DRAFT
CONSTRUCTION AND TESTING REPORT
WEBER AVENUE MONITORING WELL
LONGVIEW, WASHINGTON
JANUARY 2007

Introduction

As a task in the Source Analysis Project, Robinson, Noble, & Saltbush, Inc. supervised the drilling, construction, and testing of an exploratory well at a location on Weber Avenue in the Mint Farm Industrial Park in Longview, Washington. This new well, known as the Weber Avenue Monitoring Well, was drilled to verify the presence of an aquifer sufficient to meet the projected demands and to determine the water quality to allow for the planning of treatment processes. The monitoring well is considered a resource protection well by the state, so there was no requirement to obtain a preliminary permit to drill and test or a water right prior to drilling. As it is a monitoring well, it can never be used for production; this well may only be used to measure water levels and determine water quality. The well was drilled with 6-inch casing and completed by perforating the casing through the aquifer zone of interest.

The Weber Avenue Monitoring Well is located on the south side of Weber Avenue (slated to be vacated), five feet to the north of the right-of-way boundary and approximately 200 feet to the east of Prudential Boulevard. The Weber Avenue Monitoring Well is located approximately 1100 feet to the north of the Mirant Corporation's wells 1 and 2, which are the nearest known wells in the same aquifer. This places the site within the SE ¼, SW ¼, Section 30, T8N, R2W, Willamette Meridian, in Cowlitz County, Washington. Figure 1 shows the location of the site. The land surface elevation at the site is approximately 10 feet above mean sea level. The Mirant wells are located at 1200 Prudential Boulevard, approximately 1100 feet to the south of the Weber Avenue Monitoring Well.

Drilling and Geology

On January 3, 2007, Tacoma Pump & Drilling of Graham, Washington mobilized their Foremost DR-24HD, truck-mounted dual-rotary drilling rig to the site. Drilling began the same day with the placement of a temporary 10-inch diameter surface casing. This casing was installed to a depth of 18 feet to allow for the completion of a surface seal. Based on our experience with wells in the area, it was determined that the material present at this depth is of sufficiently low permeability to create an effective surface seal. Following the placement of the 10-inch casing and bentonite surface seal, drilling proceeded below 18 feet utilizing 0.250-inch wall, 6-inch casing tipped with a carbide-studded casing shoe. The 6-inch casing was advanced to the contracted depth of 398 feet, progressing thirty feet into the bedrock material, ensuring that the entire aquifer thickness had been penetrated and characterized. The final drilling depth was reached just after noon on January 4.

The materials encountered during the drilling of the Weber Avenue Monitoring Well consisted of unconsolidated sediments to a depth of 368 feet, where a soft gray siltstone or silty sandstone was encountered. The unconsolidated materials penetrated appear to be alluvium associated with the nearby Columbia River. Within the sequence of unconsolidated materials, two distinct hydrostratigraphic units were observed, an upper confining unit from approximately ground surface to 230 feet, and an underlying aquifer from 230 feet to the bedrock at 368 feet. The

materials comprising the upper confining unit consist of alternating layers of silt and fine sand. Although this upper sequence is saturated below 50 feet and contains some minor water-bearing strata, it is generally comprised of fine-grained, low-permeability materials. The underlying aquifer consists of a fining-upwards sequence of water-bearing sands, gravels and cobbles. Figure 2 shows a detailed description of the materials that were encountered during drilling; a copy of the Washington State Water Well Report (which also describes the drilled materials) will be included in the appendix of this report upon receipt from driller.

Construction

During the drilling of the Weber Avenue Monitoring Well, regular samples of the materials encountered were collected as a part of the hydrogeologic characterization. Within the target aquifer (materials below 230 feet), samples were collected more frequently for better characterization of the material. Due to the dual rotary drilling method used, the larger gravels were either displaced or destroyed by the drilling process, resulting in only small fragments of less than 1-inch diameter being removed from the hole as cuttings.

Rather purchase an expensive wire-wrap well screen and expend the time and effort to install, expose, and develop such a well screen assembly, it was elected to perforate the well casing in the target aquifer region to allow for the entry of water from the aquifer. The casing from 318 feet to 370 feet was perforated using a star perforator. Each perforation is ¼ inch wide by 1 inch long. Four perforations were equally distributed around the casing, and six sets of perforations were made per linear foot of casing. The details of well construction and completion are provided in the construction detail on Figure 2. While the perforations are an expedient method of well completion, the amount of open area created is much smaller than a well screen. The approximate total open area in the 52 feet of perforated casing is approximately 310 square inches, which is equivalent to less than 3 feet of a typical wire-wrapped well screen suitable for this size of well casing and formation.

Development

Initial well development was conducted after perforation by air-lift pumping. High-pressure air was used to lift water from the well at rates of up to approximately 300 gallons per minute (gpm). A large amount of sand was removed from the formation materials around the well during the development process. After 6.5 hours of air-lift development over two days, the level of well development was considered to be adequate for our purposes, as the well was producing clear water with no odor and only a small amount of sand.

Testing

Following well development, Tacoma Pump & Drilling installed a small submersible pump in the well to ascertain aquifer characteristics if possible and to obtain representative water samples from the aquifer. On January 9, a step-rate pumping test was conducted. The well was pumped at rates varying from 100 to 260 gallons per minute (gpm). The 15-minute specific capacities observed during the step rate testing ranged from 100.8 gpm per foot of drawdown (gpm/ft) at the lowest rate, to 44.4 gpm/ft at the highest rate. These data suggest that the well experiences a progressive decrease in efficiency as the discharge rate is increased. This inefficiency was not unexpected; the perforations used have less than 10% of the open area of a typical vee-wire type well screen, creating a significant impediment to water entry. After the testing at 100 gpm, the well was allowed to recover. As recovery following pump-shutdown was essentially instantaneous and the water rose over the top of the casing, no further recovery measurements were attempted between

steps. The well produced sand during the entire testing period, indicating that the well would benefit from additional development were it to be used as a production source. Ultimately, when the relatively small amount of drawdown observed at the various pumping rates (less than one foot at 100 gpm to less than six feet at 260 gpm) and the purpose of the monitoring well are considered, the efficiency loss observed during step-rate-testing is an insignificant issue that in no way restricts the use or utility of the monitoring well.

The final step of pumping was continued for three hours to allow the water to clear and to obtain water samples that are truly representative of the aquifer. During the pumping at this rate, the flow-meter failed and partially obstructed the discharge of the pump. As the water level change indicates, the rate of production dropped at approximately 12:12 PM when the flowmeter failed. After the failure, discharge dropped to 248 gpm as measured with an orifice tube and manometer, and then gradually increased to 260 gpm as the flow meter components wore out and more water was allowed to pass through. Water level data was collected throughout the testing period both manually and through the use of an electronic data logger. The data logger was configured to record measurements every 0.1 seconds, which resulted in a nearly continuous water level record for duration of the testing period (presented as Figure 5).

Figure 3 graphically depicts the water level data obtained during the 260 gpm step of the pumping test. The drawdown data are presented as the measured water level vs. elapsed time, with the time being plotted on a logarithmic scale. Unfortunately, electrical interference from the generator caused some noise in the measurements recorded by the data logging equipment. The plot was cleaned up for presentation by plotting a running average fit of the data rather than the actual data points in Figures 3 and 5. Figure 4 presents the actual water level data recorded plotted vs. elapsed time after the pump was turned off. Since the generator was not operating under load at this time, the interference observed in the earlier data was not present. Immediately after pump shutoff, the momentum of the water traveling up the casing caused the water to rise above the top of the casing, and then settle into a series of decreasing amplitude oscillations taking place for several minutes.

Hydrogeology

Due to the fluctuations in discharge, it is difficult to use the drawdown data plotted in Figure 3 to calculate aquifer characteristics. However, close observation of Figure 4 indicates that there is a very slight upward slope in the plot following the oscillations of the water level after shutdown. Unfortunately without monitoring data from the aquifer at another nearby point, it is impossible to determine if this rise is in response to the changing stage of the Columbia River, the aquifer recovering from the pumping of the well, or both. If one assumes that all of the response observed reflects recovery from the pumping event (and the tidal changes do not counter any of the actual aquifer response) the transmissivity of the aquifer can be calculated using the observed values. With a pumping rate of 260 gpm, the transmissivity of the aquifer is calculated to be 1,030,000 gallons per day per foot of aquifer width. This value is extremely large, but is less than one half of the value calculated at the Mirant wells, indicating that the aquifer is more productive at that location. Our work at that site indicated there is a strong tidal response of approximately two feet per tidal cycle in the wells at that site and similar responses would be anticipated at this location.

The initial 4 feet of drawdown observed at the 260 gpm rate is at least partially a result of pipe hydraulics rather than aquifer characteristics. When the monitoring well was tested, a submersible pump was installed approximately 100 feet below top of the well. This created a column of approximately 220 feet of 6-inch pipe between the top of the perforations and the bottom of the

pump. At a flow of 250 gpm, 6-inch nominal steel pipe experiences a frictional head loss ranging from 0.7 to 2.8 feet of head per 100 feet of length (depending on the reference used) corresponding to a calculated loss ranging from 1.5 to 6.1 feet. These values roughly bracket the measured four feet of drawdown observed immediately upon pump startup.

The recorded water level data from the monitoring well are presented in Figure 5 along with a record of the water level changes in the Columbia River near the Port of Longview. It appears that there is a change of over one foot from the initial pre-testing static water level and the water level observed at the end of testing. Without a longer quiescent monitoring period, it is impossible to determine the full range of tidal fluctuations, but it is apparent that there is some amount of tidal response in the Weber Avenue Monitoring Well.

Water Quality

During the pumping test, the well produced up to 25 milliliters of relatively fine sand per liter of water. Sand production never cleared completely, but the amount of sand did diminish as pumping continued. The initial water produced was quite turbid, but the water cleared after approximately 20 minutes of pumping. There was a slight and inconsistent odor of hydrogen sulfide (rotten egg smell) and the water had a slight metallic taste. Near the end of the 260 gpm step, the water had a pH of 7.09, a conductivity of 156.1 µS/cm, and a temperature of 11.5°C. All of the water sample containers were filled during the final 10 minutes of the pumping period. The water samples were placed directly into a cooler and delivered to Columbia Analytical of Kelso Washington for a full suite of analyses after the completion of the pumping test.

