# REMEDIAL CONSTRUCTION

# FINAL REMEDIATION REPORT ADDENDUM OPERATIONS AND MAINTENANCE

## WORK ASSIGNMENT D004440-4

**CHEM CORE**
**CITY OF BUFFALO**
**CONTRACT D005570**

**SITE NO. 9-15-176**
**ERIE COUNTY, NY**

Prepared for:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York

DIVISION OF ENVIRONMENTAL REMEDIATION

**URS Corporation**
77 Goodell Street
Buffalo, New York 14203

G41371

**November 2007**

**STATE SUPERFUND WORK ASSIGNMENT**

**D004440-4**

# FINAL REMEDIATION REPORT ADDENDUM
# OPERATIONS AND MAINTENANCE

**CHEM CORE**
**DEC SITE NO. 9-15-176**
**CITY OF BUFFALO, ERIE (C), NEW YORK**

**SUBMITTED BY:**

**URS CORPORATION**
**77 GOODELL STREET**
**BUFFALO, NEW YORK 14203**

**NOVEMBER 2007**

**CERTIFICATION**
**OF CONSTRUCTION QUALITY ASSURANCE**
**AT**
**CHEM CORE SITE**
**REMEDIAL ACTION CONSTRUCTION**
**CITY OF BUFFALO, NEW YORK**

URS Corporation's (URS's) personnel and its subcontractors have observed the remedial action operation and maintenance at the Chem Core Site according to generally accepted practices. Based on field observations and inspections made by on-site personnel, field and laboratory test data, and data provided by the Contractor and its subcontractors, URS concludes that the remedial action operation and maintenance at the site has been performed in substantial compliance with the January 2003 Record of Decision and the New York State Department of Environmental Conservation (NYSDEC) approved Contract Documents and as stated in this report.

SEAL

_____
Signature

November 2007

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## TABLES



## APPENDICES

## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AGC | Annual–Average-Based Guideline Concentration |
| Ca | Actual Annual Impact |
| HES | Horizon Environmental Services, Inc. |
| O&M | Operation and Maintenance |
| PID | Photoionization Detector |
| PLC | Programmable Logic Controller |
| SVOC | Semi-Volatile Organic Compound |
| URS | URS Corporation |
| VOC | Volatile Organic Compound |

## 1.0 INTRODUCTION

This Engineering Report for Operations and Maintenance (O&M) has been prepared for the remedial action at the Chem Core site as required under Task 3 of Work Assignment DO 04440-4. The report is an addendum to the Final Remediation Report for construction that was issued in August 2007. This O&M report includes a summary and evaluation of O&M activities performed by the remediation contractor, Horizon Environmental Services, Inc. (HES). HES performed the work under Contract No. D005570 for the period from February 21, 2007 to August 23, 2007. The six month O&M period includes a one month testing phase under Part A of the Contract and a five month operating phase under part B of the Contract.

The remediation system operated by HES is a pump-and-treat system. Drawings showing system components are included in Appendix A. The major components include the following:

1. Extraction Wells: Two 6-inch diameter extraction wells installed in bedrock to a depth of approximately 50 feet.

2. Groundwater Extraction Pumps: One Grundfos pump with a nominal pumping rate of 5 gallons per minute (gpm) installed in each extraction well.

3. Storage Tank: One 1,600-gallon plastic tank installed to collect groundwater pumped from the extraction wells.

4. Filters: Four bag type filters installed to remove suspended solids from the groundwater.

5. Chemical Addition: A chemical metering pump and in-line static mixer installed to introduce a deposit control agent (Redux 380) into the groundwater. The deposit control agent reduces scale formation in the system.

6. Air Stripper: A shallow tray air stripper installed to remove volatile organic compounds (VOCs) from the groundwater.

7. Feed Pumps: Two centrifugal pumps with a nominal pumping rate of 10 gpm installed to pump groundwater from the storage tank to the air stripper. The system is designed so that only one pump is operating at any given time.

8. Gravity Discharge: An inverted u-tube, vacuum relief valve, and associated piping installed after the air stripper to permit the gravity discharge of groundwater to the Buffalo Sewer Authority (BSA).

9. Catalytic Oxidizer: A catalytic oxidizer installed to remove VOCs from the air stripper air discharge stream, and thereby, control air emissions from the treatment system.

10. Monitoring Wells: Three 6-inch diameter monitoring wells installed in bedrock to a depth of approximately 50 feet.

## 2.0 MONITORING AND PERFORMANCE REQUIREMENTS

Monitoring and performance requirements for the remediation system O&M are specified in Section 01600 (Starting, Testing, and Operating the Groundwater Extraction/Treatment System) of the Contract Documents. Section 01600 is included as Appendix B. The requirements of Section 01600 are summarized below.

### 2.1 System Monitoring Requirements

HES was responsible for monitoring system parameters (e.g. total flow, pressure, temperature, etc.) during the O&M period. These requirements are summarized in Table 2-1. HES completed all system monitoring required by the Contract Documents during the six month O&M period (one month testing and five month operating phases). Monitoring results are discussed in Section 3.0.

### 2.2 Sampling and Analytical Requirements

HES was responsible for both groundwater and air sampling during the O&M period. Sampling and analytical requirements are summarized in Table 2-2. HES completed all sampling and analysis required by the Contract Documents during the six month O&M period except that the catalytic oxidizer influent and effluent samples were not collected in July 2007.

### 2.3 System Performance Requirements

Performance requirements established for the remediation system by the Contract Documents are presented in Table 2-3. System performance results are discussed in Section 4.0 of this report.

### 2.4 Reporting

HES submitted daily reports during the testing phase and weekly reports during the operating phase as required by the Contract Documents. These reports are included in Appendix C. URS prepared monthly summary reports based on the reports submitted by HES. URS reports are included in Appendix D.

**TABLE 2-1**

**TREATMENT SYSTEM MONITORING**

| Monitoring Parameter | Monitoring Point Location | Monitoring Frequency Testing Phase | Monitoring Frequency Operating Phase |
|---|---|---|---|
| Water Level | Monitoring Wells MW-20, MW-21 and MW-22 | Daily (Mon. - Fri.) | Weekly |
| Total Flow | Extraction Wells GEW-1 and GEW-2 | Daily (Mon. - Fri.) | Weekly |
| Pressure | Before and after bag filters | Daily (Mon. - Fri.) | Weekly |
| Run Time | PLC | Daily (Mon. - Fri.) | Weekly |
| Vapor Flow Rate | Oxidizer | Daily (Mon. - Fri.) | Weekly |
| Temperature | Oxidizer | Daily (Mon. - Fri.) | Weekly |
| Vapor Concentration | Influent to oxidizer measured by PID | Daily (Mon. - Fri.) | Weekly |

**TABLE 2-2**

**TREATMENT SYSTEM SAMPLING**

| Location | Analytes | Frequency Testing Phase | Frequency Operating Phase | Media Sampled |
|---|---|---|---|---|
| GEW-1 | VOCs | Weekly | Monthly | Water |
| GEW-2 | VOCs | Weekly | Monthly | Water |
| Air Stripper Influent | VOCs | Weekly | Monthly | Water |
| Water Discharge | VOCs, SVOCs, Metals | Weekly | Monthly | Water |
| Oxidizer Influent | VOCs | Weekly | Monthly | Air |
| Oxidizer Effluent | VOCs | Weekly | Monthly | Air |
| MW-20 | VOCs | Monthly | Monthly | Water |
| MW-21 | VOCs | Monthly | Monthly | Water |
| MW-22 | VOCs | Monthly | Monthly | Water |

VOCs – Volatile Organic Compounds
SVOCs – Semi-Volatile Organic Compounds

**TABLE 2-3**

**SYSTEM PERFORMANCE REQUIREMENTS**

| System Parameter | Performance Requirement |
|---|---|
| Run Time | At a minimum, runtime shall be 80% during the testing phase, and 90% during the operating phase. |
| Pumping Rate | At a minimum, the total pumping rate from both extraction wells shall be 120 gallons per hour during the time when the system is running. |
| Groundwater Discharge | Discharged groundwater shall meet the criteria established by the Buffalo Sewer Authority presented in Table 2-4. |
| Air Discharge | Achieve removal efficiency requirements of the Contract Documents presented in Table 2-5. |
| Air Discharge | Meet the substantive requirements of the Guidelines for the Control of Toxic Ambient Air Contaminants (DAR-1). |

**TABLE 2-4**

**DISCHARGE LIMITATIONS**

| Parameter | Discharge Limitations Daily Max |
|---|---|
| Total Cadmium | 0.125 lbs. |
| Total Chromium | 0.626 lbs. |
| Total Copper | 2.002 lbs. |
| Total Lead | 0.626 lbs. |
| Total Mercury | 0.0001 lbs. |
| Total Nickel | 1.721 lbs. |
| Total Silver | 0.275 lbs. |
| Total Zinc | 3.127 lbs. |
| Total Extractable Hydrocarbons | 100 mg/l |
| Total Suspended Solids | 250 mg/l |
| Total Phosphates | 15.34 mg/l |
| pH | 5.0 – 12.0 S.U. |

**TABLE 2-5**

**AIR DISCHARGE TREATMENT REQUIREMENTS**

| Parameter | Required Removal Efficiency (%) |
|---|---|
| 1,1-Dichloroethane | 80 |
| 1,2-Dichloroethane | 60 |
| Chloroform | 60 |
| Tetrachloroethene | 88 |
| Trichloroethene | 94 |
| Vinyl Chloride | 98 |

## 3.0 MONITORING RESULTS

Results for the seven parameters monitored during the O&M period (Table 2-1) are summarized below.

### 3.1 Water Levels

Water levels were measured to evaluate the effectiveness of extraction wells in containing contamination on site. The effectiveness was evaluated by comparing water levels in MW-20 and MW-21. The wells are considered effective when the water level in MW-20 is greater than MW-21, i.e. when water levels indicate there is an inward gradient toward the site. Data shows that an inward gradient existed at the site for about the first four months of operation, i.e. until approximately the end of June, but that the gradient was outward after that. The change in the gradient correlates to a decrease in the groundwater extraction rate which began about a month earlier than the change in the gradient. This decrease in the extraction rate could be attributable to biofouling in the extraction wells. Observations of particulate matter in water pumped from the wells supports this conclusion. It may be necessary to add chlorine bleach to the wells on a frequent basis or to clean the wells by mechanical methods on a periodic basis to increase the extraction rate and maintain an inward gradient toward the site.

### 3.2 Flow from Extraction Wells

A total of 521,489 gallons were pumped from the site by the extraction wells during the six month O&M period. Approximately 42% of the total was pumped by GEW-1 and approximately 58% by GEW-2. The average flow rate from the system over the six month period was approximately 2,900 gallons per day (gpd) or 2 gallons per minute (gpm).

### 3.3 Pressure at Bag Filters

The pressure before and after the bag filters was measured in pounds per square inch (psi). The pressures generally ranged from 5 to 10 psi. Bag filters were replaced when the difference between pressure before and after the bag filters reached about 2 to 3 psi.

### 3.4 Run Time

Timers were used to measure run times for the extraction well pumps and the air stripper blower. The run times were recorded and displayed on the control panel. The run times were a criterion used to evaluate system performance and are discussed further in Section 4.0.

### 3.5 Vapor Flow Rate

The nominal vapor discharge flow rate from the air stripper is 300 cubic feet per minute (cfm). The discharge rate was measured thirty-five times during the six month O&M period with a portable anemometer. The measured rates ranged from 246 cfm to 364 cfm and the average was 296 cfm.

### 3.6 Catalytic Oxidizer Temperature

The catalytic oxidizer temperature was monitored continuously by the oxidizer PLC, and was reported on a regular basis by HES. The oxidizer operating temperature was maintained at about 800°F when operating properly. However, the system shutdown on several occasions because this temperature could not be maintained as discussed in Section 4.0.

### 3.7 Vapor Concentrations

VOC concentrations in the air discharge from the air stripper (which is the influent stream to the catalytic oxidizer) were measured on a regular basis using a PID. During the first 3 weeks of operation, readings ranged from 10 to 110 ppm VOCs. VOC concentrations dropped off considerably after that time. For the remaining 5+ months of operation, VOC concentrations ranged from 11 to 23 ppm, and the average VOC concentration was approximately 20 ppm.

## 4.0 PERFORMANCE EVALUATION

An evaluation of the performance of the remedial system is presented below, and is based on reports provided by HES (Appendix C). System performance criteria discussed below are presented in Table 2-3.

During the first five months of the six month O&M period, many alarms and system shutdowns were attributable to low temperatures in the catalytic oxidizer. Eventually, the oxidizer became inoperable, and the entire system was shut down on August 1, 2007. The system ran for only a few days during the last month of the Contract and therefore, little data is available from this last month of O&M. However, the Contract was considered complete on the scheduled date of August 21, 2007 since the Department provided the oxidizer (the reason for the shutdown) to the Contractor. Consequently, much of the performance evaluation presented below focuses only on the first five months of the O&M period.

### 4.1 Run Time

Run times, (i.e. the percentage of time that the system was in operation) for the six month O&M period are summarized below.

| Time Period | Performance Goal | Actual Run Time |
|---|---|---|
| First Month | 80% | 80% |
| Second Month | 90% | 87% |
| Third Month | 90% | 92% |
| Fourth Month | 90% | 95% |
| Fifth Month | 90% | 92% |
| Sixth Month | 90% | Not calculated – system shutdown |

As shown, the performance goal of 80% was met during the testing phase (first month of O&M). As discussed above, the system was shutdown for most of the last month of operation so run time was not calculated. However, although the run time for the second month of the O&M period was slightly below the 90% performance goal, the average run time for months 2 through 5 was 92%.

### 4.2 Pumping Rate

Pumping rates for the six month O&M period are summarized below.

| Time Period | Performance Goal | Actual Run Pumping Rate |
|---|---|---|
| First Month | 120 gallons per hour (gph) | 203 gph |
| Second Month | 120 gph | 188 gph |
| Third Month | 120 gph | 125 gph |
| Fourth Month | 120 gph | 118 gph |
| Fifth Month | 120 gph | 128 gph |
| Sixth Month | 120 gph | Not calculated – system shutdown |

As shown, the pumping rate was above the performance goal of 120 gallons per hour (gph) except for the fourth month of O&M when it was slightly below the goal. The average pumping rate for months 1 through 5 was 152 gallons per hour (gph).

## 4.3 Groundwater Discharge

Table 4-1 summarizes data collected from the discharge of the treatment system during the six month O&M period. As shown, all parameters were in compliance with BSA permit requirements throughout the period. It should be noted that the BSA suspended requirements for analyzing suspended solids, phosphate, and pH after the first month of operation. Samples were analyzed only for metals and organics thereafter.

## 4.4 Air Discharge – Removal Efficiencies

Removal efficiencies for the catalytic oxidizer were calculated and are presented in Table 4-2. As shown, the actual efficiencies for all compounds exceeded the specified efficiencies through June 2007. The concentrations of VOCs in the June oxidizer influent sample were unusually low. The Contractor indicated that the damper valve on the catalytic oxidizer unit was not properly opened at the time of sampling so the sample is not representative of the actual influent conditions. Consequently, specified removal efficiencies were not achieved for some compounds based on June sampling results.

The concentrations of VOCs in the August 2007 influent were also unusually low. During August, the Contractor decreased the air flow rate to the air stripper and thereby decreased the flow rate to the oxidizer in an effort to keep the oxidizer running. This could have decreased the air stripper efficiency and led to lower influent concentrations to the catalytic oxidizer. Because of the abnormally low influent concentrations to the catalytic oxidizer, the removal efficiencies for some of the compounds did not meet the requirements of the Contract Documents based on August sampling results. In addition, it should be noted that influent and effluent

samples were collected three weeks apart in August rendering calculation of removal efficiencies uncertain for this month.

## 4.5 Air Discharge – Air Guidelines

Data from the discharge of the catalytic oxidizer was evaluated with respect to Department air guidelines, namely Policy DAR-1: Guidelines for the Control of Toxic Ambient Air Contaminants. A summary of the evaluation is presented in Table 4-3. In this evaluation, the maximum concentrations of compounds of concern detected in the oxidizer effluent during the six month O&M period were used to calculate an estimated annual impact (Ca) in accordance with the DAR-1 standard point source method. The calculated annual impact value (Ca) was then compared to the Department guideline, i.e. Annual-average-based Guideline Concentration (AGC), for each compound of concern. As shown, the calculated annual impact (Ca) was well below the AGC for each compound of concern indicating that the emissions for the contaminants of concern were in compliance with Department guidelines.

## 4.6 Contaminant Removal

A total of 521,489 gallons of groundwater were extracted during the six month O&M period. The average concentration of VOCs in the extracted groundwater was 13,365 µg/l. Based on these values, it is estimated that approximately 58 pounds of VOCs were removed by groundwater extraction during the reporting period.

**TABLE 4-1(page 1 of 3)**
**DISCHARGE COMPLIANCE SUMMARY**

| Parameter | Disch. Criteria | Conc.(mg/l) 3/7/2007 | Discharge(lbs/d) 3/7/2007 | Conc.(mg/l) 3/13/2007 | Discharge(lbs/d) 3/13/2007 | Conc.(mg/l) 3/15/2007 | Discharge(lbs/d) 3/15/2007 | Conc.(mg/l) 3/20/2007 | Discharge(lbs/d) 3/20/2007 |
|---|---|---|---|---|---|---|---|---|---|
| Cadmium | 0.125 lbs/d | ND | 0 | ND | 0 | NA | NV | ND | 0 |
| Chromium | 0.626 lbs/d | ND | 0 | ND | 0 | NA | NV | ND | 0 |
| Copper | 2.002 lbs/d | ND | 0 | ND | 0 | NA | NV | ND | 0 |
| Lead | 0.626 lbs/d | ND | 0 | ND | 0 | NA | NV | ND | 0 |
| Mercury | 0.0001 lbs/d | ND | 0 | ND | 0 | NA | NV | ND | 0 |
| Nickel | 1.721 lbs/d | ND | 0 | ND | 0 | NA | NV | ND | 0 |
| Silver | 0.275 lbs/d | ND | 0 | ND | 0 | NA | NV | ND | 0 |
| Zinc | 3.127 lbs/d | 0.037 | 0.00120 | 0.017 | 0.00055 | NA | NV | ND | 0 |
| Total Extractable Hydrocarbons | 100 mg/l | 0.0203 | 0.00066 | 0.018 | 0.00058 | 0.0644 | 0.00209 | 0.019 | 0.00062 |
| Total Suspended Solids | 250 mg/l | ND | 0 | 2.0 | 0.06494 | NA | NV | 2 | 0.06494 |
| Total Phosphates | 15.34 mg/l | 0.48 | 0.01558 | 0.385 | 0.01250 | NA | NV | 0.385 | 0.01250 |
| pH(see note 1) | 5.0-12.0 SU | 7.3 | Not Applicable | 8 | Not Applicable | NA | Not Applicable | 8 | Not Applicable |

NA=Not Analyzed
ND=Not Detected
NV=Value Not Calculated for Parameters That Were Not Analyzed
Notes:

1. Concentration units for pH are standard units(SU).
2. Shading indicates that the parameter exceeded the discharge limit.
3. Discharge(lbs/d) = average discharge rate x 8.34 lb/gal x detected concentration in mg/l x 10E-06
4. Average discharge rates are as follows:
   March 2007(2/21/07-3/23/07) = 3,893 gal/day
   April 2007(3/23/07-4/25/07) = 3,951 gal/day
   May 2007(4/25/07-5/23/07) = 2,726 gal/day
   June 2007(5/23/07-6/27/07) = 2,685 gal/day
   July 2007(6/27/07-7/25/07) = 2,820 gal/day
   August 2007(7/25/07-8/23/07) = 2,347 gal/day

**TABLE 4-1(page 2 of 3)**
**DISCHARGE COMPLIANCE SUMMARY**

| Parameter | Disch. Criteria | Conc.(mg/l) 3/22/2007 | Discharge(lbs/d) 3/22/2007 | Conc.(mg/l) 4/4/2007 | Discharge(lbs/d) 4/4/2007 | Conc.(mg/l) 5/2/2007 | Discharge(lbs/d) 5/2/2007 | Conc.(mg/l) 6/6/2007 | Discharge(lbs/d) 6/6/2007 |
|---|---|---|---|---|---|---|---|---|---|
| Cadmium | 0.125 lbs/d | ND | 0 | ND | 0 | ND | 0 | ND | 0 |
| Chromium | 0.626 lbs/d | ND | 0 | ND | 0 | ND | 0 | ND | 0 |
| Copper | 2.002 lbs/d | ND | 0 | ND | 0 | ND | 0 | ND | 0 |
| Lead | 0.626 lbs/d | ND | 0 | 0.06 | 0.00198 | ND | 0 | ND | 0 |
| Mercury | 0.0001 lbs/d | ND | 0 | ND | 0 | ND | 0 | ND | 0 |
| Nickel | 1.721 lbs/d | ND | 0 | ND | 0 | ND | 0 | ND | 0 |
| Silver | 0.275 lbs/d | ND | 0 | ND | 0 | ND | 0 | ND | 0 |
| Zinc | 3.127 lbs/d | ND | 0 | ND | 0 | ND | 0 | ND | 0 |
| Total Extractable Hydrocarbons | 100 mg/l | 0.015 | 0.00049 | 0.0174 | 0.00057 | ND | 0 | 0.4905 | 0.01098 |
| Total Suspended Solids | 250 mg/l | NA | NV | NA | NV | NA | NV | NA | NV |
| Total Phosphates | 15.34 mg/l | NA | NV | NA | NV | NA | NV | NA | NV |
| pH(see note 1) | 5.0-12.0 SU | NA | Not Applicable | NA | Not Applicable | NA | Not Applicable | NA | Not Applicable |

NA=Not Analyzed
ND=Not Detected
NV=Value Not Calculated for Parameters That Were Not Analyzed
Notes:

1. Concentration units for pH are standard units(SU).
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   August 2007(7/25/07-8/23/07) = 2,347 gal/day

**TABLE 4-1(page 3 of 3)**
**DISCHARGE COMPLIANCE SUMMARY**

| Parameter | Disch. Criteria | Conc.(mg/l) 7/6/2007 | Discharge(lbs/d) 7/6/2007 | Conc.(mg/l) 8/1/2007 | Discharge(lbs/d) 8/1/2007 |
|---|---|---|---|---|---|
| Cadmium | 0.125 lbs/d | ND | 0 | ND | 0 |
| Chromium | 0.626 lbs/d | ND | 0 | ND | 0 |
| Copper | 2.002 lbs/d | ND | 0 | ND | 0 |
| Lead | 0.626 lbs/d | ND | 0 | ND | 0 |
| Mercury | 0.0001 lbs/d | ND | 0 | ND | 0 |
| Nickel | 1.721 lbs/d | ND | 0 | ND | 0 |
| Silver | 0.275 lbs/d | ND | 0 | ND | 0 |
| Zinc | 3.127 lbs/d | ND | 0 | ND | 0 |
| Total Extractable Hydrocarbons | 100 mg/l | ND | 0 | ND | 0 |
| Total Suspended Solids | 250 mg/l | NA | NV | NA | NV |
| Total Phosphates | 15.34 mg/l | NA | NV | NA | NV |
| pH(see note 1) | 5.0-12.0 SU | NA | Not Applicable | NA | Not Applicable |

NA=Not Analyzed
ND=Not Detected
NV=Value Not Calculated for Parameters That Were Not Analyzed
Notes:

1. Concentration units for pH are standard units(SU).
2. Shading indicates that the parameter exceeded the discharge limit.
3. Discharge(lbs/d) = average discharge rate x 8.34 lb/gal x detected concentration in mg/l x 10E-06
4. Average discharge rates are as follows:
   March 2007(2/21/07-3/23/07) = 3,893 gal/day
   April 2007(3/23/07-4/25/07) = 3,951 gal/day
   May 2007(4/25/07-5/23/07) = 2,726 gal/day
   June 2007(5/23/07-6/27/07) = 2,685 gal/day
   July 2007(6/27/07-7/25/07) = 2,820 gal/day
   August 2007(7/25/07-8/23/07) = 2,347 gal/day

**TABLE 4-2**
**OXIDIZER REMOVAL EFFICIENCIES**

| Parameter | Required Removal Efficiency(%) | Influent Concentration (microg/m3) 3/10/07 | Effluent Concentration (microg/m3) 3/10/07 | Removal Efficiency(%) 3/10/07 | Influent Concentration (microg/m3) 3/15/07 | Effluent Concentration (microg/m3) 3/15/07 | Removal Efficiency(%) 3/15/07 |
|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | 80 | 9.2 | 0 | 100 | 2400 | 0 | 100 |
| 1,2-Dichloroethane | 60 | 0 | 0 | 100 | 62 | 0 | 100 |
| Chloroform | 60 | 0 | 0 | 100 | 92 | 0 | 100 |
| Tetrachloroethene | 88 | 19 | 0 | 100 | 5100 | 9.2 | 100 |
| Trichloroethene | 94 | 19 | 0 | 100 | 5300 | 0 | 100 |
| Vinyl Chloride | 98 | 61 | 0 | 100 | 7300 | 0 | 100 |

| Parameter | Required Removal Efficiency(%) | Influent Concentration (microg/m3) 3/21/07 | Effluent Concentration (microg/m3) 3/21/07 | Removal Efficiency(%) 3/21/07 | Influent Concentration (microg/m3) 3/22/07 | Effluent Concentration (microg/m3) 3/22/07 | Removal Efficiency(%) 3/22/07 |
|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | 80 | 7500 | 0 | 100 | 1200 | 0 | 100 |
| 1,2-Dichloroethane | 60 | 140 | 0 | 100 | 34 | 0 | 100 |
| Chloroform | 60 | 150 | 0 | 100 | 48 | 0 | 100 |
| Tetrachloroethene | 88 | 11000 | 9 | 100 | 2200 | 8.7 | 100 |
| Trichloroethene | 94 | 10000 | 0 | 100 | 2300 | 0 | 100 |
| Vinyl Chloride | 98 | 16000 | 0 | 100 | 2900 | 0 | 100 |

| Parameter | Required Removal Efficiency(%) | Influent Concentration (microg/m3) 4/4/07 | Effluent Concentration (microg/m3) 4/4/07 | Removal Efficiency(%) 4/4/07 | Influent Concentration (microg/m3) 5/2/07 | Effluent Concentration (microg/m3) 5/2/07 | Removal Efficiency(%) 5/2/07 |
|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | 80 | 3800 | 36 | 99 | 1700 | 0 | 100 |
| 1,2-Dichloroethane | 60 | 74 | 0 | 100 | 47 | 0 | 100 |
| Chloroform | 60 | 98 | 0 | 100 | 56 | 0 | 100 |
| Tetrachloroethene | 88 | 3500 | 110 | 97 | 2700 | 0 | 100 |
| Trichloroethene | 94 | 5400 | 92 | 98 | 2600 | 0 | 100 |
| Vinyl Chloride | 98 | 8500 | 52 | 99 | 3800 | 0 | 100 |

| Parameter | Required Removal Efficiency(%) | Influent Concentration (microg/m3) 6/15/07 | Effluent Concentration (microg/m3) 6/15/07 | Removal Efficiency(%) 6/15/07 | Influent Concentration (microg/m3) 8/1/07 | Effluent Concentration (microg/m3) 8/23/07 | Removal Efficiency(%) Aug-07 |
|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | 80 | 0 | 0 | 100 | 51 | 10 | 80 |
| 1,2-Dichloroethane | 60 | 0 | 0 | 100 | 0 | 0 | 100 |
| Chloroform | 60 | 0 | 0 | 100 | 0 | 0 | 100 |
| Tetrachloroethene | 88 | 14 | 14 | 0 | 38 | 11 | 71 |
| Trichloroethene | 94 | 0 | 14 | 0 | 47 | 11 | 77 |
| Vinyl Chloride | 98 | 7.3 | 0 | 100 | 160 | 12 | 93 |

Notes:
1. A concentration of 0 indicates that the parameter was not detected.
2. Removal efficiencies rounded to the nearest percent.

**TABLE 4-3**

**AIR EMISSIONS EVALUATION**

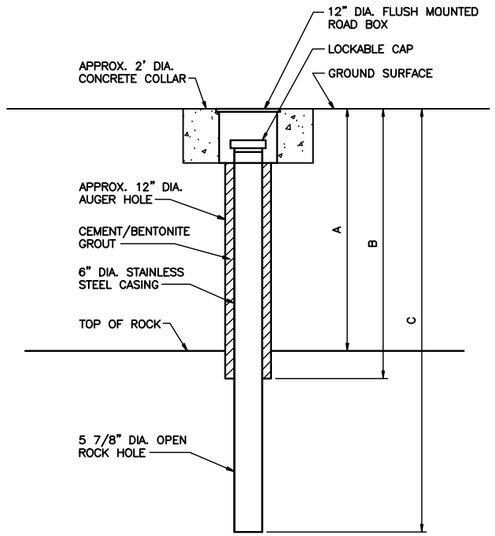
| Parameter | Maximum Concentration (µg/m³) | Calculated Actual Annual Impact – Ca (µg/m³) | AGC (µg/m³) | Ca/AGC |
|---|---|---|---|---|
| Tetrachloroethene | 110 | 0.012 | 1 | 1% |
| Trichloroethene | 92 | 0.010 | 0.5 | 2% |
| Vinyl Chloride | 52 | 0.006 | 0.11 | 5% |

AGC Annual – average - based Guideline Concentration

# APPENDIX A

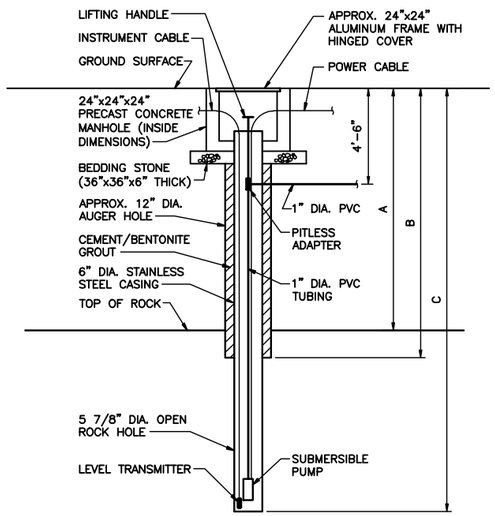
# RECORD DRAWINGS

PROJECT NO. SHEET NO.




