2008 ANNUAL REPORT OF OPERATIONS AND MAINTENANCE ACTIVITIES

FORMER SINCLAIR REFINERY SITE
OPERABLE UNIT ONE
CENTRAL ELEVATED LANDFILL AREA

WELLSVILLE, NEW YORK

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1.0 OVERVIEW

1.1 Introduction

This document presents the 2008 Annual Report of the Operation and Maintenance Activities for the Central Elevated Landfill Area (CELA) at the Former Sinclair Refinery Site Operable Unit 1 (OU1) located in the Town of Wellsville, New York, (please see Figure 1a). This document has been prepared by On-Site Technical Services, Inc. (On-Site), of Wellsville, New York for the Atlantic Richfield Company (Atlantic Richfield). Operation and Maintenance procedures for this project are detailed in the *Operations and Maintenance Plan for Central Elevated Landfill Area and Refinery Surface Soils, Wellsville, New York,* dated April 1993 (O&M Plan), prepared by GeoSyntec Consultants (GeoSyntec), Atlanta, Georgia. An electronic copy of this report is included as Appendix A.

1.2 Project Background

An Administrative Order of Consent (AOC), between Atlantic Richfield and the United States Environmental Protection Agency (USEPA) dated May 1, 1992, provided that Atlantic Richfield remediate the CELA and excavate certain surface soils in sections of Operable Unit 2 (OU2). To accomplish the CELA remediation, a contract to construct a soil-bentonite cutoff wall and a RCRA cap over the consolidated wastes at the CELA was awarded to Geo-Con, Inc., Monroeville, Pennsylvania, in spring 1992. The contractor mobilized in May 1992 and the final project inspection was conducted on July 7, 1993 (please see Figure 1b for site features). The excavation of surface soils in OU2 was completed by a combination of Geo-Con and Bakers of Jericho Hill, Inc., Alfred, New York. The surface soil remedy included removal of defined soils to an approximate depth of one foot at several locations on the Site, and backfilling with a 12-inch layer of approved borrow material.

Subsection 38 of the AOC provided that Atlantic Richfield prepares an O&M plan for operations and maintenance of the CELA and defined surface soils. GeoSyntec prepared the O&M Plan in April 1993. The O&M Plan has been modified since 1993, with concurrence from the USEPA, on specific requirements, which are discussed in this report. O&M of the defined surface soil excavation areas is covered under routine OU2 operations. OU2 Phase II remedial action construction of the subsurface water collection trench and water conveyance lines was conducted during 2008 within refinery surface soil areas, but no change in land use occurred.

1.3 Report Format

The remainder of this report is organized as follows.

- Section 2 outlines the currently approved operation requirements.
- Section 3 presents the currently approved maintenance requirements.
- Section 4 details O&M activities completed during 2008.
- Section 5 provides the results of 2008 monitoring activities.
- Section 6 presents the conclusions and recommendations.

2.0 OPERATIONS REQUIREMENTS

2.1 Inspection Requirements

The O&M Plan outlines the following visual inspections to be performed on a quarterly basis, or following any extreme natural event, which may jeopardize the integrity of the project components.

CELA Cap Vegetative Cover: visually inspect for erosion; stressed vegetation; sediment build-up; local subsidence or loss of grade; water ponding; turf height; evidence of activity of burrowing animals; growth of trees, weeds or undesirable vegetation; evidence of fires or vandalism; perform soil pH test (every three years); evidence of unauthorized traffic on cover; and slope instability or sloughing.

Gas Vent System: visually inspect for excess sediment accumulation and vegetative growth over the vent pipes; erosion or washout around the vent pipes; and damage to vent pipes due to vandalism, cap traffic, or natural disaster.

Open Well Piezometers: visually inspect for excess sediment accumulation and any vegetative growth over the protective cover; erosion around the surface casing/CELA Cap interface; proper function of the protective cover cap and lock; excess rust on the surface casing and lock; ponding between protective casing and the riser pipe; or any evidence of vandalism, damage, or any conditions which would allow willful, negligent, or accidental discharge of any undesired substances into the piezometers.

Groundwater Monitoring Wells: visually inspect for excess sediment accumulation and any vegetative growth over the protective cover; erosion around the concrete surface seal; cracks in the concrete surface seal; separation between the concrete surface seal and the surface casing; proper function of the surface casing cap and lock; excess rust on

the surface casing and lock; ponding between the surface casing and the riser pipe; or any evidence of vandalism, damage, or any conditions which would allow willful, negligent, or accidental discharge of any undesired substances into the monitoring wells.

Surface Water Drainage System: visually inspect for any condition which would in any way impede, restrict, or redirect surface water drainage such as dislodged riprap; washouts; erosion; sediment accumulation; gullies and ruts in the drainage swales and appurtenances; excess rusting, holes, cracks, sediment accumulation; foreign objects; and washouts at the berm-culvert interface in the drainage culvert which penetrates the Genesee River Channelization Dike.

Security Fence: visually inspect for proper clearance between fence gates and the ground; proper function of gate lock and hinges; holes; excess rust; ruts or burrows beneath the fence; vegetation growing onto or through the fence; improper connection between posts and chain link mesh; loose posts; cracks in the post foundations; and general signs of deterioration.

2.2 Subsidence and Settlement Surveys

Twenty-five settlement plates, each consisting of a sleeved metal rod attached to a flat metal plate, incorporated into the cap design, are surveyed by a New York State licensed professional land surveyor to detect settlement or subsidence of the materials underlying the cap. Additionally, the survey includes visual monitoring with photographs by traversing the cap on foot looking for signs of differential settlement (ponding water, or zones where the ground is softer than surrounding areas). This survey was initially required twice a year to document differential and total settlement until such time that changes in measurements over a six month period were less than 0.02 ft. Upon achieving this standard, the O&M Plan provides for the reduction in survey frequency to once per year. The current survey frequency is once per year. Differential settlement is the change in elevation since the previous survey. Total (cumulative) settlement is the change in elevation since the 1992 baseline survey. The plan also provides that if a change in settlement exceeding 0.02 ft does not occur after two years, the frequency of surveying can be reduced to once every ten years.

2.3 Groundwater Observation Requirements

A total of 11 groundwater observation wells and six open well piezometers have been installed on and around the CELA. Section 6.2.3 of the O&M Plan provides that

groundwater wells be sampled quarterly for one year to establish baseline conditions and twice per year thereafter. Samples obtained from both upgradient and downgradient wells are used to determine if there is any statistical change in groundwater conditions.

The statistical analysis performed in 2000, as documented in the 2000 Annual Report of Operations and Maintenance Activities, recommended the groundwater sampling requirement be reduced to annual sampling starting in 2001. This recommendation was approved by the USEPA in a letter dated June 2001 (Appendix B), and was implemented in 2001. Fluid level measurements, including non-aqueous phase liquid (NAPL) measurements, have continued on a semi-annual basis due to seasonal fluctuations.

In 2002 Atlantic Richfield requested to discontinue dissolved metals and semi-volatile organic compound (SVOC) analysis and to continue total metals, volatile organic compounds (VOC) and field parameter testing. In a November 2002 letter (Appendix B), the USEPA approved the discontinuation of the dissolved metal analysis contingent upon New York State Department of Environmental Conservation (NYSDEC) collecting split samples during the 2003 sampling event. NYSDEC collected split samples as part of the 2003 sampling event and dissolved metal analysis was discontinued starting in 2004. Also, in a June 27, 2005 email from USEPA to Atlantic Richfield (Appendix B), the USEPA agreed to suspend SVOC analysis. SVOC analysis was discontinued starting with the 2005 sampling event. Therefore, the current groundwater sampling frequency is annual with analysis for total metals and VOCs.

Groundwater data is compared with historical data to evaluate fluctuation of constituents. Graphs are prepared for groundwater indicator parameters and other constituents of interest. Groundwater data is compared with federal Maximum Contaminant Levels (MCLs) and Drinking Water Equivalent Levels (DWELs).

2.4 Static Groundwater Elevations

Semi-annual static groundwater elevations are routinely evaluated in the observation wells and piezometers. Groundwater contour maps are constructed semi-annually and included in the annual report.

2.5 Piezometer Evaluation Program

The liquid level within the CELA is evaluated semi-annually to determine the apparent thickness of light non-aqueous phase liquid (LNAPL), if present, and to document that the

liquid level remains a minimum of 1 ft below the elevation of the tie-in of the CELA cap to the top of the slurry wall. The elevation of the top of the slurry wall varies from 1497 ft to 1501 ft. Also, if the accumulation of LNAPL in any of the piezometers is greater than 2 ft, it will be removed and properly disposed.

2.6 Gas Vent Evaluation

Each gas vent is evaluated semi-annually, using a Photo-Ionization Detector (PID) or Flame-Ionization Detector (FID), for emission of organic compounds. At least one monitoring event is conducted during the summer months. Results of the gas vent evaluation are recorded on a form located in Appendix C of the O&M Plan.

2.7 Storm Water Evaluation

To comply with the substantive requirements of a storm water discharge permit, a storm water grab sample is collected from the outfall of the 42-inch diameter drainage culvert semi-annually (shown on Figure 1b). The grab sample is collected following a storm event that is greater than 0.1 in. of precipitation and at least 72 hours has passed since the previous storm event of at least 0.1 in. of precipitation. Analytical parameter lists for this sampling are located in section 6.6.2 of the O&M Plan.

3.0 MAINTENANCE REQUIREMENTS

3.1 Vegetation

Vegetation is mowed during the summer months after the grass goes to seed and reaches a height of more than six inches. Mowing is not lower than four inches. Prior to winter, grass is allowed to grow to eight to twelve inches. Fertilizer is applied as needed, based on agronomic soil tests performed every three years. Lime is applied as necessary to maintain soil pH above 5.8. Replacement of eroded topsoil, reseeding, and mulching is performed on an as needed basis. Routine maintenance includes the removal of sediment and removal of woody or undesirable vegetation.

3.2 Gas Vent System

The only anticipated maintenance of the passive gas vent system is repair or replacement of standpipes in the event they are damaged.

3.3 Observation Wells and Open Well Piezometers

Routine maintenance of the observation wells and piezometers includes removal of sediment accumulation and vegetation from the casing surface; repair of erosion around the concrete surface seals; filling cracks in the concrete surface seal and casing; and replacement of the surface casing cap and locks.

3. 4 Surface Drainage Features

Routine maintenance of the riprap lining of the drainage swales, rock chutes, channels, and culvert inlet and outlet includes removal of accumulated woody vegetation and sediment; replacement of washed-out riprap; and mowing or removal of vegetation. Routine maintenance of the culvert includes removal of sediment build-up; removal of foreign objects; and restoration of washed-out soil at the berm/culvert interface.

3.5 Access Roads

Maintenance of the access roads is performed as needed and includes repairs due to water ponding; removal of woody growth; and addition of new aggregate to fill ruts or depressed areas.

3.6 Security Fence

Routine maintenance of the security fence includes the removal of soil below the fence gate to ensure proper clearance; repair or replacement of gate locks and hinges; repair of holes; replacement of soil whenever ruts or burrows occur below the fence; removal of vegetation growing onto or through the fence; resetting of connection between posts and chain link mesh; replacement of rusted chain link mesh; and securing of loose posts.

4.0 2008 OPERATIONS AND MAINTENANCE ACTIVITIES

4.1 Visual Inspections

Visual inspections of the CELA were completed on March 3, June 24, September 17 and December 2, 2008. The inspections consisted of a complete walk-through visual inspection and completion of the Inspection Checklists (please see Appendix C). A summary of the inspections are included in the following sections.

4.1.1 CELA Cap Vegetative Cover

The CELA cap was mowed four times during 2008; the CELA side of the west dike was not mowed during 2008 due to rental mowing equipment (boom mower) being unavailable.

4.1.2 Gas Vent System

The gas vent system appears to be in good condition. No notable changes from previous conditions were observed during the 2008 inspections.

4.1.3 Open Well Piezometers

The six open well piezometers appear to be in good condition.

4.1.4 Groundwater Observation Wells

The 11 groundwater observation wells were inspected and are in good condition.

4.1.5 Surface Water Drainage System

The surface water drainage system is functioning as designed. Minimal vegetation continues to grow in the channels. No vegetation removal from the drainage channels was necessary during 2008.

4.1.6 Security Fence

The security fence is in overall excellent condition with no visible damage to the surrounding area at the base of the fence poles. All ground rods are properly bonded to the fence and ground posts. A September 2008 wind storm caused a small tree to fall across the fence on the west side. The tree was removed and there was no damage to the fence. An additional gate was added at the North end to allow access for the installation of an OU2 monitoring well.

4.2 2008 Monitoring Activities

4.2.1 Settlement Plate Survey

James Ball Land Surveyor of Wellsville, New York, surveyed the settlement plates on October 2, 2008. Settlement plate locations with the differential elevation data are presented in Figure 2. A tabular listing of survey data from 1992 to 2008 is included as

Table 1. Figures 3A through 3E graphically exhibit total change in elevation from 1992 to 2008. Discussion of the survey results is presented in Section 5.1 of this report.

4.2.2 Groundwater Evaluation

On-Site performed annual groundwater sampling at the 11 observation wells (MWR-01 through MWR-11) between May 27 and May 30, 2008 (see Figure 1b for well locations). A battery powered submersible Groundwater Essentials RPS 10415 Hurricane rental pump was utilized for purging and sampling the wells. Field parameters including pH, Conductivity, Turbidity, Dissolved Oxygen, Temperature and Oxidation Reduction Potential were measured throughout purge and at time of sampling (please see Table 9). Laboratory analysis of groundwater samples was performed by Lancaster Laboratories of Lancaster, Pennsylvania for total Target Analyte List metals (method 6010B) and Target Compound List VOCs (method 8260B). Discussion of groundwater conditions are presented in Section 5.3. Groundwater analytical results are presented in Tables 2 through 5. Groundwater sampling field parameter forms are included as Appendix D.

4.2.3 Liquid Level Evaluation

Static water levels were measured with an oil/water interface probe in the 11 observation wells and six piezometers during the annual groundwater sampling event on May 27, 2008 and during the static water level monitoring event on September 26, 2008. The static water levels are presented in Table 6 and water table contour maps for the May and September events are provided as Figures 4 and 5, respectively.

The static water level data were subtracted from the surveyed elevation of the top of the casing to calculate the water elevations as shown in Table 6. These data were plotted and contoured on a site base map to represent the potentiometric surface for the May 2008 monitoring event (Figure 4) and September 2008 monitoring event (Figure 5). Each contour represents a line of equivalent water elevation. The direction of groundwater flow is from higher to lower elevation approximately perpendicular to the contours. The O&M plan discusses determining both groundwater flow direction and rate. As presented on Figures 4 and 5, the direction of groundwater flow is generally towards the CELA; however, the presence of the slurry wall restricts flow across the landfill. The soil-bentonite slurry wall is designed to restrict groundwater flow with a hydraulic conductivity of 1×10^{-7} cm/sec or less.

LNAPL was detected in monitoring well MWR-02 during the May 2008 annual groundwater sampling event at an apparent thickness of 0.6 feet. MWR-02 was socked prior to sampling with a total of nine 18-inch long absorbent socks. On May 28, 2008, the first set of socks were removed, fully saturated with LNAPL; on May 29, 2008, the second set of socks were removed, fully saturated with LNAPL; and on May 30, 2008, immediately prior to sampling, the last set of socks were removed, partially saturated with LNAPL (please see Table 12). During the static water level monitoring event in September 2008, LNAPL was measured at approximately 0.68" in MWR-02; however no removal was performed at this time. Additional discussion of liquid level monitoring is provided in Section 5.2.

4.2.4 Gas Vent Evaluation

The fourteen gas vents were evaluated with a Mini Rae Photo Ionization Detector (PID) on June 25, 2008 and September 17, 2008 (see Figure 1b for locations). Prior to use, the PID was calibrated according to manufacturer specification with 100 ppm Isobutylene gas. PID readings were measured directly at the gas vent, and approximately five feet upwind and downwind of each vent. Weather conditions on June 25, 2008 were approximately 79°F, sunny with variable winds at approximately 0 to 5 mph from the west. Weather conditions on September 17, 2008 were approximately 65°F with light variable winds at approximately 0 to 5 mph. Emission levels at all upwind and downwind locations were at instrument background (0.1 ppm) during the evaluations, with the following exceptions:

- June 25, 2008: V-12 had upwind reading of 0.7.
- September 17, 2008: V-12 and V-13 had downwind readings of 0.4 and 0.3, respectively

Gas vent evaluation data are included in Appendix E of this report.

4.2.5 Storm Water Evaluation

One storm water sample was obtained from the CELA Outfall culvert at the North end of the CELA during 2008 (please see Figure 1b). The sample was collected on August 6, 2008. An attempt was made to obtain a storm water sample July 30, 2008; however there was no flow at the CELA Outfall culvert so a sample could not be collected.

The August 6, 2008 storm water sampling event is summarized as follows: The estimated flow through the culvert was 5 gallons per minute (gpm). The measured rainfall was 0.60 inches over 24 hours, and it had been approximately 96 hours since the last

storm event of at least 0.1 inches. Laboratory analysis for chemical parameters was performed by Lancaster Laboratories of Lancaster, Pennsylvania. Analysis for acute toxicity screening of Ceriodaphnia dubia and Pimephales promelas was performed by Severn Trent Laboratories, Inc (STL) of Westfield, Massachusetts.

Discussion of storm water data are provided in section 5.4. Table 7 compares storm water results from 2004 to 2008. The laboratory reports are included in Appendix F.

4.2.6 Soil pH and Agronomic Soil Test

Discontinuation of annual soil pH analysis but with continuation of agronomic soil testing (includes soil pH) every three years, was approved by USEPA via a June 27, 2005 email correspondence from USEPA to Atlantic Richfield (included in Appendix B). This change was based upon demonstrated stable soil pH values over several years. Agronomic soil testing was performed as scheduled during 2006 with results detailed in the 2006 CELA Annual Report. Agronomic soil testing is required again in 2009.

4.3 Maintenance Activities

Maintenance activities during 2008 included routine mowing of the cap. The CELA was mowed four times during 2008. During the third quarter CELA inspection, a tree was observed down on the west fence line due to wind damage. The tree was removed on September 17, 2008. A new North gate entrance was noted during the fourth quarter CELA inspection. No lime or fertilizer was added to the CELA in 2008. No topsoil was required to be replaced in 2008. No repairs to the vents, piping, monitoring wells, piezometers, drainage area or fence was required in 2008.

5.0 RESULTS

5.1 Settlement/Differential Elevation

The minimum, maximum and average changes in elevation (differential elevation) for the time period of September 24, 2007 through October 2, 2008 are 0.02 ft, -0.04 ft and -0.01 ft, respectively. Negative differential elevation represents settlement. The minimum, maximum and average differential elevation between the October 2, 2006 survey and October 2, 2008 are 0.03 ft, -0.03 ft and 0.00 ft, respectively. The O&M Plan provides that if settlement exceeding 0.02 ft does not occur after two years, the survey frequency can be reduced to once every 10 years. Between October 2, 2006 and October 2, 2008

settlement plates SP-12 and SP-15 exhibited the greatest differential settlement of –0.03 ft, therefore the survey frequency will remain annual. Settlement plate locations with the 2007 to 2008 and the 2006 to 2008 elevation changes are presented as Figure 2. Figures 3A through 3E graphically depict elevation change from 1992 to 2008. Table 1 exhibits the survey data from the 1992 baseline to 2008.

Based on visual observations of the cap no significant settlement was noted. The cap continues to have positive drainage with no observed areas of ponding water or abnormally soft ground.

5.2 Liquid Levels

5.2.1 Liquid Elevations vs. Slurry Wall Elevation

Liquid level elevation inside the slurry wall should be a minimum of 1 ft below the elevation of the top of the slurry wall. The slurry wall elevation varies between 1497 and 1501 ft. The highest water level measured inside the CELA slurry wall during 2008 was 1492.51 ft in P-2 on May 27, 2008. This level is well below the minimum of 1 ft below the top of the slurry wall and is consistent with historical measurements. The static water elevations and water table contours for May and September 2008 are presented as Figures 4 and 5, respectively and are consistent with historic levels.

5.2.2 LNAPL Thickness

Since 1993, LNAPL has been detected intermittently in observation wells MWR-02 and MWR-03 and piezometers P-4 and P-6. The maximum apparent LNAPL thickness of 1.02 ft was measured in MWR-02 during May 2007. The maximum apparent LNAPL thickness measured inside the slurry wall was 0.40 ft, measured in P-6 during August 1993. This measured thickness is well below the 2 ft thickness requiring removal. A graph of LNAPL thickness over time for each of the two wells and two piezometers is presented as Figure 6. During 2008, LNAPL was detected at MWR-02 in both May and September monitoring events with an apparent thickness of 0.60 ft and 0.68 ft, respectively. Generally, it appears that LNAPL thicknesses have varied over time, with observation well MWR-02 consistently containing the most LNAPL. Historically LNAPL has been removed from wells using absorbent socks prior to each groundwater sampling event. In 2008, approximately 128 oz. of LNAPL was recovered from MWR-02 (please see Table 10).

5.3 Groundwater Conditions

5.3.1 MCL and DWEL Comparison

Since 1993, several metals, Bis (2-ethylhexyl) phthalate and Methylene Chloride have exceeded USEPA Maximum Contaminant Levels (MCLs) for potable water at one time or another. The 2008 annual groundwater sampling event was conducted between May 27 and May 30, 2008. Analytical results from the 11 observation wells sampled indicate various metal detections. There were no VOCs detected in 2008.

The 2008 groundwater analytical results were compared to MCLs and Drinking Water Equivalent Levels (DWELs). Arsenic and chromium are the only parameters exceeding MCLs or DWELs during 2008. The table below lists the 2008 exceedances.

Location	Date Sampled	Parameter	Sample Result (mg/L)	USEPA MCL (mg/L)
MWR-02	30-May-08	Arsenic	0.0524	0.01
MWR-03	29-May-08	Arsenic	0.0128 J	0.01
MWR-09	28-May-08	Arsenic	0.0162 J	0.01
MWR-10	28-May-08	Arsenic	0.0381	0.01
MWR-11	28-May-08	Chromium	0.309	0.1

Total Metals including antimony, arsenic, beryllium, cadmium, chromium, lead, and thallium; bis (2-ethylhexyl) phthalate (SVOC); and methylene chloride (VOC) have periodically exceeded MCLs in water samples collected from observation wells. Antimony has not exceeded the MCL since 1994, and has been non-detect since 1996. The maximum detected arsenic concentration exceeded the MCL for potable water (revised in 2001) every year since the 1993 baseline sampling, with exceedances periodically occurring at each well. Beryllium has exceeded the MCL three of 16 years of sampling, with the last exceedance occurring in 2006. Cadmium exceeded the MCL only four of the 16 years of sampling with the last exceedance during 2006. Total chromium has exceeded the MCL every year except 2000 and 2001. Lead and methylene chloride have not exceeded their MCLs since 1995. Bis (2-ethylhexyl) phthalate has only exceeded the MCL three of the 16 years of sampling, with the last exceedance occurring in 1998. Thallium exceeded the MCL six of the 16 years of sampling, the last being 2003.

Table 2 compares frequency of detection, minimum detection, and maximum detection between the baseline sampling conducted in 1993 and the 2008 event. Table 3 presents the analytical results for each well from 2003 to 2008. Table 4 presents a

comparison between the 2008 MWR-11 sample and its duplicate. Analytical results from the duplicate sample compare favorably with the original sample results.

After each well was sampled, the pump and tubing were cleaned using a three step washing procedure: (i) Liqui-Nox® soap and tap water wash; (ii) tap water rinse; followed by (iii) distilled water rinse. An equipment rinsate blank was collected from the pump and tubing used for sampling. The equipment blank was collected by: i) following the cleaning procedure detailed above; ii) pumping laboratory provided de-ionized water through the pump and tubing; and iii) collecting the de-ionized water in sample bottles. Table 5 presents the equipment blank results as non-detect, with the exception of low level estimated detections of Manganese and Potassium, which are not site constituents of concern.

5.3.2 Statistical Analysis

Antimony, Arsenic, Beryllium, Cadmium and Chromium are the parameters that have shown MCL exceedances since 2004. Therefore, these parameters were evaluated for statistical analysis. The evaluation included reviewing the last 16 results for each of these five parameters from the eleven monitoring wells, which includes data from 1997 through 2008 (Please see Table 8A). Monitoring well analytical results with two or more detections of a parameter were included in the statistics. From 1997 through 2008, Beryllium was only detected in 2006; therefore statistics were not performed on this parameter. Parameters with two or more detections at a given monitoring well include: (i) Antimony at MWR-06; (ii) Arsenic at MWR-01, MWR-02, MWR-03, MWR-08, MWR-09 and MWR-10; (iii) Cadmium at MWR-01; and (iv) Chromium at MWR-04, MWR-05, MWR-06, MWR-10 and MWR-11. Therefore, statistical analysis was performed on these 13 parameter/location combinations. In conducting this analysis, one-half the detection limit was used for non-detect results and field duplicate results were excluded. Table 8B presents the data used in the statistical analysis and includes one-half detection limit for non-detects.

The statistical analysis was conducted using the Mann-Kendall non-parametric method in accordance with *USEPA Data Quality Assessment: Statistical Methods for Practitioners EPA QA/G-9S*, dated February 2006. In this analysis, statistically significant negative or decreasing trends, at the 95% confidence level, have Mann-Kendall statistical results less than –38. A statistically significant positive or increasing trend in concentration has a Mann-Kendall statistical result greater than 38. A Mann-

Kendall statistic equal to or between –38 and 38 indicates no statistical trend in concentrations at the 95% confidence level.

The statistical analysis showed the following results: (i) Arsenic exhibits decreasing trends at MWR-01, MWR-02, MWR-03 and MWR-08; (ii) Cadmium exhibits a decreasing trend at MWR-01; (iii) Chromium exhibits a decreasing trend at MWR-10; and (iv) No trend has been observed at the other parameter/location combinations tested. The statistical analysis is presented in Table 8C.

5.4 Storm Water Evaluation

One storm water sample (OF-0808) was obtained from the CELA surface water drainage channel outfall on August 6, 2008; chemical analysis was performed by Lancaster Labs and acute toxicity testing was performed by STL. An attempt was made to collect a storm water sample from the CELA surface water drainage channel outfall on July 30, 2008; Although sampling criteria were met, there was no flow at the pipe and a sample could not be collected.

The chemical analysis (inorganic compounds, Oil and Grease, pH and Wet Chemistry Parameters) of the storm water samples reported several analytes at or above detection limits. In general, the 2008 storm water analytical results compare favorably with previous years data. Table 7 presents the 2005 to 2008 storm water analytical results along with the NYSDEC Class A Surface Water Standards. The storm water acute toxicity laboratory report is included as Appendix F of this report.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Inspections

Inspections of the CELA are being conducted on a quarterly basis. Groundwater observation wells, open well piezometers, gas vents, and pipe sleeves appear in good condition. Other physical aspects such as the fences, gates, CELA vegetative cover, and drainage swales are operating or growing properly and serve their function. Inspections will continue to be performed quarterly, consistent with the current O&M Plan.

6.2 Monitoring Programs

6.2.1 Groundwater Evaluation

Semivolatile Organic Compounds have been non-detect since 1998 and annual SVOC analysis was discontinued following the 2004 sampling event. In 2008, VOCs are non-detect with recent occasional detections of cDCE, TCE, m&p Xylene and Toluene. In general, the 2008 results are consistent with recent historical data obtained from the Site. Various metals have historically been detected at the Site and were also observed in 2008. Statistical analysis of Arsenic, Chromium and Cadmium concentrations in groundwater indicate a combination of decreasing and stable trends.

6.2.2 Other Evaluations

Other activities are being conducted, including: settlement plate evaluation; liquid level evaluation; gas vent evaluation; and storm water evaluation. These evaluations will continue as outlined in the current O&M Plan. However, Atlantic Richfield plans to propose in a future correspondence to the Agency that the annual settlement plate survey be discontinued until after the additional CELA work associated with the OU2 Phase II remedial action is complete. The annual soil pH testing of the CELA Cap has been discontinued starting in 2005. Agronomic testing including soil pH will continue to be conducted every three years.

6.3 Maintenance

Maintenance continues to be conducted as indicated by the O&M Plan. Anticipated maintenance for 2009 includes routine mowing during the summer months and drainage channel vegetation abatement.

REFERENCES

"Operation and Maintenance Plan for Central Elevated Landfill Area and Areas of Remediated Refinery Surface Soils", GeoSyntec Consultants, April 1993.

"Statistical Evaluation of 1993 Groundwater Monitoring Data Sinclair Refinery Site Wellsville, New York", GeoSyntec Consultants, March 1994.

"Data Quality Assessment: Statistical Methods for Practitioners", EPA QA/G-9S. Office of Environmental Information. Washington DC, February 2006

Table 1

CELA Settlement Plate Elevations (1992-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(ft amsl)

PLATE	12/22/92 Survey			4/30/93 Survey			5/26/93 Survey			6/29/93 Survey			10/22/93 Survey			5/9/94 Survey			12/
	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation
SP-01	1512.86	0.00	0.00	1512.83	-0.03	-0.03	1512.83	0.00	-0.03	1512.83	0.00	-0.03	1512.83	0.00	-0.03	1512.85	0.02	-0.01	1512.86
SP-02	1513.57	0.00	0.00	1513.55	-0.02	-0.02	1513.55	0.00	-0.02	1513.55	0.00	-0.02	1513.55	0.00	-0.02	1513.56	0.01	-0.01	1513.56
SP-03	1521.66	0.00	0.00	1521.58	-0.08	-0.08	1521.55	-0.03	-0.11	1521.55	0.00	-0.11	1521.52	-0.03	-0.14	1521.50	-0.02	-0.16	1521.50
SP-04	1512.58	0.00	0.00	1512.59	0.01	0.01	1512.45	-0.14	-0.13	1512.45	0.00	-0.13	1512.40	-0.05	-0.18	1512.40	0.00	-0.18	1512.42
SP-05	1515.61	0.00	0.00	1515.58	-0.03	-0.03	1515.58	0.00	-0.03	1515.58	0.00	-0.03	1515.59	0.01	-0.02	1515.60	0.01	-0.01	1515.60
SP-06	1520.62	0.00	0.00	1520.55	-0.07	-0.07				1520.55		-0.07	1520.53	-0.02	-0.09	1520.52	-0.01	-0.10	1520.51
SP-07	1516.51	0.00	0.00	1516.44	-0.07	-0.07				1516.44		-0.07	1516.44	0.00	-0.07	1516.45	0.01	-0.06	1516.45
SP-08	1519.93	0.00	0.00	1519.79	-0.14	-0.14	1519.78	-0.01	-0.15	1519.78	0.00	-0.15	1519.75	-0.03	-0.18	1519.73	-0.02	-0.20	1519.71
SP-09	1523.64	0.00	0.00	1523.46	-0.18	-0.18	1523.46	0.00	-0.18	1523.46	0.00	-0.18	1523.42	-0.04	-0.22	1523.37	-0.05	-0.27	1523.36
SP-10	1519.11	0.00	0.00	1519.04	-0.07	-0.07	1519.01	-0.03	-0.10	1519.01	0.00	-0.10	1518.98	-0.03	-0.13	1518.96	-0.02	-0.15	1518.95
SP-11	1514.77	0.00	0.00	1514.64	-0.13	-0.13	1514.63	-0.01	-0.14	1514.63	0.00	-0.14	1514.60	-0.03	-0.17	1514.58	-0.02	-0.19	1514.57
SP-12	1520.72	0.00	0.00	1520.66	-0.06	-0.06	1520.62	-0.04	-0.10	1520.62	0.00	-0.10	1520.60	-0.02	-0.12	1520.55	-0.05	-0.17	1520.54
SP-13	1516.04	0.00	0.00	1516.07	0.03	0.03				1516.07		0.03	1516.06	-0.01	0.02	1516.07	0.01	0.03	1516.08
SP-14	1517.55	0.00	0.00	1517.49	-0.06	-0.06	1517.46	-0.03	-0.09	1517.46	0.00	-0.09	1517.42	-0.04	-0.13	1517.37	-0.05	-0.18	1517.36
SP-15	1522.68	0.00	0.00	1522.58	-0.10	-0.10	1522.56	-0.02	-0.12	1522.56	0.00	-0.12	1522.53	-0.03	-0.15	1522.46	-0.07	-0.22	1522.44
SP-16	1518.96	0.00	0.00	1518.91	-0.05	-0.05	1518.91	0.00	-0.05	1518.91	0.00	-0.05	1518.88	-0.03	-0.08	1518.86	-0.02	-0.10	1518.86
SP-17	1513.50	0.00	0.00	1513.54	0.04	0.04	1513.48	-0.06	-0.02	1513.48	0.00	-0.02	1513.48	0.00	-0.02	1513.49	0.01	-0.01	1513.51
SP-18	1520.70	0.00	0.00	1520.63	-0.07	-0.07	1520.57	-0.06	-0.13	1520.57	0.00	-0.13	1520.54	-0.03	-0.16	1520.47	-0.07	-0.23	1520.45
SP-19	1515.53	0.00	0.00	1515.54	0.01	0.01	1515.52	-0.02	-0.01	1515.52	0.00	0.01	1515.50	-0.02	-0.01	1515.49	-0.01	-0.02	1515.51
SP-20	1518.22	0.00	0.00	1518.20	-0.02	-0.02	1518.18	-0.02	-0.04	1518.18	0.00	-0.04	1518.13	-0.05	-0.09	1518.08	-0.05	-0.14	1518.07
SP-21	1523.34	0.00	0.00	1523.23	-0.11	-0.11	1523.19	-0.04	-0.15	1523.19	0.00	-0.15	1523.13	-0.06	-0.21	1523.05	-0.08	-0.29	1523.03
SP-22	1519.65	0.00	0.00	1519.61	-0.04	-0.04	1519.58	-0.03	-0.07	1519.58	0.00	-0.07	1519.54	-0.04	-0.11	1519.52	-0.02	-0.13	1519.53
SP-23	1513.60	0.00	0.00	1513.52	-0.08	-0.08	1513.53	0.01	-0.07	1513.53	0.00	-0.07	1513.50	-0.03	-0.10	1513.50	0.00	-0.10	1513.51
SP-24	1515.16	0.00	0.00	1515.10	-0.06	-0.06	1515.10	0.00	-0.06	1515.10	0.00	-0.06	1515.09	-0.01	-0.07	1515.08	-0.01	-0.08	1515.08
SP-25	1515.44	0.00	0.00	1515.44	0.00	0.00	1515.44	0.00	0.00	1515.44	0.00	0.00	1515.44	0.00	0.00	1515.45	0.01	0.01	1515.45
				Max.	**-0.18**	**-0.18**	**Max.**	**-0.14**	**-0.18**	**Max.**	**0.00**	**-0.18**	**Max.**	**-0.06**	**-0.22**	**Max.**	**-0.08**	**-0.29**	**Max.**
				Min.	**0.04**	**0.04**	**Min.**	**0.01**	**0.00**	**Min.**	**0.00**	**0.03**	**Min.**	**0.01**	**0.02**	**Min.**	**0.02**	**0.03**	**Min.**
				Avg.	**-0.06**	**-0.06**	**Avg.**	**-0.02**	**-0.07**	**Avg.**	**0.00**	**-0.08**	**Avg.**	**-0.02**	**-0.10**	**Avg.**	**-0.02**	**-0.12**	**Avg.**

Please see page 4 for notes.

