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Final Report

Brewerton Water Pollution Control Plant Comprehensive Facility Assessment

Prepared for: Onondaga County Department of Water Environment Protection, Onondaga County, New York

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Section 1.0 Introduction

1.1 Project Background and Overview

The Onondaga County Department of Water Environment Protection (WEP) retained CRA Infrastructure & Engineering, Inc. (CRA) in August 2013 to provide professional engineering services for a comprehensive assessment of the physical infrastructure and plant processes at the Brewerton Water Pollution Control Plant (WPCP).

The Plant was constructed in 1974 and much of the original equipment is still in use, with a few exceptions of upgrades between 1995 and 2001. The goal of this comprehensive facility inspection was to identify repairs, replacement needs, and modifications so that the WPCP is in compliance with anticipated permit limits and codes, and is capable of maintaining the facility's asset value and reliable operation into the foreseeable future. The results of the evaluation are individual recommendations on improvements, a detailed Capital Improvement Plan (CIP) for the 5-year planning period and a general CIP for the 10- and 20-year planning periods.

This comprehensive facility assessment included on-Site investigations of the mechanical, electrical, control, structural, architectural and Site assets followed by a CIP analysis to identify critical capital improvements anticipated to be needed within the next 20 years. In addition to physical assessments, a process improvement evaluation was performed to determine recommendations for critical plant issues identified.

1.2 Sources of Information Utilized

This assessment was performed using numerous sources of information including existing documents, field investigations, communication with plant personnel, and a review of applicable regulations, standards and codes.

1.2.1 Existing Documents

CRA obtained the following documents and information from WEP to develop this facility assessment:

- Brewerton Water Pollution Control Plant Record Drawings. Barton, Brown, Clyde and Loguidice, 1975
- Chemical Feed Equipment Conversions for Sodium Hypochlorite Disinfection Contract Drawings, Onondaga County Department of Drainage and Sanitation, 1999
- Brewerton Water Pollution Control Facility Upgrade, Stearns and Wheler, 2000



- Chemical Storage and Feed Facilities at Baldwinsville-Seneca Knolls, Brewerton, Wetzel Road, and Burnet Avenue, Blasland, Bouck and Lee, 2001
- Brewerton WPCP Operating and Compliance Monitoring Data 2007 2012
- Brewerton Survey for Asbestos-Containing Material, National Environmental Testing, Inc.,
 1991
- NYSERDA FlexTech Report Brewerton WWTP, Johnson Controls and CDM Smith, October 2012
- Brewerton Water Pollution Control Plant Wet Weather Operating Plan, Water Environment Protection, May 2013

1.2.2 Field Investigations and Communication with Site Personnel

The following field investigations were conducted to determine existing facility conditions:

- Mechanical Equipment Inspections, CRA, September 10, 11, and 16, 2013
- Electrical Equipment Inspections, CRA, September 24 and 25, 2013
- Controls Inspections, CRA, October 29, 2013
- Process Tank Entry and Inspections, CRA, August 26, 27, and 28, September 16, 23, and 30, 2013
- Plant Outfall Inspection, Aquatic Sciences, September 11, 2013
- Asbestos and Lead Survey, Popli Design Group, October 14, 15, and 16, 2013
- Structural, Architectural, and Building Mechanical/Electrical/ Plumbing, Popli Design Group,
 October 15 and 16, 2013

1.2.3 Regulations, Standards, and Codes

The facility infrastructure and processes were evaluated with respect to current applicable codes where practical. Regulatory requirements and industry standards were criteria for improvement recommendations. The following regulations, standards, and codes were considered as appropriate and applicable in developing this facility assessment:

- SPDES Permit for the Brewerton WPCP
- Great Lakes and Upper Mississippi Regional Board Recommended Standards for Wastewater Facilities - Ten States Standards
- New York State Department of Environmental Conservation Guidance Documents
- New York State Environmental Conservation Law



- New York State Uniform Fire Prevention and Building Code
- National Fire Prevention Association (NFPA) 820 Fire Protection in Wastewater Treatment and Collection Facilities
- National Electric Code
- Energy Conservation Construction Code of New York State
- New York State Mechanical Code
- New York State Plumbing Code
- International Building Code

1.3 Facility History

The Brewerton WPCP has been in service since 1974 and the majority of the original equipment is still in use, with a few exceptions of upgrades between 1999 and 2011. The facility was designed to provide advanced secondary treatment using Contact Stabilization mode and with recent changes in plant operation, the Plant currently treats wastewater with either Contact Stabilization or Extended Aeration, depending on plant flow rate. The WPCP is rated with design average and peak flows of 3.0 and 7.5 million gallons per day (mgd), respectively. Over the past 6 years, influent flows have averaged about 2 mgd. However, flows ranging from below 1 mgd up to 10 mgd have led to significant operational challenges and negative impacts on treatment efficacy.

Wastewater is collected throughout portions of the Town of Cicero; along the southwest edge of Oneida Lake, beginning just west of the Hamlet of Bridgeport, up to and including the Village of Brewerton. Wastewater collected from the tributary areas is conveyed via a series of pumping stations which connect to either the Lakeshore or Orangeport trunk sewers. These two trunk sewers feed to and combine at Special Manhole #1, located immediately to the east of the Raw Sewage Pumping Station structure at the WPCP. The wastewater influent is primarily from residential sources (Brewerton Factsheet, 2011).

WEP has received a draft State Pollutant Discharge Elimination System (SPDES) permit renewal that has proposed a significant reduction in effluent residual chlorine concentrations, which would require changes in treatment and monitoring. It is necessary to identify repairs, replacements, and improvements so that the WPCP complies with anticipated permit limits and codes, as well as maintain the facility's asset value and reliable operation into the foreseeable future. Improvements will touch on most facets of the Plant, particularly equipment that requires high maintenance, areas of significant deterioration, and permit/code compliance concerns.

Section 2.0 Comprehensive Facility Assessment Approach

This comprehensive facility assessment includes an evaluation of the physical plant infrastructure and the Plant processes. The approach for these evaluations is described in Sections 2.1 and 2.2, while the evaluations are summarized in Sections 3.0 and 4.0.

2.1 Physical Infrastructure Assessment Approach

CRA's approach to the Physical Infrastructure Assessment included a comprehensive review of all major assets and equipment at the WPCP. The physical assets inspection was coordinated closely with the process evaluations (see Section 2.2). Together these assessments served as the basis for the recommended CIP.

The Plant is composed of many diverse physical assets with a wide range of applications and operating conditions. Each of the major assets and supporting equipment was visually inspected by a team of engineers and architects with extensive experience related to the particular asset class being evaluated (e.g., mechanical, electrical, structural, architectural systems).

The physical inspection and evaluation of assets included four general steps: 1) review of available background information; 2) development of electronic data collection templates; 3) physical condition assessments/inspections; and 4) a likelihood/consequence of failure and risk assessment. A description of each step is included in the following sections.

2.1.1 Review of Background Information and Available Records

As part of the planning and preparation for the physical asset inspection and condition assessment, the project team reviewed the available information for the various WPCP systems (including asset condition, plant performance and operational data, and recommended design standards). This helped the inspection team gain an understanding of current conditions, maintenance practices, and treatment processes. Items reviewed under this task included, but were not limited to:

- Record drawings
- Operational data and Operations and Maintenance (O&M) manuals
- Existing Maximo system asset catalog and associated data



2.1.2 Electronic Data Collection Template Development

The evaluation team utilized electronic tablet (iPad) technology to facilitate the collection, tabulation, analysis, and compilation of asset/inventory data into a comprehensive database. These devices, and the customized data collection templates that they support, enabled an organized collection of text, photos, location, and other related data. The data collected in the field were then uploaded and assimilated into a master database.

WEP currently tracks key information about each piece of equipment (or asset) for all of its facilities on the computer maintenance management system, Maximo. The Maximo asset lists and existing available information were uploaded onto CRA's iPad units and developed into TapForm lists, streamlining the field data collection process. WEP provided the various fields of data collection for each asset category, which were included as pick lists in the TapForms. This approach used WEP's existing inventory system such that the results with updated asset information could be re-integrated into the existing Maximo database. The Maximo database inventory included the following five primary asset categories:

- Mechanical/Process Systems
- HVAC System
- Electrical/Controls Systems
- Structural Assets
- Building System Assets

During the Physical Infrastructure Assessment, a few assets not currently contained in the Maximo system were identified and added to the master inventory list. A complete listing of the asset inventory is included as Appendix A.

2.1.3 Physical Condition Assessment/Inspections

The physical condition assessment of the WPCP included an inspection of visible and inventoried assets, and was conducted by a team of personnel experienced in wastewater facility evaluations. The condition assessment was closely coordinated with WPCP staff so that relevant institutional knowledge and operational history were recorded for each asset.

The field inspections consisted of examining the equipment, discussions with plant personnel, data entry into the TapForms for each individual asset, and photographic records of equipment and nameplates, wherever possible. These data were provided to WEP electronically to be incorporated into the updated Maximo database.

During the condition assessment, a series of numeric condition scores were assigned to each asset included in the master inventory list for physical condition parameters, operational performance parameters and maintenance requirements as generally described as follows:

- Physical Condition intended to capture the actual physical appearance, and takes into account the relative age, materials of construction, and potential changes in technology for a particular asset.
- Operational Condition describes operational and performance history, including excessive wear, vibration, noise, heat, etc., of the assets. This also includes evaluating whether the asset is becoming inefficient and/or ineffective, or difficult to sustain performance (reduced capacity, excessive energy use, etc.)
- History of Planned Maintenance intended to evaluate preventative maintenance versus reactive maintenance. This category also identifies assets that require constant or progressive maintenance, difficult to find spare parts, or parts are becoming obsolete and no longer supported by manufacturers.
- O&M Protocols identifies if O&M documents and/or written procedures are available for a piece of equipment.

The specific scoring for each category was determined via collaboration between the inspectors and appropriate Brewerton operations/maintenance staff whenever possible. This approach was intended to bring a broad perspective to the analysis and mitigate individual biases during the scoring process. The condition scoring for each category was based on WEP's existing Maximo scale structure of 1-10 (a score of 1 generally indicates the asset is in very good condition/maintenance and a score of 10 indicates the asset is in very poor condition, is failing or cannot continue to be maintained).

The resulting numeric condition, operational, and maintenance scores provide a basis for estimating the projected likelihood and consequence of failure for each asset, and subsequently a corresponding risk score as described in Section 2.1.4. Preliminary asset scoring was proofed through a detailed quality assurance (QA)/quality control (QC) exercise by County staff. The scoring was then subsequently adjusted based on County feedback to develop the final asset scores.

2.1.4 Risk Assessment

To complete the Physical Infrastructure Assessment, WEP's risk-based approach was used as the basis to identify and prioritize the capital reinvestment needs for the WPCP. This approach incorporated the diverse factors that must be considered when developing a strategic CIP that reflects WEP's priorities and obligations. The asset scores collected for the WPCP assets

provided the parameters and basis for the associated risk-based analysis and prioritization. This process is designed to achieve objective, reliable, and repeatable results. Each asset was assessed based on a likelihood of failure (LOF) and a consequence of failure (COF) to produce a corresponding risk. To determine these values, the various scoring fields for each asset were compiled using the following sub-categories as provided by WEP:

- The LOF scores were determined based on a weighted average of the condition scores as follows (the LOF Matrix is included in Appendix B.1):
 - > 50% Physical Condition Score
 - > 30% Operational Condition Score
 - ➤ 15% History of Planned Maintenance
 - > 5% O&M Protocols
- The COF scores were determined based on a weighted average of the following (the COF Matrix is included in Appendix B.1):
 - > 30% System Reliability
 - > 25% Regulatory Compliance
 - 25% Health and Safety
 - ➤ 10% Fiscal Impacts
 - > 10% Public Confidence

The associated risk determination for the assets was calculated by multiplying the LOF scores by the COF scores (Risk = LOF x COF). See Appendix B.1 for the LOF, COF, and Risk analysis for the evaluated WPCP assets. Appendix B.2 is a list of the assets sorted by operational condition score, to identify those with opportunities for operational improvement. Once the risk analysis was completed for the master asset database, the following steps were completed to develop a prioritized CIP:

- Project Identification and Bundling
- Project Cost Estimates and Projections
- Capital Improvement Plan Development

The project bundles were developed primarily using the asset risk scoring. Assets with the highest risk score were determined to be high priority and subsequently associated with the 5-year CIP, those with a moderate score were placed in the intermediate category (10-year CIP) and those with the lowest scores, but determined to be critical for plant operations, were placed in the future priority category (20-year CIP). Additionally, if an asset was part of a larger

group of assets (such as the blowers, groups or sets of pumps, PLCs/SCADA system, grit system components, gates/valves, etc.), then the group of assets were categorized based on the highest risk score. For example, if one blower had a high risk score, then the other blowers would automatically be given the same priority. In developing the project priorities, intermediate and future projects also considered scheduled replacement versus failure. For example, the influent screening system improvements were viewed with higher regard due to lack of redundancy, environmental conditions, and importance to overall plant process.

Plant issues identified that were not associated with an asset in the Maximo database were based on discussions with staff about facility concerns. These issues were added to the CIP as appropriate.

The process is designed to achieve objective, reliable, and repeatable results, which are presented in Section 5.0.

2.2 Process Evaluation Approach

Concurrent with the physical infrastructure assessment, CRA conducted a comprehensive process and operations assessment to verify that the facility continues to meet the SPDES Permit limits while addressing future challenges and plant processes that require improvements. Five years of plant operational and compliance monitoring data (2007 through 2012) were used to develop a profile of process performance throughout the WPCP. Parameters analyzed during the review included:

- Average Daily Flow
- Maximum Daily Flow
- Biochemical Oxygen Demand (BOD)
- Total Kjeldahl Nitrogen (TKN)
- Ammonia-Nitrogen
- Total Suspended Solids (TSS)
- Total phosphorus (TP)
- Fecal Coliform
- Total Residual Chlorine (TRC)

The original plant design parameters for the facility were also reviewed, including hydraulic and treatment capacity design parameters for each unit process. The current operating SPDES Permit for the Plant and the draft SPDES Permit renewal were reviewed. In addition to reviewing operations' data and reports, interviews were conducted with plant operations'



personnel between June and December 2013 to provide a thorough understanding of operator's practices, perspectives, and challenges.

Section 3.0 Physical Infrastructure Assessments and Evaluations

The physical infrastructure assessments and evaluations completed at the WPCP included inspection of the following components:

- Mechanical/Process Systems
- Electrical Systems
- Instrumentation and Controls
- Process Tankage and Piping
- Building Systems
- General Site
- Security, Lighting, and Fire Alarms

3.1 Mechanical/Process Systems

The evaluations of the mechanical and process systems throughout the WPCP revealed a wide range of equipment conditions. In general, a significant number of process equipment items are either approaching or have reached the end of their useful operating design life and require either rehabilitation or full replacement. Other items were noted to be critical processes and noted for replacement under the future planning period (10-year/20-year planning period). The following summarizes the critical mechanical systems in need of upgrade or replacement to facilitate operations and permit compliance:

- Aeration blowers, associated air piping and diffusers
- Sodium hypochlorite bulk storage tanks and associated level sensors
- Grit clam bucket, hoist, air diffusers

In addition, the MLSS channel telescoping valves and Settling Tank scum pits were determined to be operationally deficient. The telescoping valves openings are breached and the scum pits backup at a total plant flow of approximately 4 mgd. Also, the south clarifier scum pit was identified to be approximately 1 inch lower than the north clarifier scum pit. The telescoping valves should be replaced with units having a longer travel distance and the scum pit elevations should be raised.



Several other items determined during the inspections to be critical to WPCP process operations that should be included under future planning phases of the CIP include:

- Settling tanks sludge collectors, scum pumps, and associated equipment
- Raw Sewage Pumps 1-3 and associated motors, and VFDs
- Ferrous sulfate bulk storage tanks, level meters, and associated feed equipment
- Return activated sludge (RAS) pumps, flow meters, and associated motors, and VFDs
- Facility process isolation gates (Chlorine Contact Tanks, Mixed Liquor Suspended Solid (MLSS) Tanks, Sludge Concentration Tank)
- Control valves
- Thickener rotary drum and pumps, digester and thickener feed pumps
- Influent screening system (no redundancy other than manual bar rack), consider smaller screen size for improved performance

A detailed listing of all mechanical assets evaluated as a part of this project with their associated scoring is included in Appendix C.

3.2 Electrical Systems

All major plant electrical components and equipment were inspected. During the Site investigations, substations, MCCs, generator, main breakers, feeders, switchgears and other key electrical assets were reviewed with WPCP electrical staff. In general, this assessment revealed several equipment deficiencies, safety issues, and code concerns. Based on these safety concerns and some critical hazards noted during the assessment, it is recommended that a facility-wide Arc Flash Hazard Analysis be completed. The following is a general summary of the critical electrical systems within the WPCP in need of rehabilitation/replacement to facilitate continued operations and permit compliance:

- Main distribution switchgear
- Motor Control Centers (MCCs)
- Facility generator
- Low voltage lighting panels

A detailed listing of all electrical assets evaluated as a part of this project with their associated scoring is included in Appendix C.

3.3 Instrumentation and Controls

A survey and inspection of the automation and control systems was conducted at the WPCP along with WEP staff. During the Site investigations, Programmable Logic Controller (PLC), Supervisory Control and Data Acquisition (SCADA), and Human-Machine Interface (HMI) systems were reviewed and each electrical enclosure that housed automation hardware was opened for general viewing and visual condition assessment. In general, the automation equipment hardware and software appear to be operational and functioning as originally designed. While no major issues were identified, the Multiplexer #1 and #2 PLCs were observed to be missing front panel doors, the Chemical PLC HMI screen loses visibility due to an inadequate light bulb, and all of the panels are becoming obsolete such that WEP will have difficulty acquiring replacement parts. Based on the age of the PLCs and high likelihood that part availability will continue to become a growing concern, it is recommended that a new architecture be developed and implemented to continue reliable, uninterrupted system operation.

3.4 Process Tankage and Piping

3.4.1 Process Tankage

The condition assessment for the process tankage involved entering each tank and performing a general visual inspection and hammer soundings investigation. WPCP personnel assisted CRA by showing the major points of concern in each structure evaluated. Generally, all process tankage are in relatively good condition and appear well maintained. The following issues were identified during the inspections:

- The process channel between the MLSS tanks and clarifiers leaks significantly during high plant flows.
- 2. Special Manhole 1 has minor cracks, chips, spalling and miscellaneous safety items noted; rehabilitation appears to be required.
- 3. Miscellaneous concrete degradation on concrete walks, and minor cracks, chips, and spalling of walls were noted.
- 4. Standing water, due to rainfall and melting snow, on the gallery deck west of the aeration tanks creates a safety hazard, especially during winter months when freeze/thaw conditions are prevalent.

3.4.2 Yard Piping

Yard piping condition was discussed with Brewerton WPCP personnel. A significant issue was identified with the facility process water piping and yard hydrants. System leaks are becoming

a growing concern and many of the yard hydrants are not in working condition and are in need of replacement.

3.4.3 Plant Outfall

The Plant outfall pipe was inspected by Aquatic Sciences on September 12, 2013, using a remotely operated vehicle equipped with video and sonar. Manhole structures and ladders appeared intact and observed piping joints were noted to be smooth in transition. Some sediment was observed in the pipe, but appeared to be minimal and not of concern. The full inspection report is provided in Appendix D.

3.5 Building Systems

The buildings' systems, including the architectural, structural and mechanical/electrical/-plumbing (MEP) components were inspected by the Popli Design Group (Popli) on October 15 and 16, 2013. The facility includes four buildings:

- Control Building, including the Garage Area
 - Built in 1972
 - Building footprint 5,494 square feet (sf)
- Raw Sewage Pumping Station
 - Built in 1972
 - Building footprint 3,836 sf
- Chemical Storage Building
 - Built in 1972
 - Building footprint 1,701 sf
- Sludge Building
 - Built in 2000
 - Building footprint 1,041 sf

A summary of the building systems and investigations is provided in the sections that follow. The building system evaluation reports prepared by Popli are included in Appendix C. Applicable building system components were also evaluated using the numeric scoring system provided by WEP and are included in Appendix A – Asset Inventory Database and Appendix B.1 – Likelihood of Failure, Consequence of Failure, and Asset Risk Analysis.

3.5.1 Control Building

3.5.1.1 Control Building Architectural Systems

The Control Building is a single-story masonry load bearing structure, with concrete foundation walls, concrete floor slabs both elevated and slab on grade, bonded brick and concrete masonry unit (CMU) exterior walls with precast concrete plank roof deck. The garage roof deck is 3 feet 4 inches higher than the remaining roof deck area of the control building. The condition of the major buildings components are as follows:

- The built-up roofing (BUR) system was installed in 1996 and is therefore 18 years old with
 7 years remaining on the existing 25-year roof warranty. The underside of the concrete roof
 deck shows evidence of slight water infiltration in the Control Room. Planning for a roof
 replacement project should begin now. It is recommended to always have or maintain the
 roof systems under warranty.
- The protected front and rear entrance doors appear to be in average condition.
- The overhead garage door is uninsulated, worn and the original hollow metal (HM) swinging exterior doors and frames are rusted out at the bottom and need replacement.
- Interior and exterior door closers and exterior weather stripping appear old and worn.
- Interior door hardware and doors with glass panels are not American Disability Act (ADA)
 compliant. Door hardware and interior vision panel doors should be replaced throughout
 the building.
- The exterior masonry appears in good condition; exposed steel lintels should be refinished and minor masonry repair including sealant joint replacement and re-pointing should be undertaken.
- Exit stairs from the below grade pipe gallery are 31 inches wide; the current Building Code
 of New York State (BCNYS) requires 36 inch minimum. This is an existing non-compliance
 issue that would be costly and is not necessary to address.
- Interior Vinyl Composition (VCT) floor finish appear in good condition; carpeting and wall base is worn out and a replacement floor finish and wall base is recommended.
- The wood casework in the Break Room is old and worn. The toilet partitions in the Locker Room are original and worn and the metal lockers are mismatched, old and rusted, and thus should be replaced.

3.5.1.2 Control Building Structural Systems

The Control Building structurally appears to be in fair to good condition. The most prevalent structural issue noted are step cracks in the CMU and brick masonry shear walls, mainly above

windows, doors or louvers. This is usually caused by either rusting of the loose lintels, or the reduction of in-plane shear capacity of the walls at the openings. The step cracks are of minor to moderate severity and are in scattered locations and therefore appear to predominantly be an aesthetic concern. There was also a wide crack in one of the concrete roof planks in the Boiler Room that is parallel to the span and extends from a step crack in the exterior wall to an opening in the roof for an air intake; this does not appear to be a significant concern.

3.5.1.3 Control Building Mechanical HVAC Systems

The condition and recommended improvements for the Control Building mechanical systems are as follows:

- The existing building is heated using electric unit heaters. The units appear to be in good operating condition.
- The thermostats for the unit heaters have been upgraded and are in new condition.
- The Control Room has an operable outside air louver with roof-mounted exhaust fan for ventilation recommended to be used in warmer periods. The building also has a roof-mounted air conditioning unit with direct expansion (DX) cooling and no operable heating. The unit's damper controls are not all intact. This unit provides ventilation and cooling; however, without heating, the unit is not used and the return air (RA) grilles are barricaded to stop cold drafts. This unit should be replaced with a new heating and cooling unit. There is no natural gas utility service on site at this time; a natural gas service would need to be installed. Note that conversion of the existing HVAC systems to natural gas is explored in Section 3.9.1.
- The Blower Room and Garage are ventilated via roof mounted supply fans and exhaust fans. These units appear to be in good operating condition.
- The Server Room is cooled with a split system air conditioner that appears to be in good condition.
- Circulation dampers and a wall fan provide ventilation from the Blower Room and appear in good condition.
- The Janitor's Room does not have an exhaust fan. An exhaust fan ducted to the building exterior is recommended.
- The Locker Room /Toilet Shower room has a roof-mounted exhaust fan in good operating condition.
- The corridor is heated with two ceiling recessed electric cabinet heaters that appear in good operating condition.
- The Break Room is heated with baseboard electric heat and cooled with a through-wall air conditioning unit; these appear to be in fair condition. No exhaust was observed in this

area. We recommend that an exhaust fan be provided and ducted to the building's exterior.

3.5.1.4 Control Building Electrical Systems

The condition and recommended improvements for the Control Building electrical systems are as follows:

- The fluorescent light fixtures have had their ballasts, lamp sockets and lamps replaced under a previous energy saving project and appear to be in good condition.
- The light switches and receptacles are original. Some switches are very weak and will likely
 fail soon. Many receptacles are broken around the "ground hole" creating a weakened
 ground connection for a cord and plug.
- The main service switchboard and motor control centers are original and components are failing. Replacement parts are becoming difficult to find.
- The lightning protection system on the roof is in very poor condition. Lightning rods are missing from many pieces of equipment. Some connections to equipment are broken and cable supports are missing around the perimeter of the roofs.

3.5.1.5 Control Building Plumbing Systems

The condition and recommended improvements for the Control Building plumbing systems are as follows:

- The building has a potable water system, sanitary system, and a storm water system.
- The plumbing fixtures include an electric water cooler in the Control Room, service sink in the janitor's room, water closet, urinal, lavatory, and stall shower in the single Locker Room, and a stainless steel kitchen sink in the Break Room. All fixtures appear in good condition. The lavatory is in need of new handles.
- The hose bib in the Garage does not have a vacuum breaker.
- The cast iron roof drains appear in good serviceable condition along with the piping systems are in good condition.
- The domestic hot water system consists of a single 40-gallon electric water heater located in the basement (West Gallery) and piped to all fixtures without a recirculation pipe. The heater does not have a heat trap on the outlet, which is a present energy code requirement if there is no recirculation system.
- The water service in the basement (8-inch) splits into a fire service, plant water service, and potable water service. All three are protected with their own reduced pressure zone



backflow preventer. The services appear in good condition. The fire service serves exterior site fire hydrants only, as there are no sprinkler systems in the buildings. The Plant water and potable water services serve all buildings on the campus via the connecting galleries below grade.

• The Locker Room in the Control Building contains the only toilet room within the facility. Having only one toilet room is a non-compliant condition with today's code, which requires separate toilet facilities for both sexes. The Building Code of New York State (BCNYS) allows a facility arrangement to be served by toilet facilities in a building within 500 feet of the building(s) without toilet facilities. The three buildings without facilities are within the 500-foot distance requirement. The required plumbing fixture count is based on the total occupant load, then equally divided by gender, and then is determined on Table 2902.1 of the BCNYS. The total load of the facility is estimated to be 157 occupants. From Table 2902.1, the overall facility should have separate toilet facilities with one Water Closet, and one Lavatory per gender. A drinking fountain or drinking water provision is also required, as well as one service sink (present in the Janitor's Room of the Control Building). Shower stalls are not required by code, but clearly could be desirable for programmatic reasons.

3.5.2 Raw Sewage Pumping Station

3.5.2.1 Raw Sewage Pumping Station Architectural

The Raw Sewage Pumping Station is a single-story masonry load bearing structure, with concrete foundation walls, concrete floor slabs both elevated and slab-on-grade, bonded brick and CMU exterior walls with precast concrete plank roof deck. The building has a basement level and a lower sub-basement level of poured concrete. The condition of the major building components is as follows:

- The slab-on-grade portion of the building houses two 1,000-gallon sodium hypochlorite storage tanks and has settled causing cracks in the floor slab, the secondary tank containment area and the exterior walls.
- The BUR system was installed in 1997 and is therefore 17 years old with 8 years remaining on the existing 25-year roof warranty. Planning for a roof replacement project should begin now.
- Two loading dock bays with fiberglass double doors and frames are present on the west elevation of the building. The doors, frames and hardware should be replaced. The original HM swinging exterior doors and frames also should be replaced.
- Interior and exterior door closers and exterior weather stripping are old and worn. All door hardware should be replaced throughout the building.



- The exterior masonry appears in good condition. Exposed steel lintels should be refinished. Minor masonry repair including, sealant joint replacement and re-pointing, should be undertaken. Mortar deterioration, likely due to corrosion from chlorine fumes, was observed below the wall exhaust fans on the north elevation.
- The painted floors, walls and roof deck, and overhead exposed steel should be refinished.
- Exit stairs from the basement levels are only 31 inches wide the current BCNYS requires 36-inch minimum. This is an existing non-compliance issue that would be costly and is not necessary to address.

3.5.2.2 Raw Sewage Pumping Station Structural

The primary structural issue identified in the Raw Sewage Pumping Station is settlement in the northeast corner of the building. The north portion of the building is a single-story, load-bearing masonry structure with concrete plank roofing and slab-on-grade that is isolated from the foundation. This portion of the building is used for the storage of sodium hypochlorite in two 1,000-gallon tanks near the northeast corner of the building.

The east side of the slab-on-grade appears to have settled approximately 0.5 inch based on the height differential at the entrance to the unit on the east wall. Another indication of settlement at the north section of the building is the widening of the vertical expansion joints along the north and east walls. Over time, this has caused the exterior brick masonry at the top of the east wall to shift by approximately 1 to 1.5 inches to the north. The movement of these walls is also indicated by what appears to be a decrease of embedment into the concrete masonry unit walls of the gantry crane support beams. The observed existing conditions indicate that the northeast corner of the building has settled over time.

It is likely that the weight of the sodium hypochlorite tanks have facilitated and exaggerated the amount of settlement that is apparent by the distress noted in the north and east exterior walls. Based on observations in the field and review of the record drawings, the slab was designed to be free floating within the foundation walls. Drawings detailing the additions to support and enclose the tanks are not available; however, it appears that when the tanks were installed, the spill curb was tied to the foundation wall. This assumption is based on the observation that there is no visible isolation joint between the curb and the walls. If that is the case, this would impose additional loads from the curb and the tanks onto the exterior wall foundation. If the settlement has subsided, no action is necessary, assuming the tank sizes do not increase. If the settlement is ongoing, there are several options to resolve the continued settlement for each scenario, whether the curb is attached to the foundation or not. These options are outlined as follows:

- 1. If the curb is attached to the foundation:
 - a. Remove, replace or alter the existing support/containment structure to provide isolation from the foundation wall and eliminate the tank load transfer to the foundation.
 - b. Construct a new area to the west of the existing tanks that is isolated from the exterior walls and abandon the existing tank location (this option is not likely, as new sodium bisulfite tanks are proposed to be located to the west of the existing sodium hypochlorite tanks).
- 2. If the curb is isolated from the foundation, the tanks are not the cause for settlement of the exterior walls and the settlement is ongoing:
 - a. Underpin the foundation using piles to prevent further settlement of the foundation walls.
 - b. Core holes in the slab and pump expansion grout under the slab to prevent further settlement of the slab and possibly raise the slab up from its current elevation.

Additional information regarding recommended improvements for the addition of new chemical tanks is provided in the Brewerton Disinfection and Clarifier Improvement Project Preliminary Design Report, CRA 2014.

The south portion of the building is also load-bearing masonry with supplemental steel framing at the interior of the building and concrete plank roof. The first floor consists of a framed slab and there are two sub-levels belowgrade that are supported on deep foundations. Several fine cracks were observed in the suspended slab at the first floor level. There were also a few minor step cracks observed in the masonry at the corners above doors.

3.5.2.3 Raw Sewage Pumping Station Mechanical HVAC Systems

The condition and recommended improvements for the Raw Sewage Pumping Station mechanical heating, ventilation and air condition (HVAC) systems are as follows:

- The Comminutor Room has explosion-proof heaters. They are in working order; however, it is reported that the lower level units were involved in a flood.
- The storage room has an explosion-proof cabinet heater that appears in fair condition.
- The heaters in the pump and motor rooms are vapor tight units that appear in good condition.

- The main supply and exhaust fans for the Comminutor room are fairly new epoxy-coated units. The main exhaust duct from the lower level is deteriorated to the need for replacement.
- The Chlorine Storage Room and Chlorination Room are served by typical roof-mounted supply fans and wall-mounted exhaust fans. These appear to be mostly original to the building but in operable condition.
- The roof fans are in need of new bird screens and one fan is missing a belt. One of the fan hoods is damaged and in need of replacement.
- The fan drain pans in the chlorine storage room appear in fair condition.

3.5.2.4 Raw Sewage Pumping Station Electrical

The condition and recommended improvements for the Raw Sewage Pumping Station electrical systems are as follows:

- The motor control center is original and components reportedly are failing. Replacement parts are becoming difficult to find.
- The original incandescent light bulbs in the explosion-proof and vapor-tight lighting fixtures have been replaced with twist type screw-in compact fluorescent bulbs. It is recommended that they be replaced with longer life LED "A" lamps.
- The existing exit lights are original and appear in poor condition. There are exit lights missing in the Comminutor Room and Pump Room.
- Unit heater disconnect switches have surface rust, but are operational.
- There are no paging speakers in any of the spaces.
- The lightning system on the roof is in very poor condition. Lightning rods are missing from many pieces of equipment. Some connections to equipment are broken and cable supports are missing around the perimeter of the roof.
- The Chlorine Storage Room has original lights with T12 lamps that should be replaced with energy efficient lights.

3.5.2.5 Raw Sewage Pumping Station Plumbing

The building basically has storm water and sanitary systems serving roof drains and floor drains, respectively. The systems appear to be in good operable condition. The Chlorine Storage Room has an eyewash/emergency shower in good condition.

3.5.3 Chemical Storage Building

3.5.3.1 Chemical Storage Building Architectural

The Chemical Building is a two-story, masonry load bearing structure, with concrete foundation walls, concrete floor slabs both elevated and slab on grade, bonded brick and CMU exterior walls with precast concrete plank roof deck. The slab-on-grade loading bay portion of the building is approximately 2 foot 6 inches lower than the elevated slab area, and is intended as a drive-thru chemical delivery area. The condition of the major buildings components are as follows:

- Two coiling doors at each end of the space are old and worn / inoperable and should be replaced.
- The BUR system was installed in 1998 and is therefore 16 years old with 9 years remaining on the existing 25-year roof warranty. Planning for a roof replacement project should begin now.
- The building mounted roof ladder is lacking a cross over platform or safety rail extensions over the roof edge at the top.
- The original swinging exterior doors and frames are rusted at the bottom and should be replaced. Exterior door weather stripping is old and worn. All door hardware should be replaced throughout the building. An interior door in the laboratory is a wood hollow core residential grade door and frame and should be replaced with a HM door and frame with commercial grade hardware.
- The exterior masonry appears in good condition. Exposed steel lintels should be refinished.
 Minor masonry repair including sealant joint replacement and re-pointing should be undertaken.
- The steel pipe railings on the exterior entrance stairs are beginning to corrode at the base the original sleeve mounting into the concrete should be packed and sealed to prevent water infiltration.
- At the entrance stair on the north side of the building the concrete has spalled at the pipe sleeves, likely from water freeze/thaw seasonal cycling.
- The painted floors, walls and roof deck, and overhead exposed steel should be refinished.
- Exit stairs from the basement levels are only 31 inches wide the current BCNYS requires 36-inch minimum. This is an existing non-compliance issue that would be costly and is not necessary to address.
- Replacement of rusted and worn laboratory workstations, countertops, casework and tables is recommended.



3.5.3.2 Chemical Storage Building Structural

There were no major structural deficiencies noted at the Chemical Storage Building. The four knockout panels for tank placement and removal at the second floor level were located and confirmed to be 10 foot wide by 8 foot high.

3.5.3.3 Chemical Storage Building Mechanical HVAC Systems

This building is heated with electric unit heaters that appear to be in good condition. The building is ventilated through operable wall louvers and roof-mounted exhaust fans. The systems appear to be in good serviceable condition.

3.5.3.4 Chemical Storage Building Electrical

The motor control center is original and components reportedly are failing. Replacement parts are becoming difficult to find. The fluorescent light fixtures have had their ballasts, lamp sockets and lamps replaced in a previous energy saving project and appear to be in good condition. Unit heater disconnects have surface rust, but are operational. There are no paging speakers in the garage area or the first floor level. The lightning protection system appears to be intact and properly functioning.

3.5.3.5 Chemical Storage Building Plumbing

The plumbing fixtures include a service sink and eyewash/emergency shower units. The service sink is supplied with plant water in lieu of potable water. Even though there is a sign stating "do not drink water," it is recommended that this sink be supplied from the potable water line next to the fixture. Adjacent to the sink is an eyewash station and an electric instantaneous water heater. The water heater is fed from plant water and is serving the sink, and should be connected to the potable water supply. The roof drainage and floor drain sanitary systems are in good serviceable condition.

3.5.3.6 Chemical Storage Building Ferrous Sulfate Storage

Ferrous sulfate is currently stored in horizontal bulk tanks on the second floor of the chemical storage building. The horizontal bulk tanks are nearing the end of their useful life and they currently have limited access for replacement due to the second floor location. Upon replacement of these bulk storage tanks, it is recommended the tanks be replaced with vertical bulk storage tanks and an alternative storage location be determined.

Alternative storage location options for the chemical bulk storage tanks are in the existing garage area on the first floor of the chemical storage building or construction of a new small

storage building near the existing chemical storage building. The recommended alternative bulk storage location is in the existing garage area of the chemical building, which is currently only used for equipment storage and has sufficient space (approximately 790 square feet total area) for two new vertical bulk storage tanks. The overhead doors would allow for easy installation and tank access and the vertical tanks would require a smaller footprint than the existing horizontal storage tanks.

3.5.4 Sludge Building

3.5.4.1 Sludge Building Architectural

The Sludge Building is a single-story, masonry load bearing structure with concrete foundation walls, elevated concrete floor slab built over sewage processing tanks, bonded brick and CMU exterior walls with precast concrete plank roof deck. A coiling door at the east end of the space does not seal closed at the bottom. The BUR system is approximately 13 years old with 17 years remaining on an existing 30-year roof warranty. No roof improvements currently appear necessary. The southwest swinging exterior door is binding in its frame above the door strike - the cause for this condition should be further investigated and rectified. Door hardware is in good condition. The exterior masonry appears in good condition.

3.5.4.2 Sludge Building Structural

The only notable structural deficiency is the repairs made to the edges of the structural roof planks in the Electrical Room. This is likely a result of damage caused during the erection process, and does not affect the structural integrity of the roof.

3.5.4.3 Sludge Building Mechanical HVAC Systems

This building is heated with electric unit heaters which appear to be in good condition. Ventilation is provided via a ducted supply system with the exhaust through the digester.

3.5.4.4 Sludge Building Electrical

All electrical in this building is original and appears in very good condition. There are no exit lights, only signs, but because the entire facility is on a generator, exit signs with lighting are not required.

3.5.4.5 Sludge Building Plumbing

The digester room has a service sink and eyewash/emergency shower supplied by the potable water system. An instantaneous electric water heater provides hot water. The fixtures appear to be in good condition.

3.5.5 Gallery

3.5.5.1 Gallery Structural

The gallery is constructed of cast-in-place reinforced concrete. There are multiple fine cracks with efflorescence, rust stains and signs of ongoing leakage throughout walls and roof slab of the Gallery. No spalling or hollow sounding concrete was encountered. The stair landing support beam at the east gallery is moderately rusted at the south connection to the gallery wall; there is no significant section loss.

3.5.5.2 Gallery Mechanical HVAC Systems

The gallery consists of four wings all of which have electric unit heaters and constant volume outside air ventilation. The heaters appear in good condition; a few show some exterior surface corrosion. The fans appear in good serviceable condition. Some drip pans under the supply fans require cleaning and painting, or replacement.

3.5.5.3 Gallery Electrical

All electrical distribution equipment, including starters, etc., appear to be original but are in good condition. The fluorescent light fixture ballasts, lamp sockets and lamps have been replaced in a previous energy saving project and appear to be in good condition. There are no exit lights, only signs, but because the entire facility is on a generator, exit signs with lighting are not required.

3.5.5.4 Gallery Plumbing

The spaces include potable and plant water distribution. The sanitary and storm system drainage piping is routed through these areas. With the exception of some corrosion of sanitary cast iron piping due to building seepage, the piping systems appear in good condition. There is one service sink near the center which is connected to the sump pump system. The fixture appears in good condition. Hot water is supplied from the water heater located in the west gallery under the control building. The Plant and potable water distribution piping is uninsulated in some areas.

3.6 Site

The facility Site includes paved driveways and parking lots, concrete sidewalks and open grass areas. The perimeter of the Site is surrounded by a chain-link fence. The paved areas are in good condition; some of the sidewalks and process tank walkways are in need of minor repair. The fence is in good condition as well.

The existing sludge drying beds are located to the east of the aeration tanks and occupy approximately 22,000 square feet each (44,000 square feet total). The beds were installed with the original facility in 1975 and are no longer used. There is currently no benefit to demolish the existing sludge drying beds and it is not recommended to consider demolition of these beds unless the occupied footprint is required in the future.

It is important to note that if installation of additional process tankage is required in the future, specifically construction of primary clarification to handle existing wet weather flow issues, the new process tankage would likely need to be installed in the location of the existing sludge drying beds. If this option were to be pursued further by WEP, it would be necessary to demolish the existing sludge drying beds to create a footprint for installation of primary clarifiers, and associated piping and infrastructure.

3.7 Security, Lighting and Fire Alarms

3.7.1 Site Security

The Brewerton WPCP site is accessed via a paved driveway from Guy Young Road. At the driveway entrance at Guy Young Road are two "No Trespassing" signs, located at each side of the entrance drive. The gradual curving "S" shape of the driveway, along with the wooded surrounding area, prevents a visual line of sight from the driveway entrance to the gate. A motor vehicle could access the Site prior to reaching the gate and would be obscured from view.

The facility is surrounded by a 6-foot high chain link security fence, with an angled barbed wire top. A chain link manually operated security gate at the fence line is located approximately 950 feet from Guy Young Road. The gate consists of two swinging leafs of equal width that are chained and locked at the center, with a "Stop" sign mounted to the gate. The gate is typically left in the open position during typical work day hours. Based on this assessment the following is recommended:

 The gate should be motorized to provide convenient, limited access to the Site by motor vehicles.

- The motorized gate could be tied into a proximity access system (card access) for County employees.
- Extending the fenced area along the access driveway and relocating the gate closer to Guy Young Road should be considered.
- Electronic surveillance should be deployed at the Site.
- A two-way communication system should be installed between the gate and the facility monitoring station for standard deliveries and guests arriving at the Site.

3.7.2 Electronic Surveillance

The facility currently lacks an electronic surveillance system. The following is recommended:

- Security cameras should be installed at the Control Building and Chemical Building, with 360-degree coverage, in order to provide full facility surveillance.
- A specific camera should be considered at the security gate location.
- A monitoring station/area should be developed with digital recording capability.

3.7.3 Building Security

Security at the building entrances is achieved today with standard keyed locking door hardware. Intrusion detection and access tracking systems are not present at the facility. The following modifications are recommended:

- An Intrusion detection alarm system should be installed at each building.
 - Sensor switches are typically installed on all exit only exterior doors and all operable windows.
- An access system with proximity readers should be installed at each building.
 - Proximity readers are typically located at each primary entrance or primary function area of each building.
 - The access system could keep a tracking record of when, where and who gained access via assigned badges.
 - Individual spaces within each building could be on the access system, such as secure storage rooms, laboratories, or specific offices.
- Remote communication to specific telephone or computer surveillance systems is possible and recommended.

3.7.4 Site Lighting

The Site lighting consists of a combination of both tall and short poles with mercury vapor light heads. These light heads are original and less efficient by today's standard. The following improvements are recommended:

- The light heads on the existing tall light poles along the entrance driveway and around the Site should be replaced with more energy efficient and long life LED light heads. The existing tall light poles can be re-used.
- The "mushroom" style light heads and 10-foot poles are in poor condition and beyond their useful life expectancy and should be replaced with new poles and energy efficient and long life LED light heads.

LED lighting is recommended because of its energy efficiency. This type of fixture has a payback of approximately 5-10 years depending on usage.

3.7.5 Fire Alarms

The Building Code of NYS - 2010 requires a manual fire alarm system in Group F occupancies that have an occupant load of 100 or more.

Below is a summary of the building loads:

Building	Occupancy Classification	Occupant Load
Control Building / Garage	Mixed F2 and S1	52 occupants
Raw Sewage Pumping Station	F2	66 occupants
Chemical Building	F2	31 occupants
Sludge Drying Building	F2	9 occupants

It is noteworthy that the building load is based on a worst-case load calculation, and is not indicative of the probable or actual staff load of the buildings. Each of the four buildings is below the 100-occupant threshold. Therefore, a manual fire alarm system is not required by the Building Code of NYS - 2010.

Given the importance of this County facility, an automatic fire alarm system is recommended in each building, including the below grade pipe gallery. A description of each type of system (manual and automatic) is as follows:

Manual System

- A manual system consists of pull break glass stations located throughout a building at the exits and any other locations deemed necessary plus audio/visual notification devices.
- When a station is pulled, all the audio/visual devices are activated.
- At the same time the station is pulled, a signal is sent to a Central Reporting Station who in turn notifies the fire department.

Automatic System

- An automatic system consists of pull break glass stations, smoke detection and heat detection devices and audio/visual notification devices.
- When a station is pulled or a smoke or heat detection device senses smoke or abnormal heat, all the audio/visual devices are activated.
- At the same time the station is pulled or any smoke or heat detection device goes into alarm, a signal is sent to a Central Reporting Station who in turn notifies the fire department.

With either system, if there is a sprinkler system in the building, the tamper and flow switches are also wired to the control panel to report water flow or valve tamper.

3.8 Asbestos, Lead, and PCB Survey Update

Popli inspected the facility for asbestos, lead paint, and PCBs on October 14-16, 2013. A copy of the entire asbestos report is included in Appendix E. The following is a summary of the asbestos, PCBs, and lead-based paint survey findings:

- The following materials were determined to be asbestos containing materials (ACM):
 - Approximately 248 linear feet (If) of yellow/brown edging mastic under gray vinyl edging
- The following materials were determined to be presumed asbestos containing materials (PACM):
 - Ten brown fire doors
 - About 870 feet of black AC roof flashing
- PCBs in hazardous concentrations were not found at the facility
- The following surfaces had positive scans for lead-based paint:
 - Four white metal sinks with 40 total square feet of surface area
 - Approximately 105 square feet between three brown and blue/green metal doors
 - About 18 square feet of gray wooden cabinet



- Approximately 27 square feet of red wooden door
- About 32 square feet of gray wooden cabinet
- Approximately 4 linear feet of yellow concrete bollards
- About 6 square feet of yellow metal fire hydrant
- Approximately 42 linear feet of yellow metal railing
- About 90 linear feet of orange exterior metal I-beams
- Approximately 10 linear feet of yellow exterior concrete curb
- About 10 square feet of yellow metal grit bucket
- Approximately 1 square foot of yellow metal grit bucket controls
- About 5 square feet of orange painted metal components of the ceiling crane
- Approximately 275 linear feet of blue metal railing
- About 12 square feet between six blue metal valve wheels and assemblies
- Approximately 20 square feet of blue equipment for the settling tanks
- About 5 square feet of blue metal stairs
- Approximately 10 square feet of orange metal crane
- About 1 square foot of red metal valve wheel and assembly
- Approximately 30 square feet of orange metal railing fixtures and equipment
- Approximately 150 linear feet of orange metal railing

3.9 Physical Infrastructure Evaluations

3.9.1 Electric to Natural Gas Heating Conversion

CRA reviewed the 2006 Carrier Audit and evaluated the feasibility for implementing natural gas heating at the WPCP. Based on discussion with WEP, the system evaluated for cost estimating purposes was a central hot water boiler system and hot water heating units. The availability of natural gas service was explored with the local natural gas provider (National Grid). National Grid indicated that the required supply and pressure to satisfy the Plant's heating needs would be available. Based upon the Carrier Audit (Audit), the conservative estimated annual power savings from switching to natural gas heating would be approximately 280,700 KWh. This savings was estimated from the WPCP electrical billings.

It is understood that the WPCP limits exhaust fan usage during the winter months and subsequently reduces the Plant heat demand and use during this time. This practice reduces the continuous air change requirement below industry standards. The Carrier Audit did not incorporate continuous fan operating conditions and therefore, underestimates this energy savings, which increases the payback period for the conversion. This analysis also does not compare energy savings from reduced air changes versus continuous fan operations as it is not a recommended practice to limit exhaust fan operations.