Analytical results indicate relatively good water quality, especially given the minimal effort expended in developing the finer aquifer material from the aquifer after the drilling and construction of the monitoring well. The laboratory report indicates that no volatile organic compounds were detected. Additionally, all inorganic analytes were below state maximum contaminant levels except for Iron at 0.97 ppm, Manganese at 0.62 ppm, and Arsenic at 0.013 ppm. As the turbidity of the sample was still elevated relative to state standards, it is likely that these chemical concentrations are somewhat higher that would otherwise be expected due to the elevated turbidity. These concentrations are well within the range that may be readily treated to meet drinking water standards; however, properly designed, constructed and developed production wells are not expected to produce sand or turbid water, which may reduce the level of treatment required.

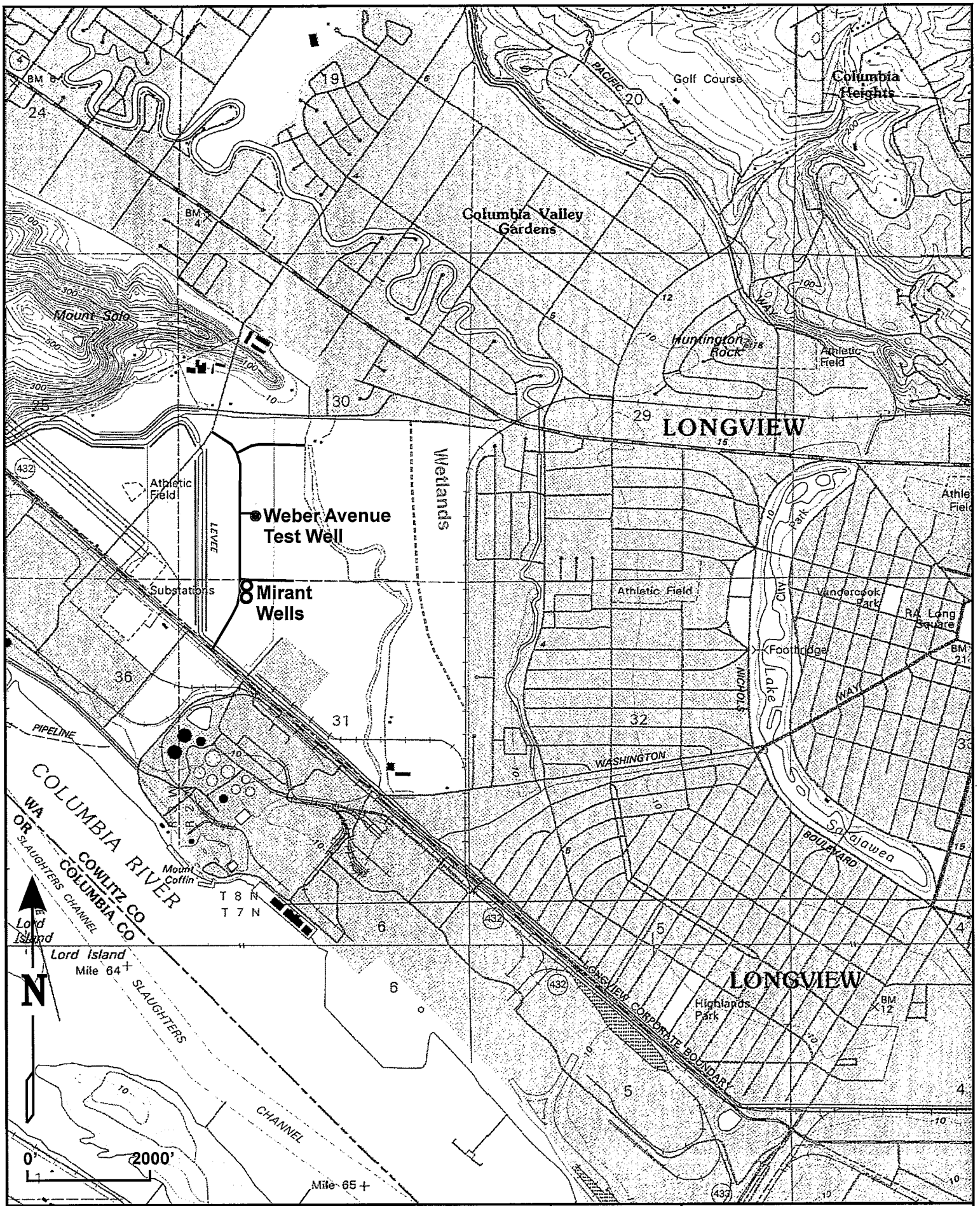
Summary and Recommendations

The Weber Avenue Monitoring Well encountered the target aquifer, which is somewhat thinner at this location than was observed at the Mirant location. The significant decrease in aquifer transmissivity between the Weber Avenue Monitoring Well location and the Mirant wells suggests that the City's proposed production wells should be drilled as far south as reasonably possible given the current land use and property constraints. Large-diameter production wells completed in aquifer material similar to what was encountered at the Weber Avenue Monitoring Well location would be expected to yield in excess of 500 gallons per minute per foot of drawdown under ideal circumstances. Realistic expectations of production well performance taking into account the pump, pipe, and well screen efficiency limits, pipe losses, well interactions, and seasonal aquifer fluctuations would suggest that a single 20-inch well producing 3,000 gallons per minute would have a long-term pumping water level of less than 20 feet below the static water level. The water quality in the aquifer is generally good based on the analysis of the sample collected, but the water

did have elevated turbidity and will require treatment to meet drinking water standards due to elevated levels of Iron, Manganese, and Arsenic.

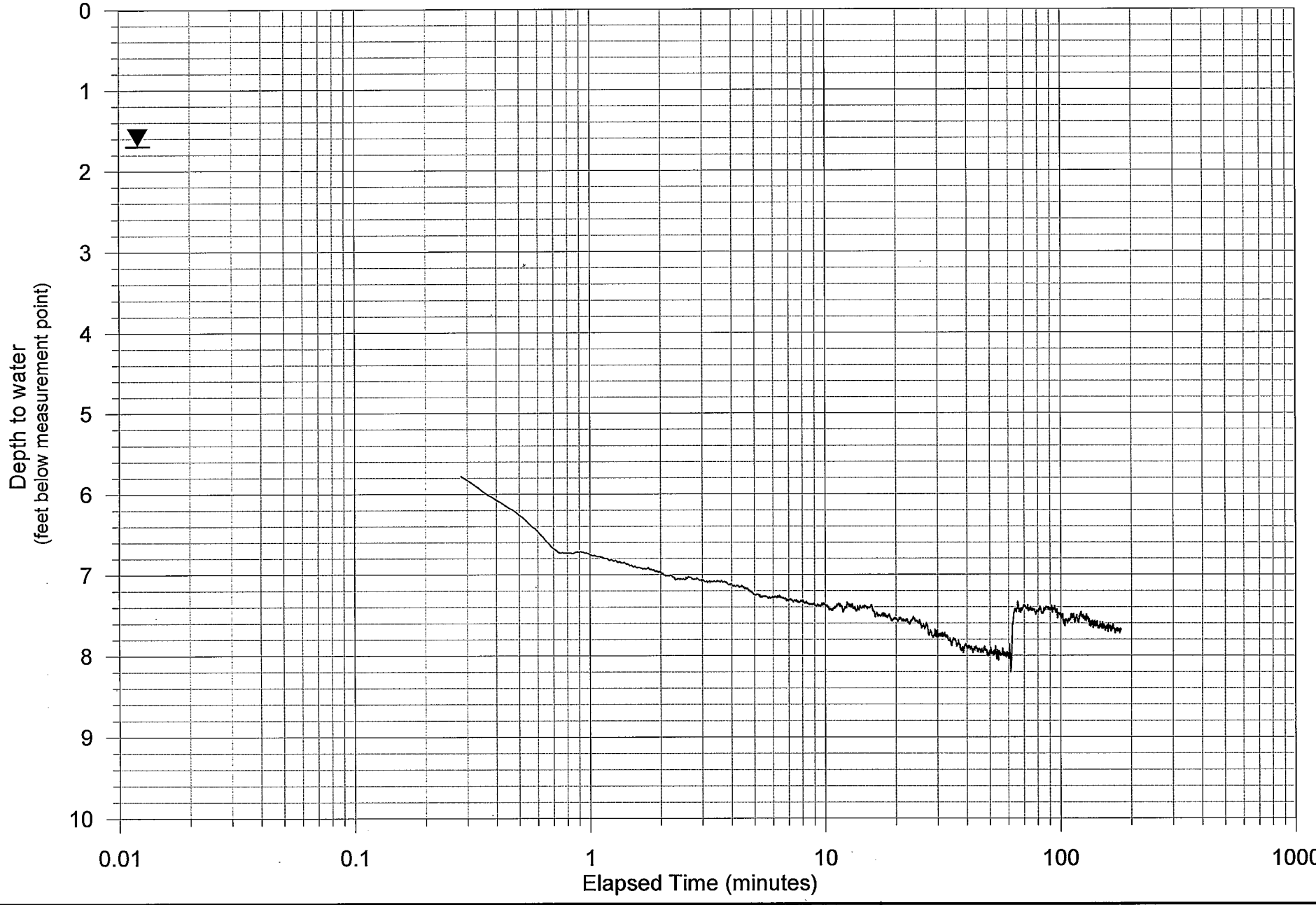
Six production wells of at least 20-inch diameter placed in similar aquifer material should meet the City's requirement of 20 million gallons per day with some reserve capacity. All of the production wells should be separated sufficiently to preclude excessive interference drawdown. A minimum spacing of 200 feet between wells would minimize interference and provide access for maintenance. Actual well location and well spacing will be contingent upon the property available for the placement of the production wells. A wellfield of three wells spaced 200 feet apart will require a minimum of 2.75 acres.

With such close spacing of large capacity wells, interference drawdown as a result of concurrent pumping will lower pumping water levels more than 10 feet below an individual well's pumping or static water level. As wells in the target aquifer will have ample amounts of available drawdown, this in no way limits the ability of the wells to make the necessary water, but does need to be planned for when production pumps are installed. A more detailed calculation of drawdown and interference drawdown can be made once the actual production wells are installed and tested.