Table 1

CELA Settlement Plate Elevations (1992-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(ft amsl)

PLATE	1/94 Surve		10/19/95 Survey			10/14/96 Survey			10/13/98 Survey			10/1/99 Survey			4/7/00 Survey			9/28/00 Survey	
	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential
SP-01	0.01	0.00	1512.83	-0.03	-0.03	1512.83	0.00	-0.03	1512.83	0.00	-0.03	1512.81	-0.02	-0.05	1512.79	-0.02	-0.07	1512.80	0.01
SP-02	0.00	-0.01	1513.54	-0.02	-0.03	1513.54	0.00	-0.03	1513.53	-0.01	-0.04	1513.51	-0.02	-0.06	1513.50	-0.01	-0.07	1513.51	0.01
SP-03	0.00	-0.16	1521.45	-0.05	-0.21	1521.44	-0.01	-0.22	1521.40	-0.04	-0.26	1521.38	-0.02	-0.28	1521.35	-0.03	-0.31	1521.36	0.01
SP-04	0.02	-0.16	1512.39	-0.03	-0.19	1512.39	0.00	-0.19	1512.37	-0.02	-0.21	1512.35	-0.02	-0.23	1512.33	-0.02	-0.25	1512.34	0.01
SP-05	0.00	-0.01	1515.57	-0.03	-0.04	1515.56	-0.01	-0.05	1515.52	-0.04	-0.09	1515.51	-0.01	-0.10	1515.47	-0.04	-0.14	1515.50	0.03
SP-06	-0.01	-0.11	1520.45	-0.06	-0.17	1520.44	-0.01	-0.18	1520.39	-0.05	-0.23	1520.36	-0.03	-0.26	1520.34	-0.02	-0.28	1520.36	0.02
SP-07	0.00	-0.06	1516.42	-0.03	-0.09	1516.42	0.00	-0.09	1516.39	-0.03	-0.12	1516.37	-0.02	-0.14	1516.35	-0.02	-0.16	1516.37	0.02
SP-08	-0.02	-0.22	1519.65	-0.06	-0.28	1519.64	-0.01	-0.29	1519.59	-0.05	-0.34	1519.58	-0.01	-0.35	1519.53	-0.05	-0.40	1519.54	0.01
SP-09	-0.01	-0.28	1523.29	-0.07	-0.35	1523.27	-0.02	-0.37	1523.20	-0.07	-0.44	1523.16	-0.04	-0.48	1523.13	-0.03	-0.51	1523.15	0.02
SP-10	-0.01	-0.16	1518.90	-0.05	-0.21	1518.89	-0.01	-0.22	1518.82	-0.07	-0.29	1518.80	-0.02	-0.31	1518.76	-0.04	-0.35	1518.78	0.02
SP-11	-0.01	-0.20	1514.51	-0.06	-0.26	1514.49	-0.02	-0.28	1514.43	-0.06	-0.34	1514.41	-0.02	-0.36	1514.38	-0.03	-0.39	1514.40	0.02
SP-12	-0.01	-0.18	1520.45	-0.09	-0.27	1520.44	-0.01	-0.28	1520.34	-0.10	-0.38	1520.31	-0.03	-0.41	1520.27	-0.04	-0.45	1520.29	0.02
SP-13	0.01	0.04	1516.04	-0.04	0.00	1516.05	0.01	0.01	1516.00	-0.05	-0.04	1515.98	-0.02	-0.06	1515.94	-0.04	-0.10	1515.98	0.04
SP-14	-0.01	-0.19	1517.28	-0.08	-0.27	1517.27	-0.01	-0.28	1517.18	-0.09	-0.37	1517.16	-0.02	-0.39	1517.12	-0.04	-0.43	1517.15	0.03
SP-15	-0.02	-0.24	1522.33	-0.11	-0.35	1522.32	-0.01	-0.36	1522.18	-0.14	-0.50	1522.13	-0.05	-0.55	1522.10	-0.03	-0.58	1522.11	0.01
SP-16	0.00	-0.10	1518.80	-0.06	-0.16	1518.80	0.00	-0.16	1518.73	-0.07	-0.23	1518.70	-0.03	-0.26	1518.68	-0.02	-0.28	1518.69	0.01
SP-17	0.02	0.01	1513.45	-0.06	-0.05	1513.47	0.02	-0.03	1513.43	-0.04	-0.07	1513.42	-0.01	-0.08	1513.40	-0.02	-0.10	1513.42	0.02
SP-18	-0.02	-0.25	1520.33	-0.12	-0.37	1520.31	-0.02	-0.39	1520.17	-0.14	-0.53	1520.12	-0.05	-0.58	1520.09	-0.03	-0.61	1520.10	0.01
SP-19	0.02	0.00	1515.44	-0.07	-0.07	1515.45	0.01	-0.06	1515.39	-0.06	-0.12	1515.38	-0.01	-0.13	1515.36	-0.02	-0.15	1515.38	0.02
SP-20	-0.01	-0.15	1517.98	-0.09	-0.24	1517.96	-0.02	-0.26	1517.88	-0.08	-0.34	1517.86	-0.02	-0.36	1517.84	-0.02	-0.38	1517.85	0.01
SP-21	-0.02	-0.31	1522.91	-0.12	-0.43	1522.90	-0.01	-0.44	1522.78	-0.12	-0.56	1522.75	-0.03	-0.59	1522.73	-0.02	-0.61	1522.75	0.02
SP-22	0.01	-0.12	1519.44	-0.09	-0.21	1519.45	0.01	-0.20	1519.36	-0.09	-0.29	1519.34	-0.02	-0.31	1519.32	-0.02	-0.33	1519.33	0.01
SP-23	0.01	-0.09	1513.44	-0.07	-0.16	1513.41	-0.03	-0.19	1513.39	-0.02	-0.21	1513.39	0.00	-0.21	1513.37	-0.02	-0.23	1513.40	0.03
SP-24	0.00	-0.08	1515.00	-0.08	-0.16	1515.01	0.01	-0.15	1514.96	-0.05	-0.20	1514.94	-0.02	-0.22	1514.92	-0.02	-0.24	1514.95	0.03
SP-25	0.00	0.01	1515.38	-0.07	-0.06	1515.39	0.01	-0.05	1515.33	-0.06	-0.11	1515.32	-0.01	-0.12	1515.31	-0.01	-0.13	1515.34	0.03
	-0.02	**-0.31**	**Max.**	**-0.12**	**-0.43**	**Max.**	**-0.03**	**-0.44**	**Max.**	**-0.14**	**-0.56**	**Max.**	**-0.05**	**-0.59**	**Max.**	**-0.05**	**-0.61**	**Max.**	**0.01**
	0.02	**0.04**	**Min.**	**-0.02**	**0.00**	**Min.**	**0.02**	**0.01**	**Min.**	**0.00**	**-0.03**	**Min.**	**0.00**	**-0.05**	**Min.**	**-0.01**	**-0.07**	**Min.**	**0.04**
	0.00	**-0.12**	**Avg.**	**-0.07**	**-0.19**	**Avg.**	**-0.01**	**-0.19**	**Avg.**	**-0.06**	**-0.25**	**Avg.**	**-0.02**	**-0.28**	**Avg.**	**-0.03**	**-0.30**	**Avg.**	**0.02**

Please see page 4 for notes.

Table 1

CELA Settlement Plate Elevations (1992-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(ft amsl)

PLATE		10/31/01 Survey			10/28/02 Survey			10/07/03 Survey			10/07/04 Survey			
	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Total	Elevation	Differential	Two Year Differential	Total
SP-01	-0.06	1512.81	0.01	-0.05	1512.78	-0.03	-0.08	1512.78	0.00	-0.08	1512.78	0.00	0.00	-0.08
SP-02	-0.06	1513.51	0.00	-0.06	1513.48	-0.03	-0.09	1513.49	0.01	-0.08	1513.48	-0.01	0.00	-0.09
SP-03	-0.30	1521.36	0.00	-0.30	1521.34	-0.02	-0.32	1521.32	-0.02	-0.34	1521.32	0.00	-0.02	-0.34
SP-04	-0.24	1512.34	0.00	-0.24	1512.32	-0.02	-0.26	1512.31	-0.01	-0.27	1512.32	0.01	0.00	-0.26
SP-05	-0.11	1515.48	-0.02	-0.13	1515.47	-0.01	-0.14	1515.45	-0.02	-0.16	1515.45	0.00	-0.02	-0.16
SP-06	-0.26	1520.35	-0.01	-0.27	1520.33	-0.02	-0.29	1520.31	-0.02	-0.31	1520.31	0.00	-0.02	-0.31
SP-07	-0.14	1516.36	-0.01	-0.15	1516.35	-0.01	-0.16	1516.34	-0.01	-0.17	1516.34	0.00	-0.01	-0.17
SP-08	-0.39	1519.53	-0.01	-0.40	1519.52	-0.01	-0.41	1519.50	-0.02	-0.43	1519.50	0.00	-0.02	-0.43
SP-09	-0.49	1523.14	-0.01	-0.50	1523.12	-0.02	-0.52	1523.10	-0.02	-0.54	1523.09	-0.01	-0.03	-0.55
SP-10	-0.33	1518.76	-0.02	-0.35	1518.74	-0.02	-0.37	1518.72	-0.02	-0.39	1518.71	-0.01	-0.03	-0.40
SP-11	-0.37	1514.37	-0.03	-0.40	1514.36	-0.01	-0.41	1514.35	-0.01	-0.42	1514.35	0.00	-0.01	-0.42
SP-12	-0.43	1520.27	-0.02	-0.45	1520.25	-0.02	-0.47	1520.22	-0.03	-0.50	1520.21	-0.01	-0.04	-0.51
SP-13	-0.06	1515.97	-0.01	-0.07	1515.96	-0.01	-0.08	1515.94	-0.02	-0.10	1515.94	0.00	-0.02	-0.10
SP-14	-0.40	1517.11	-0.04	-0.44	1517.11	0.00	-0.44	1517.08	-0.03	-0.47	1517.07	-0.01	-0.04	-0.48
SP-15	-0.57	1522.09	-0.02	-0.59	1522.07	-0.02	-0.61	1522.03	-0.04	-0.65	1522.01	-0.02	-0.06	-0.67
SP-16	-0.27	1518.68	-0.01	-0.28	1518.65	-0.03	-0.31	1518.63	-0.02	-0.33	1518.62	-0.01	-0.03	-0.34
SP-17	-0.08	1513.41	-0.01	-0.09	1513.41	0.00	-0.09	1513.39	-0.02	-0.11	1513.39	0.00	-0.02	-0.11
SP-18	-0.60	1520.07	-0.03	-0.63	1520.04	-0.03	-0.66	1520.00	-0.04	-0.70	1519.99	-0.01	-0.05	-0.71
SP-19	-0.13	1515.35	-0.03	-0.16	1515.34	-0.01	-0.17	1515.31	-0.03	-0.22	1515.31	0.00	-0.03	-0.22
SP-20	-0.37	1517.83	-0.02	-0.39	1517.83	0.00	-0.39	1517.79	-0.04	-0.43	1517.76	-0.03	-0.07	-0.46
SP-21	-0.59	1522.70	-0.05	-0.64	1522.68	-0.02	-0.66	1522.65	-0.03	-0.69	1522.64	-0.01	-0.04	-0.70
SP-22	-0.32	1519.31	-0.02	-0.34	1519.29	-0.02	-0.36	1519.26	-0.03	-0.39	1519.26	0.00	-0.03	-0.39
SP-23	-0.20	1513.39	-0.01	-0.21	1513.39	0.00	-0.21	1513.37	-0.02	-0.23	1513.38	0.01	-0.01	-0.22
SP-24	-0.21	1514.94	-0.01	-0.22	1514.94	0.00	-0.22	1514.91	-0.03	-0.25	1514.92	0.01	-0.02	-0.24
SP-25	-0.10	1515.30	-0.04	-0.14	1515.30	0.00	-0.14	1515.28	-0.02	-0.16	1515.29	0.01	-0.01	-0.15
	-0.60	**Max.**	**-0.05**	**-0.64**	**Max.**	**-0.03**	**-0.66**	**Max.**	**-0.04**	**-0.70**	**Max.**	**-0.03**	**-0.07**	**-0.71**
	-0.06	**Min.**	**0.00**	**-0.05**	**Min.**	**0.00**	**-0.08**	**Min.**	**0.01**	**-0.08**	**Min.**	**0.01**	**0.00**	**-0.08**
	-0.28	**Avg.**	**-0.02**	**-0.30**	**Avg.**	**-0.01**	**-0.31**	**Avg.**	**-0.02**	**-0.34**	**Avg.**	**0.00**	**-0.03**	**-0.34**

Please see page 4 for notes.

Table 1

CELA Settlement Plate Elevations (1992-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(ft amsl)

PLATE	09/28/05 Survey				10/2/06 Survey				9/24/07 Survey				10/2/08 Survey			
	Elevation	Differential	Two Year Differential	Total	Elevation	Differential	Two Year Differential	Total	Elevation	Differential	Two Year Differential	Total	Elevation	Differential	Two Year Differential	Total
SP-01	1512.78	0.00	0.00	-0.08	1512.77	-0.01	-0.01	-0.09	1512.78	0.01	0.00	-0.08	1512.78	0.00	0.01	-0.08
SP-02	1513.48	0.00	-0.01	-0.09	1513.47	-0.01	-0.01	-0.10	1513.47	0.00	-0.01	-0.10	1513.49	0.02	0.02	-0.08
SP-03	1521.31	-0.01	-0.01	-0.35	1521.30	-0.01	-0.02	-0.36	1521.32	0.02	0.01	-0.34	1521.31	-0.01	0.01	-0.35
SP-04	1512.30	-0.02	-0.01	-0.28	1512.29	-0.01	-0.03	-0.29	1512.31	0.02	0.01	-0.27	1512.32	0.01	0.03	-0.26
SP-05	1515.44	-0.01	-0.01	-0.17	1515.42	-0.02	-0.03	-0.19	1515.43	0.01	-0.01	-0.18	1515.43	0.00	0.01	-0.18
SP-06	1520.30	-0.01	-0.01	-0.32	1520.29	-0.01	-0.02	-0.33	1520.30	0.01	0.00	-0.32	1520.29	-0.01	0.00	-0.33
SP-07	1516.33	-0.01	-0.01	-0.18	1516.32	-0.01	-0.02	-0.19	1516.33	0.01	0.00	-0.18	1516.33	0.00	0.01	-0.18
SP-08	1519.49	-0.01	-0.01	-0.44	1519.47	-0.02	-0.03	-0.46	1519.47	0.00	-0.02	-0.46	1519.47	0.00	0.00	-0.46
SP-09	1523.08	-0.01	-0.02	-0.56	1523.06	-0.02	-0.03	-0.58	1523.05	-0.01	-0.03	-0.59	1523.04	-0.01	-0.02	-0.60
SP-10	1518.69	-0.02	-0.03	-0.42	1518.68	-0.01	-0.03	-0.43	1518.68	0.00	-0.01	-0.43	1518.67	-0.01	-0.01	-0.44
SP-11	1514.32	-0.03	-0.03	-0.45	1514.31	-0.01	-0.04	-0.46	1514.32	0.01	0.00	-0.45	1514.31	-0.01	0.00	-0.46
SP-12	1520.21	0.00	-0.01	-0.51	1520.19	-0.02	-0.02	-0.53	1520.20	0.01	-0.01	-0.52	1520.16	-0.04	-0.03	-0.56
SP-13	1515.93	-0.01	-0.01	-0.11	1515.93	0.00	-0.01	-0.11	1515.93	0.00	0.00	-0.11	1515.92	-0.01	-0.01	-0.12
SP-14	1517.07	0.00	-0.01	-0.48	1517.05	-0.02	-0.02	-0.50	1517.06	0.01	-0.01	-0.49	1517.04	-0.02	-0.01	-0.51
SP-15	1522.02	0.01	-0.01	-0.66	1521.99	-0.03	-0.02	-0.69	1521.98	-0.01	-0.04	-0.70	1521.96	-0.02	-0.03	-0.72
SP-16	1518.63	0.01	0.00	-0.33	1518.61	-0.02	-0.01	-0.35	1518.61	0.00	-0.02	-0.35	1518.59	-0.02	-0.02	-0.37
SP-17	1513.38	-0.01	-0.01	-0.12	1513.37	-0.01	-0.02	-0.13	1513.37	0.00	-0.01	-0.13	1513.37	0.00	0.00	-0.13
SP-18	1519.99	0.00	-0.01	-0.71	1519.97	-0.02	-0.02	-0.73	1519.96	-0.01	-0.03	-0.74	1519.95	-0.01	-0.02	-0.75
SP-19	1515.32	0.01	0.01	-0.21	1515.31	-0.01	0.00	-0.22	1515.31	0.00	-0.01	-0.22	1515.30	-0.01	-0.01	-0.23
SP-20	1517.76	0.00	-0.03	-0.46	1517.74	-0.02	-0.02	-0.48	1517.76	0.02	0.00	-0.46	1517.74	-0.02	0.00	-0.48
SP-21	1522.64	0.00	-0.01	-0.70	1522.63	-0.01	-0.01	-0.71	1522.63	0.00	-0.01	-0.71	1522.62	-0.01	-0.01	-0.72
SP-22	1519.26	0.00	0.00	-0.39	1519.24	-0.02	-0.02	-0.41	1519.24	0.00	-0.02	-0.41	1519.23	-0.01	-0.01	-0.42
SP-23	1513.37	-0.01	0.00	-0.23	1513.36	-0.01	-0.02	-0.24	1513.36	0.00	-0.01	-0.24	1513.34	-0.02	-0.02	-0.26
SP-24	1514.90	-0.02	-0.01	-0.26	1514.89	-0.01	-0.03	-0.27	1514.89	0.00	-0.01	-0.27	1514.88	-0.01	-0.01	-0.28
SP-25	1515.27	-0.02	-0.01	-0.17	1515.26	-0.01	-0.03	-0.18	1515.27	0.01	0.00	-0.17	1515.28	0.01	0.02	-0.16
	Max.	**-0.03**	**-0.03**	**-0.71**	**Max.**	**-0.03**	**-0.04**	**-0.73**	**Max.**	**-0.01**	**-0.04**	**-0.74**	**Max.**	**-0.04**	**-0.03**	**-0.75**
	Min.	**0.01**	**0.01**	**-0.08**	**Min.**	**0.00**	**0.00**	**-0.09**	**Min.**	**0.02**	**0.01**	**-0.08**	**Min.**	**0.02**	**0.03**	**-0.08**
	Avg.	**-0.01**	**-0.01**	**-0.35**	**Avg.**	**-0.01**	**-0.02**	**-0.36**	**Avg.**	**0.00**	**-0.01**	**-0.36**	**Avg.**	**-0.01**	**0.00**	**-0.37**

Notes:

1) Differential is the change in elevation from the previous survey.
2) Total is the total change in elevation from the 12/22/92 baseline survey.
3) Negative numbers indicate decrease in elevation (settlement).
4) Maximum, Minimum and Average indicate the maximum, minumum and average settlement.
5) Data from 12/22/92 through 5/26/93 developed by GeoSyntec Consultants.
6) Data from settlement plates SP-6,7 and 13 not available from 5/26/93 survey.
7) Between 5/26/93 and 6/29/93, extension rods were installed through the settlement plate pipe sleeves.
8) Surveys conducted on 12/22/92, 4/30/93 and 5/26/93 were measured from the base of the settlement plate. All following surveys were measured from the top of the extension rods. Data on this table for the 12/22/92, 4/30/93 and 5/26/93 surveys has been corrected to correlate with the other surveys. The correction was made by assuming no change between the 5/26/93 and 6/29/93 surveys and adding the difference between these two surveys to the 12/22/92, 4/30/93 and 5/26/93 surveyed elevations.

Please see page 4 for notes.

Table 2

Comparison of 1993 Baseline Groundwater Data
to 2008 Groundwater Data
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	1993 Baseline Detection Frequency[1]	2008 Detection Frequency	1993 Minimum Detection[1]	2008 Minimum Detection[1]	1993 Maximum Detection[1]	2008 Maximum Detection[1]	2008 Frequency of MCL[2] Exceedances	MCL[2]
Aluminum	42/44	1/11	0.231	0.0964	17.789	0.0964		
Antimony	2/44	0/11	0.068	0.0097 U	0.083	0.0097 U		0.006
Arsenic	36/44	4/11	0.012	0.0128	0.16	0.0524	4	0.01
Arsenic, dissolved	4/44	NA	0.01	NA	0.056	NA		
Barium	18/44	11/11	0.241	0.0472	0.763	0.365		2
Barium, dissolved	9/44	NA	0.232	NA	0.398	NA		
Beryllium	11/44	0/11	0.007	0.0009 U	0.009	0.0009 U		0.004
Cadmium	16/44	0/11	0.005	0.002 U	0.08	0.002 U		0.005
Calcium	33/44	11/11	16.1	11.5	48.33	36.7		
Calcium, dissolved	28/44	NA	15.96	NA	46.08	NA		
Chromium	29/44	3/11	0.015	0.0287	11.2	0.309	1	0.1
Chromium, dissolved	3/44	NA	0.005	NA	0.014	NA		
Cobalt	2/44	1/11	0.003	0.0022	0.025	0.0022		
Copper	10/44	1/11	0.026	0.0063	0.153	0.0063		1.3
Copper, dissolved	4/44	NA	0.026	NA	0.042	NA		
Iron	44/44	11/11	0.6	0.114	65.2	40.3		
Iron, dissolved	32/44	NA	0.104	NA	22.6	NA		
Lead	28/44	0/11	0.005	0.0069 U	0.7	0.0069 U		0.015
Lead, dissolved	8/44	NA	0.004	NA	1.003	NA		
Magnesium	38/44	11/11	4.71	3.28	63.581	25.1		
Magnesium, dissolved	36/44	NA	6.07	NA	61.021	NA		
Manganese	42/44	11/11	0.212	0.0129	16.013	13.3		
Manganese, dissolved	43/44	NA	0.193	NA	14.98	NA		
Nickel	8/44	3/11	0.04	0.0071	0.2	0.102		
Nickel, dissolved	3/44	NA	0.054	NA	0.118	NA		
Potassium	14/44	11/11	1.87	1.11	59.34	3.93		
Potassium, dissolved	12/44	NA	1.72	NA	5	NA		
Selenium	2/44	0/11	0.08	0.0107 U	0.1	0.0107 U		0.05
Silver	5/44	0/11	0.017	0.0022 U	0.473	0.0022 U		
Silver, dissolved	1/44	NA	0.015	NA	0.015	NA		
Sodium	39/44	11/11	6.5	7.07	23.37	24.2		
Sodium, dissolved	39/44	NA	5	NA	20.02	NA		
Thallium	6/44	0/11	0.132	0.014 U	0.396	0.014 U		0.002
Thallium, dissolved	1/44	NA	0.156	NA	0.156	NA		
Vanadium	1/44	3/11	0.061	0.003	0.061	0.0048		
Zinc	27/44	0/11	0.022	0.0081 U	0.2	0.0081 U		
Zinc, dissolved	7/44	NA	0.023	NA	0.063	NA		
Benzo(a)anthracene	1/44	NA	0.001	NA	0.001	NA		
bis(2-Ethylhexyl) phthalate	2/44	NA	0.005	NA	0.007	NA		0.006
Di-n-butylphthalate	9/44	NA	0.0009	NA	0.005	NA		
Di-n-octylphthalate	1/44	NA	0.001	NA	0.001	NA		
Naphthalene	1/44	NA	0.001	NA	0.001	NA		
Pyrene	1/44	NA	0.008	NA	0.008	NA		
1,1-Dichloroethane	1/44	0/11	0.001	0.001 U	0.001	0.001 U		
Acetone	3/44	0/11	0.006	0.006 U	0.019	0.006 U		
Benzene	1/44	0/11	0.0009	0.0005 U	0.0009	0.0005 U		0.005
cis/trans1,2-Dichloroethene	1/44	NA	0.002	NA	0.002	NA		0.07
Dichloromethane (Methylene chloride)	4/44	0/11	0.001	0.002 U	1.342	0.002 U		0.005
Tetrachloroethene	1/44	0/11	0.002	0.0008 U	0.002	0.0008 U		0.005

Notes:
[1] Geosyntec, 1994
[2] United States Environmental Protection Agency Maximum Contaminent Level
NA - Not analyzed
1/44 = 1 parameter detection out of 44 samples
U - Concentration not detected at specified detection limit

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-01 4/24/2003	MWR-01 6/15/2004	MWR-01 7/7/2005	MWR-01 5/31/2006	MWR-01 5/30/2007	MWR-01 5/29/2008
Inorganic Compounds						
Aluminum	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.005 U	0.089	0.006 U	0.0097 U
Arsenic	0.01 U	0.0126	0.005	0.008 U	0.008 U	0.0102 U
Barium	0.256	0.245	0.21	0.2 U	0.2 U	0.172
Beryllium	0.005 U	0.005 U	0.005 U	0.0201	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.008	0.004 U	0.002 U
Calcium	39.6	36.8	34.3	31.8	27.7	30.4
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0022 J
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	1.28	2.91	1.54	1	1.02	1.16
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	28.4	25	22.7	21.6	20.5	19.4
Manganese	15.7	14	13.5	12.5	11.7	13.3
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0056 U
Potassium	2 U	5 U	5 U	5 U	10 U	1.74
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	21.6	23.2	24.3	23.5	23.1	24.2
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0048 J
Zinc	0.02 U	0.02 U	0.0221	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0093 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0093 U	0.002 U				
1,4-Dichlorobenzene	0.0093 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-01 4/24/2003	MWR-01 6/15/2004	MWR-01 7/7/2005	MWR-01 5/31/2006	MWR-01 5/30/2007	MWR-01 5/29/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.0005 J	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0093 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.0011	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-02 4/24/2003	MWR-02 6/17/2004	MWR-02 7/12/2005	MWR-02 6/2/2006	MWR-02 6/4/2007	MWR-02 5/30/2008
Inorganic Compounds						
Aluminum	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U
Arsenic	0.0579	0.0532	0.005 U	0.0501	0.0491	0.0524
Barium	0.505	0.458	0.2 U	0.416	0.416	0.365
Beryllium	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U
Calcium	43.1	39.8	5 U	34.3	30.3	36.7
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	44.9	40.7	0.1 U	37.2	35.7	40.3
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	37.3	31.4	5 U	27	25.7	25.1
Manganese	8.28	7.98	0.015 U	7.69	7.74	8.74
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0056 U
Potassium	2.25	5 U	5 U	5 U	10 U	1.62
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	18.2	18.7	5 U	21.3	21.5	20.9
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0025 U
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0093 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0093 U	0.002 U				
1,4-Dichlorobenzene	0.0093 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-02 4/24/2003	MWR-02 6/17/2004	MWR-02 7/12/2005	MWR-02 6/2/2006	MWR-02 6/4/2007	MWR-02 5/30/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0093 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.00033 J	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-03 4/24/2003	MWR-03 6/17/2004	MWR-03 7/12/2005	MWR-03 6/1/2006	MWR-03 6/4/2007	MWR-03 5/29/2008
Inorganic Compounds						
Aluminum	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U
Arsenic	0.01 U	0.0124	0.01	0.008 U	0.008 U	0.0128 J
Barium	0.236	0.251	0.286	0.243	0.257	0.23
Beryllium	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U
Calcium	34.6	41.4	43.6	35.7	33.2	33.6
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	3.06	3.7	3.97	3.66	3.59	3.97
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	20.3	23.2	24.8	21.9	21.6	19.9
Manganese	2.39	3	3.31	2.73	2.87	2.82
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0056 U
Potassium	2.15	5 U	5 U	5 U	10 U	2.12
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	12.2	12.2	12.5	11.2	10.7	11.2
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0025 U
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0093 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0093 U	0.002 U				
1,4-Dichlorobenzene	0.0093 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-03 4/24/2003	MWR-03 6/17/2004	MWR-03 7/12/2005	MWR-03 6/1/2006	MWR-03 6/4/2007	MWR-03 5/29/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0093 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.00071 J	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-04 4/23/2003	MWR-04 6/16/2004	MWR-04 7/11/2005	MWR-04 6/1/2006	MWR-04 6/1/2007	MWR-04 5/29/2008
Inorganic Compounds						
Aluminum	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U
Arsenic	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U
Barium	0.1	0.2 U	0.2 U	0.2 U	0.2 U	0.0762
Beryllium	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U
Calcium	21.2	17.9	17.5	16	17.6	15.7
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.0697	0.0287
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	0.1 U	0.1 U	0.125	0.1 U	0.171	0.131 J
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	6.22	5 U	5 U	5 U	5.1	4.42
Manganese	3.75	3.12	0.971	0.665	3.27	2.88
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0071 J
Potassium	2 U	5 U	5 U	5 U	10 U	1.23
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	10.2	8.23	8.59	8.06	10 U	7.88
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0025 U
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0093 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0093 U	0.002 U				
1,4-Dichlorobenzene	0.0093 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-04 4/23/2003	MWR-04 6/16/2004	MWR-04 7/11/2005	MWR-04 6/1/2006	MWR-04 6/1/2007	MWR-04 5/29/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0093 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-05 4/23/2003	MWR-05 6/16/2004	MWR-05 7/11/2005	MWR-05 6/1/2006	MWR-05 6/1/2007	MWR-05 5/29/2008
Inorganic Compounds						
Aluminum	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U
Arsenic	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U
Barium	0.0878	0.2 U	0.2 U	0.2 U	0.2 U	0.0472
Beryllium	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U
Calcium	17.7	15.7	83.6	12.9	11	11.5
Chromium	0.0348	0.0247	0.01 U	0.0197	0.0613	0.094
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	0.231	0.137	0.267	0.166	0.488	0.603
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	5.43	5 U	66.7	5 U	5 U	3.28
Manganese	0.345	0.371	0.0777	0.0198	0.015 U	0.0327
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0595
Potassium	2 U	5 U	5 U	5 U	10 U	1.11
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	10.5	9.4	174	8.35	10 U	8.01
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0025 U
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0093 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0093 U	0.002 U				
1,4-Dichlorobenzene	0.0093 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-05 4/23/2003	MWR-05 6/16/2004	MWR-05 7/11/2005	MWR-05 6/1/2006	MWR-05 6/1/2007	MWR-05 5/29/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0093 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.00033 J	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-06 4/23/2003	MWR-06 6/16/2004	MWR-06 7/11/2005	MWR-06 6/1/2006	MWR-06 5/31/2007	MWR-06 5/29/2008
Inorganic Compounds						
Aluminum	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.0057	0.0517	0.006 U	0.0097 U
Arsenic	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U
Barium	0.105	0.2 U	0.2 U	0.2 U	0.2 U	0.12
Beryllium	0.005 U	0.005 U	0.005 U	0.0104	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.0044	0.004 U	0.002 U
Calcium	22.5	26.9	28.9	26.8	26.2	25.9
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	0.386	0.996	3.29	3.19	3.85	3.87
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	7.61	8.8	9.61	9.79	9.45	9.21
Manganese	3.32	5	7.03	6.76	6.82	6.59
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0056 U
Potassium	2 U	5 U	5 U	5 U	10 U	1.74
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	9.1	7.35	7.68	7.89	10 U	8.87
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.003 J
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0093 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0093 U	0.002 U				
1,4-Dichlorobenzene	0.0093 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-06 4/23/2003	MWR-06 6/16/2004	MWR-06 7/11/2005	MWR-06 6/1/2006	MWR-06 5/31/2007	MWR-06 5/29/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0093 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.00061 J	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-07 4/23/2003	MWR-07 6/16/2004	MWR-07 7/7/2005	MWR-07 6/1/2006	MWR-07 5/31/2007	MWR-07 5/29/2008
Inorganic Compounds						
Aluminum	0.1 U	0.2 U	0.2 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.005 U	0.0082	0.006 U	0.0097 U
Arsenic	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U
Barium	0.0668	0.2 U	0.2 U	0.2 U	0.2 U	0.0507
Beryllium	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U
Calcium	15.9	17.7	15.9	14.6	14.3	17.2
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	0.1 U	0.1 U	0.409	0.1 U	0.111	0.114 J
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	4.99	5.15	5 U	5 U	5 U	4.56
Manganese	0.455	0.877	2.58	0.24	0.402	0.884
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0056 U
Potassium	2 U	5 U	5 U	5 U	10 U	1.72
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	10.3	9.39	9.93	9.33	10 U	9.89
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0025 U
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0093 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0093 U	0.002 U				
1,4-Dichlorobenzene	0.0093 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-07 4/23/2003	MWR-07 6/16/2004	MWR-07 7/7/2005	MWR-07 6/1/2006	MWR-07 5/31/2007	MWR-07 5/29/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0093 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.00062 J	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-08 4/22/2003	MWR-08 6/15/2004	MWR-08 7/7/2005	MWR-08 5/31/2006	MWR-08 5/30/2007	MWR-08 5/28/2008
Inorganic Compounds						
Aluminum	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.005 U	0.0252	0.006 U	0.0097 U
Arsenic	0.01 U	0.0086	0.005 U	0.008 U	0.015	0.0102 U
Barium	0.121	0.2 U	0.2 U	0.2 U	0.2 U	0.0965
Beryllium	0.005 U	0.005 U	0.005 U	0.0044	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U
Calcium	22.8	21	18.2	18.4	19.8	23.6
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	4.35	3.37	2.69	3.07	6.27	2.44
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	29.2	22.8	18.3	18.4	18.6	19.2
Manganese	3.28	3.07	2.81	2.91	2.16	2.36
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0056 U
Potassium	2 U	5 U	5 U	5 U	10 U	2.13
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	8.58	8.13	7.7	7.09	10 U	7.07
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0025 U
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0093 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0093 U	0.002 U				
1,4-Dichlorobenzene	0.0093 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-08 4/22/2003	MWR-08 6/15/2004	MWR-08 7/7/2005	MWR-08 5/31/2006	MWR-08 5/30/2007	MWR-08 5/28/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0093 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.0004 J	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-09 4/22/2003	MWR-09 6/15/2004	MWR-09 7/6/2005	MWR-09 5/31/2006	MWR-09 5/31/2007	MWR-09 5/28/2008
Inorganic Compounds						
Aluminum	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.005 U	0.0506	0.006 U	0.0097 U
Arsenic	0.0238	0.005 U	0.016	0.0202	0.008 U	0.0162 J
Barium	0.269	0.2 U	0.215	0.2	0.2 U	0.162
Beryllium	0.005 U	0.005 U	0.005 U	0.0103	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.0043	0.004 U	0.002 U
Calcium	48.2	42.7	38.5	36	38.8	34.9
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	17.1	8.35	11.7	11.9	9.63	8.74
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	28.2	21.6	21	20.3	20.2	16.9
Manganese	8.66	9.05	7.71	6.67	5.63	4.5
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0056 U
Potassium	2.51	5 U	5 U	5 U	10 U	2.57
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	18.7	20.5	20.4	16.8	15.7	13.9
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0025 U
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0094 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0094 U	0.002 U				
1,4-Dichlorobenzene	0.0094 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-09 4/22/2003	MWR-09 6/15/2004	MWR-09 7/6/2005	MWR-09 5/31/2006	MWR-09 5/31/2007	MWR-09 5/28/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0094 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.00045 J	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-10 4/22/2003	MWR-10 6/15/2004	MWR-10 7/6/2005	MWR-10 5/31/2006	MWR-10 5/31/2007	MWR-10 5/28/2008
Inorganic Compounds						
Aluminum	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.0802 U
Antimony	0.06 U	0.005 U	0.005 U	0.0605	0.006 U	0.0097 U
Arsenic	0.0437	0.045	0.0475	0.0373	0.0371	0.0381
Barium	0.326	0.245	0.228	0.251	0.239	0.228
Beryllium	0.005 U	0.005 U	0.005 U	0.0131	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.0055	0.004 U	0.002 U
Calcium	36.1	33.6	31.6	30.7	29.9	30.4
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0027 U
Iron	25.1	14.2	13.3	18.7	17	17
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	24.2	23.4	20.6	19.1	19.3	17.7
Manganese	12.1	8.46	7.68	8.43	7.82	7.33
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0056 U
Potassium	2 U	5 U	5 U	5 U	10 U	1.66
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	21.4	22.8	24.8	21.9	20.3	20.3
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0031 J
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0095 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0095 U	0.002 U				
1,4-Dichlorobenzene	0.0095 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-10 4/22/2003	MWR-10 6/15/2004	MWR-10 7/6/2005	MWR-10 5/31/2006	MWR-10 5/31/2007	MWR-10 5/28/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0095 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Toluene	0.005 U	0.00041 J	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-11 4/22/2003	MWR-11 6/17/2004	MWR-11 7/7/2005	MWR-11 5/31/2006	MWR-11 5/30/2007	MWR-11 5/28/2008
Inorganic Compounds						
Aluminum	0.1 U	0.2 U	0.2 U	0.1 U	0.2 U	0.0964 J
Antimony	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U
Arsenic	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U
Barium	0.0936	0.2 U	0.2 U	0.2 U	0.2 U	0.0736
Beryllium	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U
Cadmium	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U
Calcium	28	28.1	27.3	25.5	24	24.3
Chromium	0.122	0.193	0.604	0.21	0.24	0.309
Cobalt	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0021 U
Copper	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0063 J
Iron	0.584	0.781	2.79	0.942	0.974	1.5
Lead	0.005 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0069 U
Magnesium	6.79	6.12	6.04	5.78	5.85	5.82
Manganese	0.0121	0.0152	0.0454	0.0241	0.015 U	0.0129
Mercury	0.0003 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000056 U
Nickel	0.0766	0.105	0.218	0.079	0.0643	0.102
Potassium	3.34	5 U	5 U	5 U	10 U	3.93
Selenium	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.0107 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022 U
Sodium	28.3	30.2	29	27.7	24.6	23.7
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U
Vanadium	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0025 U
Zinc	0.02 U	0.02 U	0.0374	0.02 U	0.02 U	0.0081 U
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,1-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
1,2-Dichlorobenzene	0.0093 U	0.002 U				
1,2-Dichloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.0093 U	0.002 U				
1,4-Dichlorobenzene	0.0093 U	0.002 U				
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U
2-Hexanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
4-Methyl-2-pentanone	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.003 U
Acetone	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U
Benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Bromodichloromethane	0.005 U					0.001 U
Bromoform	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.001 U
Bromomethane	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon disulfide	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Carbon tetrachloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloroethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
Chloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.005 U	0.00067 J	0.0012	0.00095 J	0.00066 J	0.0008 U
cis-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorobromomethane		0.001 U	0.001 U	0.001 U	0.001 U	
Dichloromethane (Methylene chloride)	0.005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Ethyl benzene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U