The Audit also assumed a baseline 80 percent efficiency boiler. For this analysis, it was assumed that a high efficiency 94 percent efficiency boiler would be used; this reduces the estimated natural gas usage of 1,197 million British thermal units (MMBTU) reported in the 2006 Carrier Audit to 1,018 MMBTU. Using a baseline electrical usage cost of \$0.09 per KWh based on the Brewerton WPCP 2012 billing data and a natural gas usage cost of \$6 per MMBTU based on the 2012 billing data for the Oak Orchard Waste Water Treatment Plant – which has a comparable service class structure to one the Brewerton WPCP would have under a new gas service agreement – the estimated annual cost savings of switching from an electric to a natural gas heating system would be approximately \$19,155. Based on the annual cost savings and an estimated budgetary total construction cost of \$890,000 the simple payback would be approximately 46 years.

CRA also reviewed current National Grid and New York State Energy Research and Development Authority (NYSERDA) incentives. Current incentives could be applied for the hot water boiler and the hot water pipe insulation. Depending on final boiler selection, National Grid has the largest incentive for high efficiency condensing boilers, but limits the pipe insulation incentive to 500 feet. The estimated National Grid incentive would be about \$24,750. NYSERDA would provide the largest incentive for a non-condensing boiler installation along with the pipe insulation incentive, which would be an estimated incentive of \$15,000. Neither incentive would provide for a significant reduction in the payback period and only one incentive program can be accepted under current regulations.

As discussed in Section 3.6, many of the electric unit heaters and ventilations units are in good condition and not in need of immediate replacement. However, given the ever changing equipment condition, equipment costs, energy costs, incentives available and condition of the existing heating equipment, future changeover should still be considered when WEP has funding available and equipment condition justifies replacement. Based upon the Audit's energy findings and the current cost of construction and available incentives, CRA recommends not making the conversion from electric to natural gas a high priority at this time.

3.9.2 Generator Exhaust Relocation Evaluation

The generator exhaust is currently directed out the western wall of the Brewerton WPCP garage. Since this is the direction of prevailing winds there is concern about exhaust drawback into the building. This evaluation explores options for relocation of the exhaust.

The generator has two exhaust points, the engine and the radiator. The engine fumes exhaust through a circular pipe less than 12 inches in diameter, while the radiator heat exhausts through a louvered opening approximately 10 feet high by 10 feet wide. The engine fumes are of primary concern as these are a health issue; the radiator heat exhaust is not a significant human health concern (although during summer months drawback of radiator heat could result in increased building temperatures). The relocation of the smaller engine exhaust would reduce the exhaust drawback concern.

The engine exhaust could be relocated either farther up the western wall so that the winds blow the exhaust up and over the building or through the building roof. While exhausting through the building roof would require a new roof penetration, it would result in a lower likelihood of exhaust drawback if vented properly. Therefore, venting through the roof is recommended. During the design of this modification, proper venting to eliminate drawback through other HVAC equipment located on the roof, as well as coordination with existing equipment within the building, will require further evaluation. Relocating this exhaust penetration should be closely coordinated with building roof replacement projects.

3.9.3 Green Roof Evaluation

The Popli Group inspected the condition of the existing roof system and evaluated the feasibility of installing green roof systems based on existing record drawings. The intent of this analysis was to determine if there is any reserve structural capacity to support the installation of green vegetative roofs.

The various types of building structural support systems and configurations were determined based on record drawings and field observations; no measurements of structural members were taken for this evaluation. The facility buildings are typically constructed using prestressed hollow-core plank roofs supported by either load-bearing walls or structural steel framing, or a combination of the two. The capacity of the concrete planks was evaluated based on their individual spans, using 35 pounds per square foot (psf) snow load and 15 psf miscellaneous loading for lighting, HVAC, ceilings, etc. Existing mechanical equipment on roofs were not considered for this evaluation.

Where the planks are supported on structural steel beams, the beams were evaluated. Due to limited documentation on the columns and load-bearing walls detailing reinforcement and grouting configurations, the columns and walls were not evaluated. Also, without geotechnical information, an evaluation of the ability of the footings to support additional loads was not performed. Where additional reinforcement to the beams is required to support the green roof loads, the columns, walls and footings would require further evaluation, as summarized in Table 3.1.

Table 3.1 Building Structural Capacity Availability for the Installation of Green Roofs				
System	Assumed Roof Load	Limiting Member	Reserve Capacity	Notes
Raw Sewage Pumping Station (3,836 SF)				
10-Inch Concrete Plank Load-bearing Walls and Steel Framing	145 psf	W14 by 34 Steel Beam	10 psf	Reinforce the Existing Beams
Chemical Storage Building (1,701 SF)				
6-Inch Concrete Plank	120 psf	W12 by 16.5 Steel Beam	0 psf	Reinforce the Existing Beams
Sludge Thickening Building (1,041 SF)				
10-Inch Concrete Plank	145 psf	10 in. Plank	63 psf	Adequate for green roof < 60 psf
Control Building and Garage (5,494 SF)				
10-Inch Concrete Plank	145 psf	10 in. Plank	3 psf	Reinforce the Existing Beams

3.9.4 Relocation of the Lunch Room and Laboratory

The evaluation and assessment included a conceptual review of relocating the existing Lunch Room and WPCP Laboratory, and the creation of additional space. A proposed first floor plan for the Control Building was prepared by Popli; the conceptual drawing is provided in Appendix F. As requested by WEP, the existing Blower Room was redesigned to include a men's locker room, offices, lunch room, lab area, and operations control room. Currently, the facility only has one men's bathroom; the proposed improvements will expand the men's bathroom

and add a women's bathroom. It is recommended that the above modifications be completed as a concurrent or follow-up project to the blower relocation/upgrades project.

Section 4.0 Process Evaluations

4.1 Process Evaluation Overview

This process evaluation includes a comprehensive evaluation of the Plant hydraulics and process capacities, as well as a number of targeted process evaluations. While the Brewerton WPCP has a successful track record of permit compliance, a review of available data and information provided by plant operators indicate a number of concerns regarding optimal operation and future challenges. Identified issues and associated process evaluations in this section are as follows:

- Aeration tank influent forcemain solids settling and flow distribution. The influent flow is
 divided into two trains using manual valves in the east plant gallery. The manual valves
 must be adjusted frequently and are a difficult way to provide even flow distribution.
 Additionally, during low flow, solids can settle in the influent forcemain.
- **Grit removal operations.** Grit carryover has been observed in the re-aeration tanks by plant staff.
- Secondary treatment system process and hydraulic limitations. The Plant influent flow
 rate ranges from below 1 mgd to 10 mgd. In order to avoid overflow of the re-aeration tank
 during periods of higher flow, plant staff must change the operation mode of secondary
 treatment from extended aeration to contact stabilization at flows greater than 4.2 mgd;
 this reduces the effectiveness of BOD and TKN removal.
- Phosphorus removal uses corrosive coagulants. The facility currently uses ferrous sulfate
 for phosphorus treatment. However, this compound is corrosive and imposes an oxygen
 demand, as it must be added upstream of the aeration tanks to be effective.
- Blower system optimization. Process air for the secondary treatment and aerobic digestion systems are supplied from common blowers. This configuration reduces operational flexibility and likely results in higher energy usage than an alternative approach.
 Improvements to the air diffusers can improve oxygen transfer efficiency, thus reducing air requirements. Leaking from the Plant air piping is also reducing the system efficiency and overall process effectiveness.
- **Facility-wide odor control needs.** A sizable residential development is being constructed adjacent to the WPCP property. Odors and noise generated at the Plant could result in complaints from these new homeowners.

 Chlorination/dechlorination and Clarifier improvements. These improvements and upgrades are outlined in a separate report by CRA entitled "Preliminary Design report – Disinfection and Clarifier Improvement Project," dated April 2014.

The following data and documents were used for these evaluations:

- 2013 Phosphorus Coagulant Jar Testing Results (Section 4.5.2).
- NYSERDA FlexTech Report Brewerton WWTP (Johnson Controls and CDM Smith, October 2012).
- Brewerton WPCP Operating and Compliance Monitoring Data 2007–2012.

4.2 Plant Process Overview

The Brewerton WPCP is an advanced secondary treatment facility that treats wastewater primarily from residential sources. Key processes at the Brewerton WPCP plant include:

- Preliminary screening using a bar rack and mechanical screen.
- Grit removal using an aerated grit chamber with mechanical clam shell removal system.
- Year-round phosphorus removal through addition of ferrous sulfate added to the influent of the re-aeration tanks.
- Advanced secondary treatment using Extended Aeration or Contact Stabilization Activated Sludge Processes (dependent on flow).
- Solids settling of treated water using clarifiers and aided by the addition of cationic polymer.
- Sludge digestion using two aerobic digestion tanks operating in series.
- Sludge thickening using a rotary drum thickener (hauled to the Metropolitan-Syracuse WWTP for further treatment).
- Seasonal disinfection of final clarifier effluent using chlorine contact tanks and sodium hypochlorite before discharge into the Oneida River.

4.2.1 Plant Hydraulics

The original plant was designed based on an average flow of 3 mgd and a peak flow of 7.5 mgd. The current peak hourly flow can reach up to 10 mgd, which causes hydraulic issues that result in significant process operational modifications, solids carryover and hydraulic backups.

A plant hydraulic profile was developed under design peak and current peak flow to identify hydraulic restrictions and determine facility modifications required to mitigate hydraulic issues within the plant. It is understood that the three main areas of concern in the Plant during high flow events are the aeration tanks, clarifiers, and chlorine contact tank influent box. Table 4.1 summarizes the existing hydraulic profile (at 7.5 mgd), the profile at 10 mgd, and modified hydraulic profile at 10 mgd resulting from facility improvements. The existing hydraulic profile information is based on the facility record drawings and assumes all tanks are operating.

Table 4.1 Brewerton WPCP Hydraulic Profiles						
		Water Elevation, ft				
	Tank Top of Wall	Existing Facility Configuration	Existing Facility Configuration	Modified Facility Configuration		
Location	Elevation, ft	@ 7.5 MGD	@ 10 MGD	@ 10 MGD		
Re-aeration Tank	384.67	382.00	384.67	383.5		
MLSS Tank	384.67	382.00	383.5	383.5		
Settling Tank	383.50	381.75	381.9	381.9		
Settling Tank (downstream of v-notch weirs)	381.83 (weir elevation)	-	381.9	381.9		
Chlorine Contact Tank Influent Box	378.00	378.0	378.0	377.8		

Notes:

- 1. Existing Facility Configuration based on the hydraulic profile from the Brewerton WPCP Record Drawings, 1975
- 2. Elevations in blue exceed the tank wall or upstream weir elevation (elevations exceeding a wall are noted as the top of wall elevation).
- 2. The modified water elevation of the re-aeration Tank is based on the following improvements:
 - a. Constructing a 4 ft by 4 ft opening between the re-aeration and MLSS Tanks
 - b. Enlarging the opening between the Chlorine Contact Tank Influent Box and the Chlorine Contact Tank Chambers (from 1 ft high by 2.5 ft wide to 5 ft high by 2.5 ft wide)
- 3. The modified water elevations for the MLSS, Settling and Chlorine Contact Tanks are based on the following improvements:
 - a. Enlarging the opening between the Chlorine Contact Tank Influent Box and the Chlorine Contact Tank Chambers (see modified opening size in item 2.b above)
 - b. Installation of a 24-inch effluent flow meter at the influent to the Chlorine Contact Tank

While opening a 4-foot by 4-foot opening between the re-aeration Tank and MLSS tank will positively impact the Plant hydraulics, the treatment system operation should stay within the recommended loading for the extended aeration process. Information on the Plant process capacities is provided in Section 4.2.2.

4.2.2 Plant Process Capacities

The Brewerton WPCP is rated with design average and peak flows of 3.0 and 7.5 mgd, respectively. The past 6 years of data show that influent flows have averaged about 2 mgd; however, the flow range runs from below 1 mgd up to 10 mgd. Brewerton WPCP process hydraulic and solids retention times at various plant flow rates are summarized in Tables 4.2 and 4.3, respectively. Table 4.4 summarizes the typical solids retention time (SRT), hydraulic retention time (HRT) and MLSS concentrations for a variety of activated sludge processes.

Table 4.2 Brewertor	Table 4.2 Brewerton WPCP Process Hydraulic Retention Times							
			Hyd	raulic Re	tention	Time (Ho	ours)	
	Volume	1.0	1.9	3	4.2	5	7.5	10
Process Tanks	(Gallons)	MGD	MGD	MGD	MGD	MGD	MGD	MGD
Re-aeration Tank	534,490	12.8	6.8	4.3	3.1	2.6	1.7	1.3
MLSS Tank	267,245	6.4	3.4	2.1	1.5	1.3	0.9	0.6
Aerobic Digestion Tank	534,490	12.8	6.8	4.3	3.1	2.6	1.7	1.3
Settling Tank	380,000	9.1	4.8	3.0	2.2	1.8	1.2	0.9
Pipe - Settling Tank to CCT	8,515	0.1	0.1	0.08	0.04	0.04	0.03	0.02
Chlorine Contact Tank	74,800	1.8	0.9	0.6	0.4	0.4	0.2	0.2
Effluent Pipe - CCT to MH-12	4,757	0.1	0.1	0.0	0.0	0.0	0.0	0.0
TOTAL HRT (Hours)	1,804,297	43.2	22.8	14.4	10.3	8.7	5.8	4.3

Notes:

^{1.} HRT calculation for pipe from Settling Tank to CCT includes both 16-inch and 36-inch diameter pipe retention times with half flow for 36-inch and full flow for 16-inch.

Table 4.3	Brewerton WPCP Solids Retention Times		
Flo	Flow Rate (MGD)		
	1.0		
1.9		12.5	
3		10.2	
4.2		8.5	
	5		
7.5		5.8	
	10	4.7	

Notes

- 1. SRT calculated for Extended Aeration mode using average values provided by WEP.
 - WAS = 15 20 gpm, RAS = 700 gpm, 3000 4000 mg/L
 - Mixed Liquor = 1900 2600 mg/L

3 - 15

- Clarifier Effluent = 30 - 50 mg/L

Table 4.4 Typical Solids Retention Time (SRT), Hydraulic Retention Time (HRT) and MLSS Concentrations for Activated-Sludge Processes (Metcalf and Eddy, 2003; GLUMRB, 2004)					
SRT HRT MLSS (lb BOD/ Activated Sludge Processes (days) (hours) (mg/L) 1000 ft³-day)					
Conventional Plug Flow	3 – 15	4 – 8	1,000 – 3,000	20 – 40	
Contact Stabilization	5 – 10	$0.5 - 1^{a}$ $2 - 4^{b}$	1,000 – 3,000 ^a 6,000 – 10,000 ^b	60 – 75	
Extended Aeration	20 – 40	20 – 30	2000 – 5000	5 – 15	

3 - 5

1500 - 4000

Notes:

Step Feed

Table 4.5 compares the operational conditions of each of the Brewerton WPCP modes of operation. The WPCP currently targets operation in extended aeration mode at flows up to 4.2 mgd. For flows ranging from 1.0 to 4.2 mgd secondary treatment HRT and SRT for Extended Aeration mode (which includes the MLSS and Re-aeration tank volumes) ranges from 19.2 to 4.6 hours and 15.4 to 8.5 days, respectively. BOD loading in extended aeration mode ranges from 30 to 50 lb BOD/1000 ft³-day. The calculated HRT, SRT and BOD loading for current plant operations at flows less than 4.2 mgd are somewhere between conventional plug flow and

40 - 60

^aRetention time in contact basin

^bRetention time in stabilization basin

extended aeration modes of operation. For the purposes of this report, the primary mode of operation will be referred to as extended aeration.

Table 4.5 Summary of Brewerton WPCP Secondary Treatment Operational Conditions						
Parameter						
Secondary Treatment	004 725	267,245 (contact)				
Volume (gallons)	801,735	534,490 (stabilization)				
Current Operational Flow Range (mgd)	1-4.2	4.2 – 5				
Secondary Treatment	4.6 40.2	1.3 - 1.5 (contact)				
HRT (hours)	4.6 – 19.2	2.6 – 3.1 (stabilization)				
SRT (days)	8.5 – 15.4	7.6 – 8.5				
MLSS (mg/L)	1900 – 2600	1900 – 2600				
BOD Loading (lb BOD/1000 ft ³ -day)	30 – 50	30 – 50				

Due to hydraulic constraints (discussed in Section 4.4), the facility operates in Contact Stabilization mode at flows ranging from 4.2 to 5 mgd. Hydraulic retention times range from 3.1 to 2.6 and 1.5 to 1.3 hours for flows ranging from 4.2 to 5 mgd in the stabilization and contact basins, respectively, matching typical values for this mode of operation (Metcalf and Eddy, 2003).

The Brewerton WPCP experiences a wide range of flow rates. Table 4.6 summarizes the frequency of various average daily and maximum daily flow rates. The data show that the average daily and maximum daily flows at the WPCP are less than the design values of 3.0 and 7.5 mgd approximately 95 and 98 percent of the time, respectively, indicating that the majority of the time wastewater flows are within the current plant capacity. The annual average daily flow is 1.9 mgd, which is approximately 63 percent of the rated design capacity. The historical data indicate that the WPCP is within the design capacity under typical average and maximum daily flows; however, wet weather flows in excess of 7.5 mgd create significant challenges with the Plant processes. Based on the detailed review of the flow data and process assessments and discussions with WEP, the root cause of these challenges experienced at the WPCP stem from rainfall derived infiltration and inflow (RDII) issues within the tributary collection system.

In addition to the RDII issues, the WPCP experiences hydraulic issues when the wet wells in the collection system pump stations are pumped down to facilitate maintenance. If this pumping occurs in conjunction with high flow events or normal diurnal peaks the hydraulic and process impacts are compounded. Outside of close coordination between WPCP and Flow Control

Division staff, Plant influent equalization would be required to accommodate these extreme flow peaks to reduce hydraulic and process impacts. The construction of intermittently used primary clarifiers could mitigate peak flow impacts at the plant; this is discussed further in Section 4.3.

Although the frequency of high flows is low, the effect on wastewater treatment, solids carryover and overall operation of the Plant are significant. During wet weather, high flow rates result in solids carryover, short circuiting of the clarifiers, decreased secondary treatment at flow rates above 4.2 mgd, or the requirement to stop secondary treatment altogether at flow rates greater than 5.0 mgd. High plant flow rates decreases nitrogen and BOD removal. Since 2007, daily maximum flows have been above 4.2, 5.0, 7.5 and 10 mgd, 10.0, 5.4, 1.5 and 0.4 percent of the time, respectively. Although infrequent, the elevated daily maximum flows create hydraulic, process and operation issues throughout the Plant.

Table 4.6 Average Daily and Max Daily Flow Frequency			
	Frequency Ab	ove Flow Rate (%)	
Flow Rate (mgd)	Average Daily Flow	Daily Maximum Flow	
3.0	5.1	43.8	
4.2	0.8	10.0	
5.0	0.2	5.4	
7.5	-	1.5	
10.0	-	0.4	

4.3 Secondary Treatment System Evaluation

The Brewerton WPCP was originally designed to operate in contact stabilization mode, which was the main mode of operation until September 2009 when, in order to achieve higher BOD and nitrogen removals, the activated sludge process was altered to operate in extended aeration mode at plant flow rates less than 4.2 mgd. Due to hydraulic constraints as flows increase, the mode of operation at flow rates between 4.2 and 5 mgd is changed to contact stabilization. Above flow rates of 5 mgd, aeration is turned off in the re-aeration and MLSS tanks and wastewater flows through the WPCP without secondary treatment.

Brewerton WPCP BOD, TKN and ammonia from 2007 through 2012 are summarized in Figure 4.1. The results of switching the main mode of operation from contact stabilization to extended aeration are clear, as the average effluent BOD, TKN and ammonia concentrations

decreased from 17.8, 7.0, and 5.2 mg/L to 10.4, 2.1 and 0.5 mg/L, respectively. The decrease in effluent concentrations represents 42, 70 and 90 percent decreases in BOD, TKN and ammonia, respectively.

Although the operational changes from contact stabilization to extended aeration resulted in a significant increase in effluent water quality, there are hydraulic issues that prevent the Plant from operating in extended aeration at all times. During extended aeration, flows enter in one side of the re-aeration tank, moving as a plug flow before passing through a 4-foot by 4-foot opening connecting the two sections of the re-aeration tanks. A single 12-inch diameter pipe is available to convey flows from the re-aeration tank to the MLSS tank and enable extended aeration. However, this pipe segment results in a hydraulic constraint. Under high flows, water backs up in the re-aeration tanks and cause overflow and washout of the MLSS tank, which necessitates operations staff to alleviate the hydraulic constriction by switching to contact stabilization mode. In order to maintain the Plant operating in the preferred mode of operation (extended aeration) for flow rates higher than 4.2 mgd, a 4-foot by 4-foot opening should be added to the wall between the MLSS and re-aeration tanks to allow flow to pass through all three tanks as a plug flow.

If the re-aeration and MLSS tanks were able to operate under plug flow conditions with the addition of the 4-foot by 4-foot opening, the WPCP would be able to operate in extended aeration mode at flows up to approximately 5 mgd, based on the recommended hydraulic and solids retention time ranges for this operational mode. It is recommended to add a 4-foot by 4-foot opening to remove the hydraulic restriction and increase the process capacity of the secondary treatment system. In addition to increasing the secondary treatment capacity, RDII issues must be addressed and reduced to decrease the frequency at which the WPCP is required to limit secondary treatment and ultimately, to avoid the need for unnecessary plant expansions.

If RDII concerns and issues with peaks resulting from flow control at the pump stations are not successfully addressed, and the frequency and extent of plant peak flows are not reduced, additional plant process tankage will be required during periods of high flow. Additional aeration and secondary clarification tankage would create operational issues during normal flows when additional process tankage is not required. If additional tankage is determined to be necessary, installation of intermittent primary clarification (plant equalization) could be used to address the plant peak flows and RDII issues. Primary clarifiers would most likely be located where the existing sludge drying beds are located, in which case, the existing sludge drying beds would need to be demolished (as discussed in Section 3.6). Based on Ten State Standards for Wastewater Facilities recommendations for primary clarification, two 65-feet diameter and approximately 10 to 12 feet deep primary clarifiers would be required. The budgetary cost

estimate for designing and installing these tanks, and clarification equipment, is between \$6.0 and \$7.0 million. Based on operational challenges and the high capital cost to implement these unnecessary plant expansion improvements, it is recommended that the flow peaks be addressed at the sources.

4.3.1 Settling Tank Evaluation

The two existing final clarifiers at the Brewerton WPCP operate in parallel and under normal operations with each accepting approximately 50 percent of the total plant flow. Each clarifier has a sidewall depth of 9 feet; this depth is shallow based on a Ten States Standards value of 12 feet, and is a major contributor to short circuiting and periodic solids carryover, particularly at higher flow rates. An improvement project to install baffles in each Settling Tank is being implemented concurrent to this Comprehensive Facility Assessment. While additional strategies such as the installation of another Settling Tank or a filtration system could further improve solids removal, the costs and benefits of these systems should be evaluated after the improvement gained from the baffles is completely understood. Therefore, at this time additional solids removal technologies are not recommended.

4.4 Grit Removal Evaluation

The existing grit removal system was evaluated as part of the physical infrastructure assessment; the equipment was determined to be reaching its useful design life. Alternate grit removal systems are possible such as a vortex-type system. A vortex grit system is typically capable of removing a higher percentage of grit in a relatively small footprint when compared to aerated grit chambers. However, the installation of this type of system would involve significant construction efforts to install a unit that could handle peak flows of 10 mgd. These efforts would include structural modifications requiring extensive concrete work or the construction of a completely new grit handling building downstream of the existing Raw Sewage Pumping Station.

The estimated capital cost for this type of vortex system is expected to be between approximately \$2.0 and \$3.0 million. The estimated yearly operating energy for a vortex grit system with a maximum capacity of 12 mgd is 10,200 KWh/yr (Smith and Loveless) while the estimated operating energy of the current aerated grit system is 32,700 KWh/yr (based on continuous operation of a 5 horsepower (hp) blower). Using \$0.09 / kWhr the reduction in yearly energy costs is approximately \$2,025. Based on this reduction, the payback for this type of system will not be from energy savings, but rather from reduced operating effort and overall system performance. A vortex grit system will most likely require less operation and maintenance and will remove more grit particles, reducing downstream impacts from grit carryover.

While the installation of a vortex-type grit system will slightly reduce energy consumption and decrease downstream impacts from grit (including cleaning out the aeration tanks), the costs associated with installing this type of system at the Brewerton facility are significant. Due to the physical installation constraints and significant capital costs associated with this type of retrofit, it is not recommended at this time. It is recommended that the existing grit system mechanical components be replaced in-kind, including a new clam bucket, hoist system, and air piping and diffusers. As recommended in the blower evaluation in Section 4.6, new dedicated blowers for the grit system would be installed. It is also recommended that additional air diffusers be considered for enhanced grit removal.

4.5 Phosphorus Removal Evaluation

To investigate effective combinations of coagulant type, dosing concentration and location, two rounds of jar testing were conducted. The first round of testing was designed to evaluate the effect of coagulant type and dosing concentration at two different dosing locations on phosphorus removal at ambient temperature (20 degrees C). Round 2 was designed to verify the results of Round 1 and investigate the effect of temperature by performing duplicate jar tests at two different temperatures for the four chosen combinations.

4.5.1 Methodology and Analytical Testing

A standard jar testing procedure was followed for the comparative bench-scale tests. For both rounds of jar testing, a programmable four-paddle jar stirrer with square, acrylic, 2-liter (L) testing jars was used. Bench-scale testing was performed at the WEP Oak Orchard Laboratory and the coagulant type and source used for the testing are summarized in Table 4.7.

Table 4.7 Coagulant Type and Source				
Coagulant Type	Source			
Ferrous Sulfate	Slack Chemical			
Ferrous Chloride	Kemira Water Solutions			
Ferri+Plus1100	PVC			
Aluminum Sulfate	Holland Company			
Polyaluminum Chloride	Holland Company			
Aluminum Chlorohydrate	Kemira Water Solutions			

The following two dosing locations were tested: 1) influent to the re-aeration tanks (influent) and, 2) MLSS tank effluent (effluent). The mixing rate and times for each dose location were estimated based on the tank hydraulic retention times (HRT) and estimated mixing rates (Table 4.7). Mixing times were estimated assuming an extended aeration mode of operation

and a plug flow path that includes the re-aeration tanks and MLSS tanks followed by the clarifier. For the influent dose location, the coagulant was assumed to pass through the re-aeration tanks, MLSS tank and clarifiers whereas for the effluent dose location, the coagulant was assumed to only pass through the clarifiers.

Table 4.8 summarizes the hydraulic retention times for the re-aeration tanks, MLSS tank and clarifiers at the average design and peak design flows used to estimate jar test mixing times. When coagulant is dosed at the influent location, 68 percent of the HRT is within the aerated, well-mixed aeration tanks and 32 percent of the HRT is within the clarifier. Therefore, the mixing times and rates for the influent dosing location tests were chosen to be 7 minutes at 300 rpm (to simulate mixing and aeration) followed by 3 minutes at 0 rpm to simulate clarification. Similarly, for the effluent dose location, the jar tests were mixed gently at 50 rpm for 5 seconds to simulate pipe flow at this dose location followed by 0 rpm for 3 minutes to simulate clarification.

Table 4.8	Hydraulic Retention Times				
Tank	Total Volume (gal)	HRT at Average Design 3 MGD (hours)	HRT at Peak Design 7.5 MGD (hours)	HRT (%) of To	otal*
Re-aeration	534,490	4.3	1.7	45.2	67.0
MLSS	267,245	2.1	0.9	22.6	67.8
Clarifier 380,000 3.0 1.2 32.2					
*Total retention	*Total retention time = total time in re-aeration tanks, MLSS tank and clarifiers.				

The coagulant dosing concentrations were chosen based on stoichiometric requirements and manufacturer's recommendations for each chosen coagulant type. The recommended doses for ferrous chloride, ferrous sulfate, aluminum sulfate and polyaluminum chloride were 5 to 10 times the stoichiometric requirement and the recommended dose for Ferri+Plus (ferric chloride and polymer mix) was approximately half the requirement for ferric chloride alone. The chosen coagulant dose concentrations for each coagulant type are summarized in Table 4.9.

Each sample (influent and post jar testing) was analyzed for pH, temperature, total phosphorus (TP), total dissolved phosphorus, total particulate phosphorus and soluble reactive phosphorus. Control tests were included in each round of testing and consisted of unamended wastewater evaluated under the same conditions as the amended samples. Round 1 and 2 included 26 and 18 jars each, respectively. The test conditions and phosphorus removal results are summarized in Table 4.9.

Table 4.	Table 4.9 Phosphorus Removal Bench Scale Test Conditions and Results					
			Concentration			
Round	Coagulant	Location	(mg/L)	Temperature	Removal (%)	
		Influent	30		97.0	
	Ferrous Sulfate	iiiiueiit	60	20°C	97.1	
	remous sunate	Effluent	30	20 C	95.8	
		Emuem	60		95.5	
		Influent	30		95.8	
	Ferrous Chloride	innuent	60	20°C	96.2	
	Ferrous Chioride	Effluent	30	20 C	76.6	
		Emuent	60		93.4	
	Ferri+Plus1100	Influent	15		95.0	
		iiiiueiit	30	20°C	94.9	
		Effluent	15		94.8	
1			30		94.8	
-		Influent	15	20°C	92.9	
	Aluminum	iiiiueiit	30		92.0	
	Sulfate	Effluent	15		95.6	
		Emuem	30		95.3	
		Influent	15		96.1	
	Polyaluminum	iiiiueiit	30	20°C	96.8	
	Chloride	Effluent	15	20 C	97.0	
		Emuent	30		98.0	
		Influent	15		95.6	
	Aluminum	ınınuent	30	20°C	95.7	
	Chlorohydrate	Cfflo+	15	20 C	94.6	
		Effluent			93.8	

Table 4.	Table 4.9 Phosphorus Removal Bench Scale Test Conditions and Results				
				4700	97.8
	Ferrous Sulfate	Influent	30	17°C	97.7
	remous sunate	iiiiueiit	30	13°C	96.2
				13 C	96.8
	Ferrous Chloride Influent			17°C	97.8
		Influent	30	17 C	98.4
		iiiideiit		13°C	97.3
,					97.4
				17°C	98.2
		Influent			98.2
		iiiiueiit		13°C	97.5
	Polyaluminum Chloride Effluent		15 C	97.4	
				17°C	95.4
		Effluont	30	1/ C	96.1
		EIIIUEIII	30	13°C	92.6
				15 C	93.0

4.5.2 Phosphorus Removal Results

Round 1 jar testing was completed on October 16, 2013. Round 1 untreated influent and effluent wastewater samples contained 20.5 and 24.5 mg/L of TP, respectively. Final total phosphorus concentrations after coagulant treatment are shown in Figure 4.2. Almost all iron-based coagulants achieved low final TP concentrations, excluding Ferrous Chloride dosed in the effluent location. Of the aluminum coagulants tested, polyaluminum chloride performed the best, achieving final TP concentrations, between 0.5 and 1 mg/L. The removals for the four best coagulant, dose and location combinations of Round 1 are summarized in Table 4.10.

Table 4.10	Round 1 Jar Testin	Round 1 Jar Testing Results				
		Dose	Concentration	Temperature		
Round	Coagulant	Location	(mg/L)	(°C)		
	Ferrous Sulfate	Influent	30	20		
	Ferrous Chloride	Influent	30	20		
1	Polyaluminum Chloride	Influent	30	20		
	Polyaluminum Chloride	Effluent	30	20		

The four best test conditions of Round 1 as shown in Table 4.10 were repeated in Round 2 on October 23, 2013, at 13 and 17 degrees C and the results are shown in Figure 4.3. The results were very similar to Round 1 results in that all coagulants achieved greater than 96 percent removal, excluding the condition when polyaluminum chloride was dosed at the effluent location at 13 degrees C, which achieved 92 to 93 percent removal. Polyaluminum chloride performed poorly at the colder temperature conditions used in Round 2 of jar testing, especially when dosed at the effluent location with minimum mixing.

The results of the jar testing indicate that polyaluminum chloride is a good candidate for phosphorus removal at warmer temperatures; however, at lower temperatures, decreased removal efficiencies were observed. This finding was similar to previous bench-scale testing conducted at the Metro Syracuse WWTP. Overall, Brewerton's current coagulant, ferrous sulfate, performed the same or better than the other coagulants under the conditions studied.

4.5.3 Coagulant Cost Comparison

An annual coagulant cost comparison was performed for ferrous sulfate and PAC using manufacturer provided bulk pricing. Dosing concentrations estimated in the jar tests were used to compare each coagulant and determine the relative proportional dose of each chemical. Since ferrous sulfate is currently dosed for phosphorus removal at Brewerton, the current average ferrous sulfate dose was used for the cost analysis and the PAC dose was estimated relative to the jar testing results.

Three scenarios were considered in the cost analysis: year-round ferrous sulfate addition, year-round PAC addition, and seasonal addition of ferrous sulfate (winter) and PAC (summer). The cost analysis indicated that if ferrous sulfate (the current coagulant at Brewerton) is continued to be used for phosphorus removal year round, the estimated annual cost is approximately \$33,000. If ferrous sulfate were to be dosed only in the winter months (October 15 to May 15) and PAC in the summer months (May 15 to October 15), the estimated annual coagulant cost would increase to approximately \$50,000 per year. The estimated annual cost of year-round PAC addition would increase the annual coagulant cost to approximately \$74,000. Therefore, modifying the current phosphorus removal operation to either seasonal PAC addition or year-round PAC addition would increase the overall coagulant cost by 51 percent and 124 percent, respectively, compared to the current operation of year-round ferrous sulfate addition.

4.5.4 Phosphorus Removal Coagulant Recommendations

Although ferrous sulfate performed well compared to the other coagulants tested, ferrous-based coagulants require oxidation to enable effective removal phosphorus, which increases the oxygen requirement of the Plant and ultimately the operating costs. Aluminum-based

coagulants, such as polyaluminum chloride, do not require oxidation and, therefore, can be dosed after secondary treatment processes as long as sufficient initial mixing is provided. Polyaluminum chloride is also significantly less corrosive and safer to handle than ferrous sulfate, making this a better candidate from a staff health and safety perspective. The Brewerton WPCP requires year-round phosphorus removal and polyaluminum chloride is often affected by colder temperatures. Polyaluminum chloride and ferrous sulfate performed similarly under warmer temperatures; however, polyaluminum chloride showed decreased phosphorus removal at lower temperatures. Brewerton's current coagulant, ferrous sulfate performed the best overall in the bench-scale testing and was the most cost-effective option based on the annual cost analysis. Therefore, it is recommended that the Brewerton WPCP continue to use ferrous sulfate for phosphorus removal.

4.6 Blower System Evaluation

The existing Brewerton WPCP aeration system consists of four 150 hp blowers that discharge compressed air through a common distribution system to the sludge re-aeration tanks, MLSS tanks, aerobic digesters, thickened sludge holding tank, and the grit chamber. The blowers are original to the Plant construction and nearing the end of their useful life. The use of common blowers and distribution system limits operational flexibility and reduces the efficiency of the entire system. This evaluation uses the NYSERDA FlexTech report prepared in 2012 as a basis for comparison and provides blower sizing and configuration recommendations for future aeration system improvements.

CRA's review of the NYSERDA FlexTech Report discovered several parameters used in the blower evaluation calculations that were not representative of actual plant operations. These parameters were modified and the blower evaluation calculations were repeated to more accurately determine Brewerton's WPCP aeration system requirements. The following parameters were modified or added to the revised blower evaluation:

- Grit chamber aeration requirements were included
- Plant flow ranges from 1 mgd to 5 mgd were considered as they represent 95 percent of current flow conditions
- Upgrading the tube-type diffusers to fine pore diffusers) was assumed

In addition to the blowers, the existing tube-type aeration system is inefficient and at the end of its useful life. The existing plant air piping has significant leaking, leading to additional system inefficiencies. It is recommended that the existing aeration system be replaced with fine pore diffusers, which have a high oxygen transfer efficiency and require minimal cleaning. It is understood that WEP has significant experience with ceramic disc diffuser operation and

maintenance. To maintain facility-wide consistency, fine bubble ceramic disc diffusers can be installed at Brewerton with the aeration system upgrades; this evaluation is based on the use of this type of diffuser. It should be noted that other diffuser systems are available that may have a higher oxygen transfer rate. The average oxygen transfer rate of a ceramic disk system is approximately 2.4%/ft, while other systems may provide up to 3.0%/ft. If this higher transfer rate is realized it could result in an approximately 20 percent decrease in air flow requirements allowing the associated blower system to use less energy. It is understood that the ceramic disk system is a proven technology for WEP and has therefore been used in this evaluation. An additional consideration during the design phase of the blower improvements is the incorporation of a gas connection for periodic acid cleaning of the diffusers. The installation of the gas cleaning system is not included in this evaluation; the use of a local service for cleaning is assumed.

Due to the limited operational flexibility provided by a common air distribution system, this evaluation considers the following individual aeration systems:

- 1. Sludge re-aeration and MLSS tank aeration system
- 2. Aerobic digesters and thickened sludge holding tank aeration system
- 3. Grit chamber aeration system

A preliminary plan of the proposed aeration system improvements is provided in Figure 4.4.

4.6.1 Sludge Re-aeration and MLSS Tank Aeration System

Ten States Standards recommends sizing mechanical aeration systems for the peak hourly organic load. Hourly flow and loading data is not available for the Brewerton facility; therefore, the loadings were calculated using two methods and compared to determine the aeration system design range. The Brewerton facility monitors the minimum, maximum, and total influent wastewater flow daily and the organic loading characteristics weekly. The flows, BOD and TKN concentrations from WEP's 2007 through 2012 reportable data are summarized in Table 4.11.

Table 4.1	Table 4.11 Wastewater Flows and Characteristics					
	Parameter	Value				
El.	Current Average Minimum	1.0				
Flow	Current Average	1.9				
(mgd)	Permit Design Average	3.0				
	Design Maximum	5.0				
	Current Minimum	126.5				
DOD	Current Average	171.3				
BOD ₅	Current Maximum	216.1				
(mg/L)	Permit Design	159.6				
	Effluent	Extended Aeration = 10.4, Contact Stabilization = 17.8				
	Minimum	20.3				
TIZNI	Average	25.2				
TKN	Maximum	29.7				
(mg/L)	Permit Design	n/a				
	Effluent	Extended Aeration = 2.1, Contact Stabilization = 7.0				

Notes:

- 1. Organic loading values were calculated from the average of the monthly minimum, average, and maximum influent concentrations provided in WEP's 2007 2012 operational data for the Brewerton WPCP.
- 2. The design maximum flow is based on the 95th percentile of flow (i.e. 95% of flows are less than 5 mgd), (Metcalf and Eddy, 2003)

The minimum, average, and maximum day loadings, as well as the minimum and maximum month loadings, are summarized in Table 4.12. Using a peaking factor of 2.5 (based on available data and standard practices from Metcalf and Eddy, 2003) and the average loading data, the peak hourly loads were estimated to be 6,448 lb/day and 968 lb/day of BOD and TKN, respectively. These values can be compared to the values calculated using the design flow rates and current concentration values (summarized in Table 4.13).

Table 4.12 Current Wastewater L	oads.								
Parameter	BOD (lb/day)	TKN (lb/day)							
Minimum Day	1054	271							
Average Day	2579	387							
Maximum Day	4946	718							
Day Standard Deviation	677	55							
Minimum Month	1925	329							
Maximum Month	3708	472							
Month Standard Deviation	407	28							
Peak Hourly									
(calculated using average day and	6448	986							
2.5 peaking factor)									
Notes:									
1. Organic loading values were calculated from WEP's 2007 – 2012 operational data for the Brewerton WPCP.									

Table 4.13 Calculated Minimum, Average, and Maximum BOD5 and TKN Loading												
	Organic Loading (lbs/day)											
		1 MGD	1.9 MGD		5.0 MGD (Design							
		(Current Ave	(Current	3 MGD								
Pa	rameter	Min)	Ave)	(Permit Ave)	Maximum)							
	Minimum	1,090	2,060	3,250	5,410							
BOD ₅	Average	1,440	2,740	4,320	7,200							
	Maximum	1,820	3,460	5,460	9,090							
	Minimum	180	330	520	870							
TKN	Average	220	410 640		1,060							
	Maximum	250	470	750	1,240							

Based on a comparison of the values in Tables 4.12 and 4.13 a range of influent loadings was selected. The minimum loading was selected to be the calculated minimum flow at an average organic concentration; this was selected based on a comparison between this value and the average and standard deviation of the available data. The minimum day loading of 1054 is outside of the typical loading range. The maximum loading was selected to be the design maximum flow at average organic loading conditions. This was selected because it is slightly more conservative than the calculated peak hourly loading in Table 4.12, and providing sufficient oxygen to meet the upper loading range is essential for permit compliance.

The rounded BOD and TKN loadings used to calculate the actual oxygen requirements (AOR) for BOD and TKN and are summarized in Table 4.14. Based on a typical oxygen transfer efficiency for ceramic fine air bubble diffusers of (2.4%/ft), the blower process air flow requirements (ft³/min) are summarized in Table 4.15 for each of the loading conditions.

Table 4.14 Carbonaceous, Nitrogenous, Total Loadings, and Actual Oxygen Requirement (AOR)											
Organic Loading Influent Loading (lb/day) Actual Oxygen Requirement (lb/day											
Scenario	BOD	TKN	BOD	TKN	TOTAL						
Minimum Day	1,450	220	2,180	1010	3,190						
Average Day	2,750	400	4,130	1830	5,960						
Permit Average Day	4,300	650	6,450	2970.5	9,430						
Design Maximum	7,200	1,100	10,800	5030	15,830						

Notes

- 1. Carbonaceous AOR calculated using BOD x 1.5 g O2/g BOD5 (for Extended Aeration to account for endogenous decay).
- 2. Nitrogenous AOR determined from Influent TKN x 4.57 g O2/g N

Table 4.15 Process Air Flow Range	
Loading Condition	Air Flow Required (ft ³ /min)
Minimum Day	1,100
Average Day	1,900
Permit Average Day	3,100
Design Maximum	5,100
Note: Calculated using fine hubble coramic dis	eks with an approximate evergen transfer

Note: Calculated using fine bubble ceramic disks with an approximate oxygen transfer efficiency of 2.4%/ft

A total of three 150-hp turbo blowers (2 duty and 1 standby) are recommended to meet the process air flow requirements identified in Table 4.15 with an approximate operating pressure of 8.5 (to be confirmed during detailed design based on chosen diffusers and piping layout). Positive displacement blowers were also evaluated for this application, but will be less efficient than the turbo blowers and are not recommended. Due to the blower size and concrete walls in the galleries, it is not recommended to install the blowers in the galleries below the aeration tanks. Even with sound enclosures the noise level is expected to be beyond a safe level. It should also be noted that installing the blowers within the gallery would create additional heat which would require subsequent ventilation improvements within the gallery. Instead, it is recommended that the blowers be installed outside in heated sound enclosures.

4.6.2 Aerobic Digester and Thickened Sludge Holding Tank Aeration System

Table 4 16 summarizes the aerobic digester and thickened sludge holding tank air flow requirements. The aerobic digester and thickened sludge holding tank oxygen mixing requirements were determined based on tank size, tank depth and standard diffused air mixing design criteria (Metcalf and Eddy, 2003). The air requirements for the aerobic digesters depend on the sludge depth and can range from 155 to 1,150 ft³/min per digester for sludge depths from 2 feet to a full tank (15 feet).

Table 4.16 Aerobic Digester, Thickened Sludge Holding Tank, and Grit Chamber Air Flow Requirements									
Unit Process	Air Flow Required (ft³/min)								
Aerobic Digesters (2-feet sludge depth)	310 (155 per digester)								
Aerobic Digesters (full)	2,300 (1,150 per digester)								
Thickened Sludge Holding Tank	400								
Grit Chamber	60								
Notos:	·								

Notes:

- Aerobic Digester Mixing Air Requirement: 30 CFM/1000 cu ft digester volume (Metcalf and Eddy, 2003; GLUMRB, 2004)
- Thickened Sludge Holding Tank Mixing Air Requirement: 60 CFM/1000 cu ft tank volume; 400 CFM has been used based on information from operators
- Grit Chamber Air Requirement: 6 f³/ft· min (Metcalf and Eddy, 2003)

It is understood that the digesters do not provide for complete volatile suspended solids reduction, but rather provide adequate mixing in order to keep the solids aerobic until dewatering, storage and transportation to the Syracuse Metropolitan Wastewater Treatment Facility can occur. While this evaluation focuses on separating the blower systems and sizing each system to meet the unit process needs, it should be noted that for the purposes of mixing more efficient methods may exist. WEP may want to consider evaluating the option to use an alternative system for mixing, such as jet mixers, which may prove to be more energy efficient.

It is understood that the thickened sludge holding tank can produce odors even when receiving airflows of approximately 400 ft³/min. A target airflow of 400 ft³/min has been used in this evaluation which is 200 ft³/min greater than the standard design value. It is anticipated that odors would still remain a concern even at higher airflow rates. Therefore, it is recommended that odor issues be handled as part of the odor control improvements rather than further increasing the blower system requirements, as treatment of the air, rather than liquid, will most likely be more energy efficient.

Based on the above parameters, an approximate operating pressure range of 2.0 psi to 7.5 psi (to be confirmed during detailed design), and two separate blower systems, one for the south

digester and sludge holding tank and one for the north digester, the following systems are recommended:

- 1. South Digester/Sludge Holding Tank: Two positive displacement 100-hp blowers (1 duty and 1 standby)
- 2. North Digester: Two positive displacement 75-hp blowers (1 duty and 1 standby)

Positive displacement blowers are recommended because they have a greater turndown, and can operate over a much wider range of pressures than the comparable turbo blowers.

4.6.3 Grit Chamber Aeration System

Similar to the aerobic digestion and thickened sludge holding tank air flow requirements, grit chamber air flow requirements were determined based on the size of the grit chamber and standard diffused air mixing design criteria (Metcalf and Eddy, 2003). The grit chamber air requirement is lower than the other unit processes and is also shown in Table 4.16 above.

Based on these requirements and an approximate operating pressure of 5.5 psi (to be confirmed during detailed design based on piping layout), one duty and one standby blower will be required for the grit chamber aeration system. It is recommended that 5 hp positive displacement blowers are installed to meet the grit chamber mixing air requirement. Positive displacement blowers were chosen due to the small power requirement for this application.

4.7 Odor Control Evaluation

A survey of the Raw Sewage Building and Sludge Holding Tank was conducted where odor issues were indicated as a concern at the WPCP. The survey included a site visit to the County-owned South Bay Pump Station that is one of seven County-owned pump stations in the collection system that feeds to the WPCP, and is the current location of a sodium hypochlorite dosing system. The sodium hypochlorite dosing system is intended to limit odors from entering at the WPCP. This liquid dosing system is operational during the summer to limit the amount of hydrogen sulfide gas formation when levels have historically been at their highest. The intent is to dose into the County collection system at this location to mitigate odors in the influent waste stream coming to the WPCP. The dosing system is a manually operated fixed dose rate pump that discharges sodium hypochlorite to the pumping station wet well. In general, other than the liquid phase odor control dosing at the pump station, no other odor control measures are currently in place to help control odors at the WPCP or at the other collection system pump stations. Over the years there has been limited to no odor complaints received regarding the operations at the WPCP. However, it is anticipated that future odor concerns may potentially

develop due to continued residential housing building closer to the WWTP; therefore, a plan is needed to develop an approach to reduce odor causing hydrogen sulfide gas from entering into the air.

Review of the New England Interstate Water Pollution Control Commission, TR-16 Guides for the Design of Wastewater Treatment Works 2011 Edition Odor and VOC Control, show that covering of odorous processes and air treatment of the enclosed spaces as an effective means of controlling wastewater plant generated odors. Isolating the odor sources allows for a smaller air volume of treatment, thus saving on equipment capital costs. The current air treatment market has several types of technologies available to scrub for odorous air emissions, some of which include chemical (wet scrubber), biofilters, carbon media, and dry chemical media. Each type of technology has equipment cost and O&M factors that should be evaluated under preliminary design efforts to review the alternative gas phase odor technology to meet the County's long-term and O&M requirements at the WPCP.

