

EXHIBIT F

**GROUNDWATER MONITORING REPORT
SECOND QUARTER 2007**

**GROUNDWATER MONITORING REPORT
SECOND QUARTER 2007**

**City of Hughson
Wastewater Treatment Facility
Hughson, Stanislaus County, California**

Prepared for
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Department of Public Works
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**June 13, 2007
Project No. 4685A**

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GROUNDWATER MONITORING REPORT SECOND QUARTER 2007

City of Hughson Wastewater Treatment Facility Hughson, Stanislaus County, California

1.0 INTRODUCTION

The City of Hughson (City) Wastewater Treatment Facility (the Facility) is located approximately 4 miles east of the City of Modesto, near the southern bank of the Tuolumne River, in Section 33, T3S, R10E, Mount Diablo Baseline and Meridian, Stanislaus County, California (Figure 1).

The Facility receives domestic sewage from the City and one industrial discharger, Dairy Farmers of America, Inc. Current treatment of the sewage includes screening, grit removal, extended aeration, activated sludge treatment, secondary clarification, sludge drying, and chlorination of the treated effluent. The City has implemented a pre-treatment program for the industrial discharger to control shock loading of organic compounds.

Effluent from wastewater treatment at the Facility can be discharged to a total of nine percolation/evaporation ponds (Figure 2). Three ponds are located south of Leedom Road (Ponds 1, 2, and 3). Six ponds are located north of Leedom Road, four of which (Ponds 7, 8, 9, and 10) are within the 100-year floodplain. Ponds 5 and 6 have been removed from service due to potential slope stability issues. Pond 4 was removed from service as a result of recent plant upgrades. Ponds 1, 2, 3, and 7 are typically used for effluent percolation.

The Facility is regulated under Waste Discharge Requirements (WDRs) issued by the California Regional Water Quality Control Board, Central Valley Region (Regional Board) to assure that surface and groundwaters are not adversely impacted. The Facility's WDRs, *WDR Order No. 5-00-024*, were issued on January 28, 2000. The Regional Board also issued *Monitoring and Reporting Program (MRP) No. 5-00-024* at the same time. Water quality monitoring at the site is done to comply with a *Tentative Revised Monitoring Reporting Program (TRMRP)*, issued by the Regional Board dated July 29, 2003.

This report is a quarterly summary of the surface and groundwater monitoring undertaken at the Facility in compliance with the TRMRP. Samples collected in the second quarter were analyzed for the quarterly constituent suite required in the MRP. This report presents the monitoring data for samples collected during the quarter. The report contains tabular, graphical, and narrative summaries of the groundwater monitoring data obtained at the Facility through the second quarter of 2007.

2.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

The Facility lies near the western boundary of the Great Valley Geomorphic Province of California. The valley is approximately 400 miles long and averages about 50 miles wide, and comprises about 20,000 square miles. The valley has been filled with a thick sequence of marine and non-marine sediments from the late Jurassic to Holocene. The uppermost strata of the Great Valley represent, for the most part, the alluvial, flood, and delta plains of two major rivers (Sacramento and San Joaquin Rivers) and their tributaries.

The valley deposits are derived from rocks which outcrop in the Coast Ranges to the west and in the Sierra Nevada to the east. Granitic and metamorphic rocks outcrop along the eastern and southeastern flanks of the valley. Marine sedimentary rocks outcrop along most of the western, southwestern, southern, and southeastern flanks; and volcanic rocks and deposits outcrop along the northeastern flanks of the valley. The valley geomorphology includes dissected uplands, low alluvial plains and fans, river flood plains and channels, and overflow lands and lake bottoms. The majority of the native sediments near the site consist of Miocene to Holocene continental rocks and deposits of a heterogeneous mixture of generally poorly sorted clay, silt, sand, and gravel. Some beds of claystone, siltstone, sandstone, and conglomerate also are present. The California Division of Mines and Geology "Geologic Map of the San Francisco – San Jose Quadrangle," indicates that the site is underlain by Quaternary alluvial fan deposits.

The northernmost portion of the site is located in a meandering river valley located between terraces. The river valley generally trends from the east to the west. The majority of the Facility property is located on the terrace south of the river valley.

Based on the State of California, Department of Water Resources (DWR), San Joaquin District, "Lines of Equal Elevation in Water Wells, Unconfined Aquifer, San Joaquin Valley, Spring 2002 Groundwater Report," groundwater was shown to be approximately 60 to 70 feet below the regional grade of the upper monitoring well locations (located in the terrace area), and approximately 30 feet below the local ground surface of the lower monitoring well locations (located in the meandering river valley). Based on the groundwater elevation map prepared by DWR, the regional direction of groundwater flow is shown to be toward the Tuolumne River, or to the north-northwest.

3.0 SCOPE OF WORK

The TRMRP requires regular testing of groundwater, surface water, and treated effluent as well as quarterly reporting of test results and operational data. In early July 2006, the City contracted with Condor to undertake sample collection data review and reporting for the surface and groundwater monitoring program at the Facility.

All groundwater and surface water samples were collected following EPA recommended sampling procedures. Surface water samples were collected as grab samples. Wells were purged of three casing volumes prior to collecting groundwater samples. Dedicated submersible variable-speed pumps were used to purge and collect the samples at each monitor well. New disposable sampling gloves were used for collection of samples at each sample site. Samples were placed in pre-treated sample bottles supplied by the analytical laboratory, labeled, and were placed in an ice chest with Blue Ice[®] pending same day sample pickup by the laboratory. Sample bottles collected for metals analysis for groundwater samples were either field-filtered or were filtered in the laboratory using a 45 micron filter prior to preserving with nitric acid and analysis by the laboratory, and, therefore, laboratory results reflect dissolved metals. Surface water samples are not filtered; therefore, their analyses are indicative of total metals. Laboratory analyses were done by GeoAnalytical Laboratories of Modesto, California, a California certified analytical laboratory. Coliform analyses including analyses for Escherichia Coliform (E. coli) and Fecal Streptococcus were done at JL Analytical Services, Inc. of Modesto, California.

3.1 GROUNDWATER MONITORING NETWORK

The groundwater monitoring network at the Facility consists of nine monitor wells designated MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10. The well collar at MW-1 has been damaged and is no longer accessible for sampling. Monitor wells MW-2 and MW-3 (lower monitor wells) are located on the northern portion of the site, near wastewater ponds 7 through 10. Monitor wells MW-4,

MW-5, MW-6, MW-7, and MW-8 (upper monitor wells) are located on the southern portion of the site near wastewater ponds 1 through 4 (Figure 2). Monitor well MW-9 is located directly upgradient and functions as a background monitoring well for the northern monitor wells. Monitor well MW-10 was installed to be a background well for the southern monitor wells. MW-10 is located in the historical upgradient direction of the southern monitor wells. Monitoring data for MW-9 and MW-10 are included with the upper monitor wells.

3.2 MONITORING CONSTITUENTS

The TRMRP requires sampling and analysis on a quarterly schedule. Monitoring parameters, sampling schedules, and analytical methods for the monitoring program at the Facility are listed in Table 1.

4.0 GROUNDWATER SAMPLING

Compliance samples for the second quarter 2007 were collected from eight of the nine monitor wells (MW-2, MW-3, MW-4, MW-5, MW-7, MW-8, MW-9, and MW-10) in mid-April. Due to pump problems, a sample from MW-6 could not be obtained this quarter. The collar at MW-3 was damaged by earthmoving equipment prior to the collection of the February 2006 sample.

The depth-to-groundwater was measured at each monitoring well prior to purging and sampling. The volume of water present in each monitor well was calculated. Except for MW-8, where the recharge is very slow, a minimum of three well casing volumes was purged from each monitoring well using dedicated pumps. Following the site-specific Sampling and Analysis Plan (SAP), MW-8 is purged completely and allowed to recover for 24 hours prior to collection of samples for laboratory analysis. Groundwater sample logs for the groundwater parameters pH, EC, and temperature recorded during the purge and from the final well volume of each well are included in Attachment B. Purge water from the monitoring wells was discharged to the percolation pond embankments. On April 18, 2007, the Facility staff reported that no wastewater had been routed to the upper percolation ponds 1, 2, and 3 since January 16, 2007. Historically, wastewater effluent has been discharged evenly between ponds 1, 2, 3, and 7. Ponds 1, 2, and 3 were reported to be dry at the time the second quarter 2007 samples were collected.

5.0 MONITORING RESULTS

5.1 GROUNDWATER GRADIENT AND FLOW

Static water levels were measured at all accessible monitor wells and piezometers prior to collection of samples in April 2007. Measured water levels are shown in Table 2. Figure 3 is a hydrograph of static water levels in the monitor wells. Figure 4 is a contour map showing the potentiometric surface of the groundwater. The groundwater contour map was prepared using a krigging interpretation using the Surfer[®] contouring program. To create the map, all static water level measurements from the monitor wells were used as well as the water elevations in the gaining Tuolumne River.

Groundwater levels in the monitor well adjacent to the upper percolations ponds dropped on the order of 17 feet from that measured in first quarter 2007. The lower groundwater elevation in these well is a direct result of the lack of recharge from the upper percolation ponds. These ponds were taken off-line for maintenance in January 2007 and remained off-line at the time of the second quarter sampling event. Groundwater gradients in the terrace area appear to range from 0.005 to 0.021 ft/ft radially away from the percolation ponds (ponds 1, 2, and 3). The steepest gradients are toward the Tuolumne River to the north and northwest of the ponds. The groundwater gradient in the river valley where the lower percolation ponds (ponds 5, 6, 7, and 8) are located is approximately 0.01 ft/ft toward the north-northwest.

5.2 GROUNDWATER ANALYSES

Compliance samples were collected from eight of the nine active monitor wells at the facility and analyzed for the quarterly analytical suite in the second quarter of 2007. Results of the field measurements and laboratory analyses for samples collected in the second quarter are tabulated in Table 3. Historical water-quality monitoring data collected at the monitor wells are tabulated in Attachment A. Field forms with recorded field measurements including pre-sampling purge data are included in Attachment B. Laboratory analytical reports are included in Attachment C. Time-series charts of monitoring parameters are plotted on Figures 4 through 11.

5.2.1 Upper Monitor Wells – MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10

California Primary Drinking Water Standards – Maximum Contaminant Levels (MCLs) are set to protect against public health threats. The MCL for nitrate-N is 10 mg/l. Second quarter samples collected from the background monitor wells MW-9 and MW-10 contained nitrate-N concentrations exceeding the MCL of 10 mg/l. MW-9 is located south and upgradient of the lower percolation ponds and had a nitrate-N concentration of 14.4 mg/l. MW-10 is 2,100 feet south of the ponds in the historical upgradient direction and had a nitrate-N concentration of 55.3 mg/l. Well MW-8, also located in the historical upgradient direction, contained nitrate-N concentrations of 6.18 mg/l, below the MCL. Nitrate-N concentrations in the upper wells located adjacent to the percolation ponds (MW-4, -5, -6, and -7) ranged from 1.69 mg/l at well MW-5 to 6.1 mg/l in the sample collected at MW-7.

Nitrate concentrations at MW-9 began increasing in early 2006 and have exceeded the primary MCL since April 2006. It is possible that the higher nitrate levels observed this quarter are influenced by lack of irrigation recharge from low-nitrate irrigation waters. Localized recharge from low-TDS irrigation waters appears to have a large influence over the groundwater chemistry at MW-9.

Positive results (i.e., analyses exceeding the detection limit) for any coliform organisms indicate an exceedance of the Primary MCL. Total coliform organisms (TCO) were reported to be present at the upper monitor wells MW-4, -5, and -7 (21, 2, and >1600 MPN/100 ml, respectively). Figure 7 is a time-series chart of TCO reported in groundwater samples collected from wells at the Facility. Because of the ease of introducing contamination, it is possible that some of the coliform organisms reported historically at these wells may have been introduced during well installation or sampling. To minimize sample handling and the chances for introducing coliform during sampling episodes, dedicated pumps were installed at these wells prior to collection of the August 2005 samples.