Please see page 22 for notes.

Table 3

Groundwater Analytical Results (2003-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L)

Parameter	MWR-11 4/22/2003	MWR-11 6/17/2004	MWR-11 7/7/2005	MWR-11 5/31/2006	MWR-11 5/30/2007	MWR-11 5/28/2008
VOC's Continued						
m&p-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
o-Xylene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	
Phenol	0.0093 U	0.005 U				
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U
Tetrachloroethene	0.005 U	0.00047 J	0.00083 J	0.00057 J	0.00058 J	0.0008 U
Toluene	0.005 U	0.00068 J	0.001 U	0.001 U	0.001 U	0.0007 U
trans-1,2-Dichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 U
trans-1,3-Dichloropropene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)						0.0008 U

Notes:
U - Concentration not detected at specified detection limit
J/UJ - Estimated value

Table 4

2008 Field Duplicate Analytical Results
Former Sinclair Refinery Site OU-1
Wellsville, New York
(mg/L)

Parameter	DUP1-0508	MWR11-0508
Inorganic Compounds		
Aluminum	0.0802 U	0.0964 J
Antimony	0.0097 U	0.0097 U
Arsenic	0.0102 U	0.0102 U
Barium	0.0734	0.0736
Beryllium	0.0009 U	0.0009 U
Cadmium	0.002 U	0.002 U
Calcium	24.3	24.3
Chromium	0.286	0.309
Cobalt	0.0021 U	0.0021 U
Copper	0.0064 J	0.0063 J
Iron	1.43	1.5
Lead	0.0069 U	0.0069 U
Magnesium	5.79	5.82
Manganese	0.0131	0.0129
Mercury	0.000056 U	0.000056 U
Nickel	0.11	0.102
Potassium	3.88	3.93
Selenium	0.0107 U	0.0107 U
Silver	0.0022 U	0.0022 U
Sodium	23.9	23.7
Thallium	0.014 U	0.014 U
Vanadium	0.0025 U	0.0025 U
Zinc	0.0081 U	0.0081 U
Volatile Organic Compounds		
1,1,1-Trichloroethane	0.0008 U	0.0008 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U
1,1,2-Trichloroethane	0.0008 U	0.0008 U
1,1-Dichloroethane	0.001 U	0.001 U
1,1-Dichloroethene	0.0008 U	0.0008 U
1,2-Dichloroethane	0.001 U	0.001 U
1,2-Dichloropropane	0.001 U	0.001 U
2-Butanone (MEK)	0.003 U	0.003 U
2-Hexanone	0.003 U	0.003 U
4-Methyl-2-pentanone	0.003 U	0.003 U
Acetone	0.006 U	0.006 U
Benzene	0.0005 U	0.0005 U
Bromodichloromethane	0.001 U	0.001 U
Bromoform	0.001 U	0.001 U
Bromomethane	0.001 U	0.001 U
Carbon disulfide	0.001 U	0.001 U
Carbon tetrachloride	0.001 U	0.001 U
Chlorobenzene	0.0008 U	0.0008 U
Chloroethane	0.001 U	0.001 U
Chloroform	0.0008 U	0.0008 U
Chloromethane	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.0008 U	0.0008 U
cis-1,3-Dichloropropene	0.001 U	0.001 U
Dibromochloromethane	0.001 U	0.001 U
Dichloromethane (Methylene chloride)	0.002 U	0.002 U

Parameter	DUP1-0508	MWR11-0508
VOC's Continued		
Ethyl benzene	0.0008 U	0.0008 U
Styrene	0.001 U	0.001 U
Tetrachloroethene	0.0008 U	0.0008 U
Toluene	0.0007 U	0.0007 U
trans-1,2-Dichloroethene	0.0008 U	0.0008 U
trans-1,3-Dichloropropene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U
Vinyl chloride	0.001 U	0.001 U
Xylenes (total)	0.0008 U	0.0008 U

Notes:
U - Concentration not detected at specified detection limit
J/UJ - Estimated value

Table 5

2008 Field Equipment Rinsate Blank Analytical Results
Former Sinclair Refinery Site OU-1
Wellsville, New York
(mg/L)

Parameter	EB1-0508
Inorganic Compounds	
Aluminum	0.0802 U
Antimony	0.0097 U
Arsenic	0.0102 U
Barium	0.0006 U
Beryllium	0.0009 U
Cadmium	0.002 U
Calcium	0.0702 U
Chromium	0.003 U
Cobalt	0.0021 U
Copper	0.0027 U
Iron	0.0522 U
Lead	0.0069 U
Magnesium	0.0135 U
Manganese	0.0013 J
Mercury	0.000056 U
Nickel	0.0056 U
Potassium	0.0861 J
Selenium	0.0107 U
Silver	0.0022 U
Sodium	0.433 U
Thallium	0.014 U
Vanadium	0.0025 U
Zinc	0.0081 U
Volatile Organic Compounds	
1,1,1-Trichloroethane	0.0008 U
1,1,2,2-Tetrachloroethane	0.001 U
1,1,2-Trichloroethane	0.0008 U
1,1-Dichloroethane	0.001 U
1,1-Dichloroethene	0.0008 U
1,2-Dichloroethane	0.001 U
1,2-Dichloropropane	0.001 U
2-Butanone (MEK)	0.003 U
2-Hexanone	0.003 U
4-Methyl-2-pentanone	0.003 U
Acetone	0.006 U
Benzene	0.0005 U
Bromodichloromethane	0.001 U
Bromoform	0.001 U
Bromomethane	0.001 U
Carbon disulfide	0.001 U
Carbon tetrachloride	0.001 U
Chlorobenzene	0.0008 U
Chloroethane	0.001 U
Chloroform	0.0008 U
Chloromethane	0.001 U
cis-1,2-Dichloroethene	0.0008 U
cis-1,3-Dichloropropene	0.001 U
Dibromochloromethane	0.001 U
Dichloromethane (Methylene chloride)	0.002 U

Parameter	EB1-0508
VOC's Continued	
Ethyl benzene	0.0008 U
Styrene	0.001 U
Tetrachloroethene	0.0008 U
Toluene	0.0007 U
trans-1,2-Dichloroethene	0.0008 U
trans-1,3-Dichloropropene	0.001 U
Trichloroethene	0.001 U
Vinyl chloride	0.001 U
Xylenes (total)	0.0008 U

Notes:
U - Concentration not detected at specified detection limit
J/UJ - Estimated value

Table 6

2008 Liquid Level Monitoring
Former Sinclair Refinery Site (OU-1)
Wellsville, New York

Date	Well	Depth to Water (ft)	Depth to LNAPL (ft)	Water Elevation (ft amsl)	Comment
5/27/2008	MWR-01	10.07		1491.97	
5/27/2008	MWR-02	15.30	14.70	1491.18	Socks installed - please refer to Table 10
5/27/2008	MWR-03	14.88		1491.71	
5/27/2008	MWR-04	14.48		1493.04	
5/27/2008	MWR-05	13.52		1494.10	
5/27/2008	MWR-06	12.63		1495.87	
5/27/2008	MWR-07	12.90		1495.39	
5/27/2008	MWR-08	13.07		1495.53	
5/27/2008	MWR-09	11.19		1494.27	
5/27/2008	MWR-10	8.89		1493.36	
5/27/2008	MWR-11	10.80		1500.50	
5/27/2008	P-01	17.08		1492.15	
5/27/2008	P-02	19.86		1492.51	
5/27/2008	P-03	17.77		1492.41	
5/27/2008	P-04	17.18		1492.27	
5/27/2008	P-05	13.61		1492.20	
5/27/2008	P-06	20.08		1492.13	
9/26/2008	MWR-01	10.82		1491.22	
9/26/2008	MWR-02	15.93	15.25	1490.55	
9/26/2008	MWR-03	15.27		1491.32	
9/26/2008	MWR-04	14.76		1492.76	
9/26/2008	MWR-05	14.00		1493.62	
9/26/2008	MWR-06	13.29		1495.21	
9/26/2008	MWR-07	13.20		1495.09	
9/26/2008	MWR-08	13.49		1495.11	
9/26/2008	MWR-09	12.20		1493.26	
9/26/2008	MWR-10	9.85		1492.40	
9/26/2008	MWR-11	11.46		1499.84	
9/26/2008	P-01	17.59		1491.64	
9/26/2008	P-02	20.40		1491.97	
9/26/2008	P-03	18.29		1491.89	
9/26/2008	P-04	17.72		1491.73	
9/26/2008	P-05	14.21		1491.60	
9/26/2008	P-06	20.58		1491.63	

Notes:
LNAPL - Light Non Aqueous Phase Liquid
ft amsl - Feet Above Mean Sea Level

Table 7

Storm Water Analytical Results (2005-2008)
Former Sinclair Refinery Site (OU-1)
Wellsville, New York
(mg/L except where noted)

Parameter	6/6/2005 OF-0605	3/9/2006 OF-0306	12/1/2006 OF-1206	3/2/2007 OF-0307	10/23 - 10/24/2007 OF-1007	8/6/08 OF-0808	Class A Standard[1]
Inorganic Compounds							
Arsenic	0.005 U	0.008 U	0.008 U	0.008 U	0.008 U	0.0102 U	0.05
Barium	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.54**	1
Calcium	29.9	21.8	45.3	19.3	34.6	56.7	
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	0.05
Lead	0.003 U	0.003 U	0.003 U	0.0038	0.003 U	0.0069 U	0.05
Magnesium	5.25	5 U	9.41	5 U	5.25	**47.9**	35
Magnesium, dissolved	5 U	5 U	9.54	5 U	5.08	4.21	
Mercury	0.0002 U	0.0002 U	0.0004 U	0.0002 U	0.0002 U	0.000056 U	0.0007
Selenium	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0107 U	0.01
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0022U	0.05
Oil & Grease							
Oil & Grease	5.2 U	5.1 U	5.1 U	5 U	5 U	2.7 J	
pH							
Field pH (std. units)	7.98	7.6	7.78	7.6	7.73	8.11	6.5-8.5
Wet Chemistry							
Biochemical Oxygen Demand	2 U	6.1	2 U	3.7	2 U	3.7 U	
Chemical Oxygen Demand	20 U		20 U	44.6	20 U	5	
Cyanide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	9
Nitrate Nitrogen	5.4	0.86	1.2	1.4	3.3	1.9	10
Nitrate-Nitrite	5.4	0.86	1.2	1.4	3.3	2.1	10
Nitrite Nitrogen	0.01	0.01 U	0.01 U	0.01 U	0.01 U	0.015 U	1
Phosphorus	0.11		0.05 U	0.13	0.14	0.08 U	
Total Dissolved Solids	108	76	156	62	109	102	500
Total Kjeldahl Nitrogen	0.57		0.53	0.8	0.37	0.5 U	
Total Organic Carbon (TOC)	2.9	10.3	2.9	4.8	2.2	2.6	
Total Suspended Solids	4	20	4 U	6	5	3 U	
Acute Toxicity							
Ceriodaphnia dubia (24-H) (% Mortality)	ND	0	0	NA	NA	NA	
Ceriodaphnia dubia (48-H) (% Mortality)	ND	0	10	0	5	50	
Pimephales promelas (24-H) (% Mortality)	ND	0	0	NA	NA	NA	
Pimephales promelas (48-H) (% Mortality)	ND	0	2.5	0	0	2.5	

Notes:
[1] New York State Department of Environmental Conservation 6 NYCRR Parts 700-706 Class A Surface Water Standard
Concentrations in **bold** exceed Class A Standards
U - Concentration not detected at specified detection limit
ND - Non detect (0% Mortality)
NA - Not Analyzed
J - Estimated Value

Table 8A

Select Groundwater Analytical Results 1997-2008
Former Sinclair Refinery Site OU-1
(mg/L)

MWR-01

Parameter	5/23/1997	10/24/1997	5/27/1998	9/25/1998	5/6/1999	10/22/1999	4/20/2000	10/11/2000	5/9/2001	4/19/2002	4/24/2003	6/15/2004	7/7/2005	5/31/2006	5/30/2007	5/29/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.089	0.006 U	0.0097 U	1
Arsenic	0.025 U	0.01 U	0.0235	0.0104	0.0205	0.0112	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0126	0.005	0.008 U	0.008 U	0.0102 U	6
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0201	0.001 U	0.0009 U	1
Cadmium	0.019	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.008	0.004 U	0.002 U	2
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	0

MWR-02

Parameter	5/23/1997	10/24/1997	5/28/1998	9/25/1998	5/7/1999	10/21/1999	4/20/2000	10/12/2000	5/9/2001	4/19/2002	4/24/2003	6/17/2004	7/12/2005	6/2/2006	6/4/2007	5/30/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U	0
Arsenic	0.06	0.0655	0.0678	0.0765	0.0447	0.0681	0.0697	0.0557	0.0496	0.0562	0.0579	0.0532	0.005 U	0.0501	0.0491	0.0524	15
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U	0
Cadmium	0.019	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U	1
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	0

MWR-03

Parameter	5/23/1997	10/23/1997	5/28/1998	9/24/1998	5/6/1999	10/21/1999	4/20/2000	10/11/2000	5/8/2001	4/18/2002	4/24/2003	6/17/2004	7/12/2005	6/1/2006	6/4/2007	5/29/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U	0
Arsenic	0.025	0.0121	0.0153	0.0203	0.01 U	0.0128	0.01 U	0.0129	0.01 U	0.01 U	0.01 U	0.0124	0.01	0.008 U	0.008 U	0.0128 J	9
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U	0
Cadmium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U	0
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	0

MWR-04

Parameter	5/23/1997	10/23/1997	5/28/1998	9/24/1998	5/6/1999	10/21/1999	4/20/2000	10/11/2000	5/7/2001	4/18/2002	4/23/2003	6/16/2004	7/11/2005	6/1/2006	6/1/2007	5/29/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U	0
Arsenic	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U	0
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U	0
Cadmium	0.012	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U	1
Chromium	0.019	0.0269	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.225	0.01 U	0.01 U	0.01 U	0.01 U	0.0697	0.0287	5

MWR-05

Parameter	5/22/1997	10/23/1997	5/27/1998	9/24/1998	5/6/1999	10/21/1999	4/20/2000	10/11/2000	5/7/2001	4/18/2002	4/23/2003	6/16/2004	7/11/2005	6/1/2006	6/1/2007	5/29/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U	0
Arsenic	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U	0
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U	0
Cadmium	0.008	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U	1
Chromium	0.082	0.01 U	0.0111	0.0508	0.0567	0.0414	0.0114	0.01 U	0.0303	0.14	0.0348	0.0247	0.01 U	0.0197	0.0613	0.094	13

MWR-06

Parameter	5/22/1997	10/23/1997	5/27/1998	9/24/1998	5/6/1999	10/21/1999	4/19/2000	10/11/2000	5/8/2001	4/18/2002	4/23/2003	6/16/2004	7/11/2005	6/1/2006	5/31/2007	5/29/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.0057	0.0517	0.006 U	0.0097 U	2
Arsenic	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U	0
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0104	0.001 U	0.0009 U	1
Cadmium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.0044	0.004 U	0.002 U	1
Chromium	0.169	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0594	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	2

MWR-07

Please see page 2 for notes.

Table 8A

Select Groundwater Analytical Results 1997-2008
Former Sinclair Refinery Site OU-1
(mg/L)

Parameter	5/22/1997	10/23/1997	5/27/1998	9/24/1998	5/5/1999	10/20/1999	4/19/2000	10/10/2000	5/7/2001	4/18/2002	4/23/2003	6/16/2004	7/7/2005	6/1/2006	5/31/2007	5/29/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.0082	0.006 U	0.0097 U	1
Arsenic	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U	0
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U	0
Cadmium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U	0
Chromium	0.268	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	1

MWR-08

Parameter	5/23/1997	10/23/1997	5/27/1998	9/24/1998	5/6/1999	10/22/1999	4/20/2000	10/12/2000	5/1/2001	4/17/2002	4/22/2003	6/15/2004	7/7/2005	5/31/2006	5/30/2007	5/28/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.0252	0.006 U	0.0097 U	1
Arsenic	0.025 U	0.0159	0.0191	0.0257	0.01 U	0.0107	0.0106	0.0167	0.01 U	0.01 U	0.01 U	0.0086	0.005 U	0.008 U	0.015	0.0102 U	9
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0044	0.001 U	0.0009 U	1
Cadmium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U	0
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	0

MWR-09

Parameter	5/22/1997	10/22/1997	5/26/1998	10/13/1998	5/5/1999	10/20/1999	4/19/2000	10/10/2000	5/1/2001	4/17/2002	4/22/2003	6/15/2004	7/6/2005	5/31/2006	5/31/2007	5/28/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.0506	0.006 U	0.0097 U	1
Arsenic	0.025 U	0.0264	0.0253	0.0432	0.0146	0.0261	0.0184	0.0278	0.0112	0.0123	0.0238	0.005 U	0.016	0.0202	0.008 U	0.0162 J	13
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0103	0.001 U	0.0009 U	1
Cadmium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.0043	0.004 U	0.002 U	1
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	0

MWR-10

Parameter	5/22/1997	10/22/1997	5/26/1998	10/13/1998	5/5/1999	10/20/1999	4/19/2000	10/10/2000	5/1/2001	4/17/2002	4/22/2003	6/15/2004	7/6/2005	5/31/2006	5/31/2007	5/28/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.0605	0.006 U	0.0097 U	1
Arsenic	0.053	0.0453	0.0402	0.0426	0.0319	0.035	0.0304	0.0359	0.0448	0.0586	0.0437	0.045	0.0475	0.0373	0.0371	0.0381	16
Beryllium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0131	0.001 U	0.0009 U	1
Cadmium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.0055	0.004 U	0.002 U	1
Chromium	0.055	0.0617	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.003 U	2

MWR-11

Parameter	5/21/1997	10/22/1997	5/26/1998	10/13/1998	5/5/1999	10/20/1999	4/19/2000	10/10/2000	5/8/2001	4/17/2002	4/22/2003	6/17/2004	7/7/2005	5/31/2006	5/30/2007	5/28/2008	Detections
Antimony	0.001 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.006 U	0.06 U	0.06 U	0.005 U	0.005 U	0.006 U	0.006 U	0.0097 U	0
Arsenic	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.005 U	0.008 U	0.008 U	0.0102 U	0
Beryllium	0.026	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.0009 U	1
Cadmium	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.002 U	0
Chromium	0.193	4.45	0.0837	0.19	0.174	0.0902	0.0378	0.0998	0.0597	0.836	0.122	0.193	0.604	0.21	0.24	0.309	16

Notes:
U - Concentration not detected at specified detection limit
J/UJ - Estimate value
Select results include results for parameters that have exceeded the USEPA MCL since 2004.

Please see page 2 for notes.

Table 8B

Groundwater Analytical Results 1997-2008 Used in Statistical Analysis
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-01

Parameter	5/23/1997	10/24/1997	5/27/1998	9/25/1998	5/6/1999	10/22/1999	4/20/2000	10/11/2000	5/9/2001	4/19/2002	4/24/2003	6/15/2004	7/7/2005	5/31/2006	5/30/2007	5/29/2008	Detections
Arsenic	0.0125	0.005	0.0235	0.0104	0.0205	0.0112	0.005	0.005	0.005	0.005	0.005	0.0126	0.005	0.004	0.004	0.005	6
Cadmium	0.019	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.002	0.002	0.008	0.002	0.001	2

MWR-02

Parameter	5/23/1997	10/24/1997	5/28/1998	9/25/1998	5/7/1999	10/21/1999	4/20/2000	10/12/2000	5/9/2001	4/19/2002	4/24/2003	6/17/2004	7/12/2005	6/2/2006	6/4/2007	5/30/2008	Detections
Arsenic	0.06	0.0655	0.0678	0.0765	0.0447	0.0681	0.0697	0.0557	0.0496	0.0562	0.0579	0.0532	0.0025	0.0501	0.0491	0.0524	15

MWR-03

Parameter	5/23/1997	10/23/1997	5/28/1998	9/24/1998	5/6/1999	10/21/1999	4/20/2000	10/11/2000	5/8/2001	4/18/2002	4/24/2003	6/17/2004	7/12/2005	6/1/2006	6/4/2007	5/29/2008	Detections
Arsenic	0.025	0.0121	0.0153	0.0203	0.005	0.0128	0.005	0.0129	0.005	0.005	0.005	0.0124	0.01	0.004	0.004	0.0128	9

MWR-04

Parameter	5/23/1997	10/23/1997	5/28/1998	9/24/1998	5/6/1999	10/21/1999	4/20/2000	10/11/2000	5/7/2001	4/18/2002	4/23/2003	6/16/2004	7/11/2005	6/1/2006	6/1/2007	5/29/2008	Detections
Chromium	0.019	0.0269	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.225	0.005	0.005	0.005	0.005	0.0697	0.0287	5

MWR-05

Parameter	5/22/1997	10/23/1997	5/27/1998	9/24/1998	5/6/1999	10/21/1999	4/20/2000	10/11/2000	5/7/2001	4/18/2002	4/23/2003	6/16/2004	7/11/2005	6/1/2006	6/1/2007	5/29/2008	Detections
Chromium	0.082	0.005	0.0111	0.0508	0.0567	0.0414	0.0114	0.005	0.0303	0.14	0.0348	0.0247	0.005	0.0197	0.0613	0.094	13

MWR-06

Parameter	5/22/1997	10/23/1997	5/27/1998	9/24/1998	5/6/1999	10/21/1999	4/19/2000	10/11/2000	5/8/2001	4/18/2002	4/23/2003	6/16/2004	7/11/2005	6/1/2006	5/31/2007	5/29/2008	Detections
Antimony	0.0005	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.003	0.03	0.03	0.0025	0.0057	0.0517	0.003	0.0045	2
Chromium	0.169	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.0594	0.005	0.005	0.005	0.005	0.005	0.0015	2

MWR-08

Parameter	5/23/1997	10/23/1997	5/27/1998	9/24/1998	5/6/1999	10/22/1999	4/20/2000	10/12/2000	5/1/2001	4/17/2002	4/22/2003	6/15/2004	7/7/2005	5/31/2006	5/30/2007	5/28/2008	Detections
Arsenic	0.0125	0.0159	0.0191	0.0257	0.005	0.0107	0.0106	0.0167	0.005	0.005	0.005	0.0086	0.0025	0.004	0.015	0.005	9

MWR-09

Parameter	5/22/1997	10/22/1997	5/26/1998	10/13/1998	5/5/1999	10/20/1999	4/19/2000	10/10/2000	5/1/2001	4/17/2002	4/22/2003	6/15/2004	7/6/2005	5/31/2006	5/31/2007	5/28/2008	Detections
Arsenic	0.0125	0.0264	0.0253	0.0432	0.0146	0.0261	0.0184	0.0278	0.0112	0.0123	0.0238	0.0025	0.016	0.0202	0.004	0.0162	13

MWR-10

Parameter	5/22/1997	10/22/1997	5/26/1998	10/13/1998	5/5/1999	10/20/1999	4/19/2000	10/10/2000	5/1/2001	4/17/2002	4/22/2003	6/15/2004	7/6/2005	5/31/2006	5/31/2007	5/28/2008	Detections
Arsenic	0.053	0.0453	0.0402	0.0426	0.0319	0.035	0.0304	0.0359	0.0448	0.0586	0.0437	0.045	0.0475	0.0373	0.0371	0.0381	16
Chromium	0.055	0.0617	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.0015	2

MWR-11

Parameter	5/21/1997	10/22/1997	5/26/1998	10/13/1998	5/5/1999	10/20/1999	4/19/2000	10/10/2000	5/8/2001	4/17/2002	4/22/2003	6/17/2004	7/7/2005	5/31/2006	5/30/2007	5/28/2008	Detections
Chromium	0.193	4.45	0.0837	0.19	0.174	0.0902	0.0378	0.0998	0.0597	0.836	0.122	0.193	0.604	0.21	0.24	0.309	16

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-01 Arsenic

Date	05/23/97	10/24/97	05/27/98	09/25/98	05/06/99	10/22/99	04/20/00	10/11/00	05/09/01	04/19/02	04/24/03	06/15/04	07/07/05	05/31/06	05/30/07	05/29/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Result	0.0125	0.005	0.0235	0.0104	0.0205	0.0112	0.005	0.005	0.005	0.005	0.005	0.0126	0.005	0.004	0.004	0.005	Count "+"	Count "-"
0.0125		-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	3	12
0.005			+	+	+	+	0	0	0	0	0	+	0	-	-	0	5	2
0.0235				-	-	-	-	-	-	-	-	-	-	-	-	-	0	13
0.0104					+	+	-	-	-	-	-	+	-	-	-	-	3	9
0.0205						-	-	-	-	-	-	-	-	-	-	-	0	11
0.0112							-	-	-	-	-	+	-	-	-	-	1	9
0.005								0	0	0	0	+	0	-	-	0	1	2
0.005									0	0	0	+	0	-	-	0	1	2
0.005										0	0	+	0	-	-	0	1	2
0.005											0	+	0	-	-	0	1	2
0.005												+	0	-	-	0	1	2
0.0126													-	-	-	-	0	4
0.005														-	-	0	0	2
0.004															0	+	0	0
0.004																+	0	0
																	17	72	**-55**
																	Total "+"	Total "-"	S (difference in total "+" and "-")

n (number of samples) = 16

From Table A-12a, critical value = 38

From Table A-1, $z_{0.95}$ (critical value) = 1.645

RESULT: Since S < 38 (critical value) & > -38 = FALSE
DECREASING TREND

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

Where: t_1 = number of tied samples in the first group = 8

t_2 = number of tied samples in second group = 2

g = the number of tied sample groups

p-value = $(P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.0091

p-value = 0.9909

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

V(S) = 427.00

z_o = -2.7100

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-01 Cadmium

Date	05/23/97	10/24/97	05/27/98	09/25/98	05/06/99	10/22/99	04/20/00	10/11/00	05/09/01	04/19/02	04/24/03	06/15/04	07/07/05	05/31/06	05/30/07	05/29/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Result	0.019	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.002	0.002	0.008	0.002	0.001	Count "+"	Count "-"
0.019		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15
0.0025			0	0	0	0	0	0	0	0	0	-	-	+	-	-	1	4
0.0025				0	0	0	0	0	0	0	0	-	-	+	-	-	1	4
0.0025					0	0	0	0	0	0	0	-	-	+	-	-	1	4
0.0025						0	0	0	0	0	0	-	-	+	-	-	1	4
0.0025							0	0	0	0	0	-	-	+	-	-	1	4
0.0025								0	0	0	0	-	-	+	-	-	1	4
0.0025									0	0	0	-	-	+	-	-	1	4
0.0025										0	0	-	-	+	-	-	1	4
0.0025											0	-	-	+	-	-	1	4
0.0025												-	-	+	-	-	1	4
0.002													0	+	0	-	1	1
0.002														+	0	-	1	1
0.008															-	-	0	2
0.002																-	0	1
																	12	59
																	Total "+"	Total "-"

-47
S (difference in total "+" and "-")

n (number of samples) = 16

From Table A-12a, critical value = 38

From Table A-1, $z_{0.95}$ (critical value) = 1.645

RESULT: Since S < 38 (critical value) & > -38 = TRUE
DECREASING TREND

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

Where: t_1 = number of tied samples in the first group = 10

t_2 = number of tied samples in second group = 3

g = the number of tied sample groups

p-value = $(P(Z > z_o)$ = 1 - z_p, where z_p from Table A-1 = 0.0375

p-value = 0.9625

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

V(S) = 364.67

z_o = -2.5136

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-02 Arsenic

Date	05/23/97	10/24/97	05/28/98	09/25/98	05/07/99	10/21/99	04/20/00	10/12/00	05/09/01	04/19/02	04/24/03	06/17/04	07/12/05	06/02/06	06/04/07	05/30/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Result	0.06	0.0655	0.0678	0.0765	0.0447	0.0681	0.0697	0.0557	0.0496	0.0562	0.0579	0.0532	0.0025	0.0501	0.0491	0.0524	Count "+"	Count "-"
0.06		+	+	+	-	+	+	-	-	-	-	-	-	-	-	-	5	10
0.0655			+	+	-	+	+	-	-	-	-	-	-	-	-	-	4	10
0.0678				+	-	+	+	-	-	-	-	-	-	-	-	-	3	10
0.0765					-	-	-	-	-	-	-	-	-	-	-	-	0	12
0.0447						+	+	+	+	+	+	+	-	+	+	+	10	1
0.0681							+	-	-	-	-	-	-	-	-	-	1	9
0.0697								-	-	-	-	-	-	-	-	-	0	9
0.0557									-	+	+	-	-	-	-	-	2	6
0.0496										+	+	+	-	+	-	+	5	2
0.0562											+	-	-	-	-	-	1	5
0.0579												-	-	-	-	-	0	5
0.0532													-	-	-	-	0	4
0.0025														+	+	+	3	0
0.0501															-	+	1	1
0.0491																+	1	0
																	35	84	**-49**
																	Total "+"	Total "-"	S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = TRUE