ROBINSON NOBLE SALTBUSH INC. GROUNDWATER & ENVIRONMENTAL SCIENTISTS	Note: Basemap taken from USGS Kelso Quad.	PM: MFP January 2007	1556-002A:2.A.2 Scale 1" = 2000'	Cowlitz County T 08 N/R 02 W

Figure 1
Well LocationMap
City of Longview: Groundwater Source Investigation



ROBINSON NOBLE SALTBUSH INC. Established 1947
GROUNDWATER & ENVIRONMENTAL SCIENTISTS

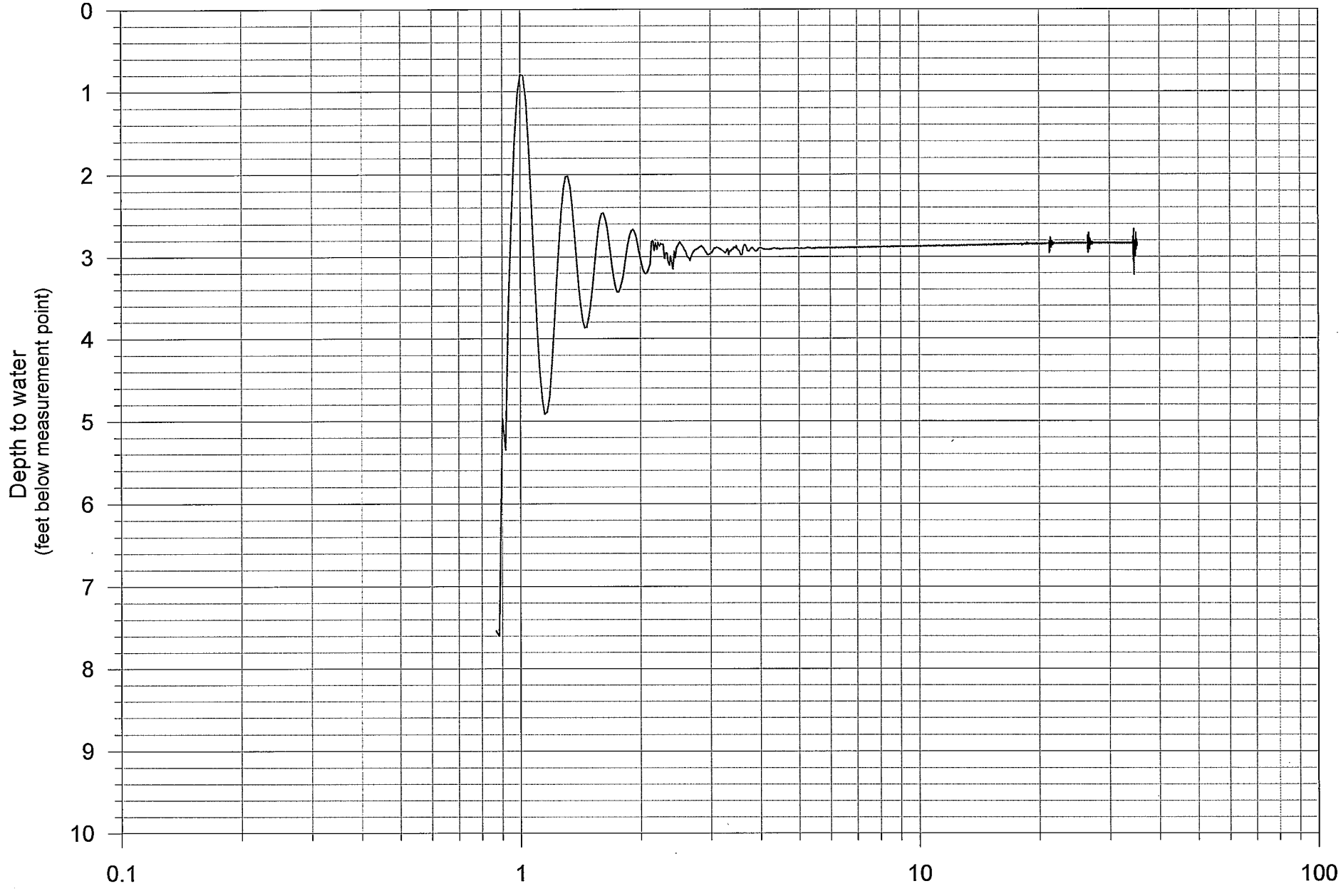
Date: 1/2007
Job#: 1556-002A
PM: MFP

Drawdown Plot
Pumping Rate = 260 GPM
Duration = 3 Hours
Static Water Level = 1.70 Feet (Tidally Influenced)

City of Longview Source Analysis

Drawdown Plot (Running Average)
Weber Avenue Test Well

Figure 3



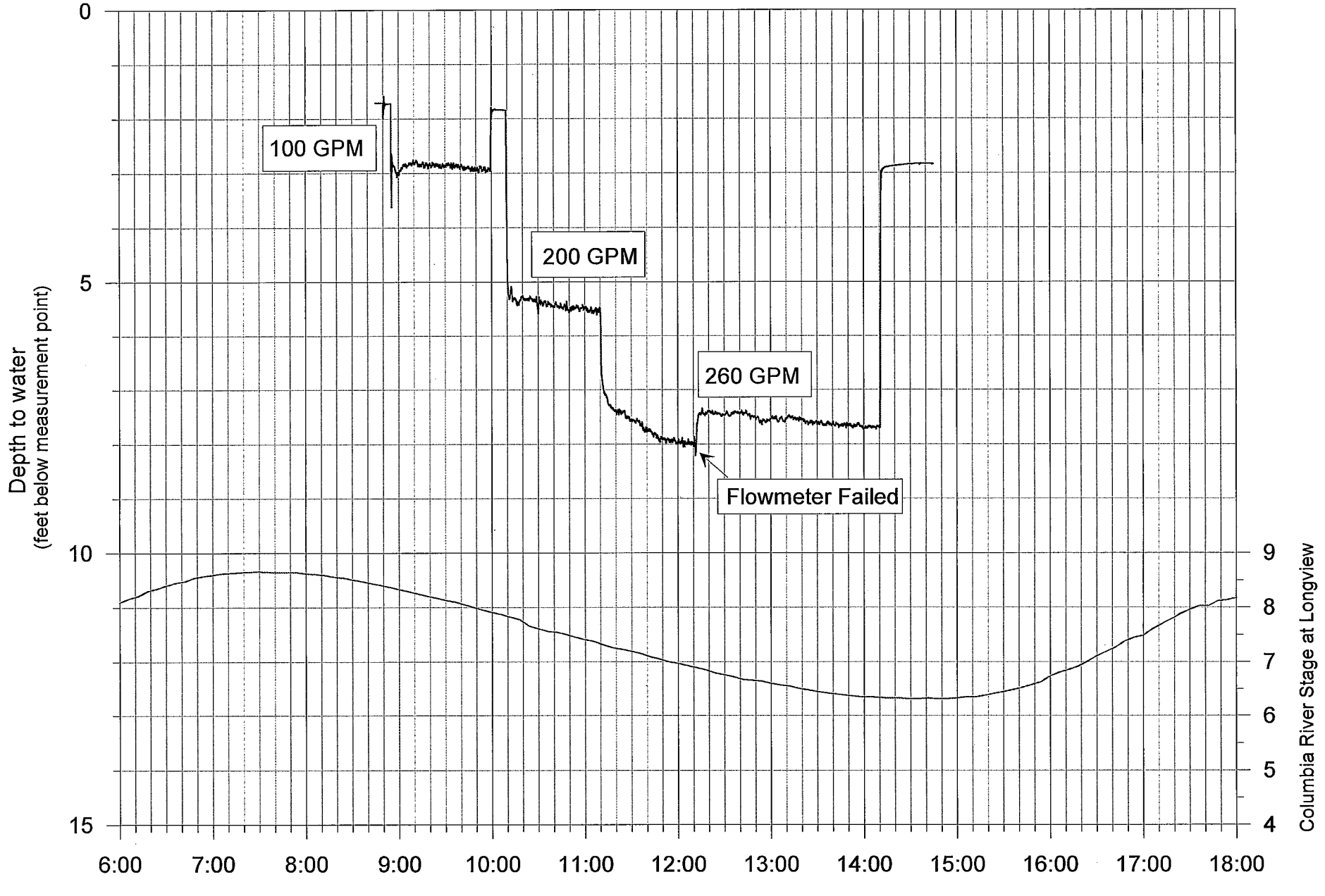
ROBINSON NOBLE SALTBUSH INC. Established 1947
GROUNDWATER & ENVIRONMENTAL SCIENTISTS

Date: 1/2007
Job#: 1556-002A
PM: MFP

Recovery Plot
Rate = 260 gpm
Duration = 3 hours
Static Water Level Tidally Influenced

City of Longview Source Analysis
Recovery Plot
Weber Avenue Test Well

Figure 4



ROBINSON NOBLE SALTBUSH INC. Established 1947 GROUNDWATER & ENVIRONMENTAL SCIENTISTS	Date: 1/2007 Job#: 1556-002A PM: MFP	Water Level Record During Test Pumping 1-9-2007 Presented as depth to water below top of sounding tube	City of Longview Source Analysis Water Level Record Weber Avenue Test Well

Figure 5

1317 South 13th Avenue P.O. Box 479 Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

Columbia Analytical Services INC.
An Employee - Owned Company

January 22, 2007 Analytical Report for Service Request No: K0700203

Mike Piechowski
Robinson & Noble
3011 S. Hudson #1A
Tacoma, WA 98409

RE: Investigative

Dear Mike:

Enclosed are the results of the sample(s) submitted to our laboratory on January 09, 2007. For your reference, these analyses have been assigned our service request number K0700203.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards. Exceptions are noted in the case narrative report where applicable. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3281. You may also contact me via Email at LVo@kelso.caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Loan Vo, Ph.D.
Project Chemist

LV/lmb

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Robinson & Noble	**Service Request No.:**	K0700203
Project:	Investigative	**Date Received:**	01/09/07
Sample Matrix:	Well Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), and Laboratory Control Sample (LCS).

Sample Receipt

One water sample was received for analysis at Columbia Analytical Services on 01/09/07. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

Total Metals

Matrix Spike Recovery Exceptions:
The control criteria for matrix spike recovery of Strontium for sample Weber Ave Test Well is not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

No other anomalies associated with the analysis of these samples were observed.

Volatile Organic Compounds by EPA Method 524.2

No anomalies associated with the analysis of these samples were observed.