TYPICAL MONITORING WELL

NOT TO SCALE




TYPICAL EXTRACTION WELL

NOT TO SCALE

EXTRACTION WELL AND MONITORING WELL CONSTRUCTION SCHEDULE

| WELL NUMBER | GRID LOCATION | | RIM ELEV. (FT. AMSL) | RISER ELEV. (FT. AMSL) | (A) DEPTH TO BEDROCK (BGS) | (B) BOTTOM OF CASING (BGS) | (C) TOTAL DEPTH (BGS) |
|---|---|---|---|---|---|---|---|
| | NORTHING | EASTING | | | | | |
| GEW-1 | 1,064,776.99 | 1,063,752.88 | 597.47 | 595.95 | 17.0 FT. | 20.0 FT. | 50 FT. |
| GEW-2 | 1,064,722.70 | 1,063,747.05 | 597.40 | 596.26 | 18.5 FT. | 21.5 FT. | 50 FT. |
| MW-20 | 1,064,756.34 | 1,063,705.58 | 595.52 | 595.12 | 19.0 FT. | 22.5 FT. | 50 FT. |
| MW-21 | 1,064,752.63 | 1,063,740.73 | 597.39 | 596.88 | 18.0 FT. | 21.0 FT. | 50 FT. |
| MW-22 | 1,064,743.30 | 1,063,842.25 | 597.43 | 596.84 | 13.3 FT. | 16.5 FT. | 50 FT. |

RECORD DRAWING
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| NO. | DATE | BY | PROJECT ARCH./ ENGR APPROVAL | DEPT. MGR/SUPR. APPROVAL |
|---|---|---|---|---|

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URS Corporation

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

625 BROADWAY
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12233

CHEM CORE SITE
CITY OF BUFFALO
ERIE COUNTY
SITE NO. 9-15-176

REMEDIAL CONSTRUCTION

WELL CONSTRUCTION DETAILS

SHEET TITLE

| OWNER'S PROJECT NUMBER | PROJECT NUMBER |
|---|---|
| DATE: JULY 2007 | SCALE: NONE |
| DRAWN BY: RAL | C-4 |
| CHECKED BY: DMc | |
| ARCH/ENGR.: CWP | DWG. NUMBER |

N:\11173519.00000\CAD\RECORD DRAWINGS\C-4.DWG 1=1 7/11/07-3 RAL

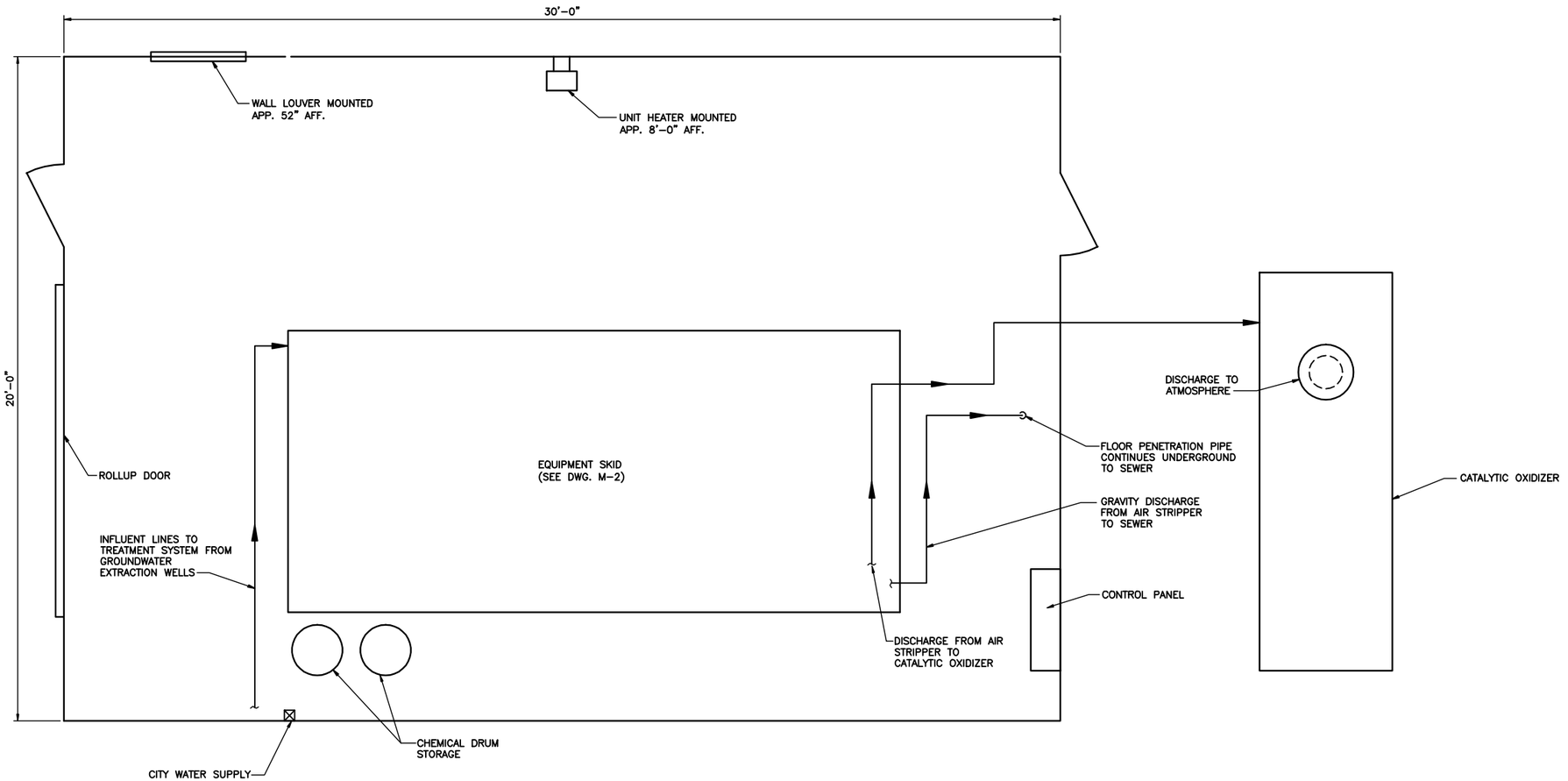
ELECTRONIC FILE LOCATION

FILE PLOT DATE STAMP

PROJECT NO.

SHEET NO.

N




0' 2' 4'

SCALE: 1/2"= 1'-0"

RECORD DRAWING
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| NO. | DATE | BY | PROJECT ARCH./ENGR APPROVAL | DEPT. MGR/SUPR. APPROVAL |
|---|---|---|---|---|

REVISIONS

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ALBANY, NEW YORK
12233

CHEM CORE SITE
CITY OF BUFFALO
ERIE COUNTY
SITE NO. 9-15-176

REMEDIAL CONSTRUCTION

MECHANICAL PLAN

SHEET TITLE

| OWNER'S PROJECT NUMBER | PROJECT NUMBER |
|---|---|
| DATE: JULY 2007 | SCALE: 1/2" = 1'-0" |
| DRAWN BY: RAL | M-1 |
| CHECKED BY: DMc | |
| ARCH/ENGR.: CWP | DWG. NUMBER |

N:\11173519.00000\CAD\RECORD DRAWINGS\M-1.DWG 1=1 7/11/07-3 RAL

ELECTRONIC FILE LOCATION

FILE PLOT DATE STAMP

PROJECT NO. SHEET NO.

SCALE BAR, EACH BLOCK IS 12' LONG

WELL PUMP PACKAGE
WITH LEVEL XMTRS

OTHER SHIP LOOSE ITEMS

PRESSURE WASHER
EXTRA TRAYS
FILTER ELEMENTS

DISCONNECT FOR GP AREA (LOOSE)

DISCONNECT AND COMPRESSOR
MUST BE INSTALLED (BY OTHERS)
IN NON-HAZARDOUS AREA

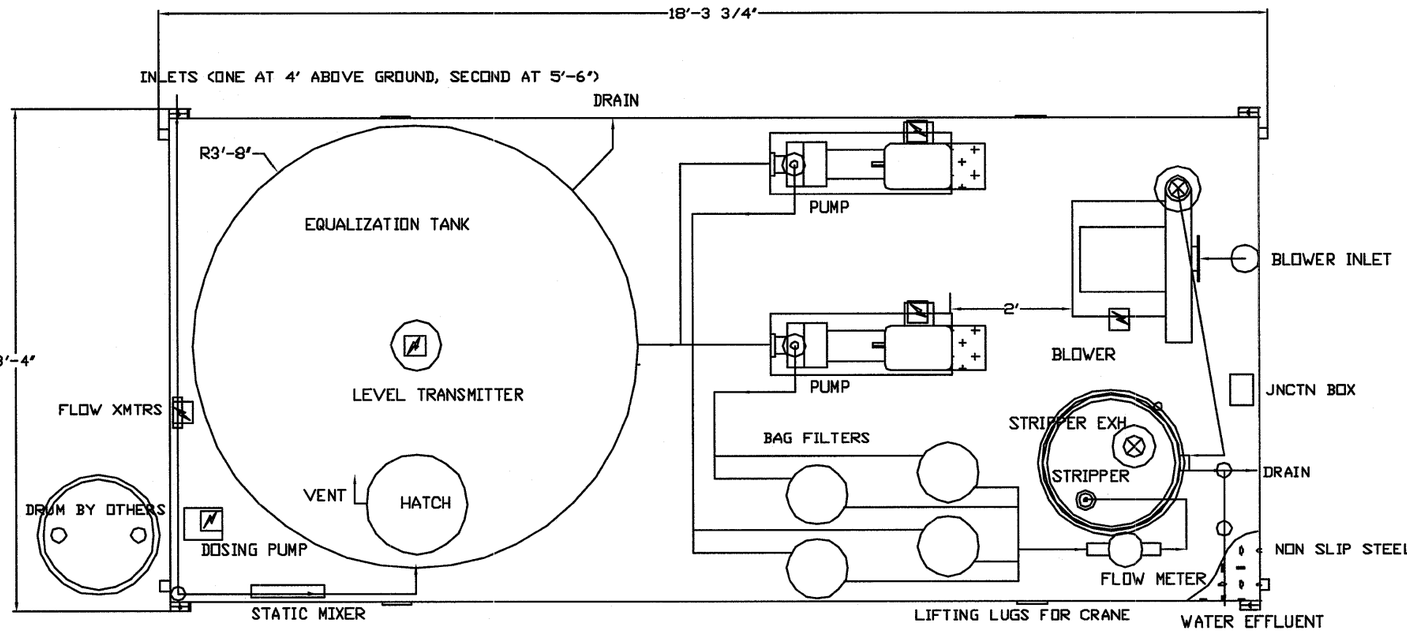
AIR COMPRESSOR IN GP AREA (LOOSE)
PARTICULATE/COALESCING FILTER ASSY (LOOSE)

PURGE PANEL (LOOSE)

| PACKING LIST | | |
|---|---|---|
| DESCRIPTION | DIM (LXWXH) | WEIGHT |
| CONTROL PANEL (LOOSE) | 4'X4'X3' | 300LBS |
| DISCONNECT (LOOSE) | 2'X2'X1' | 50LBS |
| EQUIPMENT SKID | 18'X8'X8' | 8000LBS |
| WELL PUMPS(2) | 3'X3'X2' | 100 LBS |
| COMPRESSOR & EXTRAS | 4'X4'X6' | 200LBS |

***SPECIAL PROJECT NOTES****

- BUILDING BY OTHERS; PURGE PANEL AND DISCONNECT SHIPPED LOOSE FOR INSTALLATION OUTSIDE; PROVIDE JUNCTION BOX FOR CONTROL WIRING CONNECTIONS.




RECORD DRAWING
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FLOW DIRECTION
FLOW DOWN INTO THE PAGE
FLOW OUT OF THE PAGE
ELECTRICAL CONNECTION
SPACE ALLOCATED FOR SERVICING

THIS AREA REPRESENTS
SERVICE SPACE REQUIRED

| NO. | DATE | BY | DESCRIPTION |
|---|---|---|---|
| C | 6-NOV-2006 | PK | AS BUILT |
| B | 28-AUG-2006 | PK | FOR PRODUCTION |
| A | 5-MAY-2006 | PK | FOR APPROVAL |

DWG. NO: 50103-02
TITLE: System Layout
CUSTOMER: OSC - CHEM CORE
MID ATLANTIC ENVIRONMENTAL

N:\11173519.00000\CAD\RECORD DRAWINGS\M-2.DWG 1=1 7/3/07-2 RAL

| NO. | DATE | BY | PROJECT ARCH/ENGR APPROVAL | DEPT. MGR/SUPR APPROVAL |
|---|---|---|---|---|

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DEPARTMENT OF
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CONSERVATION

625 BROADWAY
ALBANY, NEW YORK
12233

CHEM CORE SITE
CITY OF BUFFALO
ERIE COUNTY
SITE NO. 9-15-176

REMEDIAL
CONSTRUCTION

SYSTEM LAYOUT

SHEET TITLE

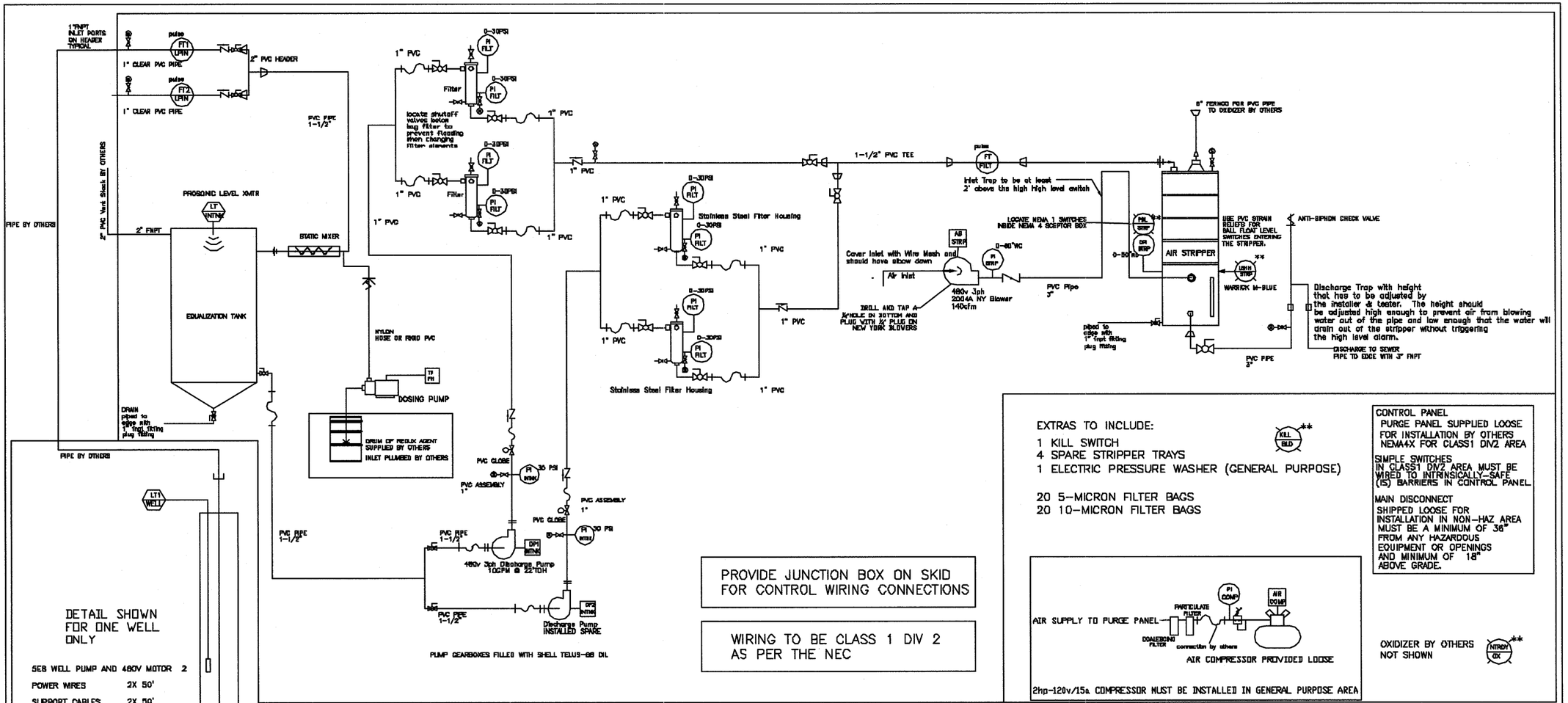
| OWNER'S PROJECT NUMBER | PROJECT NUMBER |
|---|---|
| DATE: JULY 2007 | SCALE: NONE |
| DRAWN BY: RAL | M-2 |
| CHECKED BY: DMc | |
| ARCH/ENGR.: CWP | DWG. NUMBER |

ELECTRONIC FILE LOCATION

FILE PLOT DATE STAMP

PROJECT NO. SHEET NO.

RECORD DRAWING
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY THE CONTRACTOR, AND OBSERVATIONS BY URS PERSONNEL.




PIPING DETAILS FOR FLOW METERS:
WATER FLOW METERS: PROVIDE 10 DIAMETERS OF STRAIGHT PIPE BEFORE FLOW METERS AND 5 DIAMETERS OF STRAIGHT PIPE AFTER FLOW METERS. ENSURE THAT THROTTLING VALVES ARE NOT DIRECTLY IN LINE WITH FLOW METERS.
AIR FLOW METERS: PROVIDE 8 PIPE DIAMATERS OF STRAIGHT PIPE IN FRONT OF FLOW METERS AND 3 PIPE DIAMETETERS AFTER FLOW METERS WHEN EVER POSSIBLE. AVOID TEES AND ELBOWS BEFORE AND AFTER FLOW METERS.

PIPING DETAILS
MATERIALS OF VALVES AND FITTINGS TO BE THE SAME AS THE DESCRIPTION AT THE LINE.
IF THERE IS A TRANSITION FROM PVC TO STEEL THEN THE VALVE SHOULD BE A BRASS VALVE.
THERE ARE NO SPECIAL PIPING REQUIREMENTS OTHER THAN WHAT IS EXPLAINED ON THE DIAGRAM
WHEN PVC HOSE IS SPECIFIED ALWAYS USE VACUUM HOSE. USE GREEN HOSE FOR PRESSURES LESS THAN 60PSI, USE TANK TRUCK HOSE FOR PRESSURES BETWEEN 60PSI AND 150 PSI.

NOTE: PVC PIPE MAY BE SUBSTITUTED WITH EQUAL SIZED PVC HOSE WHERE A FLEXIBLE CONNECTION IS PREFERRED

NOTE: DETAILS ON VARIOUS EQUIPMENT CAN FOUND IN THE COMPONENT MODULES OF YOUR MANUAL OR SUBMITTAL PACKAGE. THE LAST SECTION OF THE DESCRIPTION INDICATES THE RELEVANT MODULE IN THE MANUAL. FOR EXAMPLE TSH-LRP IS THE HIGH TEMPERATURE SWITCH IN THE LIQUID RING PUMP MODULE OF THE MANUAL



| LEVEL | DATE: | BY | REVISION: |
|---|---|---|---|
| C | 6-NOV-2006 | PK | AS BUILT |
| B | 28-AUG-2006 | PK | FOR PRODUCTION |
| A | 4-MAY-2006 | PK | FOR APPROVAL |

| NO. | DATE | BY | PROJECT ARCH/ ENGR APPROVAL | DEPT. MGR/SUPR. APPROVAL |
|---|---|---|---|---|

REVISIONS

DWG. NO: 50103-01
TITLE: Process & Instrumentation Drawing
CUSTOMER: OSC - CHEM CORE

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12233

CHEM CORE SITE
CITY OF BUFFALO
ERIE COUNTY
SITE NO. 9-15-176

REMEDIAL CONSTRUCTION

PROCESS AND INSTRUMENTATION DIAGRAM (P & ID)

SHEET TITLE

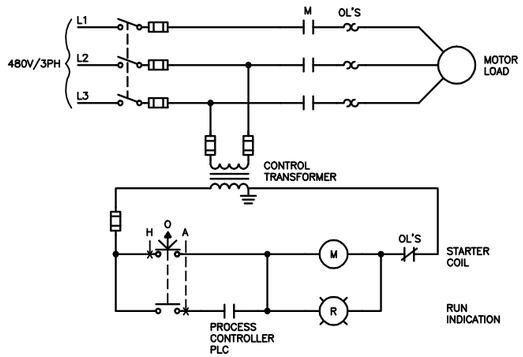
| OWNER'S PROJECT NUMBER | PROJECT NUMBER |
|---|---|
| | |
| DATE: JULY 2007 | SCALE: NONE |
| DRAWN BY: RAL | I-1 |
| CHECKED BY: DMc | |
| ARCH/ENGR.: CWP | DWG. NUMBER |

N:\11173519.00000\CAD\RECORD DRAWINGS\I-1-ALDWG 1=1 7/3/07-2 RAL

ELECTRONIC FILE LOCATION

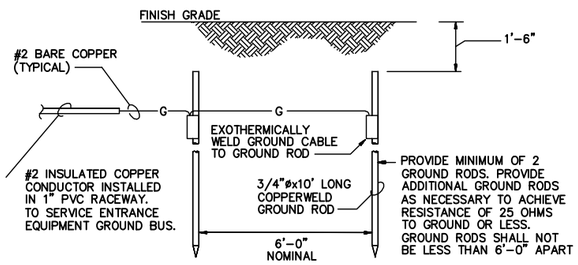
FILE PLOT DATE STAMP

PROJECT NO. SHEET NO.



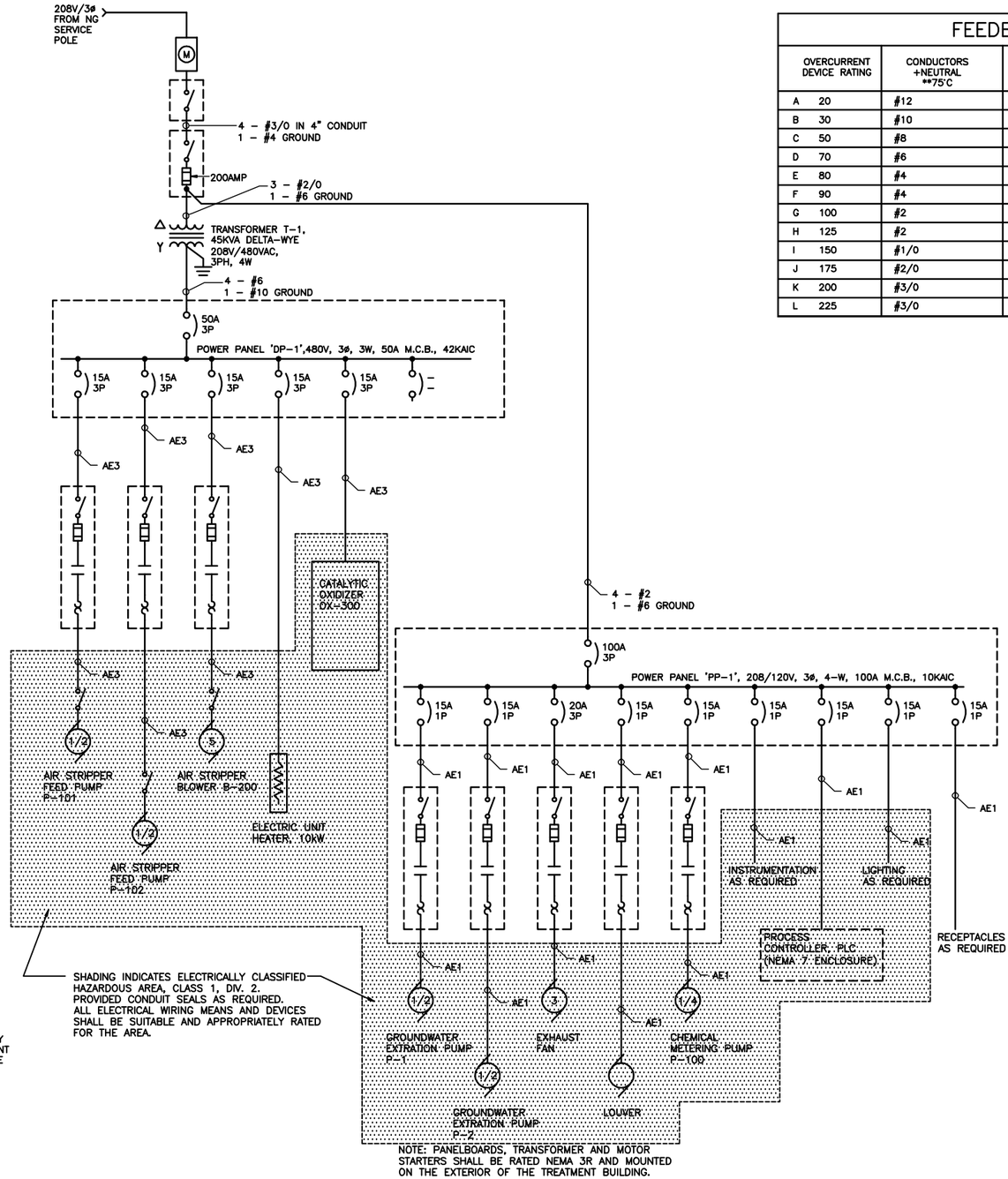

## TYPICAL MOTOR CONTROL SCHEMATIC

NO SCALE




## MADE GROUND DETAIL

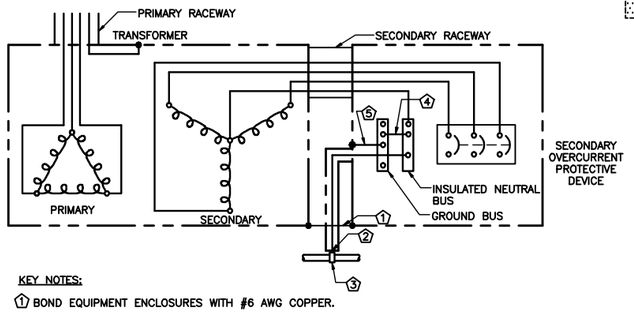
NOT TO SCALE




NOTE: PANELBOARDS, TRANSFORMER AND MOTOR STARTERS SHALL BE RATED NEMA 3R AND MOUNTED ON THE EXTERIOR OF THE TREATMENT BUILDING.

## SINGLE LINE DIAGRAM

NO SCALE




KEY NOTES:

1. BOND EQUIPMENT ENCLOSURES WITH #6 AWG COPPER.
2. GROUNDING ELECTRODE CONDUCTOR, USE #2 AWG COPPER. INSTALL IN RIGID CONDUIT
3. GROUND CONNECTION TO MADE GROUND.
4. GROUND-NEUTRAL BONDING CONDUCTOR. USE #6 AWG COPPER.
5. BOND GROUND BUS TO EQUIPMENT ENCLOSURE WITH #6 AWG COPPER.

## TYPICAL GROUNDING DETAIL

NO SCALE

## FEEDER SCHEDULE

| | OVERCURRENT DEVICE RATING | CONDUCTORS +NEUTRAL **75°C | EGC (E) | SGC (THWN) (S) | CONDUIT 1 PHASE (1) | CONDUIT 3 PHASE (3) |
|---|---|---|---|---|---|---|
| A | 20 | #12 | #12 | – | 1/2" | 1/2" |
| B | 30 | #10 | #10 | – | 1/2" | 1/2" |
| C | 50 | #8 | #10 | – | 3/4" | 1" |
| D | 70 | #6 | #8 | – | 1" | 1" |
| E | 80 | #4 | #8 | – | 1 1/2 | 1 1/2" |
| F | 90 | #4 | #8 | – | 1 1/2" | 1 1/2" |
| G | 100 | #2 | #8 | #8 | 1 1/2" | 1 1/2 |
| H | 125 | #2 | #6 | #8 | 1 1/2" | 1 1/2 |
| I | 150 | #1/0 | #6 | #6 | 1 1/2" | 2" |
| J | 175 | #2/0 | #6 | #4 | 2" | 2" |
| K | 200 | #3/0 | #6 | #4 | 2" | 2 1/2" |
| L | 225 | #3/0 | #4 | #4 | 2" | 2 1/2" |

## LEGEND

- M — ELECTRIC METER
- TRANSFORMER
- GROUND
- CIRCUIT BREAKER
- NODE
- R — PILOT LIGHT (R- RED)
- SWITCH/DISCONNECT
- FUSE
- CONTACT, N.O.
- CONTACT, N.C.
- M — COIL, MOTOR STARTER
- THERMAL MOTOR OVERLOAD
- 1/2 — MOTOR LOAD, # INDICATES H.P.

| NO. | DATE | BY | PROJECT ARCH/ ENGR APPROVAL | DEPT. MGR/SUPR APPROVAL |
|---|---|---|---|---|

REVISIONS

| | | | | |
|---|---|---|---|---|
| 1 | 7/02/2007 | DML | – | CPW |

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ALBANY, NEW YORK
12233

CHEM CORE SITE
CITY OF BUFFALO
ERIE COUNTY
SITE NO. 9-15-176

REMEDIAL CONSTRUCTION

ELECTRICAL SINGLE LINE DIAGRAM AND DETAILS

SHEET TITLE

| OWNER'S PROJECT NUMBER | PROJECT NUMBER |
|---|---|
| DATE: JULY 2007 | SCALE: NONE |
| DRAWN BY: RAL | E-1 |
| CHECKED BY: DMc | |
| ARCH/ENGR. CWP | DWG. NUMBER |

N:\11173519.00000\CAD\100% DESIGN\E-1 RECORD DWG.dwg 1=1 7/5/05-2 RAL

ELECTRONIC FILE LOCATION

FILE PLOT DATE STAMP

# APPENDIX B

# SECTION 01600

SECTION 01600

STARTING, TESTING, AND OPERATING
THE GROUNDWATER EXTRACTION/TREATMENT SYSTEM

## PART 1 - GENERAL

### 1.01 DESCRIPTION

A. The Contractor shall provide all labor, equipment, materials, and services required for starting, testing and operating the groundwater extraction and treatment system. The work shall include but not be limited to the following: equipment commissioning, maintenance, repair, troubleshooting, residuals disposal, routine system checks, sampling, data acquisition, and reporting.

### 1.02 DEFINITIONS

A. Start-up Phase: Start-up includes operation, and testing of equipment, instrumentation, and controls to demonstrate that the system is installed properly, and is performing satisfactorily in accordance with design parameters, performance goals, and manufacture's recommendations. During start-up, clean water and air shall be run through the system and it shall be checked for leaks.

B. Testing Phase: During this phase, contaminated groundwater will be pumped and treated by the system. The phase will include frequent sampling, monitoring, and reporting. The major purpose of the phase is to ensure that groundwater extraction and contaminant removal rates meet design requirements, and that air and water discharges are consistently in compliance with applicable standards.

C. Operating Phase: Once the Contractor has demonstrated consistent system performance in the testing phase, he shall begin the operating phase. Less sampling, monitoring, and reporting is required for this phase. The Contractor will perform routine system checks and maintenance, and troubleshoot the system as required.

D. Run Time: Run time is the time that the system is operational and is functioning properly. Run time includes all operating time except down time.

E. Down Time: Down time includes time when the system is shutdown by an alarm condition or for maintenance, repair or troubleshooting.

### 1.03 SUBMITTALS

A. Start-Up and Testing Plan: The Start-Up and Testing Plan shall include, at a minimum, the following:

1. Start-up and testing schedule

2. A detailed summary of activities for each day of start-up and testing.
3. List and description of all commissioning checks, tests, and inspections prior to and during

start-up and testing.

4. Criteria for pass/fail of all checks, tests or inspection

B. Reports

1. The Contractor shall submit O&M reports on a daily basis during the start-up and testing phases, and on a weekly basis during the operating phase.

2. Reports shall include, but not be limited to the following:

   a. monitoring data
   b. sampling results
   c. maintenance performed
   d. operations problems and corrective actions
   e. air stripper performance (VOC removal) calculations
   f. system run time for the reporting period and cumulative run time over the entire period of operations.

3. Monitoring data, sampling results, and calculations shall be submitted in a Microsoft Excel or equivalent format.

4. Daily reports shall be submitted no later than 2:00 PM the following day. Weekly reports shall be submitted no later than 2:00 PM on Tuesday of the following week.

5. Reports shall be e-mailed to the Engineer in Word/Microsoft Excel and PDF formats.

C. Log Book

1. The Contractor shall maintain detailed documentation of all activities in a hard-covered, bound log book.

2. The log book shall be kept on site at all times.

3. A copy of log book entries for the week shall be submitted to the Engineer each week.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 DURATION OF PHASES

A. The estimated duration of the start up phase is two (2) days. However, the Contractor shall continue start-up until all the goals of his Start-Up Plan are achieved and the Engineer approves moving on to the testing phase.

B. The testing phase shall last thirty (30) calendar days. However, the Contractor shall continue the testing phase until performance criteria are achieved and the Engineer approves moving on to the operating phase.

C. The operating phase shall last one hundred fifty (150) calendar days.

3.02 STAFFING

A. The Contractor shall operate the groundwater extraction and treatment system for 24 hours a day and 7 days per week during the testing and operating phases.

B. During the testing phase, the Contractor shall visit the site daily (Monday through Friday), at a minimum.

C. During the operating phase, the Contractor shall visit the site weekly, at a minimum.

D. During site visits, the Contractor shall inspect the system, make adjustments and repairs as necessary, and collect samples and monitoring data.

E. The Contractor shall respond to any unscheduled shut down within 24 hours of the alarm.

3.03 SAMPLING

A. Sampling shall be in accordance with Table 01600-1 and Section 01400.

3.04 MONITORING

A. Monitoring shall be in accordance with Table 01600-2.

3.05 PERFORMANCE REQUIREMENTS

A. Run Time: At a minimum, run time shall be 80% during testing phase, and 90% during operating phase. Run time shall be measured in hours.

B. Pumping Rate: At a minimum, the total pumping rate from both extraction wells shall be 120 gallons per hour during time when the system is running.

C. Groundwater Discharge: Discharged groundwater shall meet the concentration and mass based criteria established by the Buffalo Sewer Authority(BSA) as presented in Table 01600-3. The Contractor shall obtain a discharge permit from the BSA.

D. Air Discharge: The Contractor will not be required to obtain an air permit; however the Contractor will be required to meet the substantive requirements of the NYSDEC's Guidelines for the Control of Toxic Ambient Air Contaminants (DAR-1). In addition, the Contractor shall meet the discharge treatment requirements presented in Table 01600-4.

3.06 PAYMENT REDUCTIONS

A. The Contractor shall be paid on a unit price (per month) basis for system operations. For payment purposes, a month shall be defined as a 30 calendar day period and shall not depend on the actual calendar months.

B. Failure to meet the performance requirements specified in paragraph 3.05 of this section will result in a prorated reduction in the Contractor's monthly payment.

C. Payment reduction shall be in accordance with the following:

1. Downtime: Maximum downtime shall be 6 days (144 hours) per month (20%) during the testing phase and 3 days (72 hours) per month (10%) during the operating phase. The Contractor shall not be paid for any day or partial day that the system is down beyond the maximum allowed. During the operation phase, the unit (per month) payment shall be reduced by 3.33% for each day or partial day that the system is down beyond the maximum allowed. During the testing phase, the payment reductions shall be based on prices provided by the Contractor in his bid breakdown.

2. Groundwater Discharge: The Contractor shall not be paid for any day that the system discharge is not in compliance with the discharge criteria (Table 01600-3). During the operating phase, the unit (per month) payment shall be reduced by 3.33% for each day that the system is not in compliance. During the testing phase, payment reductions shall be based on prices provided by the Contractor in his bid breakdown.

3. Other prorated reductions shall be based on prices in the bid breakdown operating records and all other applicable information and data. These reductions shall be determined by the Engineer.

4. If samples show noncompliance with discharge requirements, the Contractor may resample as necessary to show compliance with air and water discharge requirements and minimize payment reductions. However, all additional sampling (resampling) not ordered by the Engineer or the Department shall be at the Contractors expense.

3.07 MAINTENANCE

A. The Contractor shall respond to any unscheduled shutdown within 24 hours of alarm and notify the NYSDEC and the Engineer..

B. The Contractor shall inspect the system, make adjustments, and perform routine maintenance during scheduled site visits.

C. Maintenance shall be performed in accordance with manufacturer's recommendations and the Contractor's Operation and Maintenance Manual (Section 01301).