Where: t_1 = number of tied samples in the first group = 0

From Table A-1, $z_{0.95}$ (critical value) = 1.645

DECREASING TREND

t_2 = number of tied samples in second group = 0

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.0239

g = the number of tied sample groups

p-value = 0.9761

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 493.33

z_o = -2.2511

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-03 Arsenic

Date	05/23/97	10/23/97	05/28/98	09/24/98	05/06/99	10/21/99	04/20/00	10/11/00	05/08/01	04/18/02	04/24/03	06/17/04	07/12/05	06/01/06	06/04/07	05/29/08		
Event	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**		
Result	**0.025**	**0.0121**	**0.0153**	**0.0203**	**0.005**	**0.0128**	**0.005**	**0.0129**	**0.005**	**0.005**	**0.005**	**0.0124**	**0.01**	**0.004**	**0.004**	**0.0128**	**Count "+"**	**Count "-"**
0.025		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15
0.0121			+	+	-	+	-	+	-	-	-	+	-	-	-	+	6	8
0.0153				+	-	-	-	-	-	-	-	-	-	-	-	-	1	12
0.0203					-	-	-	-	-	-	-	-	-	-	-	-	0	12
0.005						+	0	+	0	0	0	+	+	-	-	+	5	2
0.0128							-	+	-	-	-	-	-	-	-	0	1	8
0.005								+	0	0	0	+	+	-	-	+	4	2
0.0129									-	-	-	-	-	-	-	-	0	8
0.005										0	0	+	+	-	-	+	3	2
0.005											0	+	+	-	-	+	3	2
0.005												+	+	-	-	+	3	2
0.0124													-	-	-	+	1	3
0.01														-	-	+	1	2
0.004															0	+	1	0
0.004																+	1	0
																	29	78
																	Total "+"	Total "-"

-49
S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = FALSE
DECREASING TREND

Where: t_1 = number of tied samples in the first group = 5

From Table A-1, $z_{0.95}$ (critical value) = 1.645

t_2 = number of tied samples in second group = 2

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.0059

g = the number of tied sample groups

p-value = 0.9941

$z_o = S - \text{sign}(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 475.67

z_o = -2.2925

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-04 Chromium

Date	05/23/97	10/23/97	05/28/98	09/24/98	05/06/99	10/21/99	04/20/00	10/11/00	05/07/01	04/18/02	04/23/03	06/16/04	07/11/05	06/01/06	06/01/07	05/29/08		
Event	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**		
Result	**0.019**	**0.0269**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.225**	**0.005**	**0.005**	**0.005**	**0.005**	**0.0697**	**0.0287**	**Count "+"**	**Count "-"**
0.019		+	-	-	-	-	-	-	-	+	-	-	-	-	+	+	4	11
0.0269			-	-	-	-	-	-	-	+	-	-	-	-	+	+	3	11
0.005				0	0	0	0	0	0	+	0	0	0	0	+	+	3	0
0.005					0	0	0	0	0	+	0	0	0	0	+	+	3	0
0.005						0	0	0	0	+	0	0	0	0	+	+	3	0
0.005							0	0	0	+	0	0	0	0	+	+	3	0
0.005								0	0	+	0	0	0	0	+	+	3	0
0.005									0	+	0	0	0	0	+	+	3	0
0.005										+	0	0	0	0	+	+	3	0
0.225											-	-	-	-	-	-	0	6
0.005												0	0	0	+	+	2	0
0.005													0	0	+	+	2	0
0.005														0	+	+	2	0
0.005															+	+	2	0
0.0697																-	0	1
																	36	28	**8**
																	Total "+"	Total "-"	S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = TRUE

Where: t_1 = number of tied samples in the first group = 11

From Table A-1, $z_{0.95}$ (critical value) = 1.645

STABLE / NO TREND

t_2 = number of tied samples in second group = 0

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.3936

g = the number of tied sample groups

p-value = 0.6064

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 328.33

z_o = 0.3863

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-05 Chromium

Date	05/22/97	10/23/97	05/27/98	09/24/98	05/06/99	10/21/99	04/20/00	10/11/00	05/07/01	04/18/02	04/23/03	06/16/04	07/11/05	06/01/06	06/01/07	05/29/08		
Event	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**		
Result	**0.082**	**0.005**	**0.0111**	**0.0508**	**0.0567**	**0.0414**	**0.0114**	**0.005**	**0.0303**	**0.14**	**0.0348**	**0.0247**	**0.005**	**0.0197**	**0.0613**	**0.094**	**Count "+"**	**Count "-"**
0.082		-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	2	13
0.005			+	+	+	+	+	0	+	+	+	+	0	+	+	+	12	0
0.0111				+	+	+	+	-	+	+	+	+	-	+	+	+	11	2
0.0508					+	-	-	-	-	+	-	-	-	-	+	+	4	8
0.0567						-	-	-	-	+	-	-	-	-	+	+	3	8
0.0414							-	-	-	+	-	-	-	-	+	+	3	7
0.0114								-	+	+	+	+	-	+	+	+	7	2
0.005									+	+	+	+	0	+	+	+	7	0
0.0303										+	+	-	-	-	+	+	4	3
0.14											-	-	-	-	-	-	0	6
0.0348												-	-	-	+	+	2	3
0.0247													-	-	+	+	2	2
0.005														+	+	+	3	0
0.0197															+	+	2	0
0.0613																+	1	0
																	62	54	**8**
																	Total "+"	Total "-"	S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = TRUE

Where: t_1 = number of tied samples in the first group = 3

From Table A-1, $z_{0.95}$ (critical value) = 1.645

STABLE / NO TREND

t_2 = number of tied samples in second group = 0

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.4090

g = the number of tied sample groups

p-value = 0.591

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 489.67

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

z_o = 0.3163

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-06 Antimony

Date	5/22/97	10/23/97	5/27/98	9/24/98	5/6/99	10/21/99	4/19/00	10/11/00	5/8/01	4/18/02	4/23/03	6/16/04	7/11/05	6/1/06	5/31/07	5/29/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Result	0.0005	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.003	0.03	0.03	0.0025	0.0057	0.0517	0.003	0.0045	Count "+"	Count "-"
0.0005		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	15	0
0.03			0	0	0	0	0	0	-	0	0	-	-	+	-	-	1	5
0.03				0	0	0	0	0	-	0	0	-	-	+	-	-	1	5
0.03					0	0	0	0	-	0	0	-	-	+	-	-	1	5
0.03						0	0	0	-	0	0	-	-	+	-	-	1	5
0.03							0	0	-	0	0	-	-	+	-	-	1	5
0.03								0	-	0	0	-	-	+	-	-	1	5
0.03									-	0	0	-	-	+	-	-	1	5
0.003										+	+	-	+	+	0	+	5	1
0.03											0	-	-	+	-	-	1	4
0.03												-	-	+	-	-	1	4
0.0025													+	+	+	+	4	0
0.0057														+	-	-	1	2
0.0517															-	-	0	2
0.003																+	1	0
																	34	48
																	Total "+"	Total "-"

-14
S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = TRUE

Where: t_1 = number of tied samples in the first group = 9

From Table A-1, $z_{0.95}$ (critical value) = 1.645

STABLE / NO TREND

t_2 = number of tied samples in second group = 2

p-value = $(P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.3632

g = the number of tied sample groups

p-value = 0.6368

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 399.33

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

z_o = -0.7506

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-06 Chromium

Date	05/22/97	10/23/97	05/27/98	09/24/98	05/06/99	10/21/99	04/19/00	10/11/00	05/08/01	04/18/02	04/23/03	06/16/04	07/11/05	06/01/06	05/31/07	05/29/08		
Event	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**		
Result	**0.169**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.0594**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.0015**	**Count "+"**	**Count "-"**
0.169		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15
0.005			0	0	0	0	0	0	0	+	0	0	0	0	0	-	1	1
0.005				0	0	0	0	0	0	+	0	0	0	0	0	-	1	1
0.005					0	0	0	0	0	+	0	0	0	0	0	-	1	1
0.005						0	0	0	0	+	0	0	0	0	0	-	1	1
0.005							0	0	0	+	0	0	0	0	0	-	1	1
0.005								0	0	+	0	0	0	0	0	-	1	1
0.005									0	+	0	0	0	0	0	-	1	1
0.005										+	0	0	0	0	0	-	1	1
0.0594											-	-	-	-	-	-	0	6
0.005												0	0	0	0	-	0	1
0.005													0	0	0	-	0	1
0.005														0	0	-	0	1
0.005															0	-	0	1
0.005																-	0	1
																	8	33	**-25**
																	Total "+"	Total "-"	S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = TRUE

Where: t_1 = number of tied samples in the first group = 13

From Table A-1, $z_{0.95}$ (critical value) = 1.645

STABLE / NO TREND

t_2 = number of tied samples in second group = 0

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.2119

g = the number of tied sample groups

p-value = 0.7881

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 224.67

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

z_o = -1.7346

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-08 Arsenic

Date	05/23/97	10/23/97	05/27/98	09/24/98	05/06/99	10/22/99	04/20/00	10/12/00	05/01/01	04/17/02	04/22/03	06/15/04	07/07/05	05/31/06	05/30/07	05/28/08		
Event	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**		
Result	**0.0125**	**0.0159**	**0.0191**	**0.0257**	**0.005**	**0.0107**	**0.0106**	**0.0167**	**0.005**	**0.005**	**0.005**	**0.0086**	**0.0025**	**0.004**	**0.015**	**0.005**	**Count "+"**	**Count "-"**
0.0125		+	+	+	-	-	-	+	-	-	-	-	-	-	+	-	5	10
0.0159			+	+	-	-	-	+	-	-	-	-	-	-	-	-	3	11
0.0191				+	-	-	-	-	-	-	-	-	-	-	-	-	1	12
0.0257					-	-	-	-	-	-	-	-	-	-	-	-	0	12
0.005						+	+	+	0	0	0	+	-	-	+	0	5	2
0.0107							-	+	-	-	-	-	-	-	+	-	2	8
0.0106								+	-	-	-	-	-	-	+	-	2	7
0.0167									-	-	-	-	-	-	-	-	0	8
0.005										0	0	+	-	-	+	0	2	2
0.005											0	+	-	-	+	0	2	2
0.005												+	-	-	+	0	2	2
0.0086													-	-	+	-	1	3
0.0025														+	+	+	3	0
0.004															+	+	2	0
0.015																-	0	1
																	30	79	**-49**
																	Total "+"	Total "-"	S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = FALSE

Where: t_1 = number of tied samples in the first group = 5

From Table A-1, $z_{0.95}$ (critical value) = 1.645

DECREASING TREND

t_2 = number of tied samples in second group = 0

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.0228

g = the number of tied sample groups

p-value = 0.9772

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 476.67

z_o = -2.2901

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-09 Arsenic

Date	05/22/97	10/22/97	05/26/98	10/13/98	05/05/99	10/20/99	04/19/00	10/10/00	05/01/01	04/17/02	04/22/03	06/15/04	07/06/05	05/31/06	05/31/07	05/28/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Result	0.0125	0.0264	0.0253	0.0432	0.0146	0.0261	0.0184	0.0278	0.0112	0.0123	0.0238	0.0025	0.016	0.0202	0.004	0.0162	Count "+"	Count "-"
0.0125		+	+	+	+	+	+	+	-	-	+	-	+	+	-	+	11	4
0.0264			-	+	-	-	-	+	-	-	-	-	-	-	-	-	2	12
0.0253				+	-	+	-	+	-	-	-	-	-	-	-	-	3	10
0.0432					-	-	-	-	-	-	-	-	-	-	-	-	0	12
0.0146						+	+	+	-	-	+	-	+	+	-	+	7	4
0.0261							-	+	-	-	-	-	-	-	-	-	1	9
0.0184								+	-	-	+	-	-	+	-	-	3	6
0.0278									-	-	-	-	-	-	-	-	0	8
0.0112										+	+	-	+	+	-	+	5	2
0.0123											+	-	+	+	-	+	4	2
0.0238												-	-	-	-	-	0	5
0.0025													+	+	+	+	4	0
0.016														+	-	+	2	1
0.0202															-	-	0	2
0.004																+	1	0
																	42	77	**-35**
																	Total "+"	Total "-"	S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = TRUE

Where: t_1 = number of tied samples in the first group = 0

From Table A-1, $z_{0.95}$ (critical value) = 1.645

STABLE / NO TREND

t_2 = number of tied samples in second group = 0

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.0630

g = the number of tied sample groups

p-value = 0.937

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 493.33

z_o = -1.6208

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-10 Arsenic

Date	05/22/97	10/22/97	05/26/98	10/13/98	05/05/99	10/20/99	04/19/00	10/10/00	05/01/01	04/17/02	04/22/03	06/15/04	07/06/05	05/31/06	05/31/07	05/28/08		
Event	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**		
Result	**0.053**	**0.0453**	**0.0402**	**0.0426**	**0.0319**	**0.035**	**0.0304**	**0.0359**	**0.0448**	**0.0586**	**0.0437**	**0.045**	**0.0475**	**0.0373**	**0.0371**	**0.0381**	**Count "+"**	**Count "-"**
0.053		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	1	14
0.0453			-	-	-	-	-	-	-	+	-	-	+	-	-	-	2	12
0.0402				+	-	-	-	-	+	+	+	+	+	-	-	-	6	7
0.0426					-	-	-	-	+	+	+	+	+	-	-	-	5	7
0.0319						+	-	+	+	+	+	+	+	+	+	+	10	1
0.035							-	+	+	+	+	+	+	+	+	+	9	1
0.0304								+	+	+	+	+	+	+	+	+	9	0
0.0359									+	+	+	+	+	+	+	+	8	0
0.0448										+	-	+	+	-	-	-	3	4
0.0586											-	-	-	-	-	-	0	6
0.0437												+	+	-	-	-	2	3
0.045													+	-	-	-	1	3
0.0475														-	-	-	0	3
0.0373															-	+	1	1
0.0371																+	1	0
																	58	62
																	Total "+"	Total "-"

-4
S (difference in total "+" and "-")

n (number of samples) = 16

From Table A-12a, critical value = 38

From Table A-1, $z_{0.95}$ (critical value) = 1.645

RESULT: Since S < 38 (critical value) & > -38 = TRUE
STABLE / NO TREND

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

Where: t_1 = number of tied samples in the first group = 0

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.6736

p-value = 0.3264

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

V(S) = 493.33

z_o = -0.2251

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-10 Chromium

Date	05/22/97	10/22/97	05/26/98	10/13/98	05/05/99	10/20/99	04/19/00	10/10/00	05/01/01	04/17/02	04/22/03	06/15/04	07/06/05	05/31/06	05/31/07	05/28/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Result	0.055	0.0617	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.0015	Count "+"	Count "-"
0.055		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	14
0.0617			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14
0.005				0	0	0	0	0	0	0	0	0	0	0	0	-	0	1
0.005					0	0	0	0	0	0	0	0	0	0	0	-	0	1
0.005						0	0	0	0	0	0	0	0	0	0	-	0	1
0.005							0	0	0	0	0	0	0	0	0	-	0	1
0.005								0	0	0	0	0	0	0	0	-	0	1
0.005									0	0	0	0	0	0	0	-	0	1
0.005										0	0	0	0	0	0	-	0	1
0.005											0	0	0	0	0	-	0	1
0.005												0	0	0	0	-	0	1
0.005													0	0	0	-	0	1
0.005														0	0	-	0	1
0.005															0	-	0	1
0.005																-	0	1
																	1	40
																	Total "+"	Total "-"

-39
S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = TRUE

Where: t_1 = number of tied samples in the first group = 13

From Table A-1, $z_{0.95}$ (critical value) = 1.645

DECREASING TREND

t_2 = number of tied samples in second group = 0

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.0418

g = the number of tied sample groups

p-value = 0.9582

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 224.67

z_o = -2.6686

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 8C

Statistical Analysis of Groundwater Data 1997-2008
Former Sinclair Refinery Site OU1
(mg/L with 1/2 detection limit for non-detects)

MWR-11 Chromium

Date	05/21/97	10/22/97	05/26/98	10/13/98	05/05/99	10/20/99	04/19/00	10/10/00	05/08/01	04/17/02	04/22/03	06/17/04	07/07/05	05/31/06	05/30/07	05/28/08		
Event	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**		
Result	**0.193**	**4.45**	**0.0837**	**0.19**	**0.174**	**0.0902**	**0.0378**	**0.0998**	**0.0597**	**0.836**	**0.122**	**0.193**	**0.604**	**0.21**	**0.24**	**0.309**	**Count "+"**	**Count "-"**
0.193		+	-	-	-	-	-	-	-	+	-	0	+	+	+	+	6	8
4.45			-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14
0.0837				+	+	+	-	+	-	+	+	+	+	+	+	+	11	2
0.19					-	-	-	-	-	+	-	+	+	+	+	+	6	6
0.174						-	-	-	-	+	-	+	+	+	+	+	6	5
0.0902							-	+	-	+	+	+	+	+	+	+	8	2
0.0378								+	+	+	+	+	+	+	+	+	9	0
0.0998									-	+	+	+	+	+	+	+	7	1
0.0597										+	+	+	+	+	+	+	7	0
0.836											-	-	-	-	-	-	0	6
0.122												+	+	+	+	+	5	0
0.193													+	+	+	+	4	0
0.604														-	-	-	0	3
0.21															+	+	2	0
0.24																+	1	0
																	71	47	**24**
																	Total "+"	Total "-"	S (difference in total "+" and "-")

n (number of samples) = 16

$V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots \text{ up to } t_g]\}$

From Table A-12a, critical value = 38

RESULT: Since S < 38 (critical value) & > -38 = TRUE

Where: t_1 = number of tied samples in the first group = 2

From Table A-1, $z_{0.95}$ (critical value) = 1.645

STABLE / NO TREND

t_2 = number of tied samples in second group = 0

p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.7517

g = the number of tied sample groups

p-value = 0.2483

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

Conclusion 1: Since test statistics z_0 < critical value (1.645) = TRUE
do not reject result

V(S) = 492.33

Conclusion 2: Since p-value > significance level (0.05) = TRUE
do not reject result

z_o = 1.0366

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

Table 9

2008 Groundwater Field Parameters
Former Sinclair Refinery Site (OU-1)
Wellsville, New York

Monitoring Well	Date	pH (s.u.)	Conductivity (us/cm)	Turbidity (NTU)	D.O. (mg/L)	Temp (°C)	ORP (mV)
MWR-1	29-May-08	6.54	434	7.4	0.14	11.65	31
MWR-2	30-May-08	6.98	564	1.99	0.04	9.82	-123.8
MWR-3	29-May-08	7.04	360	1.79	0.13	11.61	-50.1
MWR-4	29-May-08	6.86	151	2.18	0.11	10.31	1.9
MWR-5	29-May-08	6.69	122	6.64	0.98	8.68	41.8
MWR-6	29-May-08	6.85	249	1.9	0.09	7.63	13.3
MWR-7	29-May-08	6.68	167	1.56	0.19	9.38	119.9
MWR-8	28-May-08	6.78	284	1.65	0.11	8.6	-156.7
MWR-9	28-May-08	6.62	365	3.81	0.07	9.28	-71.8
MWR-10	28-May-08	6.63	413	8.66	0.03	9.52	-38.8
MWR-11	28-May-08	6.59	267	12.2	5.42	8.09	78.7

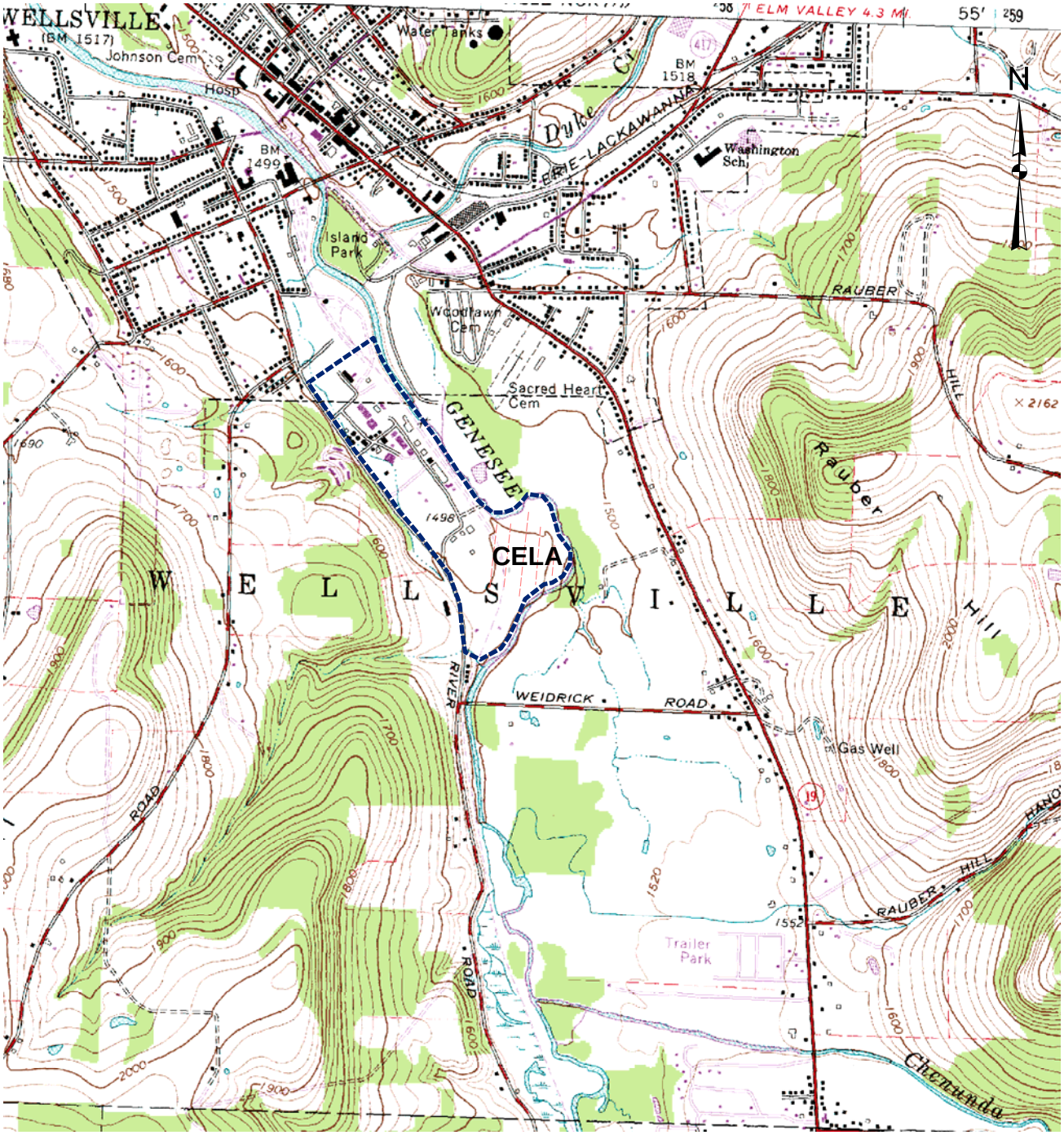
Table 10

2008 LNAPL Measurements and Removal
Former Sinclair Refinery Site (OU-1)
Wellsville, New York

Date	Depth to LNAPL (ft)	Depth to Water (ft)	Apparent LNAPL Thickness (ft)	Comment	Sock LNAPL Saturation (in)	Approximate LNAPL Removed (oz)
MWR-02						
5/27/2008	14.7	15.3	0.6	3 18" socks installed	NA	NA
5/28/2008	NM	NM	NM	3 18" socks removed - fully saturated	54	51
5/28/2008	NM	NM	NM	3 18" socks installed	NA	NA
5/29/2008	NM	NM	NM	3 18" socks removed - fully saturated	54	51
5/29/2008	NM	NM	NM	3 18" socks installed	NA	NA
5/30/2008	NM	NM	NM	3 18" socks removed - 9" saturation	27	26
				2008 Total LNAPL Removed (oz):		**128**

Notes:
The approximate quantities of LNAPL removed are based on the length of sock saturation and the manufacturers information indicates that 18" sock absorbs 17oz of NAPL.
Example: Four fully saturated 18" socks (3x17oz = 51oz NAPL)
NM - Not measured
NA - Not applicable

SITE LOCATION



SOURCE: WELLSVILLE SOUTH, NY USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, DATED 1965.

Legend

Approximate Site Boundary

2,000 1,000 0 2,000 Feet

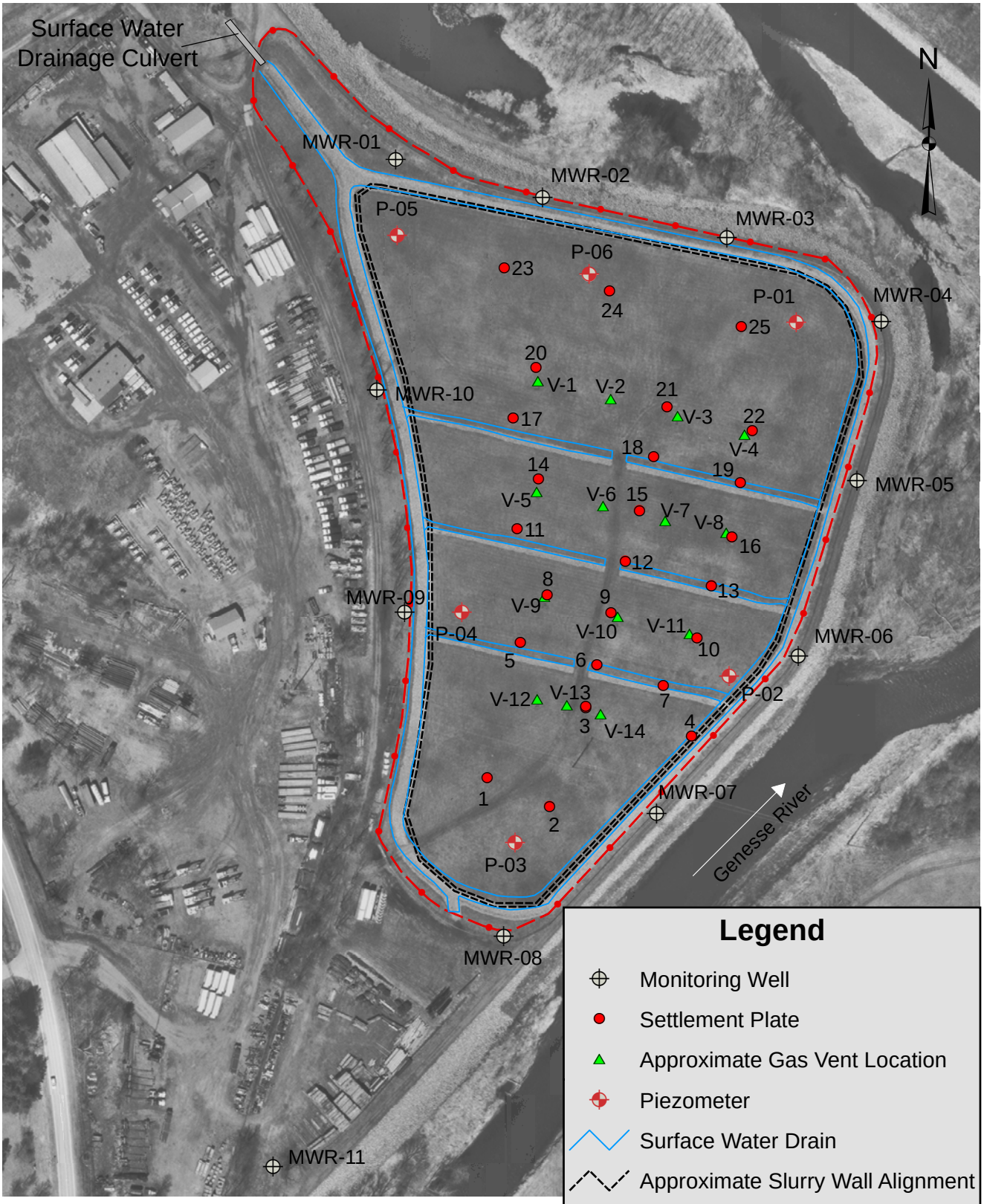
1 inch = 2,000 feet

ON-SITE TECHNICAL SERVICES, INC.
72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	1a
PROJECT	WELLSVILLE OU-1
DOCUMENT NO.	2008 CELA REPORT
FILE NO.	SITELOC.MXD

N:\ARCO_WLSV\OU1REPORTS\2008CELAREPORT\FIGURES\SITELOC.MXD

SITE FEATURES



1999 AERIAL PHOTOGRAPH

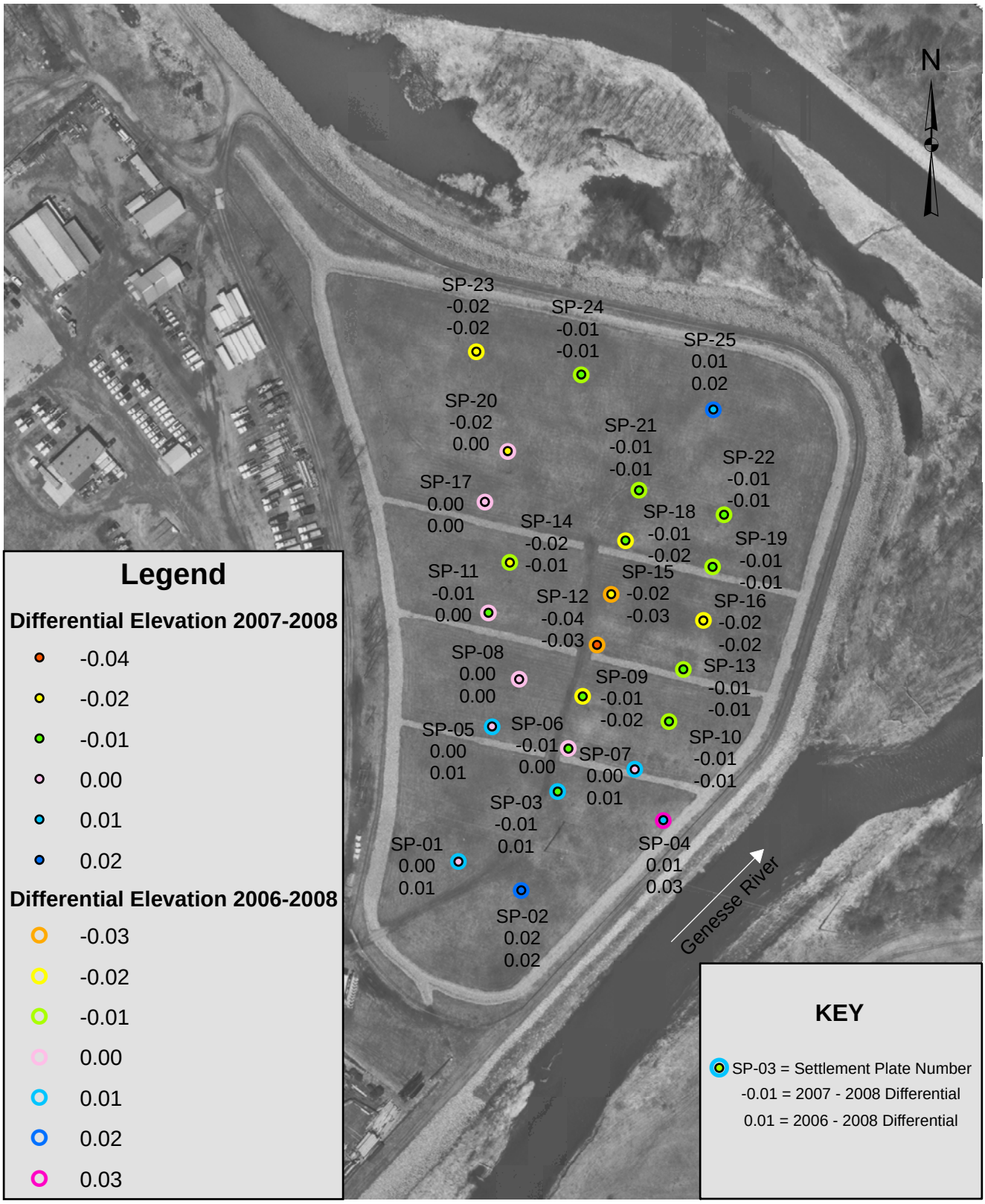
ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	1b
PROJECT	WELLSVILLE OU-1
DOCUMENT	2008 CELA REPORT
FILE NO.	SITEFEATURES.MXD

N:\ARCO_WLSV\OU1REPORTS\2008CELA\FIGURES\SITEFEATURES.MXD

CELA DIFFERENTIAL ELEVATIONS



Legend

Differential Elevation 2007-2008

- -0.04
- -0.02
- -0.01
- 0.00
- 0.01
- 0.02

Differential Elevation 2006-2008

- -0.03
- -0.02
- -0.01
- 0.00
- 0.01
- 0.02
- 0.03

KEY

SP-03 = Settlement Plate Number
-0.01 = 2007 - 2008 Differential
0.01 = 2006 - 2008 Differential

1999 AERIAL PHOTOGRAPH

200 100 0 200 Feet

1 inch = 200 feet

NOTE: NEGATIVE DIFFERENTIALS INDICATE A DECREASE IN ELEVATION

ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	2
PROJECT	WELLSVILLE OU-1
DOCUMENT	2008 CELA REPORT
FILE NO.	SETTLE08.MXD