Approved by LV Date 01.20.07

Chain of Custody Documentation

Columbia Analytical Services INC.
An Employee-Owned Company

CHAIN OF CUSTODY/DRINKING WATER

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

SR#: Y0700203 PAGE 1 OF 1 COC # 00008

Shaded Fields - Information required for all public systems submitting reports to WDOH

SYSTEM NAME: Investigative	TYPE OF SYSTEM: ☐ PUBLIC ☐ PRIVATE
PUBLIC SYSTEMS I.D. #	GROUP: ☐ A ☐ B ☐ OTHER
SAMPLE TAKEN (circle one): Before / After / NA – Chemical Treatment	SAMPLE PURPOSE (circle one): Compliance / Investigative / Other
PROJECT MANAGER: Mike Piechowski	
ADDRESS: Weber Ave Test Well	COUNTY: Cowlitz
PHONE #: 253 475 7711	FAX #: 253 472 5846
SAMPLER'S SIGNATURE:	

SAMPLE I.D.	* SOURCE #	DATE COLLECTED	TIME COLLECTED	SPECIFIC LOCATION SAMPLE TAKEN	NUMBER OF CONTAINERS	Synthetic Organic Compounds (SOCs) ☐ ①525.2 ☐ ①531.1 ☐ ①504.1 ☐	Volatile Organics (VOCs) ☐ ①524.2 ☐ TTHMs ☐	Disinfection By-Products ☐ ①HAA ☐ TTHMs ☐ ①Chlorite ☐ ①Bromate ☐ ①Chlorate ☐	IOCs WASHINGTON Group A ☐ Group B ☐ Group A & Optional ☐	IOCs Oregon Primary/Secondary ☐	Nitrates ☐ Nitrites ☐ pH ☐	Metals (Circle Below) Lead/Copper ☐ Hardness ☐	Microbiology Coliform/Collert ☐ Coliform/Quantitray ☐ Total Coliform ☐ Fecal Coliform ☐	Iron Bacteria ☐ Sulfur Bacteria ☐	Radionuclides① Gross Alpha ☐ Gross Beta ☐ Radon ☐ Radium 226 ☐ Radium 228 ☐	Cowlitz Co. Shared Well ☐	ADDITIONAL INFORMATION
Weber Ave Test Well	KA	1-9-07	14:08	Wellhead sampling port	7		X		X		X	X					Order # 5238

Reporting Requirements
When results are ready please:
Fax ☒ Call ☐ Mail ☒

Report to:
Mike Piechowski
Robinson Noble & Saltbush
3011 S Huson #A
Phone: Tacoma WA 98409 253 475 7711
Fax: 253 472 5846

INVOICE INFORMATION
P.O. #
Bill To: Robinson, Noble & Saltbush, Inc

Copy of Report to:
Phone:
Fax:

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:
*For composited or blended samples, list all sources in "additional information" section.
Call (253) 475 7711 on 1-10-07 For metals to be analyzed

①Analysis subcontracted to an outside laboratory. Shipping costs may be charged.

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: 1-9 1520	Amanda Jurell 1/9/07 1520		
Date/Time:	Signature: Jurell Date/Time: CHS		
Printed Name: Michael F Piechowski Firm: RNS	Printed Name: Firm:	Signature / Date/Time	Signature / Date/Time
		Printed Name / Firm	Printed Name / Firm

Columbia Analytical Services Inc.
Cooler Receipt and Preservation Form

PC Lata

Project/Client Robinson, Noble & Saltbush Service Request K07 00203

Cooler received on 1-9-07 and opened on 1-9-07 by DW

1.	Were custody seals on outside of coolers? If yes, how many and where? NP	Y	(N)
2.	Were custody seals intact?	~~Y~~	~~N~~
3.	Were signature and date present on the custody seals?	~~Y~~	~~N~~
4.	Is the shipper's airbill available and filed? If no, record airbill number: Walk in	~~Y~~	~~N~~
5.	COC#		
	Temperature of cooler(s) upon receipt: (°C) 1.6 : 1		
	Temperature Blank: (°C)		
	Were samples hand delivered on the same day as collection?	Y	N
6.	Were custody papers properly filled out (ink, signed, etc.)?	(Y)	N
7.	Type of packing material present NP		
8.	**Did all bottles arrive in good condition (unbroken)?**	(Y)	N
9.	Were all bottle labels complete (i.e analysis, preservation, etc.)?	(Y)	N
10.	Did all bottle labels and tags agree with custody papers?	(Y)	N
11.	**Were the correct types of bottles used for the tests indicated?**	(Y)	N
12.	Were all of the preserved bottles received at the lab with the appropriate pH?	(Y)	N
13.	Were VOA vials checked for absence of air bubbles, and if present, noted below?	(Y)	N
14.	Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below?	~~Y~~	~~N~~
15.	Did the bottles originate from CAS/K or a branch laboratory?	(Y)	N
16.	**Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?**	~~Y~~	~~N~~
17.	Was C12/Res negative?	Y	N

Explain any discrepancies:

RESOLUTION:

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials
All Samples					✓	DW

00009

General Chemistry Parameters

Columbia Analytical Services, Inc.
1317 South 13th Avenue
Kelso, WA 98626

State of Washington

INORGANIC CHEMICALS (IOCS) REPORT

System ID No.:		System Name:	**Investigative**		
Lab/Sample No.:	**Weber Ave Test Well**	Date Collected:	**1/9/07**	DOH Source No.:	
Multiple Source Nos:		Sample Type:	**Water**	Sample Purpose:	
Date Received:	**1/9/07**	Date Reported:	**1/19/07**	Supervisor:	
Date Digested:		Date Analyzed:	**1/10/07-1/17/07**	Analyst:	
County:		Group:	**A**		
Sample Location:	**Tacoma, WA**				
Send Report To:	Mike Piechowski	Bill To:	Same		

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	Method / Analyst	
EPA REGULATED								
116	Cyanide	<0.01	mg/l	0.05	0.2	0.2	335.4	BH
19	Fluoride	<0.2	mg/l	0.2	2	4	300.0	JS
114	Nitrite - N	<0.1	mg/l	0.5	0.5	1	300.0	JS
20	Nitrate - N	<0.1	mg/l	0.5	5	10	300.0	JS
161	Total Nitrate/Nitrite	<0.1	mg/l	0.5	5	10	300.0	JS
EPA REGULATED (Secondary)								
21	Chloride	10.6	mg/l	20	250	250	300.0	JS
22	Sulfate	<0.2	mg/l	10	250	250	300.0	JS
STATE REGULATED								
16	Conductivity	296	umhos/cm	10	700	700	2510B	NB
17	Turbidity	3.8	NTU	0.1	1	1	180.1	TH
18	Color	<5	color units	5	15	15	2120B	
26	Total Dissolved Solids	182	mg/l	150	500	500	2540C	RM

LAB SAMPLE NO: K0700203-001

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	Method / Analyst	
STATE UNREGULATED								
OTHER								
171	Orthophosphate	0.30	mg/l	0.1			365.3	TH

NOTES:

SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water Response Level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): in the results column indicates this compound was not included in the current analysis.

ND (Not Detected): in the results column indicates this compound was analyzed and not detected at a level greater than or equal to

the SRL.

<(0.001): indicates the compound was not detected in the sample at or above the concentration indicated.

(lab mdl) lower than the SRL.

Comments:

Metals

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Robinson & Noble	**Service Request:**	K0700203
Project:	Investigative	**Date Collected:**	01/09/07
Sample Matrix:	Drinking water	**Date Received:**	01/09/07
		Date Extracted:	01/12/07
		Date Analyzed:	01/15/07

Hardness, as CaCO3
EPA Method 200.7/ SM Method 2340B
Units: mg/L (ppm)

Sample Name	Lab Code	MRL	Result
Weber Ave Test Well	K0700203-001	0.4	115
Method Blank	K0700203-MB	0.4	ND

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Collected: 01/09/07
Date Received: 01/09/07
Date Extracted: 01/12/07
Date Analyzed: 01/15/07

Duplicate Summary
Total Metals
Units: µg/L (ppb)

Sample Name: Weber Ave Test Well
Lab Code: K0700203-001D

Analyte	EPA Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference
Hardness, as CaCO3	200.7/ SM 2340B	0.4	115	118	116	3

METALS

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client: Robinson & Noble

Service Request: K0700203

Project No.:

Project Name: Investigative

Sample No.	Lab Sample ID.
Weber Ave Test Well	K0700203-001
Weber Ave Test WellD	K0700203-001D
Weber Ave Test WellS	K0700203-001S
Method Blank	K0700203-MB

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

Signature: [signature]

Date: 01/19/07

METALS

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INORGANIC ANALYSIS DATA SHEET

Client: Robinson & Noble
Project No.: NA
Project Name: Investigative
Matrix: WATER

Service Request: K0700203
Date Collected: 01/09/07
Date Received: 01/09/07
Units: µG/L
Basis: NA

Sample Name: Weber Ave Test Well
Lab Code: K0700203-001

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.8	2.0	1	1/12/07	01/19/07	13.3		
Antimony	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Arsenic	200.8	0.5	1	1/12/07	01/19/07	13.2		
Barium	200.7	5.0	1	1/12/07	01/15/07	28.4		
Beryllium	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Boron	200.7	50	1	1/12/07	01/15/07	50	U	
Cadmium	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Calcium	200.7	50	1	1/12/07	01/15/07	31200		
Chromium	200.8	0.2	1	1/12/07	01/19/07	0.3		
Cobalt	200.8	0.02	1	1/12/07	01/19/07	0.24		
Copper	200.7	10	1	1/12/07	01/15/07	10	U	
Iron	200.7	20	1	1/12/07	01/15/07	970		
Lead	200.8	0.02	1	1/12/07	01/19/07	0.57		
Magnesium	200.7	20	1	1/12/07	01/15/07	8900		
Manganese	200.7	5.0	1	1/12/07	01/15/07	622		
Mercury	245.1	0.20	1	1/11/07	01/12/07	0.20	U	
Molybdenum	200.8	0.05	1	1/12/07	01/19/07	1.33		
Nickel	200.8	0.2	1	1/12/07	01/19/07	2.1		
Potassium	200.7	2000	1	1/12/07	01/15/07	4730		
Selenium	200.8	1.0	1	1/12/07	01/19/07	1.0	U	
Silver	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Sodium	200.7	100	1	1/12/07	01/15/07	14500		
Strontium	200.8	0	1	1/12/07	01/19/07	140		
Thallium	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Tin	200.8	0.1	1	1/12/07	01/19/07	0.1	U	
Vanadium	200.8	0.2	1	1/12/07	01/19/07	0.4		
Zinc	200.7	10	1	1/12/07	01/15/07	14.2		

% Solids: 0.0

Comments:

00017

METALS

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INORGANIC ANALYSIS DATA SHEET

Client: Robinson & Noble
Project No.: NA
Project Name: Investigative
Matrix: WATER

Service Request: K0700203
Date Collected: NA
Date Received: NA
Units: µG/L
Basis: NA

