-F			2WGW47DS-06			2WGW47DS-06-F		
SAMPLE DATE:	03/11/01			03/11/01			03/09/01			03/09/01		
LABORATORY ID:	C1C130227004			C1C130227004			C1C100172007			C1C100172007		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	361	U	A	14.7	U		46.4	U	A	14.7	U	
ANTIMONY	3.2	U		3.4	J	P	3.2	U		3.2	U	
ARSENIC	16.6			24.1			7.0			6.8		
BARIUM	63.3			78.5			332			323		
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	UJ	CK	2.6	UJ	CK	3.9	U	A	2.6	UJ	CK
CALCIUM	274000			302000			46700			42100		
CHROMIUM	2.6	U		2.6	U		2.6	U		2.6	U	
COBALT	4.1	U		4.1	U		20.0	U	A	19.6	U	A
COPPER	2.0	U		2.0	U		2.0	U		2.0	U	
IRON	6080			164	U	A	110000			103000		
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	905000			992000			60700			55600		
MANGANESE	238			178			5090			4720		
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	261000			300000			41200			38400		
SELENIUM	3.8	UJ	CD	3.8	UJ	C	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	7600000	J	I	9270000	J	FI	747000	J	I	688000	J	FI
THALLIUM	6.4	J	P	6.0	U		6.0	U		6.0	U	
VANADIUM	10.7	U	A	9.4	U	A	2.6	U		2.6	U	
ZINC	16.2	U	A	2.0	U		7.2	U	A	11.4	U	A

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	3GW37S-06			3GW37S-06-F			4GW01S-06			4GW01S-06-F		
SAMPLE DATE:	03/12/01			03/12/01			03/11/01			03/11/01		
LABORATORY ID:	C1C130227008			C1C130227008			C1C130227002			C1C130227002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	14.7	U		14.7	U		45.0	U	A	38.9	U	A
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	2.6	U		2.6	U		2.6	U		2.6	U	
BARIUM	297			269			98.7			100		
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	UJ	C	2.6	U		2.6	UJ	C	2.6	UJ	C
CALCIUM	60000			55300			31700			31900		
CHROMIUM	2.6	U		2.6	UJ	C	2.6	U		2.6	U	
COBALT	11.3	U	A	9.0	U	A	4.1	U		4.1	U	
COPPER	2.0	U		2.0	U		2.0	U		2.0	U	
IRON	386			354			8.6	U	A	8.7	U	A
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	35400			32200			4660			4720		
MANGANESE	5060			4640			3.6	U	A	3.9	U	A
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	12400			11000			4220	U	A	3880	U	A
SELENIUM	3.8	UJ	CD	3.8	UJ	C	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	341000	J	I	309000	J	FI	66700	J	I	69900	J	FI
THALLIUM	6.0	U		6.0	U		6.0	U		6.0	U	
VANADIUM	2.6	U		2.6	U		2.6	U		2.6	U	
ZINC	2.4	U	A	4.3	U	A	11.1	U	A	44.3	J	G

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	GWFD030801-01			GWFD030801-01-F			GWFD031101-01			GWFD031101-01-F		
SAMPLE DATE:	03/08/01			03/08/01			03/11/01			03/11/01		
LABORATORY ID:	C1C100172004			C1C100172004			C1C130227001			C1C130227001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	2WGW21S-06			2WGW21S-06-F			4GW01S-06			4GW01S-06-F		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	37.5	U	A	27.3	U	A	52.0	U	A	43.2	U	A
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	2.6	U		3.8	J	P	2.6	U		2.6	U	
BARIUM	19.5			19.5			97.9			103		
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	UJ	C	2.6	UJ	C	2.6	UJ	C	2.6	UJ	C
CALCIUM	32600			34200			32700			33800		
CHROMIUM	2.7	U	A	2.6	U		2.6	U		2.6	U	
COBALT	4.1	U		5.7	U	A	4.1	U		4.1	U	
COPPER	2.0	U		2.0	U		2.0	U		2.0	U	
IRON	43700			42200			13.2	U	A	3.8	U	
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	79400			84300			4720			4850		
MANGANESE	448			437			9.8	U	A	3.4	U	A
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	27400			28200			4040	U	A	4230	U	A
SELENIUM	3.8	UJ	CD	3.8	UJ	C	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	749000	J	I	825000	J	FI	65000	J	I	70700	J	FI
THALLIUM	6.0	U		6.0	U		6.0	U		6.0	U	
VANADIUM	3.6	U	A	4.9	U	A	2.6	U		2.6	U	
ZINC	2.0	U		2.6	U	A	11.1	U	A	10.1	U	A

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWFD031201-01			SWFD031201-01-F			SWSG19-06			SWSG19-06-F		
SAMPLE DATE:	03/12/01			03/12/01			03/12/01			03/12/01		
LABORATORY ID:	C1C140199001			C1C140199001			C1C140199002			C1C140199002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	SWSG19-06			SWSG19-06-F								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	27.4	U	A	14.7	U		26.5	U	A	16.0	U	A
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	2.6	U		2.6	U		2.6	U		2.6	UJ	C
BARIUM	33.7			34.2			32.3			36.7		
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	UJ	C	2.6	UJ	C	2.6	U		2.6	U	
CALCIUM	18000			18700			17400			20200		
CHROMIUM	2.6	U		2.6	U		2.6	UJ	C	2.6	U	
COBALT	4.1	U		4.1	U		4.1	U		4.1	U	
COPPER	2.0	U		2.0	U		2.0	U		2.0	U	
IRON	2300			2110			2120			2270		
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	3030			3010			2920			3550		
MANGANESE	193			200			188			213		
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	2700	U	A	2550	U	A	2470	U	A	3310	U	A
SELENIUM	3.8	UJ	CD	3.8	UJ	C	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	61200	J	I	59200	J	FI	59200	J	I	65400	J	FI
THALLIUM	6.0	U		6.0	U		6.0	U		6.0	U	
VANADIUM	2.6	U		2.6	U		2.6	U		2.6	U	
ZINC	38.0			35.8	J	G	32.9			37.1	J	G

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWSG21-06			SWSG21-06-F			SWSG22-06			SWSG22-06-F		
SAMPLE DATE:	03/11/01			03/11/01			03/11/01			03/11/01		
LABORATORY ID:	C1C130227007			C1C130227007			C1C130227006			C1C130227006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	102	U	A	15.9	U	A	251	U	A	14.7	U	
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	2.6	U		2.6	U		2.6	U		2.6	U	
BARIUM	8.4	U	A	8.2	U	A	56.9			47.3		
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	UJ	C	2.6	UJ	C	2.6	UJ	C	3.3	U	A
CALCIUM	2840			3320			35500			33100		
CHROMIUM	2.6	U		2.6	U		2.6	U		2.6	U	
COBALT	4.1	U		4.1	U		4.1	U		4.2	U	A
COPPER	2.0	U		2.0	U		2.4	U	A	2.0	U	
IRON	350			236	U	A	9010			4120		
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	718	U	A	770	U	A	4460			4100		
MANGANESE	89.2			97.9			722			681		
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		10.1	J	P	9.8	U	
POTASSIUM	1920	U	A	2270	U	A	3490	U	A	3320	U	A
SELENIUM	3.8	UJ	CD	3.8	UJ	C	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	8690	J	I	10600	J	FI	48400	J	I	44600	J	FI
THALLIUM	6.0	U		6.0	U		6.0	U		6.0	U	
VANADIUM	3.2	U	A	2.6	U		2.6	U		2.6	U	
ZINC	185			161	J	G	82.3			53.6	J	G

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWSG23-06			SWSG23-06-F			SWSG24-06			SWSG24-06-F		
SAMPLE DATE:	03/11/01			03/11/01			03/13/01			03/13/01		
LABORATORY ID:	C1C130227005			C1C130227005			C1C140199003			C1C140199003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	64.0	U	A	14.7	U		216	U	A	71.2	U	A
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	2.6	U		2.6	U		2.6	U		2.6	U	
BARIUM	9.8	U	A	7.6	U	A	7.2	U	A	23.3		
BERYLLIUM	0.43	U	A	0.13	U		0.43	U	A	0.13	U	
CADMIUM	2.6	UJ	C	2.6	UJ	C	2.6	UJ	C	2.6	UJ	C
CALCIUM	3990			3690			1630			1570		
CHROMIUM	2.6	U		2.6	UJ	C	2.6	U		2.6	U	
COBALT	4.1	U		4.1	U		4.1	U		4.1	U	
COPPER	2.0	U		2.0	U		2.1	U	A	2.1	U	A
IRON	444			110	U	A	314			130	U	A
LEAD	2.0	U		2.0	U		2.0	U		2.0	U	
MAGNESIUM	715	U	A	740	U	A	591	U	A	553	U	A
MANGANESE	56.4			48.0			82.7			78.8		
MERCURY	0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	1040	U	A	981	U	A	1530	U	A	1510	U	A
SELENIUM	3.8	UJ	CD	3.8	UJ	C	3.8	UJ	CD	3.8	UJ	C
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	5080	J	I	5430	J	FI	4580	J	I	4900	J	FI
THALLIUM	6.0	U		6.0	U		6.0	U		6.0	U	
VANADIUM	2.6	U		2.6	U		2.6	U		2.6	U	
ZINC	334			342	J	G	15.8	U	A	13.5	U	A

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2LGW20S-06			2WGW21S-06			GWFD030801-01			2WGW39DS-06		
SAMPLE DATE:	03/12/01			03/08/01			03/08/01			03/08/01		
LABORATORY ID:	C1C130227009			C1C100172003			C1C100172004			C1C100172001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
FIELD DUPLICATE OF:							2WGW21S-06					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
ALKALINITY(MG/L)	152			283			294			136		
CHEMICAL OXYGEN DEMAND(MG/L)	10	U		168			152			39.3		
CHLORIDE(MG/L)	99.4			1380			1360			439		
HARDNESS(MG/L)	160			411			409			150		
SULFATE(MG/L)	10.2			17.7			17.3			1.9		
TOTAL DISSOLVED SOLIDS(MG/L)	323			2430			2290			821		
TOTAL ORGANIC CARBON(MG/L)	1.6	U	A	17.0			18.1			5.2	U	A

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW40DS-06			2WGW41DS-06			2WGW42DS-06			2WGW44DS-06		
SAMPLE DATE:	03/09/01			03/09/01			03/08/01			03/09/01		
LABORATORY ID:	C1C100172006			C1C100172005			C1C100172002			C1C100172008		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
ALKALINITY(MG/L)	1260			1860			865			533		
CHEMICAL OXYGEN DEMAND(MG/L)	1300			799			310			128		
CHLORIDE(MG/L)	8500			7410			4310			1590		
HARDNESS(MG/L)	2430			2400			1450			622		
SULFATE(MG/L)	824			217			108			13.3		
TOTAL DISSOLVED SOLIDS(MG/L)	14400			12000			7280			2960		
TOTAL ORGANIC CARBON(MG/L)	13.0			19.1			10.6			8.9		

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW45DS-06			2WGW46DS-06			2WGW47DS-06			3GW37S-06		
SAMPLE DATE:	03/11/01			03/11/01			03/09/01			03/12/01		
LABORATORY ID:	C1C130227003			C1C130227004			C1C100172007			C1C130227008		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
ALKALINITY(MG/L)	384			2080			343			105		
CHEMICAL OXYGEN DEMAND(MG/L)	246			982			230			65.1		
CHLORIDE(MG/L)	1900			16700			1750			657		
HARDNESS(MG/L)	592			4410			367			296		
SULFATE(MG/L)	20.5			762			1.0	U		28.9		
TOTAL DISSOLVED SOLIDS(MG/L)	3260			28000			3060			1010		
TOTAL ORGANIC CARBON(MG/L)	10.4			12.4			5.9	U	A	2.7	U	A

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	4GW01S-06			GWFD031101-01			SWSG19-06			SWFD031201-01		
SAMPLE DATE:	03/11/01			03/11/01			03/12/01			03/12/01		
LABORATORY ID:	C1C130227002			C1C130227001			C1C140199002			C1C140199001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
FIELD DUPLICATE OF:				4GW01S-06						SWSG19-06		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
ALKALINITY(MG/L)	15.6			15.6			35.7			40.1		
CHEMICAL OXYGEN DEMAND(MG/L)	13.8			18.3			13.8			10	U	
CHLORIDE(MG/L)	148			149			116			116		
HARDNESS(MG/L)	98.2			101			55.5			57.3		
SULFATE(MG/L)	27.9			28.2			10.5			10.8		
TOTAL DISSOLVED SOLIDS(MG/L)	294			316			240	J	H	240	J	H
TOTAL ORGANIC CARBON(MG/L)	0.73	U	A	0.73	U	A	1.8	U	A	1.4	U	A

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWSG21-06			SWSG22-06			SWSG23-06			SWSG24-06		
SAMPLE DATE:	03/11/01			03/11/01			03/11/01			03/13/01		
LABORATORY ID:	C1C130227007			C1C130227006			C1C130227005			C1C140199003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
ALKALINITY(MG/L)	5.0	U		100			8.9			5.0	U	
CHEMICAL OXYGEN DEMAND(MG/L)	10	U		13.8			10	U		10	U	
CHLORIDE(MG/L)	15.7			89.0			7.4			6.1		
HARDNESS(MG/L)	10.1			107			12.9			6.5	U	A
SULFATE(MG/L)	3.8			5.8			2.9			1.8		
TOTAL DISSOLVED SOLIDS(MG/L)	46.0			255			99.0			10	U	
TOTAL ORGANIC CARBON(MG/L)	2.7	U	A	2.8	U	A	0.52	U	A	4.5	U	A

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. MENGEL**	**DATE:**	**APRIL 17, 2001**
FROM:	**ERIN M. FAUST**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – TAL METALS AND MISCELLANEOUS PARAMETERS**
CTO-203 NSB NEW LONDON
SAMPLE DELIVERY GROUP (SDG) – NL007

SAMPLES: 5/Aqueous/

2WGW38DS-06	2WGW43DS-06	3MSP01-06
SWSG18-06	SWSG20-06	

Overview

The sample set for CTO 203, NSB New London, SDG NL007, consists of five (5) aqueous environmental samples.