Review of the Water Environment Research Foundation (WERF) 2007 project report: Minimization of Odors and Corrosion in Collections Systems indicates that liquid sodium hypochlorite dosing is very effective at reducing hydrogen sulfide levels. However, the downstream effectiveness is limited with the distance of the dosing point to within a few miles. Several dosing tests indicated that within 2 miles of a dosing point the hydrogen sulfide would begin to increase and/or soon return to pre-dosing levels depending on the rate and style of liquid dosing used. The report also indicates a recommended practice of dosing in a range of 10 to 15 lbs sodium hypochlorite to 1 lb hydrogen sulfide. Based on this report review, the current pump station dosing location, which is several miles away from the WPCP, an additional dosing location closer to the WPCP should be considered to have a greater effectiveness on hydrogen sulfide control at the Plant.

Based on the assessment performed, CRA recommends the following odor control improvements:

- Provide cover plates and/or access hatches made of corrosive resistant materials over grit
 chamber and all open grating at the Raw Sewage Building (and open chambers around the
 Raw Sewage Building) and install a gas phase odor control system to treat odors emanating
 from the influent waste stream. Capital improvement cost is based on providing a packaged
 carbon odor control system.
- Provide cover plates and/or access hatches made of corrosive resistant materials over the
 open grating at the Sludge Holding Tank and install a gas phase odor control system to treat
 odors emanating from the influent waste stream. Capital improvement cost is based on
 providing a packaged carbon odor control system.



 Provide a controlled liquid phase odor control system to treat influent flow going to the WPCP at the Shepard Point Pump Station, which is the closest County-owned pump station to the Plant. The recommended improvements at this location are based on providing a sodium hypochlorite feed system.

Section 5.0 Capital Improvement Planning Assessments

Following the inspection, condition assessment, and scoring exercises, CRA developed specific capital projects aimed at addressing the needs for critical process systems and/or assets at the WPCP. Typically, capital projects are bundled such that design, bidding, and construction can be completed most efficiently and economically. Furthermore, since operational considerations can determine how capital projects are best bundled, CRA reviewed each project with respect to plant operations, construction sequencing and/or staging.

In some cases, alternative solutions were identified based on various construction methods, improved technologies and/or enhanced operational flexibility. Additional considerations during project bundling development included a comparison of rehabilitation versus replacements. In certain instances, a rehabilitation approach may prove more economical by providing lower life-cycle cost ratios and a substantial extension of useful life.

Once the capital needs for critical processes and assets were bundled into practical/efficient projects or alternatives, the project team prepared budgetary cost estimates based on current year (2014) values. Based on the evaluations and assessments described throughout this report, a general description of each project was prepared and served as the basis for the CIP. A high-level scope was developed for each bundled project that allowed CRA to complete the planning level cost estimates. Generally, manufacturers' representatives were consulted to determine current prices for major equipment items, and wherever practical, bids from recent similar projects were reviewed to benchmark these estimates. Typical cost percentages for mobilization/bonding/insurance (8%), contractor profit (20%), contingency (25%), and engineering/legal/administrative (20%) were also included in the project estimates; these percentages are consistent with other budgetary estimates prepared for WEP. The priority based project bundles, descriptions, and budgetary cost estimates were then grouped into priority phases (High, Intermediate, and Future Priority). As noted in the previous sections of this report, the CIPs were based on several considerations including replacement values, appropriate replacement schedules, capital project priority, and general risk/failure. These priority phases were then used to develop the recommended 5-year, 10-year, and 20-year CIPs as detailed in Sections 5.1 and 5.2 below.

Based on CRA's data review, facility assessment and evaluations, and staff interviews, a detailed listing of key projects was prepared. It is important to note that the project list represents a snapshot of known/observable infrastructure assessment conditions as of December 2013. Furthermore, it is important to note that WEP's wastewater infrastructure needs will continually evolve as projects are completed and new concerns and/or permit requirements arise. Therefore, the projects and associated costs identified herein should be reviewed and updated on a routine basis in order to continually reevaluate and reprioritize the longer term needs over the planning period.

5.1 Recommended 5-Year Capital Improvement Plan

The 5-year CIP was developed to address the highest priority assets and processes for the Brewerton WPCP. Based on the detailed assessments and evaluations, the following projects have been identified for consideration under the 5-year CIP. For a summary of the facility assets included in each project, as well as cost estimates, refer to Appendix G.

Phase 1 – High Priority Projects

Aeration System Improvements

This project would provide aeration system upgrades to all plant processes including sludge re-aeration and MLSS tanks, aerobic digester and thickened sludge holding tanks, and aerated grit chamber. To increase the efficiency of the aeration system the upgrades will include four aeration systems: Sludge re-aeration/MLSS tanks, north digester, south digester/sludge holding tank, and grit system. Turbo blower technologies are available to enable more energy-efficient operation and to better match the process demands for each of the aeration systems during both warm and cold weather months and are recommended for the Sludge Re-aeration/MLSS tank system. The grit chamber, aerobic digesters and sludge holding tanks will be served by PD blowers. This project will also include the installation of a new fine bubble diffuser system in the sludge re-aeration and MLSS tanks and a new coarse bubble diffuser system in the north digester tank. Finally, this project would also address concerns with leaking air piping throughout the facility; the air distribution piping and appurtenances (flow meters, valves, etc.) for all systems are recommended to be replaced as part of this project.

Phase 1 Electrical System Upgrades

This project would address code compliance concerns and aging PLC and electrical components at the facility. Concerns regarding spare parts and functionality of the main distribution switchgear and the Plant SCADA system were identified during the Plant assessments. It is recommended that these components be replaced. Also included under this project is the integration and programming for the implementation of the new PLC's for the SCADA system.

The following components are proposed to be replaced in this project: Main Distribution Switchgear, PLC CO4 - INF VFD, Control Rm- PLC CO6-ATS, PLC CO1 - RSPS, Control Building PLC CO2, Screen Rake PLC CO5, PLC CO3-Chem.

Sodium Hypochlorite Tank Improvements

During asset assessments, the existing sodium hypochlorite storage tanks were identified as an item to consider for replacement. This project includes the replacement of the two sodium hypochlorite tanks in the Raw Sewage Pumping Station including new level sensors. This project also includes the installation of tempered eyewash stations with in-use alarming linked to SCADA throughout the facility (as needed).

Raw Sewage Pumping Station Improvements

This project includes recommendations for improvements at the Raw Sewage Pumping Station including the grit system and rehabilitation efforts to Special Manhole 1 located on the east side of the building. The project consists of replacement in-kind of the grit system including clam bucket/hoist components, air diffuser hoist, and associated mechanical, electrical, and control items. This project also includes rehabilitation effort for Special Manhole 1 including structural modifications, and complete chamber lining with an advanced corrosion resistant technology and chamber covering improvements.

Site Security Improvements

Several security and safety items were identified during the facility assessment. This project includes improvements to Site lighting, a new building fire alarm system for the facility, and building and gate access security improvements as detailed in Section 3.7 of this report.

Replacement of Plant Water Piping/Hydrants

Non-functioning infrastructure and associated leaks were identified during site inspections and discussions with Plant personnel. This project involves replacement of plant process water piping system and associated hydrants, valves, and appurtenances to address these concerns and issues. The estimated project is based on replacement of approximately 1,800 LF of process water piping and associated appurtenances.

Control Building Upgrades

Several code and compliance issues were identified at the Control Building, and a general restructuring of the building is recommended. A conceptual building layout utilizing the existing space was developed during the detailed evaluations (see Appendix F). This concept includes new bathroom and locker room/shower facilities, lunchroom, laboratory, and general



office space. This project includes the implementation of these improvements to the facility Control Building. This project is also based on the assumption that the aforementioned Aeration System Improvements are implemented and complete.

Odor Control Upgrades

Odor control was identified as a growing concern at the WPCP due to recent nearby residential development. This project addresses Pump Station liquid odor control improvements, and implementation of the recommended improvements at the Raw Sewage Pump Station and Sludge Handling Building at the WPCP as recommended in Section 4.7 of this Report.

Structural Upgrades

Miscellaneous structural and architectural deficiencies were noted during the building and general facility assessments. This project includes the rehabilitation of these structural and architectural items as recommended at each of the facility buildings/structures. These structural and architectural items are as cross-referenced item numbers detailed within Appendix D – Architectural and Structural components. This project also includes the rehabilitation/lining of the MLSS effluent channels which have a history of significant leaks during elevated plant flows as well as rehabilitation of the gallery deck west of the aeration tanks to eliminate the water ponding issues.

5.2 Recommended 10- and 20-Year Capital Improvement Plans

As part of the assessment and evaluations, additional projects were identified for future consideration to develop planning level 10-year and 20-year capital improvements. These projects were categorized into intermediate (10-year) or future (20-year) priority plans (a project summary listing and associated cost estimates are summarized in Appendix G):

Phase 2 – Intermediate Priority Projects (10-year CIP)

Interior Building Improvements

During the architectural review of the facility buildings and galleries, several general plumbing, mechanical HVAC improvements, and miscellaneous electrical items were identified as compliance issues and/or consisted of aging/failing components, as detailed within Appendix D of this Report. This project includes building lighting, electrical receptacles, facility plumbing, and miscellaneous HVAC improvements (fans, ductwork, etc.).

Settling Tank Improvements

The two settling tanks (clarifiers) at the WPCP each consist of collector arms, baffles, weirs, catwalks, center supports, motors, drives, and associated mechanisms (including telescoping valves and scum pits) that are the original equipment and approaching the end of useful life expectancy. This project involves the replacement of the collector mechanisms for the two clarifiers, including all associated supports, drives, and appurtenances.

Phase 2 Electrical Improvements

The inspection of the WPCP major electrical components revealed several equipment and capacity deficiencies, safety issues, and code concerns. Replacement of Motor Control Centers (MCCs) and associated electrical equipment at several buildings are required for continued reliable operations and permit compliance. The MCCs at the WPCP are original and spare parts are expensive and becoming increasingly difficult to obtain, and in some cases becoming obsolete. This project involves recommendations to replace these facility MCCs.

Raw Sewage Pump Improvements

Although the inspection of the raw sewage pumps indicated relatively good condition, these assets are a high priority asset that must continuously be monitored, maintained, rehabilitated, or upgraded on a schedule, not based on failure. This project consists of replacement of the three main influent pumps at the WPCP and associated motors, drives, and appurtenances.

Ferrous Sulfate Improvements

This project recommends upgrades to the ferrous sulfate feed systems at the WPCP. These improvements include relocation and installation of new bulk storage tanks, dosing system, instrumentation, and ancillary mechanical and electrical/controls items.

Phase 3 Electrical Improvements

This phase of the electrical system improvements include recommendations to the low voltage electrical lighting panels that are becoming outdated and obsolete.

Building Roof Improvements

Most of the building roofs at the WPCP are over 15 years old and will be approaching warranty expiration. This project recommends the replacement of the facility building roofs as the existing warranties expire.



Replace Influent Screening System

Although the influent screening system is in good condition, there is only one automated screening system in place (with the backup being a manual bar rack). With no automatic redundancy, this system is critical to maintain continuous operation. As part of the future 10-year planning period, this project includes scheduled replacement or rehabilitation of the WPCP influent screening system, and a potential screen opening size reduction (pending a detailed hydraulic evaluation) and associated controls.

Phase 3 – Future Priority Projects (20-year CIP)

Phase 4 Electrical Improvements

The WPCP generator is critical for emergency backup for the entire facility processes. Maintaining this essential asset is extremely important for continuous, safe, and reliable plant operation in case of power failure. This project involves the rehabilitation of the generator components and exhaust modifications (if the exhaust modifications are not addressed through upgrades associated with the NYSDEC Air Permitting program currently under review by the Department).

Return Activated Sludge Pump Improvements

A future priority project that should be scheduled for implementation is return-activated sludge (RAS) pump improvements. Although the assessment indicated that these assets are in good condition, maintaining RAS control facilities at the WPCP should be a scheduled priority. This project recommends replacement of the RAS pumps and associated motors, VFDs, valves and controls.

Gate Improvements

Process isolation gates at the WPCP are all original and will be approaching useful life expectancy. Operation for these isolation gates often become an increased maintenance item as they age, are difficult to operate, and do not obtain a proper seal for isolation purposes. This project consists of the repair and/or replacement of major process isolation gates including chlorine contact tanks, MLSS tanks, and sludge concentration tank.

Control Valve Improvements

As with the process isolation gates, control valves at the facility are all original and approaching their useful life expectancy. This project consists of replacing these valves in order to maintain reliable flow control throughout the Plant processes.



Digester and Thickener Feed Improvements

This project has been identified as a future priority to upgrade sludge processing at the WPCP. These assets are currently in good condition; however, they should be scheduled for replacement and/or upgrade under the future 20-year planning period. This project includes recommendations to replace the thickener rotary drum and rotary drum feed pumps, digested sludge pumps 1 and 2, and thickener pumps 1 and 2.

Convert Plant HVAC from Electric to Natural Gas

Most of the heating and ventilation units at the WPCP were found to be in good condition. As these assets age and require increased maintenance or replacement, the conversion of plant HVAC from electric to natural gas becomes more advantageous. As part of the future planning process, this project involves the complete conversion of plant HVAC from electric to natural gas.

Section 6.0 References

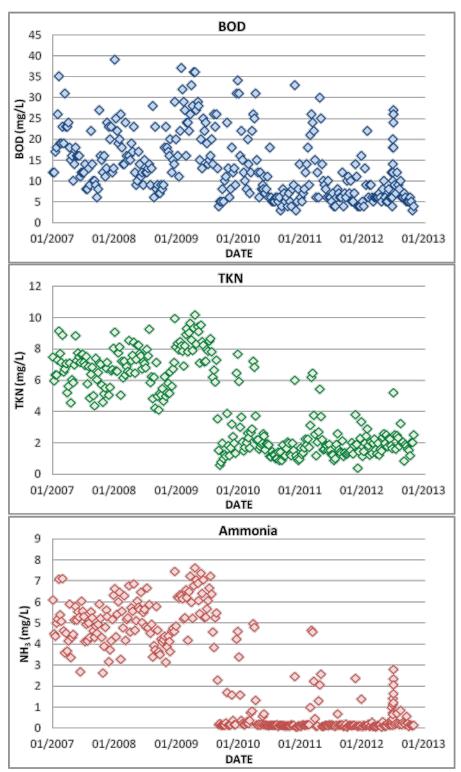
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Figures



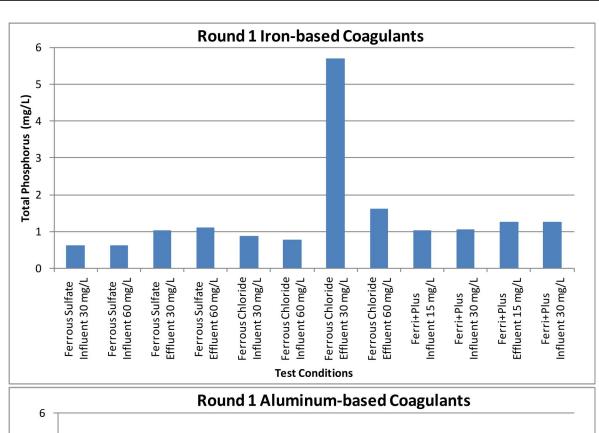


NOTE: THE FACILITY SWITCHED FROM CONTACT STABILIZATION TO EXTENDED AERATION MODE OF OPERATION IN SEPTEMBER 2009. THIS COINCIDES WITH THE REDUCTIONS IN EFFLUENT TKN AND AMMONIA SHOWN ABOVE.

figure 4-1

HISTORICAL BOD AMMONIA AND TKN FROM JAN 2007 TO OCTOBER 2013 WPCP COMPREHENSIVE FACILITY ASSESSMENT ONONDAGA COUNTY WEP Brewerton, New York





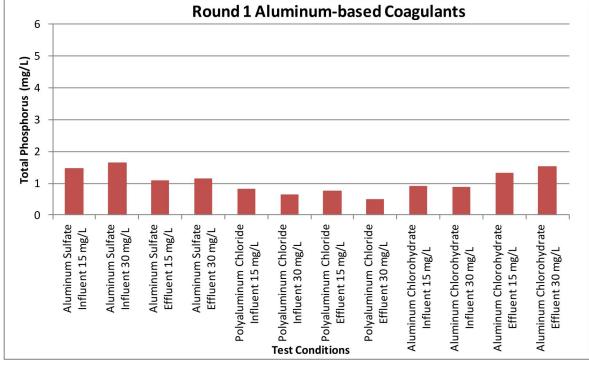


figure 4-2

ROUND 1 JAR TESTING RESULTS WPCP COMPREHENSIVE FACILITY ASSESSMENT ONONDAGA COUNTY WEP Brewerton, New York



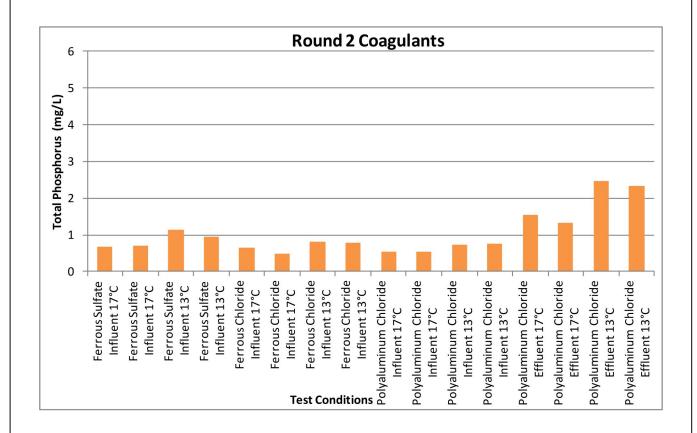
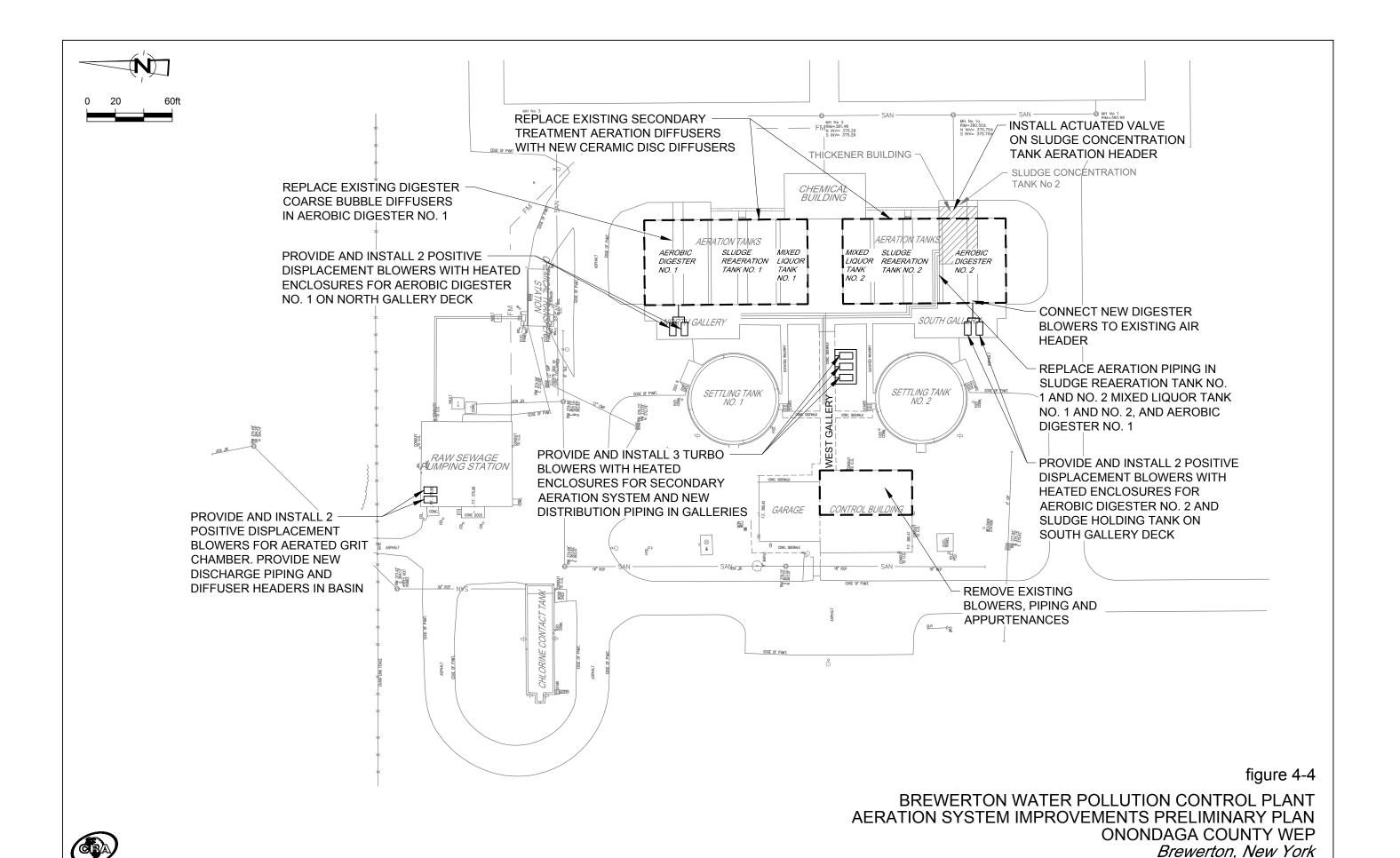


figure 4-3

ROUND 2 JAR TESTING RESULTS WPCP COMPREHENSIVE FACILITY ASSESSMENT ONONDAGA COUNTY WEP Brewerton, New York





Appendix A

Asset Inventory Database

(available on DVD following Appendices)