California Secondary Drinking Water Standards (Secondary DWS) are not based on public health concerns; rather, they are set because the constituents may adversely affect the taste, odor, or appearance of drinking water. Second quarter samples from monitor wells MW-8 and MW-10 had total dissolved solids (TDS) above the recommended Secondary DWS of 500 mg/l. Figure 6 is a time-series plot of the TDS. TDS concentrations ranged from 356 mg/l at MW-9 to 1,400 mg/l at MW-10. The TDS concentrations in the second quarter are generally consistent with historical TDS concentrations; however, the times-series chart indicates there may be a general declining trend for TDS at all the upper wells except MW-10 since late 2004. The TDS concentration at MW-10 was significantly higher than at the compliance wells located adjacent to the upper percolation ponds. Specific conductivity measurements at MW-8, and MW-10 (1,050 and 2,223 μ S, respectively) also exceeded recommended Secondary DWS of 900 μ S in the second quarter.

Trihalomethanes (THMs), primarily chloroform, are generated by a reaction between chlorine and organic matter. THMs were non-detect in the samples collected from all the upper wells in the second quarter. Low

concentrations of THMs have been reported at the older terrace wells since early 2003. The lack of THMs this quarter is likely an effect of the lack of percolation recharge from the off-line upper percolation ponds. Figure 8 is a time-series chart of the total THMs reported in groundwater at the facility.

Groundwater at MW-10, the new monitor well south of the facility, is of poorer quality than any of the other monitor wells at the site as indicated by the relatively high TDS concentration of 1,400 mg/l reported in the second quarter sample. This well exceeded the Primary MCL for nitrate with concentrations more than three times the nitrate concentration reported at any of the upper wells. Secondary DWS were exceeded for TDS and EC. The concentrations of sodium, calcium, bicarbonate, and sulfate at MW-10 are also noticeably higher than at all other monitor wells at the site. The only other monitor well located south of the site, MW-8, was also reported to have higher concentrations of sodium, bicarbonate, and sulfate as compared to those reported at the other upper monitor wells.

5.2.2 Lower Wells MW-1, MW-2, and MW-3

The well collar at MW-1 has been damaged and this well is inaccessible for sampling or water level measurements. The upper monitor well MW-9, installed in July 2005, is located directly upgradient of the lower compliance wells MW-2 and MW-3 and is intended to function as a replacement well for the former upgradient monitor well MW-1.

No TCO was reported at either MW-2 or MW-3 in the second quarter. Historically, TCO has been detected at MW-3 in excess of the 2.2 MPN/100 ml MCL in most samples collected since April of 2004.

TDS, specific conductivity, iron, and manganese exceeded the Secondary DWS at MW-3 in the second quarter. Iron and manganese also exceeded the Secondary DWS at MW-2 with a concentration of 7.6 and 0.84 mg/l, respectively. These results are consistent with historical measurements.

All other monitoring parameters at the two lower monitor wells were below MCLs and Secondary DWS. The concentrations of nitrogen compounds at MW-2 and MW-3 remained low in the second quarter 2007 samples. Nitrate-N at MW-2 was <0.25 mg/l, TKN was 1.79 mg/l, and ammonia-N was 1.29 mg/l. Nitrate-N at MW-3 was <0.25 mg/l, TKN was 1.96 mg/l, and ammonia was 1.06 mg/l.

5.3 SPRING SITE

On April 18, 2007, field parameters were measured from the spring located on the southern bank of the Tuolumne River, approximately 1,000 feet north of the northwest corner of the upper percolation pond 3. Past water quality measured at the spring suggests that this water is a mix of groundwater similar to that identified at monitor wells MW-4, -5, -6, and -7 with other groundwater. The specific conductivity field measurement at the spring in the second quarter was 923 μ S, which exceeds the Secondary DWS for specific conductivity.

5.4 SURFACE WATER SITES S-1 AND S-2

Condor collects quarterly samples from the Tuolumne River at the upstream sample site, S-1, and at the downstream sample site, S-2. The surface water samples are analyzed for the quarterly surface water monitoring suite as specified in the TRMRP. Results of the surface water samples collected in the second quarter 2007 are tabulated in Table 3.

TCO exceeded the MCL at both S-1 and S-2 in the second quarter samples and in all but one sample collected from the river since these analyses began in September 2005. Both fecal coliform organisms and E. coli were indicated to be present at S-1 and S-2 at 4 MPN/100 ml.

Laboratory measurements of pH in the river have, on occasion, fallen below the lower MCL of 6.5 SUs. During the second quarter 2007, the field pH at S-1 was measured to be 6.2 SUs and S-2 was measured to be 5.7 SUs. The only significant water quality differences noted between constituent concentrations reported in the upstream and the downstream site samples collected this quarter were higher readings of sodium in S-1 (8.1 mg/l compared to 6.4 mg/l in S-2) and sulfate in S-2 (6.3 mg/l compared to 3.75 mg/l in S-1).

5.5 QUALITY CONTROL AND QUALITY ASSURANCE (QA/QC)

The laboratory reports include Level II quality assurance/quality control (QA/QC) checks including method blanks, laboratory control blanks, laboratory control spikes, and matrix spikes and matrix spike duplicates. Surrogate recoveries are also reported for the trihalomethane analyses. In addition, the data are checked for cation-anion balances, major constituents are summed to compare with laboratory reported TDS, and EC concentrations are compared to TDS values as further QA/QC data check of the laboratory and field data.

QA/QC checks of the analytical data identified the following:

- Total cations and anions that balance within 5 percent indicate a good quality of laboratory analysis for normal groundwater samples. The cation-anion balances reported for groundwater samples collected in the second quarter met this goal, with the following exception: MW-10 a 7.7 percent difference.
- The ratio of laboratory reported TDS concentrations versus the TDS concentrations as calculated by summing all major constituents for groundwater analyses were acceptable.
- The laboratory reported the percent recovery of the matrix spike and the matrix spike duplicate for chloride and sulfate to be well above the laboratory goal for the second quarter analyses at MW-2, MW-3, MW-4, MW-5, and MW-9, and well below laboratory goal for molybdenum. The laboratory reported the percent recovery of the matrix spike for selenium to be below laboratory goal.
- The laboratory reported the percent recovery of the matrix spike and the matrix spike duplicate for chloride, nitrate, and sulfate to be well above laboratory goal for the second quarter samples at MW-7, MW-8, and MW-10 and well below laboratory goal for molybdenum. The laboratory reported the percent recovery of the matrix spike for selenium to be below laboratory goal.

6.0 DISCUSSION OF RESULTS

A groundwater mound is present under the upper percolation ponds. The groundwater mound appears to extend for a significant distance (up to 1,700 feet) radially around the upper percolation ponds. Groundwater gradients in the terrace areas appear to range from 0.013 to 0.035 ft/ft radially away from the percolation ponds. The steepest gradients are toward the Tuolumne River to the north and northwest of the ponds. The groundwater gradient in the lower river valley where the lower percolation ponds are located is approximately 0.003 ft/ft toward the north-northwest.

Plant staff and field observations taken by Condor's sampler indicate that all the wastewater ponds were dry with the exception of pond 7. The lack of recharge from the upper percolation ponds is reflected in a lowering of the groundwater potentiometric surface as shown on Figure 3 and Figure 4. The groundwater

elevation below these ponds dropped approximately 17 feet, from approximately 93 feet down to approximately 76 feet, between the first quarter 2007 and the second quarter 2007. Other effects of the lack of recharge from wastewater effluent on groundwater quality near the upper wastewater ponds are indicated by the fact that THMs were not detected at monitor wells MW-5, MW-7, and MW-9 this quarter.

Nitrate concentrations in the groundwater at MW-10 (located 1,700 feet south of the facility) are reported to be more than three times that reported in any of the other monitor wells. A large part of the recharge to MW-10 may come from groundwater to the south of the well and unimpacted by the Facility. The elevated nitrate observed at some of the wells near the wastewater percolation ponds may be, in-part, a result of naturally high background nitrate concentrations. Percolating effluent water from the Facility appears to be diluting the nitrate in groundwater beneath the percolation ponds. Nitrate concentrations in the wells near the upper percolation ponds declined substantially following the addition of a new nitrate treatment circuit at the wastewater treatment plant in the latter half of 2006. The lack of recharge from the upper percolation ponds appear to have resulted in slightly higher nitrate concentrations in MW-4 and MW-7 this quarter.

TCO was reported above the MDL in both surface water samples collected from the Tuolumne River, 80 MPN/100 ml and 130 MPN/100 ml, respectively. Fecal coliform and E. coli were also reported in surface water samples S-1 and S-2 above the MDL. In the second quarter TCO concentrations were reported at wells MW-4 and MW-7 at 21 MPN/100 ml and >1,600 MPN/100 ml, respectively. The August 2006 sample collected from MW-7 also reported nitrate concentrations of >1,600 MPN/100 ml.

Well MW-10 was completed in December 2005. This well is located 1,700 feet south of the Facility, the regional upgradient direction indicated by historical DWR water level data.¹ While the water levels in this well indicate that it is now downgradient of the upper percolation ponds, it is likely that historically, a large portion of the recharge to this well has come from upgradient sources to the south of the well. Samples collected at this well indicate groundwater of much poorer quality than observed at MW-8 or at the other wells located closer to the upper percolation ponds. TDS concentrations reported at MW-10 have ranged from 1,000 to 1,400 mg/l. The TDS of samples collected at MW-8 during this same period has ranged from 592 to 800 mg/l, and the highest TDS in any of the other monitor wells located near the upper percolation ponds has been 590 mg/l. Overall trends of the TDS concentrations of these monitor wells continue to show an overall decreasing trend. The average TDS of effluent water sent to the percolation ponds in 2004 was 589 mg/l. These data suggest that the percolation ponds recharge groundwater with water of lower TDS than was present beneath the Facility prior to startup of the wastewater treatment plant operations. The groundwater quality at MW-10 provides the best indication of background water quality. The groundwater at MW-8 appears to reflect a lower proportion of percolated effluent mixing with background groundwater than at the other monitor wells located closer to the upper percolation ponds.

7.0 RECOMMENDATIONS

Based on the data evaluated for this report, Condor makes the following recommendations:

- The well collar at MW-3 was damaged by earthmoving equipment in early February 2006. Prior to that time the surface seals at the well had been observed to be in poor condition with voids in the seal observed to extend to a least 5 or more feet below the ground surface. It is recommended that this well, as well as the previously damaged MW-1 be abandoned and destroyed in accordance

¹ California Department of Water Resources, San Joaquin District, Groundwater Basin Contour Maps, Website:
http://www.sjd.water.ca.gov/groundwater/basin_maps/index.cfm

with California Water Well Standards. If the use of the lower ponds is to continue at the facility, a new monitor well should be installed to replace MW-3.

- The dedicated pump in MW-6 failed and should be replaced before the next quarterly monitoring samples are collected.
- Continue quarterly compliance monitoring at all groundwater and surface water sites per the TRMRP and the constituent list in the Kleinfelder Workplan, as modified by the Condor letter to the Regional Board dated June 3, 2005.
- It was recommended in the fourth quarter reports that analysis for Title 22 organic compounds analytical methods with all non-detects reported in the annual effluent samples collected at the wastewater treatment plant in 2006 be identified. With Regional Board's concurrence, the groundwater monitoring schedule for the analytical methods with all ND's in the effluent should be reduced from annually to every 5 years.
- The City should submit a copy of this report to the Regional Board in accordance with the requirements of the TRMRP.

8.0 LIMITATIONS AND CERTIFICATION

Condor developed the interpretations and conclusions presented herein in accordance with generally accepted principles and practice at the time the work was performed. Subsurface investigation of any site is necessarily confined to selected locations and site conditions may change with time. Conditions may, and often do, vary between and around these locations. Should previously unrecognized conditions come to light during future investigation, additional testing or analysis may be required.

Condor has endeavored to determine as much as practical about the site using conventional practices given our scope of services. Conclusions presented in this report are professional opinions based on limited information obtained at the time of our site visits. Condor makes no representation as to the subsurface conditions at locations or times other than those sampled by our employees and reported in this document. If any changes are made or errors found in the information used for this report, the interpretations and conclusions contained herein shall not be considered valid unless the changes or errors are reviewed by Condor and either appropriately modified or re-approved in writing.