All samples were analyzed for total and dissolved target analyte list (TAL) metals, hardness, total organic carbon (TOC), chemical oxygen demand (COD), alkalinity, chloride, sulfate and total dissolved solids (TDS). Samples designated –F were analyzed for dissolved metals. The samples were collected by TetraTech NUS on March 10, 12, 13 and 14, 2001 and analyzed by Severn Trent Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Metals analyses were conducted using Contract Laboratory Program (CLP) method ILM04.0. Analyses for hardness were conducted using Standard Methods, 18th Edition, method 2340B. TOC, COD, alkalinity and TDS analyses were conducted using EPA methods 415.1, 410.1, 310.1 and 160.1, respectively. Analyses for chloride and sulfate were conducted using EPA method 300.0.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA). Sulfate and chloride analyses were conducted using Ion Chromatography (IC).

These data were evaluated based on the following parameters:

* • Data Completeness
• Holding Times
• Calibration Recoveries
• Laboratory Blank Analyses
* • Laboratory Control Sample Results
• ICP Interference Check Sample Results
• Matrix Spike Results
* • Laboratory Duplicate Results
• ICP Serial Dilution Results
• Sample Quantitation
* • Detection Limits

* - All quality control criteria were met for this parameter.

Holding Times

The 7-day holding time for TDS analyses was exceeded by three days for sample 2WGW38DS-06. The positive result reported for TDS in this sample was qualified as estimated, "J".

Calibration Recoveries

The contract required detection limit (CRDL) percent recoveries (%Rs) for lead and thallium were < 80% quality control limit. All nondetected results reported for lead and thallium were qualified as estimated, "UJ".

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method / preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum	16.2 µg/L	81.0 µg/L
Barium[1]	0.58 µg/L	2.9 µg/L
Cadmium	2.8 µg/L	14.0 µg/L
Cobalt	4.3 µg/L	21.5 µg/L
Manganese	1.2 µg/L	6.0 µg/L
Silver	3.8 µg/L	19.0 µg/L
Sodium[1]	111 µg/L	555 µg/L
Vanadium	4.9 µg/L	24.5 µg/L
TOC[1]	0.29 mg/L	1.45 mg/L

[1] Maximum concentration present in a laboratory preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluating for blank contamination. Positive results less than the blank action levels for aluminum, silver, TOC and vanadium were qualified, "U", as a result of blank contamination.

ICP Interference Check Sample Results

The interfering analytes calcium and magnesium were present in samples 2WGW43DS-06 and 2WGW43DS-06-F at concentrations, which were comparable to the levels of calcium and magnesium in the Interference Check Sample (ICS) solution. Several analytes namely arsenic, barium, cobalt, lead, manganese, sodium and vanadium were present in the ICS solution at concentrations which exceeded two times the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for arsenic and lead in the affected samples. The nondetected results reported for lead were qualified as estimated, "UJ". The positive results reported for arsenic were qualified as estimated, "J".

Matrix Spike Results

The Matrix Spike (MS) percent recovery for selenium was < 75% quality control limit, affecting the total metals matrix. All nondetected results reported for total selenium were qualified as estimated, "UJ".

The MS percent recovery for TOC was < 75% quality control limit. All positive results reported for TOC were qualified as estimated, "J".

The MS percent recovery for sodium was >125% quality control limit, affecting the dissolved metals matrix. All positive results reported for dissolved sodium were qualified as estimated, "J".

The MS percent recovery for mercury was < 30% quality control limit, affecting both the total and dissolved metals matrix. All nondetected results reported for mercury were qualified as unusable, "UR". The positive result reported for mercury was qualified as estimated, "J".

ICP Serial Dilution Results

The ICP serial dilution percent difference for sodium was >15% quality control limit, affecting the total metals matrix. All positive results reported for total sodium were qualified as estimated, "J".

Sample Quantitation

Due to uncertainty near the IDL, all positive results less than two times the IDL for antimony, arsenic, beryllium, chromium, copper, mercury, thallium and zinc were qualified as estimated, "J".

Notes

The CRDL percent recovery for mercury was >120% quality control limit. No qualification action was taken.

The MS percent recovery for selenium was >125% quality control limit, affecting the dissolved metals matrix. All results reported for dissolved selenium were nondetected; therefore, no validation action was required per regional guidance.

The Post Digestion Spike (PDS) percent recovery for selenium was < 75% quality control limit. No qualification action was taken.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method / preparation blanks. Lead and thallium were qualified due to calibration noncompliance. The holding time was exceeded for TDS for one sample.

Other Factors Affecting Data Quality: Antimony, arsenic, beryllium, chromium, copper, mercury, thallium and zinc were qualified due to uncertainty near the IDL. The nondetected results reported for mercury were rejected due to MS noncompliance. The positive result reported for mercury was qualified due to MS noncompliance. Selenium was qualified due to MS noncompliance, affecting the total metals matrix. TOC was qualified due to MS noncompliance. Sodium was qualified due to ICP serial dilution noncompliance in the total metals matrix. The interfering analytes calcium and magnesium were present in several samples.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", February 1989 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

TetraTech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCD% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	2WGW38DS-06			2WGW38DS-06-F			2WGW43DS-06			2WGW43DS-06-F		
SAMPLE DATE:	03/12/01			03/14/01			03/13/01			03/13/01		
LABORATORY ID:	C1C150224002			C1C150224003			C1C150224004			C1C150224005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	173			14.7	U		1590			294		
ANTIMONY	3.2	U		3.2	U		3.2	U		3.2	U	
ARSENIC	3.0	J	P	2.6	U		13.9	J	K	13.0	J	K
BARIUM	12.4			10.4			117			124		
BERYLLIUM	0.13	U		0.13	U		0.13	U		0.13	U	
CADMIUM	2.6	U		2.6	U		2.6	U		5.2	U	
CALCIUM	50200			49300			280000			309000		
CHROMIUM	2.6	U		2.6	U		8.0			3.2	J	P
COBALT	4.1	U		4.1	U		4.1	U		4.1	U	
COPPER	2.0	U		2.0	U		6.7			4.7		
IRON	381			36.3			20800			1070		
LEAD	2.0	UJ	C	2.0	UJ	C	2.0	UJ	CK	2.0	UJ	CK
MAGNESIUM	20500			19200			786000			868000		
MANGANESE	65.6			20.3			300			243		
MERCURY	0.079	UR	D	0.083	J	PD	0.079	UR	D	0.079	UR	D
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	14600			13300			257000			286000		
SELENIUM	3.8	UJ	D	3.8	U		3.8	UJ	D	3.8	U	
SILVER	2.1	U		2.1	U		2.1	U		2.1	U	
SODIUM	163000	J	I	151000	J	D	6560000	J	I	7650000	J	D
THALLIUM	6.0	UJ	C	6.0	UJ	C	6.0	UJ	C	6.0	UJ	C
VANADIUM	13.8	U	A	8.9	U	A	22.0	U	A	19.5	U	A
ZINC	3.8	J	P	2.0	U		29.5			10.4		

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	3MSP01-06			3MSP01-06-F			SWSG18-06			SWSG18-06-F		
SAMPLE DATE:	03/13/01			03/13/01			03/13/01			03/13/01		
LABORATORY ID:	C1C140209003			C1C140209003			C1C140209001			C1C140209001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	2090			84.1			523			40.1	U	A
ANTIMONY	5.5	J	P	3.2	U		3.2	U		3.2	U	
ARSENIC	3.9	J	P	2.6	U		2.7	J	P	2.6	U	
BARIUM	27.3			18.4			20.2			16.7		
BERYLLIUM	0.14	J	P	0.15	J	P	0.42			0.32		
CADMIUM	2.6	U		2.6	U		2.6	U		2.6	U	
CALCIUM	28700			27600			9090			8970		
CHROMIUM	4.1	J	P	2.6	U		2.6	U		2.6	U	
COBALT	4.1	U		4.1	U		4.1	U		4.1	U	
COPPER	2.0	U		2.0	UJ	C	2.0	U		2.0	U	
IRON	2560			85.8			949			152		
LEAD	11.6	J	C	2.0	UJ	C	2.0	UJ	C	2.0	UJ	C
MAGNESIUM	3320			2910			1630			1650		
MANGANESE	63.0			16.0			146			130		
MERCURY	0.079	UR	D	0.079	UR	D	0.079	UR	D	0.079	U	
NICKEL	9.8	U		9.8	U		9.8	U		9.8	U	
POTASSIUM	3120			3070			1770			1830		
SELENIUM	3.8	UJ	D	3.8	U		3.8	UJ	D	3.8	U	
SILVER	2.1	U		2.1	U		2.1	U		2.7	U	A
SODIUM	7400	J	I	7250	J	D	48600	J	I	47100	J	D
THALLIUM	6.0	UJ	C	6.6	J	CP	6.1	J	CP	6	UJ	C
VANADIUM	7.6	U	A	3.8	U	A	4.0	U	A	3.3	U	A
ZINC	116			65.6			64.5			56.7		

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	SWSG20-06	SWSG20-06-F		
SAMPLE DATE:	03/13/01	03/13/01	/ /	/ /
LABORATORY ID:	C1C140209002	C1C140209002		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
UNITS:	UG/L	UG/L		
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	313	U	A	34.0	U	A						
ANTIMONY	3.2	U		3.2	U							
ARSENIC	3.0	J	P	2.6	U							
BARIUM	15.4			14.5								
BERYLLIUM	0.17	J	P	0.15	J	P						
CADMIUM	2.6	U		2.6	U							
CALCIUM	7110			7490								
CHROMIUM	2.6	U		2.6	U							
COBALT	4.1	U		4.1	U							
COPPER	2.1	J	P	2.0	U							
IRON	784			226								
LEAD	2.0	UJ	C	2.0	UJ	C						
MAGNESIUM	1230			1270								
MANGANESE	125			124								
MERCURY	0.079	UR	D	0.079	UR	D						
NICKEL	9.8	U		9.8	U							
POTASSIUM	2170			1840								
SELENIUM	3.8	UJ	D	3.8	U							
SILVER	3.6	U	A	2.7	U	A						
SODIUM	33900	J	I	37100	J	D						
THALLIUM	6.0	UJ	C	6.0	UJ	C						
VANADIUM	7.2	U	A	3.7	U	A						
ZINC	35.1			25.3								

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	2WGW38DS-06			2WGW38DS-06			2WGW43DS-06			3MSP01-06		
SAMPLE DATE:	03/10/01			03/12/01			03/13/01			03/13/01		
LABORATORY ID:	C1C150224001			C1C150224002			C1C150224004			C1C140209003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
ALKALINITY(MG/L)	297			297			2590			71.4		
CHEMICAL OXYGEN DEMAND(MG/L)	38.4			38.4			969			31.7		
CHLORIDE(MG/L)	186			186			14800			14.1		
HARDNESS(MG/L)	210			210			3940			85.3		
SULFATE(MG/L)	38.7			38.7			126			7.9		
TOTAL DISSOLVED SOLIDS(MG/L)	665	J	H	665	J	H	25200			121		
TOTAL ORGANIC CARBON(MG/L)	8.0	J	D	8.0	J	D	12.6	J	D	6.2	J	D

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	SWSG18-06	SWSG20-06		
SAMPLE DATE:	03/13/01	03/13/01	/ /	/ /
LABORATORY ID:	C1C140209001	C1C140209002		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
ALKALINITY(MG/L)	13.4			11.2								
CHEMICAL OXYGEN DEMAND(MG/L)	10	U		10	U							
CHLORIDE(MG/L)	87.6			66.3								
HARDNESS(MG/L)	29.4			22.8								
SULFATE(MG/L)	6.6			5.7								
TOTAL DISSOLVED SOLIDS(MG/L)	160			137								
TOTAL ORGANIC CARBON(MG/L)	1.1	U	A	1.6	J	D						

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. MENGEL** **DATE: MAY 7 , 2001**

FROM: **ANGELA SCHEETZ** **COPIES: DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION: VOA / SVOA / PEST / PCB / PAH**
CTO 203, NSB NEW LONDON
SDG NL006

SAMPLES: 20 / Aqueous / VOA / SVOA / PEST / PCB / PAH

2LGW20S-06	2WGW21S-06	2WGW39DS-06
2WGW40DS-06	2WGW41DS-06	2WGW42DS-06
2WGW44DS-06	2WGW45DS-06	2WGW46DS-06
2WGW47DS-06	3GW37S-06	4GW01S-06
GWFD030801-01	GWFD031101-01	SWFD031201-01
SWSG19-06	SWSG21-06	SWSG22-06
SWSG23-06	SWSG24-06	

2 / Aqueous / VOA

TB030801-01 TB031001-01

Overview

The sample set for CTO 203, NSB New London; SDG NL006 consists of eleven (20) aqueous environmental samples and two (2) aqueous trip blanks. The 20 aqueous environmental samples were analyzed for TCL volatile organics, TCL semivolatile organics, organochlorine pesticide, polychlorinated biphenyl organic compounds, and polynuclear aromatic hydrocarbons. The 2 trip blanks were analyzed for TCL volatile organic compounds only. Three field duplicate pairs were included in this SDG, GWFD030801-01/2WGW21S-06, GWFD031101-01/4GW01S-06, and SWFD031201-01/SWSG19-06.