Sample Name: Method Blank
Lab Code: K0700203-MB

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.8	2.0	1	1/12/07	01/19/07	2.0	U	
Antimony	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Arsenic	200.8	0.5	1	1/12/07	01/19/07	0.5	U	
Barium	200.7	5.0	1	1/12/07	01/15/07	5.0	U	
Beryllium	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Boron	200.7	50	1	1/12/07	01/15/07	50	U	
Cadmium	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Calcium	200.7	50	1	1/12/07	01/15/07	50	U	
Chromium	200.8	0.2	1	1/12/07	01/19/07	0.2	U	
Cobalt	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Copper	200.7	10	1	1/12/07	01/15/07	10	U	
Iron	200.7	20	1	1/12/07	01/15/07	20	U	
Lead	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Magnesium	200.7	20	1	1/12/07	01/15/07	20	U	
Manganese	200.7	5.0	1	1/12/07	01/15/07	5.0	U	
Mercury	245.1	0.20	1	1/11/07	01/12/07	0.20	U	
Molybdenum	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Nickel	200.8	0.2	1	1/12/07	01/19/07	0.2	U	
Potassium	200.7	2000	1	1/12/07	01/15/07	2000	U	
Selenium	200.8	1.0	1	1/12/07	01/19/07	1.0	U	
Silver	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Sodium	200.7	100	1	1/12/07	01/15/07	100	U	
Strontium	200.8	0	1	1/12/07	01/19/07	0.100	U	
Thallium	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Tin	200.8	0.1	1	1/12/07	01/19/07	0.1	U	
Vanadium	200.8	0.2	1	1/12/07	01/19/07	0.2	U	
Zinc	200.7	10	1	1/12/07	01/15/07	10	U	

% Solids: 0.0

Comments:

METALS
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DUPLICATES

Client: Robinson & Noble
Project No.:
Project Name: Investigative
Matrix: WATER

Service Request: K0700203
Units: µg/L
Basis: NA
% Solids: 0.0

Sample Name: Weber Ave Test WellD
Lab Code: K0700203-001D

Analyte	Control Limit (%)	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	20	13.3		13.0		2		200.8
Antimony		0.05	U	0.05	U			200.8
Arsenic	20	13.2		12.9		2		200.8
Barium	20	28.4		29.2		3		200.7
Beryllium		0.02	U	0.02	U			200.8
Boron		50	U	50	U			200.7
Cadmium		0.05	U	0.05	U			200.8
Calcium	20	31200		32200		3		200.7
Chromium		0.3		0.3		10		200.8
Cobalt	20	0.24		0.24		2		200.8
Copper		10	U	10	U			200.7
Iron	20	970		999		3		200.7
Lead	20	0.57		0.56		1		200.8
Magnesium	20	8900		9170		3		200.7
Manganese	20	622		641		3		200.7
Mercury		0.20	U	0.20	U			245.1
Molybdenum	20	1.33		1.33		0		200.8
Nickel	20	2.1		2.1		2		200.8
Potassium		4730		5180		9		200.7
Selenium		1.0	U	1.0	U			200.8
Silver		0.02	U	0.02	U			200.8
Sodium	20	14500		15000		3		200.7
Strontium	20	140		140		0		200.8
Thallium		0.02	U	0.02	U			200.8
Tin		0.1	U	0.1	U			200.8
Vanadium		0.4		0.4		1		200.8
Zinc		14.2		12.2		15		200.7

An empty field in the Control Limit column indicates the control limit is not applicabl

METALS

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LABORATORY CONTROL SAMPLE

Client: Robinson & Noble

Service Request: K0700203

Project No.:

Project Name: Investigative

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous ug/L			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum	20.0	21.6	108					
Antimony	20.0	20.7	104					
Arsenic	20.0	20.9	104					
Barium	5000	5020	100					
Beryllium	20.0	21.3	106					
Boron	1000	1030	103					
Cadmium	20.0	20.3	102					
Calcium	12500	13000	104					
Chromium	20.0	20.9	104					
Cobalt	20.0	21.4	107					
Copper	625	612	98					
Iron	2500	2550	102					
Lead	20.0	19.8	99					
Magnesium	12500	12500	100					
Manganese	1250	1280	102					
Mercury	5.00	5.51	110					
Molybdenum	20.0	20.5	102					
Nickel	20.0	21.3	106					
Potassium	12500	12800	102					
Selenium	20.0	21.3	106					
Silver	20.0	20.4	102					
Sodium	12500	12400	99					
Strontium	20.0	20.9	104					
Thallium	20.0	19.9	100					
Tin	20.0	19.2	96					
Vanadium	20.0	20.6	103					
Zinc	1250	1280	102					

METALS

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SPIKE SAMPLE RECOVERY

Client: Robinson & Noble
Service Request: K0700203
Project No.:
Units: µg/L
Project Name: Investigative
Basis: NA
Matrix: WATER
% Solids: 0.0

Sample Name: Weber Ave Test WellS
Lab Code: K0700203-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Aluminum	70 - 130	33.8		13.3		20.0	103		200.8
Antimony	70 - 130	20.7		0.05	U	20.0	104		200.8
Arsenic	70 - 130	34.5		13.2		20.0	106		200.8
Barium	70 - 130	2120		28.4		2000	105		200.7
Beryllium	70 - 130	20.3		0.02	U	20.0	102		200.8
Boron	70 - 130	1080		50.0	U	1000	108		200.7
Cadmium	70 - 130	20.7		0.05	U	20.0	104		200.8
Chromium	70 - 130	21.1		0.3		20.0	104		200.8
Cobalt	70 - 130	21.2		0.24		20.0	105		200.8
Copper	70 - 130	260		10.0	U	250	104		200.7
Iron	70 - 130	2030		970		1000	106		200.7
Lead	70 - 130	20.1		0.57		20.0	97		200.8
Manganese	70 - 130	1160		622		500	108		200.7
Mercury	70 - 130	1.05		0.20	U	1.00	105		245.1
Molybdenum	70 - 130	22.2		1.33		20.0	104		200.8
Nickel	70 - 130	23.0		2.1		20.0	104		200.8
Selenium	70 - 130	21.6		1.0	U	20.0	108		200.8
Silver	70 - 130	19.4		0.02	U	20.0	97		200.8
Strontium		160		140		20.0	100		200.8
Thallium	70 - 130	19.7		0.02	U	20.0	99		200.8
Tin	70 - 130	19.3		0.1	U	20.0	97		200.8
Vanadium	70 - 130	21.1		0.4		20.0	104		200.8
Zinc	70 - 130	533		14.2		500	104		200.7

An empty field in the Control Limit column indicates the control limit is not applicabl

Volatile Organic Compounds
by EPA Method 524.2

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Collected: 01/09/2007
Date Received: 01/09/2007

Volatile Organic Compounds

Sample Name: Weber Ave Test Well
Lab Code: K0700203-001

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Vinyl Chloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromomethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Trichlorofluoromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Methylene Chloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
trans-1,2-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
2,2-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
cis-1,2-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Methyl tert-Butyl Ether	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloroform	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromochloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,1-Trichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Carbon Tetrachloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Benzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Trichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromodichloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Dibromomethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
cis-1,3-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Toluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
trans-1,3-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,2-Trichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Tetrachloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,3-Trichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Dibromochloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	

Comments:

00023

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Collected: 01/09/2007
Date Received: 01/09/2007

Volatile Organic Compounds

Sample Name: Weber Ave Test Well
Lab Code: K0700203-001

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Ethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Styrene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
m,p-Xylenes	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
o-Xylene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromoform	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Isopropylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,3-Trichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
n-Propylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3,5-Trimethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
2-Chlorotoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
4-Chlorotoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
tert-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,4-Trimethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
sec-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
p-Isopropyltoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,4-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
n-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,4-Trichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Hexachlorobutadiene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Naphthalene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	99	82-110	01/09/07	Acceptable
Dibromofluoromethane	96	83-121	01/09/07	Acceptable
Toluene-d8	107	89-117	01/09/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0700425-2

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Vinyl Chloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromomethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Trichlorofluoromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Methylene Chloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
trans-1,2-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
2,2-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
cis-1,2-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Methyl tert-Butyl Ether	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloroform	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromochloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,1-Trichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Carbon Tetrachloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Benzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Trichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromodichloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Dibromomethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
cis-1,3-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Toluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
trans-1,3-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,2-Trichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Tetrachloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,3-Trichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Dibromochloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	

Comments:

00025

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0700425-2

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Ethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Styrene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
m,p-Xylenes	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
o-Xylene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromoform	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Isopropylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,3-Trichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
n-Propylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3,5-Trimethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
2-Chlorotoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
4-Chlorotoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
tert-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,4-Trimethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
sec-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
p-Isopropyltoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,4-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
n-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,4-Trichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Hexachlorobutadiene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Naphthalene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	104	82-110	01/09/07	Acceptable
Dibromofluoromethane	105	83-121	01/09/07	Acceptable
Toluene-d8	108	89-117	01/09/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
Weber Ave Test Well	K0700203-001	99	96	107
Method Blank	KWG0700425-2	104	105	108
Lab Control Sample	KWG0700425-1	104	105	109

Surrogate Recovery Control Limits (%)

Sur1 = 4-Bromofluorobenzene	82-110
Sur2 = Dibromofluoromethane	83-121
Sur3 = Toluene-d8	89-117

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

00027

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Extracted: 01/09/2007
Date Analyzed: 01/09/2007

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0700425

	Lab Control Sample KWG0700425-1 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	5.20	5.00	104	70-130
Chloromethane	5.19	5.00	104	70-130
Vinyl Chloride	5.40	5.00	108	70-130
Bromomethane	4.83	5.00	97	70-130
Chloroethane	5.06	5.00	101	70-130
Trichlorofluoromethane	4.68	5.00	94	70-130
1,1-Dichloroethene	5.02	5.00	100	70-130
Methylene Chloride	4.88	5.00	98	70-130
trans-1,2-Dichloroethene	4.71	5.00	94	70-130
2,2-Dichloropropane	4.03	5.00	81	70-130
cis-1,2-Dichloroethene	4.85	5.00	97	70-130
Methyl tert-Butyl Ether	4.54	5.00	91	70-130
1,1-Dichloroethane	4.75	5.00	95	70-130
Chloroform	4.55	5.00	91	70-130
Bromochloromethane	4.90	5.00	98	70-130
1,1,1-Trichloroethane	4.63	5.00	93	70-130
1,1-Dichloropropene	4.56	5.00	91	70-130
Carbon Tetrachloride	4.67	5.00	93	70-130
Benzene	4.56	5.00	91	70-130
1,2-Dichloroethane	4.80	5.00	96	70-130
Trichloroethene	4.68	5.00	94	70-130
1,2-Dichloropropane	4.72	5.00	94	70-130
Bromodichloromethane	4.90	5.00	98	70-130
Dibromomethane	4.86	5.00	97	70-130
cis-1,3-Dichloropropene	4.78	5.00	96	70-130
Toluene	4.63	5.00	93	70-130
trans-1,3-Dichloropropene	4.31	5.00	86	70-130
1,1,2-Trichloroethane	4.86	5.00	97	70-130
Tetrachloroethene	4.55	5.00	91	70-130
1,3-Dichloropropane	4.87	5.00	97	70-130
1,2,3-Trichlorobenzene	5.04	5.00	101	70-130
Dibromochloromethane	4.84	5.00	97	70-130
1,2-Dibromoethane (EDB)	4.72	5.00	94	70-130
Chlorobenzene	4.73	5.00	95	70-130
Ethylbenzene	4.65	5.00	93	70-130
1,1,1,2-Tetrachloroethane	4.66	5.00	93	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Extracted: 01/09/2007
Date Analyzed: 01/09/2007