Condor's involvement in the work performed at this site has been limited to collecting and recording depth-to-water measurements and field parameters; collecting and shipping samples; compiling data provided by analytical laboratories; and interpreting field data. Historical data provided to Condor and utilized in this report were collected by others. Condor is not responsible for the accuracy and completeness of information collected and developed by others.

Regulations and professional standards applicable to Condor's services are continually evolving. Techniques are, by necessity, often new and relatively untried. Different professionals may reasonably adopt different approaches to similar problems. Therefore, no warranty or guarantee, expressed or implied, will be included in Condor's scope of service.

During the course of the performance of Condor's services, hazardous materials may be discovered. Condor will assume no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials.

Nothing contained in this scope of work should be construed or interpreted as requiring Condor to assume the status of an owner, operator, generator, or person who arranges for disposal, transport, storage or treatment of hazardous materials within the meaning of any governmental statute, regulation or order.

The reviews and preparation of this monitoring report has been done by, or under the direct supervision of Robert D. Hoagland, a Professional Geologist registered in the State of California. All results are true and correct to the best of his knowledge. This report has been prepared at the request of the City of Hughson Department of Public Works. The contents of the report may not be used or relied upon by any other person(s) without the express written consent and authorization of the City of Hughson Department of Public Works and Condor Earth Technologies, Inc.

Respectfully submitted,
CONDOR EARTH TECHNOLOGIES, INC.

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TABLES

DRAFT

Table 1
WATER QUALITY MONITORING CONSTITUENTS

<u>Constituent</u>	<u>Quarterly</u>	<u>Annually</u>
Field Parameters¹	X	X
Chemical Oxygen Demand (COD)	X	X
Total Coliform Organisms (TCO)	X	X
Fecal Coliform (analyzed if TCO is detected)	*	*
Fecal Streptococcus (analyzed if TCO is detected)	**	**
Escherichia Coliform (analyzed if TCO is detected)	**	**
Total Organic Carbon (TOC)	X	X
Ammonia as Nitrogen (Ammonia-N)	X	X
Nitrate as Nitrogen (Nitrate-N)	X	X
Total Kjeldhal Nitrogen (TKN)	X	X
Trihalomethanes <shortlist>	X	X
General Minerals²	X	X
Metals³	X	X
TITLE 22 CONSTITUENTS		
Secondary Drinking Water Parameters⁴		X
Inorganics⁵		X
Radioactivity		
Gross Alpha (Substitute for Individual Natural Components if <50pCi/l)		X
Organic Chemicals		
Semi-Volatile Organics		X
Chlorinated Herbicides		X
Phosphorus Containing Pesticides		X
PCBs		X
Carbamates		X
Fumigants (EDP, DBCP)		X
Glyphosate		X
Endothal		X
Diquat		X
Purgeable Halogenated & Aromatics/VOCs		X

1

Field Parameters to include: Depth-to-groundwater, specific conductance, pH, temperature

2

General Minerals Analysis to include: Sodium, Calcium, Magnesium, Potassium, Alkalinity, Carbonate, Bicarbonate, Chloride, Sulfate, Phosphorus(total) Iron, Manganese, Aluminum, Boron

3

Metals analysis to include: Aluminum, Arsenic, Barium, Copper, Cadmium, Chromium, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, and Zinc

4

Secondary Drinking Water analysis to include: Aluminum, Color, Copper, Corrosivity, MBAS, Iron, Manganese, MTBE, Odor, Silver, Thiobencarb, Turbidity, Zinc, TDSEC, Chloride, Sulfate

5

Inorganics Analysis to include: Aluminum, Antimony, Arsenic, Asbestos, Barium, Beryllium, Cadmium, Chromium, Cyanide, Fluoride, Mercury, Nickel, Nitrate, Nitrite, Selenium, and Thallium

*

Fecal Coliform is to be analyzed every time that TCO is detected.

**

E.Coli and Fecal Streptococcus are to be analyzed in first sample collected following a new detection of TCO at a sample site. Analyses for these two parameters will continue for a minimum of two sampling periods following the last detection of TCO at the sample site.

Table 2
Static Water Level Measurements
City of Hughson Wastewater Treatment Facility
Second Quarter 2007

Site	Date <i>mm/dd/yyyy</i>	Time <i>hhmm</i>	Elevation of MP <i>feet MSL</i>	Depth to Water <i>feet bmp</i>	SWL Elevation <i>feet MSL</i>
Monitor Wells					
MW-2	4/16/2007	12:45	75.01	26.80	48.21
MW-3	4/16/2007	12:34	72.31	24.72	47.59
MW-4	4/16/2007	12:10	123.07	46.40	76.67
MW-5	4/16/2007	12:03	122.14	45.59	76.55
MW-6	4/16/2007	11:49	132.48	58.27	74.21
MW-7	4/16/2007	13:29	122.86	50.74	72.12
MW-8	4/16/2007	11:40	129.80	53.71	76.09
MW-9	4/16/2007	13:25	121.10	49.98	71.12
MW-10	4/16/2007	13:35	126.95	68.64	58.31
Piezometers					
P-1	4/16/2007	13:08	103.28	41.89	61.39
P-2	4/16/2007	13:15	113.21	44.18	69.03
River Gage					
R-1 (Staff 1, highest)	4/16/2007	No SWL measurements taken.			
R-1 (Staff 2)			50.69		
R-1 (Staff 3)			48.67		
R-1 (Staff 4, lowest)			47.31		
			44.59		

MP = Measuring Point
feet bmp = Feet below the Measuring Point
feet MSL = Feet above Mean Sea Level, NAVD88 vertical datum
SWL = Static Water Level

Table 3
Water Quality Data
City Of Hughson WWTF, Stanislaus Co., CA
Second Quarter 2007 Analyses

Sample ID: Sample Date:	Units	MCL ¹	MW-2 04/17/07	MW-3 04/17/07	MW-4 04/17/07	MW-5 04/17/07	MW-6 04/17/07	MW-7 04/18/07	MW-8 04/18/07	MW-9 04/17/07	MW-10 04/18/07	Spring 04/18/07	S-1 04/16/07	S-2 04/16/07
Depth to Water	ft		26.80	24.72	46.40	45.59	58.27	50.74	53.71	49.98	68.64			
Static Water Level	ft MSL		48.21	47.59	76.67	76.55	74.21	72.12	76.09	71.12	52.46			
Purge Volume	gal		5.25	4.54	30.75	27	4	12	1	8.25	3.25			
pH (Field)	SU	6.5-8.5	6.7	6.7	7.0	7.0	6.6	7.2	7.6	6.7	7.3	7.1	6.2	5.7
Specific Conductivity (Field)	uS	900 ²	679	1132	754	727		836	1050	564	2223	923	131	138
pH (Lab)	SU	NA	7.1	6.9	7.2	7.3		7.2	7.8	7.0	7.4		7.8	7.7
Specific Conductivity (Lab)	uS	900 ²	682	1,170	795	748		847	1,020	571	2,190		103	110
Total Dissolved Solids (TDS)	mg/l	500 ²	361	701	470	461		506	595	356	1,400		51	58
MBAS	mg/l	0.5 ²	-0.25	-0.25	-0.25	-0.25		-0.25	-0.25	-0.25	-0.25		-0.25	-0.25
Total Alkalinity (as CaCO3)	mg/l		163	360	220	205		230	326	150	688		32	34
Hydroxide Alk. (as CaCO3)	mg/l		-20	-20	-20	-20		-20	-20	-20	-20		-20	-20
Carbonate (as CaCO3)	mg/l		-20	-20	-20	-20		-20	-20	-20	-20		-20	-20
Bicarbonate (as CaCO3)	mg/l		163	360	220	205		230	326	150	688		32	34
Chloride	mg/l	250 ²	95.3	81.7	83.4	82.2		89.0	81.4	32.5	212		6.0	6.5
Sulfate	mg/l	250 ²	28.1	96	33.2	31.8		30.2	46.8	20.9	135		3.8	6.3
Nitrate (as N)	mg/l	10	-0.25	-0.25	3.16	1.69		6.1	6.18	14.4	55.3		0.39	0.94
Total Kjeldahl Nitrogen (TKN)	mg/l		1.79	1.96	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0		-1.0	-1.0
Ammonia (as N)	mg/l		1.29	1.06	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0		-1.0	-1.0
Sodium	mg/l		103	172	117	119		132	186	61	310		8.1	6.4
Calcium	mg/l		15	31	21	24		22	17	33	134		7.8	7.3
Magnesium	mg/l		5.6	13	8.3	10		9.8	8.0	12	30		3.3	3.2
Potassium	mg/l		2.7	18	11	5.7		-1.0	2.0	2.3	2.1		2.0	1.9
Boron	mg/l		0.295	0.279	0.26	0.283		0.33	0.36	0.18	0.27		-0.10	-0.10
Iron	mg/l	0.3 ²	7.6	0.36	0.12	-0.10		-0.10	-0.10	-0.10	-0.10		-0.10	-0.10
Manganese	mg/l	0.05 ²	0.84	0.86	0.04	0.02		-0.02	0.11	-0.02	-0.02		-0.00001	0.03
Aluminum	mg/l	1.0	-0.05	-0.05	0.07	-0.05		-0.05	-0.05	-0.05	-0.05		-0.05	-0.05
Copper	mg/l	1.3	-0.05	-0.05	-0.05	-0.05		-0.05	-0.05	-0.05	-0.05		-0.05	-0.05
Zinc	mg/l	5.0 ²	-0.05	-0.05	-0.05	-0.05		-0.05	-0.05	-0.05	-0.05		-0.05	-0.05
Arsenic	ug/l	50	23	5	7.0	8.0		3.0	14.0	2.0	2.0			
Barium	ug/l	1000	109	145	96	147		40	116	79	327			
Cadmium	ug/l	5.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0			
Chromium	ug/l	50	2.0	4.0	4.0	1.0		-1	1	2	22			
Lead	ug/l	15	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0			
Mercury	ug/l	2.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0			
Molybdenum	ug/l		10	13	-10	17		-10	30	-10	11			
Nickel	ug/l	100	3.0	7	6	5		4	5	2	2			
Selenium	ug/l	50	-1.0	-1.0	-1.0	1.0		-1.0	-1.0	-1.0	5.0			
Silver	ug/l	100 ²	-20.0	-20.0	-20.0	-20.0		-20.0	-20.0	-20.0	-20.0			
Phosphorous (as P)	mg/l		0.08	0.33	3.23	3.33		0.84	0.44	0.39	0.06		-0.05	0.27
Total Organic Carbon (TOC)	mg/l		3.04	3.44	1.6	1.8		1.42	4	1.1	2.3			
Chemical Oxygen Demand (COD)	mg/l		-20	-20	-20	-20		-20	-20	-20	-20			
Bromoform	ug/l	100 ⁴	-0.50	-0.50	-0.5	-0.50		-0.50	-0.50	-0.50	-0.50		-0.50	-0.50
Chloroform	ug/l	100 ⁴	-0.50	-0.50	0.5	-0.50		2.48	-0.50	1.85	-0.50		-0.50	-0.50
Bromodichloromethane	ug/l	100 ⁴	-0.50	-0.50	-0.5	-0.50		-0.50	-0.50	-0.50	-0.50		-0.50	-0.50
Dibromochloromethane	ug/l	100 ⁴	-0.50	-0.50	-0.5	-0.50		-0.50	-0.50	-0.50	-0.50		-0.50	-0.50
Total Trihalomethanes	ug/l	100 ⁴	-0.50	-0.50	-0.5	-0.50		-0.50	-0.50	-0.50	-0.50		-0.50	-0.50
Total Coliform Organisms	MPN	2.2	-2	-2	21	2		1600	-2	-2	-2		80	130
Fecal Coliform Organisms ³	MPN	2.2	-2	-2	-2	-2		-2	-2	-2	-2		4	4
E Coli	MPN	2.2	-2	-2	-2	-2		-2	-2	-2	-2		4	4
Streptococcus	MPN	2.2	-2	-2	-2	-2		170	-2	-2	-2		8	2
Sodium Absorption Ratio(SAR)	(none)		6	6.5	5.5	5.2		5.9	9.3	2.3	6.3		0.6	0.5