The samples were collected by TetraTech NUS on March 8-13, 2001 and were analyzed by Severn Trent Laboratories. Analyses were conducted using the Contract Laboratory Program (CLP) Statement of Work (SOW) OLC02.1 analytical and reporting protocols.

The data were evaluated based on the following parameters:

- * Data Completeness
- Holding Times
- * GC/MS Tuning
- Initial and Continuing Calibration
- Laboratory Method and/or Field Quality Control Blanks
- Surrogate Spike Recoveries
- Blank Spike / Blank Spike Duplicate Recoveries
- * Internal Standards Performance
- * Instrument Performance
- * Compound Identification

* • Compound Quantitation
* • Tentatively Identified Compounds (TICs)
* • Field Duplicate Results

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. The attached Table summarizes the validation qualifications which are based on the following information:

CALIBRATIONS

The following tables summarize calibration noncompliance and corresponding actions for:

Compound	ICV 03/06/01	CCV 03/13/01	CCV 03/14/01
Acetone	D	RX	RX
1,2-dibromo-3-chloropropane		RX	RX
2-hexanone		X	X
2-butanone		RX	RX
4-methyl-2-pentanone		X	X
Bromomethane			X
1,1,2,2-tetrachloroethane			X
Associated Samples:	All	2WGW21S-06 2WGW39DS-06 2WGW40DS-06 2WGW41DS-06 2WGW42DS-06 2WGW44DS-06 2WGW47DS-06 GWFD030801-01 TB030801-01	2LGW20S-06 2WGW45DS-06 2WGW46DS-06 3GW37S-06 4GW01S-06 GWFD031101-01 SWSG21-06 SWSG22-06 SWSG23-06 SWSG24-06 TB031001-01

Compound	CCV 03/15/01
Acetone	RX
1,2-dibromo-3-chloropropane	RX
2-hexanone	X
2-butanone	X
4-methyl-2-pentanone	X
Bromomethane	X
1,1,2,2-tetrachloroethane	X
Bromoform	X
Associated Samples:	SWFD031201-01 SWSG19-06

Compound	ICV 02/26/01	CCV 03/14/01	CCV 03/19/01
2,4-Dinitrophenol	D		X
Benzoic Acid	D		
4-Nitrophenol			X
4-Nitroaniline			X
Associated Samples:	2WGW21S-06 2WGW39DS-06 2WGW40DS-06 2WGW41DS-06 2WGW42DS-06 2WGW44DS-06 2WGW47DS-06 GWFD030801-01	2WGW21S-06 2WGW39DS-06 2WGW40DS-06 2WGW41DS-06 2WGW42DS-06 2WGW44DS-06 2WGW47DS-06 GWFD030801-01	2LGW20S-06 3GW37S-06 4GW01S-06 2WGW45DS-06 2WGW46DS-06 GWFD031101-01 SWFD031201-01 SWSG19-06 SWSG21-06 SWSG22-06 SWSG23-06 SWSG24-06

Calibration Actions:

D - Percent Relative Standard Deviation > 30%; estimate positive (J) and nondetected (UJ) results.
X - Percent Difference > 25%; estimate (J) positive and (UJ) nondetected results.
R - Relative Response Factors < 0.05; estimate positive (J) and reject nondetected (UR) results.

Compound	ICV 03/19/01
Alpha-BHC	D
Delta-BHC	D
Associated Samples:	All

Calibration Actions for pesticide/PCBs:

D - Percent Relative Standard Deviation > 20% on one analytical column; estimate positive results (J).
X - Percent Difference > 25% on both analytical columns; estimate (J) positive and (UJ) nondetected results.
* - Percent Difference > 25% on one analytical column; estimate positive (J) and no action required for nondetected results.

BLANKS

The following contaminants were detected in laboratory method blanks:

Compound	Maximum Concentration	Action Level
Methylene chloride	0.76 µg/L	7.6 µg/L
Acetone	3.1 µg/L	31 µg/L

Samples Affected: All
Blank Actions:

- Value < Contract Required Quantitation Limit (CRQL); report CRQL followed by a U.
- Value > CRQL and < action level; report value followed by a U.
- Value > CRQL and > action level; report value unqualified.

Dilution factors and sample aliquots were taken into consideration when applying blank action levels. Positive results for methylene chloride and acetone were qualified in the manner indicated by the blank action table. Field quality control blanks were not qualified due to method blank contamination.

SURROGATE RECOVERY

% Recovery of the volatile surrogate bromofluorobenzene exceeded the quality control limits in sample 2WGW41DS-06. The sample was re-analyzed and found to have similar results. On this basis positive results were qualified as estimated, J and nondetected results were acceptable.

% Recovery of the PAH surrogate p-terphenyl fell below the quality control limits on both detectors in the following samples:

2WGW40DS-06	2WGW44DS-06
2WGW45DS-06	2WGW47DS-06

Positive and nondetected results were qualified as estimated, J and UJ, respectively in the aforementioned samples.

% Recoveries of the PAH surrogates Benzo(e)pyrene and p-terphenyl fell below the quality control limits on both detectors in sample 2WGW46DS-06. This sample was reextracted and reanalyzed and found to have compliant recoveries. However, this reextraction and reanalysis was outside the holding time period. The reviewer elected to qualify the results based on the reextraction and reanalysis results. Nondetected results were qualified as estimated, UJ due to the holding time noncompliance.

% Recoveries of the PAH surrogate Benzo(e)pyrene fell outside the quality control limits on the FLO detector in sample 2WGW40DS-06 and on both detectors in sample GWFD030801-01. No qualifications were made for sample 2WGW40DS-06 as the recovery was compliant on the other detector. Positive and nondetected results were qualified as estimated, J and UJ respectively in sample GWFD030801-01.

% Recovery of the PCB surrogate tetrachloro-m-xylene fell below the lower quality control limits in samples 2WGW21S-06, 2WGW39DS-06 and 2WGW42DS-06. Nondetected results in this sample were qualified as estimated, UJ.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

Matrix spike/matrix spike duplicate % recovery in the semivolatile fraction of 3,3'-dichlorobenzidine fell below the 10% quality control limits in samples 2WGW21S-06 and SWSG19-06. The nondetected results in these samples were qualified as rejected, UR.

BLANK SPIKE RESULTS

Blank spike % recoveries for 4-chloroaniline, 3-nitroaniline, and 3,3'-dichlorobenzidine fell below the 10% quality control limits. Nondetected results reported, for samples associated with batch number 1071355 were qualified as rejected, UR.

Blank spike % recoveries for diethyl phthalate and 4-nitroaniline fell below the quality control limits. Nondetected results reported, for samples associated with batch number 1071355 were qualified as estimated, UJ.

Blank spike % recoveries for anthracene fell below the quality control limits. The nondetected result reported in the reanalyzed sample 2WGW46DS-06 was qualified as estimated, UJ.

Blank spike % recovery for hexachlorocyclopentadiene fell below the 10% quality control limits. Nondetected results reported, for samlpes associated with batch number 1075110 were qualified as rejected, UR.

POSITIVE RESULTS % DIFFERENCES BETWEEN DETECTORS

The percent difference between columns exceeded the 25% or 100% quality control limits for the following compounds. Positive results exceeding the 100% quality control limits were qualified as rejected, R. Positive results exceeding the 25% but below the 100% quality control limits were qualified as estimated, J.

Sample	Compound	%D
2WGW42DS-06	Pyrene	43.2%
SWFD031201-01	Benzo(a)pyrene	94.3%
	Benzo(g,h,i)perylene	74.8%
SWSG21-06	Benzo(g,h,I)perylene	71.4%
2WGW21S-06	4,4-DDE	29%
	Endosulfan I	109.5%
	Alpha-chlordane	350%
GWFD-030801-01	4,4-DDE	31.1%
	Endosulfan I	117.8%
	Alpha-chlordane	349%

DILUTION FACTORS

Samples 2WGW21S-06 and GWFD030801-06 were analyzed at a 2X dilution factor. The samples were analyzed again at a 20X dilution factor due to the high concentration of 4,4'-DDD. The reported results at the 2X dilution factor were used for all compounds except 4,4-DDD which was reported at the 20X dilution factor and used to make qualifications.

TENTATIVELY INDENTIFIED COMPOUNDS

Several tentatively identified compounds were detected for the volatile and semivolatile analysis in the samples that follow. These are summarized in Table 1 of this report.

2LGW20S-06	2WGW21S-01
2WGW39DS-06	2WGW40DS-06
2WGW41DS-06	2WGW42DS-06
2WGW44DS-06	2WGW47DS-06
2WGW45DS-06	2WGW46DS-06
3GW37S-06	4GW01S-06
GWFD030801-01	GWFD031101-01
SWFD031201-01	SWSG19-06
SWSG21-06	SWSG22-06
SWSG23-06	SWSG24-06
TB030801-01	TB031001-01

ADDITIONAL COMMENTS

Positive results reported at concentrations below the CRQL were qualified as estimated (J).

Positive results in the PAH fraction in sample SWFD031201-01 were qualified as estimated, J due to field duplicate noncompliances. No positive results were reported in sample SWSG19-06.

1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene were reported in both the volatile and semivolatile fractions. Since the reporting limits for the referenced compounds is lower in the volatile fraction (1 ppb), the compounds were removed from the semivolatile fraction.

OVERALL ASSESSMENT

Laboratory Performance: Several compounds were detected in the laboratory blank and/or field quality control blank analyses. The laboratory was unable to obtain acceptable percent differences between initial and continuing calibration response factors for several volatile compounds. Several surrogate recoveries were outside the quality control limits in many fractions. Holding times were exceeded in the PAH fraction for one reanalysis.

Other Factors Affecting Data Quality: Dilution factors were used in two of the pesticide samples. Blank spikes and matrix spike/matrix spike duplicate had several recoveries that were noncompliant.

The data for these analyses were reviewed with reference to the Region I EPA "Data Validation Functional Guidelines - Part II" (12/96).

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

TetraTech NUS

Angela Scheetz
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

NSB NEW LONDON
SDG NL006
TABLE 1: SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS

TIC	2LGW20S-06	2W-GW21S-01	2W-GW39DS-06	2W-GW40DS-06	2W-GW41DS-06	2W-GW42DS-06	2W-GW44DS-06	2W-GW47DS-06	2WGW45DS-06	2WGW46DS-06
Volatiles										
Unknown(s)	X		X							
Sulfur dioxide	X		X			X		X		
Chlorofluoromethane						X				
dichlorofluoromethane										
naphthalene										
Semivolatiles										
Unknown(s)	X	X	X	X	X	X	X	X	X	X
2-butoxy-ethanol	X	X		X		X		X	X	X
Butanoic Acid									X	
2-methylbutanoic acid									X	
pentanoic acid									X	
2-methylpentanoic acid									X	
benzylmalonic acid									X	
cyclic octaatomic sulfur									X	X

NSB NEW LONDON
SDG NL006
TABLE 1: SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS

TIC		3GW37S-06	4GW01S-06	GWFD-030801-01	GWFD-031101-01	SWFD-031201-01	SWSG-19-06	2WSG21-06	SWSG22-06	SWSG23-06	SWSG-24-06	TB-030801-01	TB-031001-01
Volatiles													
Unknown(s)		X				X	X	X				X	X
Sulfur dioxide		X	X		X	X	X	X	X	X	X		X
Chlorofluoromethane						X	X						
dichlorofluoromethane						X	X						
naphthalene						X	X						
Semivolatiles													
Unknown(s)		X		X	X	X	X	X	X	X	X		
2-butoxy-ethanol		X			X				X				
Butanoic Acid													
2-methylbutanoic acid													
pentanoic acid													
2-methylpentanoic acid													
benzylmalonic acid													
cyclic octaatomic sulfur													

APPENDIX A

QUALIFIED LABORATORY RESULTS

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2LGW20S-06			2WGW21S-06			2WGW39DS-06			2WGW40DS-06		
SAMPLE DATE:	03/12/01			03/08/01			03/08/01			03/09/01		
LABORATORY ID:	C1C130227009			C1C100172003			C1C100172001			C1C100172006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	UJ	C	1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	6.4	J	C	5	UR	C
2-HEXANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
4-METHYL-2-PENTANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
ACETONE	5	U	A	5	U	A	31	U	A	5	U	A
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	UJ	C	1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		0.39	J	P	0.77	J	P
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	A