Equipment Classificati AC_motor	tion Loc. # Location Description 1257 Brew: RSPS - Basement - Pump Rm	Asset # Asset Description 15704 Brew: RSPS - Effluent Water Supply Pump 1 Motor	Also Known As Effluent Water Pump 1 Motor	Manufacturer 1003 - Baldor Electric Co.	Model # Serial Ass EJMM3711T F0512190550	et Notes Inspector Date/Time COND Shawn Thomas 9/24/2013 13:06 1 - Equ	CLASS: Equipment has appropriate classification ipment is listed for the environment?	COND-GEN: General Condition 1 - No corrective maintenance required		-RL: Visual Asset Condition and Remaining Useful Life set appears to be in very good condition, with more than 80% of life remaining	COND-ENC: Electric Enclosures 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	COND-PART: Component / Part Availability 3 - Components available locally. Component age < 10 yrs.	COND-MTBF: Prior Failures / Mear 3 - Within expected reason	nn Time Between Failures COND-HEAT: Excessive He	eat / Hot to Touch COND-HAZ: Health and Safety Ha	azard COND-SCAD: Linked to SCADA System 1 - Yes	Inspector Notes	Photo 1 Photo 2 Photo 3 48410500-EDD8-4A3A-BED3-FF05025BA433.jpg EF3BD6CE-0BDE-457B-9C46-B868D3531905.jpg
AC_motor AC_motor AC_motor	1257 Brew: RSPS - Basement - Pump Rm 1257 Brew: RSPS - Basement - Pump Rm 1969 Brew: North Gallery - Digested Sludge Transfer Pump 1	15705 Brew: RSPS - Effluent Water Supply Pump 2 Motor 15709 Brew: RSPS - Effluent Water Supply - Auto Strainer Motor 3577 Brew: North Gallery - Digested Sludge Pump 1 Motor	Effluent Water Pump 2 Motor Effluent Water Strainer Motor Digested Sludge Transfer Pump Motor 1	1003 - Baldor Electric Co. 1003 - Baldor Electric Co. 103598 - RELIANCE ELECTRIC/ROCKWELL	EJMM3711T F0502144310 KM3454 W0406013293 254T 1MA456486-G3EY	Shawn Thomas 9/24/2013 13:07 1 - Equ Shawn Thomas 9/24/2013 13:15 1 - Equ Shawn Thomas 9/24/2013 14:48 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason1 - None3 - Within expected reason			1 - Yes 5 - No		94B2CEF5-4DD2-4CF3-8409-F225638F27EA.jpg
AC_motor AC_motor AC_motor	1970 Brew: North Gallery - Return Sludge Pump 1 1971 Brew: South Gallery - Tanker Loading Pump 1 1972 Brew: South Gallery - Return Sludge Pump 3	4134 Brew: North Gallery - Return Activated Sludge Pump 1 Motor 4130 Brew: South Gallery - Tanker Loading Pump 1 Motor 4132 Brew: South Gallery - Return Activated Sludge Pump 3 Motor	Return Active Feed Sludge Pump 3 Motor Thickner Sludge Pump 1 Motor Return Activated Sludge Pump 3 Motor	1556 - US Electrical Motors 2810 - Teco-Electric 1556 - US Electrical Motors	H23389 B01A3180178R-2 Optim HE Plus KK 69A2070048 H23389 B07 97071813-001B-1			1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	1 - None3 - Within expected reason1 - None			5 - No	No also beta account	751F87E8-044B-4531-BF1D-DC2774F1CFDA.jpg A44CEE24-2CA3-4EAC-BBAD-1782AA832D72.jpg 7C7F62CB-E53E-4987-BF5D-C56524147CD6.jpg 6B06063F-A17F-4A1B-9C6B-246C1A554B80.jpg
AC_motor AC_motor AC_motor	1980 Brew: Air Diffuser Hoist 1982 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 1 1993 Brew: Settling Tank 1 (North) - Scum Pump 1	1164 Brew: Diffuser Hoist Motor 1810 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 1 3575 Brew: Settling Tank 1 (North) - Scum Pump 1 Motor	Brew: Diffuser Hoist Motor Blower Motor 1 Scum Pump #1 Motor Scum Pump #2 Motor	1003 - Baldor Electric Co. 0000008327-4 - TOSHIBA BUSINESS SOLUTIONS USA 103598 - RELIANCE ELECTRIC/ROCKWELL	m3542 580 INC B1252VLG3USH 61102624 TEFC-XT 1259347A2	Shawn Thomas 9/26/2013 8:21 Shawn Thomas 9/24/2013 11:17 1 - Equ Shawn Thomas 9/25/2013 8:57 1 - Equ Shawn Thomas 9/25/2013 8:58 1 Equ	ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required 	1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining		 2 - Components available locally. Component age < 5 yrs. 5 - Components not available. Component age > 15 yrs. 	1 - None	2 - None		5 - No 5 - No	No electric component. Need confine space entry to see.	B672A7BB-04BA-46C4-8EE8-A8F5D24808EE.jpg 0232AFA1-F76C-4C84-B368-567D5BFED609.jpg
AC_motor AC_motor Unclassified	1994 Brew: Settling Tank 2 (South) - Scum Pump 2 2094 Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum 2095 Brew: Thickener Bldg - 101 Thickener Rm - Flocculation Tank 2005 Brow: Thickener Bldg - 101 Thickener Rm - Flocculation Tank	3576 Brew: Settling Tank 2 (South) - Scum Pump 2 Motor 15710 Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Motor 3921 Brew: Thickener Bldg - Flocculator	Scum Pump #2 Motor Rotary Drum Motor Brew: Thickener Bldg - Flocculator Prow: Thickener Flocculator Motor	103598 - RELIANCE ELECTRIC/ROCKWELL 1226 - SEW-Eurodrive, Inc. 1226 - SEW-Eurodrive, Inc.	TEFC-XT 1259347A1 R77DT90L4-KS 850278534 DFT71D4K3 850278535	Shawn Thomas 9/25/2013 8:58 1 - Equ Shawn Thomas 9/24/2013 14:26 1 - Equ Shawn Thomas 9/25/2013 8:26		1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	5 - Components not available. Component age > 15 yrs. 3 - Components available locally. Component age < 10 yrs.	1 - None			5 - No	Need confine space entry to see. Repeat.	733C6A4A-5A16-4E4D-835D-78BE65BFB69C.jpg
AC_motor AC_motor AC_motor AC_motor	2095 Brew: Thickener Bldg - 101 Thickener Rm - Flocculation Tank 5357 Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 1 5361 Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 1 5379 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypo Pump 1	3922 Brew: Thickener - Flocculator Motor 15711 Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 1 Motor 2779 Brew: Ferrous Feed Pump 1 Motor 2781 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 1 Motor	Brew: Thickener - Flocculator Motor Feed Pump Motor #1 Rotary Drum Brew: Ferrous Feed Pump 1 Motor Hypochlorite Feed Pump 1 Motor	1226 - SEW-Eurodrive, Inc. 166553 - ITT FLYGT 1270 - LEESON Electric Corporation 1270 - LEESON Electric Corporation	DFT90L4KS 850278534 3102.18 19432 C42D17FK4B 98004 C42D 98003	Shawn Thomas 9/24/2013 14:37 1 - Equ Shawn Thomas 9/24/2013 14:00 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	 5 - Components not available. Component age > 15 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason3 - Within expected reason3 - Within expected reason			5 - No	Submerged.	CA0BB6A3-EC48-4979-BD25-F943A21489C3.jpg 64041DCE-CC86-4DA5-AB61-403E3B7531EE.jpg 223047BC-3262-4BFA-ADA8-A26F7A033C70.jpg EFAD24D6-D5E3-4E4F-8137-632F844B27D5.jpg B7405C64-A066-4456-B81D-3D464C1D1634.jpg 894974B8-A0E1-4591-9CFF-28ECDFB50684.jpg
AC_motor AC_motor AC_motor	5398 Brew: Thickener Bldg - 101 Thickener Rm - Effluent Pump Motors 1 and 2 5398 Brew: Thickener Bldg - 101 Thickener Rm - Effluent Pump Motors 1 and 2 5400 Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Booster Pump	1816 Brew: Thickener - Effluent Pump 1 Motor 1817 Brew: Thickener - Effluent Pump 2 Motor 2986 Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Booster Pump Motor	Brew: Thickener - Effluent Pump 1 Motor Brew: Thickener - Effluent Pump 2 Motor Rotary Drum Booster Pump Motor	1141 - Emerson Electric Co. 1141 - Emerson Electric Co. 125641 - MARATHON ENGINEERING CORP	E877A ZO8Z190R177M 80448 Z10Z222R186F 7VF184TTFS6810ANL MB596070-06121-01	Shawn Thomas 9/24/2013 13:30 1 - Equ Shawn Thomas 9/25/2013 9:12 1 - Equ Shawn Thomas 9/25/2013 9:14 1 - Equ Shawn Thomas 9/24/2013 14:31 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 5 - Components available locally. Component age < 10 yrs.	3 - Within expected reason			5 - No 5 - No		8E283FD3-4877-4015-8F9D-8F0B8AF5BF12.jpg 35BB3665-19F2-4C74-924A-3CD61E177EB8.jpg EE05B9FC-C4CC-4421-8CDB-ECC5C02E0381.jpg 23BF743A-8DCF-4FA4-AB97-C9F7C1545675.jpg 23CC070A-268F-4FDE-813F-49975811621A.jpg F9983E1D-4B2C-4236-8982-5BDAE506D99B.jpg
AC_motor AC_motor AC_motor	6232 Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 2 6233 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 2 6234 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 3	15712 Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 2 Motor 1811 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 2 1812 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 3	Feed Pump Motor #1 Rotary Drum Blower Motor 2 Blower Motor 3	166553 - ITT FLYGT 0000008327-4 - TOSHIBA BUSINESS SOLUTIONS USA 0000008327-4 - TOSHIBA BUSINESS SOLUTIONS USA	3102.18 19433 INC B1252VLG3USH 60703785	Shawn Thomas 9/24/2013 11:37 1 - Equ Shawn Thomas 9/24/2013 11:20 1 - Equ Shawn Thomas 9/24/2013 11:24 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	 3 - Components available locally. Component age < 10 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 	3 - Within expected reason 1 - None	2 - None 2 - None		5 - No 5 - No	Submerged.	4BFB1F1F-96F0-4716-9678-29EFDD4F2A5F.jpg A9A2C49F-4D4D-4BD9-87FA-866B330D64E4.jpg 60984A27-7779-4FD9-8C7A-427CC595A6AC.jpg 53014BD2-CB9B-4408-AFF3-4E0C38AA4C92.jpg
AC_motor AC_motor AC_motor	6235 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 4 6249 Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 2 6283 Brew: RSPS - Basement - Mtr Rm - Pump 1 motor	1813 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 4 2780 Brew: Ferrous Feed Pump 2 Motor 4561 Brew: RSPS - Basement - Mtr Rm - Pump 1 motor	Blower Motor 4 Brew: Ferrous Feed Pump 2 Motor Raw Waste Water Pump 1 Motor	0000008327-4 - TOSHIBA BUSINESS SOLUTIONS USA 1270 - LEESON Electric Corporation 125641 - MARATHON ENGINEERING CORP		Shawn Thomas 9/24/2013 11:22 1 - Equ Shawn Thomas 9/24/2013 13:57 1 - Equ Shawn Thomas 9/24/2013 13:13 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 2 - Coating cracked with some flacking exposing undercoat <20% of area, evidence of corrosion. Some seal wear but no dirt ingress. Ventilation and cooling adequate. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason 1 - None	2 - None		5 - No		E342124A-ACBB-4536-A2D2-ABE8CC962D23.jpg B25CF6C5-BD9C-484B-9589-9D7E262A5FC7.jpg 84B9E36B-4F23-44D0-ADC6-82E8AA78727A.jpg 285514CB-5731-4C4D-8437-03A2B524C3B2.jpg 9C852185-BDE1-4AED-914E-119B83B080C1.jpg DBF7DA52-3EE9-4ECF-858A-8B7C7F36E9FD.jpg
AC_motor AC_motor AC_motor	6284 Brew: RSPS - Basement - Mtr Rm - Pump 2 motor 6285 Brew: RSPS - Basement - Mtr Rm - Pump 3 motor 6288 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypo Pump 2	4562 Brew: RSPS - Basement - Mtr Rm - Pump 2 motor 4563 Brew: RSPS - Basement - Mtr Rm - Pump 3 motor 2782 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 2 Motor	Raw Waste Water Pump 2 Motor Raw Waste Water Pump3 Motor Hypochlorite Feed Pump 2 Motor	125641 - MARATHON ENGINEERING CORP 125641 - MARATHON ENGINEERING CORP 1270 - LEESON Electric Corporation	9F 444TSTDS4102AN MU 404000 6/12-02 9F 444TSTDS4102AN MU 404000 6/12-01 042D17FK2A 98002	Shawn Thomas 9/24/2013 13:11 1 - Equ Shawn Thomas 9/24/2013 13:09 1 - Equ Shawn Thomas 9/24/2013 13:32 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	3 - Components available locally. Component age < 10 yrs.3 - Components available locally. Component age < 10 yrs.	1 - None 1 - None			1 - Yes 1 - Yes 5 - No		8013B2C1-EE32-408A-81AA-4A89C815F1A9.jpg 192C7176-3568-4D71-94DF-FC41DC1AC357.jpg CEF5D030-E04F-4BDD-89CB-A6D1FD6FCCF9.jpg 5BA73B9E-4912-441B-8FB7-E4B0E2A59FE3.jpg BDC940D9-4C07-4988-BA39-E6841804F0E9.jpg 496A3B1B-3167-47F3-A6A5-A29FD8A8CFB9.jpg
AC_motor AC_motor AC_motor	6291 Brew: North Gallery - Return Sludge Pump 2 6295 Brew: North Gallery - Digested Sludge Transfer Pump 2 6313 Brew: South Gallery - Return Sludge Pump 4	4135 Brew: North Gallery - Return Activated Sludge Pump 2 Motor 3578 Brew: North Gallery - Digested Sludge Pump 2 Motor 4133 Brew: South Gallery - Return Activated Sludge Pump 4 Motor	Return Active Feed Sludge Pump 4 Motor Digested Sludge Transfer Pump Motor 2 Return Activated Sludge Pump 4 Motor	1556 - US Electrical Motors 103598 - RELIANCE ELECTRIC/ROCKWELL 2810 - Teco-Electric	H23389 B01A3180178R-3 254T 1MA456486-G1EY MAX-E-1 JX 4732090004	Shawn Thomas 9/25/2013 8:31 1 - Equ Shawn Thomas 9/24/2013 14:50 1 - Equ Shawn Thomas 9/25/2013 8:23 1 - Equ	ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	1 - None 1 - None			5 - No 5 - No		BB0F7A88-EB16-4996-95CE-2135C8F3E0AF.jpg
AC_motor AC_motor AC_motor	6317 Brew: South Gallery - Tanker Loading Pump 2 6324 Brew: Settling Tank 2 (South) - Settling Tank 2 Drive 6325 Brew: Settling Tank 1 (North) - Settling Tank 1 Drive	4131 Brew: South Gallery - Tanker Loading Pump 2 Motor 1815 Brew: Settling Tank 2 (South) Drive Motor 1814 Brew: Settling Tank 1 (North) Drive Motor	Thickner Sludge Pump 2 Motor Settling Tank Drive Motor #2 Settling Tank Drive Motor #1	2810 - Teco-Electric 1556 - US Electrical Motors 1556 - US Electrical Motors	Optim HE Plus KK 69A2070047 Corro-Duty G119/Y07Y156R071F Corro-Duty G119-Y07Y156R071F	Shawn Thomas 9/24/2013 14:55 1 - Equ Shawn Thomas 9/25/2013 9:05 1 - Equ Shawn Thomas 9/25/2013 9:07 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	3 - Components available locally. Component age < 10 yrs.5 - Components not available. Component age > 15 yrs.	3 - Within expected reason1 - None			5 - No	No nameplate.	6513EE18-C1C2-4153-A0AB-3652126BF414.jpg E65A3A05-F8BB-4F1A-9118-E9F97170A748.jpg 7FB266AB-7CD3-48B4-855E-DA774AE6875B.jpg 33F0A3AB-79C0-432A-BDA4-990835461CB3.jpg 67CAE2BA-6488-4BCF-81C6-76E61D99D48D.jpg
AC_motor Battery Drive	8820 Brew: East Gallery - New Plant Air Compressor - Ingersol Rand 9185 Brew: Control Bldg - 1st Fl - SCADA PLC Rm - PLC_C02 - UPS 6324 Brew: Settling Tank 2 (South) - Settling Tank 2 Drive	9609 Brew: East Gallery - New Plant Air Skid - Compressor 1 Motor 10450 Brew: Control Bldg - 1st Fl - SCADA PLC Rm - PLC_C02 - UPS 1884 Brew: Settling Tank 2 (South) - Settling Tank 2 Drive	Brew: East Gallery - New Plant Air Skid - Compress PLC_CO2 UPS Settling Tank 2 Drive	132092 - BEST POWER TECHNOLOGY INC	F3KVA-B 555565 73440-01A	Shawn Thomas 9/24/2013 15:01 1 - Equ Shawn Thomas 9/24/2013 12:42 1 - Equ Shawn Thomas 9/25/2013 0:00 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	3 - Asse 3 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in average condition, with approx. 50% of life remaining set appears to be in average condition, with approx. 50% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 2 - Components available locally. Component age < 5 yrs. 4 - Components available special order only. Component age < 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 	1 - None3 - Within expected reason3 - Within expected reason				Not a drive a fused disconnect.	C219B335-65AE-4F17-84D5-951D212F2EFB.jpg 265DAC35-D441-45CD-A41B-B4AB006762AD.jpg 1DA413BA-FF95-4AF4-AE42-F7A3441972C3.jpg F2D3F326-DB8D-4745-876A-67C796E71EC9.jpg 74EB964D-7768-41E7-8028-CBE83D6130FE.jpg
Drive Engine MCCs	6325 Brew: Settling Tank 1 (North) - Settling Tank 1 Drive 1926 Brew: Control Bldg - 1st Fl - Garage - Generator Motor 1563 Brew: Control Bldg - 1st Fl - Control Rm - Main Distribution Switchgear	4796 Brew: Control Bldg - 1st Fl - Control Rm - Main Distribution Switchgear	Settling Tank 1 Drive Brew: Control Bldg - Generator Engine Main Distribution Switch Gear	1117 - Eimco 1296 - Detroit Diesel 2806 - Rowan I TE Imperial Corp	73440-0113 91237305 128000201 48527-A1	Shawn Thomas 9/26/2013 0:00 1 - Equ Shawn Thomas 9/27/2013 0:00 1 - Equ Shawn Thomas 9/28/2013 0:00 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 2 - Few minor deficiencies and minimal corrective ma 	maintenance required 1 - Asset	set appears to be in average condition, with approx. 50% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 4 - Components available special order only. Component age < 15 yrs. 3 - Components available locally. Component age < 10 yrs. 5 - Components not available. Component age > 15 yrs. 	3 - Within expected reason1 - None3 - Within expected reason		1 - N/A	5 - No 5 - No	No drive fused disconnect.	
MCCs MCCs	1565 Brew: Control Bldg - 1st Fl - Control Rm - MCC 11 1566 Brew: Control Bldg - 1st Fl - Control Rm - MCC 11 - Transformer 3 1572 Brew: Control Bldg - 1st Fl - Control Rm - MCC 12	4797 Brew: Control Bldg - 1st Fl - Control Rm - MCC 11 4817 Brew: Control Bldg - 1st Fl - Control Rm - MCC 11 - Transformer 3 4798 Brew: Control Bldg - 1st Fl - Control Rm - MCC 12	MCC 11 MCC 11 Transformer 3 MCC 12	2806 - Rowan I TE Imperial Corp 2805 - Sorgel Dry Type 2806 - Rowan I TE Imperial Corp	5640-V3D-111-0-0 84-89906 H-115 103516-1 5640-V1-B-111-103-SPL 84-39906	Shawn Thomas 9/24/2013 10:51 1 - Equ Shawn Thomas 9/24/2013 10:58 1 - Equ Shawn Thomas 9/24/2013 11:00 1 - Equ Shawn Thomas 9/24/2013 11:03 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 2 - Few minor deficiencies and minimal corrective ma 1 - No corrective maintenance required 1 - No corrective maintenance required 	3 - Asse 2 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in average condition, with approx. 50% of life remaining set appears to be in good condition, with 60-80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 	3 - Within expected reason1 - None3 - Within expected reason	1 - N/A 1 - N/A	1 - N/A	5 - No 5 - No 5 - No		DDCDCF0D-7D78-43A6-9A80-C0A9106C33FC.jpg FF067F11-9CBF-4869-9283-3F100D4561A8.jpg 2CAF5DF0-0BE8-4CA0-A1DE-AC2189DF2AD8.jpg EFCD6013-885D-4AC1-A712-8CEC72495712.jpg A3CBE2A8-EA81-42D4-A2EC-BE09F7ADEF97.jpg A439569A-5D64-44FA-885A-4D4F2F83DA6F.jpg
MCCs MCCs	1576 Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Transformer 2A 1578 Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Transformer 2B 1584 Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 1585 Brow: Control Bldg - 1st Fl - Control Rm - MCC 13	4815 Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Transformer 2A 4816 Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Transformer 2B 4799 Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 4814 Brow: Control Bldg - 1st Fl - Control Rm - MCC 13	MCC 12 Transformer 2A MCC 12 Transformer 2B MCC 13 MCC 13 Transformer 1	1533 - HEVI-DUTY 2605 2806 - Rowan I TE Imperial Corp	55H155 103515-1 5640-V1-B-111-103-SPL 84-89906	Shawn Thomas 9/24/2013 11:02 1 - Equ Shawn Thomas 9/24/2013 11:05 1 - Equ Shawn Thomas 9/24/2013 11:07 1 - Equ Shawn Thomas 9/24/2013 11:00 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in average condition, with approx. 50% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	5 - Components not available. Component age > 15 yrs. 3 - Components available locally. Component age < 10 yrs. 5 - Components available. Component age > 15 yrs.	1 - None 1 - None 3 - Within expected reason		2 - None	5 - No 5 - No	Original xfmr blew 17 yrs ago.	EDA9F9A0-3CF4-4370-AB8C-5170D83172BF.jpg AB66F3B5-1EC5-45F9-B2ED-CD17CE4A3537.jpg FB60F997-C688-41FD-A3FF-A399ED68BD65.jpg 83FA95B5-B7B4-4A98-930F-A0255A9BF763.jpg FS077830-ADF0-4FAF-B674-7F38B63386C3.jpg FFAF78AC-A017-47C7-B033-ADC103F64FCC.jpg
MCCs MCCs MCCs	1585 Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 - Transformer 1 1587 Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 - Transformer 6 1590 Brew: Chem Bldg - 1st Fl - MCC 15 1592 Brew: Chem Bldg - 1st Fl - MCC 15 - Transformer 5	4814 Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 - Transformer 1 4820 Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 - Transformer 6 4800 Brew: Chem Bldg - 1st Fl - MCC 15 4819 Brew: Chem Bldg - 1st Fl - MCC 15 - Transformer 5	MCC 13 Transformer 1 MCC 13 Transformer 6 MCC 15 MCC 15 Transformer 5	2805 - Sorgel Dry Type 1533 - HEVI-DUTY 2806 - Rowan I TE Imperial Corp 2805 - Sorgel Dry Type	30103HPS 102233-15 S5H375 5640-BIC-111-103-0 84-89906 103516-2	Shawn Thomas 9/24/2013 11:09 1 - Equ Shawn Thomas 9/24/2013 11:52 1 - Equ Shawn Thomas 9/24/2013 13:48 1 - Equ Shawn Thomas 9/24/2013 13:50 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. None	 4 - Components available special order only. Component age < 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 	1 - None			3 - NO		58077829-4DF9-4EAE-B674-7F28B62386C3.jpg
MCCs MCCs MCCs	1594 Brew: RSPS 1st Fl - MCC Rm - MCC 23 1595 Brew: RSPS 1st Fl - MCC Rm - MCC 21 1597 Brew: RSPS 1st Fl - MCC Rm - MCC 21 - Transformer 4	4803 Brew: RSPS 1st Fl - MCC Rm - MCC 23 4801 Brew: RSPS 1st Fl - MCC Rm - MCC 21 4818 Brew: RSPS 1st Fl - MCC Rm - MCC 21 - Transformer 4	MCC 23 MCC 21 MCC 21 Transformer 4	2806 - Rowan I TE Imperial Corp 2806 - Rowan I TE Imperial Corp 2805 - Sorgel Dry Type	5640-VC3-111-0-0 84-89906 5640-V3-B-111-0-0 84-89906 3OTO 3HPS S-05877-5	Shawn Thomas 9/24/2013 12:56 1 - Equ Shawn Thomas 9/24/2013 12:53 1 - Equ Shawn Thomas 9/25/2013 12:53 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. None. 	5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs.	1 - None		No arc flash label. No arc flash label.	5 - No 5 - No		027D76A6-E3DE-4378-A7CD-A11B4FD4EC27.jpg
PLC PLC PLC	6708 Brew: Chem Bldg - 2nd Fl - Ferrous PLC C03 Cabinet 6773 Brew: Control Bldg - 1st Fl - SCADA PLC Rm - PLC_C02 Cabinet 7058 Brew: RSPS 1st Fl - MCC Rm - PLC C01 Cabinet	6134 Brew: PLC_C03 - Chem 6318 Brew: PLC_C02 - Control Bldg 7130 Brew: PLC_C01 - RSPS	PLC_CO3 Chemical PLC_CO2 - Control Building PLC_CO1	1164 - Allen Bradley / Rockwell Automation 1164 - Allen Bradley / Rockwell Automation 1164 - Allen Bradley / Rockwell Automation	SLC 5/05 PLC 5/20 PLC 5/20	Shawn Thomas 9/24/2013 14:04 1 - Equ Shawn Thomas 9/24/2013 11:37 1 - Equ Shawn Thomas 9/24/2013 13:00 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required 	3 - Asse 3 - Asse	set appears to be in average condition, with approx. 50% of life remaining set appears to be in average condition, with approx. 50% of life remaining set appears to be in average condition, with approx. 50% of life remaining	None. None.	 4 - Components available special order only. Component age < 15 yrs. 5 - Components not available. Component age > 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 	3 - Within expected reason3 - Within expected reason3 - Within expected reason			1 - Yes 1 - Yes 1 - Yes	Has no covers, been like that for 15 yrs.	EC70B01B-6F96-4E08-8193-8CCA2493A11C.jpg 1422CF0D-38BB-487C-B9C2-A6854857AB98.jpg AC86CC5F-043D-4570-9C0C-F12EBD4F83F5.jpg F526AC2B-9010-47FA-8B76-B4696BA2C90E.jpg
PLC PLC PLC	7130 Brew: RSPS 1st FI - MCC Rm - PLC CO4 (Inf. VFD) Cabinet 8248 Brew: RSPS 1st FI - MCC Rm - Screen Rake Panel (PLC_CO5) 9069 Brew: Control Bldg - 1st FI - Control Rm - ATS/PLC_CO6 Panel	7887 Brew: PLC_C04 - INF. VFD 7888 Brew: Screen Rake PLC_C05 10264 Brew: Control Bldg - 1st Fl - Control Rm - PLC_C06 - ATS	PLC_CO4 INF VFD PLC_CO5 PLC_CO6	1164 - Allen Bradley / Rockwell Automation 1164 - Allen Bradley / Rockwell Automation 1164 - Allen Bradley / Rockwell Automation	SLC 5/05 ML1000 ML1500 - DC	Shawn Thomas 9/24/2013 13:24 1 - Equ Shawn Thomas 9/24/2013 13:04 1 - Equ Shawn Thomas 9/24/2013 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required 	3 - Asse 3 - Asse	set appears to be in average condition, with approx. 50% of life remaining set appears to be in average condition, with approx. 50% of life remaining set appears to be in average condition, with approx. 50% of life remaining		 4 - Components available special order only. Component age < 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 	3 - Within expected reason3 - Within expected reason			1 - Yes 1 - Yes 1 - Yes	Reliability issuses.	4E4A1782-1C9B-466E-82F2-F9F01E800474.jpg E723872E-401C-45F2-A02F-BCA0E20FAD06.jpg 0506720B-27D5-4829-B275-AA2FDD791824.jpg
Unclassified Unclassified Unclassified	1569 Brew: Control Bldg - 1st Fl - Blower Rm - Panel B 1570 Brew: Control Bldg - 1st Fl - Blower Rm - Panel F 1573 Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - LPH-1	4826 Brew: Control Bldg - 1st Fl - Blower Rm - Panel B 4789 Brew: Control Bldg - 1st Fl - Blower Rm - Surge Control Panel F 4812 Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - LPH-1	Brew: Control Bldg - 1st Fl - Blower Rm - Panel B Brew: Control Bldg - 1st Fl - Blower Rm - Surge Co Brew: Control Bldg - 1st Fl - Control Rm - MCC 12			Shawn Thomas 9/24/2013 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 5 - Components not available. Component age > 15 yrs. 	1 - None			5 - No 5 - No 5 - No		C67FF118-4E9F-4FE6-9FF3-26561661F63E.jpg 75B75641-4C8C-4814-8628-CE46EDD29F27.jpg B501FE86-9971-46B8-8C6E-CB19D0124427.jpg
Unclassified Unclassified Unclassified	1575 Brew: South Gallery - Panel D-2 1588 Brew: Thickener Bldg - 102 Electrical Room - Panel L-6A 1589 Brew: Thickener Bldg - 102 Electrical Room - Panel L-6B	4830 Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Panel D-2 4810 Brew: Thickener Bldg - 102 Electrical Room - Panel L-6A 4811 Brew: Thickener Bldg - 102 Electrical Room - Panel L-6B	Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 Brew: Thickener Bldg - 102 Electrical Room - Panel Brew: Thickener Bldg - 102 Electrical Room - Panel	1864 - GE 1497 - General Electric	Cop A series panelboard A Series Panelboard	oy of mcc 12 Shawn Thomas 9/24/2013 Tom Blodgett 12/18/2013 11:23 1 - Equ Tom Blodgett 12/18/2013 11:26 1 - Equ	ipment is listed for the environment?	2 - Few minor deficiencies and minimal corrective ma2 - Few minor deficiencies and minimal corrective ma	maintenance required 3 - Asse	set appears to be in average condition, with approx. 50% of life remaining set appears to be in average condition, with approx. 50% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	4 - Components available special order only. Component age < 15 yrs.3 - Components available locally. Component age < 10 yrs.	3 - Within expected reason 3 - Within expected reason	2 - None 2 - None				6352EC4E-2174-4E91-9811-98C6F18BB331.jpg CB9AFC4E-FD61-40A4-B4D1-AEACD8E5E4FA.jpg
Unclassified Unclassified Unclassified	1591 Brew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 1596 Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump VFD's 1598 Brew: RSPS 1st Fl - MCC Rm - Panel L-4	4813 Brew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 4802 Brew: RSPS 1st Fl - MCC Rm - MCC 22 4808 Brew: RSPS 1st Fl - MCC Rm - Panel L-4	Brew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 Brew: RSPS 1st Fl - MCC Rm - MCC 22 Brew: RSPS 1st Fl - MCC Rm - Panel L-4			Shawn Thomas 9/24/2013 13:51 1 - Equ Shawn Thomas 9/24/2013 12:58 1 - Equ Shawn Thomas 9/25/2013 9:39 1 - Equ	ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	5 - Components not available. Component age > 15 yrs.5 - Components not available. Component age > 15 yrs.	1 - None 1 - None					70D30500-964E-4023-BA4C-42C954C7977F.jpg A5750D4D-EE4E-4AC9-8045-FB1251319C49.jpg D9F9C5E1-436C-45AC-9439-AA428716023A.jpg 205E0A39-E4A4-47D3-992C-E0662180FEB6.jpg 90FCB69C-FF62-4132-8086-8887EC31E3B6.jpg 7946796A-A17D-42D0-87F1-B381AC3B3E32.jpg
Unclassified Unclassified Unclassified	1987 Brew: Control Bldg - 1st Fl - Blower Rm - Air Filter CB 1988 Brew: Control Bldg - 1st Fl - Blower Rm - Air Filter DM 2052 Brew: Control Bldg - Roof - Exhaust Fan 403-1	1085 Brew: Control Bldg - 1st Fl - Blower Rm - Air Filter Control Box 1086 Brew: Control Bldg - 1st Fl - Blower Rm - Air Filter Drive Mechanism 9383 Brew: Control Bldg - Roof - Exhaust Fan 403-1 Motor	Brew: Control Bldg - 1st Fl - Blower Rm - Air Filt Brew: Control Bldg - 1st Fl - Blower Rm - Air Filt Brew: Control Bldg - Roof - Exhaust Fan 403-1 Moto	1397 - American Air FIlter Company, Inc. 1397 - American Air FIlter Company, Inc.		t of service. Shawn Thomas 9/25/2013 0:00 t of service. Shawn Thomas 9/25/2013 0:00 Shawn Thomas 9/25/2013 0:00 1 - Equ		1 - No corrective maintenance required		set appears to be in very good condition, with more than 80% of life remaining		5 - Components not available. Component age > 15 yrs.	3 - Within expected reason				Out of service. Out of service.	
Unclassified Unclassified Unclassified Unclassified	2083 Brew: Thickener Bldg - Roof - Exhaust Fan 1 2461 Brew: Chemical Transfer Station 5360 Brew: Chem Bldg - Roof - Exhaust Fan 422-1	9409 Brew: Thickener Bldg - Roof - Exhaust Fan 1 Motor 7889 Brew: Chemical Transfer Station Control Panel 9407 Brew: Chem Bldg - Roof - Exhaust Fan 422-1 Motor	Brew: Thickener Bldg - Roof - Exhaust Fan 1 Motor Brew: Chemical Transfer Station Control Panel Brew: Chem Bldg - Roof - Exhaust Fan 422-1 Motor Brow: Chem Bldg - 2nd El - Brossure Transmitter 1	1150	600T 00W002749	Shawn Thomas 9/25/2013 9:45 1 - Equ Shawn Thomas 9/24/2013 12:46 1 - Equ Shawn Thomas 9/24/2013 14:21 1 - Equ Shawn Thomas 9/24/2013 14:21 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	5 - Components not available. Component age > 15 yrs.5 - Components not available. Component age > 15 yrs.	3 - Within expected reason 3 - Within expected reason				Sun damage.	3CE99B63-81AC-42B2-9AC6-69A1CB840C67.jpg 17CB0F78-6214-453D-9C4C-2F28383877E2.jpg D77923B4-BA00-42E0-853D-FD3E5AB509D7.jpg
Unclassified Unclassified Unclassified	5362 Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 1 5365 Brew: Control Bldg - Roof - Supply Fan 406-1 5366 Brew: Control Bldg - Roof - Exhaust Fan 406-4 5371 Brew: RSPS 1st Fl - Disinfection Rm - Wall Fan 419-2	1016 Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 1 9385 Brew: Control Bldg - Roof - Supply Fan 406-1 Motor 9388 Brew: Control Bldg - Roof - Exhaust Fan 406-4 Motor 9400 Brew: RSPS 1st Fl - Disinfection Rm - Wall Fan 419-2 Motor	Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 1 Brew: Control Bldg - Roof - Supply Fan 406-1 Motor Brew: Control Bldg - Roof - Exhaust Fan 406-4 Moto Brew: RSPS 1st Fl - Disinfection Rm - Wall Fan 419	1139	0001 0000002749	Shawn Thomas 9/24/2013 14:21 1 - Equ Shawn Thomas 9/24/2013 11:31 1 - Equ Shawn Thomas 9/24/2013 11:27 1 - Equ Shawn Thomas 9/25/2013 9:46 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	5 - Components not available. Component age > 15 yrs.	3 - Within expected reason3 - Within expected reason			5 - No 5 - No		2FD09696-9A29-4D5E-84F3-DEE80CAD55D2.jpg 6F6F5171-6BE1-4B2D-B604-3C51CFAA732B.jpg 3A89041F-2048-4CE8-BD2E-437BDCE26F8C.jpg
Unclassified Unclassified Unclassified Unclassified	5371 Brew: RSFS 13CTT - Distriction RTH - Wall Fall 413-2 5372 Brew: Control Bldg - 1st Fl - Garage - Generator Engine 5380 Brew: RSPS - Roof - Exhaust Fan 420-1 5386 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-2	3015 Brew: Control Bldg - 1st Fl - Garage - Generator Engine 9401 Brew: RSPS - Roof - Exhaust Fan 420-1 Motor 9397 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-2 Motor	Brew: Control Bldg - 1st Fl - Garage - Generator E Brew: RSPS - Roof - Exhaust Fan 420-1 Motor Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-	125641 - MARATHON ENGINEERING CORP	680FDC4457AA W R174 BJ-79-95231	Shawn Thomas 9/24/2013 11:57 1 - Equ Shawn Thomas 9/24/2013 13:43 1 - Equ Shawn Thomas 9/25/2013 9:47 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	2 - Components available locally. Component age < 5 yrs. 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs.	1 - None 3 - Within expected reason			1 - Yes 5 - No	Data info is wrong.	0E5B1491-0DDA-4FC9-AFE9-765357234EE4.jpg 948FCB10-9068-4929-BDD7-A026DE3FA699.jpg E93C909F-802A-4280-ADB7-857A6339FB86.jpg
Unclassified Unclassified Unclassified	5387 Brew: RSPS - Roof - Exhaust Fan 416-1 5388 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 419-1 5393 Brew: Thickener Bldg - Tanker Loading Sta Flow Transmitter 2	9395 Brew: RSPS - Roof - Exhaust Fan 416-1 Motor 9399 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 419-1 Motor 3853 Brew: Thickener Bldg - Tanker Loading Sta Flow Transmitter 2	Brew: RSPS - Roof - Exhaust Fan 416-1 Motor Brew: RSPS - Roof - Hooded Rooftop Supply Fan 419- Brew: Thickener Bldg - Tanker Loading Sta Flow T	164103 - ROSEMOUNT INC	8712CR12N0C1M4T1 860109752	Shawn Thomas 9/26/2013 13:05 1 - Equ Shawn Thomas 9/24/2013 13:01 1 - Equ Shawn Thomas 9/24/2013 14:59 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	3 - Components available locally. Component age < 10 yrs.	3 - Within expected reason 1 - None			5 - No		
Unclassified Unclassified Unclassified	5396 Brew: Thickener Bldg - 101 Thickener Rm - Flow Transmitter 6237 Brew: Chem Bldg - Roof - Exhaust Fan 422-2 6243 Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 2	3856 Brew: Thickener Bldg - 101 Thickener Rm - Flow Transmitter 9408 Brew: Chem Bldg - Roof - Exhaust Fan 422-2 Motor 1017 Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 2	Brew: Thickener Bldg - 101 Thickener Rm - Flow Tra Brew: Chem Bldg - Roof - Exhaust Fan 422-2 Motor Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 2	164103 - ROSEMOUNT INC	8712CR12N0C1M4T1 860709753 1159 600T 00WOO2773	Shawn Thomas 9/25/2013 9:20 1 - Equ Shawn Thomas 9/24/2013 14:22 1 - Equ Shawn Thomas 9/24/2013 14:18 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	 2 - Components available locally. Component age < 5 yrs. 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 	3 - Within expected reason3 - Within expected reason3 - Within expected reason			5 - No		B5F795BE-AAEA-43C5-A9E0-EB6CD5D4D062.jpg
Unclassified Unclassified Unclassified	6244 Brew: Chem Bldg - 2nd Fl - Panel PLP 6259 Brew: Control Bldg - Roof - Supply Fan 406-2 6260 Brew: Control Bldg - Roof - Supply Fan 406-3	1556 Brew: Chem Bldg - 2nd Fl - Panel PLP 9386 Brew: Control Bldg - Roof - Supply Fan 406-2 Motor 9387 Brew: Control Bldg - Roof - Supply Fan 406-3 Motor	Brew: Chem Bldg - 2nd Fl - Panel PLP Brew: Control Bldg - Roof - Supply Fan 406-2 Motor Brew: Control Bldg - Roof - Supply Fan 406-3 Motor	172478 - CUTLER-HAMMER ENGINEERING		Shawn Thomas 9/24/2013 14:02 1 - Equ Shawn Thomas 9/24/2013 11:32 1 - Equ Shawn Thomas 9/24/2013 11:34 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining		3 - Components available locally. Component age < 10 yrs.	1 - None			5 - No 5 - No		9D3427CE-1069-4CAC-812C-0B7599935602.jpg 69C8A71E-7726-49DB-955F-7A7F83F8C0AD.jpg 1AA80702-E5EA-4AD9-8385-AC0493461B49.jpg F4A49F8B-5DFA-428C-82BF-CDC428C0B359.jpg F3C1CA79-69F7-4B84-95C8-165EA45E2CDD.jpg C3842628-2BC3-47A1-929F-4974F173BF6B.jpg
Unclassified Unclassified Unclassified	6261 Brew: Control Bldg - Roof - Exhaust Fan 406-5 6262 Brew: Control Bldg - Roof - Exhaust Fan 401-1 6264 Brew: Control Bldg - Roof - Exhaust Fan 405-3	9389 Brew: Control Bldg - Roof - Exhaust Fan 406-5 Motor 9382 Brew: Control Bldg - Roof - Exhaust Fan 401-1 Motor 9384 Brew: Control Bldg - Roof - Exhaust Fan 405-3 Motor	Brew: Control Bldg - Roof - Exhaust Fan 406-5 Moto Brew: Control Bldg - Roof - Exhaust Fan 401-1 Moto Brew: Control Bldg - Roof - Exhaust Fan 405-3 Moto			Shawn Thomas 9/25/2013 9:49 1 - Equ Shawn Thomas 9/24/2013 11:51 1 - Equ Shawn Thomas 9/24/2013 11:29 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse 1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	5 - Components not available. Component age > 15 yrs.				5 - No		0C2848AB-9B56-46CB-B26B-B72A029B5176.jpg FBC2865E-C3B9-4847-B692-A86418211662.jpg
Unclassified Unclassified Unclassified	6273 Brew: North Gallery - Hooded Rooftop Supply Fan 411-2 6274 Brew: South Gallery - Hooded Rooftop Supply Fan 412-2 6275 Brew: North Gallery - Exhaust Fan 411-1	9391 Brew: North Gallery - Hooded Rooftop Supply Fan 411-2 Motor 9393 Brew: South Gallery - Hooded Rooftop Supply Fan 412-2 Motor 9390 Brew: North Gallery - Exhaust Fan 411-1 Motor	Brew: North Gallery - Hooded Rooftop Supply Fan 41 Brew: South Gallery - Hooded Rooftop Supply Fan 41 Brew: North Gallery - Exhaust Fan 411-1 Motor			Shawn Thomas 9/25/2013 9:50 1 - Equ Shawn Thomas 9/26/2013 13:07 1 - Equ Shawn Thomas 9/26/2013 13:08 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	 5 - Components not available. Component age > 15 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason					
Unclassified Unclassified Unclassified	6276 Brew: South Gallery - Exhaust Fan 412-1 6289 Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-2 6290 Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-3	9392 Brew: South Gallery - Exhaust Fan 412-1 Motor 9402 Brew: RSPS 1st Fl - NaOCI Feed Rm - Wall Fan 420-2 Motor 9403 Brew: RSPS 1st Fl - NaOCI Feed Rm - Wall Fan 420-3 Motor	Brew: South Gallery - Exhaust Fan 412-1 Motor Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-2 Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-3			Shawn Thomas 9/24/2013 13:42 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining		5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs.	3 - Within expected reason3 - Within expected reason3 - Within expected reason					894AD487-3045-486E-8A4C-4B693A6D72B7.jpg 7E14273C-2836-4B78-84EA-85FF2F7DA80B.jpg
Unclassified Unclassified Unclassified Unclassified	6302 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-3 6303 Brew: RSPS - Roof - Exhaust Fan 413-1 6304 Brew: RSPS - Roof - Exhaust Fan 417-1 6305 Brew: RSPS - Roof - Supply Fan 420-4	9398 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-3 Motor 9394 Brew: RSPS - Roof - Exhaust Fan 413-1 Motor 9396 Brew: RSPS - Roof - Exhaust Fan 417-1 Motor 9404 Brew: RSPS - Roof - Supply Fan 420-4 Motor	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417- Brew: RSPS - Roof - Exhaust Fan 413-1 Motor Brew: RSPS - Roof - Exhaust Fan 417-1 Motor Brew: RSPS - Roof - Supply Fan 420-4 Motor			Shawn Thomas 9/24/2013 13:42 1 - Equ Shawn Thomas 9/24/2013 13:02 1 - Equ Shawn Thomas 9/24/2013 13:42 1 - Equ Shawn Thomas 9/24/2013 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining		3 - Components available locally. Component age < 10 yrs.5 - Components not available. Component age > 15 yrs.				5 - No		F21342DB-A7EF-4C5B-A23C-06D44D92CF44.jpg B0C28C36-B352-4486-A31B-E115C8A8B095.jpg 2778E521-FF38-49F5-A959-53E02CC9A56E.jpg
Unclassified Unclassified Unclassified	6306 Brew: RSPS - Roof - Supply Fan 420-5 6307 Brew: RSPS - Roof - Supply Fan 420-6 6711 Brew: Control Bldg - 1st Fl - Control Rm - Graphics Panel	9405 Brew: RSPS - Roof - Supply Fan 420-5 Motor 9406 Brew: RSPS - Roof - Supply Fan 420-6 Motor 6438 Brew: Plant Annunciator System	Brew: RSPS - Roof - Supply Fan 420-5 Motor Brew: RSPS - Roof - Supply Fan 420-6 Motor Brew: Plant Annunciator System			Shawn Thomas 9/24/2013 13:38 1 - Equ Shawn Thomas 9/24/2013 13:35 1 - Equ	ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	2 - Components available locally. Component age < 5 yrs.	3 - Within expected reason1 - None					4D81B2BC-162A-4A71-9E43-D9B9BB92C926.jpg 134A3736-B3D0-454B-AC4D-30560C84A7B8.jpg 1C64221C-F190-481F-8C2D-F89CC5DE3BB4.jpg 3EA78928-3C46-4775-A48B-386932FF4304.jpg F3104C59-227F-4F3D-A5A3-B501F6CD6E85.jpg
Unclassified Unclassified Unclassified	6840 Brew: Control Bldg - 1st Fl - Control Rm - Telephone System 6840 Brew: Control Bldg - 1st Fl - Control Rm - Telephone System 6841 Brew: Control Bldg - 1st Fl - Control Rm - P. A. System	6697 Brew: Telephones 6699 Brew Telephone System 6698 Brew: P. A. Speakers	Brew: Telephones Brew Telephone System Brew: P. A. Speakers	133868 - PANASONIC COMMUNICATIONS			ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 5 - Components not available. Component age > 15 yrs. 	3 - Within expected reason3 - Within expected reason3 - Within expected reason					53AE49DB-6555-4CF1-94DA-A939FB7220B0.jpg
Unclassified Unclassified Unclassified	8246 Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 1 8247 Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 2 8684 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypo Tank Level Meter 1&2	7885 Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 1 7886 Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 2 9736 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Tank Level Meter 1	Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 1 Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 2 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Tank Le	128611 - MILLTRONICS INC 128611 - MILLTRONICS INC		Shawn Thomas 9/24/2013 14:16 1 - Equ Shawn Thomas 9/24/2013 14:10 1 - Equ Shawn Thomas 9/24/2013 14:10 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	 5 - Components not available. Component age > 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason3 - Within expected reason				Disposable.	913B508B-4B1C-4F33-B735-4A90D5381FC1.jpg 7101FEA6-DEA9-454D-ADFD-1B2AD080FC00.jpg 3C623401-8044-43B0-9080-17D545ECEEE4.jpg F180C480-EA09-4BD4-8A95-EF70AAE08D82.jpg
Unclassified Unclassified Unclassified	8684 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypo Tank Level Meter 1&2 8751 Brew: Control Bldg - 1st Fl - Control Rm - Computer Area 8751 Brew: Control Bldg - 1st Fl - Control Rm - Computer Area	9737 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Tank Level Meter 2 9360 Brew: WEP 5577 - Operations 10275 Brew: WEP 1941- Weather Station	Brew: RSPS 1st FI - Disinfection Rm - Hypo Tank Level Meter Brew: WEP 5577 - Operations Brew: WEP 1941- Weather Station	2 128611 - MILLTRONICS INC Dell Campbell Scientific	Hydroranger Optiplex 745 5CK01D1 VS1		ipment is listed for the environment? ipment is listed for the environment?	 2 - Few minor deficiencies and minimal corrective ma 2 - Few minor deficiencies and minimal corrective ma 2 - Few minor deficiencies and minimal corrective ma 	maintenance required 3 - Asse maintenance required 2 - Asse	set appears to be in average condition, with approx. 50% of life remaining set appears to be in average condition, with approx. 50% of life remaining set appears to be in good condition, with 60-80% of life remaining		 3 - Components available locally. Component age < 10 yrs. 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason3 - Within expected reason3 - Within expected reason	2 - None		1 - Yes 1 - Yes 1 - Yes		89A3BD82-943A-4B4C-B24C-2E225A2AD89F.jpg F2FBE787-54A4-44AA-8C37-D68344D58DF7.jpg 20535E7D-41BB-47EA-8CB2-91D4AB7E42D0.jpg FA147A5F-4D87-4493-AEBA-B7187FC27E24.jpg
Unclassified Unclassified Unclassified	8751 Brew: Control Bldg - 1st Fl - Control Rm - Computer Area 8900 Brew: Lighting Systems - Outside 8901 Brew: Lighting Systems - Inside	9361 Brew: WEP 5335 - BREW 1 9845 Brew: Lighting Systems - Outside 9846 Brew: Lighting Systems - Inside	Brew: WEP 5335 - BREW 1 Brew: Lighting Systems - Outside Brew: Lighting Systems - Inside	Dell	Optiplex 755 FBZ6RH1	Shawn Thomas 9/25/2013 10:09 1 - Equ Shawn Thomas 9/25/2013 9:53 1 - Equ	ipment is listed for the environment?	2 - Few minor deficiencies and minimal corrective ma1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in average condition, with approx. 50% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	 1 - Components available locally. Component age < 2 yrs. 2 - Components available locally. Component age < 5 yrs. 1 - Components available locally. Component age < 2 yrs. 	3 - Within expected reason3 - Within expected reason	2 - None		1 - Yes 5 - No		A161A8CE-A9AB-4378-9EA3-91AE8C781F75.jpg EE3631E7-EF56-43EA-B05F-385CAA3B0E56.jpg
VFDs VFDs VFDs	8902 Brew: Additional Electrical Equipment 11000 Brew: Thickener Bldg - 102 Electrical Room - Rotary Drum Feed Pump VFD's 11000 Brew: Thickener Bldg - 102 Electrical Room - Rotary Drum Feed Pump VFD's	9847 Brew: Additional Electrical Equipment 15713 Brew: Thickener Bldg - 102 Electrical Room - Rotary Drum Feed Pump 1 VFD 15714 Brew: Thickener Bldg - 102 Electrical Room - Rotary Drum Feed Pump 2 VFD	Brew: Additional Electrical Equipment Rotary Drum Feed Pump 1 VFD Rotary Drum Feed Pump 2 VFD	Ite gould 1164 - Allen Bradley / Rockwell Automation 1164 - Allen Bradley / Rockwell Automation	1336 Plus II 1JAN4F11 1336 Plus II XKK864-001 MEAF5MY3	Shawn Thomas 9/25/2013 9:59 1 - Equ Shawn Thomas 9/24/2013 14:35 1 - Equ Shawn Thomas 9/24/2013 14:36 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required1 - No corrective maintenance required1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 5 - Components not available. Component age > 15 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	5 - Excessive previous failures3 - Within expected reason3 - Within expected reason		3 - Minor	5 - No	Expose copper wire in backer. Potential arcing hazard. Excessive failures.	352E9379-8332-4831-B5B6-5E5877EE0798.jpg
VFDs VFDs VFDs	11001 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump VFD's 11001 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump VFD's 1257 Brew: RSPS - Basement - Pump Rm	15715 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 1 VFD 15716 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 2 VFD 15706 Brew: RSPS - Effluent Water Supply Pump 1 Motor - VFD	Sodium Hypochlorite 1 VFD Sodium Hypochlorite 2 VFD Effluent Water 1 VFD	103598 - RELIANCE ELECTRIC/ROCKWELL 103598 - RELIANCE ELECTRIC/ROCKWELL 172478 - CUTLER-HAMMER ENGINEERING	DC2-920 SCSDC9218 Y010 DC2-920 SCSDC9217 V005 SVX 9000 11727375	Shawn Thomas 9/25/2013 9:30 1 - Equ Shawn Thomas 9/25/2013 9:32 1 - Equ Shawn Thomas 9/25/2013 9:38 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 1 - No corrective maintenance required 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 2 - Components available locally. Component age < 5 yrs. 	3 - Within expected reason3 - Within expected reason1 - None				Dc drive. Dc drive.	D24E5DEA-DA30-4EAA-B75D-9F16F1A36AA1.jpg 78ECFA76-766A-4C97-9031-8B0BBE122BA7.jpg DC00FEC5-BF50-4825-8E35-F23839B0BD67.jpg
VFDs VFDs VFDs	1257 Brew: RSPS - Basement - Pump Rm 1970 Brew: North Gallery - Return Sludge Pump 1 1972 Brew: South Gallery - Return Sludge Pump 3 5361 Brew: Chem Bldg - 2nd El - Ferrous Feed Pump 1	15707 Brew: RSPS - Effluent Water Supply Pump 2 Motor - VFD 8352 Brew: North Gallery - RAS Pump 1 VFD 8354 Brew: South Gallery - RAS Pump 3 VFD 10276 Brew: Ferrous Feed Pump 1 Motor VFD	Effluent Water 2 VFD Ras Pump 1 VFD 3 Ras Pump 3 VFD Ferrous Feed Pump 1 Motor VFD	172478 - CUTLER-HAMMER ENGINEERING 1161 - AC Technology Corporation 2812 - Yaskawa 103598 - RELIANCE ELECTRIC/ROCKWELL	SVX 9000 12070196 QC Series Q24020C-800 53727-712 P7 CIMR-P7U4015 1W04Y7503760002 DC2-920 SCSDC9216	Shawn Thomas 9/25/2013 9:36 1 - Equ Shawn Thomas 9/24/2013 14:46 1 - Equ Shawn Thomas 9/24/2013 14:52 1 - Equ Shawn Thomas 9/24/2013 14:08 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	 1 - No corrective maintenance required 	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 	 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 5 - Components not available. Component age > 15 yrs. 	3 - Within expected reason3 - Within expected reason3 - Within expected reason					267395BD-1036-49BB-99AE-9D56101AF090.jpg DF883070-0AA4-49C8-908B-E6946162D0F6.jpg AB50C161-1A59-4B4C-823F-48DB84B7D6C7.jpg 6A115FAB-F330-4E0B-86F9-6DE58CCABEBB.jpg
VFDs VFDs VFDs	5361 Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 1 6249 Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 2 6291 Brew: North Gallery - Return Sludge Pump 2 6313 Brew: South Gallery - Return Sludge Pump 4	10277 Brew: Ferrous Feed Pump 2 Motor VFD 8353 Brew: North Gallery - RAS Pump 2 VFD 8355 Brew: South Gallery - RAS Pump 4 VFD	Ferrous Feed Pump 2 Motor VFD Ras Pump 2 VFD 4 Ras Pump 4 VFD	103598 - RELIANCE ELECTRIC/ROCKWELL 1161 - AC Technology Corporation 2812 - Yaskawa	DC2-920 SCSDC9218 QC Series Q24020C-800 53728-712 P7 CIMR-P7U4015 1W04Y7503760001	Shawn Thomas 9/24/2013 14:07 1 - Equ Shawn Thomas 9/24/2013 14:46 1 - Equ Shawn Thomas 9/24/2013 14:53 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining		5 - Components not available. Component age > 15 yrs. 5 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs.	3 - Within expected reason			5 - No 5 - No	Really DC drive.	E6711932-0A67-414E-8F13-C0C618AE8601.jpg D5712B6C-4DE0-4C99-8C7C-36E939AC26A6.jpg B4381D50-02A0-49AA-B3EB-C25E7E2739B4.jpg
VFDs VFDs VFDs	7966 Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 1 - VFD 7967 Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 2 - VFD 7968 Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 3 - VFD	15700 Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 1 - VFD 15701 Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 2 - VFD 15702 Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 3 - VFD	Raw WW VFDs Raw Sewage Pump 2 VFD Raw Sewage Pump 3 VFD	38596 - ABB INSTRUMENTATION 200053 - ABB USA 200053 - ABB USA	ACS 600 ACS 600 ACS 600	Shawn Thomas 9/24/2013 12:48 1 - Equ Shawn Thomas 9/24/2013 12:49 1 - Equ Shawn Thomas 9/24/2013 12:50 1 - Equ	ipment is listed for the environment? ipment is listed for the environment?	1 - No corrective maintenance required	1 - Asse 1 - Asse	set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining set appears to be in very good condition, with more than 80% of life remaining	1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good. 1 - Protective enclosure coating sound, no deterioration. Sealing and ventilation / cooling good.	 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason3 - Within expected reason3 - Within expected reason3 - Within expected reason					0D802818-7B81-4650-AF2F-B7BE4DC57986.jpg 03036AAB-6381-4623-A912-C9E7C641049E.jpg 5F7796B3-6476-475C-AF47-AE9DF5C38AA6.jpg
			-			. , = =			_ 1.000			, , , , , , , , , , , , , , , , , , , ,						

Equipment Classification Loc. # Location Description Asset # Asset Description Manufacturer Model # Serial Install Date Purchase Price Replacement Cost Asset Notes Inspector Date/Time COND-GEN: General Condition Description COND-RL: Visual Asset Condition and Remaining Useful Life COND-PART: Component / Part Availability COND-MTBF: Prior Failures / Mean Time Between Failures COND-OTH1: Other observations including coating failure, rust, corrosion, insulation defects, or functional Issues (General Comments) Inspector Notes Photo 1 5 - No 5 - No 5 - No 9165 Balance, MFG Mettler, MOD HB43, S/N 1125121078 Balance, MFG Mettler, MOD HB43, S/N 1125121078 2256 - Mettler HB43 1125121078 Nick Pezzino 9/16/2013 11:02 1 - No corrective maintenance required 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Components available locally. Component age < 10 yrs. 1 - None 2 - None 913D02B7-EB83-44CB-8647-268319A9322B.jpg 1207 Brew: Thickener Building 1AC404C2-F53E-45A0-8881-3C7D2958893F.jpg 2FFAAA61-1666-4D26-BED5-28B5F1C162EB.jpg 6A84B63B-B606-455F-90BB-E957862127B5.jpg F21A67C0-3B5C-491E-B26D-9693E2AFD3BE.jpg 2 - None 2 - None 3 - Minor 3 - Minor Balance, MFG Mettler, MOD HB43, S/N 1120200535 1207 Brew: Thickener Building 9166 Balance, MFG Mettler, MOD HB43, S/N 1120200535 2256 - Mettler HB43 1120200535 Nick Pezzino 9/16/2013 11:03 1 - No corrective maintenance required 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Components available locally. Component age < 10 yrs. 1 - None 2 - None 5 - No 9168 Balance, MFG Intl-Lab

Balance, MFG Intl-Lab

Intell-Lab

PX-200

10481 HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 3710, S/N 205C01463 PART# 68-3710-008

HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 37

10850 - Teledyne ISCO INC 3710 205C01463 1207 Brew: Chem Building Nick Pezzino 9/16/2013 10:57 1 - No corrective maintenance required 1 - Asset appears to be in very good condition, with more than 80% of life remaining 1 - Components available locally. Component age < 2 yrs. 1 - None 5 - No 1900 2000 Nick I 2062 2120.75 Nick I 1137 1695.75 Nick I 3991 3991 Duplicate record? Nick Pezzino 9/16/2013 11:05 1 - No corrective maintenance required

Nick Pezzino 9/16/2013 11:05 1 - No corrective maintenance required

Nick Pezzino 9/16/2013 11:06 1 - No corrective maintenance required

3 - Asset appears to be in average condition, with approx. 50% of life remaining

3 - Components available locally. Component age < 10 yrs. 1 - None

3 - Components available locally. Component age < 10 yrs. 1 - None 3 - Minor 3 - Minor 5 - No 5 - No 5 - No Portable_sampler 1210 Brew: Settling Tank 1 (North) 5 - No 9488 HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 3700, S/N 11029-118, PART# 68-3700-001 HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 37 10850 - Teledyne ISCO INC 3700 11029-118 Portable_sampler 1211 Brew: Settling Tank 2 (South) 5 - No Nick Pezzino 9/16/2013 11:08 1 - No corrective maintenance required 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Components available locally. Component age < 10 yrs. 3 - Within expected reason 3 - Minor Not currently in use C64CAD1F-7766-4E18-AA97-A08E84737BF5.jpg 2 - None Portable_sampler 2094 Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum 9490 HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 3710, S/N 202D00823 PART# 68-3710-008 HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 37 10850 - Teledyne ISCO INC 3710 202D00823 Refrigerated_sampler 8373 Brew: Influent Sample Shed - Influent Sampler - IC# 619 8084 ELS-Sampler, Refrigerated, MFG ISCO, MOD 6712, S/N 205D00418 ELS-Sampler, Refrigerated, MFG ISCO, MOD 6712, S/N 10850 - Teledyne ISCO INC 6712R 205D00418 3922.54 4000 Duplicate record? Refrigerated_sampler 8374 Brew: Effluent Sample Shed - Effluent Sampler IC# 620 13232 ELS-Sampler, Fiberglass Refrigerated, MFG Isco, MOD 4700R, S/N209C01170 ELS-Sampler, Fiberglass Refrigerated, MFG Isco, MO 10850 - Teledyne ISCO INC 4700R 209C01170

							_	COND-GEN: General Condition	
• •	•	Asset # Asset Description	Also Known As	Manufacturer	Model #	·		Date/Time Description	COND-OTH1: Other observations including condition of doors, windows, handrails, gratings, concrete, roof, safety, etc. (General Comments)
Air_conditioner	5364 Brew: Control Bldg - Roof - Air Conditioner	2610 Brew: Control Bldg - Roof - Air Conditioner	Control Building Air Conditioner	2809 - Nesbitt	RSC0755000BDFA00DF			10/24/2013 10:42 3 - Several minor deficiencies noted and corrective maintenance required.	No grounding terminals / broken ground cable.
Air_conditioner	5384 Brew: Control Bldg - Roof - Air Conditioner - SCADA Rm	4834 Brew: Control Bldg - 1st Fl - SCADA PLC Rm - Air Conditioner [Brewerton]	PLC Room Air Conditioner	2808 - Computemp	42/52 65731	Popli		10/24/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required.	No grounding terminals / broken ground cable.
Electric_Unit_Heater	1991 Brew: Control Bldg - Basement - Water Heater	4424 Brew: Control Bldg - Basement - Water Heater	Brew: Control Bldg - Basement - Water Heater Brew: Control Bldg - 1st Fl - Control Rm - Heater	115535 - VANGUARD	6E721	VG 0697B16526 Popli		10/24/2013 10:00 1 - No corrective maintenance required	Poofton unit door not work in hosting
Electric_Unit_Heater	2019 Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-1	3946 Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-1 3947 Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-2	Brew: Control Bldg - 1st Fl - Control Rm - Heater	1345 - Singer Valve Inc. 1345 - Singer Valve Inc.		Popli Popli		10/24/2013 10:00 4 - Major deficiencies and significant corrective maintenance or rehab required 10/24/2013 10:00 1 - No corrective maintenance required	Rooftop unit does not work in heating.
Electric_Unit_Heater Electric_Unit_Heater	2020 Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-2 2023 Brew: Control Bldg - 1st Fl - Foyer - Heater 302-1	3949 Brew: Control Bldg - 1st Fl - Control Kill - Heater 301-2	Brew: Control Bldg - 1st Fl - Foyer - Heater 302-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2024 Brew: Control Bldg - 1st FI - Locker Rm - Heater 303-1	3951 Brew: Control Bldg - 1st Fl - Locker Rm - Heater 303-1	Brew: Control Bldg - 1st FI - Locker Rm - Heater 3	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required 10/24/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required.	No exhaust.
Electric_Unit_Heater	2025 Brew: Control Bldg - 1st Fl - Janitor Rm - Heater 304-1	3952 Brew: Control Bldg - 1st Fl - Janitor Rm - Heater 304-1	Brew: Control Bldg - 1st Fl - Janitor Rm - Heater	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required.	No exhaust
Electric_Unit_Heater	2026 Brew: Control Bldg - 1st Fl - Garage - Heater 305-1	3953 Brew: Control Bldg - 1st Fl - Garage - Heater 305-1	Brew: Control Bldg - 1st Fl - Garage - Heater 305-	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	THE CANADA
Electric_Unit_Heater	2027 Brew: Control Bldg - 1st Fl - Garage - Heater 305-5	4833 Brew: Control Bldg - 1st Fl - Garage - Heater 305-5	Brew: Control Bldg - 1st Fl - Garage - Heater 305-	20 10 Omger varie mer		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2028 Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-1	3957 Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-1	Brew: Control Bldg - 1st Fl - Blower Rm - Heater 3	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 2 - Few minor deficiencies and minimal corrective maintenance required	Need new bird screen.
Electric_Unit_Heater	2029 Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-2	3958 Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-2	Brew: Control Bldg - 1st Fl - Blower Rm - Heater 3	1345 - Singer Valve Inc.		Popli		10/24/2013 22:00 3 - Several minor deficiencies noted and corrective maintenance required.	Rooftop unit in poor condition. No heat. Not identifiable in field.
Electric_Unit_Heater	2032 Brew: East Gallery - Heater 309-1	3960 Brew: East Gallery - Heater 309-1	Brew: East Gallery - Heater 309-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
 Electric_Unit_Heater	2033 Brew: North Gallery - Heater 311-1	3962 Brew: North Gallery - Heater 311-1	Brew: North Gallery - Heater 311-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2035 Brew: South Gallery - Heater 312-1	3965 Brew: South Gallery - Heater 312-1	Brew: South Gallery - Heater 312-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2036 Brew: South Gallery - Heater 312-4	3968 Brew: South Gallery - Heater 312-4	Brew: South Gallery - Heater 312-4	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2037 Brew: RSPS 1st Fl - MCC Rm - Heater 313-1	3969 Brew: RSPS 1st Fl - MCC Rm - Heater 313-1	Brew: RSPS 1st FI - MCC Rm - Heater 313-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2038 Brew: RSPS 1st Fl - MCC Rm - Heater 313-2	3970 Brew: RSPS 1st FI - MCC Rm - Heater 313-2	Brew: RSPS 1st FI - MCC Rm - Heater 313-2	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2039 Brew: RSPS - Basement - Pump Rm - Heater 315-1	3972 Brew: RSPS - Basement - Pump Rm - Heater 315-1	Brew: RSPS - Basement - Pump Rm - Heater 315-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2040 Brew: RSPS - Basement - Pump Rm - Heater 315-2	3973 Brew: RSPS - Basement - Pump Rm - Heater 315-2	Brew: RSPS - Basement - Pump Rm - Heater 315-2	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2041 Brew: RSPS 1st Fl - Storage Room - Heater 316-1	3974 Brew: RSPS 1st Fl - Storage Room - Heater 316-1	Brew: RSPS 1st Fl - Storage Room - Heater 316-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 4 - Major deficiencies and significant corrective maintenance or rehab required	Exhaust fan not running. Fan on roof is good. Explosion proof electric cabinet heater is in fair condition.
Electric_Unit_Heater	2042 Brew: RSPS 1st Fl - Grit Rm - Heater 317-1	3881 Brew: RSPS 1st Fl - Grit Rm - Heater 317-1	Brew: RSPS 1st Fl - Grit Rm - Heater 317-1	1330 - Ruffneck Heaters		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2043 Brew: RSPS 1st Fl - Grit Rm - Heater 317-2	3882 Brew: RSPS 1st Fl - Grit Rm - Heater 317-2	Brew: RSPS 1st Fl - Grit Rm - Heater 317-2	1330 - Ruffneck Heaters		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2044 Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-1	3886 Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-1	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-	1330 - Ruffneck Heaters		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2045 Brew: RSPS 1st Fl - Disinfection Rm - Heater 319-1	3975 Brew: RSPS 1st Fl - Disinfection Rm - Heater 319-1	Brew: RSPS 1st FI - Disinfection Rm - Heater 319-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2046 Brew: RSPS 1st FI - Disinfection Rm - Heater 319-2 2047 Brew: RSPS 1st FI - NaOCI Feed Rm - Heater 320-1	3976 Brew: RSPS 1st Fl - Disinfection Rm - Heater 319-2 3977 Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-1	Brew: RSPS 1st FI - Disinfection Rm - Heater 319-2 Brew: RSPS 1st FI - NaOCI Feed Rm - Heater 320-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required 10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2047 Brew. RSPS 1st FI - NaOCI Feed Rm - Heater 320-1	3978 Brew: RSPS 1st FI - NaOCI Feed Rm - Heater 320-2	Brew: RSPS 1st FI - NaOCI Feed Rm - Heater 320-2	1345 - Singer Valve Inc. 1345 - Singer Valve Inc.		Popli Popli		10/24/2013 10:00 1 - No corrective maintenance required 10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater Electric_Unit_Heater	2049 Brew: Chem Bldg - 1st Fl - Heater 321-1	3981 Brew: Chem Bldg - 1st Fl - Heater 321-1	Brew: Chem Bldg - 1st Fl - Heater 321-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric Unit Heater	2050 Brew: Chem Bldg - 2nd Fl - Heater 322-1	3985 Brew: Chem Bldg - 2nd Fl - Heater 322-1	Brew: Chem Bldg - 2nd Fl - Heater 322-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2080 Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 1	4187 Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 1	Brew: Thickener Bldg - 101 Thickener Rm - Unit Hea	1353 - TPI Corporation	P3P5510T	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	2081 Brew: Thickener Bldg - 102 Electrical Room - Unit Heater 3	4189 Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 3	Brew: Thickener Bldg - 101 Thickener Rm - Unit Hea	1353 - TPI Corporation	P3P5510T	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	5373 Brew: Control Bldg - 1st Fl - Lunch Rm - Heater 305-4	3956 Brew: Control Bldg - 1st Fl - Lunch Rm - Heater 305-4	Brew: Control Bldg - 1st Fl - Lunch Rm - Heater 30	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	5378 Brew: RSPS - Basement - Mtr Rm - Heater 314-2	3989 Brew: RSPS - Basement - Mtr Rm - Heater 314-2	Brew: RSPS - Basement - Mtr Rm - Heater 314-2	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	5394 Brew: Thickener Bldg - 102 Electrical Room - Unit Heater	4109 Brew: Thickener Bldg - 102 Electrical Room - Unit Heater	Brew: Thickener Bldg - 102 Electrical Room - Unit	1353 - TPI Corporation	P3P5105CA1N	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6236 Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-3	3959 Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-3	Brew: Control Bldg - 1st Fl - Blower Rm - Heater 3	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6240 Brew: Chem Bldg - 1st Fl - Heater 321-2	3982 Brew: Chem Bldg - 1st Fl - Heater 321-2	Brew: Chem Bldg - 1st Fl - Heater 321-2	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6241 Brew: Chem Bldg - 1st Fl - Heater 321-3	3983 Brew: Chem Bldg - 1st Fl - Heater 321-3	Brew: Chem Bldg - 1st Fl - Heater 321-3	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6242 Brew: Chem Bldg - 1st Fl - Heater 321-4	3984 Brew: Chem Bldg - 1st Fl - Heater 321-4	Brew: Chem Bldg - 1st Fl - Heater 321-4	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6250 Brew: Chem Bldg - 2nd Fl - Heater 322-2	3986 Brew: Chem Bldg - 2nd Fl - Heater 322-2	Brew: Chem Bldg - 2nd Fl - Heater 322-2	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6251 Brew: Chem Bldg - 2nd Fl - Heater 322-3	3987 Brew: Chem Bldg - 2nd Fl - Heater 322-3	Brew: Chem Bldg - 2nd Fl - Heater 322-3	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6252 Brew: Chem Bldg - 2nd Fl - Heater 322-4	3988 Brew: Chem Bldg - 2nd Fl - Heater 322-4	Brew: Chem Bldg - 2nd Fl - Heater 322-4	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6253 Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-3	3979 Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-3	Brew: RSPS 1st FI - NaOCl Feed Rm - Heater 320-3	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6254 Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-4	3980 Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-4	Brew: RSPS 1st FI - NaOCl Feed Rm - Heater 320-4	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6255 Brew: Control Bldg - 1st Fl - Foyer - Heater 302-2	3950 Brew: Control Bldg - 1st Fl - Foyer - Heater 302-2	Brew: Control Bldg - 1st Fl - Foyer - Heater 302-2	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6256 Brew: Control Bldg - 1st Fl - Garage - Heater 305-2	3954 Brew: Control Bldg - 1st Fl - Garage - Heater 305-2	Brew: Control Bldg - 1st Fl - Garage - Heater 305-	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6257 Brew: Control Bldg - 1st Fl - Garage - Heater 305-3	3955 Brew: Control Bldg - 1st Fl - Garage - Heater 305-3	Brew: Control Bldg - 1st Fl - Garage - Heater 305-	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6265 Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-3	3948 Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-3	Brew: Control Bldg - 1st Fl - Control Rm - Heater	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6270 Brew: East Gallery - Heater 309-2 6277 Brew: RSPS 1st Fl - Grit Rm - Heater 317-3	3961 Brew: East Gallery - Heater 309-2 3883 Brew: RSPS 1st Fl - Grit Rm - Heater 317-3	Brew: East Gallery - Heater 309-2 Brew: RSPS 1st FI - Grit Rm - Heater 317-3	1345 - Singer Valve Inc. 1330 - Ruffneck Heaters		Popli		10/24/2013 10:00 1 - No corrective maintenance required 10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater Electric_Unit_Heater	6277 Brew. RSPS 1st FI - Grit Rm - Heater 317-4	3884 Brew: RSPS 1st FI - Grit Rm - Heater 317-4	Brew: RSPS 1st FI - Grit Rm - Heater 317-4	1330 - Ruffneck Heaters		Popli Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6279 Brew: RSPS 1st FI - Grit Rm - Heater 317-5	3885 Brew: RSPS 1st FI - Grit Rm - Heater 317-5	Brew: RSPS 1st FI - Grit Rm - Heater 317-4	1330 - Ruffneck Heaters		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6280 Brew: RSPS 1st FI - MCC Rm - Heater 313-3	3971 Brew: RSPS 1st FI - MCC Rm - Heater 313-3	Brew: RSPS 1st FI - MCC Rm - Heater 313-3	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6282 Brew: RSPS - Basement - Mtr Rm - Heater 314-1	3990 Brew: RSPS - Basement - Mtr Rm - Heater 314-1	Brew: RSPS - Basement - Mtr Rm - Heater 314-1	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6297 Brew: North Gallery - Heater 311-3	3963 Brew: North Gallery - Heater 311-3	Brew: North Gallery - Heater 311-3	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6298 Brew: North Gallery - Heater 311-4	3964 Brew: North Gallery - Heater 311-4	Brew: North Gallery - Heater 311-4	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
 Electric_Unit_Heater	6308 Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-2	3887 Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-2	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-	1330 - Ruffneck Heaters		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6309 Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-3	3888 Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-3	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-	1330 - Ruffneck Heaters		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6310 Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-4	3889 Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-4	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-	1330 - Ruffneck Heaters		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6318 Brew: South Gallery - Heater 312-2	3966 Brew: South Gallery - Heater 312-2	Brew: South Gallery - Heater 312-2	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6319 Brew: South Gallery - Heater 312-3	3967 Brew: South Gallery - Heater 312-3	Brew: South Gallery - Heater 312-3	1345 - Singer Valve Inc.		Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Electric_Unit_Heater	6322 Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 2	4188 Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 2	Brew: Thickener Bldg - 101 Thickener Rm - Unit Hea	1353 - TPI Corporation	P3P5510T	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Fan	2052 Brew: Control Bldg - Roof - Exhaust Fan 403-1	3572 Brew: Control Bldg - Roof - Exhaust Fan 403-1	Brew: Control Bldg - Roof - Exhaust Fan 403-1			Popli		10/24/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required.	Needs new bird screen. Unit not identifiable in field. 4/5 need new ground, not identifiable in field.
Fan -	2083 Brew: Thickener Bldg - Roof - Exhaust Fan 1	2637 Brew: Thickener Bldg - Roof - Exhaust Fan 1	Brew: Thickener Bldg - Roof - Exhaust Fan 1	1256 - Maytag Customer Service	BCRE 141	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Fan	5360 Brew: Chem Bldg - Roof - Exhaust Fan 422-1	2660 Brew: Chem Bldg - Roof - Exhaust Fan 422-1	Brew: Chem Bldg - Roof - Exhaust Fan 422-1	1256 - Maytag Customer Service	BCRE 243	Popli		10/24/2013 10:00 1 - No corrective maintenance required	New bird covers required that we take at the at the late of the la
ran For	5366 Brew: Control Bldg - Roof - Exhaust Fan 406-4	2650 Brew: Control Bldg - Roof - Exhaust Fan 406-4	Brew: Control Bldg - Roof - Exhaust Fan 406-4	1256 - Maytag Customer Service	BCRE 365	Popli		10/24/2013 10:00 2 - Few minor deficiencies and minimal corrective maintenance required	New bird screen required. Unit not identifiable in field. 4/5 need new ground, not identifiable in field.
rdii Fan	5371 Brew: RSPS 1st FI - Disinfection Rm - Wall Fan 419-2 5380 Brew: RSPS - Roof - Exhaust Fan 420-1	3433 Brew: RSPS 1st Fl - Disinfection Rm - Wall Fan 419-2 3430 Brew: RSPS - Roof - Exhaust Fan 420-1	Brew: RSPS 1st FI - Disinfection Rm - Wall Fan 419 Brew: RSPS - Roof - Exhaust Fan 420-1	1314 - Penn Ventilation Co., Inc. 1314 - Penn Ventilation Co., Inc.	WLB-452 WLB-452	Popli Popli		10/24/2013 10:00 1 - No corrective maintenance required 10/24/2013 10:42 2 - Few minor deficiencies and minimal corrective maintenance required	Exhaust fan Needs bird screen. One has belt missing not identifiable in field.
r arr Fan	5380 Brew: RSPS - Roof - Exhaust Fan 420-1 5387 Brew: RSPS - Roof - Exhaust Fan 416-1	2640 Brew: RSPS - Roof - Exhaust Fan 420-1	Brew: RSPS - Roof - Exhaust Fan 420-1 Brew: RSPS - Roof - Exhaust Fan 416-1	1314 - Penn Ventilation Co., Inc. 1256 - Maytag Customer Service	WLB-452 BCRE 141	Popli Popli		10/24/2013 10:42 2 - Few minor deficiencies and minimal corrective maintenance required 10/24/2013 10:27 2 - Few minor deficiencies and minimal corrective maintenance required	Exhaust fan Needs bird screen. One has beit missing not identifiable in field. Exhaust fan Needs bird screen. One has belt missing not identifiable in field.
Fan	6237 Brew: Chem Bldg - Roof - Exhaust Fan 422-2	2640 Brew: RSPS - Roof - Exhaust Fan 410-1 2661 Brew: Chem Bldg - Roof - Exhaust Fan 422-2	Brew: Chem Bldg - Roof - Exhaust Fan 422-2	1256 - Maytag Customer Service 1256 - Maytag Customer Service	BCRE 243	Popli Popli		10/24/2013 10:27 2 - Few minor deficiencies and minimal corrective maintenance required 10/24/2013 10:35 2 - Few minor deficiencies and minimal corrective maintenance required	Exhaust fan Needs bird screen. One has beit missing not identifiable in field. Exhaust fan Needs bird screen. One has belt missing not identifiable in field.
Fan	6261 Brew: Control Bldg - Roof - Exhaust Fan 406-5	2651 Brew: Control Bldg - Roof - Exhaust Fan 406-5	Brew: Control Bldg - Roof - Exhaust Fan 422-2	1256 - Maytag Customer Service	BCRE 365	Popli		10/24/2013 10:33 2 - Few minor deficiencies and minimal corrective maintenance required	New bird screen required. Unit not identifiable in field. 4/5 need new ground, not identifiable in field.
Fan	6262 Brew: Control Bldg - Roof - Exhaust Fan 401-1	2652 Brew: Control Bldg - Roof - Exhaust Fan 401-1	Brew: Control Bldg - Roof - Exhaust Fan 401-1	1256 - Maytag Customer Service	BCRE 143	Popli		10/24/2013 10:00 2 - Few minor deficiencies and minimal corrective maintenance required	New bird screen required. Unit not identifiable in field. 4/5 need new ground, not identifiable in field.
Fan	6264 Brew: Control Bldg - Roof - Exhaust Fan 405-3	2655 Brew: Control Bldg - Roof - Exhaust Fan 405-3	Brew: Control Bldg - Roof - Exhaust Fan 405-3	1256 - Maytag Customer Service	BCRE 243	Popli		10/24/2013 10:00 2 - Few minor deficiencies and minimal corrective maintenance required	New bird screen required. Unit not identifiable in field. 4/5 need new ground, not identifiable in field.
Fan	6275 Brew: North Gallery - Exhaust Fan 411-1	2658 Brew: North Gallery - Exhaust Fan 411-1	Brew: North Gallery - Exhaust Fan 411-1	1256 - Maytag Customer Service	BCRE 243	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Fan	6276 Brew: South Gallery - Exhaust Fan 412-1	2659 Brew: South Gallery - Exhaust Fan 412-1	Brew: South Gallery - Exhaust Fan 412-1	1256 - Maytag Customer Service	BCRE 243	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Fan	6289 Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-2	3431 Brew: RSPS 1st FI - NaOCI Feed Rm - Wall Fan 420-2	Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-2	1314 - Penn Ventilation Co., Inc.	WLB-452	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Fan	6290 Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-3	3432 Brew: RSPS 1st FI - NaOCI Feed Rm - Wall Fan 420-3	Brew: RSPS 1st FI - NaOCI Feed Rm - Wall Fan 420-3	1314 - Penn Ventilation Co., Inc.	WLB-452	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Fan	6303 Brew: RSPS - Roof - Exhaust Fan 413-1	2641 Brew: RSPS - Roof - Exhaust Fan 413-1	Brew: RSPS - Roof - Exhaust Fan 413-1	1256 - Maytag Customer Service	BCRE 184	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Fan	6304 Brew: RSPS - Roof - Exhaust Fan 417-1	2643 Brew: RSPS - Roof - Exhaust Fan 417-1	Brew: RSPS - Roof - Exhaust Fan 417-1	1256 - Maytag Customer Service	BCRE 303	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Hot_water_heater	2015 Brew: Chem Bldg - 1st Fl - Hot Water Heater	1104 Brew: Chem Bldg - 1st Fl - Hot Water Heater	Brew: Chem Bldg - 1st Fl - Hot Water Heater	1142 - A. O. Smith Corp.	PEL-20 790	790-B-73-46263 Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Roof_ventilator	5365 Brew: Control Bldg - Roof - Supply Fan 406-1	2647 Brew: Control Bldg - Roof - Supply Fan 406-1	Brew: Control Bldg - Roof - Supply Fan 406-1	1256 - Maytag Customer Service	SBS 243	Popli		10/24/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required.	No grounding terminals / broken ground cable.
Roof_ventilator	5367 Brew: Control Bldg - Roof - Ventilator 405-4	2653 Brew: Control Bldg - Roof - Ventilator 405-4	Brew: PSPS Roof - Hooded Poofton Supply Fon 417	1256 - Maytag Customer Service	3610 CRM	Popli		10/24/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required.	No grounding terminals / broken ground cable.
Roof_ventilator	5386 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-2	2638 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-2	Brew: RSPS - Roof - Hooded Roofton Supply Fan 417-	1256 - Maytag Customer Service	SBS 245	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Roof_ventilator	5388 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 419-1	2642 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 419-1	Brew: Control Bldg - Roof - Supply Fan 406-2	1256 - Maytag Customer Service	SBS 243 SBS 243	Popli Popli		10/24/2013 10:00 1 - No corrective maintenance required	No grounding terminals / broken ground cable
Roof_ventilator Roof_ventilator	6259 Brew: Control Bldg - Roof - Supply Fan 406-2 6263 Brew: Control Bldg - Roof - Ventilator 405-5	2648 Brew: Control Bldg - Roof - Supply Fan 406-2 2654 Brew: Control Bldg - Roof - Ventilator 405-5	Brew: Control Bldg - Roof - Supply Fan 406-2 Brew: Control Bldg - Roof - Ventilator 405-5	1256 - Maytag Customer Service 1256 - Maytag Customer Service	3610 CRM	Popli Popli		10/25/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required. 10/24/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required.	No grounding terminals / broken ground cable. No grounding terminals / broken ground cable.
Roof_ventilator	6273 Brew: North Gallery - Hooded Rooftop Supply Fan 411-2	2656 Brew: North Gallery - Hooded Rooftop Supply Fan 411-2	Brew: North Gallery - Hooded Rooftop Supply Fan 41	1256 - Maytag Customer Service 1256 - Maytag Customer Service	SBS 244	Popli Popli		10/24/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required. 10/24/2013 10:00 1 - No corrective maintenance required	110 Browniam Certificator Brownia cable.
Roof_ventilator	6274 Brew: South Gallery - Hooded Rooftop Supply Fan 411-2	2657 Brew: South Gallery - Hooded Rooftop Supply Fan 411-2	Brew: South Gallery - Hooded Rooftop Supply Fan 41	1256 - Maytag Customer Service	SBS 244	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Roof_ventilator	6302 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-3	2639 Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-3	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-	1256 - Maytag Customer Service	SBS 245	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Roof_ventilator	6305 Brew: RSPS - Roof - Supply Fan 420-4	2644 Brew: RSPS - Roof - Supply Fan 420-4	Brew: RSPS - Roof - Supply Fan 420-4	1256 - Maytag Customer Service	SBS 243	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Roof_ventilator	6306 Brew: RSPS - Roof - Supply Fan 420-5	2645 Brew: RSPS - Roof - Supply Fan 420-5	Brew: RSPS - Roof - Supply Fan 420-5	1256 - Maytag Customer Service	SBS 243	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Roof_ventilator	6307 Brew: RSPS - Roof - Supply Fan 420-6	2646 Brew: RSPS - Roof - Supply Fan 420-6	Brew: RSPS - Roof - Supply Fan 420-6	1256 - Maytag Customer Service	SBS 243	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Unclassified	1986 Brew: Control Bldg - 1st Fl - Blower Rm - Air Filter	1084 Brew: Control Bldg - 1st Fl - Blower Rm - Air Filter	Brew: Control Bldg - 1st Fl - Blower Rm - Air Filt	1397 - American Air Fllter Company, Inc.	Model A	Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Unclassified	2012 Brew: East Gallery - Plant Air Dryer	2684 Brew: East Gallery - Inst. Air Dryer	Brew: East Gallery - Inst. Air Dryer			Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Unclassified	2014 Brew: East Gallery - Plant Air Dryer	4795 Brew: East Gallery - Plant Air Dryer	Brew: East Gallery - Plant Air Dryer			Popli		10/24/2013 10:00 1 - No corrective maintenance required	
Roof_ventilator	6260 Brew: Control Bldg - Roof - Supply Fan 406-3	2649 Brew: Control Bldg - Roof - Supply Fan 406-3	Brew: Control Bldg - Roof - Supply Fan 406-3	1256 - Maytag Customer Service	SBS 243	Popli		10/24/2013 10:00 3 - Several minor deficiencies noted and corrective maintenance required.	No grounding terminals / broken ground cable.