Values shown in bold font indicate concentrations exceeding the MCL.
A negative symbol should be read as "Less than the detection limit of"
mg/l: milligrams per liter, ppm
THMs: Trihalomethanes
* = CA DHS Drinking Water Action Level

Shaded Cells indicate possible laboratory reporting errors.

ug/l: micrograms per liter, ppb
MCL: Maximum Contaminant Level

Footnotes: ¹ California Primary Drinking Water Standard - Maximum Contaminant Level (unless noted otherwise)
² California Secondary Drinking Water Standard - Maximum Recommended Contaminant Level
³ Fecal coliform is not analyzed when total coliform is non-detect. If total coliform is non-detect, the value listed for fecal coliform is non-detect.
⁴ MCL is set for the sum of all trihalomethanes (chloroform + bromoform + bromodichloromethane + dibromochloromethane)
Q Qualified Data

FIGURES

DRAFT

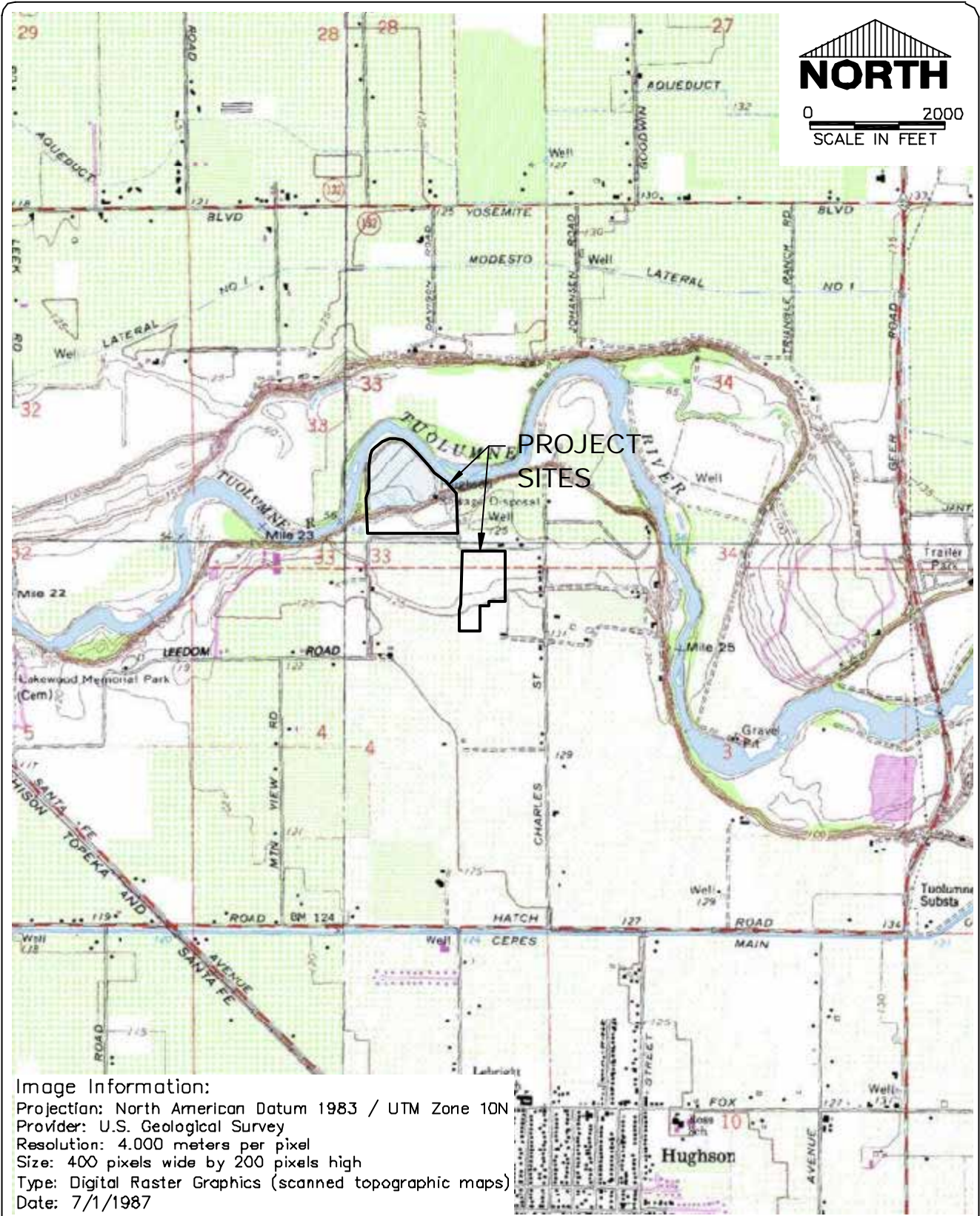


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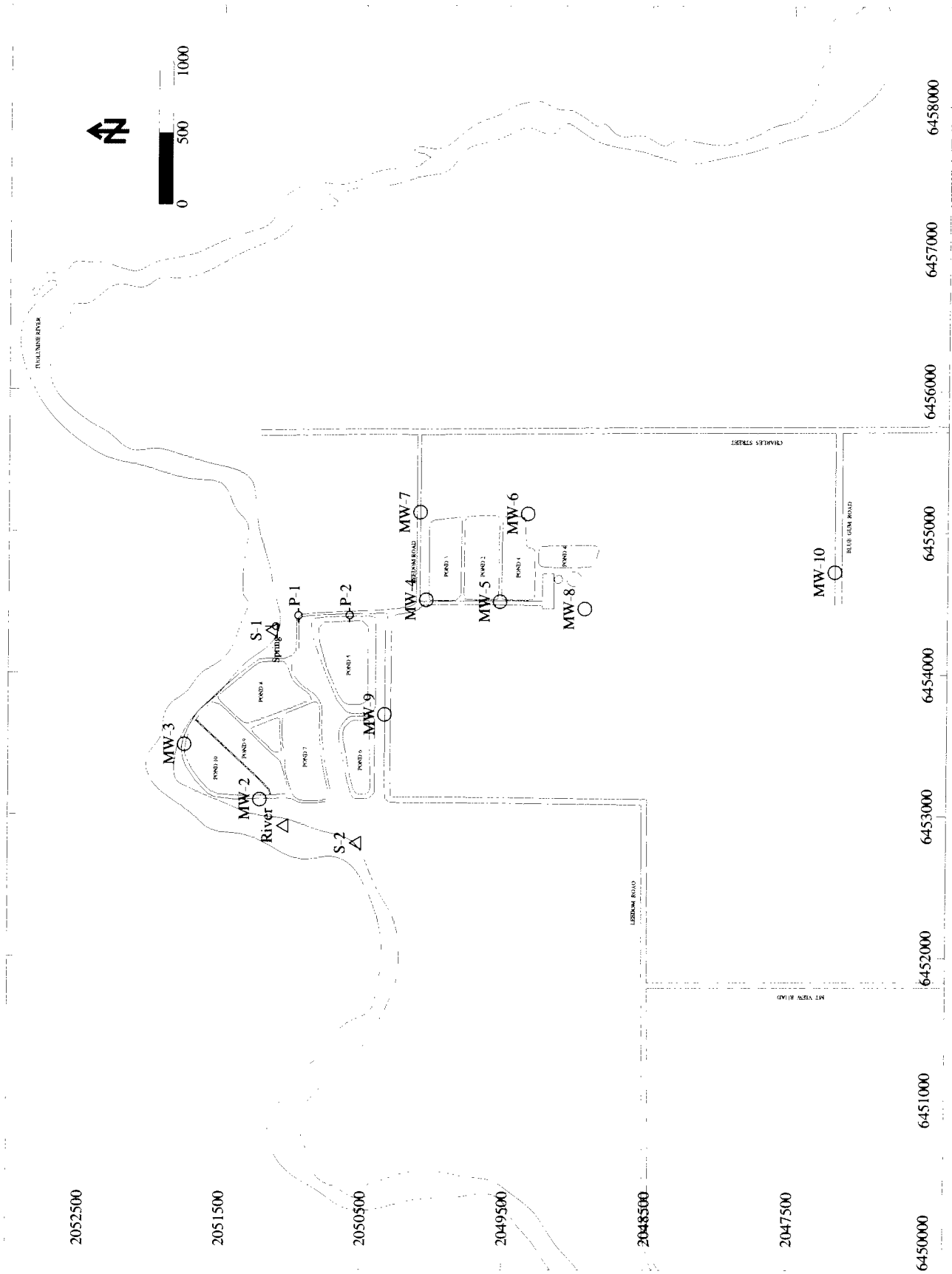


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VICINITY MAP
 WASTEWATER TREATMENT FACILITY
 CITY OF HUGHSON
 HUGHSON, CALIFORNIA