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2LGW20S-06			2WGW21S-06			2WGW39DS-06			2WGW40DS-06		
SAMPLE DATE:	03/12/01			03/08/01			03/08/01			03/09/01		
LABORATORY ID:	C1C130227009			C1C100172003			C1C100172001			C1C100172006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
STYRENE	1	U		1	U		1	U		1	U	
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1.2			1	U	
TOTAL XYLENES	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW41DS-06			2WGW42DS-06			2WGW44DS-06			2WGW45DS-06		
SAMPLE DATE:	03/09/01			03/08/01			03/09/01			03/11/01		
LABORATORY ID:	C1C100172005			C1C100172002			C1C100172008			C1C130227003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	UJ	C
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
4-METHYL-2-PENTANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
ACETONE	5	U	A	13	U	A	5	U	A	5	U	A
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	UJ	C
CARBON DISULFIDE	0.51	J	PR	1.9			0.27	J	P	1.1		
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW41DS-06			2WGW42DS-06			2WGW44DS-06			2WGW45DS-06		
SAMPLE DATE:	03/09/01			03/08/01			03/09/01			03/11/01		
LABORATORY ID:	C1C100172005			C1C100172002			C1C100172008			C1C130227003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
STYRENE	1	U		1	U		1	U		1	U	
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TOTAL XYLENES	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW46DS-06	2WGW47DS-06	3GW37S-06	4GW01S-06
SAMPLE DATE:	03/11/01	03/09/01	03/12/01	03/11/01
LABORATORY ID:	C1C130227004	C1C100172007	C1C130227008	C1C130227002
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	UJ	C	1	U		1	UJ	C	1	UJ	C
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
4-METHYL-2-PENTANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
ACETONE	5	U	A	15	U	A	2	U	A	5	U	A
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	UJ	C	1	U		1	UJ	C	1	UJ	C
CARBON DISULFIDE	0.99	J	P	0.4	J	P	1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		0.17	J	P	1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U	A	2	U		2	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW46DS-06			2WGW47DS-06			3GW37S-06			4GW01S-06		
SAMPLE DATE:	03/11/01			03/09/01			03/12/01			03/11/01		
LABORATORY ID:	C1C130227004			C1C100172007			C1C130227008			C1C130227002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
STYRENE	1	U		1	U		1	U		1	U	
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TOTAL XYLENES	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1	U		0.78	J	P	1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	GWFD030801-01			GWFD031101-01			SWFD031201-01			SWSG19-06		
SAMPLE DATE:	03/08/01			03/11/01			03/12/01			03/12/01		
LABORATORY ID:	C1C100172004			C1C130227001			C1C140199001			C1C140199002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	2WGW21S-06			4GW01S-06			SWSG19-06					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	UJ	C	1	UJ	C	1	UJ	C
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UJ	C	5	UJ	C
2-HEXANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
4-METHYL-2-PENTANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
ACETONE	5	U	A	5	U	A	5	U	A	5	U	A
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	UJ	C	1	UJ	C
BROMOMETHANE	1	U		1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	GWFD030801-01			GWFD031101-01			SWFD031201-01			SWSG19-06		
SAMPLE DATE:	03/08/01			03/11/01			03/12/01			03/12/01		
LABORATORY ID:	C1C100172004			C1C130227001			C1C140199001			C1C140199002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	2WGW21S-06			4GW01S-06			SWSG19-06					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
STYRENE	1	U		1	U		1	U		1	U	
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TOTAL XYLENES	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWSG21-06			SWSG22-06			SWSG23-06			SWSG24-06		
SAMPLE DATE:	03/11/01			03/11/01			03/11/01			03/13/01		
LABORATORY ID:	C1C130227007			C1C130227006			C1C130227005			C1C140199003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
4-METHYL-2-PENTANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
ACETONE	5	U	A	5	U	A	5	U	A	5	U	A
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWSG21-06			SWSG22-06			SWSG23-06			SWSG24-06		
SAMPLE DATE:	03/11/01			03/11/01			03/11/01			03/13/01		
LABORATORY ID:	C1C130227007			C1C130227006			C1C130227005			C1C140199003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
STYRENE	1	U		1	U		1	U		1	U	
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TOTAL XYLENES	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	TB030801-01			TB031001-01								
SAMPLE DATE:	03/08/01			03/10/01			/ /			/ /		
LABORATORY ID:	C1C100172009			C1C130227010								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U							
1,1,2,2-TETRACHLOROETHANE	1	U		1	UJ	C						
1,1,2-TRICHLOROETHANE	1	U		1	U							
1,1-DICHLOROETHANE	1	U		1	U							
1,1-DICHLOROETHENE	1	U		1	U							
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C						
1,2-DIBROMOETHANE	1	U		1	U							
1,2-DICHLOROBENZENE	1	U		1	U							
1,2-DICHLOROETHANE	1	U		1	U							
1,2-DICHLOROPROPANE	1	U		1	U							
1,3-DICHLOROBENZENE	1	U		1	U							
1,4-DICHLOROBENZENE	1	U		1	U							
2-BUTANONE	5	UR	C	5	UR	C						
2-HEXANONE	5	UJ	C	5	UJ	C						
4-METHYL-2-PENTANONE	5	UJ	C	5	UJ	C						
ACETONE	5	U	A	5	U	A						
BENZENE	1	U		1	U							
BROMOCHLOROMETHANE	1	U		1	U							
BROMODICHLOROMETHANE	1	U		1	U							
BROMOFORM	1	U		1	U							
BROMOMETHANE	1	U		1	UJ	C						
CARBON DISULFIDE	1	U		1	U							
CARBON TETRACHLORIDE	1	U		1	U							
CHLOROBENZENE	1	U		1	U							
CHLORODIBROMOMETHANE	1	U		1	U							
CHLOROETHANE	1	U		1	U							
CHLOROFORM	1	U		1	U							
CHLOROMETHANE	1	U		1	U							
CIS-1,2-DICHLOROETHENE	1	U		1	U							
CIS-1,3-DICHLOROPROPENE	1	U		1	U							
ETHYLBENZENE	1	U		1	U							
METHYLENE CHLORIDE	2	U		2	U	A						

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	TB030801-01	TB031001-01		
SAMPLE DATE:	03/08/01	03/10/01	/ /	/ /
LABORATORY ID:	C1C100172009	C1C130227010		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
UNITS:	UG/L	UG/L		
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
STYRENE	1	U		1	U							
TETRACHLOROETHENE	1	U		1	U							
TOLUENE	1	U		1	U							
TOTAL XYLENES	1	U		1	U							
TRANS-1,2-DICHLOROETHENE	1	U		1	U							
TRANS-1,3-DICHLOROPROPENE	1	U		1	U							
TRICHLOROETHENE	1	U		1	U							
VINYL CHLORIDE	1	U		1	U							