N:\ARCO_WLSV\OU1REPORTS\2008CELA\FIGURES\SETTLE08.MXD

FIGURE 3A
CHANGE IN ELEVATION 1992-2008

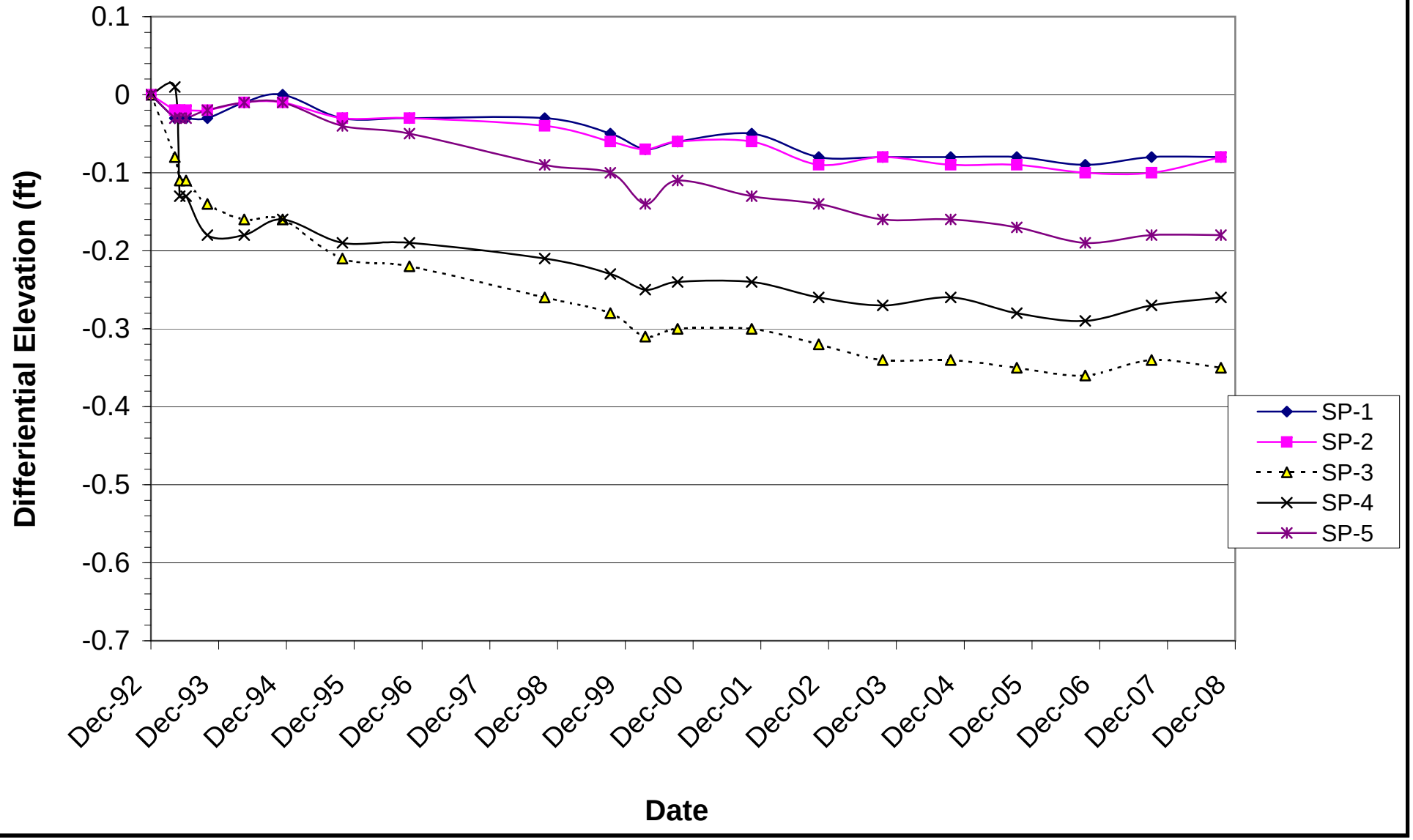


FIGURE 3B
CHANGE IN ELEVATION 1992-2008

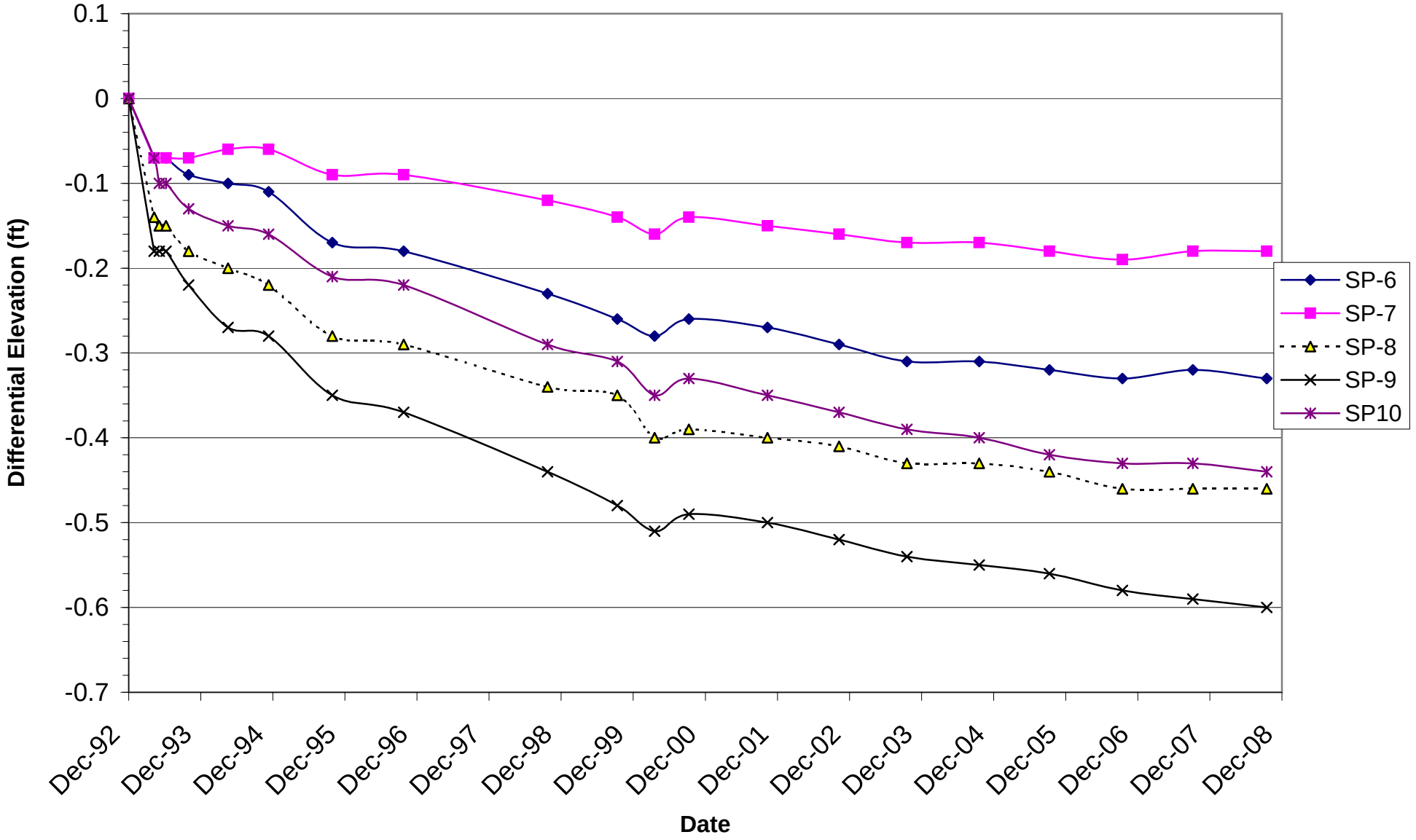


FIGURE 3C
CHANGE IN ELEVATION 1992-2008

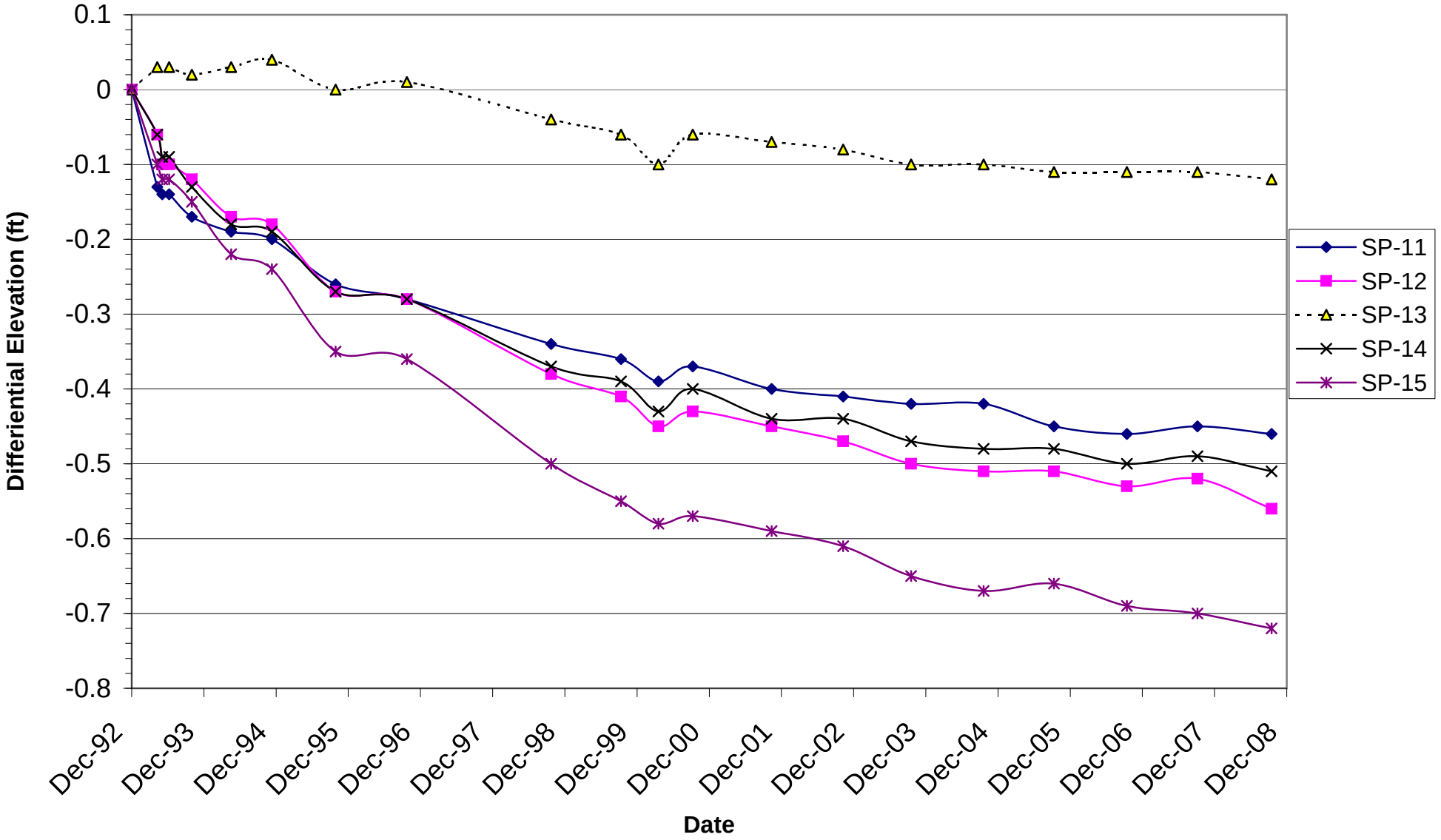


FIGURE 3D
CHANGE IN ELEVATION 1992-2008

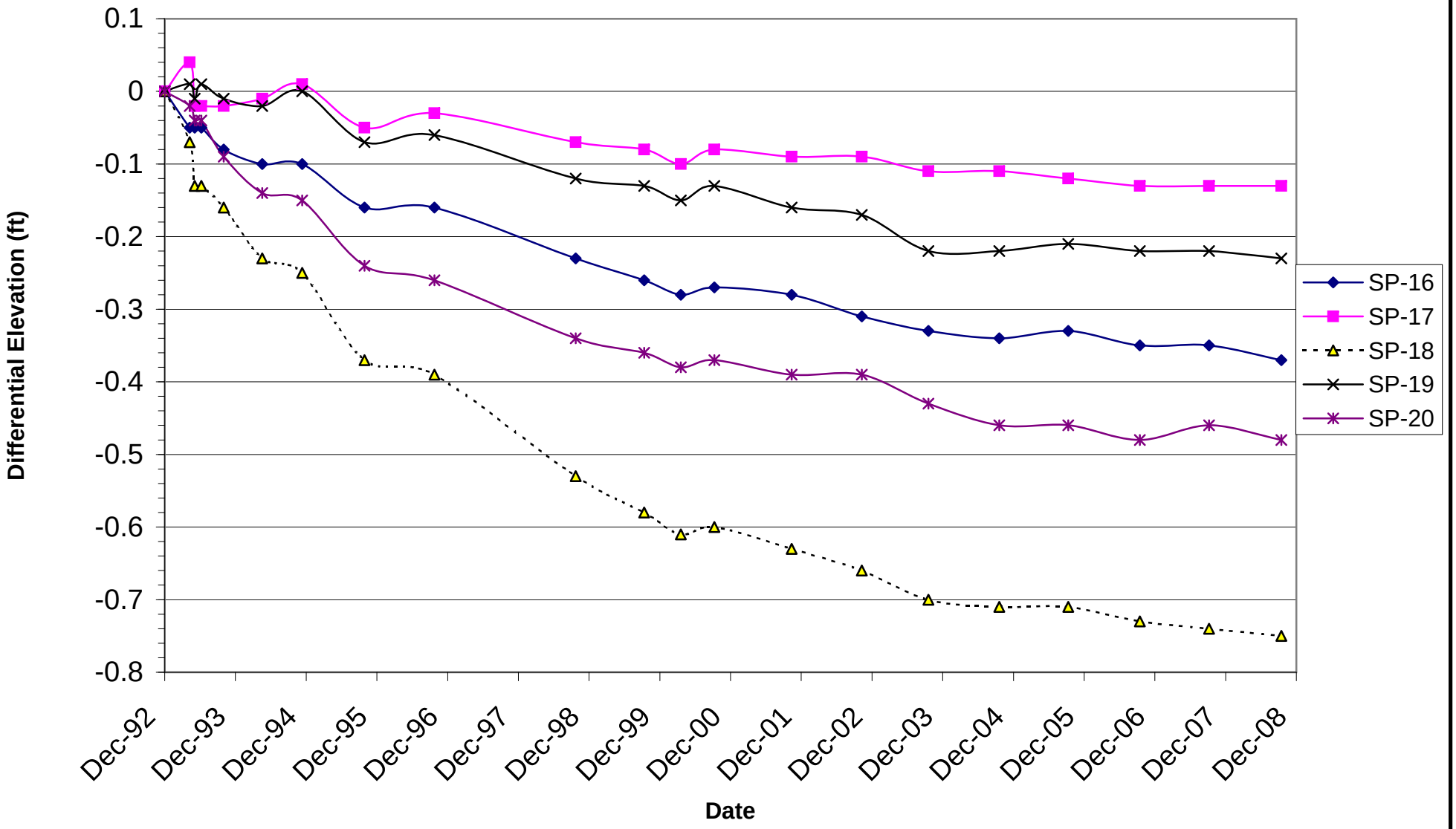
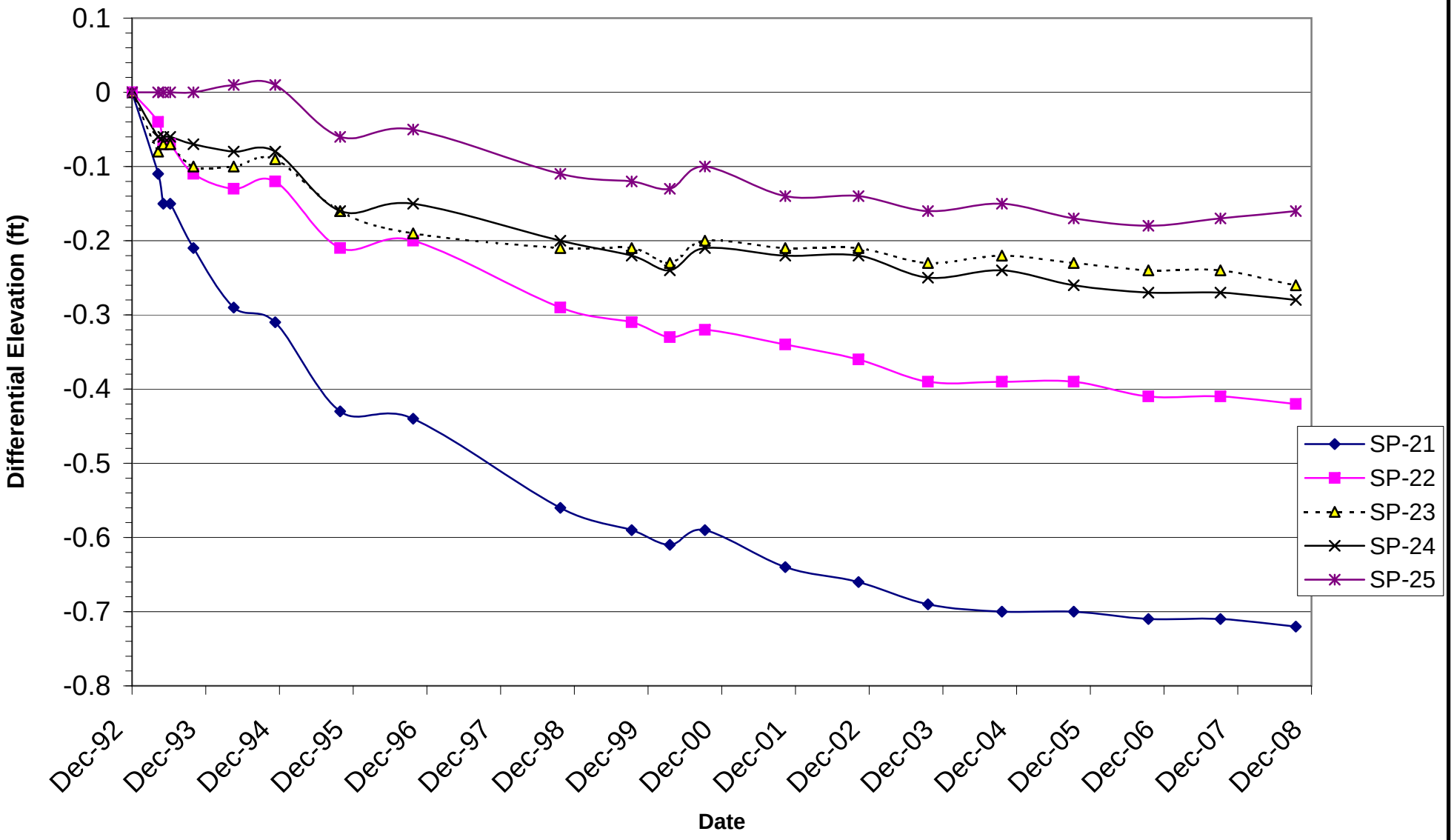


FIGURE 3E
CHANGE IN ELEVATION 1992-2008



MAY 27, 2008 WATER TABLE CONTOUR MAP

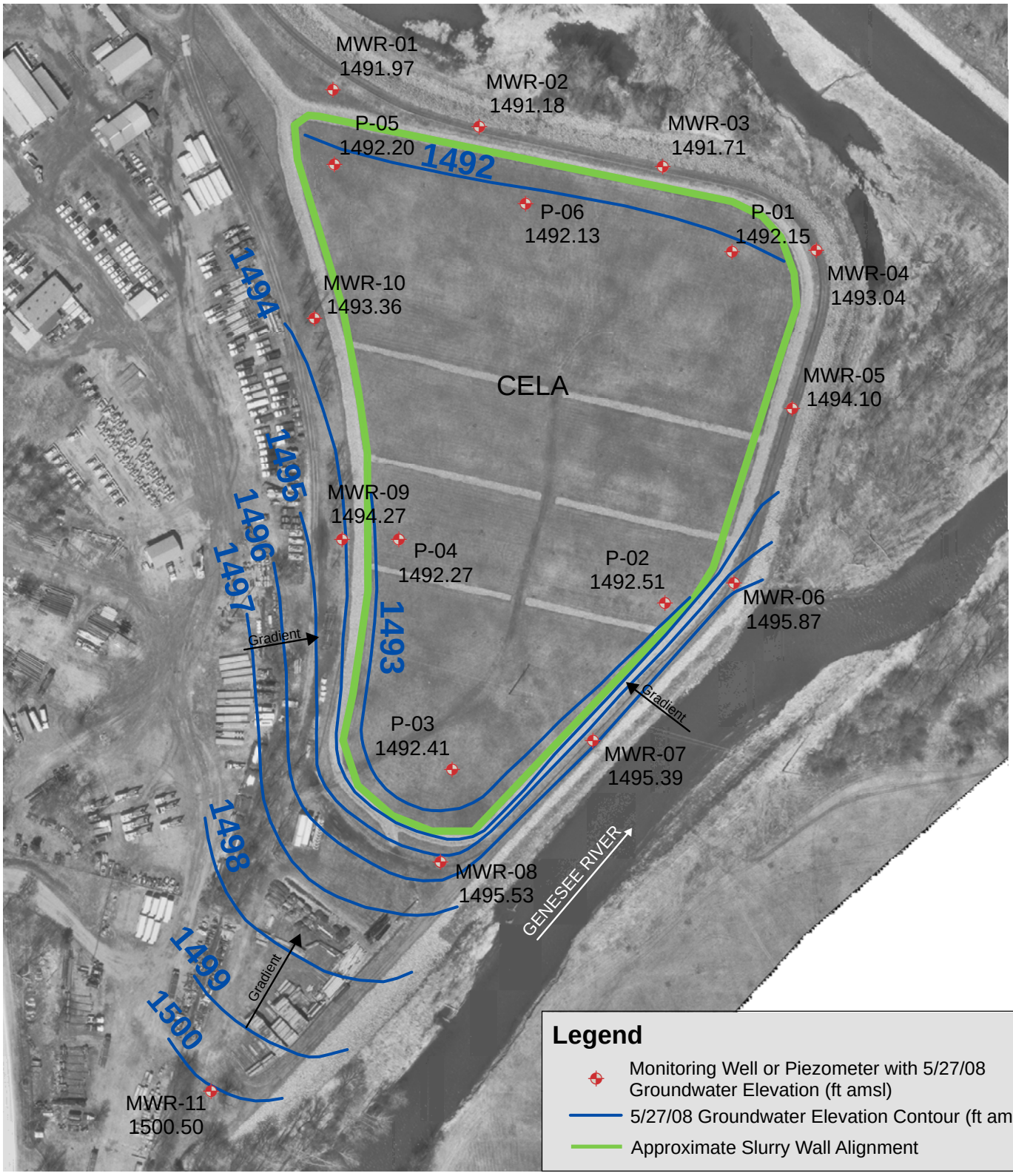
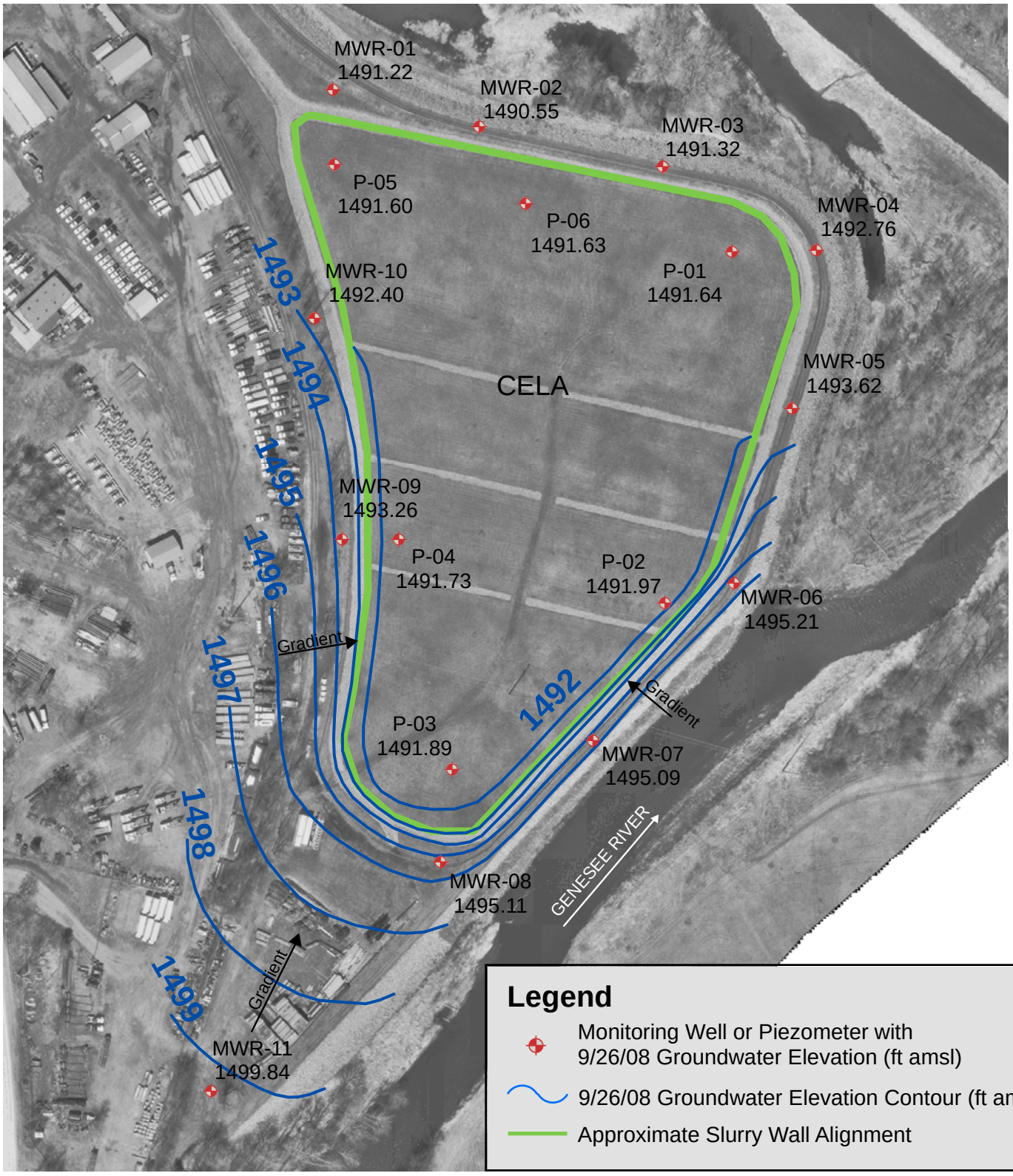


FIGURE NO.	4
PROJECT	WELLSVILLE OU-1
DOCUMENT	2008 CELA REPORT
FILE NO.	FIG4.MXD

ON-SITE TECHNICAL SERVICES, INC.
72 Railroad Avenue Wellsville, NY 14895

N:\ARCO_WLSV\OU1 REPORTS\2008CELA REPORT\FIGURES\FIG4.MXD

SEPTEMBER 26, 2008 WATER TABLE CONTOUR MAP



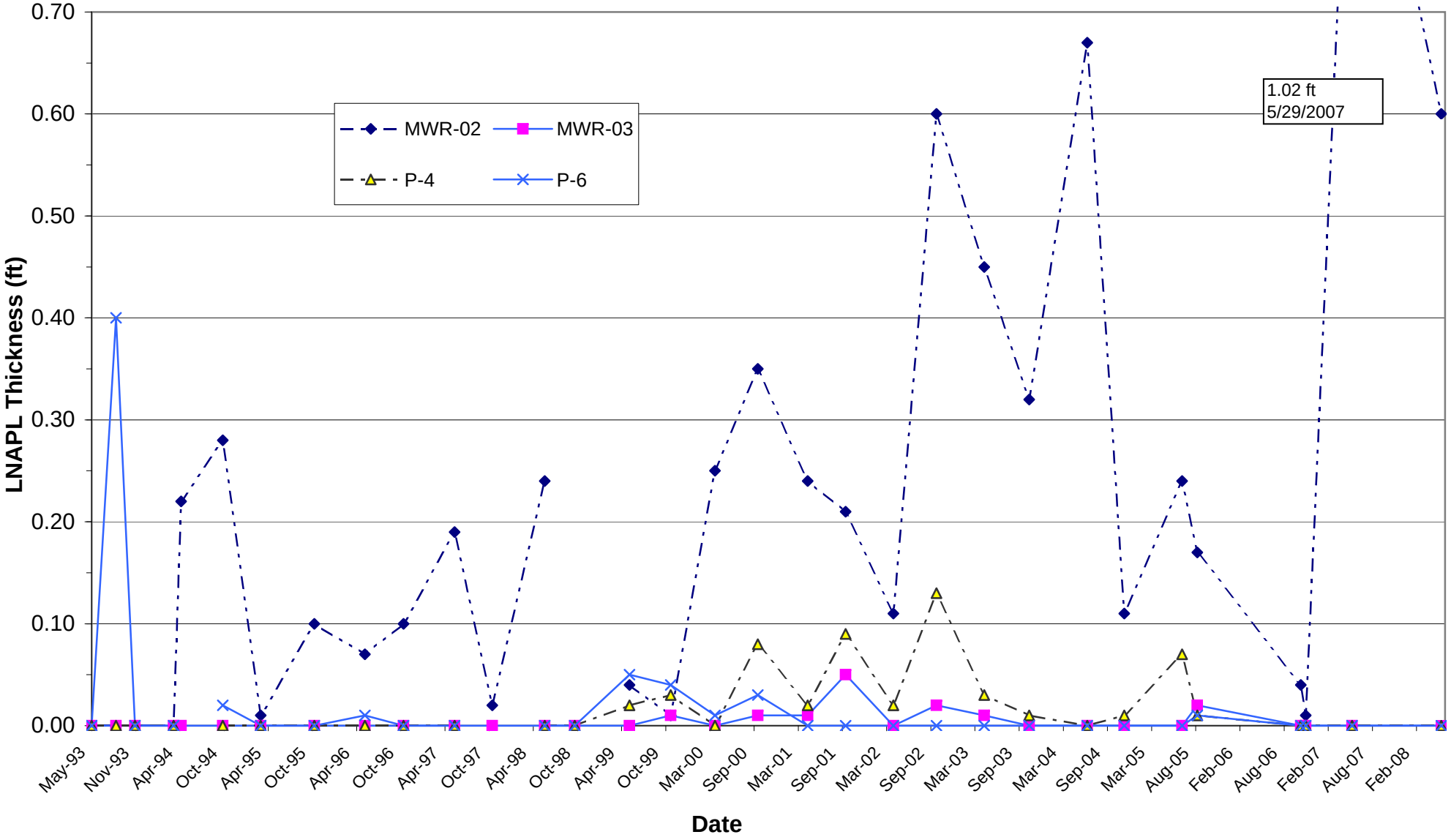
ON-SITE TECHNICAL SERVICES, INC.
72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	5
PROJECT	WELLSVILLE OU-1
DOCUMENT	2008 CELA REPORT
FILE NO.	FIG5.MXD

N:\ARCO_WLSV\OU1 REPORTS\2008CELA REPORT\FIGURES\FIG5.MXD

Figure 6

LNAPL Thickness 1993-2008



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

JUN 28 200

BY FEDEX

Terry Moore
Environmental Manager
BP/ARCO Environmental Remediation, L.L.C.
2300 West Plano Parkway, Room PRC-J1633
Plano, TX 75075-8499

Re: Sinclair Refinery Site, Wellsville, New York; Annual Reporting Requirements - OU1.

Dear Mr. Moore:

This is in response to your letter to the U.S. Environmental Protection Agency (EPA) dated April 18, 2001 whereby you request modification of the annual reporting requirements associated with the Central Elevated Landfill Area and Partial River Channelization (OU1) at the Sinclair Refinery Site in Wellsville, New York. Specifically, you request that water quality measurements (chemical analysis of water samples) be performed once per year in the Spring instead of the current Spring and Fall schedule. The reasoning behind your request is that statistical analysis of groundwater quality data show no significant trends in groundwater quality over time.

Upon EPA's review of your request, and in consultation with the New York State Department of Environmental Conservation (NYSDEC), EPA approves this modification to the annual reporting requirements. However, as you state in your letter, fluid level measurements, including non-aqueous phase liquid (NAPL) measurements, will continue on a semi-annual basis due to seasonal fluctuations and all other parameters will continue to be performed in accordance with the schedule set forth in the OU1 Operation and Maintenance Plan.

If you have any questions on this matter, please call me at (212) 637-4278.

Sincerely yours,

Michael J. Negrelli
Remedial Project Manager
New York Remediation Branch

cc: M. Brekhus - BP/ARCO (Los Angeles)
D. Keenan - NYSDEC
C. Berns - EPA/ORC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

NOV 0 8 2002

BY FEDEX

Terry Moore
Environmental Manager
BP/ARCO Environmental Remediation, L.L.C.
1701 Summit Avenue, Suite 2
Plano, TX 75074

Re: Sinclair Refinery Site, Wellsville, New York

Dear Mr. Moore:

This letter is in response to the Atlantic Richfield Company's ("ARCO's") letter to the U.S. Environmental Protection Agency ("EPA"), dated April 24, 2002, regarding proposed modifications to certain Operation and Maintenance (O&M) requirements for the first operable unit (OU1) at the Sinclair Refinery site in Wellsville, New York. Specifically, ARCO's letter requests modifications to the frequency of elevation surveys of the river channel and banks associated with OU1 and discontinuation of analyzing dissolved metals in the annual ground water sampling (total metals will continue to be analyzed).

ARCO notes that the O&M Manual for OU1 states that the frequency of surveying of cross sections of the dikes will depend on significant changes in surveying data (the elevation surveys of the river bed have no corresponding mention of changing the frequency based on observations). Surveys performed by ARCO annually for the past ten years have indicated no significant changes in survey data for either the dike cross sections or river bed. Accordingly, EPA approves modifying the survey frequency from annually to every five years. As ARCO notes in its letter, annual inspections and periodic patrols following high water events shall continue.

ARCO also requests a discontinuation of the analysis for dissolved metals in the annual ground water sampling. This request is based on recent sampling events showing metals to be below MCLs and a good correlation between dissolved and total metals concentrations (ARCO will continue to perform total metals analysis annually). Therefore, EPA approves of ARCO's proposal to discontinue dissolved metals analysis in the annual ground water sampling at OU1. However, at the request of the New York State Department of Environmental Conservation (NYSDEC), this approval shall be effective starting with the 2003 annual sampling event in order to allow the NYSDEC to collect split samples during the 2002 sampling event. Please contact Maurice Moore at the NYSDEC regional office (716-851-7220) at least two weeks prior to the sampling event in order to make arrangements.

If you have any questions on this matter, please contact me at (212) 637-4278 or by email at negrelli.mike@epa.gov.