D. All malfunctioning equipment shall be promptly repaired or replaced.

**TABLE 01600-1**

**TREATMENT SYSTEM SAMPLING**

| Location | Sample Port | Analytes | Frequency Testing Phase | Frequency Operating Phase |
|---|---|---|---|---|
| GEW-1 | SP-1 | VOCs | Weekly | Monthly |
| GEW-2 | SP-2 | VOCs | Weekly | Monthly |
| Air Stripper Influent | SP-3 | VOCs | Weekly | Monthly |
| Discharge | SP-4 | VOCs, SVOCs, Metals | Weekly | Monthly |
| Oxidizer Influent | SP-5 | VOCs | Weekly | Monthly |
| Oxidizer Effluent | SP-6 | VOCs | Weekly | Monthly |
| MW-02 | NA | VOCs | Monthly | Monthly |
| MW-20 | NA | VOCs | Monthly | Monthly |
| MW-21 | NA | VOCs | Monthly | Monthly |
| MW-22 | NA | VOCs | Monthly | Monthly |

## TABLE 01600-2

## TREATMENT SYSTEM MONITORING

| Monitoring Parameter | Monitoring Point Location | Monitoring Frequency Testing Phase | Monitoring Frequency Operating Phase |
|---|---|---|---|
| Water Level | Monitoring Wells MW-02, MW-20, MW-21 and MW-22 | Daily (Mon. - Fri.) | Weekly |
| Total Flow | Extraction Wells GEW-1 and GEW-2 | Daily (Mon. - Fri.) | Weekly |
| Pressure | Before and after bag filters | Daily (Mon. - Fri.) | Weekly |
| Run Time | PLC | Daily (Mon. - Fri.) | Weekly |
| Vapor Flow Rate | Oxidizer | Daily (Mon. - Fri.) | Weekly |
| Temperature | Oxidizer | Daily (Mon. - Fri.) | Weekly |
| Vapor Concentration | Influent to oxidizer measured by PID | Daily (Mon. - Fri.) | Weekly |

# TABLE 01600-3

## GROUNDWATER DISCHARGE REQUIREMENTS

| Parameter | Maximum Groundwater Conc. (µg/L) | Concentration Based Discharge Limit (µg/L) | Mass Based Discharge Limit (lb/day) |
|---|---|---|---|
| **Volatiles** | | | |
| 1,1,1-Trichloroethane | 9,000 | 155 | 0.0186 |
| 1,1,2-Trichloroethane | 3 | 155 | 0.0186 |
| 1,1-Dichloroethane | 5,300 | 50 | 0.0060 |
| 1,1-Dichloroethene | 1,000 | 30 | 0.0036 |
| 1,2-Dichlorobenzene | 2 | 50 | 0.0060 |
| 1,2-Dichloroethane | 160 | 30 | 0.0036 |
| 1,2-Dichloropropane | 10 | 50 | 0.0060 |
| 4-Methyl-2-pentanone | 3 | 50 | 0.0060 |
| Acetone | 100 | 100 | 0.0120 |
| Benzene | 52 | 50 | 0.0060 |
| Chloroform | 180 | 40 | 0.0048 |
| cis-1,2-Dichloroethene | 30,000 | 30 | 0.0036 |
| Ethylbenzene | 8 | 150 | 0.0180 |
| Methyl tert-butyl ether | 1 | 20 | 0.0024 |
| Methylene chloride | 350 | 200 | 0.0240 |
| Tetrachloroethene | 21,000 | 40 | 0.0048 |
| Toluene | 2,200 | 70 | 0.0084 |
| trans-1,2-Dichloroethene | 250 | 30 | 0.0036 |
| Trichloroethene | 14,000 | 140 | 0.0168 |
| Vinyl chloride | 10,000 | 100 | 0.0120 |
| Xylene (Total) | 180 | 40 | 0.0048 |
| **Semivolatiles** | | | |
| 2-Methylphenol | 3 | 80 | 0.0096 |
| 4-Methylphenol | 3 | 80 | 0.0096 |
| bis(2-Ethylhexyl)phthalate | 14 | 30 | 0.0036 |
| **Metals** | | | |
| Arsenic | 6.8 | 14 | 0.0017 |
| Barium | 124 | 250 | 0.0300 |
| Chromium | 16.4 | 33 | 0.0040 |
| Copper | 10.9 | 20 | 0.0024 |
| Nickel | 61.3 | 125 | 0.0150 |
| Silver | 3 | 6 | 0.0007 |
| Zinc | 49.1 | 100 | 0.0120 |
| **Miscellaneous Parameters** | | | |
| Cyanide | 3.2 | 6 | 0.0007 |

N:\11173519.00000\EXCEL\Design\[Table 01600-3.xls]Sheet1

# TABLE 01600-4

## AIR DISCHARGE TREATMENT REQUIREMENTS

| Parameter | Max Concentration in Groundwater (µg/L) | Max Mass Discharge to Oxidizer (lb/h) | Required Removal Efficiency (%) |
|---|---|---|---|
| 1,1,1-Trichloroethane | 9,000 | 0.0450 | * |
| 1,1-Dichloroethane | 5,300 | 0.0265 | 80 |
| 1,1-Dichloroethene | 1,000 | 0.0050 | * |
| 1,2-Dichloroethane | 160 | 0.0008 | 60 |
| Acetone | 100 | 0.0005 | * |
| Benzene | 52 | 0.00026 | * |
| Chloroform | 180 | 0.0009 | 60 |
| cis-1,2-Dichloroethene | 30,000 | 0.150 | * |
| Methylene chloride | 350 | 0.00175 | * |
| Tetrachloroethene | 21,000 | 0.105 | 88 |
| Toluene | 2,200 | 0.011 | * |
| trans-1,2-Dichloroethene | 250 | 0.00125 | * |
| Trichloroethene | 14,000 | 0.07 | 94 |
| Vinyl chloride | 10,000 | 0.05 | 98 |
| Xylene (Total) | 180 | 0.0009 | * |

NOTES:

* - Removal of these VOCs not required based on data collected to date. The Contractor will not be required to obtain an air permit;however,the Contractor will be required to meet the substantive requirements of the NYSDEC's Guidelines for the Control of Toxic Ambient Air Contaminants(DAR-1).

N:\11173519.00000\EXCEL\Design\[Table 11300-2.xls]Sheet1



END OF SECTION 01600

# APPENDIX C

# HES O&M REPORTS

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 2/22/07 |
| 2 | Time | 3:00:00 PM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 14 | FM1 | 2/21/07 | |
| 5 | PID Stripper Effluent (ppm) | 110 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 16,461 | FM2 | 2/21/07 | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A | 10 | 10 |
| 8 | 1B | 10 | 10 |
| 9 | 2A | 0 | 0 |
| 10 | 2B | 0 | 0 |

Comments/Maintenance

Flow Meter Alarms resulted from a programming problem. Maple Leaf fixed their programming and the problem resolved.

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 3,069 | |
| 12 | FM Well 2 (gal) | 6,846 | |
| 13 | DP 1 (psi) | 14 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | 30 | |
| 16 | Vapor Flow Rate | | |

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 3 | FM1-LPN (GPM) |
| 18 | 2,454 | FM1-LPN (GAL) |
| 19 | 3 | FM2-LPN (GPM) |
| 20 | 6,601 | FM2-LPN (GAL) |
| 21 | 14 | FM-FILT (GPM) |
| 22 | 13,787 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 21 | WP1-Well (HRS) |
| 39 | WP2-Well (HRS) |
| 126 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 12 | LT-Well (FT) |
| 13 | LT2-Well (FT) |
| 17 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp | 804 |
| 24 | Outlet Temp | 783 |
| 25 | High Temp Limit | 787 |
| 26 | Stack Temp | 508 |
| 27 | Flame Signal | 3.2 |
| 28 | PID Stack | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.62 | 24.5 | 595.12 |
| MW 21 (ft. elev.) | 570.38 | 26.5 | 596.88 |
| MW 22 (ft. elev.) | 570.26 | 26.58 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 2/23/07 |
| 2 | Time | 3:00:00 PM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | | System Oxidizer | 2/23/07 | 4:00 AM |
| 5 | PID Stripper Effluent (ppm) | | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A | | |
| 8 | 1B | | |
| 9 | 2A | | |
| 10 | 2B | | |

Comments/Maintenance

Main blower motor burned up on Cat Ox Unit, System completely down as a result

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | | |
| 12 | FM Well 2 (gal) | | |
| 13 | DP 1 (psi) | | ("0") = not on |
| 14 | DP 2 (psi) | | ("0") = not on |
| 15 | Blower Pressure (inches water) | | |
| 16 | Vapor Flow Rate* | 0 | |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | | Total Hours |
|---|---|---|---|
| 17 | | FM1-LPN (GPM) | WP1-Well (HRS) |
| 18 | | FM1-LPN (GAL) | WP2-Well (HRS) |
| | | | AB-STRP (HRS) |
| 19 | | FM2-LPN (GPM) | |
| 20 | | FM2-LPN (GAL) | Level Transmitter |
| | | | LT-Well (FT) |
| 21 | | FM-FILT (GPM) | LT2-Well (FT) |
| 22 | | FM-FILT (GAL) | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp | |
| 24 | Outlet Temp | |
| 25 | High Temp Limit | |
| 26 | Stack Temp | |
| 27 | Flame Signal | |
| 28 | PID Stack | |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 568.24 | 26.88 | 595.12 |
| MW 21 (ft. elev.) | 570.3 | 26.58 | 596.88 |
| MW 22 (ft. elev.) | 575.92 | 20.92 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 2/26/07 |
| 2 | Time | 3:00:00 PM |

| | | | What Alarm? | Date/Time | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | | | |
| 4 | AS pressure (inches water) | | System Oxidizer | 2/23/07 | 4:00 AM |
| 5 | PID Stripper Effluent (ppm) | | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A | | |
| 8 | 1B | | |
| 9 | 2A | | |
| 10 | 2B | | |

Comments/Maintenance

System Still Down, new motor being installed

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | | |
| 12 | FM Well 2 (gal) | | |
| 13 | DP 1 (psi) | | ("0") = not on |
| 14 | DP 2 (psi) | | ("0") = not on |
| 15 | Blower Pressure (inches water) | | |
| 16 | Vapor Flow Rate* | 0 | |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | | Total Hours | |
|---|---|---|---|---|
| 17 | | FM1-LPN (GPM) | | WP1-Well (HRS) |
| 18 | | FM1-LPN (GAL) | | WP2-Well (HRS) |
| | | | | AB-STRP (HRS) |
| 19 | | FM2-LPN (GPM) | | |
| 20 | | FM2-LPN (GAL) | Level Transmitter | |
| | | | | LT-Well (FT) |
| 21 | | FM-FILT (GPM) | | LT2-Well (FT) |
| 22 | | FM-FILT (GAL) | | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp | |
| 24 | Outlet Temp | |
| 25 | High Temp Limit | |
| 26 | Stack Temp | |
| 27 | Flame Signal | |
| 28 | PID Stack | |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 568.24 | 26.88 | 595.12 |
| MW 21 (ft. elev.) | 570.3 | 26.58 | 596.88 |
| MW 22 (ft. elev.) | 575.92 | 20.92 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 2/27/07 |
| 2 | Time | 3:00:00 PM |

| | | | What Alarm? | Date/Time | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | | | |
| 4 | AS pressure (inches water) | | System Oxidizer | 2/23/07 | 4:00 AM |
| 5 | PID Stripper Effluent (ppm) | | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A | | |
| 8 | 1B | | |
| 9 | 2A | | |
| 10 | 2B | | |

Comments/Maintenance

System Still Down, awaiting new fan, main blower motor burned up on Cat Ox Unit, System completely down as a result

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | | |
| 12 | FM Well 2 (gal) | | |
| 13 | DP 1 (psi) | | ("0") = not on |
| 14 | DP 2 (psi) | | ("0") = not on |
| 15 | Blower Pressure (inches water) | | |
| 16 | Vapor Flow Rate* | 0 | |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | | Total Hours |
|---|---|---|---|
| 17 | | FM1-LPN (GPM) | WP1-Well (HRS) |
| 18 | | FM1-LPN (GAL) | WP2-Well (HRS) |
| | | | AB-STRP (HRS) |
| 19 | | FM2-LPN (GPM) | |
| 20 | | FM2-LPN (GAL) | Level Transmitter |
| | | | LT-Well (FT) |
| 21 | | FM-FILT (GPM) | LT2-Well (FT) |
| 22 | | FM-FILT (GAL) | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp | |
| 24 | Outlet Temp | |
| 25 | High Temp Limit | |
| 26 | Stack Temp | |
| 27 | Flame Signal | |
| 28 | PID Stack | |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 568.24 | 26.88 | 595.12 |
| MW 21 (ft. elev.) | 570.3 | 26.58 | 596.88 |
| MW 22 (ft. elev.) | 575.92 | 20.92 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 2/28/07 |
| 2 | Time | 10:00 a.m. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 16 | | | |
| 5 | PID Stripper Effluent (ppm) | 110 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 23,397 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A | 8 | 8 |
| 8 | 1B | 8 | 8 |
| 9 | 2A | | |
| 10 | 2B | | |

Comments/Maintenance

New Motor installed and unit up and running continuously since 4:00 P.M. on Feb 27th

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 6,003 | |
| 12 | FM Well 2 (gal) | 10,696 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | 32 | |
| 16 | Vapor Flow Rate* | 278 | |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 39 | WP1-Well (HRS) |
| 18 | 5,498 | FM1-LPN (GAL) | 61 | WP2-Well (HRS) |
| | | | 154 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 10,350 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 10 | LT-Well (FT) |
| 21 | 11 | FM-FILT (GPM) | 12 | LT2-Well (FT) |
| 22 | 20,734 | FM-FILT (GAL) | 14 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp | 805 |
| 24 | Outlet Temp | 783 |
| 25 | High Temp Limit | 780 |
| 26 | Stack Temp | 508 |
| 27 | Flame Signal | 3.1 |
| 28 | PID Stack | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 568.24 | 26.88 | 595.12 |
| MW 21 (ft. elev.) | 570.3 | 26.58 | 596.88 |
| MW 22 (ft. elev.) | 575.92 | 20.92 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/1/07 |
| 2 | Time | 8:30 A.M. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 10 | | | |
| 5 | PID Stripper Effluent (ppm) | 110 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 28,115 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7.5 | 7.5 |
| 8 | 1B (psi) | 7.5 | 7.5 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 8,150 | |
| 12 | FM Well 2 (gal) | 13,160 | |
| 13 | DP 1 (psi) | 12.5 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* | 1475 | 290 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 51 | WP1-Well (HRS) |
| 18 | 7,588 | FM1-LPN (GAL) | 76 | WP2-Well (HRS) |
| | | | 176 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 12,859 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 10 | LT-Well (FT) |
| 21 | 11 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 25,388 | FM-FILT (GAL) | 13 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 805 |
| 24 | Outlet Temp ($^0$F) | 783 |
| 25 | Hi-Tmp Limit ($^0$F) | 780 |
| 26 | Stack Temp ($^0$F) | 509 |
| 27 | Flame Signal (volts) | 3.3 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 569.12 | 26 | 595.12 |
| MW 21 (ft. elev.) | 568.71 | 28.17 | 596.88 |
| MW 22 (ft. elev.) | 569.26 | 27.58 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/2/07 |
| 2 | Time | 10:45 a.m. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 3 | | | |
| 5 | PID Stripper Effluent (ppm) | 100 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 32,810 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 8 | 8 |
| 8 | 1B (psi) | 8 | 8 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 10,250 | |
| 12 | FM Well 2 (gal) | 15,850 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1615 | 318 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 64 | WP1-Well (HRS) |
| 18 | 9,742 | FM1-LPN (GAL) | 93 | WP2-Well (HRS) |
| | | | 202 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 15,602 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 7 | LT-Well (FT) |
| 21 | 11 | FM-FILT (GPM) | 13 | LT2-Well (FT) |
| 22 | 30,212 | FM-FILT (GAL) | 16 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 806 |
| 24 | Outlet Temp ($^0$F) | 783 |
| 25 | Hi-Tmp Limit ($^0$F) | 781 |
| 26 | Stack Temp ($^0$F) | 512 |
| 27 | Flame Signal (volts) | 270 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.32 | 24.8 | 595.12 |
| MW 21 (ft. elev.) | 569.71 | 27.17 | 596.88 |
| MW 22 (ft. elev.) | 570.34 | 26.5 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/5/07 |
| 2 | Time | 8:00:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 4 | | | |
| 5 | PID Stripper Effluent (ppm) | 0 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 51,150 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 8 | 8 |
| 10 | 2B (psi) | 8 | 8 |

Comments/Maintenance

FM FILT readout on the display is showing "XXXX" instead of the number of gallons that have passed through it. I suspect this is the same problem we had with flow meter readouts for the monitoring wells until the program was corrected. I believe that with FM FILT, the display could handle the numbers until they got too large. Maple Leaf has been notified and is checking the programming. The gallons reported today are from Maple Leaf looking at the system remotely and not from the display.

| | | | | |
|---|---|---|---|---|
| 11 | FM Well 1 (gal) | 19,350 | | |
| 12 | FM Well 2 (gal) | 25,810 | | |
| 13 | DP 1 (psi) | 0 | ("0") = not on | |
| 14 | DP 2 (psi) | 10 | ("0") = not on | |
| 15 | Blower Pressure (inches water) | | 30 | |
| 16 | Vapor Flow Rate* | 1600 | 315 | |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | | | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 116 | WP1-Well (HRS) |
| 18 | 18,841 | FM1-LPN (GAL) | 150 | WP2-Well (HRS) |
| | | | 271 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 25,562 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 9 | LT1-Well (FT) |
| 21 | 12 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 48,700 | FM-FILT (GAL) | 18 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 801 |
| 24 | Outlet Temp ($^0$F) | 783 |
| 25 | Hi-Tmp Limit ($^0$F) | 780 |
| 26 | Stack Temp ($^0$F) | 505 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.29 | 24.83 | 595.12 |
| MW 21 (ft. elev.) | 569.55 | 27.33 | 596.88 |
| MW 22 (ft. elev.) | 570.34 | 26.5 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/6/07 |
| 2 | Time | 6:00 PM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | | | | |
| 5 | PID Stripper Effluent (ppm) | weekly | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 56,166 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 7 |
| 8 | 1B (psi) | 7 | 7 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

System went down due to extreme cold. Temperature as down to zero Farenheit. The Oxidizer unit could not maintain operating temperature. The system would not come back up to operating temperature until all outside air (dillution air) was eliminated. When the system went down the inlet properly closed. However, due to inherent moisture inside the air pipe and the cold weather, the inlet valve froze in the closed position. Also took Cat Ox fan and piping assembly apart to add sealant to prevent air leakage. Moisture was condensing and freezing. System was brought back on line at 6:00 PM.

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 22,026 | |
| 12 | FM Well 2 (gal) | 28,725 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1450 | 285 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 132 | WP1-Well (HRS) |
| 18 | 21,512 | FM1-LPN (GAL) | 167 | WP2-Well (HRS) |
| | | | 295 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 28,482 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 14 | LT1-Well (FT) |
| 21 | 11 | FM-FILT (GPM) | 15 | LT2-Well (FT) |
| 22 | readout error | FM-FILT (GAL) | 25 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 809 |
| 24 | Outlet Temp ($^0$F) | 769 |
| 25 | Hi-Tmp Limit ($^0$F) | 768 |
| 26 | Stack Temp ($^0$F) | 481 |
| 27 | Flame Signal (volts) | 3.7 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.32 | 24.8 | 595.12 |
| MW 21 (ft. elev.) | 569.38 | 27.5 | 596.88 |
| MW 22 (ft. elev.) | 569.34 | 27.5 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/7/07 |
| 2 | Time | 8:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 19 | | | |
| 5 | PID Stripper Effluent (ppm) | weekly | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 59,410 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 8 | 8 |
| 8 | 1B (psi) | 8 | 8 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 23,460 | |
| 12 | FM Well 2 (gal) | 30,340 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* | 1850 | 364 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 140 | WP1-Well (HRS) |
| 18 | 22,949 | FM1-LPN (GAL) | 176 | WP2-Well (HRS) |
| | | | 307 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 30,095 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 14 | LT1-Well (FT) |
| 21 | 10 | FM-FILT (GPM) | 12 | LT2-Well (FT) |
| 22 | 8,726 | FM-FILT (GAL) | 14 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 805 |
| 24 | Outlet Temp ($^0$F) | 785 |
| 25 | Hi-Tmp Limit ($^0$F) | 783 |
| 26 | Stack Temp ($^0$F) | 504 |
| 27 | Flame Signal (volts) | 3.3 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 569.95 | 25.17 | 595.12 |
| MW 21 (ft. elev.) | 569.3 | 27.58 | 596.88 |
| MW 22 (ft. elev.) | 569.76 | 27.08 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/8/07 |
| 2 | Time | 11:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 3 | | | |
| 5 | PID Stripper Effluent (ppm) | 105 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 65,140 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 8 | 8 |
| 8 | 1B (psi) | 8 | 8 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

We throttled back the flow rate coming from Discharge Pumps ("DP") 1 and 2 to approximately 5-6 GPM. This was done in an attempt to reduce the amount of water and moisture going out to the Cat Ox unit. The theory is that some water may have been sucked out to the Cat Ox from the top tray of the Air Stripper. By reducing the flow, any vacuuming effect may be reduced or even eliminated.

| | | | | |
|---|---|---|---|---|
| 11 | FM Well 1 (gal) | 26,415 | | |
| 12 | FM Well 2 (gal) | 33,595 | | |
| 13 | DP 1 (psi) | 12 | ("0") = not on | |
| 14 | DP 2 (psi) | 0 | ("0") = not on | |
| 15 | Blower Pressure (inches water) | | 32 | |
| 16 | Vapor Flow Rate* | 1450 | 285 | |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 2 | FM1-LPN (GPM) |
| 18 | 25,905 | FM1-LPN (GAL) |
| 19 | 3 | FM2-LPN (GPM) |
| 20 | 33,327 | FM2-LPN (GAL) |
| 21 | 5 | FM-FILT (GPM) |
| 22 | 62,521 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 158 | WP1-Well (HRS) |
| 195 | WP2-Well (HRS) |
| 334 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 14 | LT1-Well (FT) |
| 13 | LT2-Well (FT) |
| 14 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 805 |
| 24 | Outlet Temp ($^0$F) | 785 |
| 25 | Hi-Tmp Limit ($^0$F) | 783 |
| 26 | Stack Temp ($^0$F) | 505 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.12 | 25 | 595.12 |
| MW 21 (ft. elev.) | 569.55 | 27.33 | 596.88 |
| MW 22 (ft. elev.) | 569.67 | 27.17 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/9/07 |
| 2 | Time | 8:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 8 | | | |
| 5 | PID Stripper Effluent (ppm) | weekly | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 69,010 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 7 |
| 8 | 1B (psi) | 7 | 7 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 28,405 | |
| 12 | FM Well 2 (gal) | 35,660 | |
| 13 | DP 1 (psi) | 13 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* 1600 | | 315 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 170 | WP1-Well (HRS) |
| 18 | 27,898 | FM1-LPN (GAL) | 209 | WP2-Well (HRS) |
| | | | 354 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 35,578 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 11 | LT1-Well (FT) |
| 21 | 9 | FM-FILT (GPM) | 8 | LT2-Well (FT) |
| 22 | 66,486 | FM-FILT (GAL) | 19 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 805 |
| 24 | Outlet Temp ($^0$F) | 784 |
| 25 | Hi-Tmp Limit ($^0$F) | 782 |
| 26 | Stack Temp ($^0$F) | 506 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.04 | 25.08 | 595.12 |
| MW 21 (ft. elev.) | 569.3 | 27.58 | 596.88 |
| MW 22 (ft. elev.) | 569.59 | 27.25 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/12/07 |
| 2 | Time | 7:30 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 16 | Ready Ox | 3/10/07 | 4:30 PM |
| 5 | PID Stripper Effluent (ppm) | weekly | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 82,650 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 7 | 7 |
| 10 | 2B (psi) | 7 | 7 |

Comments/Maintenance

Oxidizer display was reading "Gas Pressure High/Low, Press Reset." Reason for purported High/Low gas pressure at Oxidizer unknown. Oxidizer was reset and restarted. It fired normally and came up to operating temperature. No further problems.

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 35,280 | |
| 12 | FM Well 2 (gal) | 44,080 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 12 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1450 | 285 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 213 | WP1-Well (HRS) |
| 18 | 34,764 | FM1-LPN (GAL) | 261 | WP2-Well (HRS) |
| | | | 423 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 43,862 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 9 | LT1-Well (FT) |
| 21 | 10 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 80,056 | FM-FILT (GAL) | 13 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 804 |
| 24 | Outlet Temp ($^0$F) | 785 |
| 25 | Hi-Tmp Limit ($^0$F) | 783 |
| 26 | Stack Temp ($^0$F) | 508 |
| 27 | Flame Signal (volts) | 3.4 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 569.54 | 25.58 | 595.12 |
| MW 21 (ft. elev.) | 569.55 | 27.33 | 596.88 |
| MW 22 (ft. elev.) | 569.17 | 27.67 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/13/07 |
| 2 | Time | 8:00 AM |

| | | | What Alarm? | Date/Time | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | | | |
| 4 | AS pressure (inches water) | 12 | Gas Pressure H/L | 3/12/07 | 4:00 PM |
| 5 | PID Stripper Effluent (ppm) | weekly | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 86,740 | Inlet Temp High | 3/12/07 | 5:00 PM |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 7 | 7 |
| 10 | 2B (psi) | 7 | 7 |

Comments/Maintenance

Cat Ox went down for High/Low gas pressure. System restarted. Shortly after it came back up and was placed back in operation, Cat Ox went down again. This time it was for High Inlet Temperature. Inlet temp was 880 degrees F. System was restarted, came back on line and did not alarm again.

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 37,220 | |
| 12 | FM Well 2 (gal) | 46,750 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 7 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* | 1550 | 305 |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 2 | FM1-LPN (GPM) |
| 18 | 37,313 | FM1-LPN (GAL) |
| 19 | 2 | FM2-LPN (GPM) |
| 20 | 47,402 | FM2-LPN (GAL) |
| 21 | 10 | FM-FILT (GPM) |
| 22 | 85342 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 226 | WP1-Well (HRS) |
| 278 | WP2-Well (HRS) |
| 444 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 10 | LT1-Well (FT) |
| 11 | LT2-Well (FT) |
| 19 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 806 |
| 24 | Outlet Temp ($^0$F) | 786 |
| 25 | Hi-Tmp Limit ($^0$F) | 783 |
| 26 | Stack Temp ($^0$F) | 508 |
| 27 | Flame Signal (volts) | 3.3 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.04 | 25.08 | 595.12 |
| MW 21 (ft. elev.) | 569.71 | 27.17 | 596.88 |
| MW 22 (ft. elev.) | 570.34 | 26.5 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/14/07 |
| 2 | Time | 7:30 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 12 | | | |
| 5 | PID Stripper Effluent (ppm) | 0 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 91,595 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 7 | 7 |
| 10 | 2B (psi) | 7 | 7 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 39,485 | |
| 12 | FM Well 2 (gal) | 50,290 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 12 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* | 1650 | 324 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 240 | WP1-Well (HRS) |
| 18 | 38,980 | FM1-LPN (GAL) | 298 | WP2-Well (HRS) |
| | | | 467 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 49,944 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 9 | LT1-Well (FT) |
| 21 | 10 | FM-FILT (GPM) | 11 | LT2-Well (FT) |
| 22 | 88,932 | FM-FILT (GAL) | 15 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 805 |
| 24 | Outlet Temp ($^0$F) | 785 |
| 25 | Hi-Tmp Limit ($^0$F) | 783 |
| 26 | Stack Temp ($^0$F) | 510 |
| 27 | Flame Signal (volts) | 3 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.12 | 25 | 595.12 |
| MW 21 (ft. elev.) | 569.38 | 27.5 | 596.88 |
| MW 22 (ft. elev.) | 569.51 | 27.33 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/15/07 |
| 2 | Time | 10:30 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 15 | | | |
| 5 | PID Stripper Effluent (ppm) | 21 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 97,490 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 7 | 7 |
| 10 | 2B (psi) | 7 | 7 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 42,310 | |
| 12 | FM Well 2 (gal) | 84,610 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 12 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | |
| 16 | Vapor Flow Rate* 1480 | 291 | |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 260 | WP1-Well (HRS) |
| 18 | 42,223 | FM1-LPN (GAL) | 325 | WP2-Well (HRS) |
| | | | 493 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 54,982 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 8 | LT1-Well (FT) |
| 21 | 10 | FM-FILT (GPM) | 11 | LT2-Well (FT) |
| 22 | 95,623 | FM-FILT (GAL) | 17 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 805 |
| 24 | Outlet Temp ($^0$F) | 784 |
| 25 | Hi-Tmp Limit ($^0$F) | 782 |
| 26 | Stack Temp ($^0$F) | 506 |
| 27 | Flame Signal (volts) | 3 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.62 | 24.5 | 595.12 |
| MW 21 (ft. elev.) | 570.21 | 26.67 | 596.88 |
| MW 22 (ft. elev.) | 571.09 | 25.75 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/16/07 |
| 2 | Time | 9:30 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 15 | | | |
| 5 | PID Stripper Effluent (ppm) | 23 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 102,360 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 7 | 7 |
| 10 | 2B (psi) | 7 | 7 |

Comments/Maintenance

Cleaned screens on both flowmeters measuring water coming in from the wells.

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 44,880 | |
| 12 | FM Well 2 (gal) | 58,370 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 12 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* 1600 | | 315 |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 2 | FM1-LPN (GPM) |
| 18 | 44,375 | FM1-LPN (GAL) |
| 19 | 2 | FM2-LPN (GPM) |
| 20 | 58,024 | FM2-LPN (GAL) |
| 21 | 9 | FM-FILT (GPM) |
| 22 | 99,697 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 275 | WP1-Well (HRS) |
| 346 | WP2-Well (HRS) |
| 516 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 8 | LT1-Well (FT) |
| 11 | LT2-Well (FT) |
| 15 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 807 |
| 24 | Outlet Temp ($^0$F) | 783 |
| 25 | Hi-Tmp Limit ($^0$F) | 782 |
| 26 | Stack Temp ($^0$F) | 506 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.45 | 24.67 | 595.12 |
| MW 21 (ft. elev.) | 569.71 | 27.17 | 596.88 |
| MW 22 (ft. elev.) | 569.51 | 27.33 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/19/07 |
| 2 | Time | 8:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 12 | Ready Ox | 3/17/07 | 6:00 AM |
| 5 | PID Stripper Effluent (ppm) | weekly | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 16,265 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 7 | 7 |
| 10 | 2B (psi) | 7 | 7 |

Comments/Maintenance

Cold weather caused Cat Ox to go down. Balance Damper adjusted to cut back on air to unit.

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 51,850 | |
| 12 | FM Well 2 (gal) | 69,370 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 12 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1400 | 275 |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 3 | FM1-LPN (GPM) |
| 18 | 51,345 | FM1-LPN (GAL) |
| 19 | 2 | FM2-LPN (GPM) |
| 20 | 69,024 | FM2-LPN (GAL) |
| 21 | 9 | FM-FILT (GPM) |
| 22 | 13,602 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 316 | WP1-Well (HRS) |
| 408 | WP2-Well (HRS) |
| 584 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 11 | LT1-Well (FT) |
| 10 | LT2-Well (FT) |
| 12 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 807 |
| 24 | Outlet Temp ($^0$F) | 784 |
| 25 | Hi-Tmp Limit ($^0$F) | 781 |
| 26 | Stack Temp ($^0$F) | 507 |
| 27 | Flame Signal (volts) | 3 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 569.79 | 25.33 | 595.12 |
| MW 21 (ft. elev.) | 569.38 | 27.5 | 596.88 |
| MW 22 (ft. elev.) | 569.34 | 27.5 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/20/07 |
| 2 | Time | 10:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 12 | | | |
| 5 | PID Stripper Effluent (ppm) | 23 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 121,720 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 7 | 7 |
| 10 | 2B (psi) | 7 | 7 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 55,080 | |
| 12 | FM Well 2 (gal) | 73,560 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 12 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* | 1650 | 324 |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 3 | FM1-LPN (GPM) |
| 18 | 54,575 | FM1-LPN (GAL) |
| 19 | 3 | FM2-LPN (GPM) |
| 20 | 73,214 | FM2-LPN (GAL) |
| 21 | 10 | FM-FILT (GPM) |
| 22 | 119,057 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 339 | WP1-Well (HRS) |
| 434 | WP2-Well (HRS) |
| 610 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 2 | LT1-Well (FT) |
| 12 | LT2-Well (FT) |
| 14 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 804 |
| 24 | Outlet Temp ($^0$F) | 783 |
| 25 | Hi-Tmp Limit ($^0$F) | 782 |
| 26 | Stack Temp ($^0$F) | 506 |
| 27 | Flame Signal (volts) | 3.4 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.12 | 25 | 595.12 |
| MW 21 (ft. elev.) | 569.55 | 27.33 | 596.88 |
| MW 22 (ft. elev.) | 570.26 | 26.58 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/21/07 |
| 2 | Time | 8:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 16 | | | |
| 5 | PID Stripper Effluent (ppm) | weekly | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 124,860 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 8 | 8 |
| 10 | 2B (psi) | 8 | 8 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 57,195 | |
| 12 | FM Well 2 (gal) | 76,865 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 12 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* | 1650 | 324 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 354 | WP1-Well (HRS) |
| 18 | 56,690 | FM1-LPN (GAL) | 452 | WP2-Well (HRS) |
| | | | 632 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 76,519 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 11 | LT1-Well (FT) |
| 21 | 8 | FM-FILT (GPM) | 11 | LT2-Well (FT) |
| 22 | 122,197 | FM-FILT (GAL) | 20 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 804 |
| 24 | Outlet Temp ($^0$F) | 786 |
| 25 | Hi-Tmp Limit ($^0$F) | 784 |
| 26 | Stack Temp ($^0$F) | 510 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 569.95 | 25.17 | 595.12 |
| MW 21 (ft. elev.) | 569.38 | 27.5 | 596.88 |
| MW 22 (ft. elev.) | 569.42 | 27.42 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/22/07 |
| 2 | Time | 10:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 14 | | | |
| 5 | PID Stripper Effluent (ppm) | 23 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 128,930 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 7 | 7 |
| 10 | 2B (psi) | 7 | 7 |

Comments/Maintenance

High Low Gas Alarm on Cat Ox. Reset and restarted, no further problems.