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2LGW20S-06			2WGW21S-06			2WGW39DS-06			2WGW40DS-06		
SAMPLE DATE:	03/12/01			03/08/01			03/08/01			03/09/01		
LABORATORY ID:	C1C130227009			C1C100172003			C1C100172001			C1C100172006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	10	U		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U		10	U		10	U		10	U	
2,4,5-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4,6-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DIMETHYLPHENOL	10	U		10	U		10	U		10	U	
2,4-DINITROPHENOL	50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
2,4-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2,6-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2-CHLORONAPHTHALENE	10	U		10	U		10	U		10	U	
2-CHLOROPHENOL	10	U		10	U		10	U		10	U	
2-METHYLPHENOL	10	U		10	U		10	U		10	U	
2-NITROANILINE	50	U		50	U		50	U		50	U	
2-NITROPHENOL	10	U		10	U		10	U		10	U	
3,3'-DICHLOROBENZIDINE	50	U		50	UR	DE	50	UR	E	50	UR	E
3-NITROANILINE	50	U		50	UR	E	50	UR	E	50	UR	E
4,6-DINITRO-2-METHYLPHENOL	50	U		50	U		50	U		50	U	
4-BROMOPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-CHLORO-3-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-CHLOROANILINE	10	U		10	UR	E	10	UR	E	10	UR	E
4-CHLOROPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-NITROANILINE	50	UJ	C	50	UJ	E	50	UJ	E	50	UJ	E
4-NITROPHENOL	50	UJ	C	50	U		50	U		50	U	
BENZOIC ACID	50	U		50	UJ	C	50	UJ	C	50	UJ	C
BIS(2-CHLOROETHOXY)METHANE	10	U		10	U		10	U		10	U	
BIS(2-CHLOROETHYL)ETHER	10	U		10	U		10	U		10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U		10	U		10	U		10	U	
BUTYL BENZYL PHTHALATE	10	U		10	U		10	U		10	U	
CARBAZOLE	10	U		10	U		10	U		10	U	
DI-N-BUTYL PHTHALATE	10	U		10	U		10	U		10	U	
DI-N-OCTYL PHTHALATE	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2LGW20S-06			2WGW21S-06			2WGW39DS-06			2WGW40DS-06		
SAMPLE DATE:	03/12/01			03/08/01			03/08/01			03/09/01		
LABORATORY ID:	C1C130227009			C1C100172003			C1C100172001			C1C100172006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
DIBENZOFURAN	10	U		10	U		10	U		10	U	
DIETHYL PHTHALATE	10	U		10	UJ	E	10	UJ	E	10	UJ	E
DIMETHYL PHTHALATE	10	U		10	U		10	U		10	U	
HEXACHLOROBENZENE	10	U		10	U		10	U		10	U	
HEXACHLOROBUTADIENE	10	U		10	U		10	U		10	U	
HEXACHLOROCYCLOPENTADIENE	50	UR	E	50	U		50	U		50	U	
HEXACHLOROETHANE	10	U		10	U		10	U		10	U	
ISOPHORONE	10	U		10	U		10	U		10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U		10	U		10	U		10	U	
N-NITROSODIPHENYLAMINE	10	U		10	U		10	U		10	U	
NITROBENZENE	10	U		10	U		10	U		10	U	
PENTACHLOROPHENOL	50	U		50	U		50	U		50	U	
PHENOL	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW41DS-06			2WGW42DS-06			2WGW44DS-06			2WGW45DS-06		
SAMPLE DATE:	03/09/01			03/08/01			03/09/01			03/11/01		
LABORATORY ID:	C1C100172005			C1C100172002			C1C100172008			C1C130227003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	10	U		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U		10	U		10	U		10	U	
2,4,5-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4,6-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DIMETHYLPHENOL	10	U		10	U		10	U		10	U	
2,4-DINITROPHENOL	50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
2,4-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2,6-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2-CHLORONAPHTHALENE	10	U		10	U		10	U		10	U	
2-CHLOROPHENOL	10	U		10	U		10	U		10	U	
2-METHYLPHENOL	10	U		10	U		10	U		10	U	
2-NITROANILINE	50	U		50	U		50	U		50	U	
2-NITROPHENOL	10	U		10	U		10	U		10	U	
3,3'-DICHLOROBENZIDINE	50	UR	E	50	UR	E	50	UR	E	50	U	
3-NITROANILINE	50	UR	E	50	UR	E	50	UR	E	50	U	
4,6-DINITRO-2-METHYLPHENOL	50	U		50	U		50	U		50	U	
4-BROMOPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-CHLORO-3-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-CHLOROANILINE	10	UR	E	10	UR	E	10	UR	E	10	U	
4-CHLOROPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-NITROANILINE	50	UJ	E	50	UJ	E	50	UJ	E	50	UJ	C
4-NITROPHENOL	50	U		50	U		50	U		50	UJ	C
BENZOIC ACID	50	UJ	C	50	UJ	C	50	UJ	C	1.8	J	P
BIS(2-CHLOROETHOXY)METHANE	10	U		10	U		10	U		10	U	
BIS(2-CHLOROETHYL)ETHER	10	U		10	U		10	U		10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U		10	U		10	U		10	U	
BUTYL BENZYL PHTHALATE	10	U		10	U		10	U		10	U	
CARBAZOLE	10	U		10	U		10	U		10	U	
DI-N-BUTYL PHTHALATE	10	U		10	U		10	U		10	U	
DI-N-OCTYL PHTHALATE	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW41DS-06			2WGW42DS-06			2WGW44DS-06			2WGW45DS-06		
SAMPLE DATE:	03/09/01			03/08/01			03/09/01			03/11/01		
LABORATORY ID:	C1C100172005			C1C100172002			C1C100172008			C1C130227003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
DIBENZOFURAN	10	U		10	U		10	U		10	U	
DIETHYL PHTHALATE	10	UJ	E	10	UJ	E	10	UJ	E	10	U	
DIMETHYL PHTHALATE	10	U		10	U		10	U		10	U	
HEXACHLOROBENZENE	10	U		10	U		10	U		10	U	
HEXACHLOROBUTADIENE	10	U		10	U		10	U		10	U	
HEXACHLOROCYCLOPENTADIENE	50	U		50	U		50	U		50	UR	E
HEXACHLOROETHANE	10	U		10	U		10	U		10	U	
ISOPHORONE	10	U		10	U		10	U		10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U		10	U		10	U		10	U	
N-NITROSODIPHENYLAMINE	10	U		10	U		10	U		10	U	
NITROBENZENE	10	U		10	U		10	U		10	U	
PENTACHLOROPHENOL	50	U		50	U		50	U		50	U	
PHENOL	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW46DS-06			2WGW47DS-06			3GW37S-06			4GW01S-06		
SAMPLE DATE:	03/11/01			03/09/01			03/12/01			03/11/01		
LABORATORY ID:	C1C130227004			C1C100172007			C1C130227008			C1C130227002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	10	U		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U		10	U		10	U		10	U	
2,4,5-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4,6-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DIMETHYLPHENOL	10	U		10	U		10	U		10	U	
2,4-DINITROPHENOL	50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
2,4-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2,6-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2-CHLORONAPHTHALENE	10	U		10	U		10	U		10	U	
2-CHLOROPHENOL	10	U		10	U		10	U		10	U	
2-METHYLPHENOL	10	U		10	U		10	U		10	U	
2-NITROANILINE	50	U		50	U		50	U		50	U	
2-NITROPHENOL	10	U		10	U		10	U		10	U	
3,3'-DICHLOROBENZIDINE	50	U		50	UR	E	50	U		50	U	
3-NITROANILINE	50	U		50	UR	E	50	U		50	U	
4,6-DINITRO-2-METHYLPHENOL	50	U		50	U		50	U		50	U	
4-BROMOPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-CHLORO-3-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-CHLOROANILINE	10	U		10	UR	E	10	U		10	U	
4-CHLOROPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-NITROANILINE	50	UJ	C	50	UJ	E	50	UJ	C	50	UJ	C
4-NITROPHENOL	50	UJ	C	50	U		50	UJ	C	50	UJ	C
BENZOIC ACID	50	U		0.77	UJ	CP	50	U		50	U	
BIS(2-CHLOROETHOXY)METHANE	10	U		10	U		10	U		10	U	
BIS(2-CHLOROETHYL)ETHER	10	U		10	U		10	U		10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U		4.1	J	P	10	U		10	U	
BUTYL BENZYL PHTHALATE	10	U		10	U		10	U		10	U	
CARBAZOLE	10	U		10	U		10	U		10	U	
DI-N-BUTYL PHTHALATE	10	U		10	U		10	U		10	U	
DI-N-OCTYL PHTHALATE	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW46DS-06			2WGW47DS-06			3GW37S-06			4GW01S-06		
SAMPLE DATE:	03/11/01			03/09/01			03/12/01			03/11/01		
LABORATORY ID:	C1C130227004			C1C100172007			C1C130227008			C1C130227002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
DIBENZOFURAN	10	U		10	U		10	U		10	U	
DIETHYL PHTHALATE	10	U		10	UJ	E	10	U		10	U	
DIMETHYL PHTHALATE	10	U		10	U		10	U		10	U	
HEXACHLOROBENZENE	10	U		10	U		10	U		10	U	
HEXACHLOROBUTADIENE	10	U		10	U		10	U		10	U	
HEXACHLOROCYCLOPENTADIENE	50	UR	E	50	U		50	U		50	UR	E
HEXACHLOROETHANE	10	U		10	U		10	U		10	U	
ISOPHORONE	10	U		10	U		10	U		10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U		10	U		10	U		10	U	
N-NITROSODIPHENYLAMINE	10	U		10	U		10	U		10	U	
NITROBENZENE	10	U		10	U		10	U		10	U	
PENTACHLOROPHENOL	50	U		50	U		50	U		50	U	
PHENOL	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	GWFD030801-01			GWFD031101-01			SWFD031201-01			SWSG19-06		
SAMPLE DATE:	03/08/01			03/11/01			03/12/01			03/12/01		
LABORATORY ID:	C1C100172004			C1C130227001			C1C140199001			C1C140199002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	2WGW21S-06			4GW01S-06			SWSG19-06					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	10	U		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U		10	U		10	U		10	U	
2,4,5-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4,6-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DIMETHYLPHENOL	10	U		10	U		10	U		10	U	
2,4-DINITROPHENOL	50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
2,4-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2,6-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2-CHLORONAPHTHALENE	10	U		10	U		10	U		10	U	
2-CHLOROPHENOL	10	U		10	U		10	U		10	U	
2-METHYLPHENOL	10	U		10	U		10	U		10	U	
2-NITROANILINE	50	U		50	U		50	U		50	U	
2-NITROPHENOL	10	U		10	U		10	U		10	U	
3,3'-DICHLOROBENZIDINE	50	UR	E	50	U		50	U		50	UR	D
3-NITROANILINE	50	UR	E	50	U		50	U		50	U	
4,6-DINITRO-2-METHYLPHENOL	50	U		50	U		50	U		50	U	
4-BROMOPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-CHLORO-3-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-CHLOROANILINE	10	UR	E	10	U		10	U		10	U	
4-CHLOROPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-NITROANILINE	50	UJ	E	50	UJ	C	50	UJ	C	50	UJ	C
4-NITROPHENOL	50	U		50	UJ	C	50	UJ	C	50	UJ	C
BENZOIC ACID	50	UJ	C	50	U		50	U		50	U	
BIS(2-CHLOROETHOXY)METHANE	10	U		10	U		10	U		10	U	
BIS(2-CHLOROETHYL)ETHER	10	U		10	U		10	U		10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U		10	U		10	U		10	U	
BUTYL BENZYL PHTHALATE	10	U		10	U		10	U		10	U	
CARBAZOLE	10	U		10	U		10	U		10	U	
DI-N-BUTYL PHTHALATE	10	U		10	U		10	U		10	U	
DI-N-OCTYL PHTHALATE	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	GWFD030801-01			GWFD031101-01			SWFD031201-01			SWSG19-06		
SAMPLE DATE:	03/08/01			03/11/01			03/12/01			03/12/01		
LABORATORY ID:	C1C100172004			C1C130227001			C1C140199001			C1C140199002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	2WGW21S-06			4GW01S-06			SWSG19-06					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
DIBENZOFURAN	10	U		10	U		10	U		10	U	
DIETHYL PHTHALATE	10	UJ	E	10	U		10	U		10	U	
DIMETHYL PHTHALATE	10	U		10	U		10	U		10	U	
HEXACHLOROBENZENE	10	U		10	U		10	U		10	U	
HEXACHLOROBUTADIENE	10	U		10	U		10	U		10	U	
HEXACHLOROCYCLOPENTADIENE	50	U		50	UR	E	50	UR	E	50	UR	E
HEXACHLOROETHANE	10	U		10	U		10	U		10	U	
ISOPHORONE	10	U		10	U		10	U		10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U		10	U		10	U		10	U	
N-NITROSODIPHENYLAMINE	10	U		10	U		10	U		10	U	
NITROBENZENE	10	U		10	U		10	U		10	U	
PENTACHLOROPHENOL	50	U		50	U		50	U		50	U	
PHENOL	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWSG21-06			SWSG22-06			SWSG23-06			SWSG24-06		
SAMPLE DATE:	03/11/01			03/11/01			03/11/01			03/13/01		
LABORATORY ID:	C1C130227007			C1C130227006			C1C130227005			C1C140199003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	10	U		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U		10	U		10	U		10	U	
2,4,5-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4,6-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DIMETHYLPHENOL	10	U		10	U		10	U		10	U	
2,4-DINITROPHENOL	50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
2,4-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2,6-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2-CHLORONAPHTHALENE	10	U		10	U		10	U		10	U	
2-CHLOROPHENOL	10	U		10	U		10	U		10	U	
2-METHYLPHENOL	10	U		10	U		10	U		10	U	
2-NITROANILINE	50	U		50	U		50	U		50	U	
2-NITROPHENOL	10	U		10	U		10	U		10	U	
3,3'-DICHLOROBENZIDINE	50	U		50	U		50	U		50	U	
3-NITROANILINE	50	U		50	U		50	U		50	U	
4,6-DINITRO-2-METHYLPHENOL	50	U		50	U		50	U		50	U	
4-BROMOPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-CHLORO-3-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-CHLOROANILINE	10	U		10	U		10	U		10	U	
4-CHLOROPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-NITROANILINE	50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
4-NITROPHENOL	50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
BENZOIC ACID	50	U		50	U		50	U		50	U	
BIS(2-CHLOROETHOXY)METHANE	10	U		10	U		10	U		10	U	
BIS(2-CHLOROETHYL)ETHER	10	U		10	U		10	U		10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U		10	U		10	U		10	U	
BUTYL BENZYL PHTHALATE	10	U		10	U		10	U		10	U	
CARBAZOLE	10	U		10	U		10	U		10	U	
DI-N-BUTYL PHTHALATE	10	U		10	U		10	U		10	U	
DI-N-OCTYL PHTHALATE	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWSG21-06			SWSG22-06			SWSG23-06			SWSG24-06		
SAMPLE DATE:	03/11/01			03/11/01			03/11/01			03/13/01		
LABORATORY ID:	C1C130227007			C1C130227006			C1C130227005			C1C140199003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
DIBENZOFURAN	10	U		10	U		10	U		10	U	
DIETHYL PHTHALATE	10	U		10	U		10	U		10	U	
DIMETHYL PHTHALATE	10	U		10	U		10	U		10	U	
HEXACHLOROBENZENE	10	U		10	U		10	U		10	U	
HEXACHLOROBUTADIENE	10	U		10	U		10	U		10	U	
HEXACHLOROCYCLOPENTADIENE	50	UR	E	50	UR	E	50	UR	E	50	UR	E
HEXACHLOROETHANE	10	U		10	U		10	U		10	U	
ISOPHORONE	10	U		10	U		10	U		10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U		10	U		10	U		10	U	
N-NITROSODIPHENYLAMINE	10	U		10	U		10	U		10	U	
NITROBENZENE	10	U		10	U		10	U		10	U	
PENTACHLOROPHENOL	50	U		50	U		50	U		50	U	
PHENOL	10	U		10	U		10	U		10	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2LGW20S-06			2WGW21S-06			2WGW39DS-06			2WGW40DS-06		
SAMPLE DATE:	03/12/01			03/08/01			03/08/01			03/09/01		
LABORATORY ID:	C1C130227009			C1C100172003			C1C100172001			C1C100172006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
POLYNUCLEAR AROMATIC HYDROCARBONS												
ACENAPHTHENE	1	U		1	U		1	U		1	UJ	R
ACENAPHTHYLENE	1	U		1	U		1	U		1	UJ	R
ANTHRACENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
BENZO(A)ANTHRACENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
BENZO(A)PYRENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
BENZO(B)FLUORANTHENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
BENZO(G,H,I)PERYLENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
BENZO(K)FLUORANTHENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
CHRYSENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
DIBENZO(A,H)ANTHRACENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
FLUORANTHENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
FLUORENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
INDENO(1,2,3-CD)PYRENE	0.2	U		0.2	U		0.2	U		0.2	UJ	R
NAPHTHALENE	1	U		1	U		1	U		1	UJ	R
PHENANTHRENE	0.2	U		0.06	J	P	0.2	U		0.2	UJ	R
PYRENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW41DS-06			2WGW42DS-06			2WGW44DS-06			2WGW45DS-06		
SAMPLE DATE:	03/09/01			03/08/01			03/09/01			03/11/01		
LABORATORY ID:	C1C100172005			C1C100172002			C1C100172008			C1C130227003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
POLYNUCLEAR AROMATIC HYDROCARBONS												
ACENAPHTHENE	1	U		1	U		1	UJ	R	1	UJ	R
ACENAPHTHYLENE	1	U		1	U		1	UJ	R	1	UJ	R
ANTHRACENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
BENZO(A)ANTHRACENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
BENZO(A)PYRENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
BENZO(B)FLUORANTHENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
BENZO(G,H,I)PERYLENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
BENZO(K)FLUORANTHENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
CHRYSENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
DIBENZO(A,H)ANTHRACENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
FLUORANTHENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
FLUORENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
INDENO(1,2,3-CD)PYRENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
NAPHTHALENE	1	U		1	U		1	UJ	R	1	UJ	R
PHENANTHRENE	0.2	U		0.2	U		0.2	UJ	R	0.2	UJ	R
PYRENE	0.2	U		0.03	J	UP	0.2	UJ	R	0.2	UJ	R

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW46DS-06			2WGW47DS-06			3GW37S-06			4GW01S-06		
SAMPLE DATE:	03/11/01			03/09/01			03/12/01			03/11/01		
LABORATORY ID:	C1C130227004			C1C100172007			C1C130227008			C1C130227002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
POLYNUCLEAR AROMATIC HYDROCARBONS												
ACENAPHTHENE	1	UJ	H	1	UJ	R	1	U		1	U	
ACENAPHTHYLENE	1	UJ	H	1	UJ	R	1	U		1	U	
ANTHRACENE	0.2	UJ	EH	0.2	UJ	ER	0.2	U		0.2	U	
BENZO(A)ANTHRACENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
BENZO(A)PYRENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
BENZO(B)FLUORANTHENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
BENZO(G,H,I)PERYLENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
BENZO(K)FLUORANTHENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
CHRYSENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
DIBENZO(A,H)ANTHRACENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
FLUORANTHENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
FLUORENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
INDENO(1,2,3-CD)PYRENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
NAPHTHALENE	1	UJ	H	1	UJ	R	1	U		1	U	
PHENANTHRENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	
PYRENE	0.2	UJ	H	0.2	UJ	R	0.2	U		0.2	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	GWFD030801-01	GWFD031101-01	SWFD031201-01	SWSG19-06
SAMPLE DATE:	03/08/01	03/11/01	03/12/01	03/12/01
LABORATORY ID:	C1C100172004	C1C130227001	C1C140199001	C1C140199002
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:	2WGW21S-06	4GW01S-06	SWSG19-06	