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

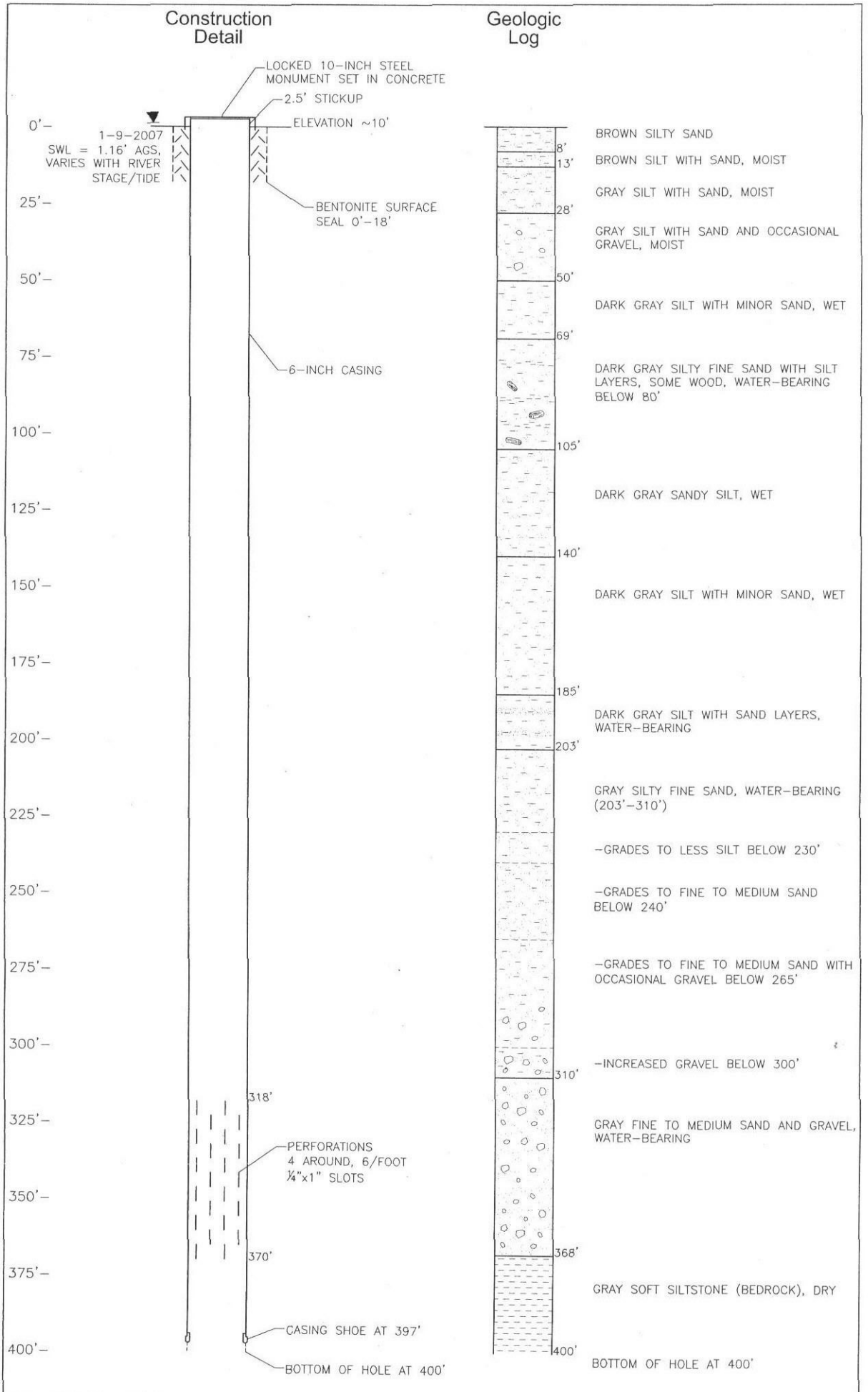
Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0700425

	Lab Control Sample KWG0700425-1 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Styrene	4.89	5.00	98	70-130
m,p-Xylenes	9.29	10.0	93	70-130
o-Xylene	4.79	5.00	96	70-130
Bromoform	4.95	5.00	99	70-130
Isopropylbenzene	4.17	5.00	83	70-130
1,1,2,2-Tetrachloroethane	4.84	5.00	97	70-130
1,2,3-Trichloropropane	4.84	5.00	97	70-130
Bromobenzene	4.70	5.00	94	70-130
n-Propylbenzene	4.58	5.00	92	70-130
1,3,5-Trimethylbenzene	4.64	5.00	93	70-130
2-Chlorotoluene	4.73	5.00	95	70-130
4-Chlorotoluene	4.72	5.00	94	70-130
tert-Butylbenzene	4.56	5.00	91	70-130
1,2,4-Trimethylbenzene	4.79	5.00	96	70-130
sec-Butylbenzene	4.82	5.00	96	70-130
p-Isopropyltoluene	4.44	5.00	89	70-130
1,3-Dichlorobenzene	4.73	5.00	95	70-130
1,4-Dichlorobenzene	4.82	5.00	96	70-130
n-Butylbenzene	4.61	5.00	92	70-130
1,2-Dichlorobenzene	4.79	5.00	96	70-130
1,2-Dibromo-3-chloropropane (DBCP	4.68	5.00	94	70-130
1,2,4-Trichlorobenzene	4.86	5.00	97	70-130
Hexachlorobutadiene	4.86	5.00	97	70-130
Naphthalene	4.97	5.00	99	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00029



ROBINSON NOBLE SALTBUSH INC. GROUNDWATER & ENVIRONMENTAL SCIENTISTS	PM: MFP January 2007 1556-002A:2.A.2	Cowlitz County T 08 N/R 02 W	Figure 2 Construction Detail & Geologic Log for Weber Avenue TW City of Longview: Groundwater Source Investigation

Chain of Custody Documentation

Columbia Analytical Services INC.
An Employee-Owned Company

CHAIN OF CUSTODY/DRINKING WATER

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222 • FAX (360) 636-1068

SR#: K0700203
PAGE 1 OF 1 COC # 8000

Shaded Fields - Information required for all public systems submitting reports to WDOH

SYSTEM NAME: Investigative	TYPE OF SYSTEM: ☐ PUBLIC ☑ PRIVATE
PUBLIC SYSTEM ID #:	GROUP: ☐ A ☐ B ☐ OTHER
SAMPLE TAKEN (circle one): Before / After / NA / Chemical Treatment	SAMPLE PURPOSE (circle one): Compliance / Investigative / Other
PROJECT MANAGER: Mike Piechowski	
ADDRESS: Weber Ave Test Well	COUNTY: Grays Harbor
PHONE #: 253 475 7711	FAX #: 253 472 5846
SAMPLER'S SIGNATURE:	

SAMPLE I.D.	# SOURCE	DATE COLLECTED	TIME COLLECTED	SPECIFIC LOCATION SAMPLE TAKEN	NUMBER OF CONTAINERS	Synthetic Organic Compounds (SOCs) ☐ 525.2 ☐ 531.1 ☐ 504.1 ☐	Volatile Organics (VOCs) 524.2 ☒ TTHMs ☐	Disinfection By-Products ☐ Chlorite ☐ ☐ HAA ☐ TTHMs ☐ Bromate ☐ Chlorate ☐	IOCs WASHINGTON Group A & Optional ☒ Group A ☐ Group B ☐	IOCs Oregon Primary/Secondary ☐	Nitrates ☒ Nitrites ☐	Metals (Circle Below) Lead/Copper ☐ ☒ Hardness	pH ☐	Microbiology Coliform/Colilert ☐ Coliform/Quantitray ☐ Total Coliform ☐ Fecal Coliform ☐	Iron Bacteria ☐ Sulfur Bacteria ☐	Radionuclides ☐ Gross Alpha ☐ Gross Beta ☐ Radon ☐ Radium 226 ☐ Radium 228 ☐	Cowlitz Co. Shared Well ☐	ADDITIONAL INFORMATION
Weber Ave Test Well	NA	1-9-07	14:08	Wellhead sampling port	7		X		X		X	X						Order # 5238

Reporting Requirements
When results are ready please:
Fax ☒ Call ☐ Mail ☒

Report to:
Mike Piechowski
Robinson Noble & Saltbush
3011 S Huson #A
Phone: Tacoma WA 98409 253 475 7711
Fax: 253 472 5846

INVOICE INFORMATION
P.O. #
Bill To: Robinson, Noble & Saltbush, Inc

Copy of Report to:
Phone:
Fax:

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

SPECIAL INSTRUCTIONS/COMMENTS:
*For composited or blended samples, list all sources in "additional information" section.
Call (253) 475 7711 on 1-10-07
For metals to be analyzed

①Analysis subcontracted to an outside laboratory. Shipping costs may be charged.