COND-GEN: General Condition

Equipment Classification Air_compressor Air_compressor Air_compressor Air_compressor Air_compressor Brew: East Gallery - Instr. Air Compressor 1&2 Air_compressor Brew: East Gallery - New Plant Air Compressor - Ingersol Rand	Asset # Asset Description 1543 Brew: East Gallery - Instr. Air Compressor 1 1544 Brew: East Gallery - Instr. Air Compressor 2 9608 Brew: East Gallery - New Plant Air Skid - Compressor 1	Also Known As Brew: East Gallery - Instr. Air Compressor 1 Brew: East Gallery - Instr. Air Compressor 2 Brew: East Gallery - New Plant Air Skid - Compress	Manufacturer 1201 - Corken, Inc. 1201 - Corken, Inc.	Model # A490-103 A490-103 Grainger 254	Serial Asset Notes No longer in service No longer in service 606090065	Inspector Date/Time COND-GEN: General Condition Nick Pezzino 9/10/2013 8:55 5 - Asset may be unserviceable, needs replacement or rehabilitation Nick Pezzino 9/10/2013 8:56 5 - Asset may be unserviceable, needs replacement or rehabilitation Nick Pezzino 9/10/2013 8:53 2 - Few minor deficiencies and minimal corrective maintenance required	COND-RL: Visual Asset Condition and Remaining Useful Life 5 - Asset appears to be in very poor condition, with less than 20% of life remaining 5 - Asset appears to be in very poor condition, with less than 20% of life remaining 1 - Asset appears to be in very good condition, with more than 80% of life remaining	MECH-COND: Mechanical Equipment 5 - Surface presenting a high probability of the structures collapse or failure. Significant shaft distortion, significant vibration, oscillation, temp, or nois 5 - Surface presenting a high probability of the structures collapse or failure. Significant shaft distortion, significant vibration, oscillation, temp, or nois 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise	COND-PART: Component / Part Availability 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 2 - Components available locally. Component age < 5 yrs.	COND-MTBF: Prior Failures / Mean Time Between Failures 5 - Excessive previous failures 5 - Excessive previous failures 3 - Within expected reason	COND-PUMP: Pumps (evaluate for pumps only)	COND-VALV: Valves & Gates (evaluate for valves and gates only)	COND-CAP: Reduced Output / Capac 5 - Severe 5 - Severe 2 - None	apacity COND-HAZ: Health and Safety F 2 - None 2 - None 2 - None	y Hazard COND-SCAD: Linked to SCADA System 5 - No 5 - No 1 - Yes
Air_compressor Air_diffuser 1978 Brew: East Gallery - New Plant Air Compressor - Ingersol Rand Air_diffuser 1978 Brew: Digester Tank 2 (South) - Coarse Bubble Air Diffusers Basket_strainer 5363 Brew: Chem Bldg - 2nd Fl - Duplex Basket Strainer 1 Basket_strainer 5370 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Duplex Basket Basket_strainer 5370 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Duplex Basket Basket_strainer 6245 Brew: Chem Bldg - 2nd Fl - Duplex Basket Strainer 2 Centrifugal_pump 1927 Brew: RSPS - Basement - Pump Rm - Raw Pump 1 Centrifugal_pump 1971 Brew: South Gallery - Tanker Loading Pump 1		Brew: East Gallery - New Plant Air Skid - Compress Brew: Digester Tank 2 (South) - Air Diffuser Brew: Chem Bldg - 2nd Fl - Duplex Basket Strainer Brew: RSPS 1st Fl - Disinfection Rm - Duplex Baske Brew: RSPS 1st Fl - Disinfection Rm - Duplex Baske Brew: Chem Bldg - 2nd Fl - Duplex Basket Strainer RSPS- Basement - Raw Pump 1 Thickner Sludge 1Pump	105981 - RED VALVE CO INC 134262 - HAYWARD INDUSTRIAL PRODUCTS 1058 - Yeomans Pump 169318 - HAYWARD GORDON	S S S	Not located in field 9807640 285476	Nick Pezzino Nick Pezzino 9/16/2013 9:42 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:51 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/11/2013 9:29 1 - No corrective maintenance required Nick Pezzino 9/11/2013 9:31 1 - No corrective maintenance required Nick Pezzino 9/10/2013 10:52 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:49 1 - No corrective maintenance required Nick Pezzino 9/10/2013 10:28 3 - Several minor deficiencies noted and corrective maintenance required.	 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 4 - Asset appears to be in poor condition, with approx. 20-40% of life remaining 	2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 3 - Surface deterioration evident. Shaft distortion or wear evident. Moderate vibration, oscillation, temp, or noise	 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	 3 - Within expected reason 3 - Within expected reason 1 - None 3 - Within expected reason 	2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected.		3 - Minor 3 - Minor 2 - None 2 - None 3 - Minor 3 - Minor 4 - Moderate	2 - None	1 - Yes 5 - No 5 - No 5 - No 1 - Yes 5 - No
Centrifugal_pump 1972 Brew: South Gallery - Return Sludge Pump 3 Centrifugal_pump 2093 Brew: RSPS - Basement - Pump Rm - Effluent Water Pump 1 Centrifugal_pump 5400 Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Booster Pump Centrifugal_pump 6291 Brew: North Gallery - Return Sludge Pump 2 Centrifugal_pump 6299 Brew: RSPS - Basement - Pump Rm - Raw Pump 2 Centrifugal_pump 6300 Brew: RSPS - Basement - Pump Rm - Raw Pump 3 Centrifugal_pump 6301 Brew: RSPS - Basement - Pump Rm - Effluent Water Pump 2	13387 Brew: South Gallery - Return Sludge Pump 3 1549 Brew: RSPS - Effluent Water Supply Pump 1 1357 Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Booster Pump 13388 Brew: North Gallery - Return Sludge Pump 2 1065 Brew: RSPS - Basement - Pump Rm - Raw Pump 2 1066 Brew: RSPS - Basement - Pump Rm - Raw Pump 3 1550 Brew: RSPS - Effluent Water Supply Pump 2	Return Sludge Pump 3 Effluent Water Pump 1 Rotary Drum Booster Pump Return Sludge Pump 2 RSPS- Basement - Raw Pump 2 RSPS- Basement - Raw Pump 3 EFFluent Water Pump 2	113357 - GOULDS PUMPS 113357 - GOULDS PUMPS 1071 - Burks Pumps 113357 - GOULDS PUMPS 1058 - Yeomans Pump 1058 - Yeomans Pump 113357 - GOULDS PUMPS	CW 3656 T3504ES8M-AB CW 1210522-4-B 1210522-4-B 3656	13267C662-1 5BF1L9CO No longer in serviceremoved D103577 B267C663-2 9807640 9807640 5B11L5G0PE No longer in serviceremoved	Nick Pezzino 9/10/2013 10:50 1 - No corrective maintenance required Nick Pezzino Nick Pezzino	 1 - Asset appears to be in very good condition, with more than 80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 1 - Asset appears to be in very good condition, with more than 80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 	 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 3 - Surface deterioration evident. Shaft distortion or wear evident. Moderate vibration, oscillation, temp, or noise 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/support, Minor vibration, oscillation, temp, or noise 	 1 - Components available locally. Component age < 2 yrs. 3 - Components available locally. Component age < 10 yrs. 1 - Components available locally. Component age < 2 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	1 - None3 - Within expected reason1 - None3 - Within expected reason3 - Within expected reason	1 - Appears as new. Shaft & supports sound - no shaft distortion or deterioration evident. No shaft distortion, vibration, or unusual noises detected. 2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 1 - Appears as new. Shaft & supports sound - no shaft distortion or deterioration evident. No shaft distortion, vibration, or unusual noises detected. 2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected.		2 - None 3 - Minor 2 - None 3 - Minor 3 - Minor	2 - None	1 - Yes 1 - Yes 1 - Yes 1 - Yes 1 - Yes
Centrifugal_pump 6313 Brew: South Gallery - Return Sludge Pump 4 Centrifugal_pump 6317 Brew: South Gallery - Tanker Loading Pump 2 Cent_multi_stage_blower 1982 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 1 Cent_multi_stage_blower 6233 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 2 Cent_multi_stage_blower 6234 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 3 Cent_multi_stage_blower 6235 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 4 Diaphragm_pump 2008 Brew: Chem Bldg - 1st Fl - Poly Blend Polymer Pump 1	Davis Rd. Eye Wash and Deluge/ Outside Brew: South Gallery - Tanker Loading Pump 2 2748 Brew: Control Bldg - Blower Rm - Aeration Blower 1 2749 Brew: Control Bldg - Blower Rm - Aeration Blower 2 2750 Brew: Control Bldg - Blower Rm - Aeration Blower 3 2751 Brew: Control Bldg - Blower Rm - Aeration Blower 4 3503 Brew: Chem Bldg - 1st Fl - Polymer Transfer Pump	Return Sludge Pump Thickner Sludge 2Pump Aeration Blower 1 Aeration Blower 2 Aeration Blower 3 Aeration Blower 4 Brew: Chem Bldg - 1st Fl - Polymer Transfer Pump	113357 - GOULDS PUMPS 169318 - HAYWARD GORDON NATIONAL TURBINE 12211 - LAMSON CORPORATION 12211 - LAMSON CORPORATION 12211 - LAMSON CORPORATION 1132 - USFilter, Water Treatment Group	CW XCS5B RC857-2-0-0-5-AD 857-2-0-0-5-0-AD 857-2-0-0-5-0-AD RC857-2-0-0-5-0-AD LP87NA-WTT3-XXX	B267C662-2 Possible record mistake? 285476-2 2121064 Add mfgr 911491 911436 Currently out of serviceoil leak 2121053 9805103219	Nick Pezzino Nick Pezzino 9/10/2013 10:29 3 - Several minor deficiencies noted and corrective maintenance required. Nick Pezzino 9/10/2013 8:15 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:18 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:19 4 - Major deficiencies and significant corrective maintenance or rehab required Nick Pezzino 9/10/2013 8:22 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:40 2 - Few minor deficiencies and minimal corrective maintenance required	4 - Asset appears to be in poor condition, with approx. 20-40% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining	3 - Surface deterioration evident. Shaft distortion or wear evident. Moderate vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise	3 - Components available locally. Component age < 10 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs.	 3 - Within expected reason 3 - Within expected reason 3 - Within expected reason 5 - Excessive previous failures 3 - Within expected reason 3 - Within expected reason 	2 - Minimal moisture on seals/joints. Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 2 - Minimal moisture on seals/joints. Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected.		4 - Moderate 3 - Minor 3 - Minor 4 - Moderate 3 - Minor 3 - Minor	2 - None	5 - No 1 - Yes 1 - Yes 1 - Yes 5 - No
Diaphragm_pump 5361 Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 1 Diaphragm_pump 5379 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypo Pump 1 Diaphragm_pump 5379 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypo Pump 1 Diaphragm_pump 5402 Brew: Thickener Bldg - 101 Thickener Rm - Polymer Pump 1 Diaphragm_pump 6249 Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 2 Diaphragm_pump 6320 Brew: Thickener Bldg - 101 Thickener Rm - Polymer Pump 2 Flowmeter 10850 Brew: Decommissioned Equipment Flowmeter 10850 Brew: Decommissioned Equipment Flowmeter 2068 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypo Flow Me	3089 Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 1 3093 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 1 3094 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 2 3091 Brew: Thickener Bldg - Poly Diaphragm Pump 1 3090 Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 2 3092 Brew: Thickener Bldg - Poly Diaphragm Pump 2 3092 Brew: Thickener Bldg - Poly Diaphragm Pump 2 1937 Brew: North Gallery - OOS - Flow Meter - 520-1 - WAS 1944 Brew: North Gallery - Flow Meter - (OOS) 515-1 - Total RAS er 1,2 Brew: RSPS 1st Fl - Disinfection Rm - Hypo Flow Meter 1	Sodium Hypochlorite Pump 1 Sodium Hypochlorite Pump 2 Brew: Thickener Bldg - Poly Diaphragm Pump 1 Ferrus Feed Pump 2 Motor Brew: Thickener Bldg - Poly Diaphragm Pump 2 Brew: North Gallery - OOS - Flow Meter - 520-1 - W Brew: North Gallery - Flow Meter - (OOS) 515-1 - T Brew: RSPS 1st Fl - Disinfection Rm - Hypo Flow Me	167288 - MILTON ROY CO 1159 1159 55947 - FISHER CONTROLS INTL INC	MTG18A-0B0P21LSDADAH2	227730 227730 1012968 227730 1017447 R-978822-41-163A Yamatake is mfgr R-978822-41-163A Yamatake is mfgr	Nick Pezzino 9/10/2013 10:48 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/11/2013 9:17 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/16/2013 9:54 1 - No corrective maintenance required Nick Pezzino 9/10/2013 10:49 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/16/2013 9:56 1 - No corrective maintenance required Nick Pezzino 9/10/2013 9:28 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 9:28 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 9:26 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/11/2013 9:25 5 - Asset may be unserviceable, needs replacement or rehabilitation	 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 5 - Asset appears to be in very poor condition, with less than 20% of life remaining 	 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 	3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs.	 3 - Within expected reason 	2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 1 - Appears as new. Shaft & supports sound - no shaft distortion or deterioration evident. No shaft distortion, vibration, or unusual noises detected. 2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected.		3 - Minor 3 - Minor 2 - None 3 - Minor 2 - None 3 - Minor 2 - None 3 - Minor 5 - Severe	3 - Minor 3 - Minor 2 - None	1 - Yes 1 - Yes 1 - Yes 1 - Yes 1 - Yes 1 - Yes 1 - Yes 5 - No
Flowmeter 2068 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypo Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters		Brew: RSPS 1st FI - Disinfection Rm - Hypo Flow Me Brew: North Gallery - Flow Meter - 520-1 - WAS Brew: North Gallery - Flow Meter - 515-1 - Total R Brew: North Gallery - Flow Meter - 517-1A - RAS St Brew: North Gallery - Flow Meter - 517-1B - RAS St Brew: North Gallery - Flow Meter - 517-1C - RAS St Brew: North Gallery - Magnetic Flow Meter	55947 - FISHER CONTROLS INTL INC 1159 1159 55947 - FISHER CONTROLS INTL INC 139568 - INVENSYS METERING SYSTEMS	10DX4311ADE18P1B2BAA2132X3AABC D1475WN14PL29AC51C1112C1 D1475WN14PL29AC51C1112C1 MTG18A-0B0P21LSDADAH2 MTG18A-0B0P21LSDADAH2 D1475WN14PL29AC51C1112C1	98W027057 Duplicate record? Duplicate record? R-978822-41-163A Yamatake is mfgr R-978822-41-163A Yamatake is mfgr 98W027062 99021725 Asset not identifiable	Nick Pezzino	2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining		 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason			3 - Minor 3 - Minor 3 - Minor 3 - Minor	2 - None 2 - None 2 - None 2 - None	1 - Yes 1 - Yes 1 - Yes 1 - Yes
Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2076 Brew: North Gallery - Magnetic Flow Meters Flowmeter 2077 Brew: South Gallery - Magnetic Flow Meters Flowmeter 2077 Brew: South Gallery - Magnetic Flow Meters Flowmeter 2077 Brew: South Gallery - Magnetic Flow Meters Flowmeter 2077 Brew: South Gallery - Magnetic Flow Meters Flowmeter 2077 Brew: South Gallery - Magnetic Flow Meters	Brew: North Gallery - Magnetic Flow Meter 2271 Brew: North Gallery - Magnetic Flow Meter 2272 Brew: North Gallery - Magnetic Flow Meter 2278 Brew: North Gallery - Magnetic Flow Meter 2279 Brew: South Gallery - Flow Meter - 520-2 - WAS 2270 Brew: South Gallery - Flow Meter - 515-2 - Total RAS 2271 Brew: South Gallery - Flow Meter - 517-2A - RAS Step A 2272 Brew: South Gallery - Flow Meter - 517-2B - RAS Step B	Brew: North Gallery - Magnetic Flow Meter Brew: North Gallery - Magnetic Flow Meter Brew: North Gallery - Magnetic Flow Meter Brew: South Gallery - Flow Meter - 520-2 - WAS Brew: South Gallery - Flow Meter - 515-2 - Total R Brew: South Gallery - Flow Meter - 517-2A - RAS St Brew: South Gallery - Flow Meter - 517-2B - RAS St	139568 - INVENSYS METERING SYSTEMS 139568 - INVENSYS METERING SYSTEMS 139568 - INVENSYS METERING SYSTEMS 1159 1159 38596 - ABB INSTRUMENTATION 38596 - ABB INSTRUMENTATION	IDP10-I20B21F-M1H IDP10-I20B21F-M1H IDP10-I20B21F-M1H M1618A-100P21L2D1A4P	96200950 Asset not identifiable 96200951 Asset not identifiable 96200957 Asset not identifiable 1-9YK57-41 1121 Yamatake is mfgr 1-9YK57-41 1121 Yamatake is mfgr 02W019488 02W019488	Nick Pezzino Nick Pezzino Nick Pezzino Nick Pezzino Nick Pezzino Nick Pezzino 9/10/2013 10:19 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:16 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:10 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:11 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining		 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason3 - Within expected reason3 - Within expected reason3 - Within expected reason			3 - Minor 3 - Minor 3 - Minor 3 - Minor	2 - None 2 - None 2 - None 2 - None	1 - Yes 1 - Yes 1 - Yes 1 - Yes
Flowmeter 2077 Brew: South Gallery - Magnetic Flow Meters Flowmeter 2077 Brew: South Gallery - Magnetic Flow Meters Flowmeter 2077 Brew: South Gallery - Magnetic Flow Meters Flowmeter 5403 Brew: West Gallery - Air Flow Meter Flowmeter 6271 Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 1 - South Flowmeter 6272 Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 2 - North Flowmeter 8775 Brew: RSPS 1st Fl - NaOCI Feed Rm - Controls	Brew: South Gallery - Flow Meter - 517-2C - RAS Step C 2274 Brew: South Gallery - Magnetic Flow Meter 2275 Brew: South Gallery - Magnetic Flow Meter 2268 Brew: Total Air Flow Meter 526-1 1948 Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 1 - South 1949 Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 2 - North 1935 Brew: RSPS 1st Fl - NaOCI Flow Meter	Brew: South Gallery - Flow Meter - 517-2C - RAS St Brew: South Gallery - Magnetic Flow Meter Brew: South Gallery - Magnetic Flow Meter Brew: Total Air Flow Meter 526-1 Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 1 - Sou Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 2 - Nor Brew: RSPS 1st Fl - NaOCI Flow Meter	38596 - ABB INSTRUMENTATION 139568 - INVENSYS METERING SYSTEMS 139568 - INVENSYS METERING SYSTEMS 101956 - FOXBORO COMPANY 1159 55947 - FISHER CONTROLS INTL INC 1159	IDP10-I20B21F-M1H IDP10-I20B21F-M1H MGG14C-MH4G-1A1N-4AH M2DCD3A012	02W019487 96200954 Asset not identifiable 96200956 Asset not identifiable 96200952 Azbil MagneW is mfgr 99W041525 Plate data not visible 00W010636 Not located in field	Nick Pezzino	 3 - Asset appears to be in average condition, with approx. 50% of life remaining 1 - Asset appears to be in very good condition, with more than 80% of life remaining 1 - Asset appears to be in very good condition, with more than 80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 		 3 - Components available locally. Component age < 10 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs. 	3 - Within expected reason3 - Within expected reason1 - None3 - Within expected reason			3 - Minor 2 - None 2 - None 3 - Minor	2 - None 2 - None 2 - None 2 - None	1 - Yes 1 - Yes 1 - Yes 1 - Yes
Hoist	Brew: RSPS 1st Fl - Grit Rm - Electric Hoist Brew: RSPS 1st Fl - NaOCI Feed Rm - Hoist Brew: RSPS 1st Fl - Grit Rm - Manual Hoist Brew: Air Diffuser Hoist Brew: North Gallery - Digested Sludge Pump 1 Brew: North Gallery - Digested Sludge Pump 2 Brew: South Gallery - Return Sludge Pump 4 Brew: Settling Tank 1 (North) - Sludge Collector 1 Brew: Settling Tank 2 (South) - Sludge Collector 2 Brew: ML Tank 1 (North) - Slide Gate	Brew: RSPS 1st Fl - Grit Rm - Electric Hoist Brew: RSPS 1st Fl - NaOCI Feed Rm - Hoist Brew: RSPS 1st Fl - Grit Rm - Manual Hoist Brew: Air Diffuser Hoist Digested Sludge Pump 1 Digested Sludge Pump 2 Brew: South Gallery - Return Sludge Pump 4 Settling Tank 1 Collection Mechanism Settling Tank 2 Collection Mechanism Brew: ML Tank 1 (North) - Slide Gate	P&H 1224 - Electrolift 1194 - Coffing Hoists 1004 - Chicago Pump Co. 127340 - MOYNO INDUSTRIAL PRODUCTS 127340 - MOYNO INDUSTRIAL PRODUCTS 2154 - ITT Goulds Pumps 1117 - Eimco 123448 - RODNEY HUNT COMPANY	SWG10H MOYNO SWG10H MOYNO CW Envirotech Envirotech	AS-62134 AS-62135 B267C662-2 73440-01R 73440-01A BS-2600-4 Not located in field	Nick Pezzino 9/11/2013 9:04 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/11/2013 9:35 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/11/2013 10:23 3 - Several minor deficiencies noted and corrective maintenance required. Nick Pezzino 9/16/2013 9:03 5 - Asset may be unserviceable, needs replacement or rehabilitation Nick Pezzino 9/10/2013 9:50 1 - No corrective maintenance required Nick Pezzino 9/10/2013 9:51 1 - No corrective maintenance required Nick Pezzino 9/10/2013 10:31 1 - No corrective maintenance required Nick Pezzino 9/16/2013 11:20 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/16/2013 11:23 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino	 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 5 - Asset appears to be in very poor condition, with less than 20% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 1 - Asset appears to be in very good condition, with more than 80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 	 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 5 - Surface presenting a high probability of the structures collapse or failure. Significant shaft distortion, significant vibration, oscillation, temp, or noise 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 3 - Surface deterioration evident. Shaft distortion or wear evident. Moderate vibration, oscillation, temp, or noise 	 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 1 - Components available locally. Component age < 2 yrs. 4 - Components available special order only. Component age < 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 		2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 1 - Appears as new. Shaft & supports sound - no shaft distortion or deterioration evident. No shaft distortion, vibration, or unusual noises detected. 1 - Appears as new. Shaft & supports sound - no shaft distortion or deterioration evident. No shaft distortion, vibration, or unusual noises detected.		2 - None 3 - Minor 3 - Minor 5 - Severe 3 - Minor 2 - None 2 - None 3 - Minor 3 - Minor	3 - Minor 2 - None 3 - Minor 2 - None 2 - None 2 - None 2 - None 3 - Minor 3 - Minor	5 - No 5 - No 5 - No 5 - No 5 - No 5 - No 1 - Yes 1 - Yes
Slide_gate 5375 Brew: ML Tank 1 (North) - Slide Gate Slide_gate 5389 Brew: SR Tank 1 (North) - Slide Gate 1 Slide_gate 5390 Brew: SR Tank 2 (South) - Slide Gate 3 Slide_gate 6311 Brew: SR Tank 1 (North) - Slide Gate 2 Slide_gate 6312 Brew: SR Tank 2 (South) - Slide Gate 4 Strainer 1257 Brew: RSPS - Basement - Pump Rm Submersible_pump 1990 Brew: Control Bldg - Basement - Sump Pump Submersible_pump 1993 Brew: Settling Tank 1 (North) - Scum Pump 1 Submersible_pump 1994 Brew: Settling Tank 2 (South) - Scum Pump 2	3730 Brew: ML Tank 1 (North) - Slide Gate 3725 Brew: SR Tank 1 (North) - Slide Gate 1 3727 Brew: SR Tank 2 (South) - Slide Gate 3 3726 Brew: SR Tank 1 (North) - Slide Gate 2 3728 Brew: SR Tank 2 (South) - Slide Gate 4 15708 Brew: RSPS - Effluent Water Supply - Auto Strainer 1133 Brew: Control Bldg - Basement - Sump Pump 3679 Brew: Settling Tank 1 (North) - Scum Pump 1 3680 Brew: Settling Tank 2 (South) - Scum Pump 2	Brew: ML Tank 1 (North) - Slide Gate Brew: SR Tank 1 (North) - Slide Gate 1 Brew: SR Tank 2 (South) - Slide Gate 3 Brew: SR Tank 1 (North) - Slide Gate 2 Brew: SR Tank 2 (South) - Slide Gate 4 Effluent Water Strainer Brew: Control Bldg - Basement - Sump Pump Scum Pump 1 Scum Pump 2	123448 - RODNEY HUNT COMPANY 184622 - RP Adams Company Inc 1302 - (DO NOT USE) Aurora-Franklin Market 127340 - MOYNO INDUSTRIAL PRODUCTS	28392-2 28392-2 28392-2 28392-2 28392-2 PORO-EDGE	BS-2600-4 Not located in field BS-2600 BS-2600 BS-2600 BS-2600 239485 S-621.5 S-521.35	Nick Pezzino Nick Pezzino 9/16/2013 9:18	2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining	 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 	 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 5 - Components not available. Component age > 15 yrs. 5 - Components not available. Component age > 15 yrs. 	 1 - None 1 - None 1 - None 1 - None 3 - Within expected reason 	2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 3 - Water dripping from seals/joints. Shaft distortion or bearing/housing wear evident, little impact on structural integrity or function. Moderate shaft distortion, vibration or unusual noises detected. 3 - Water dripping from seals/joints. Shaft distortion or bearing/housing wear evident, little impact on structural integrity or function. Moderate shaft distortion, vibration or unusual noises detected.	 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 	2 - None 2 - None 2 - None 2 - None 3 - Minor 3 - Minor 3 - Minor	2 - None	5 - No 5 - No 5 - No 5 - No 1 - Yes 5 - No 1 - Yes 1 - Yes
Submersible_pump 2016 Brew: East Gallery - Sump Pump Submersible_pump 2017 Brew: RSPS - Basement - Pump Rm - Sump Pump Submersible_pump 5357 Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 1 Submersible_pump 6232 Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 2 Thickener 2094 Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Unclassified 1930 Brew: RSPS - Basement - Scrn Rake Rm - Air Header 1 Unclassified 1962 Brew: RSPS 1st Fl - Grit Rm - Clam Bucket	Brew: East Gallery - Sump Pump Brew: RSPS - Basement - Pump Rm - Sump Pump Brew: Digester Tank 2 (South) - Thickener Feed Pump 1 Brew: Digester Tank 2 (South) - Thickener Feed Pump 2 Brew: Digester Tank 2 (South) - Thickener Feed Pump 2 Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Brew: RSPS - Basement - Scrn Rake Rm - Air Header 1 Brew: RSPS 1st Fl - Grit Rm - Clam Bucket	Brew: East Gallery - Sump Pump Brew: RSPS - Basement - Pump Rm - Sump Pump Rotary Drum Feed Pump 1 Rotary Drum Feed Pump 2 Rotary Drum Thickener Brew: RSPS - Basement - Scrn Rake Rm - Air Header Brew: RSPS 1st Fl - Grit Rm - Clam Bucket	1302 - (DO NOT USE) Aurora-Franklin Market 1302 - (DO NOT USE) Aurora-Franklin Market 166553 - ITT FLYGT 166553 - ITT FLYGT 2807 - Waterlink Hycor Products	SP50 3102.18 3102.18	19432 19433 H-001-3594Z	Nick Pezzino 9/10/2013 8:49 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/11/2013 10:54 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/16/2013 10:39 1 - No corrective maintenance required Nick Pezzino 9/16/2013 10:40 1 - No corrective maintenance required Nick Pezzino 9/16/2013 9:59 1 - No corrective maintenance required Nick Pezzino 9/16/2013 11:26 3 - Several minor deficiencies noted and corrective maintenance required. Nick Pezzino 9/11/2013 10:29 2 - Few minor deficiencies and minimal corrective maintenance required	 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 	 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 3 - Surface deterioration evident. Shaft distortion or wear evident. Moderate vibration, oscillation, temp, or noise 	 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 5 - Components not available. Component age > 15 yrs. 	3 - Within expected reason 3 - Within expected reason 1 - None 1 - None 1 - None 3 - Within expected reason	2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected.		3 - Minor 3 - Minor 2 - None 2 - None 2 - None 3 - Minor 3 - Minor	2 - None 3 - Minor	5 - No 5 - No 1 - Yes 5 - No 1 - Yes 5 - No 5 - No
Unclassified Unclassified Unclassified 1977 Brew: Digester Tank 1 (North) - Coarse Bubble Air Diffusers Unclassified 1979 Brew: ML Tank 1 (North) - Fine Bubble Air Diffusers Unclassified 1982 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 1 Unclassified 1982 Brew: Control Bldg - 1st Fl - Blower Rm - Blower 1 Unclassified 1995 Brew: Control Bldg - 1st Fl - Garage - Overhead Door Unclassified 1996 Brew: Chem Bldg - 1st Fl - Overhead Door 1 Unclassified 2000 Brew: Chem Bldg - 1st Fl - Poly Blend Unit 1 North Unclassified 2007 Brew: Chem Bldg - 1st Fl - Water Cooler Unclassified 2007 Brew: Chem Bldg - 1st Fl - Garage - Fuel Transfer Pump	Brew: RSPS 1st Fl - Grit Rm - Clam Bucket 1637 Brew: Digester Tank 1 (North) - Coarse Bubble Air Diffusers 4491 Brew: ML Tank 1 (North) - Fine Bubble Air Diffusers 2018 Brew: Control Bldg - Blower Rm - Blower 1 Fisher Control Valve 2019 Brew: Control Bldg - Blower Rm - Blower 1 Fisher Control Valve 4791 Brew: Control Bldg - 1st Fl - Garage - Overhead Door 1545 Brew: Chem Bldg - 1st Fl - Overhead Door 1 1691 Brew: Chem Bldg - 1st Fl - Mixer 4793 Brew: Chem Bldg - 1st Fl - Water Cooler 4841 Brew: Control Bldg - 1st Fl - Garage - Fuel Transfer Pump	Brew: RSPS 1st Fl - Grit Rm - Clam Bucket Brew: Digester Tank 1 (North) - Coarse Bubble Air Brew: ML Tank 1 (North) - Fine Bubble Air Diffuser Brew: Control Bldg - Blower Rm - Blower 1 Fisher C Brew: Control Bldg - Blower Rm - Blower 1 Fisher C Brew: Control Bldg - 1st Fl - Garage - Overhead Do Brew: Chem Bldg - 1st Fl - Overhead Door 1 Brew: Chem Bldg - 1st Fl - Mixer Brew: Chem Bldg - 1st Fl - Water Cooler Brew: Control Bldg - 1st Fl - Garage - Fuel Transf	109223 - U S FILTER/DAVIS PROCESS 55947 - FISHER CONTROLS INTL INC 55947 - FISHER CONTROLS INTL INC 1202 - Cornell 1132 - USFilter, Water Treatment Group	7811 7811 M82A-2 M601-D1AB	Replaced < 5 years ago 176154 176158 Requires button be held to operate 32183-2 19970 Integral to Generator skid	Nick Pezzino 9/16/2013 9:22 1 - No corrective maintenance required Nick Pezzino 9/16/2013 9:28 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:25 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:27 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:41 3 - Several minor deficiencies noted and corrective maintenance required. Nick Pezzino 9/10/2013 10:41 3 - Several minor deficiencies noted and corrective maintenance required. Nick Pezzino 9/10/2013 10:37 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/16/2013 10:16 1 - No corrective maintenance required Nick Pezzino 9/16/2013 11:41 1 - No corrective maintenance required	 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 4 - Asset appears to be in poor condition, with approx. 20-40% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 1 - Asset appears to be in very good condition, with more than 80% of life remaining 	 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 3 - Surface deterioration evident. Shaft distortion or wear evident. Moderate vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 	 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs. 4 - Components available special order only. Component age < 15 yrs. 3 - Components available locally. Component age < 10 yrs. 	 1 - None 1 - None 3 - Within expected reason 3 - Within expected reason 3 - Within expected reason 5 - Excessive previous failures 3 - Within expected reason 	2 - Minimal moisture on seals/joints . Minor shaft/ support deterioration evident, no impact on the structural strength or function. Minimal shaft distortion, vibration or unusual noises detected. 1 - Appears as new. Shaft & supports sound - no shaft distortion or deterioration evident. No shaft distortion, vibration, or unusual noises detected.	 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 	3 - Minor 2 - None 3 - Minor 3 - Minor 3 - Minor 4 - Moderate 3 - Minor 2 - None 2 - None	2 - None	1 - Yes 1 - Yes 1 - Yes 1 - Yes 5 - No 5 - No 5 - No 5 - No 1 - Yes
Unclassified 2092 Brew: RSPS 1st Fl - Disinfection Rm - Influent Sample Pump Unclassified 2096 Brew: Thickener Bldg - 101 Thickener Rm - PolyBlend Unit 1 (Anionic Unclassified 2096 Brew: Thickener Bldg - 101 Thickener Rm - PolyBlend Unit 1 (Anionic Unclassified 2097 Brew: Thickener Bldg - 101 Thickener Rm - PolyBlend Unit 2 (Cationi Unclassified 2097 Brew: Thickener Bldg - 101 Thickener Rm - PolyBlend Unit 2 (Cationi	4099 Brew: Thickener Bldg - Poly Blend Unit 1 (Anionic) 4092 Brew: Thickener Bldg - 101 Thickener Rm - PolyBlend Unit 2 (Cationic) 4093 Brew: Thickener Bldg - 101 Thickener Rm - PolyBlend Unit 2 (Cationic)		10850 - Teledyne ISCO INC 144972 - US FILTER/STRANCO 144972 - US FILTER/STRANCO 144972 - US FILTER/STRANCO ixer 144972 - US FILTER/STRANCO	4700 M601-D2.5AA M2400-D10AA	Included on PloyBlend skid; evaluated & logged toge 18326 18327 Included on PloyBlend skid; evaluated & logged toge	Nick Pezzino 9/16/2013 10:09 1 - No corrective maintenance required Nick Pezzino 9/16/2013 10:12 1 - No corrective maintenance required ther Nick Pezzino	 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 	1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise	 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	1 - None 1 - None	1 - Appears as new. Shaft & supports sound - no shaft distortion or deterioration evident. No shaft distortion, vibration, or unusual noises detected.		2 - None 2 - None 2 - None	3 - Minor 2 - None 2 - None	1 - Yes 1 - Yes 1 - Yes
Unclassified 5377 Brew: RSPS 1st FI - MCC Rm - Water Cooler Unclassified 5381 Brew: North Gallery - Control Valve 518-1 (ML) Unclassified 5391 Brew: South Gallery - Control Valve 518-2 (ML) Unclassified 5401 Brew: Thickener Bldg - 101 Thickener Rm - Overhead Door 1 Unclassified 6229 Brew: RSPS - Effluent Water Supply System Unclassified 6233 Brew: Control Bldg - 1st FI - Blower Rm - Blower 2 Unclassified 6233 Brew: Control Bldg - 1st FI - Blower Rm - Blower 2	Brew: RSPS 1st Fl - MCC Rm - Water Cooler 2010 Brew: North Gallery - Control Valve 518-1 2014 Brew: South Gallery - Control Valve 518-2 3369 Brew: Thickener Bldg - 101 Thickener Rm - Overhead Door 1 10362 Brew: RSPS - Effluent Water Supply System 2020 Brew: Control Bldg - Blower Rm - Blower 2 Fisher Control Valve 2021 Brew: Control Bldg - Blower Rm - Blower 2 Fisher Control Valve	Brew: RSPS 1st Fl - MCC Rm - Water Cooler Brew: North Gallery - Control Valve 518-1 Brew: South Gallery - Control Valve 518-2 Brew: Thickener Bldg - 101 Thickener Rm - Overhead Brew: RSPS - Effluent Water Supply System Brew: Control Bldg - Blower Rm - Blower 2 Fisher C Brew: Control Bldg - Blower Rm - Blower 2 Fisher C	55947 - FISHER CONTROLS INTL INC 55947 - FISHER CONTROLS INTL INC 1311 Flo-Pak 55947 - FISHER CONTROLS INTL INC 55947 - FISHER CONTROLS INTL INC	7811 7811 APB-VS-OS-P 7811 7811	Not located in field 176148 176149 807771 176156 176159	Nick Pezzino Nick Pezzino 9/10/2013 9:40 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 9:59 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/16/2013 10:07 1 - No corrective maintenance required Nick Pezzino 9/11/2013 10:43 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:29 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:30 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:30 2 - Few minor deficiencies and minimal corrective maintenance required	2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining	1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise	3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs.	 3 - Within expected reason 3 - Within expected reason 1 - None 3 - Within expected reason 		 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 3 - Minor leakage is likely. Maintenance works will restore seal. Coating loss /deterioration. Exposing rusting steel. Operation becoming difficult. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 3 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 	3 - Minor 3 - Minor 2 - None 3 - Minor 3 - Minor	2 - None	1 - Yes 1 - Yes 5 - No 1 - Yes 1 - Yes
Unclassified Un	Brew: Control Bldg - Blower Rm - Blower 3 Fisher Control Valve Brew: Control Bldg - Blower Rm - Blower 3 Fisher Control Valve Brew: Control Bldg - Blower Rm - Blower 4 Fisher Control Valve Brew: Control Bldg - Blower Rm - Blower 4 Fisher Control Valve Brew: Control Bldg - Blower Rm - Blower 4 Fisher Control Valve Brew: Chem Bldg - 1st Fl - Overhead Door 2 Brew: Sludge Concentration Tank 1 (North) - Sluice Gate Brew: RSPS - Basement - Mtr Rm - Sample Pump	Brew: Control Bldg - Blower Rm - Blower 3 Fisher C Brew: Control Bldg - Blower Rm - Blower 3 Fisher C Brew: Control Bldg - Blower Rm - Blower 4 Fisher C Brew: Control Bldg - Blower Rm - Blower 4 Fisher C Brew: Chem Bldg - 1st Fl - Overhead Door 2 Brew: Sludge Concentration Tank 1 (North) - Sluice Brew: RSPS - Basement - Mtr Rm - Sample Pump	55947 - FISHER CONTROLS INTL INC 1202 - Cornell Rex	7811 7811 7811 7811 M82A-2	176150 176160 176157 176161 32183-2 No longer in serviceremoved	Nick Pezzino 9/10/2013 8:31 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:32 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:33 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 8:34 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:43 3 - Several minor deficiencies noted and corrective maintenance required. Nick Pezzino Nick Pezzino Nick Pezzino Nick Pezzino Nick Pezzino 0/10/2013 0:11 2 - Few minor deficiencies and minimal corrective maintenance required a - Few minor deficiencies and minimal corrective maintenance required a - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino Nick Pezzino	3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 4 - Asset appears to be in average condition, with approx. 20-40% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining	3 - Surface deterioration evident. Shaft distortion or wear evident. Moderate vibration, oscillation, temp, or noise	2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 4 - Components available special order only. Component age < 15 yrs. 3 - Components available locally. Component age < 10 yrs.	3 - Within expected reason 5 - Excessive previous failures 3 - Within expected reason		 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 3 - Minor leakage is likely. Maintenance works will restore seal. Coating loss /deterioration. Exposing rusting steel. Operation becoming difficult. 	3 - Minor 3 - Minor 3 - Minor 4 - Moderate 4 - Moderate	2 - None	1 - Yes 1 - Yes 1 - Yes 5 - No 5 - No
Unclassified 6292 Brew: North Gallery - Control Valve 519-1 (RAS) Unclassified 6293 Brew: North Gallery - Control Valve 520-1 (WAS) Unclassified 6294 Brew: North Gallery - Control Valve 523-1 (DIG) Unclassified 6314 Brew: South Gallery - Control Valve 519-2 (RAS) Unclassified 6315 Brew: South Gallery - Control Valve 520-2 (WAS) Unclassified 6316 Brew: South Gallery - Control Valve 523-2 (DIG) Unclassified 6321 Brew: Thickener Bldg - 101 Thickener Rm - Overhead Door 2 Unclassified 6323 Brew: ML Tank 2 (South) - Fine Bubble Air Diffusers Unclassified 6727 Brew: Portable Safety Equipment (Brew) Unclassified 6770 Brew: North Gallery - Air Flow Meters	Brew: North Gallery - Control Valve 519-1 2012 Brew: North Gallery - Control Valve 520-1 2013 Brew: North Gallery - Control Valve 523-1 2015 Brew: South Gallery - Fisher Control Valve 519-2 2016 Brew: South Gallery - Fisher Control Valve 520-2 2017 Brew: South Gallery - Fisher Control Valve 523-2 3370 Brew: Thickener Bldg - 101 Thickener Rm - Overhead Door 2 15560 Brew: ML Tank 2 (North) - Fine Bubble Air Diffusers ERXA0072 Drager Gas Meter - BREW ERXA0074 Drager Gas Meter - BREW ERXM0038 Drager Gas Meter - BREW Brew: N. MLSS Air Flow Meter 518-1	Brew: North Gallery - Control Valve 519-1 Brew: North Gallery - Control Valve 520-1 Brew: North Gallery - Control Valve 523-1 Brew: South Gallery - Fisher Control Valve 519-2 Brew: South Gallery - Fisher Control Valve 520-2 Brew: South Gallery - Fisher Control Valve 523-2 Brew: Thickener Bldg - 101 Thickener Rm - Overhead Brew: ML Tank 2 (North) - Fine Bubble Air Diffusers Drager Gas Meter - BREW Drager Gas Meter - BREW Drager Gas Meter - BREW	55947 - FISHER CONTROLS INTL INC 1294 - Masoneilan - Dresser Flow Control 55947 - FISHER CONTROLS INTL INC 55947 - FISHER CONTROLS INTL INC 1294 - Masoneilan - Dresser Flow Control 55947 - FISHER CONTROLS INTL INC 1311 2241 - Drager 2241 - Drager 2241 - Drager 101956 - FOXBORO COMPANY	7811 7811 33-36424 7811	\$394454-1-2 176152 176151 \$394454-1-1 176153 807771 Mfgr is Overhead Door Corp. ERXA0072 ERXA0074 ERXM0038 96200957	Nick Pezzino 9/10/2013 9:11 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 9:35 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:03 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:03 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:21 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:22 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/16/2013 10:04 1 - No corrective maintenance required Nick Pezzino 9/16/2013 9:46 1 - No corrective maintenance required Nick Pezzino 9/16/2013 11:11 1 - No corrective maintenance required Nick Pezzino 9/16/2013 11:11 1 - No corrective maintenance required Nick Pezzino 9/16/2013 11:11 1 - No corrective maintenance required Nick Pezzino 9/16/2013 11:11 1 - No corrective maintenance required Nick Pezzino 9/10/2013 9:42 2 - Few minor deficiencies and minimal corrective maintenance required	 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 1 - Asset appears to be in very good condition, with more than 80% of life remaining 3 - Asset appears to be in average condition, with approx. 50% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 	1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise	 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs. 2 - Components available locally. Component age < 10 yrs. 2 - Components available locally. Component age < 5 yrs. 4 - Components available special order only. Component age < 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 3 - Components available locally. Component age < 10 yrs. 	 3 - Within expected reason 1 - None 3 - Within expected reason 		 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 3 - Minor leakage is likely. Maintenance works will restore seal. Coating loss /deterioration. Exposing rusting steel. Operation becoming difficult. 1 - No observable deterioration. Valve sealing in good condition. Coating as new. Operates as new. 3 - Minor leakage is likely. Maintenance works will restore seal. Coating loss /deterioration. Exposing rusting steel. Operation becoming difficult. 	2 - None 3 - Minor 3 - Minor 3 - Minor 2 - None 3 - Minor 2 - None 3 - Minor	2 - None	1 - Yes 5 - No 1 - Yes 5 - No 5 - No 1 - Yes
Unclassified 6770 Brew: North Gallery - Air Flow Meters Unclassified 6770 Brew: North Gallery - Air Flow Meters Unclassified 6770 Brew: North Gallery - Air Flow Meters Unclassified 6770 Brew: North Gallery - Air Flow Meters Unclassified 6772 Brew: South Gallery - Air Flow Meters Unclassified 6772 Brew: South Gallery - Air Flow Meters Unclassified 6772 Brew: South Gallery - Air Flow Meters Unclassified 6772 Brew: South Gallery - Air Flow Meters Unclassified 6772 Brew: South Gallery - Air Flow Meters	spare brew Air Flow Meter 7247 Brew: N. Reaeration Air Flow Meter 519-1 7248 Brew: N. Digester Air Flow Meter 523-1 7249 Brew: Grit Chamber Air Flow Meter 553-1 6316 Brew: S. Digester Air Flow Meter 523-2 7250 Brew: S. MLSS Air Flow Meter 518-2 7251 Brew: S. Reaeration Air Flow Meter 519-2 spare brew Reaeration Air Flow Meter	spare brew Air Flow Meter Brew: N. Reaeration Air Flow Meter 519-1 Brew: N. Digester Air Flow Meter 523-1 Brew: Grit Chamber Air Flow Meter 553-1 Brew: S. Digester Air Flow Meter 523-2 Brew: S. MLSS Air Flow Meter 518-2 Brew: S. Reaeration Air Flow Meter 519-2 spare brew Reaeration Air Flow Meter	101956 - FOXBORO COMPANY	IDP10-120B21F-M1H IDP10-120B21F-M1H IDP10-A22B21F-M1 IDP10-I20B21F-M1H IDP10-I20B21F-M1H IDP10-I20B21F-M1H	Asset not identifiable 96200950 96200951 99021725 96200953 96200954 96200956	Nick Pezzino Nick Pezzino 9/10/2013 9:13 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 9:45 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 9:47 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:24 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:05 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 10:05 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino	2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining		 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 	 3 - Within expected reason 			3 - Minor	2 - None	1 - Yes 1 - Yes 1 - Yes 1 - Yes 1 - Yes
Unclassified 7101 Brew: East Gallery - Flow Meters Unclassified 7101 Brew: East Gallery - Flow Meters Unclassified 8373 Brew: Efflent Sample Shed - Influent Sampler - IC# 619 Unclassified 8626 Brew: RSPS - Basement - Mtrr Rm - Effluent Water System Climber Screen 1929 Brew: RSPS - Basement - Scrn Rake Rm Centrifugal_pump 1970 Brew: North Gallery - Return Sludge Pump 1 Slide_gate 1213 Brew: Chlorine Contact Tank Slide_gate 1213 Brew: Chlorine Contact Tank	7253 Brew: East Gallery - Flow Meter - 506-1 - Raw To Mixed Liq. 1 7254 Brew: East Gallery - Flow Meter - 506-2 - Raw To Mixed Liq. 2 Brew: Efflent Sample Shed - Influent Sampler - IC#619 8661 Brew: RSPS - Bment - Mtr Rm - Eff. Water System 4783 Brew: RSPS - Basement - Scrn Rake Rm - Climber Screen 13385 Brew: North Gallery - Return Sludge Pump 1 Brew: Chlorine Contact Tank - Slide Gate 1 (North) Brew: Chlorine Contact Tank - Slide Gate 2 (South)	Brew: East Gallery - Flow Meter - 506-1 - Raw To M Brew: East Gallery - Flow Meter - 506-2 - Raw To M Brew: Efflent Sample Shed - Influent Sampler - IC# 619 Brew: RSPS - Bment - Mtr Rm - Eff. Water System RSPS - Climber Screen Brew: North Gallery - Return Sludge Pump 1 Brew: Chlorine Contact Tank - Slide Gate 1 (North) Brew: Chlorine Contact Tank - Slide Gate 2 (South)	55947 - FISHER CONTROLS INTL INC 55947 - FISHER CONTROLS INTL INC 10850 - Teledyne ISCO INC Infilco Degremont Inc. 113357 - GOULDS PUMPS 123448 - RODNEY HUNT COMPANY	DX4311ADE18P1B2BAA2132X3AABC1 DX4311ADE18P1B2BAA2132X3AABC1 4700 CS 1471 CW 28392-2		Nick Pezzino 9/10/2013 9:05 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/10/2013 9:02 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/11/2013 11:14 2 - Few minor deficiencies and minimal corrective maintenance required Nick Pezzino 9/11/2013 10:31 1 - No corrective maintenance required Nick Pezzino 9/10/2013 9:53 1 - No corrective maintenance required Nick Pezzino 9/16/2013 11:33 1 - No corrective maintenance required Nick Pezzino 9/16/2013 11:33 1 - No corrective maintenance required	 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 1 - Asset appears to be in very good condition, with more than 80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 2 - Asset appears to be in good condition, with 60-80% of life remaining 	 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 1 - Surface appears as new with little deterioration. Shaft & supports sound, no deterioration. No unusual vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 2 - Some minor surface wear, minor shaft/ support, Minor vibration, oscillation, temp, or noise 	 2 - Components available locally. Component age < 5 yrs. 2 - Components available locally. Component age < 5 yrs. 3 - Components available locally. Component age < 10 yrs. 3 - Components available locally. Component age < 10 yrs. 1 - Components available locally. Component age < 2 yrs. 4 - Components available special order only. Component age < 15 yrs. 4 - Components available special order only. Component age < 15 yrs. 	 3 - Within expected reason 3 - Within expected reason 3 - Within expected reason 1 - None 1 - None 	1 - Appears as new. Shaft & supports sound - no shaft distortion or deterioration evident. No shaft distortion, vibration, or unusual noises detected.	 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 2 - Some minor wear or corrosion on sealing elements. Coating showing signs of aging. Operates well. 	2 - None 2 - None 3 - Minor 2 - None 2 - None 2 - None	2 - None	1 - Yes 1 - Yes 1 - Yes 1 - Yes 5 - No