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
POLYNUCLEAR AROMATIC HYDROCARBONS												
ACENAPHTHENE	1	UJ	R	1	U		0.21	J	GP	1	U	
ACENAPHTHYLENE	1	UJ	R	1	U		1	U		1	U	
ANTHRACENE	0.2	UJ	R	0.2	U		0.2	U		0.2	U	
BENZO(A)ANTHRACENE	0.2	UJ	R	0.2	U		0.2	U		0.2	U	
BENZO(A)PYRENE	0.2	UJ	R	0.2	U		0.022	J	UGP	0.2	U	
BENZO(B)FLUORANTHENE	0.2	UJ	R	0.2	U		0.2	U		0.2	U	
BENZO(G,H,I)PERYLENE	0.2	UJ	R	0.2	U		0.031	J	UGP	0.2	U	
BENZO(K)FLUORANTHENE	0.2	UJ	R	0.2	U		0.2	U		0.2	U	
CHRYSENE	0.2	UJ	R	0.2	U		0.022	J	GP	0.2	U	
DIBENZO(A,H)ANTHRACENE	0.2	UJ	R	0.2	U		0.2	U		0.2	U	
FLUORANTHENE	0.029	J	PR	0.2	U		0.074	J	GP	0.2	U	
FLUORENE	0.2	UJ	R	0.2	U		0.093	J	GP	0.2	U	
INDENO(1,2,3-CD)PYRENE	0.2	UJ	R	0.2	U		0.2	U		0.2	U	
NAPHTHALENE	1	UJ	R	1	U		0.42	J	GP	1	U	
PHENANTHRENE	0.094	J	PR	0.2	U		0.067	J	GP	0.2	U	
PYRENE	0.2	UJ	R	0.2	U		0.051	J	GP	0.2	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWSG21-06			SWSG22-06			SWSG23-06			SWSG24-06		
SAMPLE DATE:	03/11/01			03/11/01			03/11/01			03/13/01		
LABORATORY ID:	C1C130227007			C1C130227006			C1C130227005			C1C140199003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
POLYNUCLEAR AROMATIC HYDROCARBONS												
ACENAPHTHENE	1	U		1	U		1	U		1	U	
ACENAPHTHYLENE	1	U		1	U		1	U		1	U	
ANTHRACENE	0.2	U		0.2	U		0.2	U		0.2	U	
BENZO(A)ANTHRACENE	0.2	U		0.2	U		0.2	U		0.2	U	
BENZO(A)PYRENE	0.022	J	P	0.2	U		0.2	U		0.2	U	
BENZO(B)FLUORANTHENE	0.2	U		0.2	U		0.2	U		0.2	U	
BENZO(G,H,I)PERYLENE	0.028	J	UP	0.2	U		0.2	U		0.2	U	
BENZO(K)FLUORANTHENE	0.2	U		0.2	U		0.2	U		0.2	U	
CHRYSENE	0.023	J	P	0.2	U		0.2	U		0.2	U	
DIBENZO(A,H)ANTHRACENE	0.2	U		0.2	U		0.2	U		0.2	U	
FLUORANTHENE	0.069	J	P	0.2	U		0.022	J	P	0.2	U	
FLUORENE	0.2	U		0.2	U		0.2	U		0.2	U	
INDENO(1,2,3-CD)PYRENE	0.2	U		0.2	U		0.2	U		0.2	U	
NAPHTHALENE	1	U		1	U		1	U		1	U	
PHENANTHRENE	0.041	J	P	0.2	U		0.2	U		0.2	U	
PYRENE	0.049	J	P	0.2	U		0.2	U		0.2	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2LGW20S-06			2WGW21S-06			2WGW39DS-06			2WGW40DS-06		
SAMPLE DATE:	03/12/01			03/08/01			03/08/01			03/09/01		
LABORATORY ID:	C1C130227009			C1C100172003			C1C100172001			C1C100172006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.020	U		5.5			0.020	U		0.020	U	
4,4'-DDE	0.020	U		0.082	J	U	0.020	U		0.020	U	
4,4'-DDT	0.020	U		0.04	U		0.020	U		0.020	U	
ALDRIN	0.010	U		0.02	U		0.010	U		0.010	U	
ALPHA-BHC	0.010	U		0.02	U		0.010	U		0.010	U	
ALPHA-CHLORDANE	0.010	U		0.03	R	U	0.010	U		0.010	U	
AROCLOR-1016	0.20	U		0.20	UJ	R	0.20	UJ	R	0.20	U	
AROCLOR-1221	0.40	U		0.40	UJ	R	0.40	UJ	R	0.40	U	
AROCLOR-1232	0.20	U		0.20	UJ	R	0.20	UJ	R	0.20	U	
AROCLOR-1242	0.20	U		0.20	UJ	R	0.20	UJ	R	0.20	U	
AROCLOR-1248	0.20	U		0.20	UJ	R	0.20	UJ	R	0.20	U	
AROCLOR-1254	0.20	U		0.20	UJ	R	0.20	UJ	R	0.20	U	
AROCLOR-1260	0.20	U		0.20	UJ	R	0.20	UJ	R	0.20	U	
BETA-BHC	0.010	U		0.02	U		0.010	U		0.010	U	
DELTA-BHC	0.010	U		0.02	U		0.010	U		0.010	U	
DIELDRIN	0.020	U		0.04	U		0.020	U		0.020	U	
ENDOSULFAN I	0.010	U		0.018	R	U	0.010	U		0.010	U	
ENDOSULFAN II	0.020	U		0.04	U		0.020	U		0.020	U	
ENDOSULFAN SULFATE	0.020	U		0.04	U		0.020	U		0.020	U	
ENDRIN	0.020	U		0.04	U		0.020	U		0.020	U	
ENDRIN ALDEHYDE	0.020	U		0.04	U		0.020	U		0.020	U	
ENDRIN KETONE	0.020	U		0.04	U		0.020	U		0.020	U	
GAMMA-BHC (LINDANE)	0.010	U		0.02	U		0.010	U		0.010	U	
GAMMA-CHLORDANE	0.010	U		0.02	U		0.010	U		0.010	U	
HEPTACHLOR	0.010	U		0.02	U		0.010	U		0.010	U	
HEPTACHLOR EPOXIDE	0.010	U		0.02	U		0.010	U		0.010	U	
METHOXYCHLOR	0.10	U		0.02	U		0.10	U		0.10	U	
TOXAPHENE	1.0	U		2.0	U		1.0	U		1.0	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW41DS-06			2WGW42DS-06			2WGW44DS-06			2WGW45DS-06		
SAMPLE DATE:	03/09/01			03/08/01			03/09/01			03/11/01		
LABORATORY ID:	C1C100172005			C1C100172002			C1C100172008			C1C130227003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.020	U		0.020	U		0.020	U		0.020	U	
4,4'-DDE	0.020	U		0.020	U		0.020	U		0.020	U	
4,4'-DDT	0.020	U		0.020	U		0.020	U		0.020	U	
ALDRIN	0.010	U		0.010	U		0.010	U		0.010	U	
ALPHA-BHC	0.010	U		0.010	U		0.010	U		0.010	U	
ALPHA-CHLORDANE	0.010	U		0.010	U		0.010	U		0.010	U	
AROCLOR-1016	0.20	U		0.20	UJ	R	0.20	U		0.20	U	
AROCLOR-1221	0.40	U		0.40	UJ	R	0.40	U		0.40	U	
AROCLOR-1232	0.20	U		0.20	UJ	R	0.20	U		0.20	U	
AROCLOR-1242	0.20	U		0.20	UJ	R	0.20	U		0.20	U	
AROCLOR-1248	0.20	U		0.20	UJ	R	0.20	U		0.20	U	
AROCLOR-1254	0.20	U		0.20	UJ	R	0.20	U		0.20	U	
AROCLOR-1260	0.20	U		0.20	UJ	R	0.20	U		0.20	U	
BETA-BHC	0.010	U		0.010	U		0.010	U		0.010	U	
DELTA-BHC	0.010	U		0.010	U		0.010	U		0.010	U	
DIELDRIN	0.020	U		0.020	U		0.020	U		0.020	U	
ENDOSULFAN I	0.010	U		0.010	U		0.010	U		0.010	U	
ENDOSULFAN II	0.020	U		0.020	U		0.020	U		0.020	U	
ENDOSULFAN SULFATE	0.020	U		0.020	U		0.020	U		0.020	U	
ENDRIN	0.020	U		0.020	U		0.020	U		0.020	U	
ENDRIN ALDEHYDE	0.020	U		0.020	U		0.020	U		0.020	U	
ENDRIN KETONE	0.020	U		0.020	U		0.020	U		0.020	U	
GAMMA-BHC (LINDANE)	0.010	U		0.010	U		0.010	U		0.010	U	
GAMMA-CHLORDANE	0.010	U		0.010	U		0.010	U		0.010	U	
HEPTACHLOR	0.010	U		0.010	U		0.010	U		0.010	U	
HEPTACHLOR EPOXIDE	0.010	U		0.010	U		0.010	U		0.010	U	
METHOXYCHLOR	0.10	U		0.10	U		0.10	U		0.10	U	
TOXAPHENE	1.0	U		1.0	U		1.0	U		1.0	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	2WGW46DS-06			2WGW47DS-06			3GW37S-06			4GW01S-06		
SAMPLE DATE:	03/11/01			03/09/01			03/12/01			03/11/01		
LABORATORY ID:	C1C130227004			C1C100172007			C1C130227008			C1C130227002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.020	U		0.029			0.020	U		0.020	U	
4,4'-DDE	0.020	U		0.020	U		0.020	U		0.020	U	
4,4'-DDT	0.020	U		0.020	U		0.020	U		0.020	U	
ALDRIN	0.010	U		0.010	U		0.010	U		0.010	U	
ALPHA-BHC	0.010	U		0.010	U		0.010	U		0.010	U	
ALPHA-CHLORDANE	0.010	U		0.010	U		0.010	U		0.010	U	
AROCLOR-1016	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1221	0.40	U		0.40	U		0.40	U		0.40	U	
AROCLOR-1232	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1242	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1248	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1254	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1260	0.20	U		0.20	U		0.20	U		0.20	U	
BETA-BHC	0.010	U		0.010	U		0.010	U		0.010	U	
DELTA-BHC	0.010	U		0.010	U		0.010	U		0.010	U	
DIELDRIN	0.020	U		0.020	U		0.020	U		0.020	U	
ENDOSULFAN I	0.010	U		0.010	U		0.010	U		0.010	U	
ENDOSULFAN II	0.020	U		0.020	U		0.020	U		0.020	U	
ENDOSULFAN SULFATE	0.020	U		0.020	U		0.020	U		0.020	U	
ENDRIN	0.020	U		0.020	U		0.020	U		0.020	U	
ENDRIN ALDEHYDE	0.020	U		0.020			0.020	U		0.020	U	
ENDRIN KETONE	0.020	U		0.020	U		0.020	U		0.020	U	
GAMMA-BHC (LINDANE)	0.010	U		0.010	U		0.010	U		0.010	U	
GAMMA-CHLORDANE	0.010	U		0.010	U		0.010	U		0.010	U	
HEPTACHLOR	0.010	U		0.010	U		0.010	U		0.010	U	
HEPTACHLOR EPOXIDE	0.010	U		0.010	U		0.010	U		0.010	U	
METHOXYCHLOR	0.10	U		0.10	U		0.10	U		0.10	U	
TOXAPHENE	1.0	U		1.0	U		1.0	U		1.0	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	GWFD030801-01			GWFD031101-01			SWFD031201-01			SWSG19-06		
SAMPLE DATE:	03/08/01			03/11/01			03/12/01			03/12/01		
LABORATORY ID:	C1C100172004			C1C130227001			C1C140199001			C1C140199002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	2WGW21S-06			4GW01S-06			SWSG19-06					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	5.1			0.020	U		0.020	U		0.020	U	
4,4'-DDE	0.074	J	U	0.020	U		0.020	U		0.020	U	
4,4'-DDT	0.04	U		0.020	U		0.020	U		0.020	U	
ALDRIN	0.02	U		0.010	U		0.010	U		0.010	U	
ALPHA-BHC	0.02	U		0.010	U		0.010	U		0.010	U	
ALPHA-CHLORDANE	0.027	R	U	0.010	U		0.010	U		0.010	U	
AROCLOR-1016	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1221	0.40	U		0.40	U		0.40	U		0.40	U	
AROCLOR-1232	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1242	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1248	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1254	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1260	0.20	U		0.20	U		0.20	U		0.20	U	
BETA-BHC	0.20	U		0.010	U		0.010	U		0.010	U	
DELTA-BHC	0.02	U		0.010	U		0.010	U		0.010	U	
DIELDRIN	0.04	U		0.020	U		0.020	U		0.020	U	
ENDOSULFAN I	0.017	R	U	0.010	U		0.010	U		0.010	U	
ENDOSULFAN II	0.04	U		0.020	U		0.020	U		0.020	U	
ENDOSULFAN SULFATE	0.04	U		0.020	U		0.020	U		0.020	U	
ENDRIN	0.04	U		0.020	U		0.020	U		0.020	U	
ENDRIN ALDEHYDE	0.04	U		0.020	U		0.020	U		0.020	U	
ENDRIN KETONE	0.40	U		0.020	U		0.020	U		0.020	U	
GAMMA-BHC (LINDANE)	0.02	U		0.010	U		0.010	U		0.010	U	
GAMMA-CHLORDANE	0.02	U		0.010	U		0.010	U		0.010	U	
HEPTACHLOR	0.02	U		0.010	U		0.010	U		0.010	U	
HEPTACHLOR EPOXIDE	0.02	U		0.010	U		0.010	U		0.010	U	
METHOXYCHLOR	0.2	U		0.10	U		0.10	U		0.10	U	
TOXAPHENE	2.0	U		1.0	U		1.0	U		1.0	U	

CTO203-NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL006

SAMPLE NUMBER:	SWSG21-06			SWSG22-06			SWSG23-06			SWSG24-06		
SAMPLE DATE:	03/11/01			03/11/01			03/11/01			03/13/01		
LABORATORY ID:	C1C130227007			C1C130227006			C1C130227005			C1C140199003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.020	U		0.020	U		0.020	U		0.020	U	
4,4'-DDE	0.020	U		0.020	U		0.020	U		0.020	U	
4,4'-DDT	0.020	U		0.020	U		0.020	U		0.020	U	
ALDRIN	0.010	U		0.010	U		0.010	U		0.010	U	
ALPHA-BHC	0.010	U		0.010	U		0.010	U		0.010	U	
ALPHA-CHLORDANE	0.010	U		0.010	U		0.010	U		0.010	U	
AROCLOR-1016	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1221	0.40	U		0.40	U		0.40	U		0.40	U	
AROCLOR-1232	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1242	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1248	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1254	0.20	U		0.20	U		0.20	U		0.20	U	
AROCLOR-1260	0.20	U		0.20	U		0.20	U		0.20	U	
BETA-BHC	0.010	U		0.010	U		0.010	U		0.010	U	
DELTA-BHC	0.010	U		0.010	U		0.010	U		0.010	U	
DIELDRIN	0.020	U		0.020	U		0.020	U		0.020	U	
ENDOSULFAN I	0.010	U		0.010	U		0.010	U		0.010	U	
ENDOSULFAN II	0.020	U		0.020	U		0.020	U		0.020	U	
ENDOSULFAN SULFATE	0.020	U		0.020	U		0.020	U		0.020	U	
ENDRIN	0.020	U		0.020	U		0.020	U		0.020	U	
ENDRIN ALDEHYDE	0.020	U		0.020	U		0.020	U		0.020	U	
ENDRIN KETONE	0.020	U		0.020	U		0.020	U		0.020	U	
GAMMA-BHC (LINDANE)	0.010	U		0.010	U		0.010	U		0.010	U	
GAMMA-CHLORDANE	0.010	U		0.010	U		0.010	U		0.010	U	
HEPTACHLOR	0.010	U		0.010	U		0.010	U		0.010	U	
HEPTACHLOR EPOXIDE	0.010	U		0.010	U		0.010	U		0.010	U	
METHOXYCHLOR	0.10	U		0.10	U		0.10	U		0.10	U	
TOXAPHENE	1.0	U		1.0	U		1.0	U		1.0	U	

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. MENGEL** **DATE: MAY 7, 2001**

FROM: **ANGELA SCHEETZ** **COPIES: DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION: VOA / SVOA / PEST / PCB / PAH**
CTO 203, NSB NEW LONDON
SDG NL007

SAMPLES: 5 / Aqueous / VOA / SVOA / PEST / PCB / PAH

2WGW38DS-06	2WGW43DS-06	3MSP01-06
SWSG18-06	SWSG20-06	

2 / Aqueous / VOA

TB031001-02	TB031201-01

Overview

The sample set for CTO 203, NSB New London; SDG NL007 consists of five (5) aqueous environmental samples and two (2) aqueous trip blanks. The 5 aqueous environmental samples were analyzed for TCL volatile organics, TCL semivolatile organics, organochlorine pesticide, polychlorinated biphenyl organic compounds, and polynuclear aromatic hydrocarbons. The 2 trip blanks were analyzed for TCL volatile organic compounds only. No field duplicate pairs were included in this SDG.