FIGURE
1

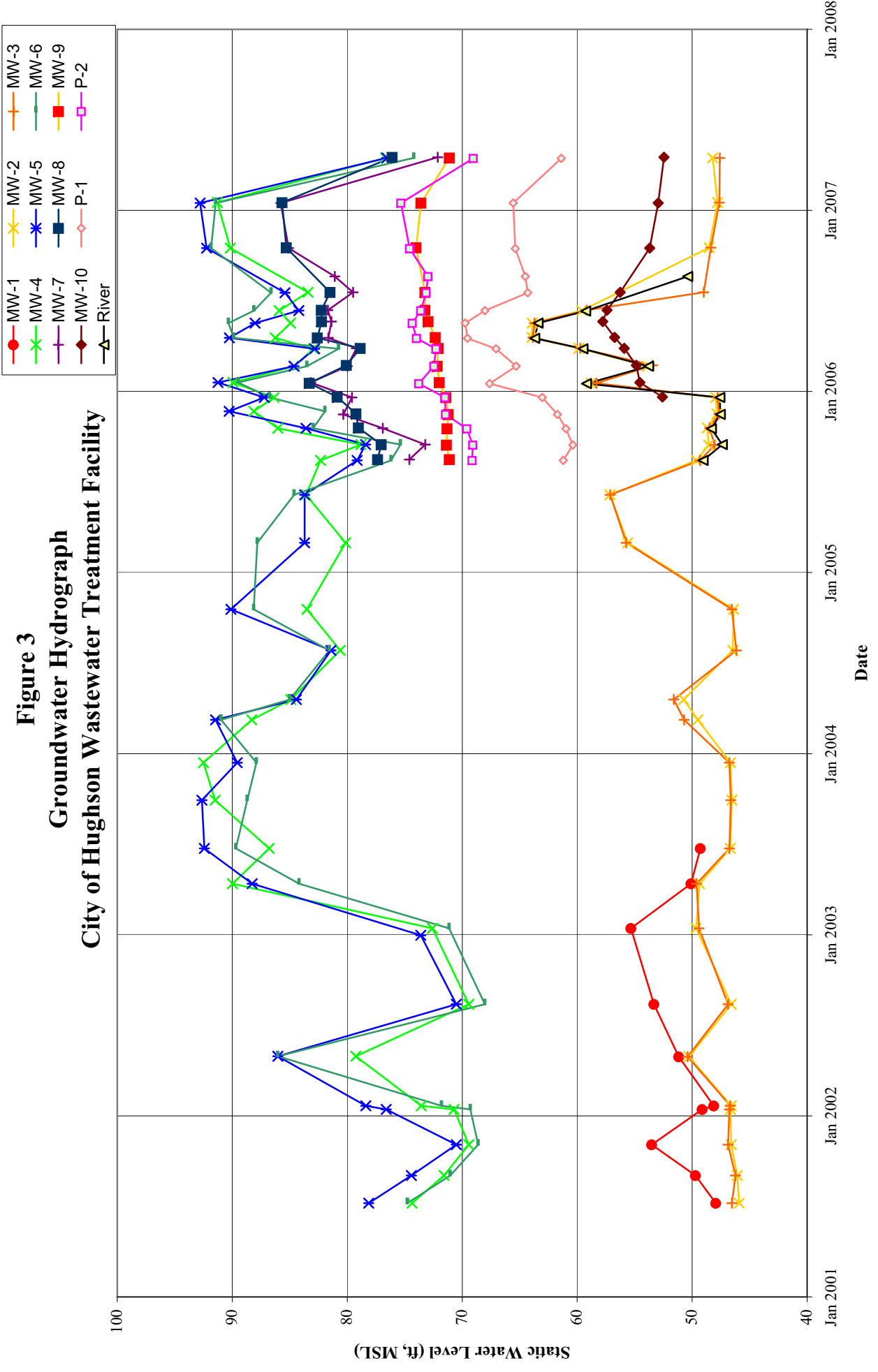
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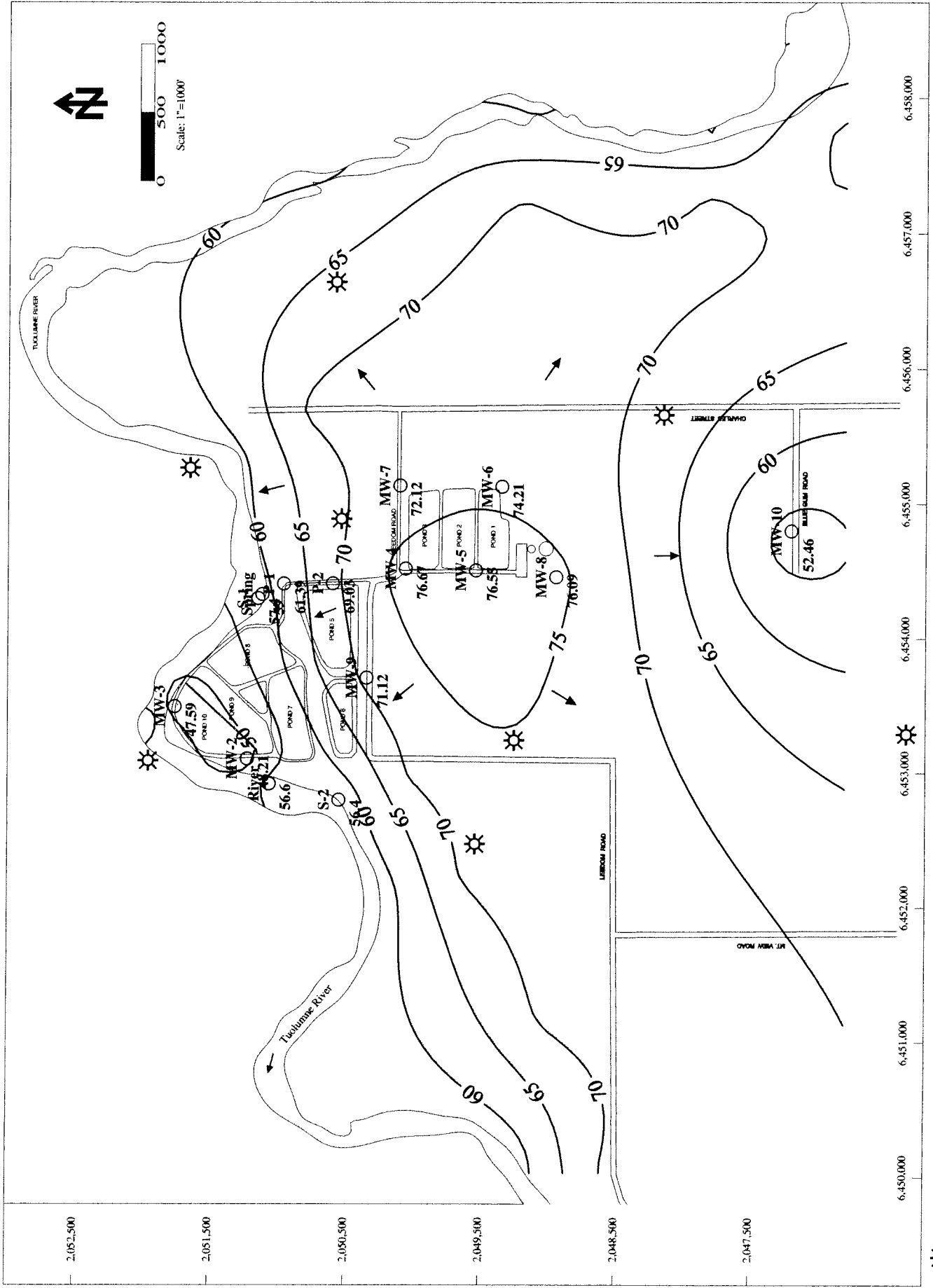


Location of Surface and Ground Water Monitor Sites
 City of Hughson Wastewater Treatment Facility
 Stanislaus County, CA

FIGURE 2

Figure 3
Groundwater Hydrograph
City of Hughson Wastewater Treatment Facility





☼ Probable Irrigation Well

**Static Water Elevations
Ground Water Monitoring Data**

April 16, 2007 - City of Hughson WWTF

Figure 4

Figure 5
Nitrate-N in Groundwater Monitor Wells
City of Hughson Wastewater Treatment Facility

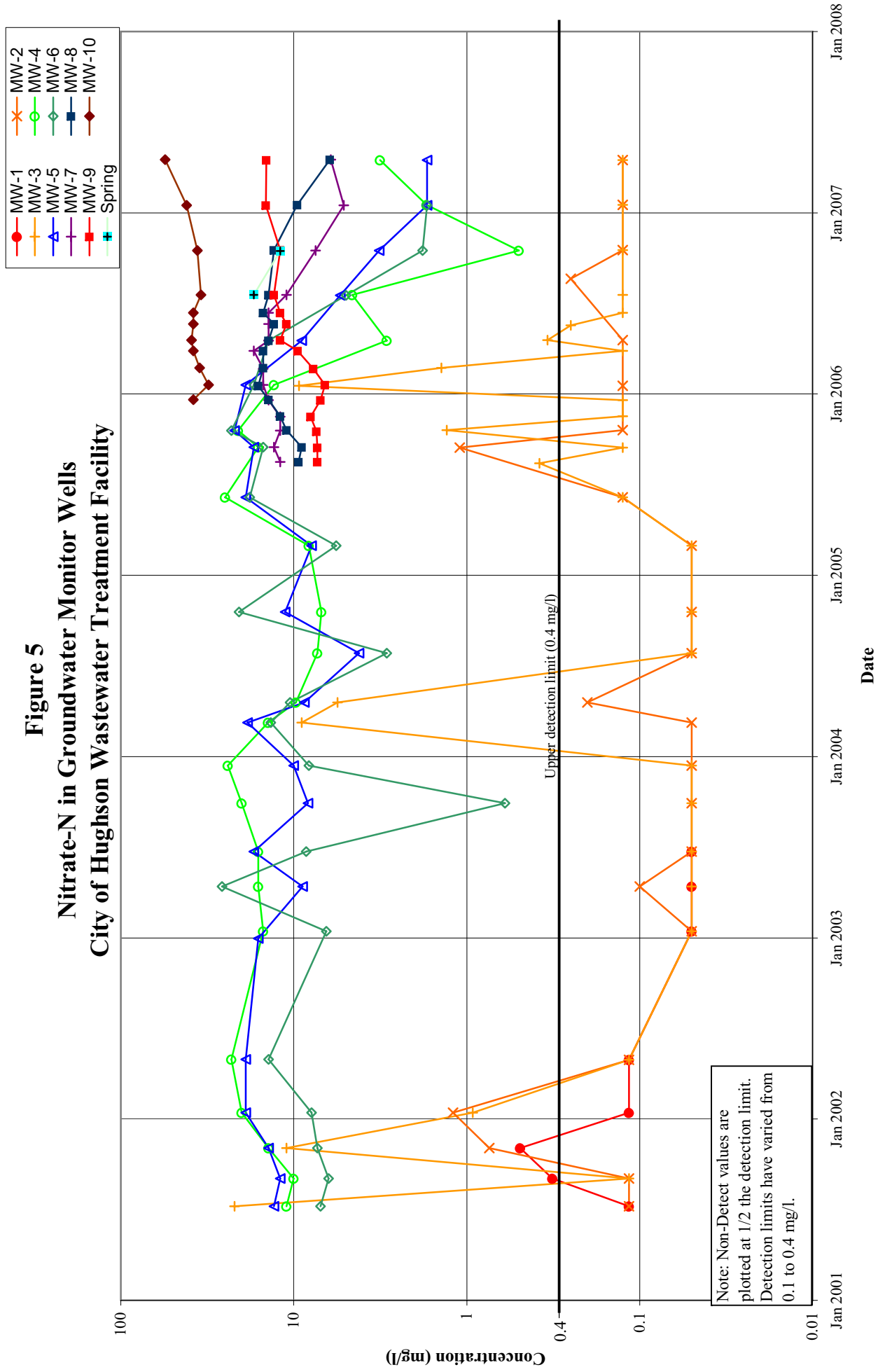


Figure 6
TDS in Groundwater Monitor Wells
City of Hughson Wastewater Treatment Facility