COND-OTH1: Other Observations Including Coating Failure, Rust, Corrosion, Insulation Defects, or Functional Issues (General Comments) 5 - No 5 - No 5 - No	Inspector Notes	Photo 1 C6A02485-645B-4EEF-B549-7E2BADF6BA57.jpg 608441EF-6F1D-40F0-A895-56039E00CA94.jpg	Photo 2 37396DBE-FA80-4181-A79B-F4649620B7E2.jpg F44F6A3E-134C-40CC-8DEE-5AD6C7504912.jpg 1B0077CB-5F2E-4B5F-AB21-FE07F5759F43.jpg	Photo 3	Photo 4	Photo 5
5 - No 5 - No 5 - No		23AFCD2D-0492-4D3D-A82A-7BD3A47F1745.jpg A371BB65-60AF-4278-98B5-D9289B03936E.jpg A8DC178E-5F5C-49B7-B03F-FB06B6E9F8C4.jpg	84DB6756-639D-41AE-9367-3914BBA7878A.jpg			
5 - No 5 - No 5 - No		960C7229-2F7C-40D1-95E0-0594AE95640C.jpg C303B8EA-40CD-4116-BE46-3F4E48952945.jpg B32AE2C6-ACFF-4130-9740-647214B62BFD.jpg	EF394007-72DC-4004-BEFE-51B8535D71A6.jpg			
5 - No 1 - Yes 5 - No	Difficulty priming; cavitates under thick sludge conditions	630EE353-E787-43E2-881B-77E8A4FC5353.jpg E109350B-315D-4CAB-B880-503A1BCFB666.jpg 4E97951D-3CE0-4344-8629-C6A2959692C6.jpg	1814F3BC-072C-498D-816E-A87E8534DC86.jpg 7EFD860E-E163-450E-9B06-4077B41B4585.jpg 6A02FE02-1523-440E-B23C-7F97587A7CF6.jpg			
5 - No 5 - No		3045423C-7B77-4570-9A8E-FF809713C3DF.jpg 4710A6CE-5872-4149-B973-A9B31C6A2ACC.jpg	D33EB81C-06EE-4341-AE3C-C3A2A4C7D50C.jpg 2AFC65DF-0B97-4875-A9DC-26718AA50F35.jpg			
5 - No 5 - No		7194B1D0-0E34-44FA-A017-A15DFD95A6EE.jpg 78C385BA-686D-4B7A-AA26-03BAF456A7BD.jpg	A33E3F1D-C215-4E0F-97D5-F1182E5EA008.jpg AC5DD999-EFDE-4AEF-9D6D-B60052E9A3FA.jpg			
1 - Yes 5 - No	Difficulty priming; cavitates under thick sludge conditions	216C6B72-CFC8-4B07-9070-9256ED268FFE.jpg 34908AEB-7391-443D-89C3-A34B18D9A187.jpg	3F55D07F-218F-4270-97D3-4AE08AA1E415.jpg ABA90C5C-7F8D-41EE-8B8C-63E3350DA2B1.jpg			
5 - No 5 - No 5 - No		1D107D53-F4C4-4161-B336-6DBA0E704856.jpg 7C85188D-1065-4A85-B7F4-C5461E1526C1.jpg 477F895F-FC45-4EA0-A1D4-3C2BBEC1FE39.jpg	C8B6F2DA-F78A-47B4-98DF-97159061D97D.jpg 741340DD-647F-4EAB-B837-FC93AFAD19DA.jpg 239CA54A-1C7B-43A1-9262-0F1AB6B06E94.jpg			
5 - No 5 - No	Operates seasonally	7261DE86-83A1-4157-933E-6791B51D237A.jpg 37452E83-1FC8-48BF-8157-A34560AC0695.jpg	1DB0297B-8C33-4B8B-99C8-4C54D8F7DEFA.jpg 3E0E929B-9EE0-4557-962E-BD1EED021081.jpg			
5 - No 1 - Yes 5 - No	Rebuilt regularly Rebuilt regularly	BD45C390-A99A-4BA8-AD68-F71B4290C463.jpg 6D2637C0-9E70-4CE4-A7C1-B657137F8F66.jpg 2D2B5CB2-2B61-48FB-8A20-C8940E2D34E9.jpg	FC01C1B7-F39D-4FAA-A329-AE64E563B259.jpg 68988E82-0B39-44E9-AEE9-BF2B2861FC25.jpg 75277B1E-C52C-490D-B340-6C13F966A652.jpg			
5 - No 5 - No 5 - No		A1623974-D8AF-4762-B9C5-A1DC3ADCE558.jpg 2821E9CA-4729-4A84-9D87-736778CBC8C7.jpg BD1670E0-B7A2-4E64-9FAB-0757CB7EEFA7.jpg	AD72726E-64B1-4F00-A390-D3D837FF16CA.jpg BABD08C6-A87F-47F6-9640-6717A3E10F61.jpg 2987A7D2-252E-4D59-A68D-2FA868DFE486.jpg			
5 - No 5 - No 5 - No	Not in service	5A438740-8952-4971-99C3-125DB12DEB2B.jpg A828C2B9-9E90-4879-99C4-A78745B8F87D.jpg F0338CB4-1BC8-4F00-BF9A-4B311AA684AA.jpg	6A77EC84-1DC4-437B-9EA1-1ED3E7AE2E5A.jpg C7F8F7F1-10E4-4871-9061-5699D45B906A.jpg	D46DF2B4-D0D1-4B34-AD63-46A52FF9BEEF.jpg		
5 - No		F654AED9-0786-4190-991A-A55B1E78FF01.jpg	1F9B12A4-CF0C-4032-B235-17E02D9DB853.jpg			
5 - No 5 - No		AA4493FA-C8F2-41C3-AF3E-4631C6C35ACE.jpg 1F5EE4AC-A2EC-4766-B0CB-860E71300F95.jpg	EBFF2D92-2644-4D7A-8EC5-D4C073536948.jpg 7E7D9F81-AED9-4653-8AA8-5299C6B139F0.jpg			
5 - No 5 - No 5 - No		D5C5921E-B606-4C95-B431-FB4F948A0D56.jpg 41430CB6-AD5F-4A44-BEB4-3239638D8A42.jpg C33A7E15-E1A1-4F40-BDE4-DC9F486DB40B.jpg	3274FF4F-688F-4B14-9568-1D39D3F5FF04.jpg EFA90804-4135-4CA0-815E-4AF90695086B.jpg F69AE1A0-54C8-4416-AE76-CCE3F5BD958F.jpg			
5 - No 5 - No		4597AF15-9BDE-4635-A2A1-0378F9666966.jpg E730284F-F4E4-4D4D-99B8-21BC55D368B1.jpg	E2C78679-484E-47B9-9AFE-9C783EAF3C4F.jpg 16002850-1425-4CA9-A4B7-3A849719F257.jpg			
5 - No 5 - No		2C714CAB-13C9-401D-8792-448C3AD93DB2.jpg B862FEAE-9C52-469C-9E0E-EE042D1B9FD7.jpg	7477FBAB-1815-4094-BA1E-F09B8F31F1D1.jpg E8EC1A5B-409D-46E7-B9A9-52D15BECB910.jpg			
5 - No 1 - Yes	Spins like a top when operated; Passed 2013 inspection	8FB498D7-EA29-4EA9-80BF-952484B48F6E.jpg 4476F2BF-5899-4471-8800-81889CF1AA8D.jpg	81FAF699-DB50-4D3A-BBE5-A739FB03A110.jpg D7680361-5CD7-46F9-8C66-D623F7D27074.jpg			
5 - No 1 - Yes 5 - No	Rarely used; passes inspection Passed 2013 inspection	C1054B0A-9DF5-4C95-A0AA-E03117AA8976.jpg BF0C9BBD-2D4D-480D-AEDD-7C72637C9D88.jpg 7CED2B70-4954-4126-93C1-E5A68F2BD973.jpg				
5 - No 5 - No 5 - No	Occassional seal leaks Occassional seal leaks	C21DA753-8FCC-448E-A53D-875310A9E511.jpg BD690B75-1DE1-4682-AFB7-849195C1BF53.jpg 0DA5307C-286B-4F6C-BE0D-5A5B81D7A4FB.jpg	E5E07467-1241-44BF-8E5B-9FD59B3AFA8A.jpg 34B1E440-E3A4-4307-BA0D-B4D485421FD7.jpg CFE9753F-96C9-43CD-A503-3ACCC5D30159.jpg			
5 - No 1 - Yes	Arm bent	4A81A4FB-9B2B-499C-85E2-DCCBB8B2BA01.jpg 119C6BCE-0B5A-4D9E-B1CD-AF8CE49B06D4.jpg	09FD0FC3-88FB-44BC-972E-6C2AB68467D6.jpg ADBC68C8-FFC8-4F70-A4BD-446B4D42255F.jpg			
5 - No 5 - No		BA1FED18-45D6-4E71-9FC6-9D39FF44BCB3.jpg BA282AA2-B741-430D-8014-211BBB27B38D.jpg	74DB8C14-5899-44EE-9655-70BF8A21D4F6.jpg DD055652-9D43-4968-8AFE-A27EFBB063A0.jpg			
5 - No 5 - No 5 - No		C3495F81-0762-45E5-9DCD-04ABE5AFC6F8.jpg 4A2D37F9-A6E7-4F17-A75F-39C476DAFE4F.jpg B6E41674-95CD-4195-BA5C-A6673DE04C4F.jpg	A7315A39-5F24-4091-B1B7-A2A1A076D1A8.jpg 56B2F4D2-3327-4D29-AC2D-74E07157C979.jpg ACF9E046-E1F3-43C2-89E2-99DBEF580654.jpg			
5 - No 5 - No 5 - No		C50AD1F4-24E2-401B-A7CA-1AB32E1D620D.jpg 39E06B60-57F6-4C98-852F-92C52662449C.jpg ED18463B-FBBE-46E0-B370-2E0A667E366E.jpg				
5 - No 5 - No 1 - Yes	Submersible; not visible	3D11241B-F364-4816-9B12-45322D42526F.jpg 6A7DF8B5-54AE-4EEA-B0B4-B18185E50AEA.jpg F7939C21-93B7-4755-B113-33FAC45B3548.jpg				
1 - Yes 5 - No 5 - No	Submersible; not visible	4CC07535-22EA-4FA8-8C41-9A500BF5316E.jpg D912C092-D7ED-45B8-81E0-842085CF6850.jpg 40E5F9AB-0207-4763-94BC-A6DC8F7C8864.jpg	E1A263FF-06E7-4CB5-BCD0-CD7DD17A9F89.jpg			
1 - Yes 5 - No	No plate data	015E3619-E855-49C7-9981-2534395A631C.jpg B1317D0A-87EA-4D5C-B85E-BD354D7F9AEA.jpg				
5 - No 5 - No 5 - No		DFC01DBA-F1EF-4B71-9D0D-7A821908A094.jpg E4396E8B-FB13-4CA0-A539-275918709F8B.jpg 4661ABFC-95E6-411F-B318-E45870FADE8D.jpg	2331B0CA-747C-4D80-83B4-0A85578B21F4.jpg 3A6C7B51-1036-44A1-9FF6-14F21B88CAE6.jpg			
5 - No 5 - No 5 - No	No plate data Jammed when tested Operates seasonally	A97B3852-6E33-40E9-9B41-116DE4BBF9B5.jpg 00D2E0EB-2895-4FFE-A4D9-F943E1B1A7CB.jpg 99400C91-45E1-4A14-B795-8A67239095B3.jpg	EE56338E-C952-4289-8CB1-EF789EFECF6F.jpg			
5 - No 5 - No 5 - No		B78E5B58-1043-46C5-BD58-5E50C33327CF.jpg 9B079E94-BB4E-4D6B-BBA9-167BABEEBD85.jpg 1FADBE15-25C0-43AE-80AE-28FD781DD3B7.jpg	, 0			
5 - No 5 - No		7CE992F6-907D-4D2B-820C-144E068D68D0.jpg D5C4BEB8-5046-4BFE-88CA-06BFEEE2DF3F.jpg	38EAC758-A93A-49FD-B705-69F22810D916.jpg BCD2836F-8003-4143-B6CB-9941FAA2683F.jpg			
5 - No		F4509888-C6AA-4E04-A4A6-A3C68A060255.jpg	B1FFF930-39C4-42A2-AA56-42CFDBFF090D.jpg			
5 - No 5 - No 5 - No		6264DA17-1924-401E-A098-95460FB43109.jpg 2882C481-D59C-420B-BF22-A8F000B67409.jpg 9DF03F7E-9F4A-41FB-B54C-27A349B0E406.jpg	3A2157F7-CEB7-462E-97EF-5A686D13062A.jpg 8F3EBD02-8117-46A1-AA41-9F5D12169E76.jpg F3792A74-D64A-4116-9577-1021DBBA4D33.jpg			
5 - No 5 - No 5 - No		A1042491-2AFE-4679-9D20-DDCE0FC81F25.jpg 75864958-2A50-4211-A16A-B45E626D6D02.jpg 597685B1-34BF-4118-BB26-809BDB2EBC4F.jpg	5A089BF3-58F2-4304-9EF2-496847832F1D.jpg 33CB45E1-06C7-436C-B8FC-7879C00A5E0D.jpg 2134136B-4769-4232-ACF3-4C82FD77DE69.jpg			
5 - No 5 - No 5 - No		6573CE64-8C9A-484A-B6D5-46B35EB09227.jpg 77FAB7DE-DD48-47A4-BE60-E456849CFB49.jpg 1D80F127-C651-4CBA-B28C-6BDF7F92B2A3.jpg	8F995E7A-9CCA-477D-BE44-780E3C4592D2.jpg D75EC9AF-B384-4E97-AEF9-DA7E4C3F3021.jpg 732270E3-9796-4A6D-8C4B-FDB44656E241.jpg			
5 - No 5 - No	No longer in use	80E2D820-00A1-4312-9E19-389BDFA48037.jpg 6970F125-665A-4843-8E7B-C901CB5CB495.jpg	A62452D3-D6A2-4B58-A9C9-67785BE9629B.jpg			
5 - No 5 - No 5 - No	Occassionally seizes closed	D68789ED-0482-4825-B1A5-AFC9C65E7CE5.jpg 9DB5EB75-F8A3-4C21-B665-AAE1D4E5A0AD.jpg 6CE4C382-2294-4A48-BA6C-0A0771A3924A.jpg	F45F5E25-8E08-460F-B834-6B121E1982F5.jpg B6F47757-0058-429B-B2B0-F4A6C55828BB.jpg BF6D6FFF-1AF2-4689-96FB-9C63FFFA1171 ing			
5 - No 5 - No 5 - No		A127DB5F-A8B5-475D-B613-C142175A04EA.jpg BC6A6A9E-21F8-4030-9C55-A4B4BB7B4576.jpg AE8A93B3-8859-4E3C-9F1D-E5C8E7D2E17A.jpg	BE6D6FFF-1AF2-4689-96FB-9C63EFFA1171.jpg 42155683-F091-47BD-8501-CD4DDF9AA6D3.jpg ED192B05-E9E6-4D1D-A0FA-9D508616A954.jpg			
5 - NO 5 - NO 5 - NO 5 - NO	Replaced < 5 years ago	DA757F02-35B6-4F64-AB67-A0597621EA77.jpg CA66B1A7-22C1-4970-A342-E2D1F5B0AF85.jpg 6B6EF018-3420-449F-8A51-D584FAFF0004.jpg	CED54647-F231-4BFF-A869-60F948554D8C.jpg			
5 - No 5 - No		BBFD66FC-2B52-4FA9-86FA-F5EAECFAA961.jpg 71CEC67A-676C-4D79-9C4A-3FBF6904A0BF.jpg	U3EE3E3U-VU34 4017 V16E E40000033443.	3EV10EBU-V1VE VEOO DOOE EESSVCOODED4 .		
5 - No 5 - No		CC50B8C9-4701-4569-ACEF-2BF6DBDC10C4.jpg 6E807D1F-E6B3-4436-AC72-83C9D315761C.jpg	03FF3E20-A034-4817-A165-F48099823A17.jpg 61AFA1E2-2F21-42FD-AE8B-3ED9CBE3F28B.jpg	3F419FB0-4146-4F88-B88E-EF33A680D5D1.jpg 96CDA6B2-4952-46EB-B4EA-6E5A17BC9E7D.jpg		
5 - No 5 - No 5 - No		494BBC08-FF50-4F49-AA4B-CE64A606ACC0.jpg 1B443B60-0FDA-44BA-BDCD-58A3D74B63A4.jpg D00CD1C2-AA75-417A-A53D-31AD3148C634.jpg		031B4D29-A28A-444D-9C6B-7D98B49F42A5.jpg 8AFD826A-9F67-456D-8716-714E831AA426.jpg 68A02FAA-6158-4164-8F9D-AC76FAB849B3.jpg	DDF254E0-4073-4BB3-820A-854D2633AA1A.jpg	
5 - No 5 - No		E5FF10DF-598E-4810-815B-6BFC615B801E.jpg CD31297D-E002-499D-9CF3-FCED19F07725.jpg	FB9A5903-DFCA-4A9B-BE85-BA1ABD52C3C1.jpg 9AE4D53D-C272-4077-B389-CBEAFB6429DD.jpg	645F8541-4331-4B75-AAD2-16A3DEFC75A8.jpg 3D0B2342-56AC-4478-9E14-B62488F43FAE.jpg		
5 - No 5 - No 5 - No		077CE3A3-DB3F-49D0-B274-063D74AD7284.jpg 6CF53CF9-2452-4158-BC0F-2491311D7445.jpg 6CDE5EBE-B246-4493-A69D-CE34CE367182.jpg	76D368E7-FDC4-4F8F-8D73-978FB603CF20.jpg B2AB5ED2-CF88-4C09-AA2F-B5D3CC9BAC05.jpg			
5 - No 5 - No		983DD780-7464-4CC0-8E31-3492D9FDB8AC.jpg 2CC32471-AC60-4561-A721-F670C3EE9D34.jpg	2EB69982-0B1B-4059-BC61-3037675E40F5.jpg	AD39517D-D43E-4C7E-A61A-C71BE988DE9F.jpg	C6C8E7D4-CED7-4D14-8830-16D7CAD366F9.jpg	3EBF4DCD-7C14-46D0-808A-883A3C86ED2F.jpg
5 - No 5 - No 5 - No		7A397B5E-5C5E-4A05-9F34-ED335E335C96.jpg 50B92555-6A84-4304-8F24-649163FFDF35.jpg 1D9C823A-B085-46DD-8226-2CE65C47803C.jpg	1E5E3F1A-368C-41E3-8BF2-9BE4547B349D.jpg EBE30F6C-9B30-4E64-B7FE-9C27FF9D6D2D.jpg			

Equipment Classification	Loc. # Location Description	Asset # Asset Description	Also Known As	Manufacturer	Model # Serial Asset Notes	Date/Time COND-GEN: General Condition	COND-RL: Visual Asset Condition and Remaining Useful Life	COND-ROOF: Roof Systems	COND-STRT: Structures / Tanks	COND-HAZ: Health and Safety Ha	ard COND-OTH1: Other observations (1) including condition of doors, windows, handrails, gratings, concrete, roof, safety, etc. (General Comments)	COND-OTH2: Other observations (2) including condition of doors, windows, handrails, gratings, concrete, roof, safety, etc. (General Comments)	COND-OTH3: Other observa
Unclassified	1207 Brew: Chemical Building	Brew: Chemical Building			Overall the building is in good conditon, there are no structural deficiencies. The four knockout exterior wall panels are present (10 feet wide x 8 feet high) for future storage tank placement and removals. The motor control center is in need or replacement. The service sink, eyewash and elec water heater should be on domestic water system. Robert McC		1 - Asset appears to be in very good condition, with more than 80% of life remaining	4 - Significant deterioration <50% of asset value required to restore asset to near new condition. Large amount of leakage occurs.		5 - No	Quarry tile floor at second floor landing should be patched at curb removals. Interior guard railings are in good condition.	Minor masonry repairs or repointing is required on exterior brick. Exterior perimeter sealant is in fair condition. Refinish concrete floors	Exterior stair pipe railings ar
Unclassified	1208 Brew: Control Building	Brew: Control Building			The rooftop A/C unit without heat should br replaced with a new heating and cooling unit. Exhaust should added to Janitors closet. Elec. switches and recept. are in need of replacement. The lightning protection system is in poor condition, missing aerials and connection Robert McC	ormick 10/15/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	2 - Asset appears to be in good condition, with 60-80% of life remaining	4 - Significant deterioration <50% of asset value required to restore asset to near new condition. Large amount of leakage occurs.		5 - No	Guard and handrails are in good condition. Minor settling and step cracks in cmu walls is not of serious concern	Minor masonry repair and repointing of exterior brick is required. Expansion joints are in need of replacement. Perimeter sealant at louvers should be replaced.	Wood breakroom casework
Unclassified	1209 Brew: Raw Sewage Pumping Station (RSPS)	Brew: RSPS Building			Cabinet heater in Storage room is in fair condition. The main exhaust duct fromthe lower level is deteriorated and in need of replacement. The eplosion proof incandescent lights should be Robert McC	ormick 10/15/2013 3 - Several minor deficiencies noted and corrective maintenance required.	2 - Asset appears to be in good condition, with 60-80% of life remaining	4 - Significant deterioration <50% of asset value required to restore asset to near new condition. Large amount of leakage occurs.		5 - No	Interior guards and handrails are in good condition.	Interior painted finishes are worn, refinishing floor walls and roof deck is imminent. Painted steel finishes are first level of protection against chlorine corrosive action.	Mortar repair below the thr
Unclassified	1212 Brew: General Site	Brew: General Site			See site lighting, surveillance, building access, and site access comments below	ormick 10/15/2013 12:00 3 - Several minor deficiencies noted and corrective maintenance required.	2 - Asset appears to be in good condition, with 60-80% of life remaining			5 - No	Entrance driveway has been recently re-paved and in excellent condition	Inter-building paging and speaker system is lacking. Adding a system should be considered.	Entrance drive swinging gate
Unclassified	1217 Brew: Thickener Building	Brew: Thickener Building			There are no structural, MEP deficiencies.	ormick 10/15/2013 14:00 2 - Few minor deficiencies and minimal corrective maintenance required	1 - Asset appears to be in very good condition, with more than 80% of life remaining	1 - Appears in excellent or as new condition with no visible signs of deterioration. No Leakage		5 - No	Guard railings, BUR roof and interior finishes are in good condition	Southwest exterior door is binding on the strike side of frame.	Overhead coiling door is no
Storage_tank	2009 Brew: Chem Bldg - 2nd Fl - Tank 1	2674 Brew: Chem Bldg - 2nd Fl - Tank 1	Ferrous Sulfate Tank 1 - Tank ID#215-1	1259 - Justin Tanks, L.L.C	Total Working Capacity 4450 gal	tt 12/18/2013 11:47 2 - Few minor deficiencies and minimal corrective maintenance required	4 - Asset appears to be in poor condition, with approx. 20-40% of life remaining						
Storage_tank	5368 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypochlorite Tank 1	3456 Brew: RSPS 1st Fl - Disinfection Rm - Hypochlorite Tank 1	Tank ID #509-1 Sodium Hypo Chemical Tank #1	1318 - Poly Processing Compar	Tom Blodge	tt 12/18/2013 10:39 2 - Few minor deficiencies and minimal corrective maintenance required	4 - Asset appears to be in poor condition, with approx. 20-40% of life remaining						
Storage_tank	5369 Brew: RSPS 1st Fl - Sodium HypoChlorite Storage Rm - Hypochlorite Tank 2	3457 Brew: RSPS 1st Fl - Disinfection Rm - Hypochlorite Tank 2	Tank ID #510-2, Chemical Tank 2	1318 - Poly Processing Compar		tt 12/18/2013 10:44 2 - Few minor deficiencies and minimal corrective maintenance required	4 - Asset appears to be in poor condition, with approx. 20-40% of life remaining						
Storage_tank	6246 Brew: Chem Bldg - 2nd Fl - Tank 2	2675 Brew: Chem Bldg - 2nd Fl - Tank 2	Ferrous Sulfate Tank 2 - Tank id #214-2	1259 - Justin Tanks, L.L.C	Working capacity 4450	tt 12/18/2013 11:49 2 - Few minor deficiencies and minimal corrective maintenance required	4 - Asset appears to be in poor condition, with approx. 20-40% of life remaining						
Unclassified	1210 Brew: Settling Tank 1 (North)	13586 Brew: Settling Tank 1 (North)			Bill Weir	8/26/2013 9:30 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1211 Brew: Settling Tank 2 (South)	13585 Brew: Settling Tank 2 (South)			Bill Weir	8/27/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Storage_tank	2001 Brew: Chem Bldg - 1st Fl - Poly Blend Unit 2 South	4792 Brew: Chem Bldg - 1st Fl - Polymer Tank	Brew: Chem Bldg - 1st Fl - Polymer Tank	144972 - US FILTER/STRANCO	M601-D1AB 19988 Asset likely approaching useful life expectancy	tt 12/18/2013 11:40 2 - Few minor deficiencies and minimal corrective maintenance required	4 - Asset appears to be in poor condition, with approx. 20-40% of life remaining						
Storage_tank	2010 Brew: Chem Bldg - 1st Fl - Poly Blend Polymer Pump 2	4794 Brew: Chem Bldg - 1st Fl - Polymer Tank	Brew: Chem Bldg - 1st Fl - Polymer Pump 2 South		A751-86PBA 10813572	tt 12/18/2013 11:37 3 - Several minor deficiencies noted and corrective maintenance required.	4 - Asset appears to be in poor condition, with approx. 20-40% of life remaining						
Unclassified	5397 Brew: Thickener Bldg - 101 Thickener Rm - Floc Tank	4845 Brew: Thickener Bldg - 101 Thickener Rm - Floc Tank	Brew: Thickener Bldg - 101 Thickener Rm - Floc Tank		Tom Blodge	tt 12/18/2013 11:19 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining						
Unclassified	1218 Brew: Mixed Liquor Tank 1 (North)	Brew: North Mixed Liquor Tank 1			Bill Weir	9/16/2013 21:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1219 Brew: Sludge Reaeration Tank 1 (North)	Brew: North Sludge Reaeration Tank 1			Bill Weir	9/16/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1220 Brew: Digester Tank 1 (North)	Brew: North Digester Tank 1			Bill Weir	9/16/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1221 Brew: Sludge Concentration Tanks 1 & 2	Brew: North and South Sludge Concentration Tanks 1 & 2			Bill Weir	9/30/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1223 Brew: Mixed Liquor Tank 2 (South)	Brew: South Mixed Liquor Tank 2			Bill Weir	9/23/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1224 Brew: Sludge Reaeration Tank 2 (South)	Brew: South Sludge Reaeration Tank 2			Bill Weir	9/23/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1225 Brew: Digester Tank 2 (South)	Brew: South Digester Tank 2			Bill Weir	9/23/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1222 Brew: North Gallery	Brew: North Pipe Gallery/Tunnel			Blodgett	9/9/2013 10:00 2 - Few minor deficiencies and minimal corrective maintenance required	2 - Asset appears to be in good condition, with 60-80% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1226 Brew: South Gallery	Brew: South Pipe Gallery/Tunnel			Blodgett	9/9/2013 10:00 2 - Few minor deficiencies and minimal corrective maintenance required	2 - Asset appears to be in good condition, with 60-80% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
	1232 Brew: East Gallery	Brew: East Pipe Gallery/Tunnel			Blodgett	9/9/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1245 Brew: West Gallery	Brew: West Pipe Gallery/Tunnel			Blodgett	9/9/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1213 Brew: Chlorine Contact Tank	Brew: Chlorine Contact Tank			Jim Thornto	n 8/28/2013 9:00 2 - Few minor deficiencies and minimal corrective maintenance required	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.	5 - No			
Unclassified	1216 Brew: Special Manhole 1	Brew: Influent Manhole/Chamber 1			Tom Blodge	tt 12/18/2013 11:13 3 - Several minor deficiencies noted and corrective maintenance required.	3 - Asset appears to be in average condition, with approx. 50% of life remaining		2 - Some minor cracking. Some minor movement or surface deterioration evident that has little impact on the structures strength or function.				

COND-OTH4: Other observations (4) including condition of doors, windows, handrails, gratings, concrete, roof, safety, etc. (General Comments)	COND-OTH5: Other observations (5) including condition of doors, windows, handrails, gratings, concrete, roof, safety, etc. (General Comments)	Inspector Notes	Photo 1	Photo 2	Photo 3
Original BUR roof is 42 years old and replacement is imminent. Roof access ladder should have reach-over guard rails and/or platform at top.	Coiling overhead doors on loading bay are in need of replacement. Exterior swinging doors and frames on building are rusting out and in need of replacement	·			
Original BUR roof is 42 years old and replacement is imminent. Original exterior swing doors and overhead sectional garage door are in need of replacement					
Original BUR roof is 42 years old and replacement is imminent. Exterior loading doors and original man doors are in need of replacement.	Tank area settling cracks at tank storage containment area should be monitored. The takn pads and containment area was not isolated from the floor slab or building foundation walls. The cracks have been filled to prevent water infiltration, no corrective action required at this time.				
Site lighting is mercury vapor lamps, appear to be original, and are old and inefficient. Perimeter poles are in good condition, light heads only should be replaced. Interior lighting heads and poles should be replaced with energy efficient lights.	Site buildings lack access/security system. Proximity reader system and surveillance camera system should be provided.				
		Asset likely approaching useful life	C1E7BAAE-9FF0-42E0-8DDF-40748EAD6401.jp	og	
			D9085751-021A-4007-9EBE-45061E08131D.	pg C77FE4BB-9B5D-4760-8184-F193A900157	0.jpg
			D8690DB8-EB6F-4563-A4D2-72841CCC292A.j	jpg EFC0E324-8341-4B70-A439-2459E6E93A6 <i>A</i>	\.jpg
		Asset likely approaching useful life	5D96C6B7-B810-4CB4-9D52-E8262901BD1A.	.jpg	
		Center feed wells slightly out of level, influent channel north side leak during high levels			
		Center feed well slightly out of level, influent channel leak on north wall at high level			
			54445658-4AA9-45B9-85D8-6ED2278C5738	jpg 55831E3A-6BCC-488B-87D3-66847B51F80	99.jpg
			0523A2E5-87FF-49DD-848D-82DD94C84AA0	.jpg 66CBE0CD-A4B0-4F2F-8CEC-199959CB192	1.jpg
			0694A8BC-4C32-4D89-B678-58881F52C7A3	jpg 09A8BA87-CC12-48D9-BCE6-812CA7FAC07	'1.jpg
		Aeration piping and supports noted as concern			
		Aeration piping and supports noted as concern			
		Air piping and supports noted as concern, north tank south wall 3 cracks with active leaking			

Some minor corrosion of gates, however holding well and not leaking

064DBB8C-884C-4C67-ADEC-1F5219EA6737.jpg 1C0747F4-1D00-4B52-ABB2-6C6A7F20F12F.jpg AADAEC0C-2FCB-4F26-ABE1-A6465C8CE127.jpg

Appendix B.1

Likelihood of Failure, Consequence of Failure, and Asset Risk Analysis

Likelihood of Failure					
Likelihood Category	1	2	4	7	10*
Physical Condition (50%)	•				
General Condition	Very good	Good	Fair	Poor	Very poor
Grade	Condition Grade 1	Condition Grade 2	Condition Grade 3	Condition Grade 4	Condition Grade 5
Maintenance Requirements	No corrective maintenance required	Few minor deficiencies and minimal corrective maintenance required	Several minor deficiencies noted and corrective maintenance required.	Major deficiencies and significant corrective maintenance or rehab required	Asset may be unserviceable, needs replacement or rehabilitation
Performance (30%)					
Capacity	Sufficient capacity to meet average and peak flow requirements		Sufficient capacity to meet current average capacity requirements and 100% during peak conditions	Able to meet current average capacity demands but not peak demands	Unable to meet current average capacity requirements
Level of Service	Appropriate utilization and function for LOS		Close to design LOS	Cannot consistently meet current or anticipated LOS	Cannot meet current or pending LOS
Financial Efficiency	Operationally efficient		Operational efficiency is poor, replacement with new equipment has ROI < 10 years	Excessive operational costs, replacement with new equipment has ROI < 5 years	Replacement with new equipment has ROI < 3 years
Inflow and Infiltration	Minimal I/I (<200 GPD/IDM)		Low I/I (>200 GPD/IDM)	Moderate I/I(<400 GPD/IDM)	Significant I/I (>400 GPD/IDM)
Flooding				Subject to flooding	
Obsolete Parts				Obsolete-cannot acquire part	
O&M Protocols (5%)					
	Complete, up-to-date, written/online, easily accessible	Complete, written/ online, up- to-date, but not easily accessible	Written/online but not complete or not up-to-date.	Written/online but outdated or location unknown.	No written or online protocols
History of Planned Maintenance	(15%) **				
	> 80% of total maintenance	≤80% to >60% of total maintenance	≤60% to >40% of total maintenance	≤40% to ≥30% of total maintenance	<30% of total maintenance

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^{*} If the Performance Score = 10 for an asset or asset system, it generally represents that the assets are already failing WEP, and the overall LoF score will be calculated as: CoF = (0.1 x Condition) + (0.8 x Performance) + (0.05 x O&M Protocols) + (0.05 x Maintenance History)

^{**} History of Planned Maintenance values are automatically determined by Maximo, based on a ratio of the Preventive Maintenance hours recorded on work orders against the asset as compared to all hours recorded on work orders written to the asset.