The samples were collected by TetraTech NUS on March 10-13, 2001 and were analyzed by Severn Trent Laboratories. Analyses were conducted using the Contract Laboratory Program (CLP) Statement of Work (SOW) OLC02.1 analytical and reporting protocols.

The data were evaluated based on the following parameters:

- * Data Completeness
- * Holding Times
- * GC/MS Tuning
- Initial and Continuing Calibration
- Laboratory Method and/or Field Quality Control Blanks
- Surrogate Spike Recoveries
- * Blank Spike / Blank Spike Duplicate Recoveries
- * Internal Standards Performance
- * Instrument Performance
- * Compound Identification
- * Compound Quantitation
- * Tentatively Identified Compounds (TICs)

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to

support the findings as discussed in this data validation report. The attached Table summarizes the validation qualifications which are based on the following information:

CALIBRATIONS

The following tables summarize calibration noncompliance and corresponding actions for:

Compound	ICV 03/06/01	CCV 03/14/01	CCV 03/15/01
Acetone	D	RX	RX
1,2-dibromo-3-chloropropane		RX	RX
2-hexanone		X	X
2-butanone		RX	X
4-methyl-2-pentanone		X	X
Bromomethane		X	X
1,1,2,2-tetrachloroethane		X	X
Bromoform			X
Associated Samples:	All	3MSP01-06 SWSG18-01 SWSG20-01 TB-031201-01	2WGW38DS-06 2WGW43DS-06 TB031001-02

Compound	ICV 02/26/01	CCV 03/19/01	CCV 03/19/01
2,4-Dinitrophenol	D	X	
Benzoic Acid	D		
4-Nitrophenol		X	X
4-Nitroaniline		X	
Associated Samples:	2WGW38DS-06 2WGW43DS-06	SWSG18-06 SWSG20-06 3MSP01-06	2WGW38DS-06 2WGW43DS-06

Calibration Actions:

D - Percent Relative Standard Deviation > 30%; estimate positive (J) and nondetected (UJ) results.
X - Percent Difference > 25%; estimate (J) positive and (UJ) nondetected results.
R - Relative Response Factors < 0.05; estimate positive (J) and reject nondetected (UR) results.

Compound	ICV 03/19/01
Alpha-BHC	D
Delta-BHC	D

Associated Samples: All

Calibration Actions for pesticide/PCBs:

D - Percent Relative Standard Deviation > 20%; estimate positive (J) and nondetected (UJ) results.
X - Percent Difference > 25% on both analytical columns; estimate (J) positive and (UJ) nondetected results.
* - Percent Difference > 25% on one analytical column; estimate positive (J) and no action required for nondetected results.

BLANKS

The following contaminants were detected in laboratory method blanks:

Compound	Maximum Concentration	Action Level
Methylene chloride	0.76 µg/L	7.6 µg/L
Acetone	2.7 µg/L	27 µg/L

Samples Affected: All
Blank Actions:

- Value < Contract Required Quantitation Limit (CRQL); report CRQL followed by a U.
- Value > CRQL and < action level; report value followed by a U.
- Value > CRQL and > action level; report value unqualified.

Dilution factors and sample aliquots were taken into consideration when applying blank action levels. Positive results for methylene chloride and acetone were qualified in the manner indicated by the blank action table. Field quality control blanks were not qualified due to method blank contamination.

SURROGATE RECOVERY

% Recovery of the PAH surrogate p-terphenyl and benzo(e)pyrene fell below the quality control limits on both detectors in sample 2WGW43DS-06. This sample was unable to be reextracted and reanalyzed due to an insufficient amount of the sample. Positive and nondetected results were qualified as estimated, J and UJ, respectively in the sample.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

% Recovery in the matrix spike/matrix spike duplicate fell below the quality control limits for endosulfan sulfate and fell below the 10% quality control limits for 3,3'-dichlorobenzidene in sample 2WGW43DS-06. The nondetected result for endosulfan sulfate was qualified as estimated, UJ in this sample. The nondetected result for 3,3'-dichlorobenzidine was qualified as rejected, UR in this sample.

Blank Spike Recoveries

% Recovery in the blank spike fell below the 10% quality control limits for hexachlorocyclopentadiene in the samples associated with batch numbers 1075110 and 1075280. The nondetected results were rejected, UR in the associated samples.

POSITIVE RESULTS % DIFFERENCES BETWEEN DETECTORS

The percent difference between columns exceeded 25% for the following compounds. Positive results <100% were qualified as estimated, J in the associated samples. The positive result (>100%), for endrin aldehyde, was qualified as rejected, R in the associated sample.

Sample	Compound	%D
2WGW43DS-06	Chrysene	430.8%
SWSG18-06	Benzo(g,h,I)perylene	70.6%
	Indeno(1,2,3-cd)pyrene	47.9%
SWSG20-06	Benzo(g,h,i)perylene	70.2%
	Indeno(1,2,3-cd)pyrene	50.5%
3MSP01-06	Dibenz(a,h)anthracene	81.7%
	Benzo(g,h,I)perylene	82.2%
	Indeno(1,2,3-cd)pyrene	41.0%
	Endrin Aldehyde	220.3%

TENTATIVELY INDENTIFIED COMPOUNDS

Several tentatively identified compounds were detected for the volatile and semivolatile analysis in the samples that follow. These are summarized in Table 1 of this report.

2WGW38DS-06	2WGW43DS-06
3MSP01-06	SWSG18-06
SWSG20-06	TB031001-02
TB031201-01	

ADDITIONAL COMMENTS

Positive results reported at concentrations below the CRQL were qualified as estimated (J).

1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene were reported in both the volatile and semivolatile fractions. Since the reporting limits for the referenced compounds is lower in the volatile fraction (1 ppb), the compounds were removed from the semivolatile fraction.

OVERALL ASSESSMENT

Laboratory Performance: Several compounds were detected in the laboratory blank and/or field quality control blank analyses. The laboratory was unable to obtain acceptable percent differences between initial

and continuing calibration response factors for several volatile compounds. Surrogate recoveries were outside the quality control limits in the PAH fraction. The blank spike % recovery of hexachlorocyclopentadiene was noncompliant.

Other Factors Affecting Data Quality: Matrix spike/matrix spike duplicate had recoveries that were noncompliant.

The data for these analyses were reviewed with reference to the Region I EPA "Data Validation Functional Guidelines - Part II" (12/96).

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

TetraTech NUS

Angela Scheetz
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

NSB NEW LONDON

SDG NL007

TABLE 1. SUMMARY OF TENTATIVELY IDINTIFIED VOLATILE AND SEMIVOLATILE COMPOUNDS

TIC		2WGW38DS-06	2WGW43DS-06	3MSP01-06	SWSG18-06	SWSG20-06	TB031001-02	TB-031201-01
Volatiles								
Unknown(s)			X					X
Sulfur dioxide		X	X	X	X	X	X	X
Semivolatiles								
Unknown(s)		X	X	X	X	X		
2-butoxy-ethanol				X	X	X		
heptan-2-one-bicyclo			X					
cyclic octaatomic sulfur			X					

APPENDIX A

QUALIFIED LABORATORY RESULTS

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	2WGW38DS-06			2WGW43DS-06			3MSP01-06			SWSG18-06		
SAMPLE DATE:	03/10/01			03/13/01			03/13/01			03/13/01		
LABORATORY ID:	C1C150224001			C1C150224004			C1C140209003			C1C140209001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UJ	C	5	UJ	C	5	UR	C	5	UR	C
2-HEXANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
4-METHYL-2-PENTANONE	5	UJ	C	5	UJ	C	5	UJ	C	5	UJ	C
ACETONE	5	U	A	5	U	A	5	U	A	5	U	A
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	UJ	C	1	UJ	C	1	U		1	U	
BROMOMETHANE	1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
CARBON DISULFIDE	1	U		0.45	J	P	1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLORODIBROMOMETHANE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U	A	2	U		2	U		2	U	

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	2WGW38DS-06			2WGW43DS-06			3MSP01-06			SWSG18-06		
SAMPLE DATE:	03/10/01			03/13/01			03/13/01			03/13/01		
LABORATORY ID:	C1C150224001			C1C150224004			C1C140209003			C1C140209001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
STYRENE	1	U		1	U		1	U		1	U	
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		0.41	J	P	1	U		1	U	
TOTAL XYLENES	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	SWSG20-06			TB031001-02			TB031201-01			/ /		
SAMPLE DATE:	03/13/01			03/10/01			03/12/01					
LABORATORY ID:	C1C140209002			C1C150224006			C1C140209004					
QC_TYPE:	NORMAL			NORMAL			NORMAL					
% SOLIDS:	0.0 %			0.0 %			0.0 %			100.0 %		
UNITS:	UG/L			UG/L			UG/L					
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U				
1,1,2,2-TETRACHLOROETHANE	1	UJ	C	1	UJ	C	1	UJ	C			
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U				
1,1-DICHLOROETHANE	1	U		1	U		1	U				
1,1-DICHLOROETHENE	1	U		1	U		1	U				
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C			
1,2-DIBROMOETHANE	1	U		1	U		1	U				
1,2-DICHLOROBENZENE	1	U		1	U		1	U				
1,2-DICHLOROETHANE	1	U		1	U		1	U				
1,2-DICHLOROPROPANE	1	U		1	U		1	U				
1,3-DICHLOROBENZENE	1	U		1	U		1	U				
1,4-DICHLOROBENZENE	1	U		1	U		1	U				
2-BUTANONE	5	UR	C	5	UJ	C	5	UJ	C			
2-HEXANONE	5	UJ	C	5	UJ	C	5	UJ	C			
4-METHYL-2-PENTANONE	5	UJ	C	5	UJ	C	5	UJ	C			
ACETONE	5	U	A	5	U		5	U	A			
BENZENE	1	U		1	U		1	U				
BROMOCHLOROMETHANE	1	U		1	U		1	U				
BROMODICHLOROMETHANE	1	U		1	U		1	U				
BROMOFORM	1	U		1	UJ	C	1	U				
BROMOMETHANE	1	UJ	C	1	UJ	C	1	UJ	C			
CARBON DISULFIDE	1	U		1	U		1	U				
CARBON TETRACHLORIDE	1	U		1	U		1	U				
CHLOROBENZENE	1	U		1	U		1	U				
CHLORODIBROMOMETHANE	1	U		1	U		1	U				
CHLOROETHANE	1	U		1	U		1	U				
CHLOROFORM	1	U		1	U		1	U				
CHLOROMETHANE	1	U		1	U		1	U				
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U				
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U				
ETHYLBENZENE	1	U		1	U		1	U				
METHYLENE CHLORIDE	2	U		2	U		2	U				

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	SWSG20-06			TB031001-02			TB031201-01					
SAMPLE DATE:	03/13/01			03/10/01			03/12/01			/ /		
LABORATORY ID:	C1C140209002			C1C150224006			C1C140209004					
QC_TYPE:	NORMAL			NORMAL			NORMAL					
% SOLIDS:	0.0 %			0.0 %			0.0 %			100.0 %		
UNITS:	UG/L			UG/L			UG/L					
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
STYRENE	1	U		1	U		1	U				
TETRACHLOROETHENE	1	U		1	U		1	U				
TOLUENE	1	U		1	U		1	U				
TOTAL XYLENES	1	U		1	U		1	U				
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U				
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U				
TRICHLOROETHENE	1	U		1	U		1	U				
VINYL CHLORIDE	1	U		1	U		1	U				