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 59,295 | |
| 12 | FM Well 2 (gal) | 80,390 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 12 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1450 | 285 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 366 | WP1-Well (HRS) |
| 18 | 58,790 | FM1-LPN (GAL) | 471 | WP2-Well (HRS) |
| | | | 654 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 80,044 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 11 | LT1-Well (FT) |
| 21 | 8 | FM-FILT (GPM) | 12 | LT2-Well (FT) |
| 22 | 126,267 | FM-FILT (GAL) | 12 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 804 |
| 24 | Outlet Temp ($^0$F) | 783 |
| 25 | Hi-Tmp Limit ($^0$F) | 782 |
| 26 | Stack Temp ($^0$F) | 508 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.45 | 24.67 | 595.12 |
| MW 21 (ft. elev.) | 569.96 | 26.92 | 596.88 |
| MW 22 (ft. elev.) | 570.51 | 26.33 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/23/07 |
| 2 | Time | 9:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 16 | | | |
| 5 | PID Stripper Effluent (ppm) | 22 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 133,275 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 6 | 6 |
| 10 | 2B (psi) | 6 | 6 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 61,770 | |
| 12 | FM Well 2 (gal) | 84,295 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 13 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* 1250 | | 246 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 381 | WP1-Well (HRS) |
| 18 | 61,175 | FM1-LPN (GAL) | 494 | WP2-Well (HRS) |
| | | | 677 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 83,960 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 9 | LT1-Well (FT) |
| 21 | 6 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 130,584 | FM-FILT (GAL) | 19 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 804 |
| 24 | Outlet Temp ($^0$F) | 784 |
| 25 | Hi-Tmp Limit ($^0$F) | 781 |
| 26 | Stack Temp ($^0$F) | 509 |
| 27 | Flame Signal (volts) | 3.1 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.37 | 24.75 | 595.12 |
| MW 21 (ft. elev.) | 570.13 | 26.75 | 596.88 |
| MW 22 (ft. elev.) | 570.67 | 26.17 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 3/28/07 |
| 2 | Time | 9:30 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 13 | | | |
| 5 | PID Stripper Effluent (ppm) | 20 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 156,095 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 8 | 8 |
| 8 | 1B (psi) | 8 | 8 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 74,670 | |
| 12 | FM Well 2 (gal) | 104,255 | |
| 13 | DP 1 (psi) | 14 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* 1250 | | 246 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 455 | WP1-Well (HRS) |
| 18 | 74,048 | FM1-LPN (GAL) | 609 | WP2-Well (HRS) |
| | | | 794 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 103,999 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 14 | LT1-Well (FT) |
| 21 | 8 | FM-FILT (GPM) | 17 | LT2-Well (FT) |
| 22 | 153,357 | FM-FILT (GAL) | 22 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 805 |
| 24 | Outlet Temp ($^0$F) | 772 |
| 25 | Hi-Tmp Limit ($^0$F) | 771 |
| 26 | Stack Temp ($^0$F) | 494 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 595.12 | 0 | 595.12 |
| MW 21 (ft. elev.) | 596.88 | 0 | 596.88 |
| MW 22 (ft. elev.) | 596.84 | 0 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 4/3/07 |
| 2 | Time | 9:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 14 | Hi Lo Gas | | |
| 5 | PID Stripper Effluent (ppm) | 21 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 175,185 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 8 | 8 |
| 8 | 1B (psi) | 8 | 8 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 84,560 | |
| 12 | FM Well 2 (gal) | 119,785 | |
| 13 | DP 1 (psi) | 13 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1400 | 275 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 509 | WP1-Well (HRS) |
| 18 | 84,055 | FM1-LPN (GAL) | 701 | WP2-Well (HRS) |
| | | | 896 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 119,439 | FM2-LPN (GAL) | Level Transmitter | |
| | | | 10 | LT1-Well (FT) |
| 21 | 7 | FM-FILT (GPM) | 11 | LT2-Well (FT) |
| 22 | 175,121 | FM-FILT (GAL) | 6 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 828 |
| 24 | Outlet Temp ($^0$F) | 783 |
| 25 | Hi-Tmp Limit ($^0$F) | 782 |
| 26 | Stack Temp ($^0$F) | 506 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 571.04 | 24.08 | 595.12 |
| MW 21 (ft. elev.) | 570.71 | 26.17 | 596.88 |
| MW 22 (ft. elev.) | 570.59 | 26.25 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 4/11/07 |
| 2 | Time | 8:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 14 | Cad Ox Air Switch Closed | 4/11/07 | 2:00a.m. |
| 5 | PID Stripper Effluent (ppm) | 23 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 204,390 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 7 |
| 8 | 1B (psi) | 7 | 7 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

System Restarted

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 101,285 | |
| 12 | FM Well 2 (gal) | 13,930 | |
| 13 | DP 1 (psi) | 13 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | |
| 16 | Vapor Flow Rate* 1475 | 290 | |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | | | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 599 | WP1-Well (HRS) |
| 18 | 101,126 | FM1-LPN (GAL) | 818 | WP2-Well (HRS) |
| | | | 1041 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 139,243 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 12 | LT1-Well (FT) |
| 21 | 8 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 216,837 | FM-FILT (GAL) | 20 | LT-INTNK (Inches) |

Total Hours

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 825 |
| 24 | Outlet Temp ($^0$F) | 744 |
| 25 | Hi-Tmp Limit ($^0$F) | 743 |
| 26 | Stack Temp ($^0$F) | 488 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 568.95 | 26.17 | 595.12 |
| MW 21 (ft. elev.) | 570.55 | 26.33 | 596.88 |
| MW 22 (ft. elev.) | 568.34 | 28.5 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 4/18/07 |
| 2 | Time | 9:30 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 15 | Cat Ox Temp Lost | 4/13/07 | 11:30 PM |
| 5 | PID Stripper Effluent (ppm) | 22 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 233,880 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 7 |
| 8 | 1B (psi) | 7 | 7 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

System successfully restarted 11:30 a.m. on 4/14. Cat Ox shut down several times between 9:30 a.m. and 11:30 a.m. for High Stack Temp before staying up after an 11:30 a.m. restart on 4/14.

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 116,325 | |
| 12 | FM Well 2 (gal) | 159,610 | |
| 13 | DP 1 (psi) | 13 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1608 | 316 |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 3 | FM1-LPN (GPM) |
| 18 | 116,305 | FM1-LPN (GAL) |
| 19 | 3 | FM2-LPN (GPM) |
| 20 | 159,604 | FM2-LPN (GAL) |
| 21 | 7 | FM-FILT (GPM) |
| 22 | 233,832 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 687 | WP1-Well (HRS) |
| 940 | WP2-Well (HRS) |
| 1201 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 11 | LT1-Well (FT) |
| 14 | LT2-Well (FT) |
| 14 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 806 |
| 24 | Outlet Temp ($^0$F) | 783 |
| 25 | Hi-Tmp Limit ($^0$F) | 782 |
| 26 | Stack Temp ($^0$F) | 506 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 24.58 | 24 | 595.12 |
| MW 21 (ft. elev.) | 27.17 | 27 | 596.88 |
| MW 22 (ft. elev.) | 27.42 | 27 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 4/25/07 |
| 2 | Time | 10:00 a.m. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 12 | | | |
| 5 | PID Stripper Effluent (ppm) | monthly | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 260,940 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 8 | 8 |
| 8 | 1B (psi) | 8 | 8 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 129,310 | |
| 12 | FM Well 2 (gal) | 181,070 | |
| 13 | DP 1 (psi) | 13 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* | 1475 | 290 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | | Total Hours |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 766 | WP1-Well (HRS) |
| 18 | 129,249 | FM1-LPN (GAL) | 1062 | WP2-Well (HRS) |
| | | | 1369 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 180,915 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 12 | LT1-Well (FT) |
| 21 | 6 | FM-FILT (GPM) | 11 | LT2-Well (FT) |
| 22 | 260,982 | FM-FILT (GAL) 190.6369613 | 25 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 808 |
| 24 | Outlet Temp ($^0$F) | 750 |
| 25 | Hi-Tmp Limit ($^0$F) | 949 |
| 26 | Stack Temp ($^0$F) | 487 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | |
|---|---|---|
| MW 20 (ft. elev.) | 24.58 | 24 |
| MW 21 (ft. elev.) | 26.83 | 26 |
| MW 22 (ft. elev.) | 25.17 | 25 |

##

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 5/2/07 |
| 2 | Time | 10:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 15 | | | |
| 5 | PID Stripper Effluent (ppm) | 11 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 285,172 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 10 | 5 |
| 8 | 1B (psi) | 9 | 5 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 1,404 | |
| 12 | FM Well 2 (gal) | 1,997 | |
| 13 | DP 1 (psi) | 13 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 31 |
| 16 | Vapor Flow Rate* | 1471 | 289 |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 3 | FM1-LPN (GPM) |
| 18 | 14,383 | FM1-LPN (GAL) |
| 19 | 3 | FM2-LPN (GPM) |
| 20 | 199,677 | FM2-LPN (GAL) |
| 21 | 9 | FM-FILT (GPM) |
| 22 | 293,009 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 836 | WP1-Well (HRS) |
| 1170 | WP2-Well (HRS) |
| 1537 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 11 | LT1-Well (FT) |
| 12 | LT2-Well (FT) |
| 25 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 792 |
| 24 | Outlet Temp ($^0$F) | 772 |
| 25 | Hi-Tmp Limit ($^0$F) | 770 |
| 26 | Stack Temp ($^0$F) | 503 |
| 27 | Flame Signal (volts) | 3.1 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | |
|---|---|
| MW 20 (ft. elev.) | 570.04 |
| MW 21 (ft. elev.) | 569.38 |
| MW 22 (ft. elev.) | 569.42 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 5/9/07 |
| 2 | Time | 10:00 AM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 15 | | | |
| 5 | PID Stripper Effluent (ppm) | 11 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 306,500 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 9 | 9 |
| 8 | 1B (psi) | 8 | 8 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 150,770 | |
| 12 | FM Well 2 (gal) | 218,800 | |
| 13 | DP 1 (psi) | 13 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 31 |
| 16 | Vapor Flow Rate* | 1600 | 315 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 902 | WP1-Well (HRS) |
| 18 | 150,703 | FM1-LPN (GAL) | 1269 | WP2-Well (HRS) |
| | | | 1729 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 215,443 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 14 | LT1-Well (FT) |
| 21 | 7 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 306,550 | FM-FILT (GAL) | 18 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 743 |
| 24 | Outlet Temp ($^0$F) | 728 |
| 25 | Hi-Tmp Limit ($^0$F) | 728 |
| 26 | Stack Temp ($^0$F) | 475 |
| 27 | Flame Signal (volts) | 3.5 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | | | | |
|---|---|---|---|---|
| MW 20 (ft. elev.) | 569.79 | 25.33 | 595.12 |
| MW 21 (ft. elev.) | 569.71 | 27.17 | 596.88 |
| MW 22 (ft. elev.) | 570.76 | 26.08 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 5/16/07 |
| 2 | Time | 11:00 AM |

| | | | What Alarm? | Date/Time | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | | | |
| 4 | AS pressure (inches water) | 16 | Cad Ox lost temp | 5/12/07 | 12:30 a.m. |
| 5 | PID Stripper Effluent (ppm) | 23 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 316,900 | Cad Ox lost temp | 5/13/07 | 11:00 a.m. |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 7 |
| 8 | 1B (psi) | 7 | 7 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

Sometime between 5/13 and 5/15, someone pulled the main power lever out at the meter pole. The power switch was turned back on and the system was restarted at 11:00 a.m. on 5/16. Horizon attached a padlock on the main power switch to prevent unauthorized persons from turning off system power.

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 156,050 | |
| 12 | FM Well 2 (gal) | 223,580 | |
| 13 | DP 1 (psi) | 10 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 32 |
| 16 | Vapor Flow Rate* 1400 | | 275 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 936 | WP1-Well (HRS) |
| 18 | 155,975 | FM1-LPN (GAL) | 1319 | WP2-Well (HRS) |
| | | | 1823 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 233,399 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 18 | LT1-Well (FT) |
| 21 | 5 | FM-FILT (GPM) | 18 | LT2-Well (FT) |
| 22 | 316,935 | FM-FILT (GAL) | 20 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 770 |
| 24 | Outlet Temp ($^0$F) | 689 |
| 25 | Hi-Tmp Limit ($^0$F) | 689 |
| 26 | Stack Temp ($^0$F) | 429 |
| 27 | Flame Signal (volts) | 3.3 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.54 | 24.58 | 595.12 |
| MW 21 (ft. elev.) | 570.3 | 26.58 | 596.88 |
| MW 22 (ft. elev.) | 570.17 | 26.67 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 5/23/07 |
| 2 | Time | 11:00 a.m. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 17 | | | |
| 5 | PID Stripper Effluent (ppm) | 22 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 337,385 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 7 |
| 8 | 1B (psi) | 7 | 7 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 166,850 | |
| 12 | FM Well 2 (gal) | 238,535 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1480 | 291 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 1007 | WP1-Well (HRS) |
| 18 | 166,788 | FM1-LPN (GAL) | 1410 | WP2-Well (HRS) |
| | | | 1990 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 238,472 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 11 | LT1-Well (FT) |
| 21 | 4 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 337,319 | FM-FILT (GAL) | 24 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 804 |
| 24 | Outlet Temp ($^0$F) | 782 |
| 25 | Hi-Tmp Limit ($^0$F) | 780 |
| 26 | Stack Temp ($^0$F) | 507 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.04 | 25.08 | 595.12 |
| MW 21 (ft. elev.) | 569.38 | 27.5 | 596.88 |
| MW 22 (ft. elev.) | 569.42 | 27.42 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 5/31/07 |
| 2 | Time | 10:30 a.m. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 17 | | | |
| 5 | PID Stripper Effluent (ppm) | 12 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 358,585 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 7 |
| 8 | 1B (psi) | 7 | 7 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 177,350 | |
| 12 | FM Well 2 (gal) | 255,060 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* 1500 | | 295 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 2 | FM1-LPN (GPM) | 1078 | WP1-Well (HRS) |
| 18 | 177,288 | FM1-LPN (GAL) | 1508 | WP2-Well (HRS) |
| | | | 2182 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 254,900 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 12 | LT1-Well (FT) |
| 21 | 3 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 358,818 | FM-FILT (GAL) | 29 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 805 |
| 24 | Outlet Temp ($^0$F) | 783 |
| 25 | Hi-Tmp Limit ($^0$F) | 782 |
| 26 | Stack Temp ($^0$F) | 507 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 569.7 | 25.42 | 595.12 |
| MW 21 (ft. elev.) | 569.55 | 27.33 | 596.88 |
| MW 22 (ft. elev.) | 569.67 | 27.17 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 6/6/07 |
| 2 | Time | 10:00 a.m. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 17 | | | |
| 5 | PID Stripper Effluent (ppm) | 23 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 372,800 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 7 |
| 8 | 1B (psi) | 6 | 6 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 183,300 | |
| 12 | FM Well 2 (gal) | 265,560 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1400 | 275 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 1121 | WP1-Well (HRS) |
| 18 | 183,744 | FM1-LPN (GAL) | 1570 | WP2-Well (HRS) |
| | | | 2350 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 265,586 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 14 | LT1-Well (FT) |
| 21 | 2 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 372,512 | FM-FILT (GAL) | 29 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 804 |
| 24 | Outlet Temp ($^0$F) | 782 |
| 25 | Hi-Tmp Limit ($^0$F) | 780 |
| 26 | Stack Temp ($^0$F) | 505 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 569.62 | 25.5 | 595.12 |
| MW 21 (ft. elev.) | 569.46 | 27.42 | 596.88 |
| MW 22 (ft. elev.) | 569.67 | 27.17 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 6/13/07 |
| 2 | Time | 10:30 a.m. |

| | | | What Alarm? | Date/Time | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | yes | | | |
| 4 | AS pressure (inches water) | 15 | System Ox | 6/9/07 | |
| 5 | PID Stripper Effluent (ppm) | | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 384,926 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 8 |
| 8 | 1B (psi) | 6 | 6 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

Cad Ox shut down

lost temp

Reduced amount of dillution air

Restarted

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 189,158 | |
| 12 | FM Well 2 (gal) | 273,641 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1475 | 290 |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 3 | FM1-LPN (GPM) |
| 18 | 189,602 | FM1-LPN (GAL) |
| 19 | 2 | FM2-LPN (GPM) |
| 20 | 273,666 | FM2-LPN (GAL) |
| 21 | 2 | FM-FILT (GPM) |
| 22 | 385,226 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 1158 | WP1-Well (HRS) |
| 1621 | WP2-Well (HRS) |
| 2436 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 13 | LT1-Well (FT) |
| 11 | LT2-Well (FT) |
| 30 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 806 |
| 24 | Outlet Temp ($^0$F) | 781 |
| 25 | Hi-Tmp Limit ($^0$F) | 780 |
| 26 | Stack Temp ($^0$F) | 501 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 569.79 | 25.33 | 595.12 |
| MW 21 (ft. elev.) | 569.71 | 27.17 | 596.88 |
| MW 22 (ft. elev.) | 570.76 | 26.08 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 6/20/07 |
| 2 | Time | 10:00 A.M. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 16 | | | |
| 5 | PID Stripper Effluent (ppm) | 21 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 412,220 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 8 | 8 |
| 8 | 1B (psi) | 7 | 7 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 202,110 | |
| 12 | FM Well 2 (gal) | 290,920 | |
| 13 | DP 1 (psi) | 13 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1475 | 290 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 1239 | WP1-Well (HRS) |
| 18 | 202,051 | FM1-LPN (GAL) | 1730 | WP2-Well (HRS) |
| | | | 2621 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 290,837 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 10 | LT1-Well (FT) |
| 21 | 3 | FM-FILT (GPM) | 9 | LT2-Well (FT) |
| 22 | 412,243 | FM-FILT (GAL) | 21 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 801 |
| 24 | Outlet Temp ($^0$F) | 777 |
| 25 | Hi-Tmp Limit ($^0$F) | 774 |
| 26 | Stack Temp ($^0$F) | 508 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 568.7 | 26.42 | 595.12 |
| MW 21 (ft. elev.) | 569.63 | 27.25 | 596.88 |
| MW 22 (ft. elev.) | 572.34 | 24.5 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 6/27/07 |
| 2 | Time | 4:30 PM |
| 3 | Alarm Since Last Report? | No |
| 4 | AS pressure (inches water) | 18 |
| 5 | PID Stripper Effluent (ppm) | monthly |
| 6 | FM Filter (gal) | 431,289 |

What Alarm? | Date/Time

What Alarm? | Date/Time

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 9 | 9 |
| 8 | 1B (psi) | 2 | 2 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 189,210 | |
| 12 | FM Well 2 (gal) | 273,083 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1475 | 290 |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | |
|---|---|---|
| 17 | 3 | FM1-LPN (GPM) |
| 18 | 210,035 | FM1-LPN (GAL) |
| 19 | 3 | FM2-LPN (GPM) |
| 20 | 303,194 | FM2-LPN (GAL) |
| 21 | 2 | FM-FILT (GPM) |
| 22 | 431,296 | FM-FILT (GAL) |

Total Hours

| | |
|---|---|
| 1289 | WP1-Well (HRS) |
| 1812 | WP2-Well (HRS) |
| 2788 | AB-STRP (HRS) |

Level Transmitter

| | |
|---|---|
| 10 | LT1-Well (FT) |
| 14 | LT2-Well (FT) |
| 29 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 804 |
| 24 | Outlet Temp ($^0$F) | 776 |
| 25 | Hi-Tmp Limit ($^0$F) | 774 |
| 26 | Stack Temp ($^0$F) | 506 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 26.5 | 25.33 | 595.12 |
| MW 21 (ft. elev.) | 26.58 | 27.17 | 596.88 |
| MW 22 (ft. elev.) | 24.42 | 26.08 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 7/5/07 |
| 2 | Time | 11:00 A.M. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 16 | | | |
| 5 | PID Stripper Effluent (ppm) | 21 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 454,065 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 8 | 6 |
| 8 | 1B (psi) | 8 | 6 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 219,070 | |
| 12 | FM Well 2 (gal) | 316,885 | |
| 13 | DP 1 (psi) | 14 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 31 |
| 16 | Vapor Flow Rate* | 1450 | 285 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 1343 | WP1-Well (HRS) |
| 18 | 218,904 | FM1-LPN (GAL) | 1898 | WP2-Well (HRS) |
| | | | 2975 | AB-STRP (HRS) |
| 19 | 0 | FM2-LPN (GPM) | | |
| 20 | 316,698 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 10 | LT1-Well (FT) |
| 21 | 2 | FM-FILT (GPM) | 14 | LT2-Well (FT) |
| 22 | 454,065 | FM-FILT (GAL) | 27 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 811 |
| 24 | Outlet Temp ($^0$F) | 774 |
| 25 | Hi-Tmp Limit ($^0$F) | 772 |
| 26 | Stack Temp ($^0$F) | 504 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 571.95 | 23.17 | 595.12 |
| MW 21 (ft. elev.) | 572.71 | 24.17 | 596.88 |
| MW 22 (ft. elev.) | 572.24 | 24.6 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 7/17/07 |
| 2 | Time | 12:30 PM |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | Yes | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 16 | High Temp on Cad Ox | 7/14/07 | Unknown |
| 5 | PID Stripper Effluent (ppm) | 20 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 487,180 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 8 | 8 |
| 8 | 1B (psi) | 8 | 8 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

System Restarted

Changed Bag Filters

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 229,695 | |
| 12 | FM Well 2 (gal) | 333,605 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 30 |
| 16 | Vapor Flow Rate* | 1400 | 275 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 1407 | WP1-Well (HRS) |
| 18 | 229,532 | FM1-LPN (GAL) | 2004 | WP2-Well (HRS) |
| | | | 3213 | AB-STRP (HRS) |
| 19 | 3 | FM2-LPN (GPM) | | |
| 20 | 333,516 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 18 | LT1-Well (FT) |
| 21 | 8 | FM-FILT (GPM) | 20 | LT2-Well (FT) |
| 22 | 487,094 | FM-FILT (GAL) | 21 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 805 |
| 24 | Outlet Temp ($^0$F) | 676 |
| 25 | Hi-Tmp Limit ($^0$F) | 671 |
| 26 | Stack Temp ($^0$F) | 434 |
| 27 | Flame Signal (volts) | 3.2 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 572.95 | 22.17 | 595.12 |
| MW 21 (ft. elev.) | 574.38 | 22.5 | 596.88 |
| MW 22 (ft. elev.) | 572.67 | 24.17 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 7/25/07 |
| 2 | Time | 10:30 A.M. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | No | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 14 | | | |
| 5 | PID Stripper Effluent (ppm) | 20 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 510,200 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 7 | 7 |
| 8 | 1B (psi) | 7 | 7 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 242,145 | |
| 12 | FM Well 2 (gal) | 345,545 | |
| 13 | DP 1 (psi) | 12 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 31 |
| 16 | Vapor Flow Rate* | 1450 | 285 |

*cu. Ft./min

Panel Readings

| | Flow Rate and Totals | | Total Hours | |
|---|---|---|---|---|
| 17 | 3 | FM1-LPN (GPM) | 1482 | WP1-Well (HRS) |
| 18 | 261,209 | FM1-LPN (GAL) | 2085 | WP2-Well (HRS) |
| | | | 3404 | AB-STRP (HRS) |
| 19 | 2 | FM2-LPN (GPM) | | |
| 20 | 345,467 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 12 | LT1-Well (FT) |
| 21 | 8 | FM-FILT (GPM) | 10 | LT2-Well (FT) |
| 22 | 510,252 | FM-FILT (GAL) | 14 | LT-INTNK (Inches) |

| | Cat Ox | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | 810 |
| 24 | Outlet Temp ($^0$F) | 770 |
| 25 | Hi-Tmp Limit ($^0$F) | 776 |
| 26 | Stack Temp ($^0$F) | 506 |
| 27 | Flame Signal (volts) | 3.1 |
| 28 | PID Stack (ppm) | 0 |

| Monitoring Wells | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 571.54 | 23.58 | 595.12 |
| MW 21 (ft. elev.) | 572.71 | 24.17 | 596.88 |
| MW 22 (ft. elev.) | 572.44 | 24.4 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | | |
|---|---|---|
| 1 | Date | 8/1/07 |
| 2 | Time | 9:00 a.m. |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Alarm Since Last Report? | yes | What Alarm? | Date/Time | |
| 4 | AS pressure (inches water) | 0 | System Ox | | |
| 5 | PID Stripper Effluent (ppm) | 0 | What Alarm? | Date/Time | |
| 6 | FM Filter (gal) | 521,417 | | | |

| | Bag Filter Press. | In | Out |
|---|---|---|---|
| 7 | 1A (psi) | 0 | 0 |
| 8 | 1B (psi) | 0 | 0 |
| 9 | 2A (psi) | 0 | 0 |
| 10 | 2B (psi) | 0 | 0 |

Comments/Maintenance

Down Hard Cad Ox

Can not maintain Temp

Bringing in Anguil

| | | | |
|---|---|---|---|
| 11 | FM Well 1 (gal) | 249,383 | |
| 12 | FM Well 2 (gal) | 351,864 | |
| 13 | DP 1 (psi) | 0 | ("0") = not on |
| 14 | DP 2 (psi) | 0 | ("0") = not on |
| 15 | Blower Pressure (inches water) | | 0 |
| 16 | Vapor Flow Rate* | 0 | 0 |

*cu. Ft./min

Panel Readings

Flow Rate and Totals

| | | | Total Hours | |
|---|---|---|---|---|
| 17 | 0 | FM1-LPN (GPM) | 1525 | WP1-Well (HRS) |
| 18 | 249,214 | FM1-LPN (GAL) | 2127 | WP2-Well (HRS) |
| | | | 3512 | AB-STRP (HRS) |
| 19 | 0 | FM2-LPN (GPM) | | |
| 20 | 351,748 | FM2-LPN (GAL) | | Level Transmitter |
| | | | 18 | LT1-Well (FT) |
| 21 | 0 | FM-FILT (GPM) | 20 | LT2-Well (FT) |
| 22 | 521,489 | FM-FILT (GAL) | 29 | LT-INTNK (Inches) |

Cat Ox

| | | |
|---|---|---|
| 23 | Inlet Temp ($^0$F) | |
| 24 | Outlet Temp ($^0$F) | |
| 25 | Hi-Tmp Limit ($^0$F) | |
| 26 | Stack Temp ($^0$F) | |
| 27 | Flame Signal (volts) | |
| 28 | PID Stack (ppm) | |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 572.95 | 22.17 | 595.12 |
| MW 21 (ft. elev.) | 574.38 | 22.5 | 596.88 |
| MW 22 (ft. elev.) | 572.67 | 24.17 | 596.84 |

# Chem Core Pump and Treat System Monitoring

Horizon Environmental Services

| | |
|---|---|
| Date | 8/24/07 |
| Time | 12:01 PM |

| | Yes |
|---|---|
| AS pressure (inches water) | 12 |
| PID Stripper Effluent (ppm) | |
| FM Filter (gal) | 5,294,899 |

| What Alarm? | Date/Time | |
|---|---|---|
| System Ox | | |
| What Alarm? | Date/Time | |
| | | |

| Bag Filter Press. | In | Out |
|---|---|---|
| 1A (psi) | 0 | 0 |
| 1B (psi) | 0 | 0 |
| 2A (psi) | 8 | 8 |
| 2B (psi) | 6 | 8 |

Comments/Maintenance

Anguil onsite to bring cad ox back into service and perform annual check-up/maintenance

| | | |
|---|---|---|
| FM Well 1 (gal) | 253,493 | 114 |
| FM Well 2 (gal) | 355,603 | 71 |
| DP 1 (psi) | 0 | ("0") = not on |
| DP 2 (psi) | 10 | ("0") = not on |
| Blower Pressure (inches water) | | 30 |
| Vapor Flow Rate* | | 230 |

*cu. Ft./min

Panel Readings

| | | | |
|---|---|---|---|
| FM-FILT (GAL) | 529,470 | | |
| FM1-LPN (GAL) | 253,379 | | |
| FM2-LPN (GAL) | 355,532 | | |
| WP1-Well (HRS) | 1,551 | | |
| WP2-Well (HRS) | 2,154 | | |
| AB-STRP (HRS) | 3,575 | | |
| FM1-LPN (GPM) | 2 | LT1-Well (FT) | 14 |
| FM2-LPN (GPM) | 2 | LT2-Well (FT) | 15 |
| FM-FILT (GPM) | 8 | LT-INTNK (Inches) | 12 |

Cat Ox

| | |
|---|---|
| Inlet Temp ($^0$F) | 804 |
| Outlet Temp ($^0$F) | 753 |
| Hi-Tmp Limit ($^0$F) | 750 |
| Stack Temp ($^0$F) | 484 |
| Flame Signal (volts) | 3.3 |
| PID Stack (ppm) | 0 |

Monitoring Wells

| | | | |
|---|---|---|---|
| MW 20 (ft. elev.) | 570.87 | 24.25 | 595.12 |
| MW 21 (ft. elev.) | 569.88 | 27 | 596.88 |
| MW 22 (ft. elev.) | 570.09 | 26.75 | 596.84 |

# APPENDIX D

# URS O&M REPORTS

**CHEM CORE SITE**
**SITE # 9-15-176**
**BUFFALO, NEW YORK**
**MONTHLY REPORT**

**Monthly Report # 1:February 21, 2007 to March 23,2007**

**System Operation**:
The treatment system was operational for approximately 575 hours out of approximately 720 total hours, for a system run time of 80%. The run time met the requirement of 80% minimum run time for the first month specified in the Contract Documents.

**Water Treatment and Discharge:**
A total of 116,797 gallons of treated water was discharged to the Buffalo Sewer Authority (BSA) during this period. The average discharge flow rate was 3,893 gallons per day (gpd), or 2.7 gallons per minute (gpm).

The pumping rate during operation for the extraction wells calculated by dividing the total flow (116,797 gallons) by the hours of operation (575 hours) was 203 gallons per hour (gph). This pumping rate exceeds the rate of 120 gph specified in the Contract Documents. Approximately 43% of the flow was attributable to the first extraction well (GEW-1), and approximately 57% of the flow was attributable to the second extraction well (GEW-2).

Water samples were collected on March 7,13,15,20, and 22 during the reporting period. Summarized analytical results for these samples are included in Tables 1(Extraction Well GEW-1), 2(Extraction Well GEW-2), 3(Air Stripper Influent), 4(Discharge), 5(Monitoring Well MW-20), 6(Monitoring Well MW-21), and 7(Monitoring Well MW-22). All discharge samples were in compliance with BSA permit requirements (Attachment A).

**Air Treatment and Discharge**:
The nominal air discharge rate for the air stripper is 300 cubic feet per minute (cfm). The discharge rate was measured on seventeen occasions during the reporting period with a portable anemometer. The average discharge rate based on the measurements was 303 cfm. The vapor

content of the air stream was measured with a PID on nine occasions during the reporting period. The average PID reading was 72 ppm VOCs.

Air samples were collected on March 10,15,21, and 22 during the reporting period. Summarized analytical results for these samples are included in Tables 8A(Catalytic Oxidizer Influent) and 9A(Catalytic Oxidizer Effluent). There was nearly 100% destruction of chlorinated hydrocarbons in the discharge stream by the catalytic oxidizer based on these samples. The catalytic oxidizer achieved removal efficiencies for compounds of concern specified in the Contract Documents.

**Unscheduled Maintenance and Alarms:**

The motor for the catalytic oxidizer blower failed on February 23. The system was down for five days. The motor was replaced on February 28.

Alarms associated with the catalytic oxidizer shut the system down five times during the reporting period. The system was restarted within 24 hours on these occasions.

Maple Leaf Environmental reprogrammed the display panel so that flow measurements could be read on the panel.