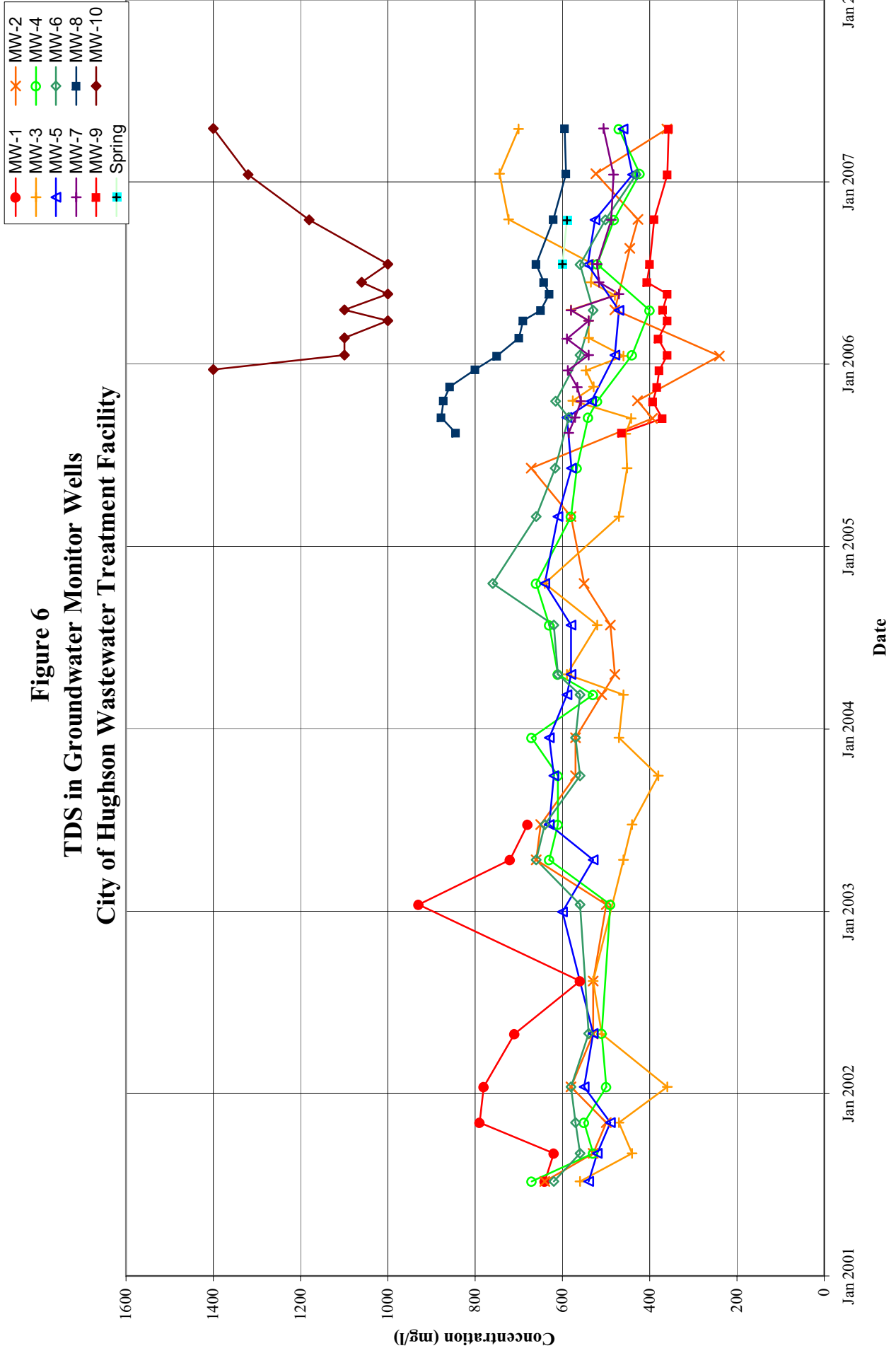
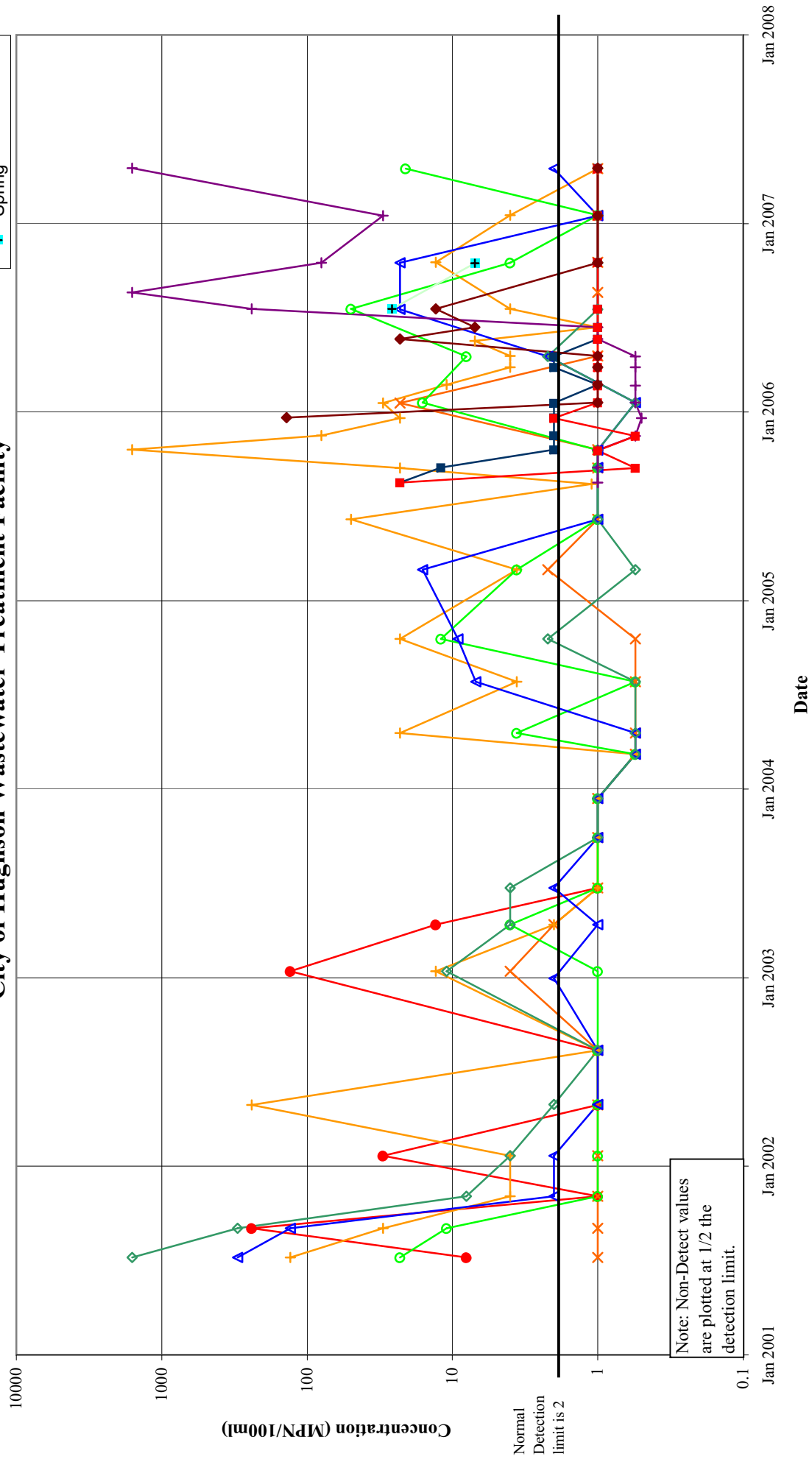


Figure 7
Total Coliform Organisms in Groundwater Monitor Wells
City of Hughson Wastewater Treatment Facility



Note: Non-Detect values are plotted at 1/2 the detection limit.

Figure 8
Total Trihalomethanes in Groundwater Monitor Wells
City of Hughson Wastewater Treatment Facility

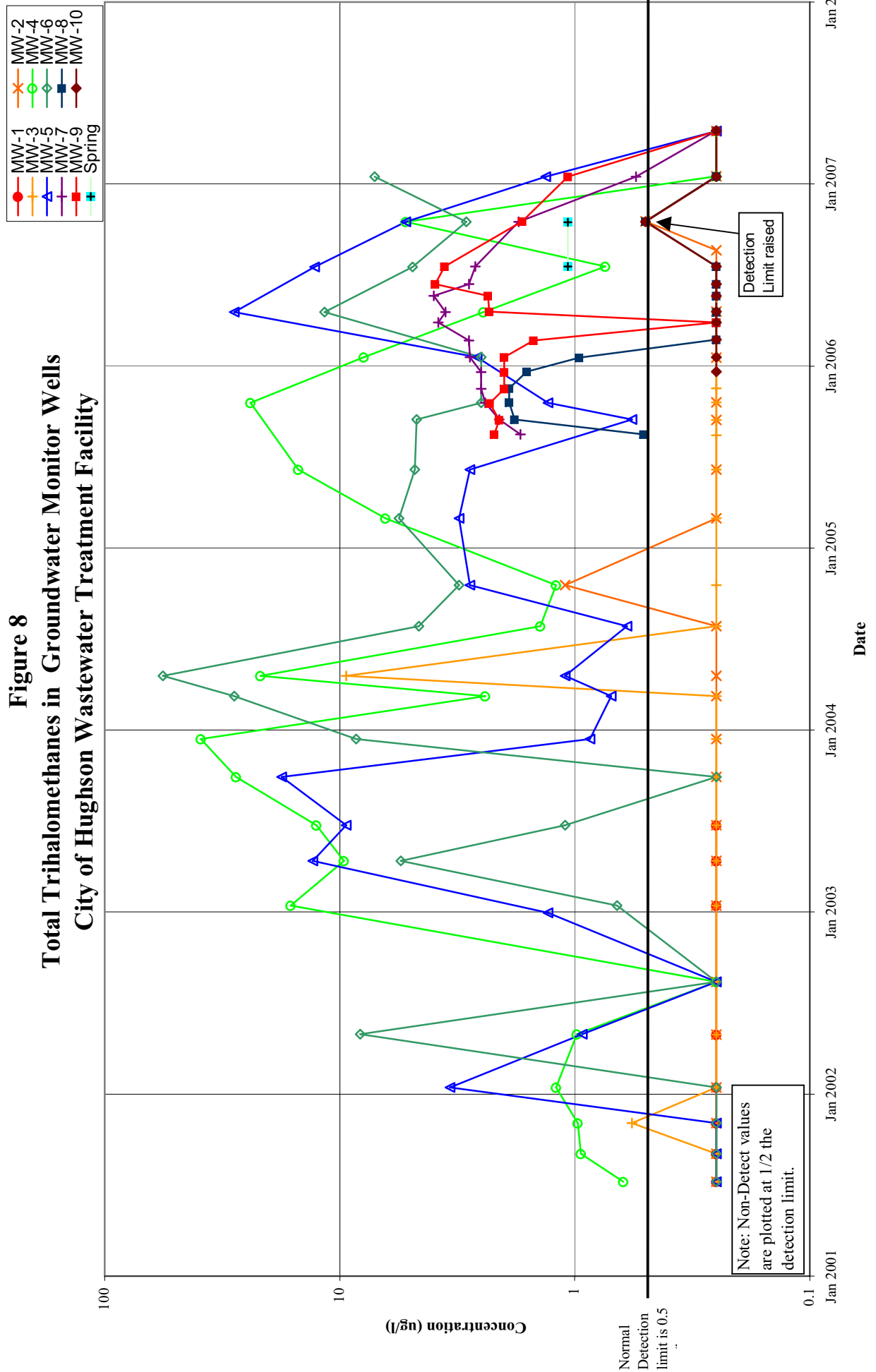


Figure 9
pH in Groundwater Monitor Wells
City of Hughson Wastewater Treatment Facility

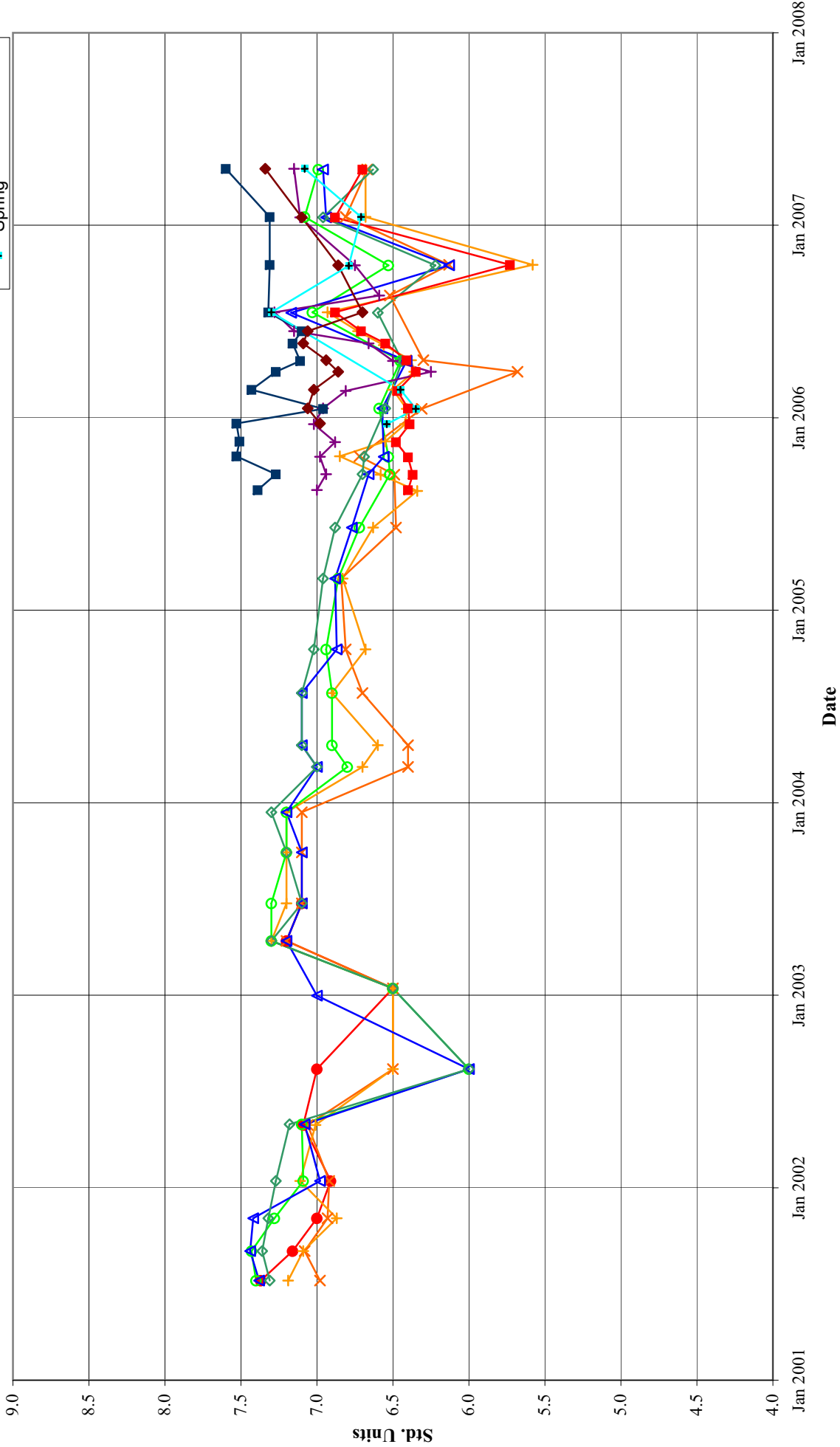


Figure 10
Specific Conductivity in Groundwater Monitor Wells
City of Hughson Wastewater Treatment Facility