Consequence of Failure by Level of	Service Category			
LOS Category	Negligible = 1	Low = 4	Moderate = 7	Severe = 10
System Reliability (30%)				
Capacity	Adequate hydraulic and / or treatment capacity for all existing flows	Loss of hydraulic and / or treatment >0 <10% of existing capacity	Loss of hydraulic and / or treatment >10 <30% of existing capacity	Loss of hydraulic and / or treatment >30% existing capacity
SSO / Dry Weather CSO	No SSOs or Dry weather CSOs	SSO or DWCSO <2,000 gallons	SSO or DWCSO >2,000 < 100,000	SSO or DWCSO >100,000 gallons
Property damage	No property damage	<5 property damage claims	<25 property damage claims	>25 property damage claims
Odor	No odor complaints	Minimal odor complaints	Localized odor complaints	Widespread odor complaints
Process/System Impact	No loss of treatment or system effectiveness	No loss of treatment or system effectiveness but need to use redundant systems	Will result in loss of treatment or system effectiveness if action is not taken promptly	Will immediately result in significant loss of treatment or system effectiveness if action is not taken promptly
Regulatory Compliance (25%)				
Permit limits	No permit violations	Violation with no formal enforcement action	Formal enforcement action with potential fines or Consent Decree impact	Major enforcement action (including fines)
Consent Decree	Meet all Consent Decree requirements (e.g., ACJ green & gray)	Restore all impaired receiving waters to target classifications not on set schedule	Impaired receiving water bodies not improving	Adverse impact on Consent Decree
Water Body Use Attainability	Restore all impaired receiving waters to target classifications on set schedule			Receiving water bodies degradation
Public & Employee Health & Safety (25	%)			
Injuries	No potential injuries or adverse health effects	Potential minor injury with no loss of time; 1 of the following: confined space entry, 480V circuit, >20ft. in height	Potential minor injury with lost time; 2 or more of the following: confined space entry, 480V circuit, >20ft. in height; acidic/caustic chemicals	Potential major injury due to extreme unsafe condition; >480V; loss of ventilation in classified areas
Impact to Public Health	No infectious disease	No infectious disease	Remote possibility of infectious disease	Possible infectious disease
Fiscal Impacts (10%)				
Capital & O&M budgets User rate stability	Sufficient financial resources to meet capital and O&M budget (<\$5,000)	Needs to go to WEP Fiscal Officer (> \$5,000 and < approximately \$35,000)	< \$100,000 and > \$35,000	Needs to go to full County Ledge (> 100K)
Public Confidence (10%)				
Construction Impact (e.g., traffic, noise, etc.)	No adverse impact on community	Managed traffic disruption	Total closure to lower density areas or local streets	Total closure or significant traffic disruption (e.g., congested area, major arterial, major connectors)
Business Impact	No adverse impact on businesses	Limited adverse impact on businesses	Localized adverse impact on businesses	Disruption to customers providing critical services
Public perception	No adverse media attention	Loss of some support from the public; some concerns expressed publicly (1- day story)	Loss of support from the public; concerns expressed publicly (1-day story)	Widespread adverse impact on multiple businesses
Development Impact	Support smart growth			No public confidence in the Utility (consistent negative media)

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		System Regulatory Health & Fiscal Public					d of Failu	re (LOF)					
		System				-				Maint.	1		
Asset #	Asset Description	Reliability	Compliance	Safety	Impacts	Confidence	COF*	Condition	Performance	History	O&M Protocols	LOF**	Risk***
1543	Brew: East Gallery - Instr. Air Compressor 1						N/A						N/A
1544	Brew: East Gallery - Instr. Air Compressor 2	1					N/A						N/A
4792	Brew: Chem Bldg - 1st Fl - Polymer Tank						N/A						N/A
4794	Brew: Chem Bldg – 1st Fl – Polymer Tank						N/A						N/A
1937	Brew: North Gallery - OOS - Flow Meter - 520-1 - WAS						N/A						N/A
1944	Brew: North Gallery - Flow Meter - (OOS) 515-1 - Total RAS						N/A						N/A
3503	Brew: Chem Bldg - 1st Fl - Polymer Transfer Pump						N/A						N/A
4844	Brew: RSPS 1st Fl - Disinfection Rm - Influent Sample Pump						N/A						N/A
1691	Brew: Chem Bldg - 1st Fl - Mixer						N/A						N/A
1614	Brew: Control Bldg Generator Engine						N/A						N/A
2269	Brew: North Gallery Magnetic Flow Meter						N/A						N/A
2270	Brew: North Gallery - Magnetic Flow Meter						N/A						N/A
2271	Brew: North Gallery - Magnetic Flow Meter						N/A						N/A
2272	Brew: North Gallery Magnetic Flow Meter						N/A						N/A
2274	Brew: South Gallery - Magnetic Flow Meter						N/A						N/A
2275	Brew: South Gallery - Magnetic Flow Meter						N/A						N/A
3921	Brew: Thickener Bldg - Flocculator						N/A						N/A
1085	Brew: Control Bldg 1st Fl Blower Rm Air Filter Control Box						N/A						N/A
1086	Brew: Control Bldg - 1st Fl - Blower Rm - Air Filter Drive Mechanism						N/A						N/A
1549	Brew: RSPS - Effluent Water Supply Pump 1						N/A						N/A
1550	Brew: RSPS - Effluent Water Supply Pump 2						N/A						N/A
13381	Davis Rd. Eye Wash and Deluge/ Outside						N/A						N/A
13587	Brew: RSPS 1st Fl - Grit Rm - Clam Bucket						N/A						N/A
4094	Brew: Thickener Bldg - Poly Blend Unit 1 (Anionic) Mixer						N/A						N/A
4093	Brew: Thickener Bldg - 101 Thickener Rm - PolyBlend Unit 2 (Cationic) Mixer						N/A						N/A
4832	Brew: RSPS 1st Fl - MCC Rm - Water Cooler						N/A						N/A
4 785	Brew: RSPS - Basement - Mtr Rm - Sample Pump						N/A						N/A
7246	spare brew Air Flow Meter						N/A						N/A
7252	spare brew Reaeration Air Flow Meter						N/A						N/A
8661	Brew: RSPS - Bment - Mtr Rm - Eff. Water System						N/A						N/A
1084	Brew: Control Bldg - 1st Fl - Blower Rm - Air Filter						N/A						N/A
2750	Brew: Control Bldg - Blower Rm - Aeration Blower 3	10	10	10	4	7	9.1	10	10	4	4	9.4	85.5
4796	Brew: Control Bldg - 1st Fl - Control Rm - Main Distribution Switchgear	10	7	10	10	10	9.25	7	7	4	4	6.4	59.2
7887	Brew: PLC_C04 - INF. VFD	10	10	10	4	10	9.4	7	4	7	7	6.1	57.3
3456	Brew: RSPS 1st Fl - Disinfection Rm - Hypochlorite Tank 1	7	7	10	4	7	7.45	7	7	10	4	7.3	54.4
3457	Brew: RSPS 1st Fl - Disinfection Rm - Hypochlorite Tank 2	7	7	10	4	7	7.45	7	7	10	4	7.3	54.4
2748	Brew: Control Bldg - Blower Rm - Aeration Blower 1	10	10	10	4	7	9.1	7	4	4	4	5.5	50.1
10264	Brew: Control Bldg - 1st Fl - Control Rm - PLC_C06 - ATS	10	7	10	1	7	8.05	4	7	7	7	5.5	44.3
1778	Brew: RSPS 1st Fl - Grit Rm - Electric Hoist	7	1	7	1	1	4.3	4	10	7	2	8.85	38.1
2749	Brew: Control Bldg - Blower Rm - Aeration Blower 2	10	10	10	4	7	9.1	4	4	4	4	4	36.4
2751	Brew: Control Bldg - Blower Rm - Aeration Blower 4	10	10	10	4	7	9.1	4	4	4	4	4	36.4
7130	Brew: PLC_C01 - RSPS	10	4	4	4	4	5.8	7	4	7	7	6.1	35.4
10450	Brew: Control Bldg - 1st Fl - SCADA PLC Rm - PLC_C02 - UPS	10	4	7	4	1	6.25	4	7	7	7	5.5	34.4
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			Conse	quence of F	ailure (CO)F)			Likelihoo	d of Failu	re (LOF)		-
		System		Health &		Public				Maint.			
Asset #	Asset Description	Reliability	Compliance				COF*	Condition	Performance		O&M Protocols	LOF**	Risk***
1334	Brew: RSPS 1st Fl - Grit Rm - Clam Bucket	7	1	7	7	1	4.9	7	7	7	7	7	34.3
6438	Brew: Plant Annunciator System	4	4	7	4	1	4.45	7	7	10	7	7.45	33.2
1216	Special Manhole 1	10	7	7	7	10	8.2	4	4	4	4	4	32.8
4843	Brew: Settling Tank 2 (South) - Sludge Collector 2	7	7	4	7	1	5.65	7	4	4	4	5.5	31.1
4842	Brew: Settling Tank 1 (North) - Sludge Collector 1	7	7	4	7	1	5.65	7	4	4	4	5.5	31.1
4817	Brew: Control Bldg - 1st Fl - Control Rm - MCC 11 - Transformer 3	7	1	7	7	1	4.9	7	4	7	4	5.95	29.2
4815	Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Transformer 2A	7	1	7	7	1	4.9	7	4	7	4	5.95	29.2
4816	Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Transformer 2B	7	1	7	7	1	4.9	7	4	7	4	5.95	29.2
4814	Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 - Transformer 1	7	1	7	7	1	4.9	7	4	7	4	5.95	29.2
4820	Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 - Transformer 6	7	1	7	7	1	4.9	7	4	7	4	5.95	29.2
4819	Brew: Chem Bldg - 1st Fl - MCC 15 - Transformer 5	7	1	7	7	1	4.9	7	4	7	4	5.95	29.2
4818	Brew: RSPS 1st Fl - MCC Rm - MCC 21 - Transformer 4	7	1	7	7	1	4.9	7	4	7	4	5.95	29.2
1209	Raw Sewage Pumping Station (RSPS)	7	1	7	7	4	5.2	7	4	4	4	5.5	28.6
6318	Brew: PLC_C02 - Control Bldg	7	1	7	4	1	4.6	7	4	7	7	6.1	28.1
3015	Brew: Control Bldg - 1st Fl - Garage - Generator Engine	10	4	7	10	1	6.85	4	4	1	7	3.7	25.3
2674	Brew: Chem Bldg - 2nd Fl - Tank 1	4	1	7	4	1	3.7	7	4	10	10	6.7	24.8
2675	Brew: Chem Bldg - 2nd Fl - Tank 2	4	1	7	4	1	3.7	7	4	10	10	6.7	24.8
9847	Brew: Additional Electrical Equipment	7	1	7	7	1	4.9	4	4	10	7	5.05	24.7
1884	Brew: Settling Tank 2 (South) - Settling Tank 2 Drive	7	7	4	7	1	5.65	7	4		7	4.25	24.0
1883	Brew: Settling Tank 1 (North) - Settling Tank 1 Drive	7	7	4	7	1	5.65	7	4		7	4.25	24.0
1942	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Flow Meter 1	7	4	7	1	7	5.65	7	4	4	2	4.2	23.7
1424	Brew: Air Diffuser Hoist	1	1	7	1	1	2.5	10	10	7	2	9.45	23.6
4797	Brew: Control Bldg - 1st Fl - Control Rm - MCC 11	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4798	Brew: Control Bldg - 1st Fl - Control Rm - MCC 12	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4799	Brew: Control Bldg - 1st Fl - Control Rm - MCC 13	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4800	Brew: Chem Bldg - 1st Fl - MCC 15	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4803	Brew: RSPS 1st Fl - MCC Rm - MCC 23	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4801	Brew: RSPS 1st Fl - MCC Rm - MCC 21	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4812	Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - LPH-1	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4830	Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Panel D-2	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4810	Brew: Thickener Bldg - 102 Electrical Room - Panel L-6A	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4811	Brew: Thickener Bldg - 102 Electrical Room - Panel L-6B	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4813	Brew: Chem Bldg - 1st Fl - MCC 15 - LPH-2	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4802	Brew: RSPS 1st Fl - MCC Rm - MCC 22	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
4808	Brew: RSPS 1st Fl - MCC Rm - Panel L-4	7	1	7	7	1	4.9	4	4	7	4	4.45	21.8
15700	Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 1 - VFD	7	1	4	4	1	3.85	7	4	4	7	5.65	21.8
15701	Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 2 - VFD	7	1	4	4	1	3.85	7	4	4	7	5.65	21.8
15702	Brew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 3 - VFD	7	1	4	4	1	3.85	7	4	4	7	5.65	21.8
8352	Brew: North Gallery - RAS Pump 1 VFD	4	1	4	4	1	2.95	10	4	4	7	7.15	21.1
8353	Brew: North Gallery - RAS Pump 2 VFD	4	1	4	4	1	2.95	10	4	4	7	7.15	21.1
2781	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 1 Motor	4	4	7	4	7	5.05	4	4	4	7	4.15	21.0
2782	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 2 Motor	4	4	7	4	7	5.05	4	4	4	7	4.15	21.0
1207	Chemical Building	7	1	7	7	4	5.2	4	4	4	4	4	20.8

			Conse	quence of F	ailure (CO)F)			Likelihoo	d of Failu	re (LOF)		
		System Regulatory Health & Fiscal Public							<u> </u>	Maint.	I		
Asset #	Asset Description						COF*	Condition	Performance		O&M Protocols	LOF**	Risk***
1208	Control Building	7	1	7	7	4	5.2	4	4	4	4	4	20.8
Pending	Brew: Chlorine Contact Tank - Slide Gate 1 (North)	4	4	4	4	1	3.7	7	4	4	2	5.4	20.0
Pending	Brew: Chlorine Contact Tank - Slide Gate 2 (South)	4	4	4	4	1	3.7	7	4	4	2	5.4	20.0
3093	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 1	4	4	7	4	7	5.05	4	4	4	2	3.9	19.7
3094	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 2	4	4	7	4	7	5.05	4	4	4	2	3.9	19.7
2610	Brew: Control Bldg - Roof - Air Conditioner	7	1	1	4	1	3.1	7	7	2	4	6.1	18.9
4491	Brew: ML Tank 1 (North) - Fine Bubble Air Diffusers	4	7	4	1	7	4.75	4	4	4	2	3.9	18.5
15560	Brew: ML Tank 2 (North) - Fine Bubble Air Diffusers	4	7	4	1	7	4.75	4	4	4	2	3.9	18.5
7253	Brew: East Gallery - Flow Meter - 506-1 - Raw To Mixed Lig. 1	7	4	1	4	1	3.85	4	7	4	2	4.8	18.5
7254	Brew: East Gallery - Flow Meter - 506-2 - Raw To Mixed Lig. 2	7	4	1	4	1	3.85	4	7	4	2	4.8	18.5
4834	Brew: Control Bldg - 1st Fl - SCADA PLC Rm - Air Conditioner	7	1	1	4	1	3.1	7	7	2	1	5.95	18.4
1815	Brew: Settling Tank 2 (South) Drive Motor	7	7	4	1	1	5.05	2	4	7	7	3.6	18.2
1814	Brew: Settling Tank 1 (North) Drive Motor	7	7	4	1	1	5.05	2	4	7	7	3.6	18.2
3679	Brew: Settling Tank 1 (North) - Scum Pump 1	1	1	7	4	1	2.8	7	7	4	2	6.3	17.6
3680	Brew: Settling Tank 2 (South) - Scum Pump 2	1	1	7	4	1	2.8	7	7	4	2	6.3	17.6
4493	Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum	7	1	4	7	4	4.45	4	4	4	2	3.9	17.4
13586	Brew: Settling Tank 1 (North)	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
13585	Brew: Settling Tank 2 (South)	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1218	Mixed Liquor Tank 1 (North)	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1219	Sludge Reaeration Tank 1 (North)	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1220	Digester Tank 1 (North)	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1221	Sludge Concentration Tanks 1 & 2	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1223	Mixed Liquor Tank 2 (South)	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1224	Sludge Reaeration Tank 2 (South)	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1225	Digester Tank 2 (South)	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1222	North Gallery	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1226	South Gallery	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1232	East Gallery	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1245	West Gallery	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
1213	Chlorine Contact Tank	7	7	4	10	7	6.55	2	4	2	2	2.6	17.0
7889	Brew: Chemical Transfer Station Control Panel	4	1	7	4	1	3.7	4	4	7	7	4.6	17.0
1482	Brew: RSPS 1st Fl - Grit Rm - Manual Hoist	4	1	4	1	1	2.65	4	10	7	2	6.15	16.3
1943	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Flow Meter 2	4	4	7	1	1	4.15	4	4	4	2	3.9	16.2
2014	Brew: South Gallery - Control Valve 518-2	10	4	4	1	4	5.5	2	4	4	2	2.9	16.0
1810	Brew: Control Bldg - 1st Fl - Blower Rm - Blower 1	10	10	10	4	7	9.1	1	1	4	7	1.75	15.9
1811	Brew: Control Bldg - 1st Fl - Blower Rm - Blower 2	10	10	10	4	7	9.1	1	1	4	7	1.75	15.9
1812	Brew: Control Bldg - 1st Fl - Blower Rm - Blower 3	10	10	10	4	7	9.1	1	1	4	7	1.75	15.9
1813	Brew: Control Bldg - 1st Fl - Blower Rm - Blower 4	10	10	10	4	7	9.1	1	1	4	7	1.75	15.9
9845	Brew: Lighting Systems - Outside	4	1	7	1	1	3.4	4	4	7	7	4.6	15.6
9409	Brew: Thickener Bldg - Roof - Exhaust Fan 1 Motor	4	1	7	1	1	3.4	4	4	7	7	4.6	15.6
9407	Brew: Chem Bldg - Roof - Exhaust Fan 422-1 Motor	4	1	7	1	1	3.4	4	4	7	7	4.6	15.6
1777	Brew: RSPS 1st Fl - NaOCl Feed Rm - Hoist	1	1	4	1	1	1.75	4	10	7	2	8.85	15.5
2779	Brew: Ferrous Feed Pump 1 Motor	4	1	7	4	1	3.7	4	4	4	7	4.15	15.4

			Consec	quence of F	ailure (CO)F)			Likelihoo	d of Failu	re (LOF)		
		System		Health &		Public				Maint.	(201)		
Asset #	Asset Description	Reliability	Compliance				COF*	Condition	Performance		O&M Protocols	LOF**	Risk***
2780	Brew: Ferrous Feed Pump 2 Motor	4	1	7	4	1	3.7	4	4	4	7	4.15	15.4
1935	Brew: RSPS 1st Fl - NaOCl Flow Meter	4	4	7	1	1	4.15	4	4		2	3.7	15.4
2011	Brew: North Gallery - Control Valve 519-1	7	4	1	4	1	3.85	4	4	4	2	3.9	15.0
2012	Brew: North Gallery - Control Valve 520-1	7	4	1	4	1	3.85	4	4	4	2	3.9	15.0
2013	Brew: North Gallery - Control Valve 523-1	7	4	1	4	1	3.85	4	4	4	2	3.9	15.0
2015	Brew: South Gallery - Fisher Control Valve 519-2	7	4	1	4	1	3.85	4	4	4	2	3.9	15.0
2016	Brew: South Gallery - Fisher Control Valve 520-2	7	4	1	4	1	3.85	4	4	4	2	3.9	15.0
2017	Brew: South Gallery - Fisher Control Valve 523-2	7	4	1	4	1	3.85	4	4	4	2	3.9	15.0
2018	Brew: Control Bldg - Blower Rm - Blower 1 Fisher Control Valve	7	1	1	4	1	3.1	4	7	4	2	4.8	14.9
2019	Brew: Control Bldg - Blower Rm - Blower 1 Fisher Control Valve	7	1	1	4	1	3.1	4	7	4	2	4.8	14.9
2020	Brew: Control Bldg - Blower Rm - Blower 2 Fisher Control Valve	7	1	1	4	1	3.1	4	7	4	2	4.8	14.9
2021	Brew: Control Bldg - Blower Rm - Blower 2 Fisher Control Valve	7	1	1	4	1	3.1	4	7	4	2	4.8	14.9
2022	Brew: Control Bldg - Blower Rm - Blower 3 Fisher Control Valve	7	1	1	4	1	3.1	4	7	4	2	4.8	14.9
2023	Brew: Control Bldg - Blower Rm - Blower 3 Fisher Control Valve	7	1	1	4	1	3.1	4	7	4	2	4.8	14.9
2024	Brew: Control Bldg - Blower Rm - Blower 4 Fisher Control Valve	7	1	1	4	1	3.1	4	7	4	2	4.8	14.9
2025	Brew: Control Bldg - Blower Rm - Blower 4 Fisher Control Valve	7	1	1	4	1	3.1	4	7	4	2	4.8	14.9
5395	Brew: Digester Tank 2 (South) - Air Diffuser	4	1	4	4	7	3.55	4	4	4	4	4	14.2
9398	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-3 Motor	4	1	7	1	1	3.4	4	4	4	7	4.15	14.1
9394	Brew: RSPS - Roof - Exhaust Fan 413-1 Motor	4	1	7	1	1	3.4	4	4	4	7	4.15	14.1
9396	Brew: RSPS - Roof - Exhaust Fan 417-1 Motor	4	1	7	1	1	3.4	4	4	4	7	4.15	14.1
9406	Brew: RSPS - Roof - Supply Fan 420-6 Motor	4	1	7	1	1	3.4	4	4	4	7	4.15	14.1
9609	Brew: East Gallery - New Plant Air Skid - Compressor 1 Motor	7	4	4	1	4	4.6	2	4	4	4	3	13.8
9846	Brew: Lighting Systems - Inside	4	1	7	1	1	3.4	4	4	4	4	4	13.6
1949	Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 2 - North	4	1	7	1	1	3.4	4	4	4	4	4	13.6
7888	Brew: Screen Rake PLC_C05	4	1	1	4	1	2.2	7	4	7	7	6.1	13.4
ERXA0072	Drager Gas Meter - BREW	4	1	7	4	4	4	2	4	7	2	3.35	13.4
ERXA0074	Drager Gas Meter - BREW	4	1	7	4	4	4	2	4	7	2	3.35	13.4
ERXM0038	Drager Gas Meter - BREW	4	1	7	4	4	4	2	4	7	2	3.35	13.4
2010	Brew: North Gallery - Control Valve 518-1	7	4	4	1	4	4.6	2	4	4	2	2.9	13.3
3089	Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 1	4	1	7	4	1	3.7	4	4	2	2	3.6	13.3
3090	Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 2	4	1	7	4	1	3.7	4	4	2	2	3.6	13.3
1212	General Site	4	1	4	4	4	3.25	4	4	4	4	4	13.0
9401	Brew: RSPS - Roof - Exhaust Fan 420-1 Motor	1	1	7	4	1	2.8	4	4	7	7	4.6	12.9
9397	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-2 Motor	1	1	7	4	1	2.8	4	4	7	7	4.6	12.9
9389	Brew: Control Bldg - Roof - Exhaust Fan 406-5 Motor	1	1	7	4	1	2.8	4	4	7	7	4.6	12.9
9391	Brew: North Gallery - Hooded Rooftop Supply Fan 411-2 Motor	1	1	7	4	1	2.8	4	4	7	7	4.6	12.9
9402	Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-2 Motor	1	1	7	4	1	2.8	4	4	7	7	4.6	12.9
9403	Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-3 Motor	1	1	7	4	1	2.8	4	4	7	7	4.6	12.9
9404	Brew: RSPS - Roof - Supply Fan 420-4 Motor	1	1	7	4	1	2.8	4	4	7	7	4.6	12.9
9405	Brew: RSPS - Roof - Supply Fan 420-5 Motor	1	1	7	4	1	2.8	4	4	7	7	4.6	12.9
4783	Brew: RSPS - Basement - Scrn Rake Rm - Climber Screen	7	1	7	7	1	4.9	2	4	2	1	2.55	12.5
1016	Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 1	1	1	7	4	1	2.8	7	1	2	7	4.45	12.5
6134	Brew: PLC_C03 - Chem	4	1	1	4	1	2.2	7	4	4	7	5.65	12.4

			Conse	quence of F	ailure (CC	OF)			Likelihoo	d of Failu	re (LOF)		
		System	Regulatory	Health &		Public				Maint.			
Asset #	Asset Description	Reliability	Compliance	Safety	Impacts	Confidence	COF*	Condition	Performance	History	O&M Protocols	LOF**	Risk***
1556	Brew: Chem Bldg - 2nd Fl - Panel PLP	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
8354	Brew: South Gallery - RAS Pump 3 VFD	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
8355	Brew: South Gallery - RAS Pump 4 VFD	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
3577	Brew: North Gallery - Digested Sludge Pump 1 Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
4134	Brew: North Gallery - Return Activated Sludge Pump 1 Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
4132	Brew: South Gallery - Return Activated Sludge Pump 3 Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
15710	Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
15711	Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 1 Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
2986	Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Booster Pump Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
15712	Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 2 Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
4135	Brew: North Gallery - Return Activated Sludge Pump 2 Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
3578	Brew: North Gallery - Digested Sludge Pump 2 Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
4133	Brew: South Gallery - Return Activated Sludge Pump 4 Motor	4	1	4	4	1	2.95	4	4	4	7	4.15	12.2
2455	Brew: South Gallery - Tanker Loading Pump 1	4	1	1	4	1	2.2	4	10	2	4	5.5	12.1
2456	Brew: South Gallery - Tanker Loading Pump 2	4	1	1	4	1	2.2	4	10	2	4	5.5	12.1
1938	Brew: South Gallery - Flow Meter - 520-2 - WAS	7	1	1	4	1	3.1	4	4	4	2	3.9	12.1
7245	Brew: N. MLSS Air Flow Meter 518-1	7	4	1	4	4	4.15	2	4	4	2	2.9	12.0
7247	Brew: N. Reaeration Air Flow Meter 519-1	7	4	1	4	4	4.15	2	4	4	2	2.9	12.0
7248	Brew: N. Digester Air Flow Meter 523-1	7	4	1	4	4	4.15	2	4	4	2	2.9	12.0
6316	Brew: S. Digester Air Flow Meter 523-2	7	4	1	4	4	4.15	2	4	4	2	2.9	12.0
7250	Brew: S. MLSS Air Flow Meter 518-2	7	4	1	4	4	4.15	2	4	4	2	2.9	12.0
7251	Brew: S. Reaeration Air Flow Meter 519-2	7	4	1	4	4	4.15	2	4	4	2	2.9	12.0
3725	Brew: SR Tank 1 (North) - Slide Gate 1	4	1	1	4	1	2.2	7	4	4	2	5.4	11.9
3727	Brew: SR Tank 2 (South) - Slide Gate 3	4	1	1	4	1	2.2	7	4	4	2	5.4	11.9
3726	Brew: SR Tank 1 (North) - Slide Gate 2	4	1	1	4	1	2.2	7	4	4	2	5.4	11.9
3728	Brew: SR Tank 2 (South) - Slide Gate 4	4	1	1	4	1	2.2	7	4	4	2	5.4	11.9
4826	Brew: Control Bldg - 1st Fl - Blower Rm - Panel B	4	1	4	4	1	2.95	4	4	4	4	4	11.8
4789	Brew: Control Bldg - 1st Fl - Blower Rm - Surge Control Panel F	4	1	4	4	1	2.95	4	4	4	4	4	11.8
4561	Brew: RSPS - Basement - Mtr Rm - Pump 1 motor	7	4	7	4	1	5.35	1	4	1	7	2.2	11.8
4562	Brew: RSPS - Basement - Mtr Rm - Pump 2 motor	7	4	7	4	1	5.35	1	4	1	7	2.2	11.8
4563	Brew: RSPS - Basement - Mtr Rm - Pump 3 motor	7	4	7	4	1	5.35	1	4	1	7	2.2	11.8
1545	Brew: Chem Bldg - 1st Fl - Overhead Door 1	1	1	1	4	1	1.3	7	10	4	2	9	11.7
1546	Brew: Chem Bldg - 1st Fl - Overhead Door 2	1	1	1	4	1	1.3	7	10	4	2	9	11.7
3575	Brew: Settling Tank 1 (North) - Scum Pump 1 Motor	4	1	1	1	1	1.9	7	4	7	7	6.1	11.6
3576	Brew: Settling Tank 2 (South) - Scum Pump 2 Motor	4	1	1	1	1	1.9	7	4	7	7	6.1	11.6
2650	Brew: Control Bldg - Roof - Exhaust Fan 406-4	4	1	7	1	1	3.4	4	4	1	1	3.4	11.6
3430	Brew: RSPS - Roof - Exhaust Fan 420-1	4	1	7	1	1	3.4	4	4	1	1	3.4	11.6
2640	Brew: RSPS - Roof - Exhaust Fan 416-1	4	1	7	1	1	3.4	4	4	1	1	3.4	11.6
2661	Brew: Chem Bldg - Roof - Exhaust Fan 422-2	4	1	7	1	1	3.4	4	4	1	1	3.4	11.6
2651	Brew: Control Bldg - Roof - Exhaust Fan 406-5	4	1	7	1	1	3.4	4	4	1	1	3.4	11.6
2652	Brew: Control Bldg - Roof - Exhaust Fan 401-1	4	1	7	1	1	3.4	4	4	1	1	3.4	11.6
2655	Brew: Control Bldg - Roof - Exhaust Fan 405-3	4	1	7	1	1	3.4	4	4	1	1	3.4	11.6
9400	Brew: RSPS 1st Fl - Disinfection Rm - Wall Fan 419-2 Motor	1	1	7	1	1	2.5	4	4	7	7	4.6	11.5

			Conse	quence of F	ailure (CO	F)			Likelihoo	d of Failu	re (LOF)		
	T	System	Regulatory	Health &		Public				Maint.			
Asset #	Asset Description	Reliability	Compliance				COF*	Condition	Performance		O&M Protocols	LOF**	Risk***
7885	Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 1	1	1	7	1	1	2.5	4	4	7	7	4.6	11.5
7886	Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 2	1	1	7	1	1	2.5	4	4	7	7	4.6	11.5
9408	Brew: Chem Bldg - Roof - Exhaust Fan 422-2 Motor	1	1	7	1	1	2.5	4	4	7	7	4.6	11.5
1017	Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 2	1	1	7	1	1	2.5	4	4	7	7	4.6	11.5
13524	Brew: North Gallery - Flow Meter - 520-1 - WAS	7	1	1	4	1	3.1	4	4		2	3.7	11.5
3677	Brew: North Gallery - Digested Sludge Pump 1	4	1	1	4	1	2.2	7	4	2	2	5.1	11.2
3678	Brew: North Gallery - Digested Sludge Pump 2	4	1	1	4	1	2.2	7	4	2	2	5.1	11.2
10362	Brew: RSPS - Effluent Water Supply System	4	1	4	4	1	2.95	2	7	4	2	3.8	11.2
4784	Brew: RSPS - Basement - Scrn Rake Rm - Air Header 1	1	1	7	1	4	2.8	4	4	4	4	4	11.2
9386	Brew: Control Bldg - Roof - Supply Fan 406-2 Motor	4	1	4	1	1	2.65	4	4	4	7	4.15	11.0
9387	Brew: Control Bldg - Roof - Supply Fan 406-3 Motor	4	1	4	1	1	2.65	4	4	4	7	4.15	11.0
9382	Brew: Control Bldg - Roof - Exhaust Fan 401-1 Motor	4	1	4	1	1	2.65	4	4	4	7	4.15	11.0
9384	Brew: Control Bldg - Roof - Exhaust Fan 405-3 Motor	4	1	4	1	1	2.65	4	4	4	7	4.15	11.0
9393	Brew: South Gallery - Hooded Rooftop Supply Fan 412-2 Motor	4	1	4	1	1	2.65	4	4	4	7	4.15	11.0
9390	Brew: North Gallery - Exhaust Fan 411-1 Motor	4	1	4	1	1	2.65	4	4	4	7	4.15	11.0
9392	Brew: South Gallery - Exhaust Fan 412-1 Motor	4	1	4	1	1	2.65	4	4	4	7	4.15	11.0
2684	Brew: East Gallery - Inst. Air Dryer	7	1	4	4	1	3.85	4	1	1	7	2.8	10.8
4795	Brew: East Gallery - Plant Air Dryer	7	1	4	4	1	3.85	4	1	1	7	2.8	10.8
3572	Brew: Control Bldg - Roof - Exhaust Fan 403-1	1	1	7	1	1	2.5	4	7	1	1	4.3	10.8
2647	Brew: Control Bldg - Roof - Supply Fan 406-1	1	1	7	1	1	2.5	4	7	1	1	4.3	10.8
2653	Brew: Control Bldg - Roof - Ventilator 405-4	1	1	7	1	1	2.5	4	7	1	1	4.3	10.8
2648	Brew: Control Bldg - Roof - Supply Fan 406-2	1	1	7	1	1	2.5	4	7	1	1	4.3	10.8
2654	Brew: Control Bldg - Roof - Ventilator 405-5	1	1	7	1	1	2.5	4	7	1	1	4.3	10.8
2649	Brew: Control Bldg - Roof - Supply Fan 406-3	1	1	7	1	1	2.5	4	7	1	1	4.3	10.8
2050	Brew: Digester Tank 2 (South) - Thickener Feed Pump 1	4	1	7	4	1	3.7	2	4	4	2	2.9	10.7
2051	Brew: Digester Tank 2 (South) - Thickener Feed Pump 2	4	1	7	4	1	3.7	2	4	4	2	2.9	10.7
15715	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 1 VFD	4	4	4	1	1	3.4	4	2	1	7	3.1	10.5
15716	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 2 VFD	4	4	4	1	1	3.4	4	2	1	7	3.1	10.5
3957	Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-1	4	1	4	4	1	2.95	4	4	1	4	3.55	10.5
1164	Brew: Diffuser Hoist Motor	4	1	4	1	1	2.65	4	4		7	3.95	10.5
6699	Brew Telephone System	1	1	4	4	1	2.05	4	4	10	7	5.05	10.4
8084	ELS-Sampler, Refrigerated, MFG ISCO, MOD 6712, S/N 205D00418	4	4	1	4	1	2.95	2	4		2	3.5	10.3
13232	ELS-Sampler, Fiberglass Refrigerated, MFG Isco, MOD 4700R, S/N209C01170	4	4	1	4	1	2.95	2	4		2	3.5	10.3
3856	Brew: Thickener Bldg - 101 Thickener Rm - Flow Transmitter	4	1	1	1	1	1.9	7	4	1	7	5.2	9.9
2447	Brew: Chem Bldg - 2nd Fl - Duplex Basket Strainer 1	4	1	7	1	1	3.4	2	4	4	2	2.9	9.9
2445	Brew: RSPS 1st Fl - Disinfection Rm - Duplex Basket Strainer	4	1	7	1	1	3.4	2	4	4	2	2.9	9.9
2557	Brew: Chem Bldg - 2nd Fl - Duplex Basket Strainer 2	4	1	7	1	1	3.4	2	4	4	2	2.9	9.9
9383	Brew: Control Bldg - Roof - Exhaust Fan 403-1 Motor	4	1	4	1	1	2.65	4	4	1	7	3.7	9.8
9385	Brew: Control Bldg - Roof - Supply Fan 406-1 Motor	4	1	4	1	1	2.65	4	4	1	7	3.7	9.8
9388	Brew: Control Bldg - Roof - Exhaust Fan 406-4 Motor	4	1	4	1	1	2.65	4	4	1	7	3.7	9.8
3881	Brew: RSPS 1st Fl - Grit Rm - Heater 317-1	4	1	7	4	1	3.7	4	1	1	4	2.65	9.8
3882	Brew: RSPS 1st Fl - Grit Rm - Heater 317-2	4	1	7	4	1	3.7	4	1	1	4	2.65	9.8
3886	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-1	4	1	7	4	1	3.7	4	1	1	4	2.65	9.8

			Consec	quence of F	ailure (CO	F)			Likelihood of Failure (LOF)					
		System		Health &		Public				Maint.				
Asset #	Asset Description	Reliability	Compliance			Confidence	COF*	Condition	Performance		O&M Protocols	LOF**	Risk***	
3883	Brew: RSPS 1st Fl - Grit Rm - Heater 317-3	4	1	7	4	1	3.7	4	1	1	4	2.65	9.8	
3884	Brew: RSPS 1st Fl - Grit Rm - Heater 317-4	4	1	7	4	1	3.7	4	1	1	4	2.65	9.8	
3885	Brew: RSPS 1st Fl - Grit Rm - Heater 317-5	4	1	7	4	1	3.7	4	1	1	4	2.65	9.8	
3887	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-2	4	1	7	4	1	3.7	4	1	1	4	2.65	9.8	
3888	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-3	4	1	7	4	1	3.7	4	1	1	4	2.65	9.8	
3889	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-4	4	1	7	4	1	3.7	4	1	1	4	2.65	9.8	
9736	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Tank Level Meter 1	1	1	7	1	1	2.5	4	4	2	7	3.85	9.6	
9737	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Tank Level Meter 2	1	1	7	1	1	2.5	4	4	2	7	3.85	9.6	
1816	Brew: Thickener - Effluent Pump 1 Motor	7	1	1	4	1	3.1	1	4	7	7	3.1	9.6	
1817	Brew: Thickener - Effluent Pump 2 Motor	7	1	1	4	1	3.1	1	4	7	7	3.1	9.6	
1064	Brew: RSPS - Basement - Pump Rm - Raw Pump 1	7	4	7	7	1	5.65	2	1	2	2	1.7	9.6	
1065	Brew: RSPS - Basement - Pump Rm - Raw Pump 2	7	4	7	7	1	5.65	2	1	2	2	1.7	9.6	
1066	Brew: RSPS - Basement - Pump Rm - Raw Pump 3	7	4	7	7	1	5.65	2	1	2	2	1.7	9.6	
10276	Brew: Ferrous Feed Pump 1 Motor VFD	4	1	4	1	1	2.65	2	4	7	7	3.6	9.5	
10277	Brew: Ferrous Feed Pump 2 Motor VFD	4	1	4	1	1	2.65	2	4	7	7	3.6	9.5	
3961	Brew: East Gallery - Heater 309-2	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3968	Brew: South Gallery - Heater 312-4	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3954	Brew: Control Bldg - 1st Fl - Garage - Heater 305-2	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3955	Brew: Control Bldg - 1st Fl - Garage - Heater 305-3	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3963	Brew: North Gallery - Heater 311-3	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3964	Brew: North Gallery - Heater 311-4	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3966	Brew: South Gallery - Heater 312-2	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3967	Brew: South Gallery - Heater 312-3	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3953	Brew: Control Bldg - 1st Fl - Garage - Heater 305-1	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
4833	Brew: Control Bldg - 1st Fl - Garage - Heater 305-5	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3969	Brew: RSPS 1st Fl - MCC Rm - Heater 313-1	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
3970	Brew: RSPS 1st Fl - MCC Rm - Heater 313-2	4	1	4	1	1	2.65	4	4	1	4	3.55	9.4	
9395	Brew: RSPS - Roof - Exhaust Fan 416-1 Motor	1	1	7	1	1	2.5	4	4	1	7	3.7	9.3	
9399	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 419-1 Motor	1	1	7	1	1	2.5	4	4	1	7	3.7	9.3	
7249	Brew: Grit Chamber Air Flow Meter 553-1	7	1	1	4	1	3.1	2	4	4	2	2.9	9.0	
6697	Brew: Telephones	1	1	4	1	1	1.75	4	4	10	7	5.05	8.8	
6698	Brew: P. A. Speakers	1	1	4	1	1	1.75	4	4	10	7	5.05	8.8	
3729	Brew: ML Tank 1 (North) - Slide Gate	4	1	1	4	1	2.2	7	4		2	4	8.8	
3730	Brew: ML Tank 2 (South) - Slide Gate	4	1	1	4	1	2.2	7	4		2	4	8.8	
1945	Brew: North Gallery - Flow Meter - 517-1A - RAS Step A	4	1	1	4	1	2.2	4	4	4	2	3.9	8.6	
1946	Brew: North Gallery - Flow Meter - 517-1B - RAS Step B	4	1	1	4	1	2.2	4	4	4	2	3.9	8.6	
1947	Brew: North Gallery - Flow Meter - 517-1C - RAS Step C	4	1	1	4	1	2.2	4	4	4	2	3.9	8.6	
1939	Brew: South Gallery - Flow Meter - 515-2 - Total RAS	4	1	1	4	1	2.2	4	4	4	2	3.9	8.6	
1940	Brew: South Gallery - Flow Meter - 517-2A - RAS Step A	4	1	1	4	1	2.2	4	4	4	2	3.9	8.6	
1941	Brew: South Gallery - Flow Meter - 517-2B - RAS Step B	4	1	1	4	1	2.2	4	4	4	2	3.9	8.6	
2273	Brew: South Gallery - Flow Meter - 517-2C - RAS Step C	4	1	1	4	1	2.2	4	4	4	2	3.9	8.6	
15708	Brew: RSPS - Effluent Water Supply - Auto Strainer	4	1	1	4	1	2.2	4	4	4	2	3.9	8.6	
3974	Brew: RSPS 1st Fl - Storage Room - Heater 316-1	1	1	1	1	1	1	10	10	1	4	8.35	8.4	

			Conse	quence of F	ailure (CO)F)		Likelihood of Failure (LOF)					
		System		Health &		Public		Maint.					
Asset #	Asset Description	Reliability	Compliance				COF*	Condition	Performance		O&M Protocols	LOF**	Risk***
2446	Brew: RSPS 1st Fl - Disinfection Rm - Duplex Basket Strainer	4	1	7	1	1	3.4	2	4	1	2	2.45	8.3
15206	Brew: North Gallery - Flow Meter - 515-1 - Total RAS	4	1	1	4	1	2.2	4	4		2	3.7	8.1
4130	Brew: South Gallery - Tanker Loading Pump 1 Motor	4	1	4	4	1	2.95	1	4	4	7	2.65	7.8
4131	Brew: South Gallery - Tanker Loading Pump 2 Motor	4	1	4	4	1	2.95	1	4	4	7	2.65	7.8
3972	Brew: RSPS - Basement - Pump Rm - Heater 315-1	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3973	Brew: RSPS - Basement - Pump Rm - Heater 315-2	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3975	Brew: RSPS 1st Fl - Disinfection Rm - Heater 319-1	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3976	Brew: RSPS 1st Fl - Disinfection Rm - Heater 319-2	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3977	Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-1	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3978	Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-2	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3981	Brew: Chem Bldg - 1st Fl - Heater 321-1	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3985	Brew: Chem Bldg - 2nd Fl - Heater 322-1	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
4187	Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 1	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3959	Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-3	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3982	Brew: Chem Bldg - 1st Fl - Heater 321-2	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3983	Brew: Chem Bldg - 1st Fl - Heater 321-3	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3984	Brew: Chem Bldg - 1st Fl - Heater 321-4	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3986	Brew: Chem Bldg - 2nd Fl - Heater 322-2	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3987	Brew: Chem Bldg - 2nd Fl - Heater 322-3	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3988	Brew: Chem Bldg - 2nd Fl - Heater 322-4	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3979	Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-3	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
3980	Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-4	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
4188	Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 2	4	1	4	4	1	2.95	4	1	1	4	2.65	7.8
9608	Brew: East Gallery - New Plant Air Skid - Compressor 1	4	1	4	4	1	2.95	2	4	1	2	2.45	7.2
10481	HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 3710, S/N 205C01463 PART# 68-3710-008	4	4	1	1	1	2.65	2	4	1	7	2.7	7.2
9488	HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 3700, S/N 11029-118, PART# 68-3700-001	4	4	1	1	1	2.65	2	4	1	7	2.7	7.2
9490	HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 3710, S/N 202D00823 PART# 68-3710-008	4	4	1	1	1	2.65	2	4	1	7	2.7	7.2
4841	Brew: Control Bldg - 1st Fl - Garage - Fuel Transfer Pump	10	4	7	1	1	5.95	1	1	2	2	1.2	7.1
4189	Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 3	4	1	4	1	1	2.65	4	1	1	4	2.65	7.0
3989	Brew: RSPS - Basement - Mtr Rm - Heater 314-2	4	1	4	1	1	2.65	4	1	1	4	2.65	7.0
4109	Brew: Thickener Bldg - 102 Electrical Room - Unit Heater	4	1	4	1	1	2.65	4	1	1	4	2.65	7.0
3948	Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-3	4	1	4	1	1	2.65	4	1	1	4	2.65	7.0
3971	Brew: RSPS 1st Fl - MCC Rm - Heater 313-3	4	1	4	1	1	2.65	4	1	1	4	2.65	7.0
3990	Brew: RSPS - Basement - Mtr Rm - Heater 314-1	4	1	4	1	1	2.65	4	1	1	4	2.65	7.0
3960	Brew: East Gallery - Heater 309-1	4	1	4	1	1	2.65	4	1	1	4	2.65	7.0
3962	Brew: North Gallery - Heater 311-1	4	1	4	1	1	2.65	4	1	1	4	2.65	7.0
3965	Brew: South Gallery - Heater 312-1	4	1	4	1	1	2.65	4	1	1	4	2.65	7.0
1217	Thickener Building	4	1	4	4	4	3.25	2	1	4	4	2.1	6.8
15704	Brew: RSPS - Effluent Water Supply Pump 1 Motor	7	1	1	4	1	3.1	1	4	1	7	2.2	6.8
15705	Brew: RSPS - Effluent Water Supply Pump 2 Motor	7	1	1	4	1	3.1	1	4	1	7	2.2	6.8
1948	Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 1 - South	4	1	7	1	1	3.4	2	2	2	2	2	6.8
2637	Brew: Thickener Bldg - Roof - Exhaust Fan 1	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2660	Brew: Chem Bldg - Roof - Exhaust Fan 422-1	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6

			Conse	quence of F	ailure (CC)F)			Likelihoo	d of Failu	re (LOF)		
		System	Regulatory	Health &		Public		Maint.					
Asset #	Asset Description	Reliability	Compliance				COF*	Condition	Performance		O&M Protocols	LOF**	Risk***
3433	Brew: RSPS 1st Fl - Disinfection Rm - Wall Fan 419-2	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
3431	Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-2	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
3432	Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-3	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2641	Brew: RSPS - Roof - Exhaust Fan 413-1	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2643	Brew: RSPS - Roof - Exhaust Fan 417-1	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2638	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-2	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2642	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 419-1	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2656	Brew: North Gallery - Hooded Rooftop Supply Fan 411-2	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2657	Brew: South Gallery - Hooded Rooftop Supply Fan 412-2	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2639	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-3	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2644	Brew: RSPS - Roof - Supply Fan 420-4	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2645	Brew: RSPS - Roof - Supply Fan 420-5	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
2646	Brew: RSPS - Roof - Supply Fan 420-6	4	1	4	1	1	2.65	4	1	1	1	2.5	6.6
10275	Brew: WEP 1941- Weather Station	1	1	1	4	1	1.3	4	4	10	7	5.05	6.6
3958	Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-2	1	1	4	1	1	1.75	4	4	1	4	3.55	6.2
3951	Brew: Control Bldg - 1st Fl - Locker Rm - Heater 303-1	1	1	4	1	1	1.75	4	4	1	4	3.55	6.2
3952	Brew: Control Bldg - 1st Fl - Janitor Rm - Heater 304-1	1	1	4	1	1	1.75	4	4	1	4	3.55	6.2
3956	Brew: Control Bldg - 1st Fl - Lunch Rm - Heater 305-4	1	1	4	1	1	1.75	4	4	1	4	3.55	6.2
15713	Brew: Thickener Bldg - 102 Electrical Room - Rotary Drum Feed Pump 1 VFD	4	1	4	4	1	2.95	2	2	1	7	2.1	6.2
15714	Brew: Thickener Bldg - 102 Electrical Room - Rotary Drum Feed Pump 2 VFD	4	1	4	4	1	2.95	2	2	1	7	2.1	6.2
15706	Brew: RSPS - Effluent Water Supply Pump 1 Motor - VFD	4	1	4	4	1	2.95	2	2	1	7	2.1	6.2
15707	Brew: RSPS - Effluent Water Supply Pump 2 Motor - VFD	4	1	4	4	1	2.95	2	2	1	7	2.1	6.2
4099	Brew: Thickener Bldg - Poly Blend Unit 1 (Anionic)	4	1	1	4	1	2.2	2	4	2	2	2.6	5.7
4092	Brew: Thickener Bldg - 101 Thickener Rm - PolyBlend Unit 2 (Cationic)	4	1	1	4	1	2.2	2	4	2	2	2.6	5.7
2268	Brew: Total Air Flow Meter 526-1	4	1	1	4	1	2.2	2	4	2	2	2.6	5.7
9610	Brew: East Gallery - New Plant Air Skid - Compressor 1 - Controls	4	1	4	4	1	2.95	2	2		2	1.9	5.6
1357	Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Booster Pump	4	1	1	1	1	1.9	2	4	4	2	2.9	5.5
2658	Brew: North Gallery - Exhaust Fan 411-1	4	1	1	4	1	2.2	4	1	1	1	2.5	5.5
2659	Brew: South Gallery - Exhaust Fan 412-1	4	1	1	4	1	2.2	4	1	1	1	2.5	5.5
3922	Brew: Thickener - Flocculator Motor	1	1	4	1	1	1.75	1	4	7	7	3.1	5.4
1637	Brew: Digester Tank 1 (North) - Coarse Bubble Air Diffusers	1	1	4	1	1	1.75	2	4	4	2	2.9	5.1
9360	Brew: WEP 5577 - Operations	1	1	1	1	1	1	4	4	10	7	5.05	5.1
9361	Brew: WEP 5335 - BREW 1	1	1	1	1	1	1	4	4	10	7	5.05	5.1
15709	Brew: RSPS - Effluent Water Supply - Auto Strainer Motor	4	1	1	1	1	1.9	1	4	4	7	2.65	5.0
3947	Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-2	4	1	4	4	1	2.95	2	1	1	4	1.65	4.9
3949	Brew: Control Bldg - 1st Fl - Foyer - Heater 302-1	4	1	4	4	1	2.95	2	1	1	4	1.65	4.9
3853	Brew: Thickener Bldg - Tanker Loading Sta Flow Transmitter 2	1	1	1	1	1	1	7	1	4	7	4.75	4.8
4791	Brew: Control Bldg - 1st Fl - Garage - Overhead Door	1	1	1	4	1	1.3	4	4	2	2	3.6	4.7
3950	Brew: Control Bldg - 1st Fl - Foyer - Heater 302-2	4	1	4	1	1	2.65	2	1	1	4	1.65	4.4
3091	Brew: Thickener Bldg - Poly Diaphragm Pump 1	4	1	1	1	1	1.9	1	4	2	2	2.1	4.0
3092	Brew: Thickener Bldg - Poly Diaphragm Pump 2	4	1	1	1	1	1.9	1	4	2	2	2.1	4.0
1133	Brew: Control Bldg - Basement - Sump Pump	1	1	1	1	1	1	4	4	4	2	3.9	3.9
1134	Brew: East Gallery - Sump Pump	1	1	1	1	1	1	4	4	4	2	3.9	3.9

			Consec	quence of F	ailure (CO	F)		Likelihood of Failure (LOF)					
		System	Regulatory	Health &	Fiscal	Public				Maint.			
Asset #	Asset Description	Reliability	Compliance	Safety	Impacts	Confidence	COF*	Condition	Performance	History	O&M Protocols	LOF**	Risk***
1135	Brew: RSPS - Basement - Pump Rm - Sump Pump	1	1	1	1	1	1	4	4	4	2	3.9	3.9
8373	Brew: Effluent Sample Shed - Influent Sampler - IC# 619	1	1	1	4	1	1.3	2	4	4	2	2.9	3.8
4845	Brew: Thickener Bldg - 101 Thickener Rm - Floc Tank	4	1	1	4	1	2.2	2	1	2	2	1.7	3.7
3946	Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-1	1	1	1	1	1	1	4	4	1	4	3.55	3.6
4424	Brew: Control Bldg - Basement - Water Heater	1	1	4	1	1	1.75	2	1	1	10	1.95	3.4
1104	Brew: Chem Bldg - 1st Fl - Hot Water Heater	1	1	4	1	1	1.75	2	1	1	10	1.95	3.4
13385	Brew: North Gallery - Return Sludge Pump 1	4	1	1	4	1	2.2	1	1	2	2	1.2	2.6
13387	Brew: South Gallery - Return Sludge Pump 3	4	1	1	4	1	2.2	1	1	2	2	1.2	2.6
13388	Brew: North Gallery - Return Sludge Pump 2	4	1	1	4	1	2.2	1	1	2	2	1.2	2.6
13386	Brew: South Gallery - Return Sludge Pump 4	4	1	1	4	1	2.2	1	1	2	2	1.2	2.6
3370	Brew: Thickener Bldg - 101 Thickener Rm - Overhead Door 2	1	1	1	4	1	1.3	2	1	4	2	2	2.6
3369	Brew: Thickener Bldg - 101 Thickener Rm - Overhead Door 1	1	1	1	4	1	1.3	2	1	2	2	1.7	2.2
9165	Balance, MFG Mettler, MOD HB43, S/N 1125121078	1	1	1	1	1	1	2	1	1	7	1.8	1.8
9166	Balance, MFG Mettler, MOD HB43, S/N 1120200535	1	1	1	1	1	1	2	1	1	7	1.8	1.8
4793	Brew: Chem Bldg - 1st Fl - Water Cooler	1	1	1	1	1	1	2	1	2	2	1.7	1.7
9168	Brew: Chem Building - Balance MFG Intl-Lab	1	1	1	1	1	1	1	1	1	7	1.3	1.3
4835	Brew: Sludge Concentration Tank 1 (North) - Sluice Gate	1	1	1	1	1	1	1	1		2	1	1.0

COF, LOF, & Risk Key:

N/A = Dupilcate record, Asset not found in field, or not applicable to asset category

* COF = 30%(System Reliability)+25%(Regulatory Compliance)+25%(Health&Safety)+10%(Fiscal impacts)+10%(Public Confidence)

** LOF = 50%(Physical Condition)+30%(Performance)+15%(Maintenance History)+5%(O&M Protocols)

** LOF = 10%(Physical Condition)+80%(Performance)+5%(Maintenance History)+5%(O&M Protocols)

[For Performance Score = 10]

*** Risk = COF*LOF

COF Scoring Criteria:

1 = Negligible

4 = Low

7 = Moderate

10 = Severe

LOF Scoring Criteria:

1 = Very good condition, operation, performance, etc.