**TABLE 1**
**EXTRACTION WELL GEW-1**

| PARAMETER | Conc(ppb) GEW-1 3/7/2007 | Conc(ppb) GEW-1 3/13/2007 | Conc(ppb) GEW-1 3/15/2007 | Conc(ppb) GEW-1 3/20/2007 | Conc(ppb) GEW-1 3/22/2007 | Conc(ppb) GEW-1 4/4/2007 | Conc(ppb) GEW-1 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 2200 | 1800 | 2200 | ND | ND | 1500 | 1200 |
| 1,1-Dichloroethane | 1100 | 750 | 830 | 670 | 600 | 590 | 520 |
| cis-1,2-Dichloroethene | 8200 | 5700 | 6000 | 3900 | 4400 | 4500 | 3400 |
| Dibromochloromethane | ND | ND | ND | ND | ND | ND | 1100 |
| Tetrachloroethene | 1800 | 2200 | 3200 | 3000 | 3700 | 2800 | 2100 |
| Trichloroethene | 3100 | 3300 | 4000 | 2700 | 3400 | 2900 | 2100 |
| Vinyl Chloride | 2900 | ND | 1900 | 1300 | 1700 | 1200 | 1200 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 19300 | 13750 | 18130 | 11570 | 13800 | 13490 | 11620 |

| PARAMETER | Conc(ppb) GEW-1 6/6/2007 | Conc(ppb) GEW-1 7/6/2007 |
|---|---|---|
| 1,1,1 Trichloroethane | 590 | 850 |
| 1,1-Dichloroethane | 340 | 420 |
| cis-1,2-Dichloroethene | 2800 | 4000 |
| Dibromochloromethane | ND | ND |
| Tetrachloroethene | 990 | 880 |
| Trichloroethene | 1700 | 1600 |
| Vinyl Chloride | 460 | 1000 |
| Methylene Chloride | ND | 210 |
| Acetone | ND | ND |
| **TOTAL** | 6880 | 8960 |

ND=Not Detected

**TABLE 2**
**EXTRACTION WELL GEW-2**

| PARAMETER | Conc(ppb) GEW-2 3/7/2007 | Conc(ppb) GEW-2 3/13/2007 | Conc(ppb) GEW-2 3/15/2007 | Conc(ppb) GEW-2 3/20/2007 | Conc(ppb) GEW-2 3/22/2007 | Conc(ppb) GEW-2 4/4/2007 | Conc(ppb) GEW-2 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1600 | 1900 | 2600 | ND | ND | 1900 | 1200 |
| 1,1-Dichloroethane | 920 | 1100 | 1200 | 710 | 720 | 1100 | 1300 |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | 200 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND | 320 |
| cis-1,2-Dichloroethene | 8500 | 9600 | 11000 | 6600 | 6500 | 9900 | 8100 |
| Methylene Chloride | ND | ND | ND | ND | ND | 310 | 560 |
| Tetrachloroethene | ND | ND | 710 | 450 | 390 | 420 | ND |
| Toluene | ND | ND | 350 | ND | ND | 200 | ND |
| Trichloroethene | 360 | 580 | 1200 | 480 | 390 | 680 | ND |
| Vinyl Chloride | ND | ND | 2700 | 1900 | 2100 | 2500 | 2000 |
| **TOTAL** | 11380 | 13180 | 19760 | 10140 | 10100 | 17210 | 13480 |

| PARAMETER | Conc(ppb) GEW-2 6/6/2007 | Conc(ppb) GEW-2 7/6/2007 |
|---|---|---|
| 1,1,1 Trichloroethane | ND | 790 |
| 1,1-Dichloroethane | 1100 | 780 |
| 1,1-Dichloroethene | ND | ND |
| Chloroform | ND | ND |
| cis-1,2-Dichloroethene | 5500 | 5700 |
| Methylene Chloride | 300 | 570 |
| Tetrachloroethene | ND | 370 |
| Toluene | ND | ND |
| Trichloroethene | ND | 350 |
| Vinyl Chloride | 940 | 1600 |
| **TOTAL** | 7840 | 10160 |

ND=Not Detected

**TABLE 3**
**AIR STRIPPER INFLUENT**

| PARAMETER | Conc(ppb) AS influent 3/7/2007 | Conc(ppb) AS influent 3/13/2007 | Conc(ppb) AS influent 3/15/2007 | Conc(ppb) AS influent 3/20/2007 | Conc(ppb) AS influent 3/22/2007 | Conc(ppb) AS influent 4/4/2007 | Conc(ppb) AS influent 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1700 | 1700 | 2100 | ND | ND | 1700 | 1400 |
| 1,1-Dichloroethane | 1000 | 900 | 1000 | 670 | 570 | 980 | 1100 |
| cis-1,2-Dichloroethene | 8200 | 7700 | 8800 | 5200 | 4400 | 8400 | 7000 |
| Methylene Chloride | ND | ND | ND | ND | ND | 200 | 300 |
| Tetrachloroethene | 880 | 910 | 1600 | 1400 | 1100 | 1400 | 1100 |
| Toluene | ND | ND | ND | ND | ND | 200 | ND |
| Trichloroethene | 1600 | 1600 | 2400 | 1700 | 1200 | 1600 | 1300 |
| Vinyl Chloride | ND | ND | 1800 | 1600 | 1300 | 1800 | 1600 |
| **TOTAL** | 13380 | 12810 | 17700 | 10570 | 8570 | 16280 | 13800 |

| PARAMETER | Conc(ppb) AS influent 6/6/2007 | Conc(ppb) AS influent 7/6/2007 |
|---|---|---|
| 1,1,1 Trichloroethane | 870 | 910 |
| 1,1-Dichloroethane | 730 | 860 |
| cis-1,2-Dichloroethene | 5300 | 7100 |
| Methylene Chloride | 170 | 310 |
| Tetrachloroethene | 860 | ND |
| Toluene | ND | ND |
| Trichloroethene | 1200 | 1000 |
| Vinyl Chloride | 1100 | 1600 |
| **TOTAL** | 10230 | 11780 |

ND=Not Detected

**TABLE 4**
**DISCHARGE**

| PARAMETER | Conc(ppb) Discharge 3/7/2007 | Conc(ppb) Discharge 3/13/2007 | Conc(ppb) Discharge 3/15/2007 | Conc(ppb) Discharge 3/20/2007 | Conc(ppb) Discharge 3/22/2007 | Conc(ppb) Discharge 4/4/2007 | Conc(ppb) Discharge 5/2/2007 |
|---|---|---|---|---|---|---|---|
| Acetone | 17 | 18 | ND | 19 | 15 | 12 | ND |
| 1,1-Dichloroethane | ND | ND | 3.6 | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 3.3 | ND | 52 | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | 3.1 | ND | ND | ND | ND |
| Trichloroethene | ND | ND | 5.5 | ND | ND | ND | ND |
| Arsenic | ND | ND | NA | ND | ND | 5 | ND |
| Barium | ND | ND | NA | ND | ND | 200 | ND |
| Selenium | ND | ND | NA | 17 | ND | ND | ND |
| Lead | ND | ND | NA | ND | ND | 60 | ND |
| Zinc | 37 | 17 | NA | ND | ND | ND | ND |
| SVOCs | ND | ND | NA | ND | ND | 5.4(BEHP) | ND |
| pH(Standard Unit) | 7.3 | 8 | NA | 8 | NA | NA | NA |
| TSS(mg/l) | ND | 2 | NA | 2 | NA | NA | NA |
| O&G(mg/l) | ND | ND | NA | ND | NA | NA | NA |
| P(mg/l) | 0.48 | 0.385 | NA | 0.385 | NA | NA | NA |

| PARAMETER | Conc(ppb) Discharge 6/6/2007 | Conc(ppb) Discharge 7/6/2007 |
|---|---|---|
| Acetone | ND | ND |
| 1,1-Dichloroethane | ND | ND |
| cis-1,2-Dichloroethene | 480 | ND |
| Tetrachloroethene | ND | ND |
| Trichloroethene | ND | ND |
| Arsenic | ND | ND |
| Barium | ND | ND |
| Selenium | ND | ND |
| Lead | ND | ND |
| Zinc | ND | ND |
| SVOCs | 10.5 | ND |
| pH(Standard Unit) | NA | NA |
| TSS(mg/l) | NA | NA |
| O&G(mg/l) | NA | NA |
| P(mg/l) | NA | NA |

ND=Not Detected
NA=Not Analyzed

**TABLE 5**
**MONITORING WELL MW-20**

| PARAMETER | Conc(ppb) MW-20 3/13/2007 | Conc(ppb) MW-20 3/15/2007 | Conc(ppb) MW-20 3/20/2007 | Conc(ppb) MW-20 3/22/2007 | Conc(ppb) MW-20 4/4/2007 | Conc(ppb) MW-20 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 17 | ND | ND | 180 | 50 | 300 |
| 1,1-Dichloroethane | 29 | 24 | 40 | 500 | 80 | ND |
| Acetone | ND | ND | 33 | ND | ND | 3600 |
| Chloroethane | ND | ND | ND | ND | 93 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 56 | 45 | 110 | 1100 | 290 | 2700 |
| Tetrachloroethene | ND | ND | ND | ND | ND | 2800 |
| Toluene | ND | ND | 3.2 | ND | 6 | ND |
| Trichloroethene | 9 | 6.4 | 5.5 | 80 | 9 | 2100 |
| Vinyl Chloride | 49 | 47 | 73 | 630 | 170 | 330 |
| **TOTAL** | 160 | 122.4 | 264.7 | 2490 | 698 | 11830 |

| PARAMETER | Conc(ppb) MW-20 6/6/2007 | Conc(ppb) MW-20 7/6/2007 |
|---|---|---|
| 1,1,1 Trichloroethane | 40 | ND |
| 1,1-Dichloroethane | 67 | 170 |
| Acetone | ND | ND |
| Chloroethane | ND | ND |
| Chloroform | ND | ND |
| cis-1,2-Dichloroethene | 190 | 840 |
| Tetrachloroethene | 12 | ND |
| Toluene | ND | ND |
| Trichloroethene | 27 | ND |
| Vinyl Chloride | 120 | 530 |
| **TOTAL** | 456 | 1540 |

ND=Not Detected

**TABLE 6**
**MONITORING WELL MW-21**

| PARAMETER | Conc(ppb) MW-21 3/13/2007 | Conc(ppb) MW-21 3/15/2007 | Conc(ppb) MW-21 3/20/2007 | Conc(ppb) MW-21 3/22/2007 | Conc(ppb) MW-21 4/4/2007 | Conc(ppb) MW-21 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 3000 | ND | ND | Nd | 1800 | 1200 |
| 1,1-Dichloroethane | 810 | 130 | 740 | 510 | 580 | 430 |
| 1,1-Dichloroethene | ND | 79 | ND | ND | ND | ND |
| 1,2-Dichloroethane | ND | 31 | ND | ND | ND | ND |
| 1,2-Dichloropropane | ND | 44 | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | 11000 |
| Chloroethane | ND | ND | ND | ND | 380 | ND |
| cis-1,2-Dichloroethene | 4400 | 1800 | 5100 | 3800 | 4300 | 3200 |
| Tetrachloroethene | 1400 | 1800 | 3900 | 2700 | 2000 | 1500 |
| Toluene | 390 | ND | ND | ND | ND | ND |
| Trichloroethene | 5300 | 1100 | 4800 | 3300 | 2500 | 1800 |
| Vinyl Chloride | 1600 | 380 | 1100 | 830 | 710 | 580 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 16900 | 5364 | 15640 | 11140 | 12270 | 19710 |

| PARAMETER | Conc(ppb) MW-21 6/6/2007 | Conc(ppb) MW-21 7/6/2007 |
|---|---|---|
| 1,1,1 Trichloroethane | 620 | 180 |
| 1,1-Dichloroethane | 380 | 340 |
| 1,1-Dichloroethene | ND | ND |
| 1,2-Dichloroethane | ND | ND |
| 1,2-Dichloropropane | ND | ND |
| Acetone | ND | ND |
| Chloroethane | ND | ND |
| cis-1,2-Dichloroethene | 2500 | 1300 |
| Tetrachloroethene | ND | ND |
| Toluene | ND | ND |
| Trichloroethene | 1400 | ND |
| Vinyl Chloride | 590 | 920 |
| Methylene Chloride | ND | 160 |
| **TOTAL** | 5490 | 2900 |

ND=Not Detected

**TABLE 7**
**MONITORING WELL MW-22**

| PARAMETER | Conc(ppb) MW-22 3/13/2007 | Conc(ppb) MW-22 3/15/2007 | Conc(ppb) MW-22 3/20/2007 | Conc(ppb) MW-22 3/22/2007 | Conc(ppb) MW-22 4/4/2007 | Conc(ppb) MW-22 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | ND | ND | ND | 25 | 460 | 22 |
| 1,1-Dichloroethane | ND | 1000 | ND | 8.7 | 200 | 31 |
| 1,1-Dichloroethene | ND | ND | ND | 6.5 | ND | 3.2 |
| cis-1,2-Dichloroethene | 1400 | 7300 | 2100 | 150 | 2300 | 110 |
| Tetrachloroethene | 1500 | 3000 | 1600 | 70 | 2000 | 13 |
| Toluene | ND | ND | ND | ND | ND | ND |
| Trichloroethene | 1300 | 6800 | 1700 | 140 | 2100 | 35 |
| Vinyl Chloride | 320 | 1500 | 450 | 20 | ND | 46 |
| Carbon Disulfide | ND | ND | ND | ND | ND | 6 |
| **TOTAL** | 4520 | 19600 | 5850 | 395.2 | 6600 | 244.2 |

| PARAMETER | Conc(ppb) MW-22 6/6/2007 | Conc(ppb) MW-22 7/6/2007 |
|---|---|---|
| 1,1,1 Trichloroethane | 470 | 850 |
| 1,1-Dichloroethane | 240 | 240 |
| 1,1-Dichloroethene | ND | 180 |
| cis-1,2-Dichloroethene | 2700 | 3300 |
| Tetrachloroethene | 3100 | 3400 |
| Toluene | ND | ND |
| Trichloroethene | 1800 | 2100 |
| Vinyl Chloride | ND | ND |
| Carbon Disulfide | ND | ND |
| **TOTAL** | 7840 | 9220 |

ND=Not Detected

**TABLE 8A**
**CATALYTIC OXIDIZER INFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Inf 3/10/2007 | Conc(microg/m3) CatOx Inf 3/15/2007 | Conc(microg/m3) CatOx Inf 3/21/2007 | Conc(microg/m3) CatOx Inf 3/22/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 34 | 9400 | 14000 | 3200 |
| 1,1,2-Trichloroethane | ND | 7.3 | 6.3 | ND |
| 1,1-Dichloroethane | 9.2 | 2400 | 7500 | 1200 |
| 1,1-Dichloroethene | ND | 310 | 1100 | 220 |
| 1,2-Dichloroethane | ND | 82 | 140 | 34 |
| 1,2-Dichloropropane | ND | 11 | 11 | ND |
| 1,2,4-Trimethylbenzene | ND | ND | 9.5 | ND |
| 1,3,5-Trimethylbenzene | ND | ND | ND | ND |
| 2,2,4-trimethylpentane(2) | 30000 | ND | ND | ND |
| 4-ethyltoluene | ND | ND | ND | ND |
| Acetone | 86 | 610 | 49 | 50 |
| Benzene | ND | 19 | 27 | 9.9 |
| Chloroethane | ND | ND | 9 | ND |
| Chloroform | ND | 92 | 150 | 48 |
| Chloromethane | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 38 | 28000 | 43000 | 5400 |
| Cyclohexane | ND | 38 | ND | ND |
| Carbon Disulfide | ND | 12 | 9.5 | ND |
| Ethyl Acetate | ND | ND | ND | ND |
| Ethylbenzene | ND | 8 | 58 | ND |
| Freon 11 | ND | 31 | ND | ND |
| Hexane | ND | 230 | ND | ND |
| Isoprpyl Alcohol | ND | 310 | 390 | 220 |
| m&p-Xylene | ND | 35 | 5.7 | 7.7 |
| Methyl Butl Ketone | ND | 4.5 | 0 | ND |
| Methyl Ethyl Ketone | ND | ND | 9.7 | ND |
| Methyl Isobutly Ketone | 52 | 7.1 | ND | ND |
| Methylene Chloride(3) | 34 | 320 | 960 | 160 |
| o-Xylene | ND | 32 | ND | 5.5 |
| Styrene | ND | ND | 5.2 | ND |
| Tetrachloroethylene | 19 | 5100 | 11000 | 2200 |
| Tetrahydrofuran | 3.7 | 9.4 | 37 | ND |
| trans-1,2-Dichloroethene | ND | ND | 300 | 71 |
| Toluene | 7 | 570 | 59 | 93 |
| Trichloroethene | 19 | 5300 | 10000 | 2300 |
| Vinyl Chloride | 61 | 7200 | 16000 | 2900 |
| **TOTAL** | 30362.9 | 60138.3 | 104835.9 | 18119.1 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

**TABLE 9A**
**CATALYTIC OXIDIZER EFFLUENT**

| **PARAMETER** | Conc(microg/m3) CatOx Eff 3/10/2007 | Conc(microg/m3) CatOx Eff 3/15/2007 | Conc(microg/m3) CatOx Eff 3/21/2007 | Conc(microg/m3) CatOx Eff 3/22/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | ND | ND | ND | ND |
| 1,1-Dichloroethane | ND | ND | ND | ND |
| 1,1-Dichloroethene | ND | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 7.1 | 17 | ND | 27 |
| 1,3,5-Trimethylbenzene | ND | ND | ND | 10 |
| 2,2,4-trimethylpentane(2) | 10000 | ND | ND | 19 |
| 4-ethyltoluene | ND | 5.8 | ND | 6.1 |
| Acetone | 140 | 39 | 29 | ND |
| Benzene | ND | ND | ND | ND |
| Chloromethane | ND | 8.3 | ND | ND |
| cis-1,2-Dichloroethene | ND | 11 | 21 | 16 |
| Carbon Disulfide | 8.6 | 13 | ND | 8.7 |
| Ethyl Acetate | ND | ND | ND | ND |
| Ethylbenzene | 10 | 290 | ND | 190 |
| Isopropyl Alcohol | ND | 220 | 220 | 0 |
| m&p-Xylene | 25 | 6.7 | ND | 8.3 |
| Methyl Isobutly Ketone | 63 | ND | ND | ND |
| Methylene Chloride(3) | 8.3 | 8.7 | 7.6 | 9.1 |
| o-Xylene | 7.6 | ND | ND | ND |
| Styrene | ND | 15 | ND | 11 |
| Tetrachloroethylene | ND | 9.2 | 9 | 8.7 |
| Tetrahydrofuran | ND | ND | ND | ND |
| Toluene | 22 | 15 | 6.2 | 39 |
| Trichloroethene | ND | ND | ND | ND |
| Vinyl Chloride | ND | ND | ND | ND |
| **TOTAL** | 10291.6 | 658.7 | 292.8 | 352.9 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

# ATTACHMENT A
# BSA DISCHARGE CRITERIA

# PART I: SPECIFIC CONDITIONS

## A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **monthly** by the permittee as specified below.

| Sample Point | Parameter | Discharge Limitations[1] Daily Max | Sampling Requirements Period | Type |
|---|---|---|---|---|
| 001 | pH | 5.0 – 12.0 S.U. | 1 day | Composite[2] |
| | Total Cadmium | 0.125 lbs. | 1 day | Composite[2] |
| | Total Chromium | 0.626 lbs. | 1 day | Composite[2] |
| | Total Copper | 2.002 lbs. | 1 day | Composite[2] |
| | Total Lead | 0.626 lbs. | 1 day | Composite[2] |
| | Total Mercury | 0.0001 lbs. | 1 day | Composite[2] |
| | Total Nickel | 1.721 lbs. | 1 day | Composite[2] |
| | Total Silver | 0.275 lbs. | 1 day | Composite[2] |
| | Total Zinc | 3.127 lbs. | 1 day | Composite[2] |
| | Total Extractable Hydrocarbons | 100 mg/l | 1 day | Composite[2] |
| | Total Suspended Solids[5] | 250 mg/l | 1 day | Composite[2] |
| | Total Phosphates[5] | 15.34 mg/l | 1 day | Composite[2] |
| | Total Flow | 15,00 gallons[6] | 1 day | Discharge meter reading |

**Footnotes are explained on page 5.**

**CHEM CORE SITE**

**SITE # 9-15-176**

**BUFFALO, NEW YORK**

**MONTHLY REPORT**

**Monthly Report # 2:March 23, 2007 to April 25,2007**

**System Operation**:

The treatment system was operational for approximately 692 hours out of approximately 792 total hours, for a system run time of 87%. The run time was slightly below the requirement of 90% run time specified in the Contract Documents for months 2-6 of operation.

**Water Treatment and Discharge:**

A total of 130,398 gallons of treated water was discharged to the Buffalo Sewer Authority (BSA) during this period. The average discharge flow rate was 3,951 gallons per day (gpd), or 2.7 gallons per minute (gpm).

The pumping rate during operation for the extraction wells calculated by dividing the total flow (130,398 gallons) by the hours of operation (692 hours) was 188 gallons per hour (gph). This pumping rate exceeds the rate of 120 gph specified in the Contract Documents. Approximately 40% of the flow was attributable to the first extraction well (GEW-1), and approximately 60% of the flow was attributable to the second extraction well (GEW-2).

Water samples were collected on April 4 during the reporting period. Summarized analytical results for these samples are included in Tables 1(Extraction Well GEW-1), 2(Extraction Well GEW-2), 3(Air Stripper Influent), 4(Discharge), 5(Monitoring Well MW-20), 6(Monitoring Well MW-21), and 7(Monitoring Well MW-22). All discharge samples were in compliance with BSA permit requirements (Attachment A).

**Air Treatment and Discharge**:

The nominal air discharge rate for the air stripper is 300 cubic feet per minute (cfm). The discharge rate was measured on five occasions during the reporting period with a portable anemometer. The average discharge rate based on the measurements was 283 cfm. The vapor

content of the air stream was measured with a PID on four occasions during the reporting period. The average PID reading was 22 ppm.

Air samples were collected on April 4 during the reporting period. Summarized analytical results for these samples are included in Tables 8B(Catalytic Oxidizer Influent) and 9B(Catalytic Oxidizer Effluent). There was approximately 98% destruction of chlorinated hydrocarbons in the discharge stream by the catalytic oxidizer based on this sample. The catalytic oxidizer achieved removal efficiencies for compounds of concern specified in the Contract Documents.

**Unscheduled Maintenance and Alarms:**

Alarms associated with the catalytic oxidizer shut the system down two times during the reporting period.

**TABLE 1**
**EXTRACTION WELL GEW-1**

| PARAMETER | Conc(ppb) GEW-1 3/7/2007 | Conc(ppb) GEW-1 3/13/2007 | Conc(ppb) GEW-1 3/15/2007 | Conc(ppb) GEW-1 3/20/2007 | Conc(ppb) GEW-1 3/22/2007 | Conc(ppb) GEW-1 4/4/2007 | Conc(ppb) GEW-1 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 2200 | 1800 | 2200 | ND | ND | 1500 | 1200 |
| 1,1-Dichloroethane | 1100 | 750 | 830 | 670 | 600 | 590 | 520 |
| cis-1,2-Dichloroethene | 8200 | 5700 | 6000 | 3900 | 4400 | 4500 | 3400 |
| Dibromochloromethane | ND | ND | ND | ND | ND | ND | 1100 |
| Tetrachloroethene | 1800 | 2200 | 3200 | 3000 | 3700 | 2800 | 2100 |
| Trichloroethene | 3100 | 3300 | 4000 | 2700 | 3400 | 2900 | 2100 |
| Vinyl Chloride | 2900 | ND | 1900 | 1300 | 1700 | 1200 | 1200 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 19300 | 13750 | 18130 | 11570 | 13800 | 13490 | 11620 |

| PARAMETER | Conc(ppb) GEW-1 6/6/2007 | Conc(ppb) GEW-1 7/6/2007 | Conc(ppb) GEW-1 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 590 | 850 | ND |
| 1,1-Dichloroethane | 340 | 420 | ND |
| cis-1,2-Dichloroethene | 2800 | 4000 | ND |
| Dibromochloromethane | ND | ND | ND |
| Tetrachloroethene | 990 | 880 | 800 |
| Trichloroethene | 1700 | 1600 | ND |
| Vinyl Chloride | 460 | 1000 | 1200 |
| Methylene Chloride | ND | 210 | ND |
| Acetone | ND | ND | ND |
| **TOTAL** | 6880 | 8960 | 2000 |

ND=Not Detected

**TABLE 2**
**EXTRACTION WELL GEW-2**

| PARAMETER | Conc(ppb) GEW-2 3/7/2007 | Conc(ppb) GEW-2 3/13/2007 | Conc(ppb) GEW-2 3/15/2007 | Conc(ppb) GEW-2 3/20/2007 | Conc(ppb) GEW-2 3/22/2007 | Conc(ppb) GEW-2 4/4/2007 | Conc(ppb) GEW-2 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1600 | 1900 | 2600 | ND | ND | 1900 | 1200 |
| 1,1-Dichloroethane | 920 | 1100 | 1200 | 710 | 720 | 1100 | 1300 |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | 200 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND | 320 |
| cis-1,2-Dichloroethene | 8500 | 9600 | 11000 | 6600 | 6500 | 9900 | 8100 |
| Methylene Chloride | ND | ND | ND | ND | ND | 310 | 560 |
| Tetrachloroethene | ND | ND | 710 | 450 | 390 | 420 | ND |
| Toluene | ND | ND | 350 | ND | ND | 200 | ND |
| Trichloroethene | 360 | 580 | 1200 | 480 | 390 | 680 | ND |
| Vinyl Chloride | ND | ND | 2700 | 1900 | 2100 | 2500 | 2000 |
| **TOTAL** | 11380 | 13180 | 19760 | 10140 | 10100 | 17210 | 13480 |

| PARAMETER | Conc(ppb) GEW-2 6/6/2007 | Conc(ppb) GEW-2 7/6/2007 | Conc(pbb) GEW-2 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | ND | 790 | ND |
| 1,1-Dichloroethane | 1100 | 780 | 970 |
| 1,1-Dichloroethene | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 5500 | 5700 | 8600 |
| Methylene Chloride | 300 | 570 | ND |
| Tetrachloroethene | ND | 370 | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | ND | 350 | 620 |
| Vinyl Chloride | 940 | 1600 | 1500 |
| **TOTAL** | 7840 | 10160 | 11690 |

ND=Not Detected

**TABLE 3**
**AIR STRIPPER INFLUENT**

| PARAMETER | Conc(ppb) AS influent 3/7/2007 | Conc(ppb) AS influent 3/13/2007 | Conc(ppb) AS influent 3/15/2007 | Conc(ppb) AS influent 3/20/2007 | Conc(ppb) AS influent 3/22/2007 | Conc(ppb) AS influent 4/4/2007 | Conc(ppb) AS influent 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1700 | 1700 | 2100 | ND | ND | 1700 | 1400 |
| 1,1-Dichloroethane | 1000 | 900 | 1000 | 670 | 570 | 980 | 1100 |
| Carbon Disulfide | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 8200 | 7700 | 8800 | 5200 | 4400 | 8400 | 7000 |
| Methylene Chloride | ND | ND | ND | ND | ND | 200 | 300 |
| Tetrachloroethene | 880 | 910 | 1600 | 1400 | 1100 | 1400 | 1100 |
| Toluene | ND | ND | ND | ND | ND | 200 | ND |
| Trichloroethene | 1600 | 1600 | 2400 | 1700 | 1200 | 1600 | 1300 |
| Vinyl Chloride | ND | ND | 1800 | 1600 | 1300 | 1800 | 1600 |
| **TOTAL** | 13380 | 12810 | 17700 | 10570 | 8570 | 16280 | 13800 |

| PARAMETER | Conc(ppb) AS influent 6/6/2007 | Conc(ppb) AS influent 7/6/2007 | Conc(ppb) AS influent 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 870 | 910 | 1300 |
| 1,1-Dichloroethane | 730 | 860 | 930 |
| Carbon Disulfide | ND | ND | 4600 |
| cis-1,2-Dichloroethene | 5300 | 7100 | 7800 |
| Methylene Chloride | 170 | 310 | 500 |
| Tetrachloroethene | 860 | ND | 700 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1200 | 1000 | 1100 |
| Vinyl Chloride | 1100 | 1600 | 1600 |
| **TOTAL** | 10230 | 11780 | 18530 |

ND=Not Detected

**TABLE 4**
**DISCHARGE**

| PARAMETER | Conc(ppb) Discharge 3/7/2007 | Conc(ppb) Discharge 3/13/2007 | Conc(ppb) Discharge 3/15/2007 | Conc(ppb) Discharge 3/20/2007 | Conc(ppb) Discharge 3/22/2007 | Conc(ppb) Discharge 4/4/2007 | Conc(ppb) Discharge 5/2/2007 |
|---|---|---|---|---|---|---|---|
| Acetone | 17 | 18 | ND | 19 | 15 | 12 | ND |
| 1,1-Dichloroethane | ND | ND | 3.6 | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 3.3 | ND | 52 | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | 3.1 | ND | ND | ND | ND |
| Trichloroethene | ND | ND | 5.5 | ND | ND | ND | ND |
| Arsenic | ND | ND | NA | ND | ND | 5 | ND |
| Barium | ND | ND | NA | ND | ND | 200 | ND |
| Selenium | ND | ND | NA | 17 | ND | ND | ND |
| Lead | ND | ND | NA | ND | ND | 60 | ND |
| Zinc | 37 | 17 | NA | ND | ND | ND | ND |
| SVOCs | ND | ND | NA | ND | ND | 5.4(BEHP) | ND |
| pH(Standard Unit) | 7.3 | 8 | NA | 8 | NA | NA | NA |
| TSS(mg/l) | ND | 2 | NA | 2 | NA | NA | NA |
| O&G(mg/l) | ND | ND | NA | ND | NA | NA | NA |
| P(mg/l) | 0.48 | 0.385 | NA | 0.385 | NA | NA | NA |

| PARAMETER | Conc(ppb) Discharge 6/6/2007 | Conc(ppb) Discharge 7/6/2007 | Conc(ppb) Discharge 8/1/2007 |
|---|---|---|---|
| Acetone | ND | ND | ND |
| 1,1-Dichloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 480 | ND | ND |
| Tetrachloroethene | ND | ND | ND |
| Trichloroethene | ND | ND | ND |
| Arsenic | ND | ND | ND |
| Barium | ND | ND | ND |
| Selenium | ND | ND | 7 |
| Lead | ND | ND | ND |
| Zinc | ND | ND | ND |
| SVOCs | 10.5 | ND | ND |
| pH(Standard Unit) | NA | NA | NA |
| TSS(mg/l) | NA | NA | NA |
| O&G(mg/l) | NA | NA | NA |
| P(mg/l) | NA | NA | NA |

ND=Not Detected
NA=Not Analyzed

**TABLE 5**
**MONITORING WELL MW-20**

| PARAMETER | Conc(ppb) MW-20 3/13/2007 | Conc(ppb) MW-20 3/15/2007 | Conc(ppb) MW-20 3/20/2007 | Conc(ppb) MW-20 3/22/2007 | Conc(ppb) MW-20 4/4/2007 | Conc(ppb) MW-20 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 17 | ND | ND | 180 | 50 | 300 |
| 1,1-Dichloroethane | 29 | 24 | 40 | 500 | 80 | ND |
| Acetone | ND | ND | 33 | ND | ND | 3600 |
| Chloroethane | ND | ND | ND | ND | 93 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 56 | 45 | 110 | 1100 | 290 | 2700 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | ND | ND | ND | 2800 |
| Toluene | ND | ND | 3.2 | ND | 6 | ND |
| Trichloroethene | 9 | 6.4 | 5.5 | 80 | 9 | 2100 |
| Vinyl Chloride | 49 | 47 | 73 | 630 | 170 | 330 |
| **TOTAL** | 160 | 122.4 | 264.7 | 2490 | 698 | 11830 |

| PARAMETER | Conc(ppb) MW-20 6/6/2007 | Conc(ppb) MW-20 7/6/2007 | Conc(ppb) MW-20 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 40 | ND | 520 |
| 1,1-Dichloroethane | 67 | 170 | 1200 |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 190 | 840 | 4900 |
| Metrhylene Chloride | ND | ND | 210 |
| Tetrachloroethene | 12 | ND | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | 27 | ND | 260 |
| Vinyl Chloride | 120 | 530 | 3000 |
| **TOTAL** | 456 | 1540 | 10090 |

ND=Not Detected

**TABLE 6**
**MONITORING WELL MW-21**

| PARAMETER | Conc(ppb) MW-21 3/13/2007 | Conc(ppb) MW-21 3/15/2007 | Conc(ppb) MW-21 3/20/2007 | Conc(ppb) MW-21 3/22/2007 | Conc(ppb) MW-21 4/4/2007 | Conc(ppb) MW-21 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 3000 | ND | ND | Nd | 1800 | 1200 |
| 1,1-Dichloroethane | 810 | 130 | 740 | 510 | 580 | 430 |
| 1,1-Dichloroethene | ND | 79 | ND | ND | ND | ND |
| 1,2-Dichloroethane | ND | 31 | ND | ND | ND | ND |
| 1,2-Dichloropropane | ND | 44 | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | 11000 |
| Chloroethane | ND | ND | ND | ND | 380 | ND |
| cis-1,2-Dichloroethene | 4400 | 1800 | 5100 | 3800 | 4300 | 3200 |
| Tetrachloroethene | 1400 | 1800 | 3900 | 2700 | 2000 | 1500 |
| Toluene | 390 | ND | ND | ND | ND | ND |
| Trichloroethene | 5300 | 1100 | 4800 | 3300 | 2500 | 1800 |
| Vinyl Chloride | 1600 | 380 | 1100 | 830 | 710 | 580 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 16900 | 5364 | 15640 | 11140 | 12270 | 19710 |

| PARAMETER | Conc(ppb) MW-21 6/6/2007 | Conc(ppb) MW-21 7/6/2007 | Conc(ppb) MW-21 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 620 | 180 | 670 |
| 1,1-Dichloroethane | 380 | 340 | 640 |
| 1,1-Dichloroethene | ND | ND | ND |
| 1,2-Dichloroethane | ND | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 2500 | 1300 | 2000 |
| Tetrachloroethene | ND | ND | 820 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1400 | ND | 2300 |
| Vinyl Chloride | 590 | 920 | ND |
| Methylene Chloride | ND | 160 | ND |
| **TOTAL** | 5490 | 2900 | 6430 |