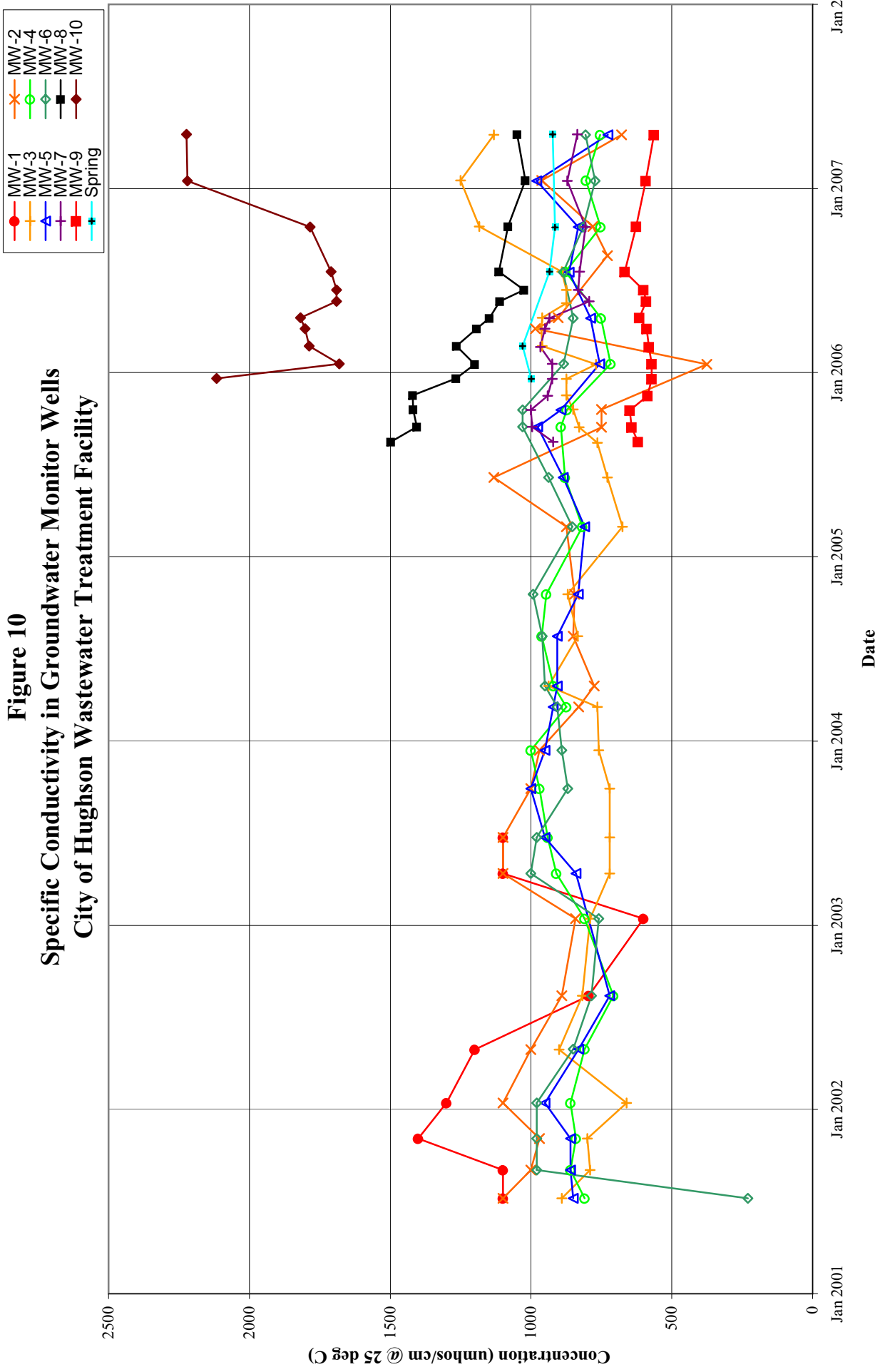
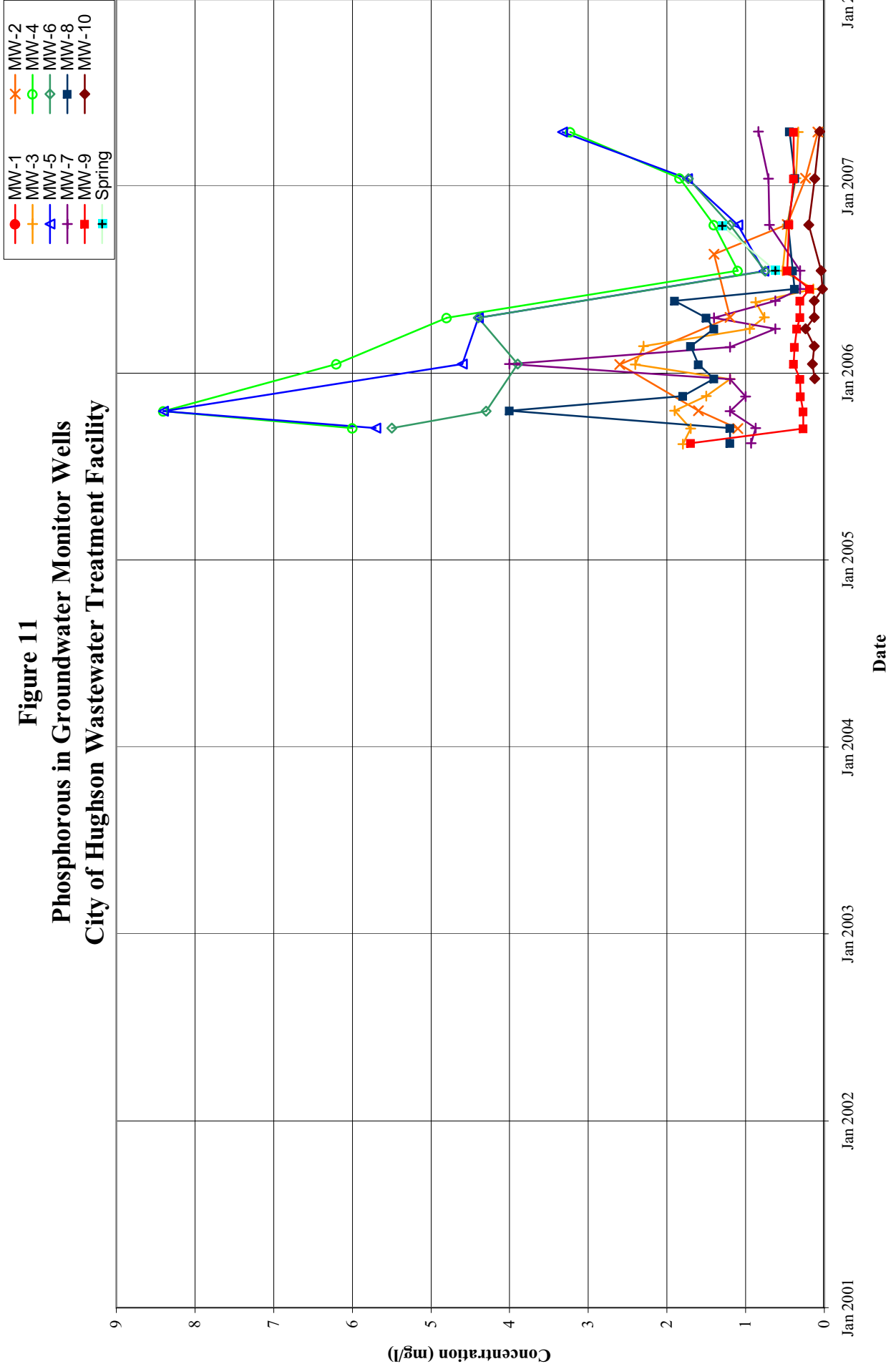


Figure 11
Phosphorous in Groundwater Monitor Wells
City of Hughson Wastewater Treatment Facility



ATTACHMENT A
Water Quality Tabulations

DRAFT

Water Quality Database - Quarterly Monitoring Constituents - Hughson WWTF

Well / Site	Date	Aluminum mg/l	Copper mg/l	Zinc mg/l	Arsenic ug/l	Barium ug/l	Cadmium ug/l	Chromium ug/l	Lead ug/l	Mercury ug/l	Molybdenum ug/l	Nickel ug/l	Selenium ug/l	Silver ug/l	Phosphorus-P mg/l	TOC mg/l	COD mg/l	Bromoform ug/l	Chloroform ug/l	Bromo-dichloro-methane ug/l	Dibromo-chloro-methane ug/l	Total THMs	Total Coliform Organisms MPN/100ml	Fecal Coliform Organisms MPN/100ml	Escheria Coliform Organisms MPN/100ml	Streptococcus Coliform Organisms MPN/100ml	Sodium Absorption Ratio (SAR) (none)	Comment
ACL Occurrence/DIS		0.2	1.3	5.0	50	1000	5	50	15	2		100	50	100								100	ND	ND				
Effluent 2004 Range																						2 - 16000	9500					
Effluent 02/16/05		1.10	0.017	0.19	12	46	ND	4	3.5	0.13	17	3	ND	ND	1.6			-0.5	-0.5	-0.5	-0.5	-0.5	8	-2				
Effluent 05/16/05																												
MW-1 07/10/01																												
MW-1 09/04/01																												
MW-1 11/05/01																												
MW-1 01/15/02																												
MW-1 01/22/02																												
MW-1 05/01/02																												
MW-1 08/15/02																												
MW-1 01/15/03																												
MW-1 04/15/03																												
MW-1 06/25/03																												
MW-2 07/10/01																												
MW-2 09/04/01																												
MW-2 11/05/01																												
MW-2 01/15/02																												
MW-2 01/22/02																												
MW-2 05/01/02																												
MW-2 08/15/02																												
MW-2 04/15/03																												
MW-2 06/25/03																												
MW-2 09/30/03																												
MW-2 12/15/03																												
MW-2 03/10/04																												
MW-2 04/20/04																												
MW-2 07/28/04																												
MW-2 10/19/04																												
MW-2 03/02/05																												
MW-2 06/07/05																												
MW-2 08/15/05																												
MW-2 09/15/05																												
MW-2 10/20/05																												
MW-2 11/17/05																												
MW-2 12/20/05																												
MW-2 01/18/06																												
MW-2 02/21/06																												
MW-2 04/20/06																												
MW-2 03/29/06																												
MW-2 05/19/06																												
MW-2 06/13/06																												
MW-2 08/21/06																												
MW-2 10/18/06																												
MW-2 01/17/07																												
MW-2 04/17/07																												