Sincerely yours,

Michael J. Negrelli

Michael J.Negrelli
Remedial Project Manager
New York Remediation Branch

cc: Wayne Mizerak - NYSDEC
Maurice Moore - NYSDEC/R.9

-----Original Message-----
From: Negrelli.Mike@epamail.epa.gov
[mailto:Negrelli.Mike@epamail.epa.gov]
Sent: Monday, June 27, 2005 4:08 PM
To: Hufford, Walter
Cc: mfmoore@gw.dec.state.ny.us
Subject: OU1 Monitoring

Walt-
After discussion with Maurice, we agree to ARCO's proposal to suspend SVOC analysis from the CELA monitoring program as they have been non-detect since 1998. However, EPA reserves the right to have SVOC analysis resume should conditions at the CELA change at some point in the future that would lead us to believe the analysis should be resumed. Further, I believe we have previously agreed to your request to changing the soil pH analysis from annually to every three years, both in the CELA monitoring program and partial river channelization monitoring program. Please inform Jerry Palmer and Jon Brandis at On-Site Health and Safety of this determination.

If you have any questions on this matter, please do not hesitate to contact me.

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR VEGETATIVE COVER

Completed By: S. Watson Sheet 1 of 6

Title: Plant Operator Date: 3-3-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
A. VEGETATIVE COVER	
1. Erosion ✓	
2. Stressed Vegetation ✓	
3. Sediment Build-Up ✓	
4. Local Subsidence or Loss of Grade ✓	
5. Water Ponding ✓	
6. Turf Height ✓	
7. Burrowing Animals ✓	
8. Weeds or Undesirable Vegetation ✓	
9. Evidence of Fires or Vandalism ✓	
10. Soil pH Check ✓	
11. Unauthorized Traffic ✓	
12. Slope Instability or Sloughing ✓	

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR GAS VENT SYSTEM

Completed By: S. Watson Sheet 2 of 6

Title: Plant Operator Date: 3-3-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
B. GAS VENT SYSTEM	
1. Excess Sediment Build-Up and Vegetation Growth Over Vent Pipes	✓
2. Erosion or Washout Around Vent Pipes	✓
3. Damaged Vent Pipe	✓

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR OPEN WELL PIEZOMETERS

Completed By: S. Watson Sheet 3 of 6

Title: Plant Operator Date: 3-3-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
C. OPEN WELL PIEZOMETERS	
1. Excess Sediment Build-Up and Vegetation Growth Over Casing	✓
2. Erosion or Washout Around Piezometer Casings	✓
3. Proper Functioning of the Protective Cover Cap and Lock (Test)	✓
4. Excess Rust on the Surface Casing and Lock	✓
5. Ponding Between Protective Casing and Riser Pipe	✓

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR GROUND-WATER MONITORING WELLS

Completed By: S. Watson Sheet 4 of 6

Title: Plant Operator Date: 3-3-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
D. GROUND-WATER MONITORING WELLS	
1. Excess Sediment-Buildup and Vegetation Growth Over the Surface Casing	✓
2. Erosion Around the Concrete Surface Seal	✓
3. Cracks in the Concrete Surface Seal	✓
4. Separation Between the Concrete Surface Seal and the Surface Casing	✓
5. Proper Function of the Surface Casing Cap and Lock	✓
6. Excess Rust on the Surface Casing and Lock	✓
7. Ponding Between the Surface Casing and the Riser Pipe	✓

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST SURFACE WATER DRAINAGE SYSTEM

Completed By: S. Watson Sheet 5 of 6

Title: Plant Operator Date: 3-3-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
E. SURFACE-WATER DRAINAGE SYSTEMS	
1. Dislodged Riprap ✓	
2. Washouts ✓	
3. Erosion ✓	
4. Sediment Build-Up on Riprap ✓	
5. Gullies and Ruts ✓	
6. Excess Rusting of Drainage Culvert ✓	
7. Holes and Cracks in Drainage Culvert ✓	
8. Sediment Build-Up in Drainage Culvert ✓	
9. Foreign Objects ✓	
10. Washout at Berm/Culvert Interface ✓	

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST SECURITY FENCE

Completed By: S. Watson Sheet 6 of 6

Title: Plant Operator Date: 3-3-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Regular
( ) Immediately after heavy storm (2 in. in 24 hour)
( ) Other (explain)

Item Description — Condition*/Remarks

F. SECURITY FENCE

1. Proper Clearance (8 in. (200 mm) Between Fence Gate and the Ground ✓
2. Proper Function of Gate Lock and Hinges ✓
3. Holes ✓
4. Excess Rust ✓
5. Ruts or Burrows Beneath the Fence ✓
6. Vegetation Growing Onto or Through the Fence ✓
7. Improper Connection Between Posts and Chain Link Mesh ✓
8. Loose Posts ✓
9. Cracks in the Post Foundation ✓
10. General Signs of Deterioration ✓

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR VEGETATIVE COVER

Completed By: K D.E Sheet 1 of 6

Title: Field Tech Date: 6-24-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
A. VEGETATIVE COVER	
1. Erosion ✓	
2. Stressed Vegetation ✓	
3. Sediment Build-Up ✓	
4. Local Subsidence or Loss of Grade ✓	
5. Water Ponding ✓	
6. Turf Height ✓	
7. Burrowing Animals ✓	
8. Weeds or Undesirable Vegetation ✓	
9. Evidence of Fires or Vandalism ✓	
10. Soil pH Check ✓	
11. Unauthorized Traffic ✓	
12. Slope Instability or Sloughing ✓	

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR GAS VENT SYSTEM

Completed By: K Dye Sheet 2 of 6

Title: Field Tech Date: 6-24-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(✓) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
B. GAS VENT SYSTEM	
1. Excess Sediment Build-Up and Vegetation Growth Over Vent Pipes ✓	
2. Erosion or Washout Around Vent Pipes ✓	
3. Damaged Vent Pipe ✓	

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR OPEN WELL PIEZOMETERS

Completed By: K Dye Sheet 3 of 6

Title: Field Tech Date: 6-24-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
C. OPEN WELL PIEZOMETERS	
1. Excess Sediment Build-Up and Vegetation Growth Over Casing ✓	
2. Erosion or Washout Around Piezometer Casings ✓	
3. Proper Functioning of the Protective Cover Cap and Lock (Test) ✓	
4. Excess Rust on the Surface Casing and Lock ✓	
5. Ponding Between Protective Casing and Riser Pipe ✓	

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR GROUND-WATER MONITORING WELLS

Completed By: K DyE Sheet 4 of 6

Title: Field Tech Date: 6-24-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
D. GROUND-WATER MONITORING WELLS	
1. Excess Sediment-Buildup and Vegetation Growth Over the Surface Casing	✓
2. Erosion Around the Concrete Surface Seal	✓
3. Cracks in the Concrete Surface Seal	✓
4. Separation Between the Concrete Surface Seal and the Surface Casing	✓
5. Proper Function of the Surface Casing Cap and Lock	✓
6. Excess Rust on the Surface Casing and Lock	✓
7. Ponding Between the Surface Casing and the Riser Pipe	✓

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST SURFACE WATER DRAINAGE SYSTEM

Completed By: K DE Sheet 5 of 6

Title: Field Tech Date: 6-24-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
E. SURFACE-WATER DRAINAGE SYSTEMS	
1. Dislodged Riprap	✓
2. Washouts	✓
3. Erosion	✓
4. Sediment Build-Up on Riprap	✓
5. Gullies and Ruts	✓
6. Excess Rusting of Drainage Culvert	✓
7. Holes and Cracks in Drainage Culvert	✓
8. Sediment Build-Up in Drainage Culvert	✓
9. Foreign Objects	✓
10. Washout at Berm/Culvert Interface	✓

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST SECURITY FENCE

Completed By: K Duf Sheet 6 of 6

Title: Field Tech Date: 6-24-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Regular
( ) Immediately after heavy storm (2 in. in 24 hour)
( ) Other (explain)

Item Description	Condition*/Remarks

F. SECURITY FENCE

1. Proper Clearance (8 in. (200 mm) Between Fence Gate and the Ground ✓
2. Proper Function of Gate Lock and Hinges ✓
3. Holes ✓
4. Excess Rust ✓
5. Ruts or Burrows Beneath the Fence ✓
6. Vegetation Growing Onto or Through the Fence ✓
7. Improper Connection Between Posts and Chain Link Mesh ✓
8. Loose Posts ✓
9. Cracks in the Post Foundation ✓
10. General Signs of Deterioration ✓

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR VEGETATIVE COVER

Completed By: Scott Watson Sheet 1 of 6

Title: Plant operator Date: 9-17-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
A. VEGETATIVE COVER	
1. Erosion ✓	
2. Stressed Vegetation ✓	
3. Sediment Build-Up ✓	
4. Local Subsidence or Loss of Grade ✓	
5. Water Ponding ✓	
6. Turf Height ✓	
7. Burrowing Animals ✓	
8. Weeds or Undesirable Vegetation ✓	
9. Evidence of Fires or Vandalism ✓	
10. Soil pH Check ✓	
11. Unauthorized Traffic ✓	
12. Slope Instability or Sloughing ✓	

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* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR GAS VENT SYSTEM

Completed By: Scott Watson Sheet 2 of 6

Title: Plant Operator Date: 9/17/08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
B. GAS VENT SYSTEM	
1. Excess Sediment Build-Up and Vegetation Growth Over Vent Pipes	✓
2. Erosion or Washout Around Vent Pipes	✓
3. Damaged Vent Pipe	✓

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR OPEN WELL PIEZOMETERS

Completed By: Scott Watson Sheet 3 of 6

Title: Plant Operator Date: 9/17/08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
C. OPEN WELL PIEZOMETERS	
1. Excess Sediment Build-Up and Vegetation Growth Over Casing	✓
2. Erosion or Washout Around Piezometer Casings	✓
3. Proper Functioning of the Protective Cover Cap and Lock (Test)	✓
4. Excess Rust on the Surface Casing and Lock	✓
5. Ponding Between Protective Casing and Riser Pipe	✓

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR GROUND-WATER MONITORING WELLS

Completed By: Scott Watson Sheet 4 of 6

Title: Plant operator Date: 9/17/08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
D. GROUND-WATER MONITORING WELLS	
1. Excess Sediment-Buildup and Vegetation Growth Over the Surface Casing	✓
2. Erosion Around the Concrete Surface Seal	✓
3. Cracks in the Concrete Surface Seal	✓
4. Separation Between the Concrete Surface Seal and the Surface Casing	✓
5. Proper Function of the Surface Casing Cap and Lock	✓
6. Excess Rust on the Surface Casing and Lock	✓
7. Ponding Between the Surface Casing and the Riser Pipe	✓

---

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST SURFACE WATER DRAINAGE SYSTEM

Completed By: Scott Watson Sheet 5 of 6

Title: Plant operator Date: 9/17/08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
E. SURFACE-WATER DRAINAGE SYSTEMS	
1. Dislodged Riprap	✓
2. Washouts	✓
3. Erosion	✓
4. Sediment Build-Up on Riprap	✓
5. Gullies and Ruts	✓
6. Excess Rusting of Drainage Culvert	✓
7. Holes and Cracks in Drainage Culvert	✓
8. Sediment Build-Up in Drainage Culvert	✓
9. Foreign Objects	✓
10. Washout at Berm/Culvert Interface	✓

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* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST SECURITY FENCE

Completed By: Scott Watson Sheet 6 of 6

Title: Plant Operator Date: 9/17/08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Regular
( ) Immediately after heavy storm (2 in. in 24 hour)
( ) Other (explain)

Item Description	Condition*/Remarks
F. SECURITY FENCE	
1. Proper Clearance (8 in. (200 mm) Between Fence Gate and the Ground	✓
2. Proper Function of Gate Lock and Hinges	✓
3. Holes	✓
4. Excess Rust	✓
5. Ruts or Burrows Beneath the Fence	✓
6. Vegetation Growing Onto or Through the Fence	✓
7. Improper Connection Between Posts and Chain Link Mesh	✓
8. Loose Posts	✓
9. Cracks in the Post Foundation	✓
10. General Signs of Deterioration	✓
	Tree on West Fence line (wind blow down) removed 9/17/08

* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR VEGETATIVE COVER

Completed By: Kevin Dye Sheet 1 of 6

Title: Field Tech Date: 12-2-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
A. VEGETATIVE COVER	
1. ✓ Erosion	✓
2. ✓ Stressed Vegetation	✓
3. ✓ Sediment Build-Up	✓
4. ✓ Local Subsidence or Loss of Grade	✓
5. ✓ Water Ponding	✓
6. ✓ Turf Height	✓
7. ✓ Burrowing Animals	✓
8. ✓ Weeds or Undesirable Vegetation	✓
9. ✓ Evidence of Fires or Vandalism	✓
10. ✓ Soil pH Check	✓
11. ✓ Unauthorized Traffic	✓
12. ✓ Slope Instability or Sloughing	✓

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* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

New North Gate Entrance added

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR GAS VENT SYSTEM

Completed By: Kevin Dye Sheet 2 of 6

Title: Field Tech Date: 12-2-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
B. GAS VENT SYSTEM	
1. ✓Excess Sediment Build-Up and Vegetation Growth Over Vent Pipes	
2. ✓Erosion or Washout Around Vent Pipes	
3. ✓Damaged Vent Pipe	

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* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR OPEN WELL PIEZOMETERS

Completed By: Kevin Dye Sheet 3 of 6

Title: Field Tech Date: 12-2-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
C. OPEN WELL PIEZOMETERS	
1. ✓ Excess Sediment Build-Up and Vegetation Growth Over Casing	
2. ✓ Erosion or Washout Around Piezometer Casings	
3. ✓ Proper Functioning of the Protective Cover Cap and Lock (Test)	
4. ✓ Excess Rust on the Surface Casing and Lock	
5. ✓ Ponding Between Protective Casing and Riser Pipe	

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* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST FOR GROUND-WATER MONITORING WELLS

Completed By: Kevin Dye Sheet 4 of 6

Title: Field Tech Date: 12-2-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(✓) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
D. GROUND-WATER MONITORING WELLS	
1. ✓ Excess Sediment-Buildup and Vegetation Growth Over the Surface Casing	
2. ✓ Erosion Around the Concrete Surface Seal	
3. ✓ Cracks in the Concrete Surface Seal	
4. ✓ Separation Between the Concrete Surface Seal and the Surface Casing	
5. ✓ Proper Function of the Surface Casing Cap and Lock	
6. ✓ Excess Rust on the Surface Casing and Lock	
7. ✓ Ponding Between the Surface Casing and the Riser Pipe	

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* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST SURFACE WATER DRAINAGE SYSTEM

Completed By: Kevin Dye Sheet 5 of 6

Title: Field Tech Date: 12-2-08

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Quarterly
( ) Other (explain)

Item Description	Condition*/Remarks
E. SURFACE-WATER DRAINAGE SYSTEMS	
1. ✓ Dislodged Riprap	
2. ✓ Washouts	
3. ✓ Erosion	
4. ✓ Sediment Build-Up on Riprap	
5. ✓ Gullies and Ruts	
6. ✓ Excess Rusting of Drainage Culvert	
7. ✓ Holes and Cracks in Drainage Culvert	
8. ✓ Sediment Build-Up in Drainage Culvert	
9. ✓ Foreign Objects	
10 ✓ Washout at Berm/Culvert Interface	

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* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

CELA INSPECTION CHECKLIST SECURITY FENCE

Completed By: Kevin Dye Sheet 6 of 6

Title: Field Tech Date: 12-2-05

Verified By: _____

Title: _____ Date: _____

Type of Inspection (check only one):

(X) Regular
( ) Immediately after heavy storm (2 in. in 24 hour)
( ) Other (explain)

Item Description — Condition*/Remarks

F. SECURITY FENCE

1. ✓ Proper Clearance (8 in. (200 mm) Between Fence Gate and the Ground
2. ✓ Proper Function of Gate Lock and Hinges
3. ✓ Holes
4. ✓ Excess Rust
5. ✓ Ruts or Burrows Beneath the Fence
6. ✓ Vegetation Growing Onto or Through the Fence
7. ✓ Improper Connection Between Posts and Chain Link Mesh
8. ✓ Loose Posts
9. ✓ Cracks in the Post Foundation
10. ✓ General Signs of Deterioration

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* Indicate satisfactory condition with a check; briefly describe conditions other than satisfactory; use additional sheets if more space is needed.

Recommendations for maintenance or repair (attach additional sheets as needed):

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/29/08

Monitoring Well: MWR01 **Sample ID:** MWR01-0508 **Arrival Time:** 1240

Weather Conditions

Temp. 70 ° F (✓) Sunny (✓) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions: _____

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: _____

15 gallon purge

Depth & Purging Information

SWL: 10.07 ft TD 33.3 ft Start Purge: 1250

LNAPL Present: (Y)(N) Well Socked Prior to Purging: (Y)(N) How Many? _____ Sock Saturation: _____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump rental

Pumping Rate: 175/500mL Start Sampling: 1325 Purge Duration: 35 m Purge Vol: 28 g.

Field Parameters

Meters: YSI 556 (sn: 05H1715A0), Hach 2100P (sn: 050200011331) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
8	1300	Switch to cell		20.8				10.17
16	1310	6.58	435	17.6	0.19	11.53	35.1	
20	1315	6.54	435	13.7	0.17	11.91	33.9	
24	1320	6.55	434	11.8	0.16	11.81	31.2	
28	1325	6.54	434	7.40	0.14	11.65	31.0	↓

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: clear/colorless Sample Odor: (Y) or (N) Explain: _____

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments: _____

Analysis Requested: VOCs/Metals Number of Containers: 4

Well Sampling Completion: Time 1335 Date 5/29 Samplers M Dearhoff / K Dye

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/30/08

Monitoring Well: MWR02 **Sample ID:** MWR02-0508 **Arrival Time:** 0825

Weather Conditions

Temp. 45° F (✓) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions:

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: Flush mount

15 gallon purge

Depth & Purging Information

SWL: 14.90 ft TD 38.5 ft Start Purge: 0845

LNAPL Present: (Y)(N) Well Socked Prior to Purging: (Y)(N) How Many? 9 Sock Saturation: 6 full / 3 half

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump rental

Pumping Rate: 175/500 mL Start Sampling: 0935 (MD) Purge Duration: 45 m. Purge Vol: 23 (MD) g.

Field Parameters

Meters: YSI 556 (sn: 05H1715AO), Hach 2100P (sn: 05020C011331) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
5	0855	Switch-to Cell		2.44				14.88
10	0905	7.15	568	2.71	0.27	9.37	-109.3	"
15	0915	7.10	565	2.27	.16	9.22	-113.4	"
17	0920	7.04	564	2.14	0.11	9.42	-116.8	pulled
19	0925	7.00	565	2.16	0.09	9.55	-119.1	
21	0930	6.98	564	1.98	0.07	9.82	-121.7	
23	0935	6.98	564	1.99	0.04	9.82	-123.8	

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: clear/colorless Sample Odor: (Y) or (N) Explain: hydrocarbon odor

Final Sample Oil Sheen: ( ) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments: 6 SOCKS 5/29 / 3 SOCKS 5/30

Fully saturated 1/2 saturated

Analysis Requested: VOCs / Metals Number of Containers: 4

Sampling Completion: Time 0945 Date 5/30 Samplers M. Orkhoff / K Oye

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/29/08

Monitoring Well: MWR03 **Sample ID:** MWR03-0508 **Arrival Time:** 1135

Weather Conditions

Temp. 70° F (✓) Sunny (✓) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions:

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: Flushmount

10 gallon purge

Depth & Purging Information

SWL: 14.88 ft TD 30.0 ft Start Purge: 1140

LNAPL Present: (Y) (N) Well Socked Prior to Purging: (Y) (N) How Many? ____ Sock Saturation: ____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump rental

Pumping Rate: 308/500mL Start Sampling: 1220 Purge Duration: 40 m. Purge Vol: 24 g.

Field Parameters

Meters: YSI 556 (sn: 05H1715140), Hach 2100P (sn: 050200011331) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
6	1150	Switch to Cell		3.6				
12	1200	7.01	360	3.39	0.62	12.45	-50.5	14.97
15	1205	7.04	362	2.35	0.16	11.64	-57.9	14.97
18	1210	7.04	362	2.34	0.14	11.80	-55.8	14.98
21	1215	7.04	361	1.75	0.13	11.72	-50.4	pulled
24	1220	7.04	360	1.79	0.13	11.61	-50.1	

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: Clear / colorless Sample Odor: (Y) or (N) Explain:

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments:

Analysis Requested: VOC's / Metals Number of Containers: 4

Well Sampling Completion: Time 1230 Date 5/29 Samplers M Darkoff OD / K Dye

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/29/08

Monitoring Well: MWR04 **Sample ID:** MWR04-0508 **Arrival Time:** 1042

Weather Conditions

Temp. 70 ° F (✓) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions:

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: Flush mount

7 gallon purge

Depth & Purging Information

SWL: 14.52 ft TD 25.3 ft Start Purge: 1048

LNAPL Present: (Y) (N) Well Socked Prior to Purging: (Y) (N) How Many? ____ Sock Saturation: ____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump rental

Pumping Rate: 185/500mL Start Sampling: 1125 Purge Duration: 35 m. Purge Vol: 12

Field Parameters

Meters: YSI 556 (sn: 05H1715AC), Hach 2100P (sn: 050200201331) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
4	1100	Switch to cell		15.2				14.7
7	1110	6.89	151	6.64	0.23	10.34	+5.2	14.7
9	1115	6.88	151	3.63	0.12	10.85	4.1	14.71
10	1120	6.86	151	2.82	0.11	10.68	4.1	14.7
12	1125	6.86	151	2.18	0.11	10.31	1.9	pulled

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: clear/colorless Sample Odor: (Y) or (N) Explain:

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments:

Analysis Requested: VOCs/Metals Number of Containers: 4

Well Sampling Completion: Time 1130 Date 5/29 Samplers M Denhoff / K Dye

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/29/08

Monitoring Well: MWR 05 **Sample ID:** MWR05-0508 **Arrival Time:** 0948

Weather Conditions

Temp. 60° F (✓) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions:

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: Flush Mount

11.5 gallon purge

Depth & Purging Information

SWL: 13.59 ft TD 31.3 ft Start Purge: 0955

LNAPL Present: (Y) (N) Well Socked Prior to Purging: (Y) (N) How Many? ____ Sock Saturation: ____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump rental

Pumping Rate: 165/500mL Start Sampling: 1030 Purge Duration: 35 m. Purge Vol: 21 g.

Field Parameters

Meters: YSI 556 (sn: 05H1715/10), Hach 2100P (sn: 050200011331) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
6	1005	switch to cell		32.9				13.68
12	1015	6.75	123	21.1	0.89	8.64	47.0	13.69
15	1020	6.73	122	12.3	0.94	8.60	41.9	13.68
18	1025	6.71	122	7.59	0.94	8.59	40.8	pulled
21	1030	6.69	122	6.64	0.98	8.68	41.8	

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: clear/colorless Sample Odor: (Y) or (N) Explain:

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments:

Analysis Requested: VOCs / Metals Number of Containers: 4

Well Sampling Completion: Time 1040 Date 5/29 Samplers M Dashoff / K Dye

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/29/08

Monitoring Well: MWR06 **Sample ID:** MWR06-0508 **Arrival Time:** 0848

Weather Conditions

Temp. 55° F (✓) Sunny (✓) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions: _____

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: Flush mount

13.3 gallon purge

Depth & Purging Information

SWL: 12.96 ft TD 33.4 ft Start Purge: 0900

LNAPL Present: (Y) (N) Well Socked Prior to Purging: (Y) (N) How Many? _____ Sock Saturation: _____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump rental

Pumping Rate: 30s./500ml Start Sampling: 0935 Purge Duration: 35 m. Purge Vol: 17 g.

Field Parameters

Meters: YSI 556 (sn: 05H1715A0), Hach 2100P (sn: 05020C011331) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
8	0910	Switch to cell		13.0				13.53
11	0920	6.85	253	6.44	0.23	7.55	23.0	
13	0925	6.85	251	3.59	0.12	7.74	20.2	13.33
15	0930	6.86	251	2.67	0.10	7.66	15.6	13.33
17	0935	6.85	249	1.90	0.09	7.63	13.3	pulled

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: clear/colorless Sample Odor: (Y) or (N) Explain: _____

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments: _____

Analysis Requested: VOCs/Metals Number of Containers: 4

Well Sampling Completion: Time 0945 Date 5/29 Samplers M Durkoff / K Dye

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/29/08

Monitoring Well: MWR07 **Sample ID:** MWR07-0508 **Arrival Time:** 0740

Weather Conditions

Temp. 50 ° F (✓) Sunny (✓) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions:

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: flush mount

17 gallon purge

Depth & Purging Information

SWL: 12.98 ft TD 39.1 ft Start Purge: 0750

LNAPL Present: (Y) (N) Well Socked Prior to Purging: (Y) (N) How Many? ____ Sock Saturation: ____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump rental

Pumping Rate: 18s/500mL Start Sampling: 0835 Purge Duration: 45 m. Purge Vol: 21g.

Field Parameters

Meters: YSI 556 (sn: 05H1715AO), Hach 2100P (sn: 05020C011331) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
10	0810	Switch to cell		5.40				13.05
15	0820	6.73	173	3.10	0.42	9.38	129.9	13.10
17	0825	6.67	172	2.17	0.29	9.20	124.6	13.09
19	0830	6.64	168	2.07	0.24	9.31	124.4	13.10
21	835	6.68	167	1.56	0.19	9.38	119.9	13.10

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: clear/colorless Sample Odor: (Y) or (N) Explain:

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments:

Analysis Requested: VOCs / Metals Number of Containers: 4

Well Sampling Completion: Time 0845 Date 5/29 Samplers JM Denhoff / K Dye

MS/MSD

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/28/08

Monitoring Well: MWR08 **Sample ID:** MWR08-0508 **Arrival Time:** 1040

Weather Conditions

Temp. 55 ° F (✓) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions: _____

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: Soft bottom

10.5 gallon purge

Depth & Purging Information

SWL: 13.12 ft TD 29.3 ft Start Purge: 1050

LNAPL Present: (Y) (N) Well Socked Prior to Purging: (Y) (N) How Many? _____ Sock Saturation: _____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump-rental

Pumping Rate: 178/500 mL Start Sampling: 1130 Purge Duration: 40 m. Purge Vol: 21 g.

11-12 voltage output

Field Parameters

Meters: YSI 556 (sn: 05H1715AO), Hach 2100P (sn: 050200011331) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
9	1100	switch to cell		13.6				13.40
13	1110	7.02	290	6.76	0.18	8.46	-102.9	13.44
17	1120	6.88	285	3.69	0.16	8.32	-147.2	13.43
19	1125	6.83	284	2.56	0.14	8.36	-152.3	13.43
21	1130	6.78	284	1.65	0.11	8.60	-156.7	13.44

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: Clear/colorless Sample Odor: (Y) or (N) Explain: _____

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments: _____

Analysis Requested: VOCs/metals Number of Containers: 4

Well Sampling Completion: Time 1140 Date 5/28 Samplers M Denhoff / K Dye

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/28/08

Monitoring Well: MWR09 **Sample ID:** MWR09-0508 **Arrival Time:** 1144

Weather Conditions

Temp. 60 ° F (✓) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions: _____

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: _____

Depth & Purging Information

14.5 gallon purge

SWL: 11.22 ft TD 33.3 ft Start Purge: 1155

LNAPL Present: (Y) (N) Well Socked Prior to Purging: (Y) (N) How Many? _____ Sock Saturation: _____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump rental

Pumping Rate: 18S/500mL Start Sampling: 1240 Purge Duration: 45 m. Purge Vol: 22 g.

Field Parameters

Meters: YSI 556 (sn:05H1715AO), Hach 2100P (sn:05020C011331) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
8	1205	Switch to cell		9.81				12.05
12	1215	6.89	353	8.40	0.23	9.35	-46.2	~~11.52~~ (MS)
16	1225	6.72	359	5.75	0.12	9.16	-63.5	12.05
18	1230	6.67	361	4.59	0.08	9.51	-69.0	12.05
20	1235	6.64	362	4.15	0.05	9.38	-71.9	12.05
22	1240	6.62	365	3.81	0.07	9.28	-71.8	pulled.

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: clear/colorless Sample Odor: (Y) or (N) Explain: _____

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments: _____

Analysis Requested: VOCs/Metals Number of Containers: 4

Well Sampling Completion: Time 1250 Date 5/28 Samplers M Derhoff / K Dye

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/28/08

Monitoring Well: MWR10 **Sample ID:** MWR10-0508 **Arrival Time:** 1255

Weather Conditions

Temp. 60° F (✓) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions: _____

Well Condition Checklist

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: _____

15 gallon purge

Depth & Purging Information

SWL: 8.93 ft TD 32.3 ft Start Purge: 1300

LNAPL Present: (Y) (N) Well Socked Prior to Purging: (Y) (N) How Many? _____ Sock Saturation: _____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: Hurricane pump rental

Pumping Rate: 178/500mL Start Sampling: 1355 Purge Duration: 55 m. Purge Vol: 32 g.

Field Parameters

Meters: YSI 556 (sn: 05H1715AO, Hach 2100P (sn: 050200C011330) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal) (MW)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
10	1315	Switch to cell		41.5				10.11
16	1325	7.00	395	27.2	0.18	9.85	-12.2	10.10
21	1335	6.75	405	18.5	0.08	9.74	-21.6	pulled
26	1345	6.66	408	13.4	0.01	9.70	-31.4	
29	1350	6.63	411	10.8	0.04	9.59	-35.5	
32	1355	6.63	413	8.66	0.03	9.52	-38.8	↓

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: clear/colorless Sample Odor: (Y) or (N) Explain: _____

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments: _____

Analysis Requested: VOCs/Metals Number of Containers: 4

Well Sampling Completion: Time 1420 Date 5/28 Samplers M Dunhoff / K Dye

dup 1 1030

On-Site Technical Services, Inc.

Groundwater Purging and Sampling

Project: OU-1 Wellsville, New York **Date:** 5/28/08

Monitoring Well: MW-11 **Sample ID:** MW-11-0508 **Arrival Time:** 0815

Weather Conditions

Temp. 50 ° F (✓) Sunny ( ) Partly Cloudy ( ) Cloudy ( ) Light Rain ( ) Heavy Rain ( ) Snow

Wind Conditions: _____

Well Condition Checklist No lock

Bump posts: n/a Pro. casing/lock: OK Surface pad: OK

Well Visibility (paint): OK Well Label: OK Comment: Soft bottom

Depth & Purging Information

11 gallon purge

SWL: 10.8 ft TD 27.5 ft Start Purge: 0825/945

LNAPL Present: (Y) (N) Well Socked Prior to Purging: (Y) (N) How Many? _____ Sock Saturation: _____

Purging Method: ( ) Submersible ( ) Peristaltic (✓) Other: hurricane rental pump

Pumping Rate: 9-10 Start Sampling: 1020 Purge Duration: 35 m. Purge Vol: 19 g.

Voltage output Rate = 26s/500 mL.

Field Parameters

Meters: YSI 556 (sn:05H1715AO), Hach 2100P (sn:05030C01133) Measured in: (✓) Flow Cell ( ) Cup

Purge (gal)	Time	pH	Conductivity (us/cm)	Turbidity (ntu)	D.O. (mg/L)	Temp. (°C)	ORP (mV)	DTW (ft)
9	0955	Switch to cell		22.9				13.56
13	1005	6.60	262	19.4	5.42	8.20	88.6	13.55
15	1010	6.60	264	14.8	5.41	8.18	86.9	13.78
17	1015	6.60	266	11.9	5.44	8.24	81.2	13.83
19	1020	6.59	267	12.2	5.42	8.09	78.7	13.86

Stabilization Criteria: 1) field parameters ± 0.1 pH, ±3% conductivity, ±10 mv ORP, ±10% DO, ±10% Turbidity; 2) 3 well volumes or dry

Final Sample clarity\color: clear/colorless Sample Odor: (Y) or (N) Explain: _____

Final Sample Oil Sheen: (✓) None ( ) Light ( ) Medium ( ) Heavy ( ) NAPL

Other Observations/Comments: _____

Analysis Requested: VOC's/metals Number of Containers: 4/4

Well Sampling Completion: Time 1035 Date 5/28 Samplers M Denhoff/K Dye

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

GAS VENT MONITORING

Completed By: Kevin Dye Sheet 1 of 1

Title: _____ Date: 3-25-08

Verified By: _____

Title: _____ Date: _____

Type of Monitoring (check only one):

(X) Semi-Annual
( ) Other (explain)
( ) Type of Monitoring Device

Gas Vent Identification	Upwind Reading	Downwind Reading	Gas Venting Reading
V-1	0.1	0.1	0.1
V-2	0.1	0.1	0.1
V-3	0.1	0.1	0.1
V-4	0.1	0.1	0.1
V-5	0.1	0.1	0.1
V-6	0.1	0.1	0.1
V-7	0.1	0.1	0.1
V-8	0.1	0.1	0.1
V-9	0.1	0.1	0.1
V-10	0.1	0.1	0.1
V-11	0.1	0.1	0.1
V-12	0.7	~~7.2~~ 0.1 (SKW)	~~0.1~~ 7.2 (SKW)
V-13	0.1	~~1.9~~ 0.1 (SKW)	~~0.1~~ 1.9
V-14	0.1	0.1	0.1

COMMENTS OR PERIMETER FENCE MONITORING RESULTS (Attach additional sheets if required):

0.1 background on PID
Cal. by S. Watson

79°F 0-5 mph wind from West

FORMER SINCLAIR REFINERY SITE
WELLSVILLE, NEW YORK

GAS VENT MONITORING

Completed By: Scott Watson Sheet 1 of 1

Title: _____ Date: 9-17-08

Verified By: _____

Title: _____ Date: _____

Type of Monitoring (check only one):

(X) Semi-Annual
( ) Other (explain)
( ) Type of Monitoring Device

Gas Vent Identification	Upwind Reading	Downwind Reading	Gas Venting Reading
V-1	0.1	0.1	0.1
V-2	0.1	0.1	0.1
V-3	0.1	0.1	0.1
V-4	0.1	0.1	0.1
V-5	0.1	0.1	0.1
V-6	0.1	0.1	0.1
V-7	0.1	0.1	0.1
V-8	0.1	0.1	0.1
V-9	0.1	0.1	0.1
V-10	0.1	0.1	0.1
V-11	0.1	0.1	0.1
V-12	0.1	0.4	8.8
V-13	0.1	0.3	2.1
V-14	0.1	0.1	0.1

COMMENTS OR PERIMETER FENCE MONITORING RESULTS (Attach additional sheets if required):

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 360-18096-1

Job Description: Stormwater Toxicity

For:
On-Site Health and Safety
72 Railroad Ave
Wellsville, NY 14895

Attention: Mr. Jon Brandes

Designee for
Becky C Mason
Project Manager II
becky.mason@testamericainc.com
08/18/2008

The test results in this report meet all NELAC requirements for accredited parameters. Any exceptions to NELAC requirements are noted in this report. Pursuant to NELAC, this report may not be reproduced except in full, and with written approval from the laboratory. TestAmerica Westfield Certifications and Approvals: MADEP MA014, RIDOH57, CTDPH 0494, VT DECWSD, NH DES 253903-A, NELAP FL E87912 TOX, NELAP NJ MA008 TOX, NELAP NY 10843, NY DOH 10843.