ND=Not Detected

**TABLE 7**
**MONITORING WELL MW-22**

| PARAMETER | Conc(ppb) MW-22 3/13/2007 | Conc(ppb) MW-22 3/15/2007 | Conc(ppb) MW-22 3/20/2007 | Conc(ppb) MW-22 3/22/2007 | Conc(ppb) MW-22 4/4/2007 | Conc(ppb) MW-22 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | ND | ND | ND | 25 | 460 | 22 |
| 1,1-Dichloroethane | ND | 1000 | ND | 8.7 | 200 | 31 |
| 1,1-Dichloroethene | ND | ND | ND | 6.5 | ND | 3.2 |
| cis-1,2-Dichloroethene | 1400 | 7300 | 2100 | 150 | 2300 | 110 |
| Tetrachloroethene | 1500 | 3000 | 1600 | 70 | 2000 | 13 |
| Toluene | ND | ND | ND | ND | ND | ND |
| Trichloroethene | 1300 | 6800 | 1700 | 140 | 2100 | 35 |
| Vinyl Chloride | 320 | 1500 | 450 | 20 | ND | 46 |
| Carbon Disulfide | ND | ND | ND | ND | ND | 6 |
| **TOTAL** | 4520 | 19600 | 5850 | 395.2 | 6600 | 244.2 |

| PARAMETER | Conc(ppb) MW-22 6/6/2007 | Conc(ppb) MW-22 7/6/2007 | Conc(ppb) MW-22 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 470 | 850 | 520 |
| 1,1-Dichloroethane | 240 | 240 | 250 |
| 1,1-Dichloroethene | ND | 180 | ND |
| cis-1,2-Dichloroethene | 2700 | 3300 | 2900 |
| Tetrachloroethene | 3100 | 3400 | 1900 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1800 | 2100 | 1700 |
| Vinyl Chloride | ND | ND | ND |
| Carbon Disulfide | ND | ND | ND |
| **TOTAL** | 7840 | 9220 | 6750 |

ND=Not Detected

**TABLE 8B**
**CATALYTIC OXIDIZER INFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Inf 4/4/2007 | Conc(microg/m3) CatOx Inf 5/2/2007 | Conc(microg/m3) CatOx Inf 6/15/2007 | Conc(microg/m3) CatOx Inf 8/23/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 7500 | 2600 | ND | 130 |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | 7.1 |
| 1,1,2-Trichloroethane | ND | ND | ND | ND |
| 1,1-Dichloroethane | 3800 | 1700 | ND | 51 |
| 1,1-Dichloroethene | 700 | 280 | ND | 18 |
| 1,2-Dichloroethane | 74 | 47 | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 8.5 | 40 | 37 | 17 |
| 1,3,5-Trimethylbenzene | ND | 18 | 17 | 9.6 |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | ND |
| 1,4-Dichlorobenzene | ND | 18 | ND | 11 |
| 4-ethyltoluene | ND | 11 | 9.3 | 6.8 |
| Acetone | 52 | 33 | 840 | 69 |
| Benzene | 22 | 12 | 32 | 6.5 |
| Chloroethane | ND | ND | ND | ND |
| Chloroform | 98 | 56 | ND | ND |
| Chloromethane | ND | ND | 36 | 320 |
| cis-1,2-Dichloroethene | 27000 | 9700 | ND | ND |
| Cyclohexane | ND | ND | ND | ND |
| Carbon Disulfide | 11 | 11 | 16 | 18 |
| Ethyl Acetate | ND | ND | 8.7 | ND |
| Ethylbenzene | 39 | 14 | 32 | 15 |
| Freon 11 | ND | ND | ND | ND |
| Hexane | ND | ND | ND | ND |
| Isoprpyl Alcohol | 180 | 120 | 51 | 22 |
| m&p-Xylene | 21 | 55 | 61 | 17 |
| Methyl Butl Ketone | ND | ND | ND | ND |
| Methyl Ethyl Ketone | ND | ND | 83 | ND |
| Methyl Isobutly Ketone | ND | ND | 6.5 | ND |
| Methylene Chloride(3) | 940 | 590 | 6.5 | 44 |
| o-Xylene | 20 | 36 | 28 | 9.9 |
| Styrene | ND | ND | 13 | 10 |
| Tetrachloroethylene | 3500 | 2700 | 14 | 38 |
| Tetrahydrofuran | ND | ND | ND | ND |
| trans-1,2-Dichloroethene | 150 | 100 | ND | ND |
| Toluene | 420 | 180 | 49 | 34 |
| Trichloroethene | 5400 | 2600 | ND | 47 |
| Vinyl Chloride | 8500 | 3800 | 7.3 | 160 |
| **TOTAL** | 58435.5 | 24721 | 1347.3 | 1060.9 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

**TABLE 9B**
**CATALYTIC OXIDIZER EFFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Eff 4/4/2007 | Conc(microg/m3) CatOx Eff 5/2/2007 | Conc(microg/m3) CatOx Eff 6/15/2007 | Conc(microg/m3) CatOx Eff 8/1/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 94 | ND | ND | 11 |
| 1,1-Dichloroethane | 36 | ND | ND | 10 |
| 1,1-Dichloroethene | 46 | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 10 | 12 | 12 | 12 |
| 1,3,5-Trimethylbenzene | ND | ND | 7.8 | ND |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | 71 |
| 4-ethyltoluene | ND | ND | 5.7 | 6.3 |
| Acetone | ND | 40 | 110 | 110 |
| Benzene | ND | ND | 12 | 5.9 |
| Chloromethane | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 230 | ND | ND | 33 |
| Carbon Disulfide | ND | 15 | 34 | 69 |
| Ethyl Acetate | ND | ND | 13 | ND |
| Ethylbenzene | 17 | 9.5 | 8.1 | ND |
| Freon 11 | ND | ND | ND | 79 |
| Hexane | ND | ND | ND | 11 |
| Isopropyl Alcohol | ND | 100 | 51 | ND |
| m&p-Xylene | 22 | 24 | 17 | 12 |
| Methyl Isobutly Ketone | ND | ND | 24 | ND |
| Methylene Chloride(3) | 18 | 25 | 8.4 | 11 |
| o-Xylene | 11 | 8.9 | 6.6 | 5.8 |
| Styrene | ND | ND | 6.1 | ND |
| Tetrachloroethylene | 110 | ND | 14 | 11 |
| Tetrahydrofuran | 15 | ND | ND | ND |
| Toluene | ND | 7.1 | 70 | 18 |
| Trans-1,2-Dichloroethene | ND | ND | ND | 10 |
| Trichloroethene | 92 | ND | 14 | 11 |
| Vinyl Chloride | 52 | ND | ND | 12 |
| **TOTAL** | 753 | 241.5 | 413.7 | 509 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

# ATTACHMENT A
# BSA DISCHARGE CRITERIA

# PART I: SPECIFIC CONDITIONS

## A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **monthly** by the permittee as specified below.

| Sample | | Discharge Limitations[1] | Sampling Requirements | |
|---|---|---|---|---|
| **Point** | **Parameter** | **Daily Max** | **Period** | **Type** |
| 001 | pH | 5.0 – 12.0 S.U. | 1 day | Composite[2] |
| | Total Cadmium | 0.125 lbs. | 1 day | Composite[2] |
| | Total Chromium | 0.626 lbs. | 1 day | Composite[2] |
| | Total Copper | 2.002 lbs. | 1 day | Composite[2] |
| | Total Lead | 0.626 lbs. | 1 day | Composite[2] |
| | Total Mercury | 0.0001 lbs. | 1 day | Composite[2] |
| | Total Nickel | 1.721 lbs. | 1 day | Composite[2] |
| | Total Silver | 0.275 lbs. | 1 day | Composite[2] |
| | Total Zinc | 3.127 lbs. | 1 day | Composite[2] |
| | Total Extractable Hydrocarbons | 100 mg/l | 1 day | Composite[2] |
| | Total Suspended Solids[5] | 250 mg/l | 1 day | Composite[2] |
| | Total Phosphates[5] | 15.34 mg/l | 1 day | Composite[2] |
| | Total Flow | 15,00 gallons[6] | 1 day | Discharge meter reading |

**Footnotes are explained on page 5.**

**CHEM CORE SITE**
**SITE # 9-15-176**
**BUFFALO, NEW YORK**
**MONTHLY REPORT**

**Monthly Report # 3:April 25, 2007 to May 23,2007**

**System Operation**:
The treatment system was operational for approximately 621 hours out of approximately 672 total hours, for a system run time of 92%. The operational efficiency was above the requirement of 90% operational efficiency specified in the Contract Documents for months 2-6 of operation.

**Water Treatment and Discharge:**
A total of 76,337 gallons of treated water was discharged to the Buffalo Sewer Authority (BSA) during this period. The average discharge flow rate was 2,726 gallons per day (gpd), or 1.9 gallons per minute (gpm).

The pumping rate during operation of the extraction wells calculated by dividing the total flow (76,337 gallons) by the hours of operation (621 hours) was 125 gallons per hour (gph). This pumping rate exceeds the rate of 120 gph specified in the Contract Documents. Approximately 42% of the flow was attributable to the first extraction well (GEW-1), and approximately 58% of the flow was attributable to the second extraction well (GEW-2).

Water samples were collected on May 2 during the reporting period. Summarized analytical results for these samples are included in Tables 1(Extraction Well GEW-1), 2(Extraction Well GEW-2), 3(Air Stripper Influent), 4(Discharge), 5(Monitoring Well MW-20), 6(Monitoring Well MW-21), and 7(Monitoring Well MW-22). All discharge samples were in compliance with BSA permit requirements (Attachment A).

**Air Treatment and Discharge**:
The nominal discharge rate for the air stripper is 300 cubic feet per minute (cfm). The discharge rate was measured on four occasions during the reporting period with a portable anemometer. The average discharge rate based on the measurements was 292 cfm. The vapor content of the air

stream was measured with a PID on four occasions during the reporting period. The average PID reading was 17 ppm.

Air samples were collected on May 2 during the reporting period. Summarized analytical results for these samples are included in Tables 8B(Catalytic Oxidizer Influent) and 9B(Catalytic Oxidizer Effluent). There was nearly 100% destruction of chlorinated hydrocarbons in the discharge stream by the catalytic oxidizer based on this sample. The catalytic oxidizer achieved removal efficiencies for the compounds of concern specified in the Contract Documents.

**Unscheduled Maintenance and Alarms:**

Unauthorized personnel turned off power to the treatment plant by closing the disconnect switch at the power pole. HES installed a padlock on the switch on May 16 to prevent further vandalism.

**TABLE 1**
**EXTRACTION WELL GEW-1**

| PARAMETER | Conc(ppb) GEW-1 3/7/2007 | Conc(ppb) GEW-1 3/13/2007 | Conc(ppb) GEW-1 3/15/2007 | Conc(ppb) GEW-1 3/20/2007 | Conc(ppb) GEW-1 3/22/2007 | Conc(ppb) GEW-1 4/4/2007 | Conc(ppb) GEW-1 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 2200 | 1800 | 2200 | ND | ND | 1500 | 1200 |
| 1,1-Dichloroethane | 1100 | 750 | 830 | 670 | 600 | 590 | 520 |
| cis-1,2-Dichloroethene | 8200 | 5700 | 6000 | 3900 | 4400 | 4500 | 3400 |
| Dibromochloromethane | ND | ND | ND | ND | ND | ND | 1100 |
| Tetrachloroethene | 1800 | 2200 | 3200 | 3000 | 3700 | 2800 | 2100 |
| Trichloroethene | 3100 | 3300 | 4000 | 2700 | 3400 | 2900 | 2100 |
| Vinyl Chloride | 2900 | ND | 1900 | 1300 | 1700 | 1200 | 1200 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 19300 | 13750 | 18130 | 11570 | 13800 | 13490 | 11620 |

| PARAMETER | Conc(ppb) GEW-1 6/6/2007 | Conc(ppb) GEW-1 7/6/2007 | Conc(ppb) GEW-1 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 590 | 850 | ND |
| 1,1-Dichloroethane | 340 | 420 | ND |
| cis-1,2-Dichloroethene | 2800 | 4000 | ND |
| Dibromochloromethane | ND | ND | ND |
| Tetrachloroethene | 990 | 880 | 800 |
| Trichloroethene | 1700 | 1600 | ND |
| Vinyl Chloride | 460 | 1000 | 1200 |
| Methylene Chloride | ND | 210 | ND |
| Acetone | ND | ND | ND |
| **TOTAL** | 6880 | 8960 | 2000 |

ND=Not Detected

**TABLE 2**
**EXTRACTION WELL GEW-2**

| PARAMETER | Conc(ppb) GEW-2 3/7/2007 | Conc(ppb) GEW-2 3/13/2007 | Conc(ppb) GEW-2 3/15/2007 | Conc(ppb) GEW-2 3/20/2007 | Conc(ppb) GEW-2 3/22/2007 | Conc(ppb) GEW-2 4/4/2007 | Conc(ppb) GEW-2 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1600 | 1900 | 2600 | ND | ND | 1900 | 1200 |
| 1,1-Dichloroethane | 920 | 1100 | 1200 | 710 | 720 | 1100 | 1300 |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | 200 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND | 320 |
| cis-1,2-Dichloroethene | 8500 | 9600 | 11000 | 6600 | 6500 | 9900 | 8100 |
| Methylene Chloride | ND | ND | ND | ND | ND | 310 | 560 |
| Tetrachloroethene | ND | ND | 710 | 450 | 390 | 420 | ND |
| Toluene | ND | ND | 350 | ND | ND | 200 | ND |
| Trichloroethene | 360 | 580 | 1200 | 480 | 390 | 680 | ND |
| Vinyl Chloride | ND | ND | 2700 | 1900 | 2100 | 2500 | 2000 |
| **TOTAL** | 11380 | 13180 | 19760 | 10140 | 10100 | 17210 | 13480 |

| PARAMETER | Conc(ppb) GEW-2 6/6/2007 | Conc(ppb) GEW-2 7/6/2007 | Conc(pbb) GEW-2 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | ND | 790 | ND |
| 1,1-Dichloroethane | 1100 | 780 | 970 |
| 1,1-Dichloroethene | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 5500 | 5700 | 8600 |
| Methylene Chloride | 300 | 570 | ND |
| Tetrachloroethene | ND | 370 | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | ND | 350 | 620 |
| Vinyl Chloride | 940 | 1600 | 1500 |
| **TOTAL** | 7840 | 10160 | 11690 |

ND=Not Detected

**TABLE 3**
**AIR STRIPPER INFLUENT**

| PARAMETER | Conc(ppb) AS influent 3/7/2007 | Conc(ppb) AS influent 3/13/2007 | Conc(ppb) AS influent 3/15/2007 | Conc(ppb) AS influent 3/20/2007 | Conc(ppb) AS influent 3/22/2007 | Conc(ppb) AS influent 4/4/2007 | Conc(ppb) AS influent 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1700 | 1700 | 2100 | ND | ND | 1700 | 1400 |
| 1,1-Dichloroethane | 1000 | 900 | 1000 | 670 | 570 | 980 | 1100 |
| Carbon Disulfide | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 8200 | 7700 | 8800 | 5200 | 4400 | 8400 | 7000 |
| Methylene Chloride | ND | ND | ND | ND | ND | 200 | 300 |
| Tetrachloroethene | 880 | 910 | 1600 | 1400 | 1100 | 1400 | 1100 |
| Toluene | ND | ND | ND | ND | ND | 200 | ND |
| Trichloroethene | 1600 | 1600 | 2400 | 1700 | 1200 | 1600 | 1300 |
| Vinyl Chloride | ND | ND | 1800 | 1600 | 1300 | 1800 | 1600 |
| **TOTAL** | 13380 | 12810 | 17700 | 10570 | 8570 | 16280 | 13800 |

| PARAMETER | Conc(ppb) AS influent 6/6/2007 | Conc(ppb) AS influent 7/6/2007 | Conc(ppb) AS influent 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 870 | 910 | 1300 |
| 1,1-Dichloroethane | 730 | 860 | 930 |
| Carbon Disulfide | ND | ND | 4600 |
| cis-1,2-Dichloroethene | 5300 | 7100 | 7800 |
| Methylene Chloride | 170 | 310 | 500 |
| Tetrachloroethene | 860 | ND | 700 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1200 | 1000 | 1100 |
| Vinyl Chloride | 1100 | 1600 | 1600 |
| **TOTAL** | 10230 | 11780 | 18530 |

ND=Not Detected

**TABLE 4**
**DISCHARGE**

| PARAMETER | Conc(ppb) Discharge 3/7/2007 | Conc(ppb) Discharge 3/13/2007 | Conc(ppb) Discharge 3/15/2007 | Conc(ppb) Discharge 3/20/2007 | Conc(ppb) Discharge 3/22/2007 | Conc(ppb) Discharge 4/4/2007 | Conc(ppb) Discharge 5/2/2007 |
|---|---|---|---|---|---|---|---|
| Acetone | 17 | 18 | ND | 19 | 15 | 12 | ND |
| 1,1-Dichloroethane | ND | ND | 3.6 | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 3.3 | ND | 52 | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | 3.1 | ND | ND | ND | ND |
| Trichloroethene | ND | ND | 5.5 | ND | ND | ND | ND |
| Arsenic | ND | ND | NA | ND | ND | 5 | ND |
| Barium | ND | ND | NA | ND | ND | 200 | ND |
| Selenium | ND | ND | NA | 17 | ND | ND | ND |
| Lead | ND | ND | NA | ND | ND | 60 | ND |
| Zinc | 37 | 17 | NA | ND | ND | ND | ND |
| SVOCs | ND | ND | NA | ND | ND | 5.4(BEHP) | ND |
| pH(Standard Unit) | 7.3 | 8 | NA | 8 | NA | NA | NA |
| TSS(mg/l) | ND | 2 | NA | 2 | NA | NA | NA |
| O&G(mg/l) | ND | ND | NA | ND | NA | NA | NA |
| P(mg/l) | 0.48 | 0.385 | NA | 0.385 | NA | NA | NA |

| PARAMETER | Conc(ppb) Discharge 6/6/2007 | Conc(ppb) Discharge 7/6/2007 | Conc(ppb) Discharge 8/1/2007 |
|---|---|---|---|
| Acetone | ND | ND | ND |
| 1,1-Dichloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 480 | ND | ND |
| Tetrachloroethene | ND | ND | ND |
| Trichloroethene | ND | ND | ND |
| Arsenic | ND | ND | ND |
| Barium | ND | ND | ND |
| Selenium | ND | ND | 7 |
| Lead | ND | ND | ND |
| Zinc | ND | ND | ND |
| SVOCs | 10.5 | ND | ND |
| pH(Standard Unit) | NA | NA | NA |
| TSS(mg/l) | NA | NA | NA |
| O&G(mg/l) | NA | NA | NA |
| P(mg/l) | NA | NA | NA |

ND=Not Detected
NA=Not Analyzed

**TABLE 5**
**MONITORING WELL MW-20**

| PARAMETER | Conc(ppb) MW-20 3/13/2007 | Conc(ppb) MW-20 3/15/2007 | Conc(ppb) MW-20 3/20/2007 | Conc(ppb) MW-20 3/22/2007 | Conc(ppb) MW-20 4/4/2007 | Conc(ppb) MW-20 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 17 | ND | ND | 180 | 50 | 300 |
| 1,1-Dichloroethane | 29 | 24 | 40 | 500 | 80 | ND |
| Acetone | ND | ND | 33 | ND | ND | 3600 |
| Chloroethane | ND | ND | ND | ND | 93 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 56 | 45 | 110 | 1100 | 290 | 2700 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | ND | ND | ND | 2800 |
| Toluene | ND | ND | 3.2 | ND | 6 | ND |
| Trichloroethene | 9 | 6.4 | 5.5 | 80 | 9 | 2100 |
| Vinyl Chloride | 49 | 47 | 73 | 630 | 170 | 330 |
| **TOTAL** | 160 | 122.4 | 264.7 | 2490 | 698 | 11830 |

| PARAMETER | Conc(ppb) MW-20 6/6/2007 | Conc(ppb) MW-20 7/6/2007 | Conc(ppb) MW-20 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 40 | ND | 520 |
| 1,1-Dichloroethane | 67 | 170 | 1200 |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 190 | 840 | 4900 |
| Metrhylene Chloride | ND | ND | 210 |
| Tetrachloroethene | 12 | ND | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | 27 | ND | 260 |
| Vinyl Chloride | 120 | 530 | 3000 |
| **TOTAL** | 456 | 1540 | 10090 |

ND=Not Detected

**TABLE 6**
**MONITORING WELL MW-21**

| PARAMETER | Conc(ppb) MW-21 3/13/2007 | Conc(ppb) MW-21 3/15/2007 | Conc(ppb) MW-21 3/20/2007 | Conc(ppb) MW-21 3/22/2007 | Conc(ppb) MW-21 4/4/2007 | Conc(ppb) MW-21 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 3000 | ND | ND | Nd | 1800 | 1200 |
| 1,1-Dichloroethane | 810 | 130 | 740 | 510 | 580 | 430 |
| 1,1-Dichloroethene | ND | 79 | ND | ND | ND | ND |
| 1,2-Dichloroethane | ND | 31 | ND | ND | ND | ND |
| 1,2-Dichloropropane | ND | 44 | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | 11000 |
| Chloroethane | ND | ND | ND | ND | 380 | ND |
| cis-1,2-Dichloroethene | 4400 | 1800 | 5100 | 3800 | 4300 | 3200 |
| Tetrachloroethene | 1400 | 1800 | 3900 | 2700 | 2000 | 1500 |
| Toluene | 390 | ND | ND | ND | ND | ND |
| Trichloroethene | 5300 | 1100 | 4800 | 3300 | 2500 | 1800 |
| Vinyl Chloride | 1600 | 380 | 1100 | 830 | 710 | 580 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 16900 | 5364 | 15640 | 11140 | 12270 | 19710 |

| PARAMETER | Conc(ppb) MW-21 6/6/2007 | Conc(ppb) MW-21 7/6/2007 | Conc(ppb) MW-21 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 620 | 180 | 670 |
| 1,1-Dichloroethane | 380 | 340 | 640 |
| 1,1-Dichloroethene | ND | ND | ND |
| 1,2-Dichloroethane | ND | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 2500 | 1300 | 2000 |
| Tetrachloroethene | ND | ND | 820 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1400 | ND | 2300 |
| Vinyl Chloride | 590 | 920 | ND |
| Methylene Chloride | ND | 160 | ND |
| **TOTAL** | 5490 | 2900 | 6430 |

ND=Not Detected

**TABLE 7**
**MONITORING WELL MW-22**

| PARAMETER | Conc(ppb) MW-22 3/13/2007 | Conc(ppb) MW-22 3/15/2007 | Conc(ppb) MW-22 3/20/2007 | Conc(ppb) MW-22 3/22/2007 | Conc(ppb) MW-22 4/4/2007 | Conc(ppb) MW-22 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | ND | ND | ND | 25 | 460 | 22 |
| 1,1-Dichloroethane | ND | 1000 | ND | 8.7 | 200 | 31 |
| 1,1-Dichloroethene | ND | ND | ND | 6.5 | ND | 3.2 |
| cis-1,2-Dichloroethene | 1400 | 7300 | 2100 | 150 | 2300 | 110 |
| Tetrachloroethene | 1500 | 3000 | 1600 | 70 | 2000 | 13 |
| Toluene | ND | ND | ND | ND | ND | ND |
| Trichloroethene | 1300 | 6800 | 1700 | 140 | 2100 | 35 |
| Vinyl Chloride | 320 | 1500 | 450 | 20 | ND | 46 |
| Carbon Disulfide | ND | ND | ND | ND | ND | 6 |
| **TOTAL** | 4520 | 19600 | 5850 | 395.2 | 6600 | 244.2 |

| PARAMETER | Conc(ppb) MW-22 6/6/2007 | Conc(ppb) MW-22 7/6/2007 | Conc(ppb) MW-22 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 470 | 850 | 520 |
| 1,1-Dichloroethane | 240 | 240 | 250 |
| 1,1-Dichloroethene | ND | 180 | ND |
| cis-1,2-Dichloroethene | 2700 | 3300 | 2900 |
| Tetrachloroethene | 3100 | 3400 | 1900 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1800 | 2100 | 1700 |
| Vinyl Chloride | ND | ND | ND |
| Carbon Disulfide | ND | ND | ND |
| **TOTAL** | 7840 | 9220 | 6750 |

ND=Not Detected

**TABLE 8B**
**CATALYTIC OXIDIZER INFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Inf 4/4/2007 | Conc(microg/m3) CatOx Inf 5/2/2007 | Conc(microg/m3) CatOx Inf 6/15/2007 | Conc(microg/m3) CatOx Inf 8/23/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 7500 | 2600 | ND | 130 |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | 7.1 |
| 1,1,2-Trichloroethane | ND | ND | ND | ND |
| 1,1-Dichloroethane | 3800 | 1700 | ND | 51 |
| 1,1-Dichloroethene | 700 | 280 | ND | 18 |
| 1,2-Dichloroethane | 74 | 47 | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 8.5 | 40 | 37 | 17 |
| 1,3,5-Trimethylbenzene | ND | 18 | 17 | 9.6 |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | ND |
| 1,4-Dichlorobenzene | ND | 18 | ND | 11 |
| 4-ethyltoluene | ND | 11 | 9.3 | 6.8 |
| Acetone | 52 | 33 | 840 | 69 |
| Benzene | 22 | 12 | 32 | 6.5 |
| Chloroethane | ND | ND | ND | ND |
| Chloroform | 98 | 56 | ND | ND |
| Chloromethane | ND | ND | 36 | 320 |
| cis-1,2-Dichloroethene | 27000 | 9700 | ND | ND |
| Cyclohexane | ND | ND | ND | ND |
| Carbon Disulfide | 11 | 11 | 16 | 18 |
| Ethyl Acetate | ND | ND | 8.7 | ND |
| Ethylbenzene | 39 | 14 | 32 | 15 |
| Freon 11 | ND | ND | ND | ND |
| Hexane | ND | ND | ND | ND |
| Isoprpyl Alcohol | 180 | 120 | 51 | 22 |
| m&p-Xylene | 21 | 55 | 61 | 17 |
| Methyl Butl Ketone | ND | ND | ND | ND |
| Methyl Ethyl Ketone | ND | ND | 83 | ND |
| Methyl Isobutly Ketone | ND | ND | 6.5 | ND |
| Methylene Chloride(3) | 940 | 590 | 6.5 | 44 |
| o-Xylene | 20 | 36 | 28 | 9.9 |
| Styrene | ND | ND | 13 | 10 |
| Tetrachloroethylene | 3500 | 2700 | 14 | 38 |
| Tetrahydrofuran | ND | ND | ND | ND |
| trans-1,2-Dichloroethene | 150 | 100 | ND | ND |
| Toluene | 420 | 180 | 49 | 34 |
| Trichloroethene | 5400 | 2600 | ND | 47 |
| Vinyl Chloride | 8500 | 3800 | 7.3 | 160 |
| **TOTAL** | 58435.5 | 24721 | 1347.3 | 1060.9 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

**TABLE 9B**
**CATALYTIC OXIDIZER EFFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Eff 4/4/2007 | Conc(microg/m3) CatOx Eff 5/2/2007 | Conc(microg/m3) CatOx Eff 6/15/2007 | Conc(microg/m3) CatOx Eff 8/1/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 94 | ND | ND | 11 |
| 1,1-Dichloroethane | 36 | ND | ND | 10 |
| 1,1-Dichloroethene | 46 | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 10 | 12 | 12 | 12 |
| 1,3,5-Trimethylbenzene | ND | ND | 7.8 | ND |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | 71 |
| 4-ethyltoluene | ND | ND | 5.7 | 6.3 |
| Acetone | ND | 40 | 110 | 110 |
| Benzene | ND | ND | 12 | 5.9 |
| Chloromethane | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 230 | ND | ND | 33 |
| Carbon Disulfide | ND | 15 | 34 | 69 |
| Ethyl Acetate | ND | ND | 13 | ND |
| Ethylbenzene | 17 | 9.5 | 8.1 | ND |
| Freon 11 | ND | ND | ND | 79 |
| Hexane | ND | ND | ND | 11 |
| Isopropyl Alcohol | ND | 100 | 51 | ND |
| m&p-Xylene | 22 | 24 | 17 | 12 |
| Methyl Isobutly Ketone | ND | ND | 24 | ND |
| Methylene Chloride(3) | 18 | 25 | 8.4 | 11 |
| o-Xylene | 11 | 8.9 | 6.6 | 5.8 |
| Styrene | ND | ND | 6.1 | ND |
| Tetrachloroethylene | 110 | ND | 14 | 11 |
| Tetrahydrofuran | 15 | ND | ND | ND |
| Toluene | ND | 7.1 | 70 | 18 |
| Trans-1,2-Dichloroethene | ND | ND | ND | 10 |
| Trichloroethene | 92 | ND | 14 | 11 |
| Vinyl Chloride | 52 | ND | ND | 12 |
| **TOTAL** | 753 | 241.5 | 413.7 | 509 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

# ATTACHMENT A
# BSA DISCHARGE CRITERIA

# PART I: SPECIFIC CONDITIONS

## A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **monthly** by the permittee as specified below.

| Sample Point | Parameter | Discharge Limitations[1] Daily Max | Sampling Requirements Period | Type |
|---|---|---|---|---|
| 001 | pH | 5.0 – 12.0 S.U. | 1 day | Composite[2] |
| | Total Cadmium | 0.125 lbs. | 1 day | Composite[2] |
| | Total Chromium | 0.626 lbs. | 1 day | Composite[2] |
| | Total Copper | 2.002 lbs. | 1 day | Composite[2] |
| | Total Lead | 0.626 lbs. | 1 day | Composite[2] |
| | Total Mercury | 0.0001 lbs. | 1 day | Composite[2] |
| | Total Nickel | 1.721 lbs. | 1 day | Composite[2] |
| | Total Silver | 0.275 lbs. | 1 day | Composite[2] |
| | Total Zinc | 3.127 lbs. | 1 day | Composite[2] |
| | Total Extractable Hydrocarbons | 100 mg/l | 1 day | Composite[2] |
| | Total Suspended Solids[5] | 250 mg/l | 1 day | Composite[2] |
| | Total Phosphates[5] | 15.34 mg/l | 1 day | Composite[2] |
| | Total Flow | 15,00 gallons[6] | 1 day | Discharge meter reading |

**Footnotes are explained on page 5.**

**CHEM CORE SITE**

**SITE # 9-15-176**

**BUFFALO, NEW YORK**

**MONTHLY REPORT**

**Monthly Report # 4:May 23, 2007 to June 27,2007**

**System Operation:**

The treatment system was operational for approximately 798 hours out of approximately 840 total hours, for a system run time of 95%. The run time exceeded the requirement of 90% run time specified in the Contract Documents for months 2-6 of operation.

**Water Treatment and Discharge:**

A total of 93,977 gallons of treated water was discharged to the Buffalo Sewer Authority (BSA) during this period. The average discharge flow rate was 2,685 gallons per day (gpd), or 1.9 gallons per minute (gpm).

The pumping rate during operation of the extraction wells calculated by dividing the total flow (93,977 gallons) by the hours of operation (798 hours) was 118 gallons per hour (gph). This pumping rate is slightly below the rate of 120 gph specified in the Contract Documents. Approximately 39% of the flow was attributable to the first extraction well (GEW-1), and approximately 61% of the flow was attributable to the second extraction well (GEW-2).

Water samples were collected on June 6 during the reporting period. Summarized analytical results for these samples are included in Tables 1(Extraction Well GEW-1), 2(Extraction Well GEW-2), 3(Air Stripper Influent), 4(Discharge), 5(Monitoring Well MW-20), 6(Monitoring Well MW-21), and 7(Monitoring Well MW-22). All discharge samples were in compliance with BSA permit requirements (Attachment A)

**Air Treatment and Discharge**

The nominal discharge rate for the air stripper is 300 cubic feet per minute (cfm). The discharge rate was measured on five occasions during the reporting period with a portable anemometer The average discharge rate based on the measurements was 288 cfm The vapor content of the air

stream was measured with a PID on four occasions during the reporting period. The average PID reading was 19 ppm.