Well / Site	Date	MP Elevation	Depth to Water ¹	Static Water Level	Purge Volume	Temp-erature	Turbidity	pH	EC	Lab pH	Lab EC	TDS	MBAS	Total Alkalinity	Hydroxide Alkalinity	Carbonate	Bicarbonate	Chloride	Sulfate	Nitrate	TKN	Ammonia	Calcium	Magnesium	Potassium	Boron	Iron	Manganese		
			ft.	ft. MSL	gal	deg C	NTUs	std units	umhos/cm	std units	umhos/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
		MCL (Secondary DHS values shaded)				5		6.5-8.5		900		5.0		250		250		250		10						0.3		0.05		
MW-5	07/10/01	121.42	43.30	78.12				7.38	850			540																		
MW-5	09/04/01	121.42	47.01	74.41				7.44	860			520																		
MW-5	11/05/01	121.42	50.90	70.52				7.42	860			490																		
MW-5	01/15/02	121.42	44.80	76.62				6.98	950			550																		
MW-5	01/22/02	121.42	43.04	78.38				7.08	830			530																		
MW-5	05/02/02	121.42	35.39	86.03				6.01	720.1			780 Q																		
MW-5	08/15/02	121.42	50.90	70.52				7.01	667.9			600																		
MW-5	01/01/03	121.42	47.81	73.61				7.21	840.2			530																		
MW-5	04/15/03	121.42	33.15	88.27				7.12	950.2			630																		
MW-5	06/25/03	121.42	28.99	92.43				7.12	1000.2			620																		
MW-5	09/30/03	121.42	28.78	92.64				7.22	950.2			630																		
MW-5	03/10/04	121.42	29.96	91.46				7.02	921.2			590																		
MW-5	04/20/04	121.42	37.00	84.42				7.11	906.2			580																		
MW-5	07/28/04	121.42	40.01	81.41				7.12	907.2			580																		
MW-5	10/19/04	121.42	31.30	90.12	54	19.0		6.9	832	6.8	910	640																		
MW-5	01/16/07	122.14	29.34	92.80	58.5	20.9	1.5	6.94	542.9	6.6	980	439	-0.25	200	-20	200	75.5	32.6	1.69	-1.0	-1.0	11.6	19	7.2	7.2	0.27	-0.10	-0.01		
MW-5	04/17/07	122.14	25.59	76.55	27	19.7		6.96	727.7	7.3	748	461	-0.25	205	-20	205	82.2	31.8	10.0	-1.0	-1.0	11.9	24	10.0	5.7	0.283	-0.10	0.02		
MW-6	07/10/01	131.92	57.15	74.77				7.31	230			620																		
MW-6	09/04/01	131.92	60.88	71.04				7.36	980			570																		
MW-6	11/05/01	131.92	63.30	68.62				7.32	980			560																		
MW-6	01/15/02	131.92	62.62	69.30				7.27	980			580																		
MW-6	01/22/02	131.92	60.12	71.80				7.18	850			540																		
MW-6	05/02/02	131.92	45.89	86.03				6.01	785.1			800 Q																		
MW-6	08/15/02	131.92	63.90	68.02				6.51	759.1			560																		
MW-6	01/15/03	131.92	60.79	71.13				7.32	1000.2			660																		
MW-6	04/15/03	131.92	47.73	84.19				7.12	980.2			640																		
MW-6	06/25/03	131.92	42.23	89.69				7.12	960.2			620																		
MW-6	09/30/03	131.92	43.23	88.69				7.22	870.2			560																		
MW-6	12/15/03	131.92	44.03	87.89				7.32	890.2			570																		
MW-6	03/10/04	131.92	40.95	90.97				7.1	906.2			560																		
MW-6	04/20/04	131.92	46.91	85.01				7.12	950.2			610																		
MW-6	07/28/04	131.92	50.38	81.54				7.12	960.2			620																		
MW-6	10/19/04	131.92	43.79	88.13	42	17.5		7.0	993.7	7.0	1110	760																		
MW-6	03/02/05	131.92	44.09	87.83	42	18.7		7.0	853.7	7.8	980	660																		
MW-6	06/07/05	131.92	47.31	84.61	12	20.1	19	6.9	938	7.1	927	617																		
MW-6	08/15/05	132.48	52.39	76.19				6.7	413.9	6.8	1030	586	-0.25	204	-20	204	77	30	15	3.9	-1.0	161	29	11	4.9	0.16	-0.10	-0.01		
MW-6	09/16/05	132.48	49.51	75.37	30	19.9	1.3	6.7	419.9	6.9	1030	616	-0.25	235	-20	235	69	34	23	-1.0	-1.0	144	28	10	5.3	0.28	-0.10	-0.01		
MW-6	10/19/05	132.48	49.51	82.97				6.51	759.1			560																		
MW-6	12/20/05	132.48	50.54	81.94				6.51	759.1			560																		
MW-6	01/15/06	132.48	45.72	86.76				6.51	759.1			560																		
MW-6	07/19/06	132.48	43.00	89.48				6.6	782.9	6.9	884	560	-0.25	240	-20	240	61	29	17	-1.0	-1.0	150	30	9.5	13	0.26	-0.10	-0.01		
MW-6	02/21/06	132.48	48.97	83.51				6.4	850			530																		
MW-6	04/19/06	132.48	42.61	90.87	45	20.3	1.0	6.4	850	6.8	748	530	-0.25	230	-20	230	55	27	14	-1.0	-1.0	120	26	9.4	7.3	0.26	-0.10	-0.01		
MW-6	05/19/06	132.48	42.16	90.32				6.6	886	6.7	853	560	-0.25	279	-20	279	75	24	5.0	-1.0	-1.0	133	28	8.9	9.8	0.40	-0.10	-0.01		
MW-6	06/13/06	132.48	44.37	88.11	39	19.4	10.8	6.6	886	6.7	853	560	-0.25	240	-20	240	79	29	1.8	-1.0	-1.0	113	24	7.5	8.5	0.29	-0.10	-0.01		
MW-6	10/17/06	132.48	40.63	91.85	48.75	22.7		6.2	814	6.9	757	502	-0.25	197	-20	197	70.0	28.8	1.69	-1.0	-1.0	113	21	7.0	7.1	0.26	-0.10	-0.01		
MW-6	01/16/07	132.48	41.05	91.43	45.94	21.5	1.41	6.96	541.9	6.3	772	431	-0.25	197	-20	197	70.0	28.8	1.69	-1.0	-1.0	113	21	7.0	7.1	0.26	-0.10	-0.01		
MW-6	04/17/07	132.48	58.27	74.21	4	19.4		6.63	806			Not sampled due to pump problems.																		

Well / Site	Date	MP Elevation	Depth to Water Level ^y ft. ASSL	Field Measurements (unless noted)										Quarterly Laboratory Analysis															
				Static Water Level ft. ASSL	Purge Volume gal	Temperature deg C	Turbidity NTUs	pH std units	EC umhos/cm	Lab pH std units	Lab EC umhos/cm	TDS mg/l	MBAS mg/l	Total Alkalinity (as CaCO3) mg/l	Hydroxide Alkalinity (as CaCO3) mg/l	Carbonate (as CaCO3) mg/l	Bicarbonate (as CaCO3) mg/l	Chloride mg/l	Sulfate mg/l	Nitrate (as N) mg/l	TKN mg/l	Ammonia (as N) mg/l	Sodium mg/l	Calcium mg/l	Magnesium mg/l	Potassium mg/l	Boron mg/l	Iron mg/l	Manganese mg/l
MCC (Secondary DBS - below standard)				5	6.5-8.5	900	6.5-8.5	900		300	5.0				250	250	10												
P-1	08/15/05	103.28	42.07																										
P-1	09/15/05	103.28	42.91																										
P-1	10/18/05	103.28	42.31																										
P-1	11/16/05	103.28	41.57																										
P-1	12/20/05	103.28	40.24																										
P-1	01/17/06	103.28	35.65																										
P-1	02/21/06	103.28	37.98																										
P-1	03/28/06	103.28	36.23																										
P-1	04/18/06	103.28	33.73																										
P-1	05/19/06	103.28	33.55																										
P-1	06/13/06	103.28	35.25																										
P-1	07/19/06	103.28	38.99																										
P-1	08/21/06	103.28	38.77																										
P-1	10/16/06	103.28	37.9																										
P-1	01/16/07	103.28	37.72																										
P-1	04/16/07	103.28	41.89																										
P-2	08/15/05	113.21	44.07																										
P-2	09/15/05	113.21	44.14																										
P-2	10/18/05	113.21	43.61																										
P-2	11/16/05	113.21	41.77																										
P-2	12/20/05	113.21	41.70																										
P-2	01/17/06	113.21	39.43																										
P-2	02/21/06	113.21	40.75																										
P-2	03/28/06	113.21	40.93																										
P-2	04/18/06	113.21	39.24																										
P-2	05/19/06	113.21	38.87																										
P-2	06/13/06	113.21	39.60																										
P-2	07/19/06	113.21	40.07																										
P-2	08/21/06	113.21	40.22																										
P-2	10/16/06	113.21	38.64																										
P-2	01/16/07	113.21	37.87																										
P-2	04/16/07	113.21	44.18																										
River	08/15/05	48.67	0.39																										
River	09/16/05	47.31	0.08																										
River	10/18/05	47.31	1.02																										
River	11/16/05	44.59	2.97																										
River	12/20/05	44.59	3.01																										
River	01/17/06	50.69	abv																										
River	02/21/06	50.69	3.1																										
River	03/28/06	50.69	abv																										
River	04/18/06	50.69	63.7																										
River	05/19/06	50.69	63.4																										
River	06/12/06	50.69	59.26																										
River	08/21/06	50.69	40.3																										
River	10/16/06	50.69	Not measured																										
River	01/16/07	50.69	Not measured																										
River	04/16/07	50.69	Not measured																										

^y Depth to Water Measurements taken prior to purging of any monitor well. The actual date of measurement may be prior to the sampling date.

¹ Field measurements by City of Hughson

² Suspected laboratory measurements

³ Fecal coliform not analyzed because total coliform was non-detect. Therefore, the value listed for fecal coliform is same as total coliform.

⁴ Insufficient sample volume to analyze

Q Data has been qualified.

Green (dark) highlighted data indicates suspect data that may need to be qualified or may need to be modified following laboratory review of reported data.

Orange (dark) highlighted datasets indicate early sampling periods at monitor wells prior to stabilization of groundwater conditions.

Water Quality Database - Quarterly Monitoring Constituents - Hughson WWTF

Well / Site	Date	Aluminum mg/l	Copper mg/l	Zinc mg/l	Arsenic ug/l	Barium ug/l	Cadmium ug/l	Chromium ug/l	Lead ug/l	Mercury ug/l	Molyb- denum ug/l	Nickel ug/l	Selenium ug/l	Silver ug/l	Phospho- rus-P mg/l	TOC mg/l	COD mg/l	Bromofom ug/l	Chlorofom ug/l	Bromo- dichloro- methane ug/l	Dibromo- chloro- methane ug/l	Total THMs ug/l	Total Coliform Organisms MPN/100ml	Fecal Coliform Organisms MPN/100ml	Escheria Coliform Organisms MPN/100ml	Streptococcus Coliform Organisms MPN/100ml	Sodium Absorption Ratio (SAR) (none)	Comment
MCCL Secondary DWS		0.2	1.3	5.0	50	1000	5	50	15	2		100	50	100								100	ND	ND				DTW measurement only
P-1	08/15/05																											DTW measurement only
P-1	09/15/05																											DTW measurement only
P-1	10/18/05																											DTW measurement only
P-1	11/16/05																											DTW measurement only
P-1	12/20/05																											DTW measurement only
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P-1	04/18/06																											DTW measurement only
P-1	05/19/06																											DTW measurement only
P-1	06/13/06																											DTW measurement only
P-1	07/19/06																											DTW measurement only
P-1	08/21/06																											DTW measurement only
P-1	10/16/06																											DTW measurement only
P-1	01/16/07																											DTW measurement only
P-1	04/16/07																											DTW measurement only
P-2	08/15/05																											DTW measurement only
P-2	09/15/05																											DTW measurement only
P-2	10/18/05																											DTW measurement only
P-2	11/16/05																											DTW measurement only
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P-2	03/28/06																											DTW measurement only
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P-2	06/13/06																											DTW measurement only
P-2	07/19/06																											DTW measurement only
P-2	08/21/06																											DTW measurement only
P-2	10/16/06																											DTW measurement only
P-2	01/16/07																											DTW measurement only
P-2	04/16/07																											DTW measurement only
River	08/15/05																											River level measurement only
River	09/16/05																											River level measurement only
River	10/18/05																											River level measurement only
River	11/16/05																											River level measurement only
River	12/20/05																											River level measurement only
River	01/17/06																											River level measurement only
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River	05/19/06																											River level measurement only
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River	08/21/06																											River level measurement only
River	10/16/06																											River level measurement only
River	01/16/07																											River level measurement only
River	04/16/07																											River level measurement only

^W Depth to Water Measurements taken prior to purging of any monitor well. The actual date of measurement may be prior to the sampling date.

¹ Field measurements by City of Hughson

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Green (dark) highlighted data indicates detection limit for reporting changes or suspect data that may need to be qualified or may need to be modified following laboratory review of reported data.

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ATTACHMENT B
Field Forms and Field Equipment Calibration Records

DRAFT

ATTACHMENT C
Laboratory Reports

DRAFT