TestAmerica Laboratories, Inc.
TestAmerica Westfield Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085
Tel (413) 572-4000 Fax (413) 572-3707 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

METHOD SUMMARY

Client: On-Site Health and Safety | Job Number: 360-18096-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Toxicity 48 hour- Pimephales promelas-Fresh water	TAL WFD	EPA 821-R-02-013	
Toxicity 48 hour-Ceriodaphnia dubia-Fresh water	TAL WFD	EPA 821-R-02-013	

Lab References:

TAL WFD = TestAmerica Westfield

Method References:

EPA = US Environmental Protection Agency

METHOD / ANALYST SUMMARY

Client: On-Site Health and Safety

Job Number: 360-18096-1

Method	Analyst	Analyst ID
EPA 821-R-02-013	Benoit, Gary R	GRB

SAMPLE SUMMARY

Client: On-Site Health and Safety

Job Number: 360-18096-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-18096-1	OF-0808	Water	08/06/2008 1000	08/07/2008 1045

On-Site Health and Safety
72 Railroad Ave
Wellsville, NY 14895

360-18096

Test America, Inc.
Westfield Executive Park
53 Southampton Rd
Westfield, MA 01085

Tel 413-572-4000
Fax 413-572-3707

WHOLE EFFLUENT TOXICITY TEST REPORT CERTIFICATION

I certify under penalty of law that this document and all ATTACHMENTS were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: August 15, 2008
(Date)

[Authorized Signature]

Patrick Sullivan Department Supervisor
[Print or Type Name and Title]

TestAmerica, Inc.
[Print or Type Name of Bioassay Laboratory]

Telephone Contact
If you have any questions, please contact TestAmerica at, (413)572-4000.

x **Acute Toxicity Report**
□ Chronic Toxicity Report
□ Storm Water Toxicity Report
□ Screening Test Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ACUTE TOXICITY TEST REPORT

Ceriodaphnia dubia

TestAmerica, Inc.
53 Southampton Road
Westfield, MA 01085

Aquatic Toxicology - Biology Department

job#: 360-18096

SAMPLE AND TEST IDENTIFICATION

CLIENT NAME:	On-Site Health and Safety	SPDES PERMIT#:	N/A
SAMPLING DATE:	8/6/2008	DILUTION WATER:	MHSF Lab Water
ORGANISM:	*Ceriodaphnia dubia*	LOCATION:	Wellsville
ORIGIN:	New England Bioassay - Manchester, CT	TEST TYPE:	48 Hour ACUTE
AGE and DOB:	<24 hrs. old	SAMPLE TYPE:	Unchlorinated
TEST START:	8/7/2008 14:20	SAMPLE METHOD:	Grab
TEST END:	8/9/2008 12:25		

STATISTICAL ENDPOINT: LC_{50}, TUa

TEST RESULTS

	LC_{50} %	TUa	A-NOEC
Concentration with statistical difference (LC50, TUa) TUa = 100%/LC50 (%) Acute-No Oberved Effect Concentration (A-NOEC)	**100.0%**	**1**	**50.00%**

STATISTICAL METHOD: Probit

95% confidence Limits:	Lower	Upper
	79.2%	198.7%

MORTALITY DATA SUMMARY

% MORTALITY

48hr Percent Mortality	Lab Control	6.25%	12.50%	25%	50%	100%
	5.0%	0.0%	0.0%	0.0%	10.0%	50.0%

GENERAL CHEMISTRY - INIT EFFLUENT SAMPLE

DISSOLVED OXYGEN:	7.8 mg/L	RESIDUAL CHLORINE:	<0.02 mg/L
CONDUCTIVITY:	178 S/cm	DISSOLVED OXYGEN AFTER AERATION:	N/A mg/L
pH:	8.0		

All methods and guidelines used were consistant witht the protocol from Short-terms Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012.

All acceptable method criteria were met: 90% or greater survival in the control(s). YES (y/n)

GRB
Analyst Initials

Primary Data Review
GRB 8/15/08
(Initial/Date)

Secondary Data Review
(Initial/Date)

PS: Pat Sullivan
GRB: Gary Benoit
CAL: Carrie LaPlante

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ACUTE TOXICITY TEST REPORT

Pimephales promelas

TestAmerica, Inc.
53 Southampton Road
Westfield, MA 01085

Aquatic Toxicology - Biology Department

job#: 360-18096

SAMPLE AND TEST IDENTIFICATION

CLIENT NAME:	On-Site Health and Safety		SPDES PERMIT#:	N/A
SAMPLING DATE:	8/6/2008		DILUTION WATER:	MHSF Lab Water
ORGANISM:	*Pimephales promelas*		LOCATION:	Wellsville
ORIGIN:	Aquatic Bio Systems - Ft. Collins, CO		TEST TYPE:	48 Hour ACUTE
AGE and DOB:	4 days old		SAMPLE TYPE:	Unchlorinated
TEST START:	8/7/2008	14:50	SAMPLE METHOD:	Grab
TEST END:	8/9/2008	12:50		

STATISTICAL ENDPOINT: $LC_{50,}$ TUa

TEST RESULTS

	LC_{50}	TUa	A-NOEC
Concentration with statistical difference (LC50, TUa) TUa = 100%/LC50 (%) Acute-No Oberved Effect Concentration (A-NOEC)	>100%	<1.0	100.00%

STATISTICAL METHOD: Linear Interpolation

95% confidence Limits:	Lower	Upper
	N/A	N/A

MORTALITY DATA SUMMARY

% MORTALITY

48hr Percent Mortality	Lab Control	6.25%	12.50%	25%	50%	100%
	2.5%	5.0%	5.0%	2.5%	0.0%	2.5%

GENERAL CHEMISTRY - INIT EFFLUENT SAMPLE

DISSOLVED OXYGEN:	7.8 mg/L	RESIDUAL CHLORINE:	<0.02 mg/L
CONDUCTIVITY:	178 S/cm	DISSOLVED OXYGEN AFTER AERATION:	N/A mg/L
pH:	8.0		

All methods and guidelines used were consistant witht the protocol from Short-terms Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012.

All acceptable method criteria were met: 90% or greater survival in the control(s). **YES** (y/n)

GRB
Analyst Initials

Primary Data Review
GRB 8/15/08
(Initial/Date)

Secondary Data Review
8/15/8
(Initial/Date)

PS: Pat Sullivan
GRB: Gary Benoit
CAL: Carrie LaPlante

TOXICOLOGICAL EVALUATION SUMMARY

1.0 METHOD PROCEDURES

The Analytical and Toxicological methods used in this toxicity test followed the procedures outlined in the EPA manual entitled "Methods for Measuring the Acute Toxicity of Effluents Receiving Waters to Freshwater and Marine Organisms", fifth edition, EPA 821-R-02-012, October 2002, as well as the specific protocols outlined by the facility's NPDES permit.

2.0 TOXICITY TESTS

The toxicity test involved preparing a series of effluent concentrations by dilution with receiving stream water. The laboratory control water (Moderately Hard Synthetic water) can be used as an alternative diluent when a receiving stream is not available or exhibits known toxicity. Groups of test organisms are exposed to the varying effluent concentrations, as well as to receiving water and laboratory control water for a forty-eight and or ninety-six hour period. The resultant assay data is used to determine the median lethal concentration (LC_{50}) and the Acute No Observed Effect Concentration (A-NOEC) of the effluent at the time of sampling. The LC_{50} is defined as the effluent concentration which causes mortality to 50% of the test organism population. The A-NOEC is defined as the concentration at which 90% or more of the organisms survive. TUa is defined as $100/LC_{50}$ value. If the LC_{50} is >100, the TUa value is reported as AA.

3.0 TOXICITY TEST PROCEDURES

The toxicity test is conducted using static assay techniques. A minimum of five effluent concentrations, a receiving stream and a laboratory control are used for each species tested. The species tested varies by NPDES permit and the regulatory agency in charge. Generally an invertebrate (Ceriodaphnia sp.) and vertebrate (Pimephales sp.) are used. Four replicates of five organisms were used for each concentration in the Ceriodaphnia dubia assay, and four replicates with ten organisms for the Pimephales promelas assay. The Ceriodaphnia dubia are placed in 30mL vessels with 25mL of test solution per replicate. The Pimephales promelas are placed in 250mL vessels with 200mL of test solution per replicate. Test exposure can vary from twenty-four hours to ninety-six hours depending on the test objectives and the requirements of the regulatory authority. The end-point required for assays is lethality. The test organisms were considered dead if there was no response observed after gentle prodding. Observations of survival are made at twenty-four hour intervals during the assay. Test organisms are fed two hours prior to test initiation and at the forty-eight hour renewal (when applicable).

Measurements of dissolved oxygen, pH, temperature and specific conductance are performed every twenty-four hours on each effluent concentration, receiving stream and laboratory control water.

Total Residual chlorine is analyzed on each effluent and receiving stream sample upon receipt in the laboratory. Effluent samples containing residual chlorine are de-chlorinated using a 10% solution of Sodium Thiosulfate prior to use in the toxicity test.

4.0 QUALITY ASSURANCE

The quality assurance protocol for this type of toxicity test dictates that reference toxicants be analyzed on a monthly basis. The data obtained from these analyses are used to assess the validity of the assay and the health and condition of the organisms. Sodium chloride and or Potassium chloride are used as the reference toxicant(s) for these toxicity tests. The values for these tests must fall within acceptable laboratory criteria.

The acceptance criteria of 90% survival must be met in the test control.

Reporting toxicity test results ensures that all requirements of the NELAC Standards have been met.

5.0 STATISTICAL RESULTS AND RAW DATA

The summary report outlines the LC_{50} and A-NOEC values for each species tested in the bioassay.
All raw bench sheet data can be found in Appendix A, computer printouts of the statistical modeling for the LC_{50} can be found in Appendix B, and the results of any additional chemical analysis (when applicable) and chains of custody can be found in Appendix C.

APPENDIX A

Raw Data

ACUTE TOXICITY REPORT - TestAmerica

Client job #: 360-18096

Facility Name: On-Site Tech. Services/ Wellsville
Dilution Water: MHSF Lab Control / Lot # 073108LC
Test Initiation: 8/7/08 @ 1420 / 1450 (DATE / TIME)

Grab
Sample NPDES Permit No.: N/A
Analyst (s): GRB/PS/CAL
Test Termination: 8/9/08 @ 1225 / 1250 (DATE / TIME)

WATER QUALITY CHEMISTRY

EFFLUENT CONC. %	DISSOLVED OXYGEN mg/L Hours 0	24	48	72	96	pH Hours 0	24	48	72	96	CONDUCTIVITY Hours 0	24	48	72	96	TEMPERATURE C Hours 0	24	48	72	96
Lab	8.1	7.2	6.6			7.7	8.0	7.7			287	297	300			25	25	26		
6.25	7.9	7.3	6.5			7.9	8.1	7.9			339	318	315			25	25	26		
12.5	7.8	7.2	6.9			8.0	8.1	7.9			280	283	307			25	25	26		
25	7.7	7.5	6.8			8.0	8.0	8.0			262	263	292			25	25	26		
50	7.7	7.3	6.6			8.0	8.0	8.0			234	236	255			25	25	26		
100	7.8	7.0	6.8			8.0	8.1	8.1			178	179	190			25	25	26		

SPECIES: C.dubia (1420) / (1225) AGE: <24 hours (NEB)

EFFLUENT CONC. %	Lab				6.25				12.5				25				50				100			
HOURS	24	48	72	96	24	48	72	96	24	48	72	96	24	48	72	96	24	48	72	96	24	48	72	96
SURVIVAL PER REPLICATE A	5	5							5	5			5	5			5	5			4	4			5	2		
SURVIVAL PER REPLICATE B	4	4							5	5			5	5			5	5			5	4			1	0		
SURVIVAL PER REPLICATE C	5	5							5	5			5	5			5	5			5	5			4	4		
SURVIVAL PER REPLICATE D	5	5							5	5			5	5			5	5			5	5			5	4		
% MORTALITY	5				0				0				0				10				50			

SPECIES: P.promelas (1450) / (1250) AGE: 4 days old (ABS)

EFFLUENT CONC. %	Lab				6.25				12.5				25				50				100			
HOURS	24	48	72	96	24	48	72	96	24	48	72	96	24	48	72	96	24	48	72	96	24	48	72	96
SURVIVAL PER REPLICATE A	10	10			10	10			10	10			10	10			10	10			10	10		
SURVIVAL PER REPLICATE B	10	9			10	10			10	9			9	9			10	10			10	10		
SURVIVAL PER REPLICATE C	10	10			10	9			10	9			10	10			10	10			10	9		
SURVIVAL PER REPLICATE D	10	10			9	9			10	10			10	10			10	10			10	10		
% MORTALITY	2.5	—			Grab 10 / 5				Grab 10 / 5				2.5				0				2.5			

REFERENCE TOXICANT RESULTS

Test Species	Date	Reference Toxicant	Source	LC_{50}
C.dubia	070808CD	Potassium Chloride	Westfield	C.dubia 0.40 / P.promelas 7.07
P. promelas	072108PP	Sodium Chloride		
Sample Hardness		Dilution Water Hardness		
92		89		

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

* Grab
8-11-08

NEW ENGLAND BIOASSAY, INC.

Culture Department
Description of Organisms

Sold to: Test America, Westfield, MA Date: 8-7-08

Species: Ceriodaphnia dubia
acute test organisms

NEB lot #: Cd08(8-7)

Age/history: <24hr. old until 1850 hrs. on 8-7-08

Qty: 400 Price: _

Shipping/courier cost: ~ —

Packed by: LC/AH

Culture Manager: Larry Coe NEB project #: 203-018

77 BATSON DRIVE / MANCHESTER, CT 06042 / TEL. (860) 643-9560 / FAX (860) 646-7169 / WWW.NEBIO.COM

1300 Blue Spruce Drive, Suite C
Fort Collins, Colorado 80524

Toll Free: 800/331-5916
Tel:970/484-5091 Fax:970/484-2514

ORGANISM HISTORY

DATE: 8/4/08

SPECIES: *Pimephales promelas*

AGE: 1 day

LIFE STAGE: Larvae

HATCH DATE: 8/3/08

BEGAN FEEDING: 8/4/08

FOOD: *Artemia* sp.

Water Chemistry Record:	Current	Range	D.O.	pH	Temp. °C
TEMPERATURE:	24°C	--			
SALINITY/CONDUCTIVITY:	--	--	11.70	7.35	23.3
TOTAL HARDNESS (as $CaCO_3$):	140 mg/l	--			
TOTAL ALKALINITY (as $CaCO_3$):	85 mg/l	--			
pH:	8.26	--			

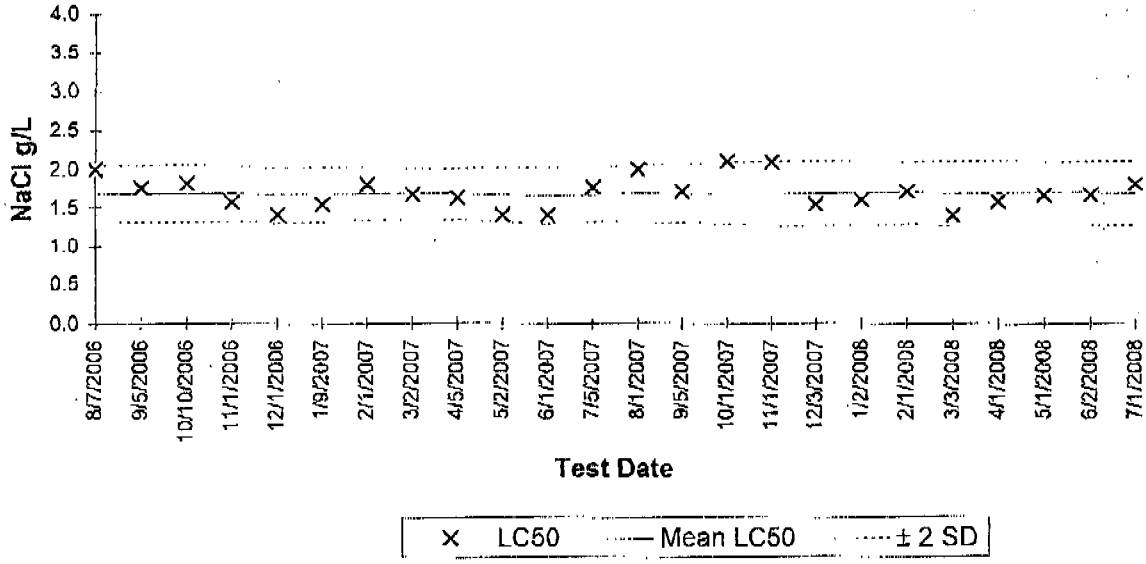
Comments:

Facility Supervisor

Rcvd in good health. 8/5/08
G.28/CAL

New England Bioassay

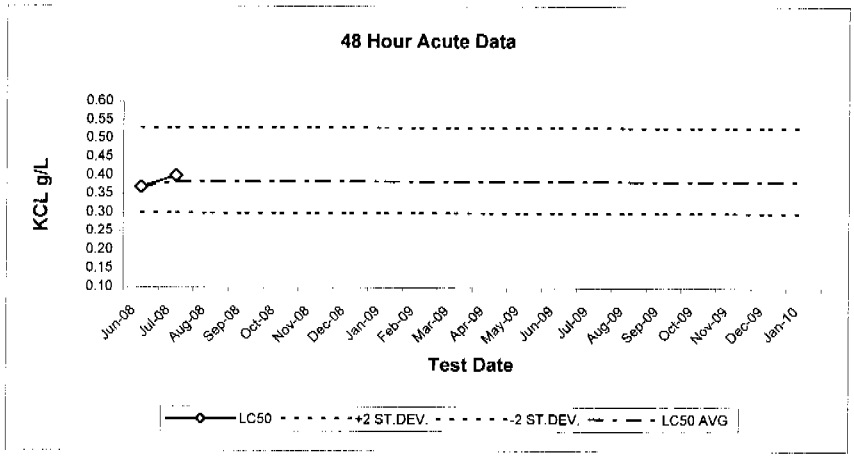
Reference Toxicant Data: *Ceriodaphnia dubia*
48-h Acute Toxicity Test Data
August 2006 - July 2008



Test ID	Date	LC_{50}	Mean LC_{50}	STD	-2 STD	+2 STD	CV %
26-1928	8/7/2006	2.0	1.7	0.2	1.3	2.0	11.1
26-2068	9/5/2006	1.8	1.7	0.2	1.3	2.0	10.8
26-2286	10/10/2006	1.8	1.7	0.2	1.3	2.0	10.9
26-2380	11/1/2006	1.6	1.7	0.2	1.3	2.0	10.7
26-2495	12/1/2006	1.4	1.7	0.2	1.3	2.0	10.6
27-1036	1/9/2007	1.5	1.7	0.2	1.3	2.0	10.6
27-1150	2/1/2007	1.8	1.7	0.2	1.3	2.0	10.1
27-1267	3/2/2007	1.7	1.7	0.2	1.3	2.0	10.0
27-1434	4/5/2007	1.6	1.7	0.2	1.3	2.0	10.0
27-1531	5/2/2007	1.4	1.7	0.2	1.3	2.0	10.5
27-1687	6/1/2007	1.4	1.6	0.2	1.3	2.0	11.1
27-1828	7/5/2007	1.8	1.7	0.2	1.3	2.0	10.6
27-2046	8/1/2007	2.0	1.7	0.2	1.3	2.1	11.2
27-2227	9/5/2007	1.7	1.7	0.2	1.3	2.1	11.2
27-2444	10/1/2007	2.1	1.7	0.2	1.3	2.1	11.9
27-2587	11/1/2007	2.1	1.7	0.2	1.3	2.1	12.4
27-2700	12/3/2007	1.5	1.7	0.2	1.3	2.1	12.5
28-1004	1/2/2008	1.6	1.7	0.2	1.3	2.1	12.5
28-1112	2/1/2008	1.7	1.7	0.2	1.3	2.1	12.1
28-1217	3/3/2008	1.4	1.7	0.2	1.3	2.1	12.7
28-1397	4/1/2008	1.6	1.7	0.2	1.3	2.1	12.5
28-1590	5/1/2008	1.7	1.7	0.2	1.3	2.1	12.3
28-1745	6/2/2008	1.7	1.7	0.2	1.3	2.1	12.3
28-1901	7/1/2008	1.8	1.7	0.2	1.3	2.1	12.3

REFERENCE TOXICANT LC50
Ceriodaphnia dubia

TestAmerica, Inc.
53 Southampton Road
Westfield, Massachusetts



48 Hour Modified Acute Toxicity Data For
1g/L KCL
Ceriodaphnia dubia

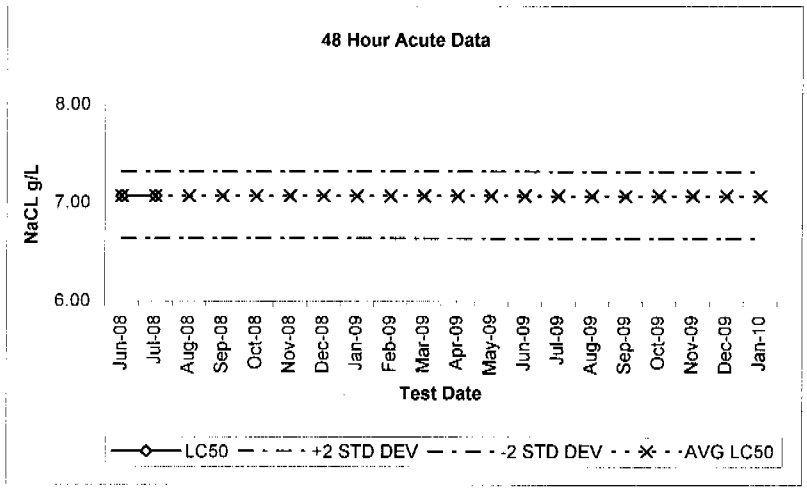
Date	LC50 (g/L KCL)	95% Confidence (lower)	(upper)	AVG.LC50 (g/L KCL)	Method	+2 STD	-2STD
Jun-08	0.37	0.33	0.41	0.37	S-K	0.53	0.30
Jul-08	0.40	0.34	0.47	0.39	S-K	0.53	0.30
Aug-08				0.39	S-K	0.53	0.30
Sep-08				0.39	S-K	0.53	0.30
Oct-08				0.39	S-K	0.53	0.30
Nov-08				0.39	S-K	0.53	0.30
Dec-08				0.39	S-K	0.53	0.30
Jan-09				0.39	S-K	0.53	0.30
Feb-09				0.39	S-K	0.53	0.30
Mar-09				0.39	S-K	0.53	0.30
Apr-09				0.39	S-K	0.53	0.30
May-09				0.39	S-K	0.53	0.30
Jun-09				0.39	S-K	0.53	0.30
Jul-09				0.39	S-K	0.53	0.30
Aug-09				0.39	S-K	0.53	0.30
Sep-09				0.39	S-K	0.53	0.30
Oct-09				0.39	S-K	0.53	0.30
Nov-09				0.39	S-K	0.53	0.30
Dec-09				0.39	S-K	0.53	0.30
Jan-10				0.39	S-K	0.53	0.30

Note: the +- 2 standard deviations are derived from 2006-2008 data points.

N/A = Limit not determined by Spearman-Karber

REFERENCE TOXICANT DATA

Pimphales promelas



48 Hour Acute Toxicity Data For
20g/L NaCL
Pimephales promelas

Date	LC50 (g/L NaCL	95% Confidence (lower)	(upper)	AVG.LC50 (g/L NaCL)	Method	+2 STD	-2STD
Jun-08	7.07	NA	NA	7.07	S-K	7.32	6.64
Jul-08	7.07	NA	NA	7.07	S-K	7.32	6.64
Aug-08				7.07	S-K	7.32	6.64
Sep-08				7.07	S-K	7.32	6.64
Oct-08				7.07	S-K	7.32	6.64
Nov-08				7.07	S-K	7.32	6.64
Dec-08				7.07	S-K	7.32	6.64
Jan-09				7.07	S-K	7.32	6.64
Feb-09				7.07	S-K	7.32	6.64
Mar-09				7.07	S-K	7.32	6.64
Apr-09				7.07	S-K	7.32	6.64
May-09				7.07	S-K	7.32	6.64
Jun-09				7.07	S-K	7.32	6.64
Jul-09				7.07	S-K	7.32	6.64
Aug-09				7.07	S-K	7.32	6.64
Sep-09				7.07	S-K	7.32	6.64
Oct-09				7.07	S-K	7.32	6.64
Nov-09				7.07	S-K	7.32	6.64
Dec-09				7.07	S-K	7.32	6.64
Jan-10				7.07	S-K	7.32	6.64

N/A = Limit not determined by Spearman-Karber

Note: the +- 2 standard deviations are derived from 2006-2008 data points.

APPENDIX B

Statistical Modeling

C. dubia 360-18096

Pos	ID	Rep	Group	Start	24 Hr	48 Hr	72 Hr	96 Hr	
1	1	1	B-Control	5	5	5			
2	2	2	B-Control	5	4	4			
3	3	3	B-Control	5	5	5			
4	4	4	B-Control	5	5	5			
5	5	1	6.250	5	5	5			
6	6	2	6.250	5	5	5			
7	7	3	6.250	5	5	5			
8	8	4	6.250	5	5	5			
9	9	1	12.500	5	5	5			
10	10	2	12.500	5	5	5			
11	11	3	12.500	5	5	5			
12	12	4	12.500	5	5	5			
13	13	1	25.000	5	5	5			
14	14	2	25.000	5	5	5			
15	15	3	25.000	5	5	5			
16	16	4	25.000	5	5	5			
17	17	1	50.000	5	4	4			
18	18	2	50.000	5	5	4			
19	19	3	50.000	5	5	5			
20	20	4	50.000	5	5	5			
21	21	1	100.000	5	5	2			
22	22	2	100.000	5	1	0			
23	23	3	100.000	5	4	4			
24	24	4	100.000	5	5	4			

Daphnid Acute Test-48 Hr Survival

Start Date:	8/7/2008 14:20	Test ID:	360-18096C	Sample ID:	WELLSVILLE
End Date:	8/9/2008 12:25	Lab ID:	TA-TestAmerica - Westfield	Sample Type:	SRW2-Industrial stormwater
Sample Date:	8/6/2008	Protocol:	EPA/821/R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	On-Site Tech. / Wellsville / 48hr C.dubia acute tox.				

Conc-%	1	2	3	4
B-Control	1.0000	0.8000	1.0000	1.0000
6.25	1.0000	1.0000	1.0000	1.0000
12.5	1.0000	1.0000	1.0000	1.0000
25	1.0000	1.0000	1.0000	1.0000
50	0.8000	0.8000	1.0000	1.0000
100	0.4000	0.0000	0.8000	0.8000

			Transform: Untransformed					Rank	1-Tailed	Number	Total
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Resp	Number
B-Control	0.9500	1.0000	0.9500	0.8000	1.0000	10.526	4			1	20
6.25	1.0000	1.0526	1.0000	1.0000	1.0000	0.000	4	20.00	10.00	0	20
12.5	1.0000	1.0526	1.0000	1.0000	1.0000	0.000	4	20.00	10.00	0	20
25	1.0000	1.0526	1.0000	1.0000	1.0000	0.000	4	20.00	10.00	0	20
50	0.9000	0.9474	0.9000	0.8000	1.0000	12.830	4	16.00	10.00	2	20
100	0.5000	0.5263	0.5000	0.0000	0.8000	76.594	4	11.00	10.00	10	20

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.78745	0.884	-1.0774	5.72063
Equality of variance cannot be confirmed				

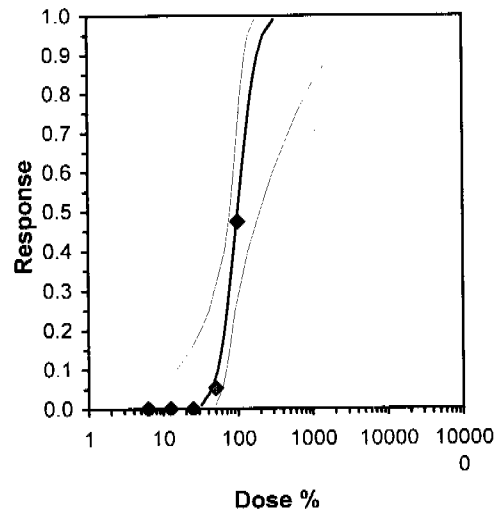
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1
Treatments vs B-Control				

GRB 8-15-08

Maximum Likelihood-Probit

Parameter	Value	SE	95% Fiducial Limits		Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	4.66671	1.73817	1.2599	8.07351	0.05	0.84698	7.81472	0.84	2.0008	0.21428	9
Intercept	-4.3372	3.32802	-10.86	2.18576							
TSCR	0.01277	0.01314	-0.013	0.03852							

Point	Probits	%	95% Fiducial Limits	
EC01	2.674	31.7909	2.33649	49.3726
EC05	3.355	44.4976	7.9558	61.1913
EC10	3.718	53.2337	15.1167	69.3863
EC15	3.964	60.0774	23.048	76.3858
EC20	4.158	66.1388	31.7851	83.5943
EC25	4.326	71.8241	41.1043	92.0172
EC40	4.747	88.4126	66.9342	137.575
EC50	5.000	100.185	79.1518	198.697
EC60	5.253	113.525	89.1927	301.154
EC75	5.674	139.744	104.413	626.318
EC80	5.842	151.757	110.455	842.791
EC85	6.036	167.068	117.665	1194.02
EC90	6.282	188.546	127.107	1855.27
EC95	6.645	225.563	142.074	3576.18
EC99	7.326	315.719	174.122	12314.1



LC_{50} = 100%

Daphnid Acute Test-48 Hr Survival

Start Date:	8/7/2008 14:20	Test ID:	360-18096C	Sample ID:	WELLSVILLE
End Date:	8/9/2008 12:25	Lab ID:	TA-TestAmerica - Westfield	Sample Type:	SRW2-Industrial stormwater
Sample Date:	8/6/2008	Protocol:	EPA/821/R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	On-Site Tech. / Wellsville / 48hr C.dubia acute tox.				

Conc-%	1	2	3	4
B-Control	1.0000	0.8000	1.0000	1.0000
6.25	1.0000	1.0000	1.0000	1.0000
12.5	1.0000	1.0000	1.0000	1.0000
25	1.0000	1.0000	1.0000	1.0000
50	0.8000	0.8000	1.0000	1.0000
100	0.4000	0.0000	0.8000	0.8000

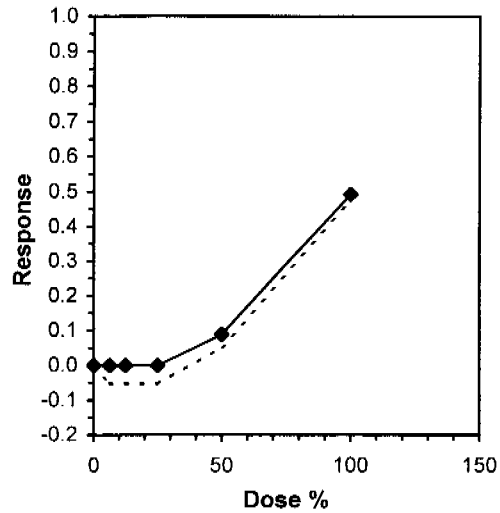
			Transform: Untransformed					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
B-Control	0.9500	1.0000	0.9500	0.8000	1.0000	10.526	4			0.9875	1.0000
6.25	1.0000	1.0526	1.0000	1.0000	1.0000	0.000	4	20.00	10.00	0.9875	1.0000
12.5	1.0000	1.0526	1.0000	1.0000	1.0000	0.000	4	20.00	10.00	0.9875	1.0000
25	1.0000	1.0526	1.0000	1.0000	1.0000	0.000	4	20.00	10.00	0.9875	1.0000
50	0.9000	0.9474	0.9000	0.8000	1.0000	12.830	4	16.00	10.00	0.9000	0.9114
100	0.5000	0.5263	0.5000	0.0000	0.8000	76.594	4	11.00	10.00	0.5000	0.5063

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.78745	0.884	-1.0774	5.72063
Equality of variance cannot be confirmed				

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		<1
Treatments vs B-Control				

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)		Skew
IC05	39.107	7.929	27.056	66.540	0.4100
IC10	51.406	7.550	30.196	75.823	0.1545
IC15	57.578	8.712	37.013	98.786	1.0168
IC20	63.750				
IC25	69.922				
IC40	88.438				
IC50	>100				



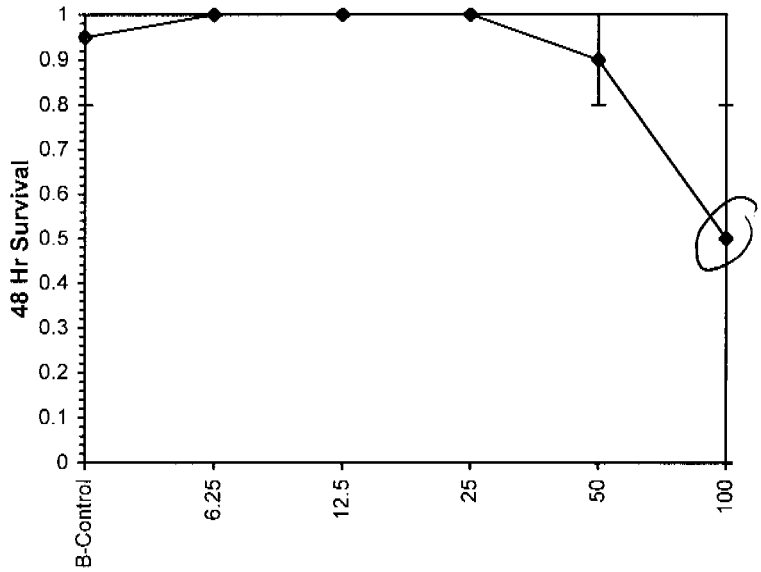
Reviewed by: GRB

RV

Daphnid Acute Test-48 Hr Survival

Start Date:	8/7/2008 14:20	Test ID:	360-18096C	Sample ID:	WELLSVILLE
End Date:	8/9/2008 12:25	Lab ID:	TA-TestAmerica - Westfield	Sample Type:	SRW2-Industrial stormwater
Sample Date:	8/6/2008	Protocol:	EPA/821/R-02-012	Test Species:	CD-Ceriodaphnia dubia
Comments:	On-Site Tech. / Wellsville / 48hr C.dubia acute tox.				