Air samples were collected on June 15 during the reporting period. Summarized analytical results for these samples are included in Tables 8B(Catalytic Oxidizer Influent) and 9B(Catalytic Oxidizer Effluent). As shown, catalytic oxidizer influent concentrations were significantly less than for previous influent samples. Based on conversations with HES, the damper valve on the catalytic oxidizer unit was not properly opened at the time of sampling so the sample is not representative of the actual influent conditions Therefore, oxidizer efficiencies were not calculated using this sample. However, concentrations of compounds of concern in the oxidizer effluent samples were comparable to concentrations of these compounds in previous effluent samples indicating that the catalytic oxidizer was operating properly.

**Unscheduled Maintenance and Alarms:**

Alarms associated with the catalytic oxidizer shut the system once during the reporting period

**TABLE 1**
**EXTRACTION WELL GEW-1**

| PARAMETER | Conc(ppb) GEW-1 3/7/2007 | Conc(ppb) GEW-1 3/13/2007 | Conc(ppb) GEW-1 3/15/2007 | Conc(ppb) GEW-1 3/20/2007 | Conc(ppb) GEW-1 3/22/2007 | Conc(ppb) GEW-1 4/4/2007 | Conc(ppb) GEW-1 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 2200 | 1800 | 2200 | ND | ND | 1500 | 1200 |
| 1,1-Dichloroethane | 1100 | 750 | 830 | 670 | 600 | 590 | 520 |
| cis-1,2-Dichloroethene | 8200 | 5700 | 6000 | 3900 | 4400 | 4500 | 3400 |
| Dibromochloromethane | ND | ND | ND | ND | ND | ND | 1100 |
| Tetrachloroethene | 1800 | 2200 | 3200 | 3000 | 3700 | 2800 | 2100 |
| Trichloroethene | 3100 | 3300 | 4000 | 2700 | 3400 | 2900 | 2100 |
| Vinyl Chloride | 2900 | ND | 1900 | 1300 | 1700 | 1200 | 1200 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 19300 | 13750 | 18130 | 11570 | 13800 | 13490 | 11620 |

| PARAMETER | Conc(ppb) GEW-1 6/6/2007 | Conc(ppb) GEW-1 7/6/2007 | Conc(ppb) GEW-1 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 590 | 850 | ND |
| 1,1-Dichloroethane | 340 | 420 | ND |
| cis-1,2-Dichloroethene | 2800 | 4000 | ND |
| Dibromochloromethane | ND | ND | ND |
| Tetrachloroethene | 990 | 880 | 800 |
| Trichloroethene | 1700 | 1600 | ND |
| Vinyl Chloride | 460 | 1000 | 1200 |
| Methylene Chloride | ND | 210 | ND |
| Acetone | ND | ND | ND |
| **TOTAL** | 6880 | 8960 | 2000 |

ND=Not Detected

**TABLE 2**
**EXTRACTION WELL GEW-2**

| PARAMETER | Conc(ppb) GEW-2 3/7/2007 | Conc(ppb) GEW-2 3/13/2007 | Conc(ppb) GEW-2 3/15/2007 | Conc(ppb) GEW-2 3/20/2007 | Conc(ppb) GEW-2 3/22/2007 | Conc(ppb) GEW-2 4/4/2007 | Conc(ppb) GEW-2 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1600 | 1900 | 2600 | ND | ND | 1900 | 1200 |
| 1,1-Dichloroethane | 920 | 1100 | 1200 | 710 | 720 | 1100 | 1300 |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | 200 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND | 320 |
| cis-1,2-Dichloroethene | 8500 | 9600 | 11000 | 6600 | 6500 | 9900 | 8100 |
| Methylene Chloride | ND | ND | ND | ND | ND | 310 | 560 |
| Tetrachloroethene | ND | ND | 710 | 450 | 390 | 420 | ND |
| Toluene | ND | ND | 350 | ND | ND | 200 | ND |
| Trichloroethene | 360 | 580 | 1200 | 480 | 390 | 680 | ND |
| Vinyl Chloride | ND | ND | 2700 | 1900 | 2100 | 2500 | 2000 |
| **TOTAL** | 11380 | 13180 | 19760 | 10140 | 10100 | 17210 | 13480 |

| PARAMETER | Conc(ppb) GEW-2 6/6/2007 | Conc(ppb) GEW-2 7/6/2007 | Conc(pbb) GEW-2 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | ND | 790 | ND |
| 1,1-Dichloroethane | 1100 | 780 | 970 |
| 1,1-Dichloroethene | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 5500 | 5700 | 8600 |
| Methylene Chloride | 300 | 570 | ND |
| Tetrachloroethene | ND | 370 | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | ND | 350 | 620 |
| Vinyl Chloride | 940 | 1600 | 1500 |
| **TOTAL** | 7840 | 10160 | 11690 |

ND=Not Detected

**TABLE 3**
**AIR STRIPPER INFLUENT**

| PARAMETER | Conc(ppb) AS influent 3/7/2007 | Conc(ppb) AS influent 3/13/2007 | Conc(ppb) AS influent 3/15/2007 | Conc(ppb) AS influent 3/20/2007 | Conc(ppb) AS influent 3/22/2007 | Conc(ppb) AS influent 4/4/2007 | Conc(ppb) AS influent 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1700 | 1700 | 2100 | ND | ND | 1700 | 1400 |
| 1,1-Dichloroethane | 1000 | 900 | 1000 | 670 | 570 | 980 | 1100 |
| Carbon Disulfide | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 8200 | 7700 | 8800 | 5200 | 4400 | 8400 | 7000 |
| Methylene Chloride | ND | ND | ND | ND | ND | 200 | 300 |
| Tetrachloroethene | 880 | 910 | 1600 | 1400 | 1100 | 1400 | 1100 |
| Toluene | ND | ND | ND | ND | ND | 200 | ND |
| Trichloroethene | 1600 | 1600 | 2400 | 1700 | 1200 | 1600 | 1300 |
| Vinyl Chloride | ND | ND | 1800 | 1600 | 1300 | 1800 | 1600 |
| **TOTAL** | 13380 | 12810 | 17700 | 10570 | 8570 | 16280 | 13800 |

| PARAMETER | Conc(ppb) AS influent 6/6/2007 | Conc(ppb) AS influent 7/6/2007 | Conc(ppb) AS influent 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 870 | 910 | 1300 |
| 1,1-Dichloroethane | 730 | 860 | 930 |
| Carbon Disulfide | ND | ND | 4600 |
| cis-1,2-Dichloroethene | 5300 | 7100 | 7800 |
| Methylene Chloride | 170 | 310 | 500 |
| Tetrachloroethene | 860 | ND | 700 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1200 | 1000 | 1100 |
| Vinyl Chloride | 1100 | 1600 | 1600 |
| **TOTAL** | 10230 | 11780 | 18530 |

ND=Not Detected

**TABLE 4**
**DISCHARGE**

| PARAMETER | Conc(ppb) Discharge 3/7/2007 | Conc(ppb) Discharge 3/13/2007 | Conc(ppb) Discharge 3/15/2007 | Conc(ppb) Discharge 3/20/2007 | Conc(ppb) Discharge 3/22/2007 | Conc(ppb) Discharge 4/4/2007 | Conc(ppb) Discharge 5/2/2007 |
|---|---|---|---|---|---|---|---|
| Acetone | 17 | 18 | ND | 19 | 15 | 12 | ND |
| 1,1-Dichloroethane | ND | ND | 3 6 | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 3 3 | ND | 52 | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | 3 1 | ND | ND | ND | ND |
| Trichloroethene | ND | ND | 5 5 | ND | ND | ND | ND |
| Arsenic | ND | ND | NA | ND | ND | 5 | ND |
| Barium | ND | ND | NA | ND | ND | 200 | ND |
| Selenium | ND | ND | NA | 17 | ND | ND | ND |
| Lead | ND | ND | NA | ND | ND | 60 | ND |
| Zinc | 37 | 17 | NA | ND | ND | ND | ND |
| SVOCs | ND | ND | NA | ND | ND | 5 4(BEHP) | ND |
| pH(Standard Unit) | 7 3 | 8 | NA | 8 | NA | NA | NA |
| TSS(mg/l) | ND | 2 | NA | 2 | NA | NA | NA |
| O&G(mg/l) | ND | ND | NA | ND | NA | NA | NA |
| P(mg/l) | 0 48 | 0 385 | NA | 0 385 | NA | NA | NA |

| PARAMETER | Conc(ppb) Discharge 6/6/2007 | Conc(ppb) Discharge 7/6/2007 | Conc(ppb) Discharge 8/1/2007 |
|---|---|---|---|
| Acetone | ND | ND | ND |
| 1,1-Dichloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 480 | ND | ND |
| Tetrachloroethene | ND | ND | ND |
| Trichloroethene | ND | ND | ND |
| Arsenic | ND | ND | ND |
| Barium | ND | ND | ND |
| Selenium | ND | ND | 7 |
| Lead | ND | ND | ND |
| Zinc | ND | ND | ND |
| SVOCs | 10 5 | ND | ND |
| pH(Standard Unit) | NA | NA | NA |
| TSS(mg/l) | NA | NA | NA |
| O&G(mg/l) | NA | NA | NA |
| P(mg/l) | NA | NA | NA |

ND=Not Detected
NA=Not Analyzed

**TABLE 5**
**MONITORING WELL MW-20**

| PARAMETER | Conc(ppb) MW-20 3/13/2007 | Conc(ppb) MW-20 3/15/2007 | Conc(ppb) MW-20 3/20/2007 | Conc(ppb) MW-20 3/22/2007 | Conc(ppb) MW-20 4/4/2007 | Conc(ppb) MW-20 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 17 | ND | ND | 180 | 50 | 300 |
| 1,1-Dichloroethane | 29 | 24 | 40 | 500 | 80 | ND |
| Acetone | ND | ND | 33 | ND | ND | 3600 |
| Chloroethane | ND | ND | ND | ND | 93 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 56 | 45 | 110 | 1100 | 290 | 2700 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | ND | ND | ND | 2800 |
| Toluene | ND | ND | 3 2 | ND | 6 | ND |
| Trichloroethene | 9 | 6 4 | 5 5 | 80 | 9 | 2100 |
| Vinyl Chloride | 49 | 47 | 73 | 630 | 170 | 330 |
| **TOTAL** | 160 | 122 4 | 264 7 | 2490 | 698 | 11830 |

| PARAMETER | Conc(ppb) MW-20 6/6/2007 | Conc(ppb) MW-20 7/6/2007 | Conc(ppb) MW-20 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 40 | ND | 520 |
| 1,1-Dichloroethane | 67 | 170 | 1200 |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 190 | 840 | 4900 |
| Metrhylene Chloride | ND | ND | 210 |
| Tetrachloroethene | 12 | ND | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | 27 | ND | 260 |
| Vinyl Chloride | 120 | 530 | 3000 |
| **TOTAL** | 456 | 1540 | 10090 |

ND=Not Detected

**TABLE 6**
**MONITORING WELL MW-21**

| PARAMETER | Conc(ppb) MW-21 3/13/2007 | Conc(ppb) MW-21 3/15/2007 | Conc(ppb) MW-21 3/20/2007 | Conc(ppb) MW-21 3/22/2007 | Conc(ppb) MW-21 4/4/2007 | Conc(ppb) MW-21 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 3000 | ND | ND | Nd | 1800 | 1200 |
| 1,1-Dichloroethane | 810 | 130 | 740 | 510 | 580 | 430 |
| 1,1-Dichloroethene | ND | 79 | ND | ND | ND | ND |
| 1,2-Dichloroethane | ND | 31 | ND | ND | ND | ND |
| 1,2-Dichloropropane | ND | 44 | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | 11000 |
| Chloroethane | ND | ND | ND | ND | 380 | ND |
| cis-1,2-Dichloroethene | 4400 | 1800 | 5100 | 3800 | 4300 | 3200 |
| Tetrachloroethene | 1400 | 1800 | 3900 | 2700 | 2000 | 1500 |
| Toluene | 390 | ND | ND | ND | ND | ND |
| Trichloroethene | 5300 | 1100 | 4800 | 3300 | 2500 | 1800 |
| Vinyl Chloride | 1600 | 380 | 1100 | 830 | 710 | 580 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 16900 | 5364 | 15640 | 11140 | 12270 | 19710 |

| PARAMETER | Conc(ppb) MW-21 6/6/2007 | Conc(ppb) MW-21 7/6/2007 | Conc(ppb) MW-21 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 620 | 180 | 670 |
| 1,1-Dichloroethane | 380 | 340 | 640 |
| 1,1-Dichloroethene | ND | ND | ND |
| 1,2-Dichloroethane | ND | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 2500 | 1300 | 2000 |
| Tetrachloroethene | ND | ND | 820 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1400 | ND | 2300 |
| Vinyl Chloride | 590 | 920 | ND |
| Methylene Chloride | ND | 160 | ND |
| **TOTAL** | 5490 | 2900 | 6430 |

ND=Not Detected

**TABLE 7**
**MONITORING WELL MW-22**

| PARAMETER | Conc(ppb) MW-22 3/13/2007 | Conc(ppb) MW-22 3/15/2007 | Conc(ppb) MW-22 3/20/2007 | Conc(ppb) MW-22 3/22/2007 | Conc(ppb) MW-22 4/4/2007 | Conc(ppb) MW-22 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | ND | ND | ND | 25 | 460 | 22 |
| 1,1-Dichloroethane | ND | 1000 | ND | 8 7 | 200 | 31 |
| 1,1-Dichloroethene | ND | ND | ND | 6 5 | ND | 3 2 |
| cis-1,2-Dichloroethene | 1400 | 7300 | 2100 | 150 | 2300 | 110 |
| Tetrachloroethene | 1500 | 3000 | 1600 | 70 | 2000 | 13 |
| Toluene | ND | ND | ND | ND | ND | ND |
| Trichloroethene | 1300 | 6800 | 1700 | 140 | 2100 | 35 |
| Vinyl Chloride | 320 | 1500 | 450 | 20 | ND | 46 |
| Carbon Disulfide | ND | ND | ND | ND | ND | 6 |
| **TOTAL** | 4520 | 19600 | 5850 | 395 2 | 6600 | 244 2 |

| PARAMETER | Conc(ppb) MW-22 6/6/2007 | Conc(ppb) MW-22 7/6/2007 | Conc(ppb) MW-22 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 470 | 850 | 520 |
| 1,1-Dichloroethane | 240 | 240 | 250 |
| 1,1-Dichloroethene | ND | 180 | ND |
| cis-1,2-Dichloroethene | 2700 | 3300 | 2900 |
| Tetrachloroethene | 3100 | 3400 | 1900 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1800 | 2100 | 1700 |
| Vinyl Chloride | ND | ND | ND |
| Carbon Disulfide | ND | ND | ND |
| **TOTAL** | 7840 | 9220 | 6750 |

ND=Not Detected

**TABLE 8B**
**CATALYTIC OXIDIZER INFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Inf 4/4/2007 | Conc(microg/m3) CatOx Inf 5/2/2007 | Conc(microg/m3) CatOx Inf 6/15/2007 | Conc(microg/m3) CatOx Inf 8/23/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 7500 | 2600 | ND | 130 |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | 7 1 |
| 1,1,2-Trichloroethane | ND | ND | ND | ND |
| 1,1-Dichloroethane | 3800 | 1700 | ND | 51 |
| 1,1-Dichloroethene | 700 | 280 | ND | 18 |
| 1,2-Dichloroethane | 74 | 47 | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 8 5 | 40 | 37 | 17 |
| 1,3,5-Trimethylbenzene | ND | 18 | 17 | 9 6 |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | ND |
| 1,4-Dichlorobenzene | ND | 18 | ND | 11 |
| 4-ethyltoluene | ND | 11 | 9 3 | 6 8 |
| Acetone | 52 | 33 | 840 | 69 |
| Benzene | 22 | 12 | 32 | 6 5 |
| Chloroethane | ND | ND | ND | ND |
| Chloroform | 98 | 56 | ND | ND |
| Chloromethane | ND | ND | 36 | 320 |
| cis-1,2-Dichloroethene | 27000 | 9700 | ND | ND |
| Cyclohexane | ND | ND | ND | ND |
| Carbon Disulfide | 11 | 11 | 16 | 18 |
| Ethyl Acetate | ND | ND | 8 7 | ND |
| Ethylbenzene | 39 | 14 | 32 | 15 |
| Freon 11 | ND | ND | ND | ND |
| Hexane | ND | ND | ND | ND |
| Isoprpyl Alcohol | 180 | 120 | 51 | 22 |
| m&p-Xylene | 21 | 55 | 61 | 17 |
| Methyl Butl Ketone | ND | ND | ND | ND |
| Methyl Ethyl Ketone | ND | ND | 83 | ND |
| Methyl Isobutly Ketone | ND | ND | 6 5 | ND |
| Methylene Chloride(3) | 940 | 590 | 6 5 | 44 |
| o-Xylene | 20 | 36 | 28 | 9 9 |
| Styrene | ND | ND | 13 | 10 |
| Tetrachloroethylene | 3500 | 2700 | 14 | 38 |
| Tetrahydrofuran | ND | ND | ND | ND |
| trans-1,2-Dichloroethene | 150 | 100 | ND | ND |
| Toluene | 420 | 180 | 49 | 34 |
| Trichloroethene | 5400 | 2600 | ND | 47 |
| Vinyl Chloride | 8500 | 3800 | 7 3 | 160 |
| **TOTAL** | 58435 5 | 24721 | 1347 3 | 1060 9 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

**TABLE 9B**
**CATALYTIC OXIDIZER EFFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Eff 4/4/2007 | Conc(microg/m3) CatOx Eff 5/2/2007 | Conc(microg/m3) CatOx Eff 6/15/2007 | Conc(microg/m3) CatOx Eff 8/1/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 94 | ND | ND | 11 |
| 1,1-Dichloroethane | 36 | ND | ND | 10 |
| 1,1-Dichloroethene | 46 | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 10 | 12 | 12 | 12 |
| 1,3,5-Trimethylbenzene | ND | ND | 7 8 | ND |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | 71 |
| 4-ethyltoluene | ND | ND | 5 7 | 6 3 |
| Acetone | ND | 40 | 110 | 110 |
| Benzene | ND | ND | 12 | 5 9 |
| Chloromethane | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 230 | ND | ND | 33 |
| Carbon Disulfide | ND | 15 | 34 | 69 |
| Ethyl Acetate | ND | ND | 13 | ND |
| Ethylbenzene | 17 | 9 5 | 8 1 | ND |
| Freon 11 | ND | ND | ND | 79 |
| Hexane | ND | ND | ND | 11 |
| Isopropyl Alcohol | ND | 100 | 51 | ND |
| m&p-Xylene | 22 | 24 | 17 | 12 |
| Methyl Isobutly Ketone | ND | ND | 24 | ND |
| Methylene Chloride(3) | 18 | 25 | 8 4 | 11 |
| o-Xylene | 11 | 8 9 | 6 6 | 5 8 |
| Styrene | ND | ND | 6 1 | ND |
| Tetrachloroethylene | 110 | ND | 14 | 11 |
| Tetrahydrofuran | 15 | ND | ND | ND |
| Toluene | ND | 7 1 | 70 | 18 |
| Trans-1,2-Dichloroethene | ND | ND | ND | 10 |
| Trichloroethene | 92 | ND | 14 | 11 |
| Vinyl Chloride | 52 | ND | ND | 12 |
| **TOTAL** | 753 | 241 5 | 413 7 | 509 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

# ATTACHMENT A
# BSA DISCHARGE CRITERIA

# PART I: SPECIFIC CONDITIONS

## A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **monthly** by the permittee as specified below

| Sample | | Discharge Limitations[1] | Sampling Requirements | |
|---|---|---|---|---|
| **Point** | **Parameter** | **Daily Max** | **Period** | **Type** |
| 001 | pH | 5.0 – 12.0 S.U. | 1 day | Composite[2] |
| | Total Cadmium | 0.125 lbs. | 1 day | Composite[2] |
| | Total Chromium | 0 626 lbs. | 1 day | Composite[2] |
| | Total Copper | 2.002 lbs. | 1 day | Composite[2] |
| | Total Lead | 0.626 lbs. | 1 day | Composite[2] |
| | Total Mercury | 0.0001 lbs. | 1 day | Composite[2] |
| | Total Nickel | 1.721 lbs | 1 day | Composite[2] |
| | Total Silver | 0.275 lbs. | 1 day | Composite[2] |
| | Total Zinc | 3.127 lbs. | 1 day | Composite[2] |
| | Total Extractable Hydrocarbons | 100 mg/l | 1 day | Composite[2] |
| | Total Suspended Solids[5] | 250 mg/l | 1 day | Composite[2] |
| | Total Phosphates[5] | 15.34 mg/l | 1 day | Composite[2] |
| | Total Flow | 15,00 gallons[6] | 1 day | Discharge meter reading |

**Footnotes are explained on page 5.**

**CHEM CORE SITE**
**SITE # 9-15-176**
**BUFFALO, NEW YORK**
**MONTHLY REPORT**

**Monthly Report # 5:June 27, 2007 to July 25,2007**

**System Operation**:
The treatment system was operational for approximately 616 hours out of approximately 672 total hours, for a system run time of 92%. The run time was above the requirement of 90% minimum run time specified in the Contract Documents for months 2-6 of operation.

**Water Treatment and Discharge:**
A total of 78,958 gallons of treated water was discharged to the Buffalo Sewer Authority (BSA) during this period The average discharge flow rate was 2,820 gallons per day (gpd), or 2.0 gallons per minute (gpm).

The pumping rate during operation for the extraction wells calculated by dividing the total flow (78,958 gallons) by the hours of operation (616 hours) was 128 gallons per hour (gph) This pumping rate exceeds the rate of 120 gph specified in the Contract Documents. Approximately 42% of the flow was attributable to the first extraction well (GEW-1), and approximately 58% of the flow was attributable to the second extraction well (GEW-2).

Water samples were collected on July 6 during the reporting period. Summarized analytical results for these samples are included in Tables 1(Extraction Well GEW-1), 2(Extraction Well GEW-2), 3(Air Stripper Influent), 4(Discharge), 5(Monitoring Well MW-20), 6(Monitoring Well MW-21), and 7(Monitoring Well MW-22) All discharge samples were in compliance with BSA permit requirements (Attachment A)

**Air Treatment and Discharge**:
The nominal discharge rate for the air stripper is 300 cubic feet per minute (cfm) The discharge rate was measured on four occasions during the reporting period with a portable anemometer. The average discharge rate based on the measurements was 292 cfm The vapor content of the air

stream was measured with a PID on four occasions during the reporting period. The average PID reading was 20 ppm.

Sampling was scheduled, however, HES did not collect air samples during this reporting period.

**Unscheduled Maintenance and Alarms:**

Alarms associated with the catalytic oxidizer shut the system down once during the reporting period.

**TABLE 1**
**EXTRACTION WELL GEW-1**

| PARAMETER | Conc(ppb) GEW-1 3/7/2007 | Conc(ppb) GEW-1 3/13/2007 | Conc(ppb) GEW-1 3/15/2007 | Conc(ppb) GEW-1 3/20/2007 | Conc(ppb) GEW-1 3/22/2007 | Conc(ppb) GEW-1 4/4/2007 | Conc(ppb) GEW-1 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 2200 | 1800 | 2200 | ND | ND | 1500 | 1200 |
| 1,1-Dichloroethane | 1100 | 750 | 830 | 670 | 600 | 590 | 520 |
| cis-1,2-Dichloroethene | 8200 | 5700 | 6000 | 3900 | 4400 | 4500 | 3400 |
| Dibromochloromethane | ND | ND | ND | ND | ND | ND | 1100 |
| Tetrachloroethene | 1800 | 2200 | 3200 | 3000 | 3700 | 2800 | 2100 |
| Trichloroethene | 3100 | 3300 | 4000 | 2700 | 3400 | 2900 | 2100 |
| Vinyl Chloride | 2900 | ND | 1900 | 1300 | 1700 | 1200 | 1200 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 19300 | 13750 | 18130 | 11570 | 13800 | 13490 | 11620 |

| PARAMETER | Conc(ppb) GEW-1 6/6/2007 | Conc(ppb) GEW-1 7/6/2007 | Conc(ppb) GEW-1 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 590 | 850 | ND |
| 1,1-Dichloroethane | 340 | 420 | ND |
| cis-1,2-Dichloroethene | 2800 | 4000 | ND |
| Dibromochloromethane | ND | ND | ND |
| Tetrachloroethene | 990 | 880 | 800 |
| Trichloroethene | 1700 | 1600 | ND |
| Vinyl Chloride | 460 | 1000 | 1200 |
| Methylene Chloride | ND | 210 | ND |
| Acetone | ND | ND | ND |
| **TOTAL** | 6880 | 8960 | 2000 |

ND=Not Detected

**TABLE 2**
**EXTRACTION WELL GEW-2**

| PARAMETER | Conc(ppb) GEW-2 3/7/2007 | Conc(ppb) GEW-2 3/13/2007 | Conc(ppb) GEW-2 3/15/2007 | Conc(ppb) GEW-2 3/20/2007 | Conc(ppb) GEW-2 3/22/2007 | Conc(ppb) GEW-2 4/4/2007 | Conc(ppb) GEW-2 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1600 | 1900 | 2600 | ND | ND | 1900 | 1200 |
| 1,1-Dichloroethane | 920 | 1100 | 1200 | 710 | 720 | 1100 | 1300 |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | 200 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND | 320 |
| cis-1,2-Dichloroethene | 8500 | 9600 | 11000 | 6600 | 6500 | 9900 | 8100 |
| Methylene Chloride | ND | ND | ND | ND | ND | 310 | 560 |
| Tetrachloroethene | ND | ND | 710 | 450 | 390 | 420 | ND |
| Toluene | ND | ND | 350 | ND | ND | 200 | ND |
| Trichloroethene | 360 | 580 | 1200 | 480 | 390 | 680 | ND |
| Vinyl Chloride | ND | ND | 2700 | 1900 | 2100 | 2500 | 2000 |
| **TOTAL** | 11380 | 13180 | 19760 | 10140 | 10100 | 17210 | 13480 |

| PARAMETER | Conc(ppb) GEW-2 6/6/2007 | Conc(ppb) GEW-2 7/6/2007 | Conc(pbb) GEW-2 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | ND | 790 | ND |
| 1,1-Dichloroethane | 1100 | 780 | 970 |
| 1,1-Dichloroethene | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 5500 | 5700 | 8600 |
| Methylene Chloride | 300 | 570 | ND |
| Tetrachloroethene | ND | 370 | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | ND | 350 | 620 |
| Vinyl Chloride | 940 | 1600 | 1500 |
| **TOTAL** | 7840 | 10160 | 11690 |

ND=Not Detected

**TABLE 3**
**AIR STRIPPER INFLUENT**

| PARAMETER | Conc(ppb) AS influent 3/7/2007 | Conc(ppb) AS influent 3/13/2007 | Conc(ppb) AS influent 3/15/2007 | Conc(ppb) AS influent 3/20/2007 | Conc(ppb) AS influent 3/22/2007 | Conc(ppb) AS influent 4/4/2007 | Conc(ppb) AS influent 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1700 | 1700 | 2100 | ND | ND | 1700 | 1400 |
| 1,1-Dichloroethane | 1000 | 900 | 1000 | 670 | 570 | 980 | 1100 |
| Carbon Disulfide | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 8200 | 7700 | 8800 | 5200 | 4400 | 8400 | 7000 |
| Methylene Chloride | ND | ND | ND | ND | ND | 200 | 300 |
| Tetrachloroethene | 880 | 910 | 1600 | 1400 | 1100 | 1400 | 1100 |
| Toluene | ND | ND | ND | ND | ND | 200 | ND |
| Trichloroethene | 1600 | 1600 | 2400 | 1700 | 1200 | 1600 | 1300 |
| Vinyl Chloride | ND | ND | 1800 | 1600 | 1300 | 1800 | 1600 |
| **TOTAL** | 13380 | 12810 | 17700 | 10570 | 8570 | 16280 | 13800 |

| PARAMETER | Conc(ppb) AS influent 6/6/2007 | Conc(ppb) AS influent 7/6/2007 | Conc(ppb) AS influent 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 870 | 910 | 1300 |
| 1,1-Dichloroethane | 730 | 860 | 930 |
| Carbon Disulfide | ND | ND | 4600 |
| cis-1,2-Dichloroethene | 5300 | 7100 | 7800 |
| Methylene Chloride | 170 | 310 | 500 |
| Tetrachloroethene | 860 | ND | 700 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1200 | 1000 | 1100 |
| Vinyl Chloride | 1100 | 1600 | 1600 |
| **TOTAL** | 10230 | 11780 | 18530 |

ND=Not Detected

**TABLE 4**
**DISCHARGE**

| PARAMETER | Conc(ppb) Discharge 3/7/2007 | Conc(ppb) Discharge 3/13/2007 | Conc(ppb) Discharge 3/15/2007 | Conc(ppb) Discharge 3/20/2007 | Conc(ppb) Discharge 3/22/2007 | Conc(ppb) Discharge 4/4/2007 | Conc(ppb) Discharge 5/2/2007 |
|---|---|---|---|---|---|---|---|
| Acetone | 17 | 18 | ND | 19 | 15 | 12 | ND |
| 1,1-Dichloroethane | ND | ND | 3 6 | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 3 3 | ND | 52 | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | 3 1 | ND | ND | ND | ND |
| Trichloroethene | ND | ND | 5 5 | ND | ND | ND | ND |
| Arsenic | ND | ND | NA | ND | ND | 5 | ND |
| Barium | ND | ND | NA | ND | ND | 200 | ND |
| Selenium | ND | ND | NA | 17 | ND | ND | ND |
| Lead | ND | ND | NA | ND | ND | 60 | ND |
| Zinc | 37 | 17 | NA | ND | ND | ND | ND |
| SVOCs | ND | ND | NA | ND | ND | 5 4(BEHP) | ND |
| pH(Standard Unit) | 7 3 | 8 | NA | 8 | NA | NA | NA |
| TSS(mg/l) | ND | 2 | NA | 2 | NA | NA | NA |
| O&G(mg/l) | ND | ND | NA | ND | NA | NA | NA |
| P(mg/l) | 0 48 | 0 385 | NA | 0 385 | NA | NA | NA |

| PARAMETER | Conc(ppb) Discharge 6/6/2007 | Conc(ppb) Discharge 7/6/2007 | Conc(ppb) Discharge 8/1/2007 |
|---|---|---|---|
| Acetone | ND | ND | ND |
| 1,1-Dichloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 480 | ND | ND |
| Tetrachloroethene | ND | ND | ND |
| Trichloroethene | ND | ND | ND |
| Arsenic | ND | ND | ND |
| Barium | ND | ND | ND |
| Selenium | ND | ND | 7 |
| Lead | ND | ND | ND |
| Zinc | ND | ND | ND |
| SVOCs | 10 5 | ND | ND |
| pH(Standard Unit) | NA | NA | NA |
| TSS(mg/l) | NA | NA | NA |
| O&G(mg/l) | NA | NA | NA |
| P(mg/l) | NA | NA | NA |

ND=Not Detected
NA=Not Analyzed

**TABLE 5**
**MONITORING WELL MW-20**

| PARAMETER | Conc(ppb) MW-20 3/13/2007 | Conc(ppb) MW-20 3/15/2007 | Conc(ppb) MW-20 3/20/2007 | Conc(ppb) MW-20 3/22/2007 | Conc(ppb) MW-20 4/4/2007 | Conc(ppb) MW-20 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 17 | ND | ND | 180 | 50 | 300 |
| 1,1-Dichloroethane | 29 | 24 | 40 | 500 | 80 | ND |
| Acetone | ND | ND | 33 | ND | ND | 3600 |
| Chloroethane | ND | ND | ND | ND | 93 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 56 | 45 | 110 | 1100 | 290 | 2700 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | ND | ND | ND | 2800 |
| Toluene | ND | ND | 3 2 | ND | 6 | ND |
| Trichloroethene | 9 | 6 4 | 5 5 | 80 | 9 | 2100 |
| Vinyl Chloride | 49 | 47 | 73 | 630 | 170 | 330 |
| **TOTAL** | 160 | 122 4 | 264 7 | 2490 | 698 | 11830 |

| PARAMETER | Conc(ppb) MW-20 6/6/2007 | Conc(ppb) MW-20 7/6/2007 | Conc(ppb) MW-20 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 40 | ND | 520 |
| 1,1-Dichloroethane | 67 | 170 | 1200 |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 190 | 840 | 4900 |
| Metrhylene Chloride | ND | ND | 210 |
| Tetrachloroethene | 12 | ND | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | 27 | ND | 260 |
| Vinyl Chloride | 120 | 530 | 3000 |
| **TOTAL** | 456 | 1540 | 10090 |