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature: Amanda Jurell	Signature:	Signature:
Date/Time: 1-9/1520	Date/Time: 1/9/07 1520	Date/Time:	Date/Time:
Printed Name: Michael F Piechowski	Printed Name: Jurell	Printed Name:	Printed Name:
Firm: RNTS	Firm: CHS	Firm:	Firm:

Columbia Analytical Services Inc.
Cooler Receipt and Preservation Form

PC Lotus

Project/Client Robinson, Noble & Saltbush Service Request K07 0203

Cooler received on 1-9-07 and opened on 1-9-07 by DW

1.	Were custody seals on outside of coolers? If yes, how many and where? NP	Y	(N)
2.	Were custody seals intact?	~~Y~~	~~N~~
3.	Were signature and date present on the custody seals?	~~Y~~	~~N~~
4.	Is the shipper's airbill available and filed? If no, record airbill number: Walk in	~~Y~~	~~N~~
5.	COC#		
	Temperature of cooler(s) upon receipt: (°C) 1.0.1		
	Temperature Blank: (°C)		
	Were samples hand delivered on the same day as collection?	Y	N
6.	Were custody papers properly filled out (ink, signed, etc.)?	(Y)	N
7.	Type of packing material present N-P		
8.	**Did all bottles arrive in good condition (unbroken)?**	(Y)	N
9.	Were all bottle labels complete (i.e analysis, preservation, etc.)?	(Y)	N
10.	Did all bottle labels and tags agree with custody papers?	(Y)	N
11.	**Were the correct types of bottles used for the tests indicated?**	(Y)	N
12.	Were all of the preserved bottles received at the lab with the appropriate pH?	(Y)	N
13.	Were VOA vials checked for absence of air bubbles, and if present, noted below?	(Y)	N
14.	Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below?	~~Y~~	~~N~~
15.	Did the bottles originate from CAS/K or a branch laboratory?	(Y)	N
16.	**Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?**	~~Y~~	~~N~~
17.	Was C12/Res negative?	Y	N

Explain any discrepancies: _____

RESOLUTION: _____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials
All Samples					✓	DW

General Chemistry Parameters

Columbia Analytical Services, Inc.
1317 South 13th Avenue
Kelso, WA 98626

State of Washington

INORGANIC CHEMICALS (IOCS) REPORT

System ID No.:		System Name:	**Investigative**		
Lab/Sample No.:	**Weber Ave Test Well**	Date Collected:	**1/9/07**		DOH Source No.:
Multiple Source Nos:			Sample Type:	**Water**	Sample Purpose:
Date Received:	**1/9/07**	Date Reported:	**1/19/07**		Supervisor:
Date Digested:		Date Analyzed:	**1/10/07-1/17/07**		Analyst:
County:			Group:	**A**	
Sample Location:	**Tacoma, WA**				
Send Report To:	Mike Piechowski		Bill To:	Same	

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	Method	/ Analyst
EPA REGULATED								
116	Cyanide	<0.01	mg/l	0.05	0.2	0.2	335.4	BH
19	Fluoride	<0.2	mg/l	0.2	2	4	300.0	JS
114	Nitrite - N	<0.1	mg/l	0.5	0.5	1	300.0	JS
20	Nitrate - N	<0.1	mg/l	0.5	5	10	300.0	JS
161	Total Nitrate/Nitrite	<0.1	mg/l	0.5	5	10	300.0	JS
EPA REGULATED (Secondary)								
21	Chloride	10.6	mg/l	20	250	250	300.0	JS
22	Sulfate	<0.2	mg/l	10	250	250	300.0	JS
STATE REGULATED								
16	Conductivity	296	umhos/cm	10	700	700	2510B	NB
17	Turbidity	3.8	NTU	0.1	1	1	180.1	TH
18	Color	<5	color units	5	15	15	2120B	
26	Total Dissolved Solids	182	mg/l	150	500	500	2540C	RM

LAB SAMPLE NO: K0700203-001

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	Method	/ Analyst
STATE UNREGULATED								
OTHER								
171	Orthophosphate	0.30	mg/l	0.1			365.3	TH

NOTES:

SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water Response Level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): in the results column indicates this compound was not included in the current analysis.

ND (Not Detected): in the results column indicates this compound was analyzed and not detected at a level greater than or equal to

the SRL.

<(0.001): indicates the compound was not detected in the sample at or above the concentration indicated.

(lab mdl) lower than the SRL.

Comments:

Metals

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Collected: 01/09/07
Date Received: 01/09/07
Date Extracted: 01/12/07
Date Analyzed: 01/15/07

Hardness, as CaCO3
EPA Method 200.7/ SM Method 2340B
Units: mg/L (ppm)

Sample Name	Lab Code	MRL	Result
Weber Ave Test Well	K0700203-001	0.4	115
Method Blank	K0700203-MB	0.4	ND

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Collected: 01/09/07
Date Received: 01/09/07
Date Extracted: 01/12/07
Date Analyzed: 01/15/07

Duplicate Summary
Total Metals
Units: µg/L (ppb)

Sample Name: Weber Ave Test Well
Lab Code: K0700203-001D

Analyte	EPA Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference
Hardness, as CaCO3	200.7/ SM 2340B	0.4	115	118	116	3

METALS

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client: Robinson & Noble

Service Request: K0700203

Project No.:

Project Name: Investigative

Sample No.	Lab Sample ID.
Weber Ave Test Well	K0700203-001
Weber Ave Test WellD	K0700203-001D
Weber Ave Test WellS	K0700203-001S
Method Blank	K0700203-MB

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

Signature: [signature]

Date: 01/19/07

METALS

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INORGANIC ANALYSIS DATA SHEET

Client:	Robinson & Noble	Service Request:	K0700203
Project No.:	NA	Date Collected:	01/09/07
Project Name:	Investigative	Date Received:	01/09/07
Matrix:	WATER	Units:	µG/L
		Basis:	NA

Sample Name: Weber Ave Test Well Lab Code: K0700203-001

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.8	2.0	1	1/12/07	01/19/07	13.3		
Antimony	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Arsenic	200.8	0.5	1	1/12/07	01/19/07	13.2		
Barium	200.7	5.0	1	1/12/07	01/15/07	28.4		
Beryllium	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Boron	200.7	50	1	1/12/07	01/15/07	50	U	
Cadmium	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Calcium	200.7	50	1	1/12/07	01/15/07	31200		
Chromium	200.8	0.2	1	1/12/07	01/19/07	0.3		
Cobalt	200.8	0.02	1	1/12/07	01/19/07	0.24		
Copper	200.7	10	1	1/12/07	01/15/07	10	U	
Iron	200.7	20	1	1/12/07	01/15/07	970		
Lead	200.8	0.02	1	1/12/07	01/19/07	0.57		
Magnesium	200.7	20	1	1/12/07	01/15/07	8900		
Manganese	200.7	5.0	1	1/12/07	01/15/07	622		
Mercury	245.1	0.20	1	1/11/07	01/12/07	0.20	U	
Molybdenum	200.8	0.05	1	1/12/07	01/19/07	1.33		
Nickel	200.8	0.2	1	1/12/07	01/19/07	2.1		
Potassium	200.7	2000	1	1/12/07	01/15/07	4730		
Selenium	200.8	1.0	1	1/12/07	01/19/07	1.0	U	
Silver	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Sodium	200.7	100	1	1/12/07	01/15/07	14500		
Strontium	200.8	0	1	1/12/07	01/19/07	140		
Thallium	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Tin	200.8	0.1	1	1/12/07	01/19/07	0.1	U	
Vanadium	200.8	0.2	1	1/12/07	01/19/07	0.4		
Zinc	200.7	10	1	1/12/07	01/15/07	14.2		

% Solids: 0.0

Comments:

00017

METALS

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INORGANIC ANALYSIS DATA SHEET

Client: Robinson & Noble
Project No.: NA
Project Name: Investigative
Matrix: WATER

Service Request: K0700203
Date Collected: NA
Date Received: NA
Units: µG/L
Basis: NA

Sample Name: Method Blank
Lab Code: K0700203-MB

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.8	2.0	1	1/12/07	01/19/07	2.0	U	
Antimony	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Arsenic	200.8	0.5	1	1/12/07	01/19/07	0.5	U	
Barium	200.7	5.0	1	1/12/07	01/15/07	5.0	U	
Beryllium	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Boron	200.7	50	1	1/12/07	01/15/07	50	U	
Cadmium	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Calcium	200.7	50	1	1/12/07	01/15/07	50	U	
Chromium	200.8	0.2	1	1/12/07	01/19/07	0.2	U	
Cobalt	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Copper	200.7	10	1	1/12/07	01/15/07	10	U	
Iron	200.7	20	1	1/12/07	01/15/07	20	U	
Lead	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Magnesium	200.7	20	1	1/12/07	01/15/07	20	U	
Manganese	200.7	5.0	1	1/12/07	01/15/07	5.0	U	
Mercury	245.1	0.20	1	1/11/07	01/12/07	0.20	U	
Molybdenum	200.8	0.05	1	1/12/07	01/19/07	0.05	U	
Nickel	200.8	0.2	1	1/12/07	01/19/07	0.2	U	
Potassium	200.7	2000	1	1/12/07	01/15/07	2000	U	
Selenium	200.8	1.0	1	1/12/07	01/19/07	1.0	U	
Silver	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Sodium	200.7	100	1	1/12/07	01/15/07	100	U	
Strontium	200.8	0	1	1/12/07	01/19/07	0.100	U	
Thallium	200.8	0.02	1	1/12/07	01/19/07	0.02	U	
Tin	200.8	0.1	1	1/12/07	01/19/07	0.1	U	
Vanadium	200.8	0.2	1	1/12/07	01/19/07	0.2	U	
Zinc	200.7	10	1	1/12/07	01/15/07	10	U	

% Solids: 0.0

Comments:

METALS
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DUPLICATES

Client: Robinson & Noble
Project No.:
Project Name: Investigative
Matrix: WATER

Service Request: K0700203
Units: µg/L
Basis: NA
% Solids: 0.0

Sample Name: Weber Ave Test WellD
Lab Code: K0700203-001D

Analyte	Control Limit(%)	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	20	13.3		13.0		2		200.8
Antimony		0.05	U	0.05	U			200.8
Arsenic	20	13.2		12.9		2		200.8
Barium	20	28.4		29.2		3		200.7
Beryllium		0.02	U	0.02	U			200.8
Boron		50	U	50	U			200.7
Cadmium		0.05	U	0.05	U			200.8
Calcium	20	31200		32200		3		200.7
Chromium		0.3		0.3		10		200.8
Cobalt	20	0.24		0.24		2		200.8
Copper		10	U	10	U			200.7
Iron	20	970		999		3		200.7
Lead	20	0.57		0.56		1		200.8
Magnesium	20	8900		9170		3		200.7
Manganese	20	622		641		3		200.7
Mercury		0.20	U	0.20	U			245.1
Molybdenum	20	1.33		1.33		0		200.8
Nickel	20	2.1		2.1		2		200.8
Potassium		4730		5180		9		200.7
Selenium		1.0	U	1.0	U			200.8
Silver		0.02	U	0.02	U			200.8
Sodium	20	14500		15000		3		200.7
Strontium	20	140		140		0		200.8
Thallium		0.02	U	0.02	U			200.8
Tin		0.1	U	0.1	U			200.8
Vanadium		0.4		0.4		1		200.8
Zinc		14.2		12.2		15		200.7

An empty field in the Control Limit column indicates the control limit is not applicabl

METALS

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LABORATORY CONTROL SAMPLE

Client: Robinson & Noble

Service Request: K0700203

Project No.:

Project Name: Investigative

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous ug/L True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	20.0	21.6	108						
Antimony	20.0	20.7	104						
Arsenic	20.0	20.9	104						
Barium	5000	5020	100						
Beryllium	20.0	21.3	106						
Boron	1000	1030	103						
Cadmium	20.0	20.3	102						
Calcium	12500	13000	104						
Chromium	20.0	20.9	104						
Cobalt	20.0	21.4	107						
Copper	625	612	98						
Iron	2500	2550	102						
Lead	20.0	19.8	99						
Magnesium	12500	12500	100						
Manganese	1250	1280	102						
Mercury	5.00	5.51	110						
Molybdenum	20.0	20.5	102						
Nickel	20.0	21.3	106						
Potassium	12500	12800	102						
Selenium	20.0	21.3	106						
Silver	20.0	20.4	102						
Sodium	12500	12400	99						
Strontium	20.0	20.9	104						
Thallium	20.0	19.9	100						
Tin	20.0	19.2	96						
Vanadium	20.0	20.6	103						
Zinc	1250	1280	102						

METALS

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SPIKE SAMPLE RECOVERY

Client: Robinson & Noble
Project No.:
Project Name: Investigative
Matrix: WATER

Service Request: K0700203
Units: µg/L
Basis: NA
% Solids: 0.0

Sample Name: Weber Ave Test WellS
Lab Code: K0700203-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Aluminum	70 - 130	33.8		13.3		20.0	103		200.8
Antimony	70 - 130	20.7		0.05	U	20.0	104		200.8
Arsenic	70 - 130	34.5		13.2		20.0	106		200.8
Barium	70 - 130	2120		28.4		2000	105		200.7
Beryllium	70 - 130	20.3		0.02	U	20.0	102		200.8
Boron	70 - 130	1080		50.0	U	1000	108		200.7
Cadmium	70 - 130	20.7		0.05	U	20.0	104		200.8
Chromium	70 - 130	21.1		0.3		20.0	104		200.8
Cobalt	70 - 130	21.2		0.24		20.0	105		200.8
Copper	70 - 130	260		10.0	U	250	104		200.7
Iron	70 - 130	2030		970		1000	106		200.7
Lead	70 - 130	20.1		0.57		20.0	97		200.8
Manganese	70 - 130	1160		622		500	108		200.7
Mercury	70 - 130	1.05		0.20	U	1.00	105		245.1
Molybdenum	70 - 130	22.2		1.33		20.0	104		200.8
Nickel	70 - 130	23.0		2.1		20.0	104		200.8
Selenium	70 - 130	21.6		1.0	U	20.0	108		200.8
Silver	70 - 130	19.4		0.02	U	20.0	97		200.8
Strontium		160		140		20.0	100		200.8
Thallium	70 - 130	19.7		0.02	U	20.0	99		200.8
Tin	70 - 130	19.3		0.1	U	20.0	97		200.8
Vanadium	70 - 130	21.1		0.4		20.0	104		200.8
Zinc	70 - 130	533		14.2		500	104		200.7

An empty field in the Control Limit column indicates the control limit is not applicabl

Volatile Organic Compounds
by EPA Method 524.2

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Robinson & Noble	**Service Request:**	K0700203
Project:	Investigative	**Date Collected:**	01/09/2007
Sample Matrix:	Drinking water	**Date Received:**	01/09/2007

Volatile Organic Compounds

Sample Name:	Weber Ave Test Well	**Units:**	ug/L
Lab Code:	K0700203-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Vinyl Chloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromomethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Trichlorofluoromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Methylene Chloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
trans-1,2-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
2,2-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
cis-1,2-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Methyl tert-Butyl Ether	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloroform	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromochloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,1-Trichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Carbon Tetrachloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Benzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Trichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromodichloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Dibromomethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
cis-1,3-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Toluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
trans-1,3-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,2-Trichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Tetrachloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,3-Trichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Dibromochloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	

Comments:

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Robinson & Noble	**Service Request:**	K0700203
Project:	Investigative	**Date Collected:**	01/09/2007
Sample Matrix:	Drinking water	**Date Received:**	01/09/2007

Volatile Organic Compounds

Sample Name:	Weber Ave Test Well	**Units:**	ug/L
Lab Code:	K0700203-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	524.2		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Ethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Styrene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
m,p-Xylenes	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
o-Xylene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromoform	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Isopropylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,3-Trichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
n-Propylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3,5-Trimethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
2-Chlorotoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
4-Chlorotoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
tert-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,4-Trimethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
sec-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
p-Isopropyltoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,4-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
n-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,4-Trichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Hexachlorobutadiene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Naphthalene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	99	82-110	01/09/07	Acceptable
Dibromofluoromethane	96	83-121	01/09/07	Acceptable
Toluene-d8	107	89-117	01/09/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0700425-2

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Vinyl Chloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromomethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Trichlorofluoromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Methylene Chloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
trans-1,2-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
2,2-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
cis-1,2-Dichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Methyl tert-Butyl Ether	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chloroform	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromochloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,1-Trichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Carbon Tetrachloride	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Benzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Trichloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromodichloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Dibromomethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
cis-1,3-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Toluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
trans-1,3-Dichloropropene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,2-Trichloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Tetrachloroethene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3-Dichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,3-Trichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Dibromochloromethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dibromoethane (EDB)	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Chlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	

Comments:

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0700425-2

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Ethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Styrene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
m,p-Xylenes	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
o-Xylene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromoform	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Isopropylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,3-Trichloropropane	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Bromobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
n-Propylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3,5-Trimethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
2-Chlorotoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
4-Chlorotoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
tert-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,4-Trimethylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
sec-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
p-Isopropyltoluene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,3-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,4-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
n-Butylbenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2-Dibromo-3-chloropropane (DBCP	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
1,2,4-Trichlorobenzene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Hexachlorobutadiene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	
Naphthalene	ND	U	0.50	1	01/09/07	01/09/07	KWG0700425	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	104	82-110	01/09/07	Acceptable
Dibromofluoromethane	105	83-121	01/09/07	Acceptable
Toluene-d8	108	89-117	01/09/07	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
Weber Ave Test Well	K0700203-001	99	96	107
Method Blank	KWG0700425-2	104	105	108
Lab Control Sample	KWG0700425-1	104	105	109

Surrogate Recovery Control Limits (%)

Sur1 =	4-Bromofluorobenzene	82-110
Sur2 =	Dibromofluoromethane	83-121
Sur3 =	Toluene-d8	89-117

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Robinson & Noble	**Service Request:**	K0700203
Project:	Investigative	**Date Extracted:**	01/09/2007
Sample Matrix:	Drinking water	**Date Analyzed:**	01/09/2007

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	524.2	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG0700425

	Lab Control Sample KWG0700425-1 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	5.20	5.00	104	70-130
Chloromethane	5.19	5.00	104	70-130
Vinyl Chloride	5.40	5.00	108	70-130
Bromomethane	4.83	5.00	97	70-130
Chloroethane	5.06	5.00	101	70-130
Trichlorofluoromethane	4.68	5.00	94	70-130
1,1-Dichloroethene	5.02	5.00	100	70-130
Methylene Chloride	4.88	5.00	98	70-130
trans-1,2-Dichloroethene	4.71	5.00	94	70-130
2,2-Dichloropropane	4.03	5.00	81	70-130
cis-1,2-Dichloroethene	4.85	5.00	97	70-130
Methyl tert-Butyl Ether	4.54	5.00	91	70-130
1,1-Dichloroethane	4.75	5.00	95	70-130
Chloroform	4.55	5.00	91	70-130
Bromochloromethane	4.90	5.00	98	70-130
1,1,1-Trichloroethane	4.63	5.00	93	70-130
1,1-Dichloropropene	4.56	5.00	91	70-130
Carbon Tetrachloride	4.67	5.00	93	70-130
Benzene	4.56	5.00	91	70-130
1,2-Dichloroethane	4.80	5.00	96	70-130
Trichloroethene	4.68	5.00	94	70-130
1,2-Dichloropropane	4.72	5.00	94	70-130
Bromodichloromethane	4.90	5.00	98	70-130
Dibromomethane	4.86	5.00	97	70-130
cis-1,3-Dichloropropene	4.78	5.00	96	70-130
Toluene	4.63	5.00	93	70-130
trans-1,3-Dichloropropene	4.31	5.00	86	70-130
1,1,2-Trichloroethane	4.86	5.00	97	70-130
Tetrachloroethene	4.55	5.00	91	70-130
1,3-Dichloropropane	4.87	5.00	97	70-130
1,2,3-Trichlorobenzene	5.04	5.00	101	70-130
Dibromochloromethane	4.84	5.00	97	70-130
1,2-Dibromoethane (EDB)	4.72	5.00	94	70-130
Chlorobenzene	4.73	5.00	95	70-130
Ethylbenzene	4.65	5.00	93	70-130
1,1,1,2-Tetrachloroethane	4.66	5.00	93	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Robinson & Noble
Project: Investigative
Sample Matrix: Drinking water

Service Request: K0700203
Date Extracted: 01/09/2007
Date Analyzed: 01/09/2007

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 524.2

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0700425

Analyte Name	Lab Control Sample KWG0700425-1 Lab Control Spike Result	Expected	%Rec	%Rec Limits
Styrene	4.89	5.00	98	70-130
m,p-Xylenes	9.29	10.0	93	70-130
o-Xylene	4.79	5.00	96	70-130
Bromoform	4.95	5.00	99	70-130
Isopropylbenzene	4.17	5.00	83	70-130
1,1,2,2-Tetrachloroethane	4.84	5.00	97	70-130
1,2,3-Trichloropropane	4.84	5.00	97	70-130
Bromobenzene	4.70	5.00	94	70-130
n-Propylbenzene	4.58	5.00	92	70-130
1,3,5-Trimethylbenzene	4.64	5.00	93	70-130
2-Chlorotoluene	4.73	5.00	95	70-130
4-Chlorotoluene	4.72	5.00	94	70-130
tert-Butylbenzene	4.56	5.00	91	70-130
1,2,4-Trimethylbenzene	4.79	5.00	96	70-130
sec-Butylbenzene	4.82	5.00	96	70-130
p-Isopropyltoluene	4.44	5.00	89	70-130
1,3-Dichlorobenzene	4.73	5.00	95	70-130
1,4-Dichlorobenzene	4.82	5.00	96	70-130
n-Butylbenzene	4.61	5.00	92	70-130
1,2-Dichlorobenzene	4.79	5.00	96	70-130
1,2-Dibromo-3-chloropropane (DBCP	4.68	5.00	94	70-130
1,2,4-Trichlorobenzene	4.86	5.00	97	70-130
Hexachlorobutadiene	4.86	5.00	97	70-130
Naphthalene	4.97	5.00	99	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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