Dose-Response Plot



50% Mortality @ 100%
8/15/08

P. promelas 360-18096

Pos	ID	Rep	Group	Start	24 Hr	48 Hr	72 Hr	96 Hr	
1	1	1	B-Control	10	10	10			
2	2	2	B-Control	10	10	9			
3	3	3	B-Control	10	10	10			
4	4	4	B-Control	10	10	10			
5	5	1	6.250	10	10	10			
6	6	2	6.250	10	10	10			
7	7	3	6.250	10	10	9			
8	8	4	6.250	10	9	9			
9	9	1	12.500	10	10	10			
10	10	2	12.500	10	10	9			
11	11	3	12.500	10	10	9			
12	12	4	12.500	10	10	10			
13	13	1	25.000	10	10	10			
14	14	2	25.000	10	9	9			
15	15	3	25.000	10	10	10			
16	16	4	25.000	10	10	10			
17	17	1	50.000	10	10	10			
18	18	2	50.000	10	10	10			
19	19	3	50.000	10	10	10			
20	20	4	50.000	10	10	10			
21	21	1	100.000	10	10	10			
22	22	2	100.000	10	10	10			
23	23	3	100.000	10	10	9			
24	24	4	100.000	10	10	10			

Acute Fish Test-48 Hr Survival

Start Date:	8/7/2008 14:50	Test ID:	360-18096P	Sample ID:	WELLSVILLE
End Date:	8/9/2008 12:50	Lab ID:	TA-TestAmerica - Westfield	Sample Type:	SRW2-Industrial stormwater
Sample Date:	8/6/2008	Protocol:	EPA/821/R-02-012	Test Species:	PP-Pimephales promelas
Comments:	On-Site Tech. / Wellsville / 48hr P.promelas acute tox.				

Conc-%	1	2	3	4
B-Control	1.0000	0.9000	1.0000	1.0000
6.25	1.0000	1.0000	0.9000	0.9000
12.5	1.0000	0.9000	0.9000	1.0000
25	1.0000	0.9000	1.0000	1.0000
50	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	0.9000	1.0000

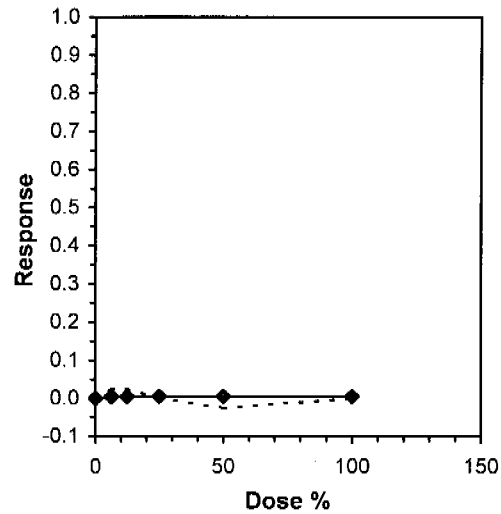
			Transform: Untransformed					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
B-Control	0.9750	1.0000	0.9750	0.9000	1.0000	5.128	4			0.9750	1.0000
6.25	0.9500	0.9744	0.9500	0.9000	1.0000	6.077	4	16.00	10.00	0.9700	0.9949
12.5	0.9500	0.9744	0.9500	0.9000	1.0000	6.077	4	16.00	10.00	0.9700	0.9949
25	0.9750	1.0000	0.9750	0.9000	1.0000	5.128	4	18.00	10.00	0.9700	0.9949
50	1.0000	1.0256	1.0000	1.0000	1.0000	0.000	4	20.00	10.00	0.9700	0.9949
100	0.9750	1.0000	0.9750	0.9000	1.0000	5.128	4	18.00	10.00	0.9700	0.9949

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.84089	0.884	-0.6718	-0.9803
Equality of variance cannot be confirmed				

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		<1
Treatments vs B-Control				

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			

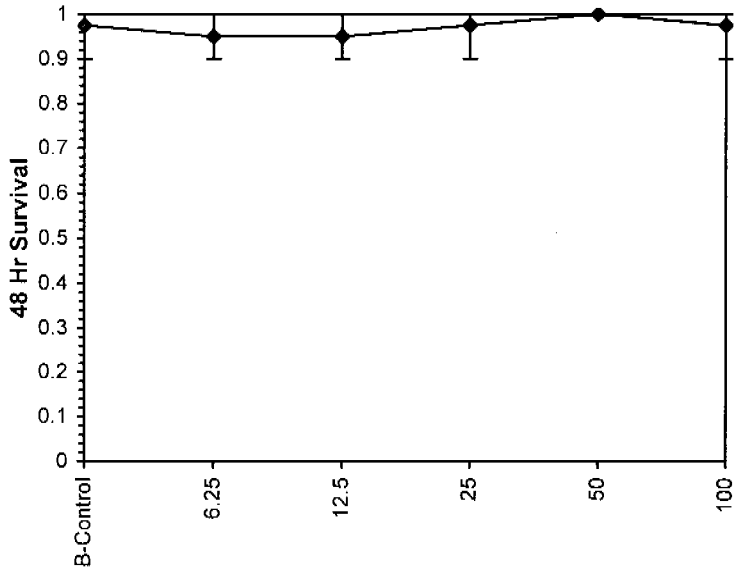


EC_{50}/LC_{50} > 100%

Acute Fish Test-48 Hr Survival

Start Date:	8/7/2008 14:50	Test ID:	360-18096P	Sample ID:	WELLSVILLE
End Date:	8/9/2008 12:50	Lab ID:	TA-TestAmerica - Westfield	Sample Type:	SRW2-Industrial stormwater
Sample Date:	8/6/2008	Protocol:	EPA/821/R-02-012	Test Species:	PP-Pimephales promelas
Comments:	On-Site Tech. / Wellsville / 48hr P.promelas acute tox.				

Dose-Response Plot



Acute Fish Test-48 Hr Survival

Start Date:	8/7/2008 14:50	Test ID:	360-18096P	Sample ID:	WELLSVILLE
End Date:	8/9/2008 12:50	Lab ID:	TA-TestAmerica - Westfield	Sample Type:	SRW2-Industrial stormwater
Sample Date:	8/6/2008	Protocol:	EPA/821/R-02-012	Test Species:	PP-Pimephales promelas
Comments:	On-Site Tech. / Wellsville / 48hr P.promelas acute tox.				

Conc-%	1	2	3	4
B-Control	1.0000	0.9000	1.0000	1.0000
6.25	1.0000	1.0000	0.9000	0.9000
12.5	1.0000	0.9000	0.9000	1.0000
25	1.0000	0.9000	1.0000	1.0000
50	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	0.9000	1.0000

			Transform: Untransformed					Rank	1-Tailed	Number	Total
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Resp	Number
B-Control	0.9750	1.0000	0.9750	0.9000	1.0000	5.128	4			1	40
6.25	0.9500	0.9744	0.9500	0.9000	1.0000	6.077	4	16.00	10.00	2	40
12.5	0.9500	0.9744	0.9500	0.9000	1.0000	6.077	4	16.00	10.00	2	40
25	0.9750	1.0000	0.9750	0.9000	1.0000	5.128	4	18.00	10.00	1	40
50	1.0000	1.0256	1.0000	1.0000	1.0000	0.000	4	20.00	10.00	0	40
100	0.9750	1.0000	0.9750	0.9000	1.0000	5.128	4	18.00	10.00	1	40

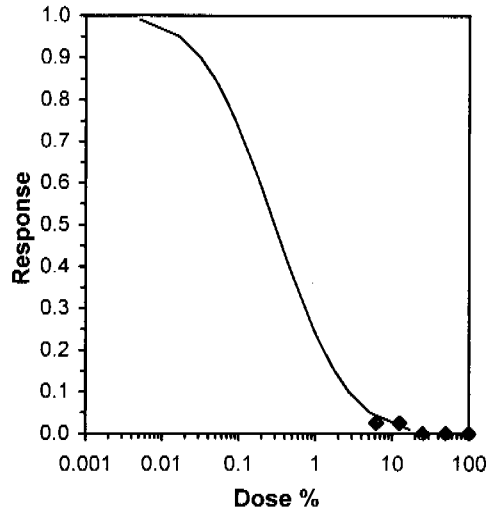
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.84089	0.884	-0.6718	-0.9803
Equality of variance cannot be confirmed				

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test Treatments vs B-Control	100	>100		1

Maximum Likelihood-Probit

Parameter	Value	SE	95% Fiducial Limits		Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	-1.3206	2.49384	-6.2085	3.56734	0.025	0.72006	7.81472	0.87	-0.5305	-0.7572	50
Intercept	4.2995	2.43326	-0.4697	9.06869							
TSCR	0.01908	0.02012	-0.0203	0.05851							

Point	Probits	%	95% Fiducial Limits
EC01	2.674	17.0281	
EC05	3.355	5.18928	
EC10	3.718	2.75422	
EC15	3.964	1.79632	
EC20	4.158	1.27898	
EC25	4.326	0.95566	
EC40	4.747	0.45856	
EC50	5.000	0.29481	
EC60	5.253	0.18954	
EC75	5.674	0.09095	
EC80	5.842	0.06796	
EC85	6.036	0.04839	
EC90	6.282	0.03156	
EC95	6.645	0.01675	
EC99	7.326	0.0051	



APPENDIX C

Chemical Report and/or Chain of Custody

Login Sample Receipt Check List

Client: On-Site Health and Safety

Job Number: 360-18096-1

Login Number: 18096
List Source: TestAmerica Westfield
Creator: Tremblay, Kara R
List Number: 1

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	5.6 C
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Chain of Custody Form

•53 Southampton Road
Westfield, MA 01085
(P) 413-572-4000
(F) 413-572-3707
Westfield

•148 Rangeway Road
N. Billerica, MA 01862
(P) 978-667-1400
(F) 978-667-7871
Boston - Service Center

Client: ON-SITE TECH. SERVICES
Address: 72 RAILROAD AVE.
WELLSVILLE, NY 14895
Phone: 585-593-1824 Fax: 585-593-7471

Client Project #: Former Sinclair Refinery
Site ID & State: 08-1 / NY
Reports Sent To: Jon Brandes
Email: jonbe on-sitehs.com Email Rpt: ☐

Job# 360-18096 | Quote# | PO#

Shaded areas for office use
Invoice same as Report to? ☐
If Invoice contact or address different, note in *Comments*

Comments *(Special Instructions)*

Please print legibly. If the analytical requests are not clearly defined on the chain-of-custody, the turnaround time will begin after all questions have been satisfactorily answered.

Requested Turnaround Time (PLEASE SPECIFY)
STANDARD X | RUSH ____ *(Lab Approval Required)*

Regulatory Programs/Presumptive Certainty/QC Forms
MADEP MCP ☐ GW1/S1 ☐ | PWS DEP Forms ☐
CTDEP RCP ☐ CT RSR ☐ | EDD Required ☐
QA Rpt: No QC ☐ | Std QC Rpt ☐ | CLP QC Rpt: ☐

500-series for drinking water
600-series for waste water, NPDES
6000-series for groundwater, soil, waste
8000-series for groundwater, soil, waste
Use comments section to further define.

Sample Type Codes: WW-Wastewater, DW-Drinking Water, SW-Surface Water, GW-Groundwater, LW Lab Water, A-Air, "Z"-Other (please specify)

Sample I.D.	Sample Type	Sampler's Initials	Date / Time Collected	Grab	Comp.	# Containers	Plastic(P) or Glass(G)	Preservative: NaHSO4/MeOH	HNO3 to pH <2	H2SO4 to pH <2	HCl to pH <2	NaOH to pH >12	Na2S2O3	None / 4° C	524 / 624 / 8260	525 / 625 / 8270	PCB / Pest / Herbicide	EPH / VPH	DRO / GRO / ETPH	Metals (Please Specify)	Mercury	General Chemistry	Bacteriological	Toxicity
08-0808	SW	SW	8-6-8 1000	X		2	P							2										2

Page 28 of 28

KRT 8/7/08

Comments:

Sampled by (print): SCOTT WATSON | 8-6-8 | 1000 | Signature: Scott R. W

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Scott R. W	8-6-8	1200	Kara Trumbley	8/7/08	1045
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Cooler ? (Y) / N | MADEP Requirement Samples Iced? (Y) / N
Temp @ receipt: 5.6 °C
Preservation / pH checked? Y (N)
By: / Date: /

WESTFIELD

White = Lab file Yellow = Report copy Pink = Customer copy

TAL-8245(1007)

Lancaster Laboratories

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Analysis Report

REVISED

ANALYTICAL RESULTS

Prepared for:

Atlantic Richfield(OnSite-NY)
501 WestLake Park Blvd
Houston TX 77079

281-366-2000

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1104214. Samples arrived at the laboratory on Thursday, August 07, 2008. The PO# for this group is 001BK-0012 and the release number is SONTCHI.

Client Description	Lancaster Labs Number
OF-0808 Water	5435010
OF-0808 Filtered Water	5435011

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

ELECTRONIC COPY TO	On-Site Technical Services Inc	Attn: Jon Brandes
ELECTRONIC COPY TO	Atlantic Richfield Company	Attn: Joe Sontchi
ELECTRONIC COPY TO	On-Site Technical Services, In	Attn: Scott Watson
ELECTRONIC COPY TO	BP/Atlantic Richfield	Attn: Eric Larson
1 COPY TO	Data Package Group	

Lancaster Laboratories

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Analysis Report

REVISED

Questions? Contact your Client Services Representative
Jessica A Oknefski at (717) 656-2300

Respectfully Submitted,

Robert Strocko Jr.
Manager

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

REVISED

Lancaster Laboratories Sample No. 5435010 WW Group No. 1104214

OF-0808 Water
BP Wellsville OU-1 COC:
2530 S Brooklyn Ave - Wellsville, NY OF-0808

Collected:08/06/2008 10:00 by SW Account Number: 12381

Submitted: 08/07/2008 08:50
Reported: 08/25/2008 at 10:00
Discard: 09/25/2008

Atlantic Richfield(OnSite-NY)
501 WestLake Park Blvd
Houston TX 77079

OF080

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
00259	Mercury	7439-97-6	N.D.		0.000056	0.00020	mg/l	1
01750	Calcium	7440-70-2	56.7		0.0702	0.200	mg/l	1
01757	Magnesium	7439-95-4	47.9		0.0135	0.100	mg/l	1
07035	Arsenic	7440-38-2	N.D.		0.0102	0.0200	mg/l	1
07036	Selenium	7782-49-2	N.D.		0.0107	0.0200	mg/l	1
07046	Barium	7440-39-3	1.54		0.00060	0.0050	mg/l	1
07051	Chromium	7440-47-3	N.D.		0.0030	0.0150	mg/l	1
07055	Lead	7439-92-1	N.D.		0.0069	0.0150	mg/l	1
07066	Silver	7440-22-4	N.D.		0.0022	0.0050	mg/l	1
00206	Total Suspended Solids	n.a.	N.D.		3.0	12.0	mg/l	1
00212	Total Dissolved Solids	n.a.	102.		9.7	30.0	mg/l	1
00217	Kjeldahl Nitrogen	n.a.	N.D.		0.50	1.0	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	0.050	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	1.9		0.040	0.10	mg/l	1
00227	Total Phosphorus as P (water)	7723-14-0	N.D.		0.080	0.10	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		3.7	3.7	mg/l	1
00237	Total Cyanide (water)	57-12-5	N.D.		0.0050	0.010	mg/l	1
00273	Total Organic Carbon	n.a.	2.6		0.50	1.0	mg/l	1
04001	Chemical Oxygen Demand	n.a.	N.D.		12.8	50.0	mg/l	1
07882	Total Nitrite/Nitrate Nitrogen	7727-37-9	2.1		0.040	0.10	mg/l	1
08079	HEM (oil & grease)	n.a.	2.7	J	1.4	5.0	mg/l	1

The pH at the time of collection was 8.11.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00259	Mercury	EPA 245.1 rev 3	1	08/20/2008 07:08	Damary Valentin	1
01750	Calcium	EPA 200.7 rev 4.4	1	08/12/2008 18:40	John P Hook	1
01757	Magnesium	EPA 200.7 rev 4.4	1	08/12/2008 18:40	John P Hook	1
07035	Arsenic	EPA 200.7 rev 4.4	1	08/12/2008 18:40	John P Hook	1
07036	Selenium	EPA 200.7 rev 4.4	1	08/19/2008 13:22	Joanne M Gates	1
07046	Barium	EPA 200.7 rev 4.4	1	08/12/2008 18:40	John P Hook	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories Sample No. 5435010 WW Group No. 1104214

OF-0808 Water
BP Wellsville OU-1 COC:
2530 S Brooklyn Ave - Wellsville, NY OF-0808

Collected:08/06/2008 10:00 by SW Account Number: 12381

Submitted: 08/07/2008 08:50
Reported: 08/25/2008 at 10:00
Discard: 09/25/2008

Atlantic Richfield(OnSite-NY)
501 WestLake Park Blvd
Houston TX 77079

OF080

07051	Chromium	EPA 200.7 rev 4.4	1	08/12/2008 18:40	John P Hook	1
07055	Lead	EPA 200.7 rev 4.4	1	08/12/2008 18:40	John P Hook	1
07066	Silver	EPA 200.7 rev 4.4	1	08/12/2008 18:40	John P Hook	1
00206	Total Suspended Solids	SM20 2540 D	1	08/08/2008 08:39	Susan A Engle	1
00212	Total Dissolved Solids	SM20 2540 C	1	08/12/2008 08:37	Sharaya A Hurd	1
00217	Kjeldahl Nitrogen	EPA 351.2	1	08/12/2008 11:16	William L Hamaker Jr	1
00219	Nitrite Nitrogen	EPA 353.2	1	08/07/2008 20:01	Venia B McFadden	1
00220	Nitrate Nitrogen	EPA 353.2	1	08/13/2008 20:05	Venia B McFadden	1
00227	Total Phosphorus as P (water)	EPA 365.1	1	08/11/2008 20:29	Venia B McFadden	1
00235	Biochemical Oxygen Demand	SM20 5210 B	1	08/07/2008 12:06	Susan A Engle	1
00237	Total Cyanide (water)	EPA 335.4	1	08/12/2008 18:09	Venia B McFadden	1
00273	Total Organic Carbon	SM20 5310 C	1	08/11/2008 07:09	James S Mathiot	1
04001	Chemical Oxygen Demand	EPA 410.4	1	08/11/2008 09:20	Susan A Engle	1
07882	Total Nitrite/Nitrate Nitrogen	EPA 353.2	1	08/08/2008 10:01	William L Hamaker Jr	1
08079	HEM (oil & grease)	EPA 1664A	1	08/11/2008 08:44	Kisha L Vazquez	1
00492	Cyanide Water Distillation	EPA 335.4	1	08/12/2008 10:20	Nancy J Shoop	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	08/09/2008 22:45	Carolyn M Mastropietro	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	08/19/2008 17:45	Nelli S Markaryan	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	08/11/2008 19:05	James L Mertz	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	2	08/18/2008 15:00	Mirit S Shenouda	1
08263	Total Phos as P Prep (water)	EPA 365.1	1	08/09/2008 02:40	Carolyn M Mastropietro	1

*=This limit was used in the evaluation of the final result

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Analysis Report

REVISED

Lancaster Laboratories Sample No. 5435011 WW Group No. 1104214

OF-0808 Filtered Water
BP Wellsville OU-1 COC:
2530 S Brooklyn Ave - Wellsville, NY OF-0808

Collected:08/06/2008 10:00 by SW Account Number: 12381

Submitted: 08/07/2008 08:50
Reported: 08/25/2008 at 10:00
Discard: 09/25/2008

Atlantic Richfield(OnSite-NY)
501 WestLake Park Blvd
Houston TX 77079

OF08F

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Units	Dilution Factor
01757	Magnesium	7439-95-4	4.21	0.0135	0.100	mg/l	1

This sample was filtered in the lab for dissolved metals.
The pH at the time of collection was 8.11.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	08/12/2008 18:51	John P Hook	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	08/11/2008 19:05	James L Mertz	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Atlantic Richfield(OnSite-NY) Group Number: 1104214
Reported: 08/25/08 at 10:00 AM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 08220023502A	Sample number(s): 5435010								
Biochemical Oxygen Demand					95	93	85-115	2	8
Batch number: 08220105101A	Sample number(s): 5435010								
Nitrite Nitrogen	N.D.	0.015	0.050	mg/l	101		90-110		
Batch number: 08221020601B	Sample number(s): 5435010								
Total Suspended Solids	N.D.	3.0	12.0	mg/l	75		63-121		
Batch number: 08221118101A	Sample number(s): 5435010								
Total Nitrite/Nitrate Nitrogen	N.D.	0.040	0.10	mg/l	106		90-110		
Batch number: 082215716003	Sample number(s): 5435010-5435011								
Calcium	N.D.	0.0702	0.200	mg/l	94		85-115		
Magnesium	N.D.	0.0135	0.100	mg/l	92		85-115		
Arsenic	N.D.	0.0102	0.0200	mg/l	94		85-115		
Barium	N.D.	0.00060	0.0050	mg/l	95		85-115		
Chromium	N.D.	0.0030	0.0150	mg/l	91		85-115		
Lead	N.D.	0.0069	0.0150	mg/l	96		85-115		
Silver	N.D.	0.0022	0.0050	mg/l	94		85-115		
Batch number: 08222108101A	Sample number(s): 5435010								
Kjeldahl Nitrogen	N.D.	0.50	1.0	mg/l	100		90-110		
Batch number: 08222109101A	Sample number(s): 5435010								
Total Phosphorus as P (water)	N.D.	0.080	0.10	mg/l	98		90-110		
Batch number: 08224049501B	Sample number(s): 5435010								
Total Organic Carbon	N.D.	0.50	1.0	mg/l	104		86-112		
Batch number: 08224400101A	Sample number(s): 5435010								
Chemical Oxygen Demand					103		94-110		
Batch number: 08224807901A	Sample number(s): 5435010								
HEM (oil & grease)	1.7 J	1.4	5.0	mg/l	81		78-114		
Batch number: 08225021201A	Sample number(s): 5435010								
Total Dissolved Solids	N.D.	9.7	30.0	mg/l	80		80-120		
Batch number: 08225102101A	Sample number(s): 5435010								
Total Cyanide (water)	N.D.	0.0050	0.010	mg/l	103		90-110		
Batch number: 08226106101A	Sample number(s): 5435010								
Nitrate Nitrogen	N.D.	0.040	0.10	mg/l	104		90-110		
Batch number: 082315716003	Sample number(s): 5435010								
Selenium	N.D.	0.0107	0.0200	mg/l	97		85-115		

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Atlantic Richfield(OnSite-NY) Group Number: 1104214
Reported: 08/25/08 at 10:00 AM

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 082325714001	Sample number(s): 5435010								
Mercury	N.D.	0.00005	0.00020	mg/l	100		85-115		
		6							

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 08220023502A	Sample number(s): 5435010 UNSPK: P434258 BKG: P434158								
Biochemical Oxygen Demand	108	111	77-142	2	8	231.	247.	7	14
Batch number: 08220105101A	Sample number(s): 5435010 UNSPK: P434867 BKG: P434867								
Nitrite Nitrogen	113*		90-110			N.D.	N.D.	0 (1)	20
Batch number: 08221020601B	Sample number(s): 5435010 BKG: P434867								
Total Suspended Solids						40.4	40.4	0 (1)	13
Batch number: 08221118101A	Sample number(s): 5435010 UNSPK: P435240 BKG: P435240								
Total Nitrite/Nitrate Nitrogen	109		90-110			0.058 J	0.046 J	23* (1)	3
Batch number: 082215716003	Sample number(s): 5435010-5435011 UNSPK: P432574 BKG: P432574								
Calcium	83 (2)		78-125			230.	227.	1	20
Magnesium	119 (2)		77-122			43.4	43.3	0	20
Arsenic	100		80-128			N.D.	N.D.	0 (1)	20
Barium	99		76-125			0.311	0.318	2	20
Chromium	89		81-120			N.D.	N.D.	0 (1)	20
Lead	98		77-125			0.0202	0.0203	1 (1)	20
Silver	94		70-130			N.D.	N.D.	0 (1)	20
Batch number: 08222108101A	Sample number(s): 5435010 UNSPK: 5435010 BKG: 5435010								
Kjeldahl Nitrogen	100		90-110			N.D.	N.D.	0 (1)	20
Batch number: 08222109101A	Sample number(s): 5435010 UNSPK: P434867 BKG: P434867								
Total Phosphorus as P (water)	100		90-110			0.14	0.14	2 (1)	3
Batch number: 08224049501B	Sample number(s): 5435010 UNSPK: P434924 BKG: P434924								
Total Organic Carbon	103		61-135			9.1	8.9	2	4
Batch number: 08224400101A	Sample number(s): 5435010 UNSPK: P434867 BKG: P434867								
Chemical Oxygen Demand	98	99	90-110	2	4	28.6 J	26.1 J	9* (1)	5
Batch number: 08224807901A	Sample number(s): 5435010 UNSPK: P434867 BKG: P434867								
HEM (oil & grease)	70*	84	79-114	21	29	2.6 J	3.1 J	18 (1)	18
Batch number: 08225021201A	Sample number(s): 5435010 UNSPK: P436200 BKG: P436200								
Total Dissolved Solids	104	96	54-143	3	12	43,000.	44,500.	3	9
Batch number: 08225102101A	Sample number(s): 5435010 UNSPK: P435784 BKG: P435784								
Total Cyanide (water)	97		90-110			N.D.	N.D.	0 (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Atlantic Richfield(OnSite-NY) Group Number: 1104214
Reported: 08/25/08 at 10:00 AM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 08226106101A	Sample number(s): 5435010 UNSPK: P434867 BKG: P434867								
Nitrate Nitrogen	112*		90-110			0.91	0.90	1	3
Batch number: 082315716003	Sample number(s): 5435010 UNSPK: P442953 BKG: P442953								
Selenium	87		70-130			N.D.	N.D.	0 (1)	20
Batch number: 082325714001	Sample number(s): 5435010 UNSPK: P439430 BKG: P439430								
Mercury	107		80-120			N.D.	N.D.	0 (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Project Name: Wellsville OU-1
LLI Group #: 1104214

General Comments:

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Chronicle section of the Analysis Report for the method references

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

00219: Nitrite Nitrogen

Batch #: 08220105101A (Sample number(s): 5435010 UNSPK: P434867 BKG: P434867)

The recovery for the above analytes in the MS was outside the acceptance window.

00220: Nitrate Nitrogen

Batch #: 08226106101A (Sample number(s): 5435010 UNSPK: P434867 BKG: P434867)

The recovery for the above analytes in the MS was outside the acceptance window.

07882: Total Nitrite/Nitrate Nitrogen

Batch #: 08221118101A (Sample number(s): 5435010 UNSPK: P435240 BKG: P435240)

The duplicate RPD for the above analyte exceeded the acceptance window.

04001: Chemical Oxygen Demand

Batch #: 08224400101A (Sample number(s): 5435010 UNSPK: P434867 BKG: P434867)

The duplicate RPD for the above analyte exceeded the acceptance window.

08079: HEM (oil & grease)

Batch #: 08224807901A (Sample number(s): 5435010 UNSPK: P434867 BKG: P434867)

The recovery for the above analyte in the MS and/or MSD was outside the acceptance window.

Acct# 12381
Grp# 1104214

Sample# 5435010-11

Chain of Custody Record

bp

Project Name: Wellsville OU1 - Storm Water
BP BU/AR Region/Enfos Segment: BP>Americas>East Coast>OBC Non-Mining
State or Lead Regulatory Agency: USEPA
Requested Due Date (mm/dd/yy): Standard

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name: Lancaster Laboratories	BP/AR Facility No.: Wellsville OU-1	Consultant/Contractor: On-Site Technical Services
Address: 2425 New Holland Pike	BP/AR Facility Address: 2530 South Brooklyn Ave. Wellsville, NY 14	Address: 72 Railroad Ave.
Lancaster, PA 17601	Site Lat/Long:	Wellsville, NY 14895
Lab PM: Jessica Heun	California Global ID No.: NA	Consultant/Contractor Project No.: Wellsville OU-2
Tele/Fax: (717) 656-2300	Enfos Project No.: 001BK-0011	Consultant/Contractor PM:Mr. Jon Brandes
BP/AR PM Contact: Joe Sontchi	Provision or RCOP (circle one) Provision	Tele/Fax: (585) 593-1824/ 7471
Address: 28100 Torch Parkway, MC 2S	Phase/WBS: Provision-O&M	Report Type & QC Level: III
Warrensville,IL 60555-3938	Sub Phase/Task: Analytical	E-mail EDD To: jonb@on-sitehs.com
Tele/Fax: (630) 836-6955	Cost Element: Subcontracted Costs	Invoice to: BP/GEM SAP#: S1-001BL

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	H3PO4	Requested Analysis: TKN, COD, Phos.	NO2 / NO3	O & G EPA 1664	Total Metals EPA 200.7	Cyanides	Diss. Magnesium	TDS, TSS, BOD	TOC	NO2 (353.1)	NO3 (353.2)	Sample Point Lat/Long and Comments
1	OF-0808	1000	8/6/08		X			12	4	3	1	2	1	1	1	1	2	1	1	1	2	1	1	1	pH= 8.11
2																									
3																									Updated Total Metals
4																									list per Jon Brandes.
5	Temp blank		8/6/08		X			1	1																Revised COC attached.
6																									[initials] 8/18/08
7																									
8																									
9																									
10																									

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Scott Watson / Kevin Dye	Scott Watson / On-Site Technical Services	8/6/08	1200			
Sampler's Company: On-Site Technical Services	[signature]					
Shipment Date: 8-6-8						
Shipment Method: Fed Ex						
Shipment Tracking No: 865752425180				Mary [signature]	8/7/08	0950

Special Instructions: Total metals = Al, As, Cr, Cu, Fe, Pb, Ni, Zn, Diss. Metals = l, Use project specific quantification limits.

SP-114 = Raw Influent, SP217 = Between Carbon filters, SP219 = Treated Effluent

Custody Seals In Place Yes ✓ No Temp Blank Yes ✓ No Cooler Temperature on Receipt 5.1 °F/C Trip Blank Yes ___ No ✓

Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor

Acct# 12381
Grp# 1104214

bp

Sample# 5435010-11

Chain of Custody Record

Project Name: Wellsville OU1 - Storm Water
BP BU/AR Region/Enfos Segment: BP>Americas>East Coast>OBC Non-Mining
State or Lead Regulatory Agency: USEPA
Requested Due Date (mm/dd/yy): Standard

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name: Lancaster Laboratories	BP/AR Facility No.: Wellsville OU-1	Consultant/Contractor: On-Site Technical Services
Address: 2425 New Holland Pike	BP/AR Facility Address: 2530 South Brooklyn Ave. Wellsville, NY 14	Address: 72 Railroad Ave.
Lancaster, PA 17601	Site Lat/Long:	Wellsville, NY 14895
Lab PM: Jessica Hem	California Global ID No.: NA	Consultant/Contractor Project No.: Wellsville OU-2
Tele/Fax: (717) 656-2300	Enfos Project No.: 001BK-0011	Consultant/Contractor PM:Mr. Jon Brandes
BP/AR PM Contact: Joe Sontchi	Provision or RCOP (circle one) Provision	Tele/Fax: (585) 593-1824/ 7471
Address: 28100 Torch Parkway, MC 28	Phase/WBS: Provision-O&M	Report Type & QC Level: III
Warrenville, IL 60555-3938	Sub Phase/Task: Analytical	E-mail EDD To: jonb@on-sitehs.com
Tele/Fax: (630) 836-6955	Cost Element: Subcontracted Costs	Invoice to: BP/GEM SAP#: S1-001BL

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: HCl	Preservative: NaOH	Preservative: H3PO4	Requested Analysis: TKN, COD, Phos.	NO2 / NO3	O & G EPA 1664	Total Metals EPA 200.7	Cyanides	Diss. Magnesium	TDS, TSS, BOD	TOC	NO2 (353.1)	NO3 (353.2)	Sample Point Lat/Long and Comments
1	OF-0808	1000	8/6/08		X			12	4	3	1	2	1	1	1	1	2	1	1	1	2	1	1	1	pH= 8.11
2																									
3																									
4																									
5	Temp blank		8/6/08		X			1	1																
6																									
7																									
8																									
9																									
10																									

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Scott Watson / Kevin Dye						
Sampler's Company: On-Site Technical Services	Scott Watson / On-Site Technical Services	8/6/08	1200			
Shipment Date: 8-6-8	Scott R. W					
Shipment Method: Fed Ex						
Shipment Tracking No: 865752425180				Gary Hutch	8/7/08	0950

Special Instructions: [redacted]

[redacted] TOTAL METALS: As, Ba, Ca, Cr, Pb, Mg, Hg, Se, Ag

SRW 8-18-8

Custody Seals In Place Yes ✓ No   Temp Blank Yes ✓ No   Cooler Temperature on Receipt 5.1 °F/C   Trip Blank Yes   No ✓

Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: BP- Wellsville 001

Date of Receipt: 8/7/08

Time of Receipt: 0850

Source Code: SO-1

Unpacker Emp. No.: 2316

Shipping Container Sealed: (YES) NO

Custody Seal Present: (YES) NO

Custody Seal Intact: (YES) NO NA

Package: (Chilled) Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	425983	5.1°C	TB	WI	Y	B	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Mary Herbst	8/7/08	1108	Unpacking / to storage
Kristin Zeigh	8-7-08	1125	Place in Storage or (Entry)
			Entry
			Entry

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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