ND=Not Detected

**TABLE 6**
**MONITORING WELL MW-21**

| PARAMETER | Conc(ppb) MW-21 3/13/2007 | Conc(ppb) MW-21 3/15/2007 | Conc(ppb) MW-21 3/20/2007 | Conc(ppb) MW-21 3/22/2007 | Conc(ppb) MW-21 4/4/2007 | Conc(ppb) MW-21 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 3000 | ND | ND | Nd | 1800 | 1200 |
| 1,1-Dichloroethane | 810 | 130 | 740 | 510 | 580 | 430 |
| 1,1-Dichloroethene | ND | 79 | ND | ND | ND | ND |
| 1,2-Dichloroethane | ND | 31 | ND | ND | ND | ND |
| 1,2-Dichloropropane | ND | 44 | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | 11000 |
| Chloroethane | ND | ND | ND | ND | 380 | ND |
| cis-1,2-Dichloroethene | 4400 | 1800 | 5100 | 3800 | 4300 | 3200 |
| Tetrachloroethene | 1400 | 1800 | 3900 | 2700 | 2000 | 1500 |
| Toluene | 390 | ND | ND | ND | ND | ND |
| Trichloroethene | 5300 | 1100 | 4800 | 3300 | 2500 | 1800 |
| Vinyl Chloride | 1600 | 380 | 1100 | 830 | 710 | 580 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 16900 | 5364 | 15640 | 11140 | 12270 | 19710 |

| PARAMETER | Conc(ppb) MW-21 6/6/2007 | Conc(ppb) MW-21 7/6/2007 | Conc(ppb) MW-21 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 620 | 180 | 670 |
| 1,1-Dichloroethane | 380 | 340 | 640 |
| 1,1-Dichloroethene | ND | ND | ND |
| 1,2-Dichloroethane | ND | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 2500 | 1300 | 2000 |
| Tetrachloroethene | ND | ND | 820 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1400 | ND | 2300 |
| Vinyl Chloride | 590 | 920 | ND |
| Methylene Chloride | ND | 160 | ND |
| **TOTAL** | 5490 | 2900 | 6430 |

ND=Not Detected

**TABLE 7**
**MONITORING WELL MW-22**

| PARAMETER | Conc(ppb) MW-22 3/13/2007 | Conc(ppb) MW-22 3/15/2007 | Conc(ppb) MW-22 3/20/2007 | Conc(ppb) MW-22 3/22/2007 | Conc(ppb) MW-22 4/4/2007 | Conc(ppb) MW-22 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | ND | ND | ND | 25 | 460 | 22 |
| 1,1-Dichloroethane | ND | 1000 | ND | 8 7 | 200 | 31 |
| 1,1-Dichloroethene | ND | ND | ND | 6 5 | ND | 3 2 |
| cis-1,2-Dichloroethene | 1400 | 7300 | 2100 | 150 | 2300 | 110 |
| Tetrachloroethene | 1500 | 3000 | 1600 | 70 | 2000 | 13 |
| Toluene | ND | ND | ND | ND | ND | ND |
| Trichloroethene | 1300 | 6800 | 1700 | 140 | 2100 | 35 |
| Vinyl Chloride | 320 | 1500 | 450 | 20 | ND | 46 |
| Carbon Disulfide | ND | ND | ND | ND | ND | 6 |
| **TOTAL** | 4520 | 19600 | 5850 | 395 2 | 6600 | 244 2 |

| PARAMETER | Conc(ppb) MW-22 6/6/2007 | Conc(ppb) MW-22 7/6/2007 | Conc(ppb) MW-22 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 470 | 850 | 520 |
| 1,1-Dichloroethane | 240 | 240 | 250 |
| 1,1-Dichloroethene | ND | 180 | ND |
| cis-1,2-Dichloroethene | 2700 | 3300 | 2900 |
| Tetrachloroethene | 3100 | 3400 | 1900 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1800 | 2100 | 1700 |
| Vinyl Chloride | ND | ND | ND |
| Carbon Disulfide | ND | ND | ND |
| **TOTAL** | 7840 | 9220 | 6750 |

ND=Not Detected

**TABLE 8B**
**CATALYTIC OXIDIZER INFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Inf 4/4/2007 | Conc(microg/m3) CatOx Inf 5/2/2007 | Conc(microg/m3) CatOx Inf 6/15/2007 | Conc(microg/m3) CatOx Inf 8/23/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 7500 | 2600 | ND | 130 |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | 7 1 |
| 1,1,2-Trichloroethane | ND | ND | ND | ND |
| 1,1-Dichloroethane | 3800 | 1700 | ND | 51 |
| 1,1-Dichloroethene | 700 | 280 | ND | 18 |
| 1,2-Dichloroethane | 74 | 47 | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 8 5 | 40 | 37 | 17 |
| 1,3,5-Trimethylbenzene | ND | 18 | 17 | 9 6 |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | ND |
| 1,4-Dichlorobenzene | ND | 18 | ND | 11 |
| 4-ethyltoluene | ND | 11 | 9 3 | 6 8 |
| Acetone | 52 | 33 | 840 | 69 |
| Benzene | 22 | 12 | 32 | 6 5 |
| Chloroethane | ND | ND | ND | ND |
| Chloroform | 98 | 56 | ND | ND |
| Chloromethane | ND | ND | 36 | 320 |
| cis-1,2-Dichloroethene | 27000 | 9700 | ND | ND |
| Cyclohexane | ND | ND | ND | ND |
| Carbon Disulfide | 11 | 11 | 16 | 18 |
| Ethyl Acetate | ND | ND | 8 7 | ND |
| Ethylbenzene | 39 | 14 | 32 | 15 |
| Freon 11 | ND | ND | ND | ND |
| Hexane | ND | ND | ND | ND |
| Isoprpyl Alcohol | 180 | 120 | 51 | 22 |
| m&p-Xylene | 21 | 55 | 61 | 17 |
| Methyl Butl Ketone | ND | ND | ND | ND |
| Methyl Ethyl Ketone | ND | ND | 83 | ND |
| Methyl Isobutly Ketone | ND | ND | 6 5 | ND |
| Methylene Chloride(3) | 940 | 590 | 6 5 | 44 |
| o-Xylene | 20 | 36 | 28 | 9 9 |
| Styrene | ND | ND | 13 | 10 |
| Tetrachloroethylene | 3500 | 2700 | 14 | 38 |
| Tetrahydrofuran | ND | ND | ND | ND |
| trans-1,2-Dichloroethene | 150 | 100 | ND | ND |
| Toluene | 420 | 180 | 49 | 34 |
| Trichloroethene | 5400 | 2600 | ND | 47 |
| Vinyl Chloride | 8500 | 3800 | 7 3 | 160 |
| **TOTAL** | 58435 5 | 24721 | 1347 3 | 1060 9 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

**TABLE 9B**
**CATALYTIC OXIDIZER EFFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Eff 4/4/2007 | Conc(microg/m3) CatOx Eff 5/2/2007 | Conc(microg/m3) CatOx Eff 6/15/2007 | Conc(microg/m3) CatOx Eff 8/1/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 94 | ND | ND | 11 |
| 1,1-Dichloroethane | 36 | ND | ND | 10 |
| 1,1-Dichloroethene | 46 | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 10 | 12 | 12 | 12 |
| 1,3,5-Trimethylbenzene | ND | ND | 7 8 | ND |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | 71 |
| 4-ethyltoluene | ND | ND | 5 7 | 6 3 |
| Acetone | ND | 40 | 110 | 110 |
| Benzene | ND | ND | 12 | 5 9 |
| Chloromethane | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 230 | ND | ND | 33 |
| Carbon Disulfide | ND | 15 | 34 | 69 |
| Ethyl Acetate | ND | ND | 13 | ND |
| Ethylbenzene | 17 | 9 5 | 8 1 | ND |
| Freon 11 | ND | ND | ND | 79 |
| Hexane | ND | ND | ND | 11 |
| Isopropyl Alcohol | ND | 100 | 51 | ND |
| m&p-Xylene | 22 | 24 | 17 | 12 |
| Methyl Isobutly Ketone | ND | ND | 24 | ND |
| Methylene Chloride(3) | 18 | 25 | 8 4 | 11 |
| o-Xylene | 11 | 8 9 | 6 6 | 5 8 |
| Styrene | ND | ND | 6 1 | ND |
| Tetrachloroethylene | 110 | ND | 14 | 11 |
| Tetrahydrofuran | 15 | ND | ND | ND |
| Toluene | ND | 7 1 | 70 | 18 |
| Trans-1,2-Dichloroethene | ND | ND | ND | 10 |
| Trichloroethene | 92 | ND | 14 | 11 |
| Vinyl Chloride | 52 | ND | ND | 12 |
| **TOTAL** | 753 | 241 5 | 413 7 | 509 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

# ATTACHMENT A
# BSA DISCHARGE CRITERIA

# PART I: SPECIFIC CONDITIONS

## A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **monthly** by the permittee as specified below

| Sample | | Discharge Limitations[1] | Sampling Requirements | |
|---|---|---|---|---|
| **Point** | **Parameter** | **Daily Max** | **Period** | **Type** |
| 001 | pH | 5 0 – 12.0 S.U. | 1 day | Composite[2] |
| | Total Cadmium | 0.125 lbs. | 1 day | Composite[2] |
| | Total Chromium | 0 626 lbs. | 1 day | Composite[2] |
| | Total Copper | 2.002 lbs. | 1 day | Composite[2] |
| | Total Lead | 0.626 lbs | 1 day | Composite[2] |
| | Total Mercury | 0.0001 lbs. | 1 day | Composite[2] |
| | Total Nickel | 1.721 lbs | 1 day | Composite[2] |
| | Total Silver | 0.275 lbs. | 1 day | Composite[2] |
| | Total Zinc | 3.127 lbs. | 1 day | Composite[2] |
| | Total Extractable Hydrocarbons | 100 mg/l | 1 day | Composite[2] |
| | Total Suspended Solids[5] | 250 mg/l | 1 day | Composite[2] |
| | Total Phosphates[5] | 15.34 mg/l | 1 day | Composite[2] |
| | Total Flow | 15,00 gallons[6] | 1 day | Discharge meter reading |

**Footnotes are explained on page 5.**

**CHEM CORE SITE**

**SITE # 9-15-176**

**BUFFALO, NEW YORK**

**MONTHLY REPORT**

**Monthly Report # 6: July 25, 2007 to August 23,2007**

**System Operation**:

The treatment system was operational for only five days during the reporting period The catalytic oxidizer could not be maintained at the proper temperature for combustion so the unit was shut down. The Contractor (HES) scheduled a maintenance visit by the equipment manufacturer (Anguil Environmental) for August 24,2007. Costs for repair of the catalytic oxidizer will be included in Change Order #3 for the Chem Core project.

**Water Treatment and Discharge:**

A total of 11,237 gallons of treated water was discharged to the Buffalo Sewer Authority (BSA) in the five days of operation during this period. The average discharge flow rate was 2,247 gallons per day (gpd), or 1 6 gallons per minute (gpm).

The pumping rate during operation of the extraction wells calculated by dividing the total flow (11,237 gallons) by the hours of operation (108 hours) was 104 gallons per hour (gph). This pumping rate is somewhat below the rate of 120 gph specified in the Contract Documents. Approximately 56% of the flow was attributable to the first extraction well (GEW-1), and approximately 44% of the flow was attributable to the second extraction well (GEW-2)

Water samples were collected on August 1 and 23 during the reporting period. Summarized analytical results for these samples are included in Tables 1(Extraction Well GEW-1), 2(Extraction Well GEW-2), 3(Air Stripper Influent), 4(Discharge), 5(Monitoring Well MW-20), 6(Monitoring Well MW-21), and 7(Monitoring Well MW-22) All discharge samples were in compliance with BSA permit requirements (Attachment A)

**Air Treatment and Discharge.**

The nominal discharge rate for the air stripper is 300 cubic feet per minute (cfm). The discharge rate was not measured during the reporting period. The vapor content of the air stream was not measured during the reporting period.

Air samples were collected on August 1 (effluent) and August 23 (influent) during the reporting period. Summarized analytical results for these samples are included in Tables 8B(Catalytic Oxidizer Influent) and 9B(Catalytic Oxidizer Effluent). As shown, catalytic oxidizer influent concentrations were significantly less than for previous influent samples other than the sample collected in June In order to keep the catalytic oxidizer operating, the air stripper air flow rate was decreased and the water flow rate to the stripper was increased during the period. These factors could have decreased the air stripper efficiency and led to the lower influent concentrations. Based on conversations with HES, there was not a problem with sampling the air stream as occurred during month four of operation. Because of the abnormal influent concentrations, the removal efficiencies for some of the compounds of concern did not meet the requirements of the Contract Documents. However, concentrations of compounds of concern in the oxidizer effluent samples were low indicating that there is not an air emissions problem.

**Unscheduled Maintenance and Alarms:**

The system was shut down after five days of operation because the catalytic oxidizer was not operating properly Anguil Environmental (the catalytic oxidizer manufacturer) is scheduled to begin oxidizer repairs on August 24

**TABLE 1**
**EXTRACTION WELL GEW-1**

| PARAMETER | Conc(ppb) GEW-1 3/7/2007 | Conc(ppb) GEW-1 3/13/2007 | Conc(ppb) GEW-1 3/15/2007 | Conc(ppb) GEW-1 3/20/2007 | Conc(ppb) GEW-1 3/22/2007 | Conc(ppb) GEW-1 4/4/2007 | Conc(ppb) GEW-1 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 2200 | 1800 | 2200 | ND | ND | 1500 | 1200 |
| 1,1-Dichloroethane | 1100 | 750 | 830 | 670 | 600 | 590 | 520 |
| cis-1,2-Dichloroethene | 8200 | 5700 | 6000 | 3900 | 4400 | 4500 | 3400 |
| Dibromochloromethane | ND | ND | ND | ND | ND | ND | 1100 |
| Tetrachloroethene | 1800 | 2200 | 3200 | 3000 | 3700 | 2800 | 2100 |
| Trichloroethene | 3100 | 3300 | 4000 | 2700 | 3400 | 2900 | 2100 |
| Vinyl Chloride | 2900 | ND | 1900 | 1300 | 1700 | 1200 | 1200 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 19300 | 13750 | 18130 | 11570 | 13800 | 13490 | 11620 |

| PARAMETER | Conc(ppb) GEW-1 6/6/2007 | Conc(ppb) GEW-1 7/6/2007 | Conc(ppb) GEW-1 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 590 | 850 | ND |
| 1,1-Dichloroethane | 340 | 420 | ND |
| cis-1,2-Dichloroethene | 2800 | 4000 | ND |
| Dibromochloromethane | ND | ND | ND |
| Tetrachloroethene | 990 | 880 | 800 |
| Trichloroethene | 1700 | 1600 | ND |
| Vinyl Chloride | 460 | 1000 | 1200 |
| Methylene Chloride | ND | 210 | ND |
| Acetone | ND | ND | ND |
| **TOTAL** | 6880 | 8960 | 2000 |

ND=Not Detected

**TABLE 2**
**EXTRACTION WELL GEW-2**

| PARAMETER | Conc(ppb) GEW-2 3/7/2007 | Conc(ppb) GEW-2 3/13/2007 | Conc(ppb) GEW-2 3/15/2007 | Conc(ppb) GEW-2 3/20/2007 | Conc(ppb) GEW-2 3/22/2007 | Conc(ppb) GEW-2 4/4/2007 | Conc(ppb) GEW-2 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1600 | 1900 | 2600 | ND | ND | 1900 | 1200 |
| 1,1-Dichloroethane | 920 | 1100 | 1200 | 710 | 720 | 1100 | 1300 |
| 1,1-Dichloroethene | ND | ND | ND | ND | ND | 200 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND | 320 |
| cis-1,2-Dichloroethene | 8500 | 9600 | 11000 | 6600 | 6500 | 9900 | 8100 |
| Methylene Chloride | ND | ND | ND | ND | ND | 310 | 560 |
| Tetrachloroethene | ND | ND | 710 | 450 | 390 | 420 | ND |
| Toluene | ND | ND | 350 | ND | ND | 200 | ND |
| Trichloroethene | 360 | 580 | 1200 | 480 | 390 | 680 | ND |
| Vinyl Chloride | ND | ND | 2700 | 1900 | 2100 | 2500 | 2000 |
| **TOTAL** | 11380 | 13180 | 19760 | 10140 | 10100 | 17210 | 13480 |

| PARAMETER | Conc(ppb) GEW-2 6/6/2007 | Conc(ppb) GEW-2 7/6/2007 | Conc(pbb) GEW-2 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | ND | 790 | ND |
| 1,1-Dichloroethane | 1100 | 780 | 970 |
| 1,1-Dichloroethene | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 5500 | 5700 | 8600 |
| Methylene Chloride | 300 | 570 | ND |
| Tetrachloroethene | ND | 370 | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | ND | 350 | 620 |
| Vinyl Chloride | 940 | 1600 | 1500 |
| **TOTAL** | 7840 | 10160 | 11690 |

ND=Not Detected

**TABLE 3**
**AIR STRIPPER INFLUENT**

| PARAMETER | Conc(ppb) AS influent 3/7/2007 | Conc(ppb) AS influent 3/13/2007 | Conc(ppb) AS influent 3/15/2007 | Conc(ppb) AS influent 3/20/2007 | Conc(ppb) AS influent 3/22/2007 | Conc(ppb) AS influent 4/4/2007 | Conc(ppb) AS influent 5/2/2007 |
|---|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 1700 | 1700 | 2100 | ND | ND | 1700 | 1400 |
| 1,1-Dichloroethane | 1000 | 900 | 1000 | 670 | 570 | 980 | 1100 |
| Carbon Disulfide | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 8200 | 7700 | 8800 | 5200 | 4400 | 8400 | 7000 |
| Methylene Chloride | ND | ND | ND | ND | ND | 200 | 300 |
| Tetrachloroethene | 880 | 910 | 1600 | 1400 | 1100 | 1400 | 1100 |
| Toluene | ND | ND | ND | ND | ND | 200 | ND |
| Trichloroethene | 1600 | 1600 | 2400 | 1700 | 1200 | 1600 | 1300 |
| Vinyl Chloride | ND | ND | 1800 | 1600 | 1300 | 1800 | 1600 |
| **TOTAL** | 13380 | 12810 | 17700 | 10570 | 8570 | 16280 | 13800 |

| PARAMETER | Conc(ppb) AS influent 6/6/2007 | Conc(ppb) AS influent 7/6/2007 | Conc(ppb) AS influent 8/1/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 870 | 910 | 1300 |
| 1,1-Dichloroethane | 730 | 860 | 930 |
| Carbon Disulfide | ND | ND | 4600 |
| cis-1,2-Dichloroethene | 5300 | 7100 | 7800 |
| Methylene Chloride | 170 | 310 | 500 |
| Tetrachloroethene | 860 | ND | 700 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1200 | 1000 | 1100 |
| Vinyl Chloride | 1100 | 1600 | 1600 |
| **TOTAL** | 10230 | 11780 | 18530 |

ND=Not Detected

**TABLE 4**
**DISCHARGE**

| PARAMETER | Conc(ppb) Discharge 3/7/2007 | Conc(ppb) Discharge 3/13/2007 | Conc(ppb) Discharge 3/15/2007 | Conc(ppb) Discharge 3/20/2007 | Conc(ppb) Discharge 3/22/2007 | Conc(ppb) Discharge 4/4/2007 | Conc(ppb) Discharge 5/2/2007 |
|---|---|---|---|---|---|---|---|
| Acetone | 17 | 18 | ND | 19 | 15 | 12 | ND |
| 1,1-Dichloroethane | ND | ND | 3 6 | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 3 3 | ND | 52 | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | 3 1 | ND | ND | ND | ND |
| Trichloroethene | ND | ND | 5 5 | ND | ND | ND | ND |
| Arsenic | ND | ND | NA | ND | ND | 5 | ND |
| Barium | ND | ND | NA | ND | ND | 200 | ND |
| Selenium | ND | ND | NA | 17 | ND | ND | ND |
| Lead | ND | ND | NA | ND | ND | 60 | ND |
| Zinc | 37 | 17 | NA | ND | ND | ND | ND |
| SVOCs | ND | ND | NA | ND | ND | 5 4(BEHP) | ND |
| pH(Standard Unit) | 7 3 | 8 | NA | 8 | NA | NA | NA |
| TSS(mg/l) | ND | 2 | NA | 2 | NA | NA | NA |
| O&G(mg/l) | ND | ND | NA | ND | NA | NA | NA |
| P(mg/l) | 0 48 | 0 385 | NA | 0 385 | NA | NA | NA |

| PARAMETER | Conc(ppb) Discharge 6/6/2007 | Conc(ppb) Discharge 7/6/2007 | Conc(ppb) Discharge 8/1/2007 |
|---|---|---|---|
| Acetone | ND | ND | ND |
| 1,1-Dichloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 480 | ND | ND |
| Tetrachloroethene | ND | ND | ND |
| Trichloroethene | ND | ND | ND |
| Arsenic | ND | ND | ND |
| Barium | ND | ND | ND |
| Selenium | ND | ND | 7 |
| Lead | ND | ND | ND |
| Zinc | ND | ND | ND |
| SVOCs | 10 5 | ND | ND |
| pH(Standard Unit) | NA | NA | NA |
| TSS(mg/l) | NA | NA | NA |
| O&G(mg/l) | NA | NA | NA |
| P(mg/l) | NA | NA | NA |

ND=Not Detected
NA=Not Analyzed

**TABLE 5**
**MONITORING WELL MW-20**

| PARAMETER | Conc(ppb) MW-20 3/13/2007 | Conc(ppb) MW-20 3/15/2007 | Conc(ppb) MW-20 3/20/2007 | Conc(ppb) MW-20 3/22/2007 | Conc(ppb) MW-20 4/4/2007 | Conc(ppb) MW-20 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 17 | ND | ND | 180 | 50 | 300 |
| 1,1-Dichloroethane | 29 | 24 | 40 | 500 | 80 | ND |
| Acetone | ND | ND | 33 | ND | ND | 3600 |
| Chloroethane | ND | ND | ND | ND | 93 | ND |
| Chloroform | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 56 | 45 | 110 | 1100 | 290 | 2700 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| Tetrachloroethene | ND | ND | ND | ND | ND | 2800 |
| Toluene | ND | ND | 3 2 | ND | 6 | ND |
| Trichloroethene | 9 | 6 4 | 5 5 | 80 | 9 | 2100 |
| Vinyl Chloride | 49 | 47 | 73 | 630 | 170 | 330 |
| **TOTAL** | 160 | 122 4 | 264 7 | 2490 | 698 | 11830 |

| PARAMETER | Conc(ppb) MW-20 6/6/2007 | Conc(ppb) MW-20 7/6/2007 | Conc(ppb) MW-20 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 40 | ND | 520 |
| 1,1-Dichloroethane | 67 | 170 | 1200 |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| Chloroform | ND | ND | ND |
| cis-1,2-Dichloroethene | 190 | 840 | 4900 |
| Metrhylene Chloride | ND | ND | 210 |
| Tetrachloroethene | 12 | ND | ND |
| Toluene | ND | ND | ND |
| Trichloroethene | 27 | ND | 260 |
| Vinyl Chloride | 120 | 530 | 3000 |
| **TOTAL** | 456 | 1540 | 10090 |

ND=Not Detected

**TABLE 6**
**MONITORING WELL MW-21**

| PARAMETER | Conc(ppb) MW-21 3/13/2007 | Conc(ppb) MW-21 3/15/2007 | Conc(ppb) MW-21 3/20/2007 | Conc(ppb) MW-21 3/22/2007 | Conc(ppb) MW-21 4/4/2007 | Conc(ppb) MW-21 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | 3000 | ND | ND | Nd | 1800 | 1200 |
| 1,1-Dichloroethane | 810 | 130 | 740 | 510 | 580 | 430 |
| 1,1-Dichloroethene | ND | 79 | ND | ND | ND | ND |
| 1,2-Dichloroethane | ND | 31 | ND | ND | ND | ND |
| 1,2-Dichloropropane | ND | 44 | ND | ND | ND | ND |
| Acetone | ND | ND | ND | ND | ND | 11000 |
| Chloroethane | ND | ND | ND | ND | 380 | ND |
| cis-1,2-Dichloroethene | 4400 | 1800 | 5100 | 3800 | 4300 | 3200 |
| Tetrachloroethene | 1400 | 1800 | 3900 | 2700 | 2000 | 1500 |
| Toluene | 390 | ND | ND | ND | ND | ND |
| Trichloroethene | 5300 | 1100 | 4800 | 3300 | 2500 | 1800 |
| Vinyl Chloride | 1600 | 380 | 1100 | 830 | 710 | 580 |
| Methylene Chloride | ND | ND | ND | ND | ND | ND |
| **TOTAL** | 16900 | 5364 | 15640 | 11140 | 12270 | 19710 |

| PARAMETER | Conc(ppb) MW-21 6/6/2007 | Conc(ppb) MW-21 7/6/2007 | Conc(ppb) MW-21 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 620 | 180 | 670 |
| 1,1-Dichloroethane | 380 | 340 | 640 |
| 1,1-Dichloroethene | ND | ND | ND |
| 1,2-Dichloroethane | ND | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND |
| Acetone | ND | ND | ND |
| Chloroethane | ND | ND | ND |
| cis-1,2-Dichloroethene | 2500 | 1300 | 2000 |
| Tetrachloroethene | ND | ND | 820 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1400 | ND | 2300 |
| Vinyl Chloride | 590 | 920 | ND |
| Methylene Chloride | ND | 160 | ND |
| **TOTAL** | 5490 | 2900 | 6430 |

ND=Not Detected

**TABLE 7**
**MONITORING WELL MW-22**

| PARAMETER | Conc(ppb) MW-22 3/13/2007 | Conc(ppb) MW-22 3/15/2007 | Conc(ppb) MW-22 3/20/2007 | Conc(ppb) MW-22 3/22/2007 | Conc(ppb) MW-22 4/4/2007 | Conc(ppb) MW-22 5/2/2007 |
|---|---|---|---|---|---|---|
| 1,1,1 Trichloroethane | ND | ND | ND | 25 | 460 | 22 |
| 1,1-Dichloroethane | ND | 1000 | ND | 8 7 | 200 | 31 |
| 1,1-Dichloroethene | ND | ND | ND | 6 5 | ND | 3 2 |
| cis-1,2-Dichloroethene | 1400 | 7300 | 2100 | 150 | 2300 | 110 |
| Tetrachloroethene | 1500 | 3000 | 1600 | 70 | 2000 | 13 |
| Toluene | ND | ND | ND | ND | ND | ND |
| Trichloroethene | 1300 | 6800 | 1700 | 140 | 2100 | 35 |
| Vinyl Chloride | 320 | 1500 | 450 | 20 | ND | 46 |
| Carbon Disulfide | ND | ND | ND | ND | ND | 6 |
| **TOTAL** | 4520 | 19600 | 5850 | 395 2 | 6600 | 244 2 |

| PARAMETER | Conc(ppb) MW-22 6/6/2007 | Conc(ppb) MW-22 7/6/2007 | Conc(ppb) MW-22 8/23/2007 |
|---|---|---|---|
| 1,1,1 Trichloroethane | 470 | 850 | 520 |
| 1,1-Dichloroethane | 240 | 240 | 250 |
| 1,1-Dichloroethene | ND | 180 | ND |
| cis-1,2-Dichloroethene | 2700 | 3300 | 2900 |
| Tetrachloroethene | 3100 | 3400 | 1900 |
| Toluene | ND | ND | ND |
| Trichloroethene | 1800 | 2100 | 1700 |
| Vinyl Chloride | ND | ND | ND |
| Carbon Disulfide | ND | ND | ND |
| **TOTAL** | 7840 | 9220 | 6750 |

ND=Not Detected

**TABLE 8B**
**CATALYTIC OXIDIZER INFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Inf 4/4/2007 | Conc(microg/m3) CatOx Inf 5/2/2007 | Conc(microg/m3) CatOx Inf 6/15/2007 | Conc(microg/m3) CatOx Inf 8/23/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 7500 | 2600 | ND | 130 |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | 7 1 |
| 1,1,2-Trichloroethane | ND | ND | ND | ND |
| 1,1-Dichloroethane | 3800 | 1700 | ND | 51 |
| 1,1-Dichloroethene | 700 | 280 | ND | 18 |
| 1,2-Dichloroethane | 74 | 47 | ND | ND |
| 1,2-Dichloropropane | ND | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 8 5 | 40 | 37 | 17 |
| 1,3,5-Trimethylbenzene | ND | 18 | 17 | 9 6 |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | ND |
| 1,4-Dichlorobenzene | ND | 18 | ND | 11 |
| 4-ethyltoluene | ND | 11 | 9 3 | 6 8 |
| Acetone | 52 | 33 | 840 | 69 |
| Benzene | 22 | 12 | 32 | 6 5 |
| Chloroethane | ND | ND | ND | ND |
| Chloroform | 98 | 56 | ND | ND |
| Chloromethane | ND | ND | 36 | 320 |
| cis-1,2-Dichloroethene | 27000 | 9700 | ND | ND |
| Cyclohexane | ND | ND | ND | ND |
| Carbon Disulfide | 11 | 11 | 16 | 18 |
| Ethyl Acetate | ND | ND | 8 7 | ND |
| Ethylbenzene | 39 | 14 | 32 | 15 |
| Freon 11 | ND | ND | ND | ND |
| Hexane | ND | ND | ND | ND |
| Isoprpyl Alcohol | 180 | 120 | 51 | 22 |
| m&p-Xylene | 21 | 55 | 61 | 17 |
| Methyl Butl Ketone | ND | ND | ND | ND |
| Methyl Ethyl Ketone | ND | ND | 83 | ND |
| Methyl Isobutly Ketone | ND | ND | 6 5 | ND |
| Methylene Chloride(3) | 940 | 590 | 6 5 | 44 |
| o-Xylene | 20 | 36 | 28 | 9 9 |
| Styrene | ND | ND | 13 | 10 |
| Tetrachloroethylene | 3500 | 2700 | 14 | 38 |
| Tetrahydrofuran | ND | ND | ND | ND |
| trans-1,2-Dichloroethene | 150 | 100 | ND | ND |
| Toluene | 420 | 180 | 49 | 34 |
| Trichloroethene | 5400 | 2600 | ND | 47 |
| Vinyl Chloride | 8500 | 3800 | 7 3 | 160 |
| **TOTAL** | 58435 5 | 24721 | 1347 3 | 1060 9 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

**TABLE 9B**
**CATALYTIC OXIDIZER EFFLUENT**

| PARAMETER | Conc(microg/m3) CatOx Eff 4/4/2007 | Conc(microg/m3) CatOx Eff 5/2/2007 | Conc(microg/m3) CatOx Eff 6/15/2007 | Conc(microg/m3) CatOx Eff 8/1/2007 |
|---|---|---|---|---|
| 1,1,1-Trichloroethane(1) | 94 | ND | ND | 11 |
| 1,1-Dichloroethane | 36 | ND | ND | 10 |
| 1,1-Dichloroethene | 46 | ND | ND | ND |
| 1,2,4-Trimethylbenzene | 10 | 12 | 12 | 12 |
| 1,3,5-Trimethylbenzene | ND | ND | 7 8 | ND |
| 2,2,4-trimethylpentane(2) | ND | ND | ND | 71 |
| 4-ethyltoluene | ND | ND | 5 7 | 6 3 |
| Acetone | ND | 40 | 110 | 110 |
| Benzene | ND | ND | 12 | 5 9 |
| Chloromethane | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 230 | ND | ND | 33 |
| Carbon Disulfide | ND | 15 | 34 | 69 |
| Ethyl Acetate | ND | ND | 13 | ND |
| Ethylbenzene | 17 | 9 5 | 8 1 | ND |
| Freon 11 | ND | ND | ND | 79 |
| Hexane | ND | ND | ND | 11 |
| Isopropyl Alcohol | ND | 100 | 51 | ND |
| m&p-Xylene | 22 | 24 | 17 | 12 |
| Methyl Isobutly Ketone | ND | ND | 24 | ND |
| Methylene Chloride(3) | 18 | 25 | 8 4 | 11 |
| o-Xylene | 11 | 8 9 | 6 6 | 5 8 |
| Styrene | ND | ND | 6 1 | ND |
| Tetrachloroethylene | 110 | ND | 14 | 11 |
| Tetrahydrofuran | 15 | ND | ND | ND |
| Toluene | ND | 7 1 | 70 | 18 |
| Trans-1,2-Dichloroethene | ND | ND | ND | 10 |
| Trichloroethene | 92 | ND | 14 | 11 |
| Vinyl Chloride | 52 | ND | ND | 12 |
| **TOTAL** | 753 | 241 5 | 413 7 | 509 |

(1) methylchloroform
(2) iso-octane
(3) dichloromethane

ND=Not Detected

# ATTACHMENT A
# BSA DISCHARGE CRITERIA

# PART I: SPECIFIC CONDITIONS

## A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **monthly** by the permittee as specified below

| Sample | | Discharge Limitations[1] | Sampling Requirements | |
|---|---|---|---|---|
| **Point** | **Parameter** | **Daily Max** | **Period** | **Type** |
| 001 | pH | 5.0 – 12.0 S.U. | 1 day | Composite[2] |
| | Total Cadmium | 0.125 lbs. | 1 day | Composite[2] |
| | Total Chromium | 0 626 lbs. | 1 day | Composite[2] |
| | Total Copper | 2.002 lbs. | 1 day | Composite[2] |
| | Total Lead | 0.626 lbs. | 1 day | Composite[2] |
| | Total Mercury | 0.0001 lbs. | 1 day | Composite[2] |
| | Total Nickel | 1.721 lbs | 1 day | Composite[2] |
| | Total Silver | 0.275 lbs. | 1 day | Composite[2] |
| | Total Zinc | 3.127 lbs. | 1 day | Composite[2] |
| | Total Extractable Hydrocarbons | 100 mg/l | 1 day | Composite[2] |
| | Total Suspended Solids[5] | 250 mg/l | 1 day | Composite[2] |
| | Total Phosphates[5] | 15 34 mg/l | 1 day | Composite[2] |
| | Total Flow | 15,00 gallons[6] | 1 day | Discharge meter reading |

**Footnotes are explained on page 5.**