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	2WGW38DS-06			2WGW43DS-06			3MSP01-06			SWSG18-06		
SAMPLE DATE:	03/10/01			03/13/01			03/13/01			03/13/01		
LABORATORY ID:	C1C150224001			C1C150224004			C1C140209003			C1C140209001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	10	U		10	U		10	U		10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U		10	U		10	U		10	U	
2,4,5-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4,6-TRICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DICHLOROPHENOL	10	U		10	U		10	U		10	U	
2,4-DIMETHYLPHENOL	10	U		10	U		10	U		10	U	
2,4-DINITROPHENOL	50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
2,4-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2,6-DINITROTOLUENE	10	U		10	U		10	U		10	U	
2-CHLORONAPHTHALENE	10	U		10	U		10	U		10	U	
2-CHLOROPHENOL	10	U		10	U		10	U		10	U	
2-METHYLPHENOL	10	U		10	U		10	U		10	U	
2-NITROANILINE	50	U		50	U		50	U		50	U	
2-NITROPHENOL	10	U		10	U		10	U		10	U	
3,3'-DICHLOROBENZIDINE	50	U		50	UR	D	50	U		50	U	
3-NITROANILINE	50	U		50	U		50	U		50	U	
4,6-DINITRO-2-METHYLPHENOL	50	U		50	U		50	U		50	U	
4-BROMOPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-CHLORO-3-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-CHLOROANILINE	10	U		10	U		10	U		10	U	
4-CHLOROPHENYL PHENYL ETHER	10	U		10	U		10	U		10	U	
4-METHYLPHENOL	10	U		10	U		10	U		10	U	
4-NITROANILINE	50	U		50	U		50	UJ	C	50	UJ	C
4-NITROPHENOL	50	UJ	C	50	UJ	C	50	UJ	C	50	UJ	C
BENZOIC ACID	50	UJ	C	50	UJ	C	50	U		50	U	
BIS(2-CHLOROETHOXY)METHANE	10	U		10	U		10	U		10	U	
BIS(2-CHLOROETHYL)ETHER	10	U		10	U		10	U		10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U		10	U		10	U		10	U	
BUTYL BENZYL PHTHALATE	10	U		10	U		10	U		10	U	
CARBAZOLE	10	U		10	U		10	U		10	U	
DI-N-BUTYL PHTHALATE	10	U		10	U		10	U		10	U	
DI-N-OCTYL PHTHALATE	10	U		10	U		10	U		10	U	

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	2WGW38DS-06			2WGW43DS-06			3MSP01-06			SWSG18-06		
SAMPLE DATE:	03/10/01			03/13/01			03/13/01			03/13/01		
LABORATORY ID:	C1C150224001			C1C150224004			C1C140209003			C1C140209001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
DIBENZOFURAN	10	U		10	U		10	U		10	U	
DIETHYL PHTHALATE	10	U		10	U		10	U		10	U	
DIMETHYL PHTHALATE	10	U		10	U		10	U		10	U	
HEXACHLOROBENZENE	10	U		10	U		10	U		10	U	
HEXACHLOROBUTADIENE	10	U		10	U		10	U		10	U	
HEXACHLOROCYCLOPENTADIENE	50	UR	E	50	UR	E	50	UR	E	50	UR	E
HEXACHLOROETHANE	10	U		10	U		10	U		10	U	
ISOPHORONE	10	U		10	U		10	U		10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U		10	U		10	U		10	U	
N-NITROSODIPHENYLAMINE	10	U		10	U		10	U		10	U	
NITROBENZENE	10	U		10	U		10	U		10	U	
PENTACHLOROPHENOL	50	U		50	U		50	U		50	U	
PHENOL	10	U		10	U		10	U		10	U	

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	SWSG20-06			/ /			/ /			/ /		
SAMPLE DATE:	03/13/01											
LABORATORY ID:	C1C140209002											
QC_TYPE:	NORMAL											
% SOLIDS:	0.0 %			100.0 %			100.0 %			100.0 %		
UNITS:	UG/L											
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
1,2,4-TRICHLOROBENZENE	10	U										
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U										
2,4,5-TRICHLOROPHENOL	10	U										
2,4,6-TRICHLOROPHENOL	10	U										
2,4-DICHLOROPHENOL	10	U										
2,4-DIMETHYLPHENOL	10	U										
2,4-DINITROPHENOL	50	UJ	C									
2,4-DINITROTOLUENE	10	U										
2,6-DINITROTOLUENE	10	U										
2-CHLORONAPHTHALENE	10	U										
2-CHLOROPHENOL	10	U										
2-METHYLPHENOL	10	U										
2-NITROANILINE	50	U										
2-NITROPHENOL	10	U										
3,3'-DICHLOROBENZIDINE	50	U										
3-NITROANILINE	50	U										
4,6-DINITRO-2-METHYLPHENOL	50	U										
4-BROMOPHENYL PHENYL ETHER	10	U										
4-CHLORO-3-METHYLPHENOL	10	U										
4-CHLOROANILINE	10	U										
4-CHLOROPHENYL PHENYL ETHER	10	U										
4-METHYLPHENOL	10	U										
4-NITROANILINE	50	UJ	C									
4-NITROPHENOL	50	UJ	C									
BENZOIC ACID	50	U										
BIS(2-CHLOROETHOXY)METHANE	10	U										
BIS(2-CHLOROETHYL)ETHER	10	U										
BIS(2-ETHYLHEXYL)PHTHALATE	10	U										
BUTYL BENZYL PHTHALATE	10	U										
CARBAZOLE	10	U										
DI-N-BUTYL PHTHALATE	10	U										
DI-N-OCTYL PHTHALATE	10	U										

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	SWSG20-06											
SAMPLE DATE:	03/13/01			/ /			/ /			/ /		
LABORATORY ID:	C1C140209002											
QC_TYPE:	NORMAL											
% SOLIDS:	0.0 %			100.0 %			100.0 %			100.0 %		
UNITS:	UG/L											
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
DIBENZOFURAN	10	U										
DIETHYL PHTHALATE	10	U										
DIMETHYL PHTHALATE	10	U										
HEXACHLOROBENZENE	10	U										
HEXACHLOROBUTADIENE	10	U										
HEXACHLOROCYCLOPENTADIENE	50	UR	E									
HEXACHLOROETHANE	10	U										
ISOPHORONE	10	U										
N-NITROSO-DI-N-PROPYLAMINE	10	U										
N-NITROSODIPHENYLAMINE	10	U										
NITROBENZENE	10	U										
PENTACHLOROPHENOL	50	U										
PHENOL	10	U										

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	2WGW38DS-06			2WGW43DS-06			3MSP01-06			SWSG18-06		
SAMPLE DATE:	03/12/01			03/13/01			03/13/01			03/13/01		
LABORATORY ID:	C1C150224002			C1C150224004			C1C140209003			C1C140209001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
POLYNUCLEAR AROMATIC HYDROCARBONS												
ACENAPHTHENE	1	U		1	UJ	R	1	U		1	U	
ACENAPHTHYLENE	1	U		1	UJ	R	1	U		1	U	
ANTHRACENE	0.2	U		0.2	UJ	R	0.24			0.2	U	
BENZO(A)ANTHRACENE	0.2	U		0.2	UJ	R	0.82			0.061	J	P
BENZO(A)PYRENE	0.2	U		0.2	UJ	R	0.9			0.11	J	P
BENZO(B)FLUORANTHENE	0.2	U		0.2	UJ	R	0.83			0.2	U	
BENZO(G,H,I)PERYLENE	0.2	U		0.2	UJ	R	0.98	J	U	0.2	J	U
BENZO(K)FLUORANTHENE	0.2	U		0.2	UJ	R	0.44			0.083	J	P
CHRYSENE	0.2	U		0.061	J	UR	0.77			0.16	J	P
DIBENZO(A,H)ANTHRACENE	0.2	U		0.2	UJ	R	0.095	J	UP	0.2	U	
FLUORANTHENE	0.2	U		0.2	UJ	R	2			0.42		
FLUORENE	0.2	U		0.2	UJ	R	0.11	J	P	0.2	U	
INDENO(1,2,3-CD)PYRENE	0.2	U		0.2	UJ	R	0.49	J	U	0.091	J	UP
NAPHTHALENE	1	U		1	UJ	R	1	U		1	U	
PHENANTHRENE	0.2	U		0.2	UJ	R	1.1			0.21		
PYRENE	0.2	U		0.2	UJ	R	1.8			0.3		

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	SWSG20-06											
SAMPLE DATE:	03/13/01			/ /			/ /			/ /		
LABORATORY ID:	C1C140209002											
QC_TYPE:	NORMAL											
% SOLIDS:	0.0 %			100.0 %			100.0 %			100.0 %		
UNITS:	UG/L											
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
POLYNUCLEAR AROMATIC HYDROCARBONS												
ACENAPHTHENE	1	U										
ACENAPHTHYLENE	1	U										
ANTHRACENE	0.2	U										
BENZO(A)ANTHRACENE	0.037	J	P									
BENZO(A)PYRENE	0.066	J	P									
BENZO(B)FLUORANTHENE	0.2	U										
BENZO(G,H,I)PERYLENE	0.11	J	UP									
BENZO(K)FLUORANTHENE	0.05	J	P									
CHRYSENE	0.095	J	P									
DIBENZO(A,H)ANTHRACENE	0.2	U										
FLUORANTHENE	0.26											
FLUORENE	0.2	U										
INDENO(1,2,3-CD)PYRENE	0.054	J	UP									
NAPHTHALENE	1	U										
PHENANTHRENE	0.14	J	P									
PYRENE	0.18	J	P									

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	2WGW38DS-06			2WGW43DS-06			3MSP01-06			SWSG18-06		
SAMPLE DATE:	03/10/01			03/13/01			03/13/01			03/13/01		
LABORATORY ID:	C1C150224001			C1C150224004			C1C140209003			C1C140209001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.02	U		0.02	U		0.023			0.02	U	
4,4'-DDE	0.02	U		0.02	U		0.02			0.02	U	
4,4'-DDT	0.02	U		0.02	U		0.056			0.02	U	
ALDRIN	0.01	U		0.01	U		0.01	U		0.01	U	
ALPHA-BHC	0.01	UJ	C	0.01	UJ	C	0.01	UJ	C	0.01	UJ	C
ALPHA-CHLORDANE	0.01	U		0.01	U		0.01	U		0.01	U	
AROCLOR-1016	0.2	U		0.2	U		0.2	U		0.2	U	
AROCLOR-1221	0.4	U		0.4	U		0.4	U		0.4	U	
AROCLOR-1232	0.2	U		0.2	U		0.2	U		0.2	U	
AROCLOR-1242	0.2	U		0.2	U		0.2	U		0.2	U	
AROCLOR-1248	0.2	U		0.2	U		0.2	U		0.2	U	
AROCLOR-1254	0.2	U		0.2	U		0.2	U		0.2	U	
AROCLOR-1260	0.2	U		0.2	U		0.2	U		0.2	U	
BETA-BHC	0.01	U		0.01	U		0.01	U		0.01	U	
DELTA-BHC	0.01	UJ	C	0.01	UJ	C	0.01	UJ	C	0.01	UJ	C
DIELDRIN	0.02	U		0.02	U		0.02	U		0.02	U	
ENDOSULFAN I	0.01	U		0.01	U		0.01	U		0.01	U	
ENDOSULFAN II	0.02	U		0.02	U		0.02	U		0.02	U	
ENDOSULFAN SULFATE	0.02	U		0.02	UJ	D	0.02	U		0.02	U	
ENDRIN	0.02	U		0.02	U		0.02	U		0.02	U	
ENDRIN ALDEHYDE	0.02	U		0.02	U		0.011	R	U	0.02	U	
ENDRIN KETONE	0.02	U		0.02	U		0.02	U		0.02	U	
GAMMA-BHC (LINDANE)	0.01	U		0.01	U		0.01	U		0.01	U	
GAMMA-CHLORDANE	0.01	U		0.01	U		0.01	U		0.01	U	
HEPTACHLOR	0.01	U		0.01	U		0.01	U		0.01	U	
HEPTACHLOR EPOXIDE	0.01	U		0.01	U		0.01	U		0.01	U	
METHOXYCHLOR	0.1	U		0.1	U		0.1	U		0.1	U	
TOXAPHENE	1	U		1	U		1	U		1	U	

NSB NEW LONDON
WATER DATA
QUANTERRA
SDG: NL007

SAMPLE NUMBER:	SWSG20-06											
SAMPLE DATE:	03/13/01			/ /			/ /			/ /		
LABORATORY ID:	C1C140209002											
QC_TYPE:	NORMAL											
% SOLIDS:	0.0 %			100.0 %			100.0 %			100.0 %		
UNITS:	UG/L											
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.02	U										
4,4'-DDE	0.02	U										
4,4'-DDT	0.02	U										
ALDRIN	0.01	U										
ALPHA-BHC	0.01	UJ	C									
ALPHA-CHLORDANE	0.01	U										
AROCLOR-1016	0.2	U										
AROCLOR-1221	0.4	U										
AROCLOR-1232	0.2	U										
AROCLOR-1242	0.2	U										
AROCLOR-1248	0.2	U										
AROCLOR-1254	0.2	U										
AROCLOR-1260	0.2	U										
BETA-BHC	0.01	U										
DELTA-BHC	0.01	UJ	C									
DIELDRIN	0.02	U										
ENDOSULFAN I	0.01	U										
ENDOSULFAN II	0.02	U										
ENDOSULFAN SULFATE	0.02	U										
ENDRIN	0.02	U										
ENDRIN ALDEHYDE	0.02	U										
ENDRIN KETONE	0.02	U										
GAMMA-BHC (LINDANE)	0.01	U										
GAMMA-CHLORDANE	0.01	U										
HEPTACHLOR	0.01	U										
HEPTACHLOR EPOXIDE	0.01	U										
METHOXYCHLOR	0.1	U										
TOXAPHENE	1	U										