2 = Good

4 = Fair

7 = Poor

10 = Very poor

Appendix B.2

Asset Operational Performance Priority List



Asset #	Asset Description	Performance
2750	Brew: Control Bldg - Blower Rm - Aeration Blower 3	10
1778	Brew: RSPS 1st Fl - Grit Rm - Electric Hoist	10
1424	Brew: Air Diffuser Hoist	10
1482	Brew: RSPS 1st Fl - Grit Rm - Manual Hoist	10
1777	Brew: RSPS 1st Fl - NaOCl Feed Rm - Hoist	10
2455	Brew: South Gallery - Tanker Loading Pump 1	10
2456	Brew: South Gallery - Tanker Loading Pump 2	10
1545	Brew: Chem Bldg - 1st Fl - Overhead Door 1	10
1546	Brew: Chem Bldg - 1st Fl - Overhead Door 2	10
3974	Brew: RSPS 1st Fl - Storage Room - Heater 316-1	10
4796	Brew: Control Bldg - 1st Fl - Control Rm - Main Distribution Switchgear	7
3456	Brew: RSPS 1st Fl - Disinfection Rm - Hypochlorite Tank 1	7
3457	Brew: RSPS 1st FI - Disinfection Rm - Hypochlorite Tank 2	7
10264	Brew: Control Bldg - 1st Fl - Control Rm - PLC C06 - ATS	7
10450	Brew: Control Bldg - 1st Fl - SCADA PLC Rm - PLC_C02 - UPS	7
1334	Brew: RSPS 1st FI - Grit Rm - Clam Bucket	7
6438	Brew: Plant Annunciator System	7
2610	Brew: Control Bldg - Roof - Air Conditioner	7
7253		7
7254	Brew: East Gallery - Flow Meter - 506-1 - Raw To Mixed Liq. 1	
	Brew: East Gallery - Flow Meter - 506-2 - Raw To Mixed Liq. 2	7
4834	Brew: Control Bldg - 1st Fl - SCADA PLC Rm - Air Conditioner	7
3679	Brew: Settling Tank 1 (North) - Scum Pump 1	7
3680	Brew: Settling Tank 2 (South) - Scum Pump 2	7
2018	Brew: Control Bldg - Blower Rm - Blower 1 Fisher Control Valve	7
2019	Brew: Control Bldg - Blower Rm - Blower 1 Fisher Control Valve	7
2020	Brew: Control Bldg - Blower Rm - Blower 2 Fisher Control Valve	7
2021	Brew: Control Bldg - Blower Rm - Blower 2 Fisher Control Valve	7
2022	Brew: Control Bldg - Blower Rm - Blower 3 Fisher Control Valve	7
2023	Brew: Control Bldg - Blower Rm - Blower 3 Fisher Control Valve	7
2024	Brew: Control Bldg - Blower Rm - Blower 4 Fisher Control Valve	7
2025	Brew: Control Bldg - Blower Rm - Blower 4 Fisher Control Valve	7
10362	Brew: RSPS - Effluent Water Supply System	7
3572	Brew: Control Bldg - Roof - Exhaust Fan 403-1	7
2647	Brew: Control Bldg - Roof - Supply Fan 406-1	7
2653	Brew: Control Bldg - Roof - Ventilator 405-4	7
2648	Brew: Control Bldg - Roof - Supply Fan 406-2	7
2654	Brew: Control Bldg - Roof - Ventilator 405-5	7
2649	Brew: Control Bldg - Roof - Supply Fan 406-3	7
7887	Brew: PLC_C04 - INF. VFD	4
2748	Brew: Control Bldg - Blower Rm - Aeration Blower 1	4
2749	Brew: Control Bldg - Blower Rm - Aeration Blower 2	4
2751	Brew: Control Bldg - Blower Rm - Aeration Blower 4	4
7130	Brew: PLC_C01 - RSPS	4
1216	Special Manhole 1	4
4843	Brew: Settling Tank 2 (South) - Sludge Collector 2	4
4842	Brew: Settling Tank 1 (North) - Sludge Collector 1	4
4817	Brew: Control Bldg - 1st Fl - Control Rm - MCC 11 - Transformer 3	4
4815	Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Transformer 2A	4
4816	Brew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Transformer 2B	4
4814	Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 - Transformer 1	4
4820	Brew: Control Bldg - 1st Fl - Control Rm - MCC 13 - Transformer 6	4
4819	Brew: Chem Bldg - 1st Fl - MCC 15 - Transformer 5	4
4818	Brew: RSPS 1st Fl - MCC Rm - MCC 21 - Transformer 4	4
1209	Raw Sewage Pumping Station (RSPS)	4
6318	Brew: PLC_C02 - Control Bldg	4
3015	Brew: Control Bldg - 1st Fl - Garage - Generator Engine	4
2674	Brew: Chem Bldg - 2nd Fl - Tank 1	4
2675	Brew: Chem Bldg - 2nd Fl - Tank 2	4
9847	Brew: Additional Electrical Equipment	4
1884	Brew: Settling Tank 2 (South) - Settling Tank 2 Drive	4

1942 Bre 4797 Bre 4798 Bre 4799 Bre 4800 Bre 4801 Bre 4812 Bre 4810 Bre 4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Settling Tank 1 (North) - Settling Tank 1 Drive ew: RSPS 1st FI - Disinfection Rm - Hypo Flow Meter 1 ew: Control Bldg - 1st FI - Control Rm - MCC 11 ew: Control Bldg - 1st FI - Control Rm - MCC 12 ew: Control Bldg - 1st FI - Control Rm - MCC 13 ew: Control Bldg - 1st FI - MCC 15 ew: Chem Bldg - 1st FI - MCC 15 ew: RSPS 1st FI - MCC Rm - MCC 23 ew: RSPS 1st FI - MCC Rm - MCC 21 ew: Control Bldg - 1st FI - Control Rm - MCC 12 - LPH-1 ew: Control Bldg - 1st FI - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 102 Electrical Room - Panel L-6B ew: Chem Bldg - 1st FI - MCC 15 - LPH-2 ew: RSPS 1st FI - MCC Rm - MCC 22 ew: RSPS 1st FI - MCC Rm - MCC 22 ew: RSPS 1st FI - MCC Rm - Panel L-4 ew: RSPS 1st FI - MCC Rm - MCC 22 - Inf. Pump 1 - VFD	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
4797 Bre 4798 Bre 4799 Bre 4800 Bre 4803 Bre 4801 Bre 4812 Bre 4830 Bre 4810 Bre 4811 Bre 4802 Bre 15700 Bre 15701 Bre	ew: Control Bldg - 1st Fl - Control Rm - MCC 11 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 ew: Control Bldg - 1st Fl - Control Rm - MCC 13 ew: Chem Bldg - 1st Fl - MCC 15 ew: RSPS 1st Fl - MCC Rm - MCC 23 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - LPH-1 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - LPH-1 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4 4 4 4 4 4 4 4 4 4 4
4798 Bre 4799 Bre 4800 Bre 4801 Bre 4801 Bre 4812 Bre 4810 Bre 4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Control Bldg - 1st Fl - Control Rm - MCC 12 ew: Control Bldg - 1st Fl - Control Rm - MCC 13 ew: Chem Bldg - 1st Fl - MCC 15 ew: RSPS 1st Fl - MCC Rm - MCC 23 ew: RSPS 1st Fl - MCC Rm - MCC 21 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - LPH-1 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4 4 4 4 4 4 4 4 4
4799 Bre 4800 Bre 4803 Bre 4801 Bre 4812 Bre 4810 Bre 4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Control Bldg - 1st Fl - Control Rm - MCC 13 ew: Chem Bldg - 1st Fl - MCC 15 ew: RSPS 1st Fl - MCC Rm - MCC 23 ew: RSPS 1st Fl - MCC Rm - MCC 21 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - LPH-1 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4 4 4 4 4 4 4 4 4
4800 Bre 4803 Bre 4801 Bre 4812 Bre 4810 Bre 4810 Bre 4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Chem Bldg - 1st Fl - MCC 15 ew: RSPS 1st Fl - MCC Rm - MCC 23 ew: RSPS 1st Fl - MCC Rm - MCC 21 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - LPH-1 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 102 Electrical Room - Panel L-6B ew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4 4 4 4 4 4 4 4
4800 Bre 4803 Bre 4801 Bre 4812 Bre 4830 Bre 4810 Bre 4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Chem Bldg - 1st Fl - MCC 15 ew: RSPS 1st Fl - MCC Rm - MCC 23 ew: RSPS 1st Fl - MCC Rm - MCC 21 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - LPH-1 ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 102 Electrical Room - Panel L-6B ew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4 4 4 4 4 4 4
4803 Bre 4801 Bre 4812 Bre 4830 Bre 4810 Bre 4811 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: RSPS 1st FI - MCC Rm - MCC 23 ew: RSPS 1st FI - MCC Rm - MCC 21 ew: Control Bldg - 1st FI - Control Rm - MCC 12 - LPH-1 ew: Control Bldg - 1st FI - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 102 Electrical Room - Panel L-6B ew: Chem Bldg - 1st FI - MCC 15 - LPH-2 ew: RSPS 1st FI - MCC Rm - MCC 22 ew: RSPS 1st FI - MCC Rm - Panel L-4	4 4 4 4 4 4 4
4801 Bre 4812 Bre 4830 Bre 4810 Bre 4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: RSPS 1st FI - MCC Rm - MCC 21 ew: Control Bldg - 1st FI - Control Rm - MCC 12 - LPH-1 ew: Control Bldg - 1st FI - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 102 Electrical Room - Panel L-6B ew: Chem Bldg - 1st FI - MCC 15 - LPH-2 ew: RSPS 1st FI - MCC Rm - MCC 22 ew: RSPS 1st FI - MCC Rm - Panel L-4	4 4 4 4 4 4
4830 Bre 4810 Bre 4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 102 Electrical Room - Panel L-6B ew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4 4 4 4
4830 Bre 4810 Bre 4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Control Bldg - 1st Fl - Control Rm - MCC 12 - Panel D-2 ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 102 Electrical Room - Panel L-6B ew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4 4 4
4810 Bre 4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Thickener Bldg - 102 Electrical Room - Panel L-6A ew: Thickener Bldg - 102 Electrical Room - Panel L-6B ew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4 4
4811 Bre 4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Thickener Bldg - 102 Electrical Room - Panel L-6B ew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4
4813 Bre 4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: Chem Bldg - 1st Fl - MCC 15 - LPH-2 ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4 4
4802 Bre 4808 Bre 15700 Bre 15701 Bre	ew: RSPS 1st Fl - MCC Rm - MCC 22 ew: RSPS 1st Fl - MCC Rm - Panel L-4	4
4808 Bre 15700 Bre 15701 Bre	ew: RSPS 1st Fl - MCC Rm - Panel L-4	
15700 Bre 15701 Bre		4
15701 Bre	-w	4
	ew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 2 - VFD	4
	ew: RSPS 1st Fl - MCC Rm - MCC 22 - Inf. Pump 3 - VFD	4
	ew: North Gallery - RAS Pump 1 VFD	4
	ew: North Gallery - RAS Pump 2 VFD	4
	ew: RSPS 1st FI - Disinfection Rm - Hypo Pump 1 Motor	4
-	ew: RSPS 1st FI - Disinfection Rm - Hypo Pump 2 Motor	4
	emical Building	4
	ntrol Building	4
	ew: Chlorine Contact Tank - Slide Gate 1 (North)	4
	ew: Chlorine Contact Tank - Slide Gate 2 (South)	4
	ew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 1	4
	ew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 2	4
	ew: ML Tank 1 (North) - Fine Bubble Air Diffusers	4
-	ew: ML Tank 2 (North) - Fine Bubble Air Diffusers	4
-	ew: Settling Tank 2 (South) Drive Motor	4
	ew: Settling Tank 1 (North) Drive Motor	4
	ew: Thickener Bldg - 101 Thickener Rm - Rotary Drum	4
	ew: Settling Tank 1 (North)	4
	ew: Settling Tank 2 (South)	4
	xed Liquor Tank 1 (North)	4
-	dge Reaeration Tank 1 (North)	4
	gester Tank 1 (North)	4
	dge Concentration Tanks 1 & 2	4
	xed Liquor Tank 2 (South)	4
	dge Reaeration Tank 2 (South)	4
	rester Tank 2 (South)	4
	rth Gallery	4
	uth Gallery	4
	st Gallery	4
	est Gallery	4
	lorine Contact Tank	4
-	ew: Chemical Transfer Station Control Panel	4
-	ew: RSPS 1st FI - Disinfection Rm - Hypo Flow Meter 2	4
	ew: South Gallery - Control Valve 518-2	4
	ew: Lighting Systems - Outside	4
	ew: Thickener Bldg - Roof - Exhaust Fan 1 Motor	4
	ew: Chem Bldg - Roof - Exhaust Fan 422-1 Motor	4
	ew: Ferrous Feed Pump 1 Motor	4
-	ew: Ferrous Feed Pump 2 Motor	4
-	ew: RSPS 1st FI - NaOCI Flow Meter	4
	ew: North Gallery - Control Valve 519-1	4
	ew: North Gallery - Control Valve 519-1	4
	ew: North Gallery - Control Valve 520-1	4
	ew: North Gallery - Control Valve 523-1	4
	ew: South Gallery - Fisher Control Valve 520-2	4

Asset #	Asset Description	Performance
2017	Brew: South Gallery - Fisher Control Valve 523-2	4
5395	Brew: Digester Tank 2 (South) - Air Diffuser	4
9398	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-3 Motor	4
9394	Brew: RSPS - Roof - Exhaust Fan 413-1 Motor	4
9396	Brew: RSPS - Roof - Exhaust Fan 417-1 Motor	4
9406	Brew: RSPS - Roof - Supply Fan 420-6 Motor	4
9609	Brew: East Gallery - New Plant Air Skid - Compressor 1 Motor	4
9846	Brew: Lighting Systems - Inside	4
1949	Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 2 - North	4
7888	Brew: Screen Rake PLC_C05	4
	Drager Gas Meter - BREW	4
-	Drager Gas Meter - BREW	4
	Drager Gas Meter - BREW	4
2010	Brew: North Gallery - Control Valve 518-1	4
3089	Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 1	4
3090	Brew: Chem Bldg - 2nd Fl - Ferrous Feed Pump 2	4
1212	General Site	4
9401	Brew: RSPS - Roof - Exhaust Fan 420-1 Motor	4
9397	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-2 Motor	4
9389	Brew: Control Bldg - Roof - Exhaust Fan 406-5 Motor	4
9391	Brew: North Gallery - Hooded Rooftop Supply Fan 411-2 Motor	4
9402	Brew: RSPS 1st FI - NaOCI Feed Rm - Wall Fan 420-2 Motor	4
9403	Brew: RSPS 1st FI - NaOCI Feed Rm - Wall Fan 420-3 Motor	4
9404	Brew: RSPS - Roof - Supply Fan 420-4 Motor	4
9405	Brew: RSPS - Roof - Supply Fan 420-5 Motor	4
4783	Brew: RSPS - Basement - Scrn Rake Rm - Climber Screen	4
6134	Brew: PLC_C03 - Chem	4
1556	Brew: Chem Bldg - 2nd Fl - Panel PLP	4
8354	Brew: South Gallery - RAS Pump 3 VFD	4
8355	Brew: South Gallery - RAS Pump 4 VFD	4
3577	Brew: North Gallery - Digested Sludge Pump 1 Motor	4
4134	Brew: North Gallery - Return Activated Sludge Pump 1 Motor	4
4132	Brew: South Gallery - Return Activated Sludge Pump 3 Motor	4
15710	Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Motor	4
15711	Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 1 Motor	4
2986	Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Booster Pump Motor	4
15712	Brew: Digester Tank 2 (South) - Rotary Drum Feed Pump 2 Motor	4
4135	Brew: North Gallery - Return Activated Sludge Pump 2 Motor	4
3578	Brew: North Gallery - Digested Sludge Pump 2 Motor	4
4133	Brew: South Gallery - Return Activated Sludge Pump 4 Motor	
1938	Brew: South Gallery - Flow Meter - 520-2 - WAS	4
7245	Brew: N. MLSS Air Flow Meter 518-1	4
7247	Brew: N. Reaeration Air Flow Meter 519-1	4
7247	Brew: N. Digester Air Flow Meter 523-1	4
-	Brew: S. Digester Air Flow Meter 523-2	
6316		4
7250 7251	Brew: S. MLSS Air Flow Meter 518-2 Brew: S. Reaeration Air Flow Meter 519-2	4
		
3725	Brew: SR Tank 1 (North) - Slide Gate 1	4
3727	Brew: SR Tank 2 (South) - Slide Gate 3	4
3726	Brew: SR Tank 1 (North) - Slide Gate 2	4
3728	Brew: SR Tank 2 (South) - Slide Gate 4	4
4826	Brew: Control Bldg - 1st Fl - Blower Rm - Panel B	4
4789	Brew: Control Bldg - 1st Fl - Blower Rm - Surge Control Panel F	4
4561	Brew: RSPS - Basement - Mtr Rm - Pump 1 motor	4
4562	Brew: RSPS - Basement - Mtr Rm - Pump 2 motor	4
4563	Brew: RSPS - Basement - Mtr Rm - Pump 3 motor	4
3575	Brew: Settling Tank 1 (North) - Scum Pump 1 Motor	4
3576	Brew: Settling Tank 2 (South) - Scum Pump 2 Motor	4
2650	Brew: Control Bldg - Roof - Exhaust Fan 406-4	4
3430	Brew: RSPS - Roof - Exhaust Fan 420-1	4
2640	Brew: RSPS - Roof - Exhaust Fan 416-1	4

Asset #	Asset Description	Performance
2661	Brew: Chem Bldg - Roof - Exhaust Fan 422-2	4
2651	Brew: Control Bldg - Roof - Exhaust Fan 406-5	4
2652	Brew: Control Bldg - Roof - Exhaust Fan 401-1	4
2655	Brew: Control Bldg - Roof - Exhaust Fan 405-3	4
9400	Brew: RSPS 1st Fl - Disinfection Rm - Wall Fan 419-2 Motor	4
7885	Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 1	4
7886	Brew: Chem Bldg - 2nd Fl - Ferrous Level Meter 2	4
9408	Brew: Chem Bldg - Roof - Exhaust Fan 422-2 Motor	4
1017	Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 2	4
13524	Brew: North Gallery - Flow Meter - 520-1 - WAS	4
3677	Brew: North Gallery - Digested Sludge Pump 1	4
3678	Brew: North Gallery - Digested Sludge Pump 2	4
4784	Brew: RSPS - Basement - Scrn Rake Rm - Air Header 1	4
9386	Brew: Control Bldg - Roof - Supply Fan 406-2 Motor	4
9387	Brew: Control Bldg - Roof - Supply Fan 406-3 Motor	4
9382	Brew: Control Bldg - Roof - Exhaust Fan 401-1 Motor	4
9384	Brew: Control Bldg - Roof - Exhaust Fan 405-3 Motor	4
9393	Brew: South Gallery - Hooded Rooftop Supply Fan 412-2 Motor	4
9390	Brew: North Gallery - Exhaust Fan 411-1 Motor	4
9392	Brew: South Gallery - Exhaust Fan 412-1 Motor	4
2050	Brew: Digester Tank 2 (South) - Thickener Feed Pump 1	4
2051	Brew: Digester Tank 2 (South) - Thickener Feed Pump 2	4
3957	Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-1	4
1164	Brew: Diffuser Hoist Motor	4
6699	Brew Telephone System	4
8084	ELS-Sampler, Refrigerated, MFG ISCO, MOD 6712, S/N 205D00418	4
13232	ELS-Sampler, Fiberglass Refrigerated, MFG Isco, MOD 4700R, S/N209C01170	4
3856	Brew: Thickener Bldg - 101 Thickener Rm - Flow Transmitter	4
2447	Brew: Chem Bldg - 2nd Fl - Duplex Basket Strainer 1	4
2445	Brew: RSPS 1st FI - Disinfection Rm - Duplex Basket Strainer	4
2557	Brew: Chem Bldg - 2nd Fl - Duplex Basket Strainer 2	4
9383	Brew: Control Bldg - Roof - Exhaust Fan 403-1 Motor	4
9385	Brew: Control Bldg - Roof - Supply Fan 406-1 Motor	4
9388	Brew: Control Bldg - Roof - Exhaust Fan 406-4 Motor	4
9736	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Tank Level Meter 1	4
9737	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Tank Level Meter 2	4
1816	Brew: Thickener - Effluent Pump 1 Motor	4
1817	Brew: Thickener - Effluent Pump 2 Motor	4
10276	Brew: Ferrous Feed Pump 1 Motor VFD	4
10277	Brew: Ferrous Feed Pump 2 Motor VFD	4
3961	Brew: East Gallery - Heater 309-2	4
3968	Brew: South Gallery - Heater 312-4	4
3954	Brew: Control Bldg - 1st Fl - Garage - Heater 305-2	4
3955	Brew: Control Bldg - 1st Fl - Garage - Heater 305-3	4
3963	Brew: North Gallery - Heater 311-3	4
3964	Brew: North Gallery - Heater 311-4	4
3966	Brew: South Gallery - Heater 312-2	4
3967	Brew: South Gallery - Heater 312-3	4
3953	Brew: Control Bldg - 1st Fl - Garage - Heater 305-1	4
4833	Brew: Control Bldg - 1st Fl - Garage - Heater 305-5	4
3969	Brew: RSPS 1st FI - MCC Rm - Heater 313-1	4
3970	Brew: RSPS 1st FI - MCC Rm - Heater 313-2	4
9395	Brew: RSPS - Roof - Exhaust Fan 416-1 Motor	4
9399	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 419-1 Motor	4
7249	Brew: Grit Chamber Air Flow Meter 553-1	4
6697	Brew: Telephones	4
6698	Brew: P. A. Speakers	4
3729	Brew: ML Tank 1 (North) - Slide Gate	4
11127		
	IBrow: MI Lank 7 (South) - Slide (-ate	//
3730 1945	Brew: ML Tank 2 (South) - Slide Gate Brew: North Gallery - Flow Meter - 517-1A - RAS Step A	4 4

Asset #	Asset Description	Performance
1947	Brew: North Gallery - Flow Meter - 517-1C - RAS Step C	4
1939	Brew: South Gallery - Flow Meter - 515-2 - Total RAS	4
1940	Brew: South Gallery - Flow Meter - 517-2A - RAS Step A	4
1941	Brew: South Gallery - Flow Meter - 517-2B - RAS Step B	4
2273	Brew: South Gallery - Flow Meter - 517-2C - RAS Step C	4
15708	Brew: RSPS - Effluent Water Supply - Auto Strainer	4
2446	Brew: RSPS 1st Fl - Disinfection Rm - Duplex Basket Strainer	4
15206	Brew: North Gallery - Flow Meter - 515-1 - Total RAS	4
4130	Brew: South Gallery - Tanker Loading Pump 1 Motor	4
4131	Brew: South Gallery - Tanker Loading Pump 2 Motor	4
9608	Brew: East Gallery - New Plant Air Skid - Compressor 1	4
10481	HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 3710, S/N 205C01463 PART# 68-3710-008	4
9488	HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 3700, S/N 11029-118, PART# 68-3700-001	4
9490	HCMF-ELS-196 - Sampler, Portable, MFG Isco, MOD 3710, S/N 202D00823 PART# 68-3710-008	4
15704	Brew: RSPS - Effluent Water Supply Pump 1 Motor	4
15705	Brew: RSPS - Effluent Water Supply Pump 2 Motor	4
10275	Brew: WEP 1941- Weather Station	4
3958	Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-2	4
3951	Brew: Control Bldg - 1st Fl - Locker Rm - Heater 303-1	4
3952	Brew: Control Bldg - 1st Fl - Janitor Rm - Heater 304-1	4
3956	Brew: Control Bldg - 1st Fl - Lunch Rm - Heater 305-4	4
4099	Brew: Thickener Bldg - Poly Blend Unit 1 (Anionic)	4
4092	Brew: Thickener Bldg - 101 Thickener Rm - PolyBlend Unit 2 (Cationic)	4
2268	Brew: Total Air Flow Meter 526-1	4
1357	Brew: Thickener Bldg - 101 Thickener Rm - Rotary Drum Booster Pump	4
3922	Brew: Thickener - Flocculator Motor	4
1637	Brew: Digester Tank 1 (North) - Coarse Bubble Air Diffusers	4
9360	Brew: WEP 5577 - Operations	4
9361	Brew: WEP 5335 - BREW 1	4
15709	Brew: RSPS - Effluent Water Supply - Auto Strainer Motor	4
4791	Brew: Control Bldg - 1st Fl - Garage - Overhead Door	4
3091	Brew: Thickener Bldg - Poly Diaphragm Pump 1	4
3092	Brew: Thickener Bldg - Poly Diaphragm Pump 2	4
1133	Brew: Control Bldg - Basement - Sump Pump	4
1134	Brew: East Gallery - Sump Pump	4
1135	Brew: RSPS - Basement - Pump Rm - Sump Pump	4
8373	Brew: Effluent Sample Shed - Influent Sampler - IC# 619	4
3946 15715	Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-1	4
	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 1 VFD	2
15716	Brew: RSPS 1st Fl - Disinfection Rm - Hypo Pump 2 VFD	2
1948	Brew: Chem Bldg - 2nd Fl - Ferr Flow Meter 1 - South	2
15713	Brew: Thickener Bldg - 102 Electrical Room - Rotary Drum Feed Pump 1 VFD	2
15714	Brew: Thickener Bldg - 102 Electrical Room - Rotary Drum Feed Pump 2 VFD	2
15706	Brew: RSPS - Effluent Water Supply Pump 1 Motor - VFD	2
15707	Brew: RSPS - Effluent Water Supply Pump 2 Motor - VFD	2
9610	Brew: East Gallery - New Plant Air Skid - Compressor 1 - Controls	2
1810	Brew: Control Bldg - 1st Fl - Blower Rm - Blower 1	1
1811	Brew: Control Bldg - 1st Fl - Blower Rm - Blower 2	1
1812	Brew: Control Bldg - 1st Fl - Blower Rm - Blower 3	1
1813	Brew: Control Bldg - 1st Fl - Blower Rm - Blower 4	1
1016	Brew: Chem Bldg - 2nd Fl - Pressure Transmitter 1	1
2684	Brew: East Gallery - Inst. Air Dryer	1
4795	Brew: East Gallery - Plant Air Dryer	1
3881	Brew: RSPS 1st Fl - Grit Rm - Heater 317-1	1
3882	Brew: RSPS 1st Fl - Grit Rm - Heater 317-2	1
3886	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-1	1
3883	Brew: RSPS 1st Fl - Grit Rm - Heater 317-3	1
3884	Brew: RSPS 1st Fl - Grit Rm - Heater 317-4	1
3885	Brew: RSPS 1st Fl - Grit Rm - Heater 317-5	1
3887	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-2	1
3888	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-3	1

Asset #	Asset Description	Performance
3889	Brew: RSPS - Basement - Scrn Rake Rm - Heater 318-4	1
1064	Brew: RSPS - Basement - Pump Rm - Raw Pump 1	1
1065	Brew: RSPS - Basement - Pump Rm - Raw Pump 2	1
1066	Brew: RSPS - Basement - Pump Rm - Raw Pump 3	1
3972	Brew: RSPS - Basement - Pump Rm - Heater 315-1	1
3973	Brew: RSPS - Basement - Pump Rm - Heater 315-2	1
3975	Brew: RSPS 1st Fl - Disinfection Rm - Heater 319-1	1
3976	Brew: RSPS 1st FI - Disinfection Rm - Heater 319-2	1
3977	Brew: RSPS 1st FI - NaOCI Feed Rm - Heater 320-1	1
3978	Brew: RSPS 1st FI - NaOCI Feed Rm - Heater 320-2	1
3981	Brew: Chem Bldg - 1st Fl - Heater 321-1	1
3985	Brew: Chem Bldg - 2nd Fl - Heater 322-1	1
4187	Brew: Chem Bidg - 210 Th- Heater 322-1 Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 1	1
3959	Brew: Control Bldg - 1st Fl - Blower Rm - Heater 306-3	1
3982	Brew: Chem Bldg - 1st Fl - Heater 321-2	1
3983	Brew: Chem Bldg - 1st FI - Heater 321-3	1
3984	Brew: Chem Bldg - 1st Fl - Heater 321-4	1
3986	Brew: Chem Bldg - 2nd Fl - Heater 322-2	1
	-	
3987	Brew: Chem Bldg - 2nd Fl - Heater 322-3	1
3988	Brew: Chem Bldg - 2nd Fl - Heater 322-4	1
3979	Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-3	1
3980	Brew: RSPS 1st Fl - NaOCl Feed Rm - Heater 320-4	1
4188	Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 2	1
4841	Brew: Control Bldg - 1st Fl - Garage - Fuel Transfer Pump	1
4189	Brew: Thickener Bldg - 101 Thickener Rm - Unit Heater 3	1
3989	Brew: RSPS - Basement - Mtr Rm - Heater 314-2	1
4109	Brew: Thickener Bldg - 102 Electrical Room - Unit Heater	1
3948	Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-3	1
3971	Brew: RSPS 1st Fl - MCC Rm - Heater 313-3	1
3990	Brew: RSPS - Basement - Mtr Rm - Heater 314-1	1
3960	Brew: East Gallery - Heater 309-1	1
3962	Brew: North Gallery - Heater 311-1	1
3965	Brew: South Gallery - Heater 312-1	1
1217	Thickener Building	1
2637	Brew: Thickener Bldg - Roof - Exhaust Fan 1	1
2660	Brew: Chem Bldg - Roof - Exhaust Fan 422-1	1
3433	Brew: RSPS 1st Fl - Disinfection Rm - Wall Fan 419-2	1
3431	Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-2	1
3432	Brew: RSPS 1st Fl - NaOCl Feed Rm - Wall Fan 420-3	1
2641	Brew: RSPS - Roof - Exhaust Fan 413-1	1
2643	Brew: RSPS - Roof - Exhaust Fan 417-1	1
2638	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-2	1
2642	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 419-1	1
2656	Brew: North Gallery - Hooded Rooftop Supply Fan 411-2	1
2657	Brew: South Gallery - Hooded Rooftop Supply Fan 412-2	1
2639	Brew: RSPS - Roof - Hooded Rooftop Supply Fan 417-3	1
2644	Brew: RSPS - Roof - Supply Fan 420-4	1
2645	Brew: RSPS - Roof - Supply Fan 420-5	1
2646	Brew: RSPS - Roof - Supply Fan 420-6	1
2658	Brew: North Gallery - Exhaust Fan 411-1	1
2659	Brew: South Gallery - Exhaust Fan 412-1	1
3947	Brew: Control Bldg - 1st Fl - Control Rm - Heater 301-2	1
3949	Brew: Control Bldg - 1st Fl - Foyer - Heater 302-1	1
3853	Brew: Thickener Bldg - Tanker Loading Sta Flow Transmitter 2	1
3950	Brew: Control Bldg - 1st Fl - Foyer - Heater 302-2	1
4845	Brew: Thickener Bldg - 101 Thickener Rm - Floc Tank	1
4424	Brew: Control Bldg - Basement - Water Heater	1
1104	Brew: Chem Bldg - 1st Fl - Hot Water Heater	1
13385	Brew: North Gallery - Return Sludge Pump 1	1
13387	Brew: South Gallery - Return Sludge Pump 3	1
13388	Brew: North Gallery - Return Sludge Pump 2	1
	, U* * F	1

Asset #	Asset Description	Performance
13386	Brew: South Gallery - Return Sludge Pump 4	1
3370	Brew: Thickener Bldg - 101 Thickener Rm - Overhead Door 2	1
3369	Brew: Thickener Bldg - 101 Thickener Rm - Overhead Door 1	1
9165	Balance, MFG Mettler, MOD HB43, S/N 1125121078	1
9166	Balance, MFG Mettler, MOD HB43, S/N 1120200535	1
4793	Brew: Chem Bldg - 1st Fl - Water Cooler	1
9168	Brew: Chem Building - Balance MFG Intl-Lab	1
4835	Brew: Sludge Concentration Tank 1 (North) - Sluice Gate	1

Scoring Criteria:

- 1 = Very good condition, operation, performance, etc.
- 2 = Good
- 4 = Fair
- 7 = Poor
- 10 = Very poor

Appendix C

Popli Design Group Building System Evaluation Reports (available on DVD following Appendices)





Physical Conditions Assessment: Architectural Onondaga Cty Brewerton WWTP

Robert McCormick, AIA

October 15, 2013

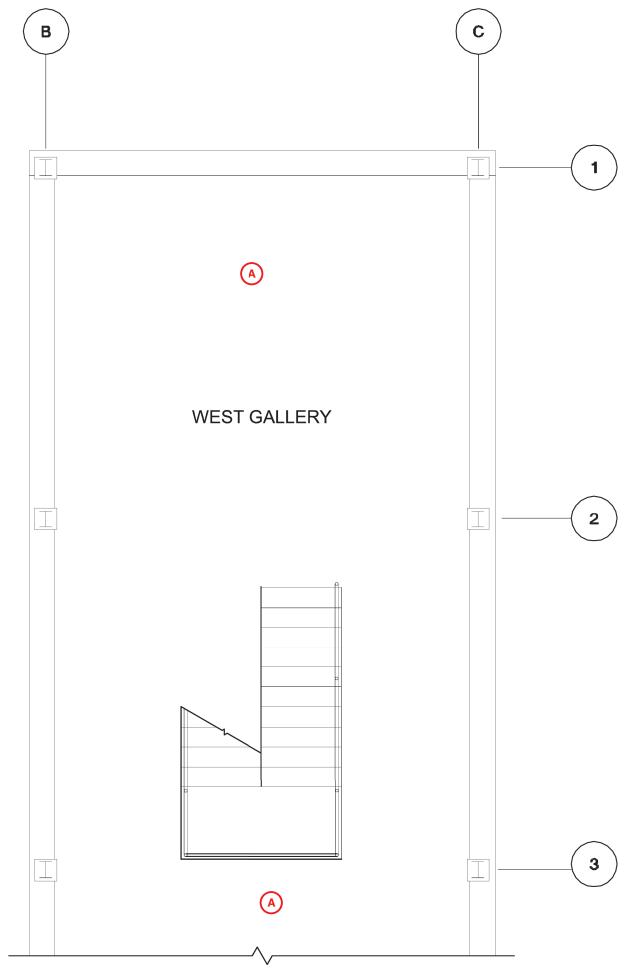
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CHEMICAL STORAGE BUILDING - BASEMENT LEVEL

#87 Architectural



Issue Number: 87

Date Created: Oct 15, 2013 @ 17:41 Creator: Robert McCormick, AIA

Status: Open

Room: WEST GALLERY

Description: Painted conc floor, unpainted walls

and deck above. 31 inch wide stairs. Pipe railing in good condition.

Photos (4)



October 16, 2013 at 13:52



October 16, 2013 at 13:52

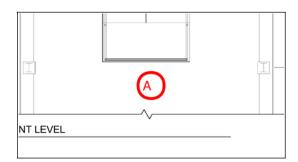


October 16, 2013 at 13:52



October 16, 2013 at 13:5

#88 Architectural



Issue Number: 88

Date Created: Oct 15, 2013 @ 17:44 Creator: Robert McCormick, AIA

Status: Open

Room: WEST GALLERY Description: End of west galley

Photos (3)



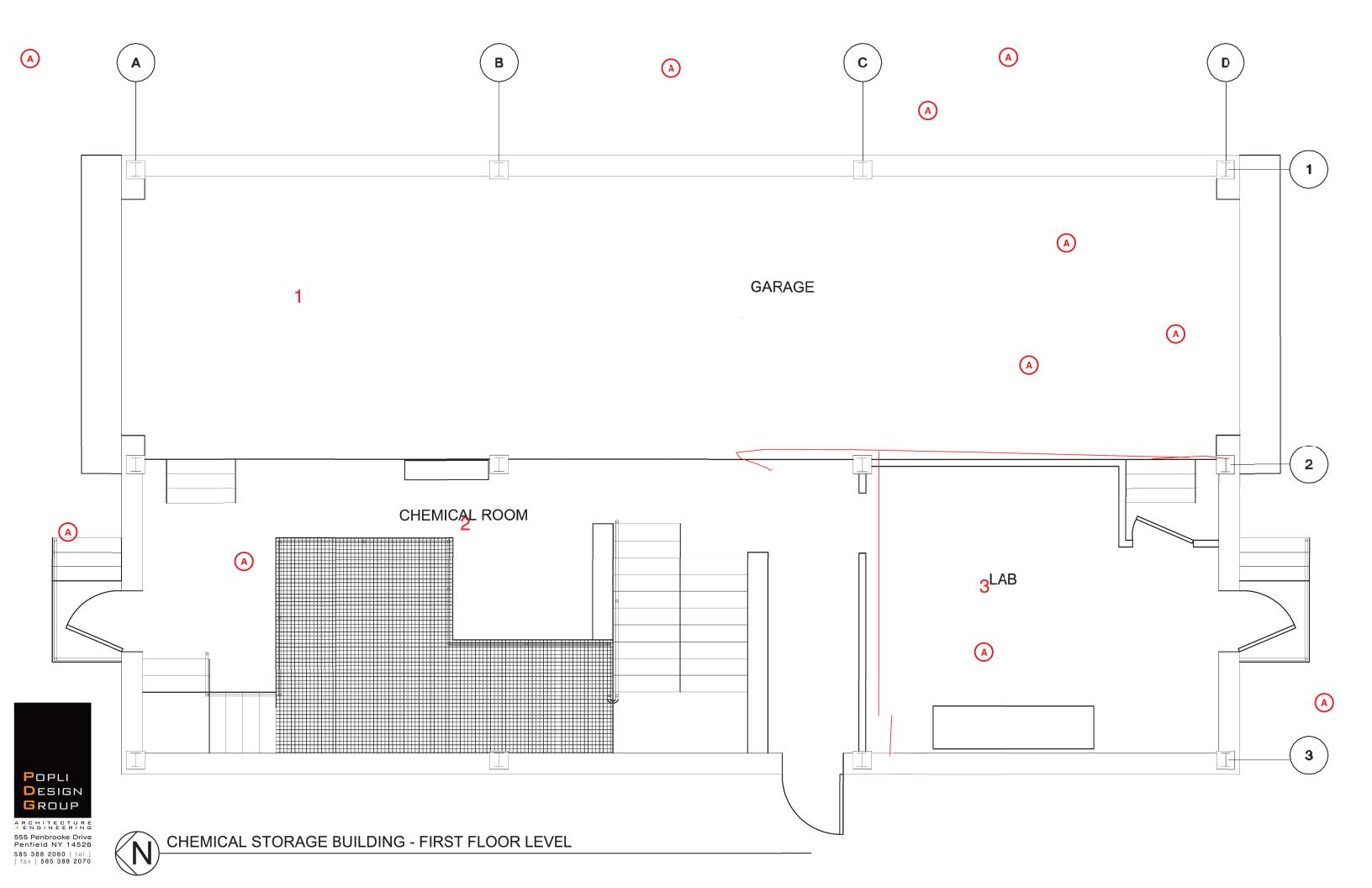
October 16, 2013 at 13:52



October 16, 2013 at 13:52

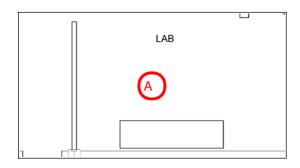


October 16, 2013 at 13:52



CHEMICAL STORAGE BUILDING - FIRST FLOOR LEVEL

#76 Architectural



Issue Number: 76

Date Created: Oct 15, 2013 @ 16:59 Creator: Robert McCormick, AIA

Status: Open

Room: CHEMICAL ROOM

Description: Painted conc. floor, CMU, wood stud

and GWB walls. Painted conc. deck above. Metal casework is old and rusted. Pipe and wood shop made tables, borrowed light into garage.

Photos (12)



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50



October 16, 2013 at 13:50

#77 Architectural



Issue Number: 77

Date Created: Oct 15, 2013 @ 17:06 Creator: Robert McCormick, AIA

> Status: Open Room: GARAGE

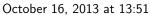
Description: Unpainted conc. floor, good slope to

grate drain, painted CMU walls and

conc deck.

Photos (2)

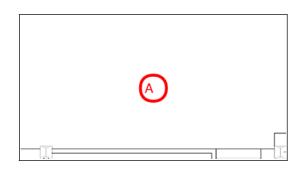






October 16, 2013 at 13:51

#78 Architectural



Issue Number: 78

Date Created: Oct 15, 2013 @ 17:09 Creator: Robert McCormick, AIA

> Status: Open Room: GARAGE

Description: Coiling door is almost non function-

ing, cannot open to full height, won't

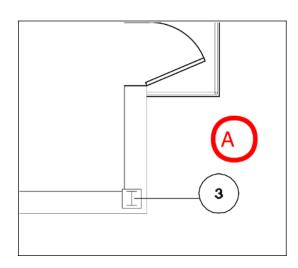
close again.

Photos (1)



October 16, 2013 at 13:51

#79 Architectural



Issue Number: 79

Date Created: Oct 15, 2013 @ 17:11 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Exterior door hardware hold open and

knobs are non- ADA. Sealant and weatherstrip are OK. Exterior steps are good, slight rusting at base of pipe railing, steps onto walkway between

aeration tanks are rusted.

Photos (4)







October 16, 2013 at 13:51

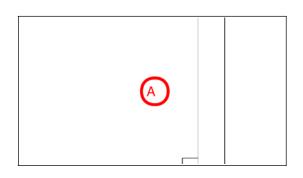


October 16, 2013 at 13:51



October 16, 2013 at 13:51

#80 Architectural



Issue Number: 80

Date Created: Oct 15, 2013 @ 17:16 Creator: Robert McCormick, AIA

> Status: Open Room: GARAGE

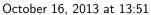
Description: Steps up to lab are OK, door into

lab is hollow painted residential grade wood, 30 inch wide, should be re-

placed.

Photos (2)

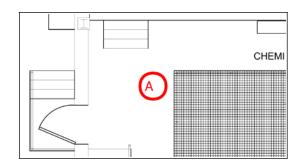






October 16, 2013 at 13:51

#81 Architectural



Issue Number: 81

Date Created: Oct 15, 2013 @ 17:20 Creator: Robert McCormick, AIA

Status: Open

Room: CHEMICAL ROOM

Description: Exterior HM door and frame are

rusted out at bottom, poor weather

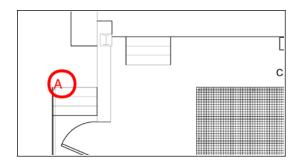
stripping at threshold

Photos (1)



October 16, 2013 at 13:51

#82 Architectural



Issue Number: 82

Date Created: Oct 15, 2013 @ 17:22 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Exterior door is in poor condition,

coiling door is inoperable, railing base

has been repaired in the past.

Photos (4)



October 16, 2013 at 13:51



October 16, 2013 at 13:51

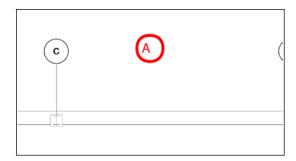


October 16, 2013 at 13:51



October 16, 2013 at 13:51

#89 Architectural



Issue Number: 89

Date Created: Oct 15, 2013 @ 17:47 Creator: Robert McCormick, AIA

> Status: Open Room: EXTERIOR

Description: Louver perimeter sealant is sound.

Photos (1)



October 16, 2013 at 13:52

#90 Architectural



Issue Number: 90

Date Created: Oct 15, 2013 @ 17:48 Creator: Robert McCormick, AIA

> Status: Open Room: EXTERIOR

Description: Louver perimeter sealant is opening

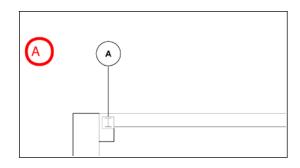
up at top.

Photos (1)



October 16, 2013 at 13:52

#91 Architectural



Issue Number: 91

Date Created: Oct 15, 2013 @ 17:50 Creator: Robert McCormick, AIA

Status: Open

Description: Minor masonry repainting and repairs

needed

Photos (2)

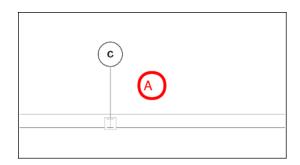


October 16, 2013 at 13:52



October 16, 2013 at 13:53

#102 Architectural



Issue Number: 102

Date Created: Oct 15, 2013 @ 18:37 Creator: Robert McCormick, AIA

> Status: Open Room: ROOF

Description: Original BUR system is over 42 years

old, with lightning protection aerials

and cabling.

Photos (6)



October 16, 2013 at 13:54



October 16, 2013 at 13:54



October 16, 2013 at 13:54



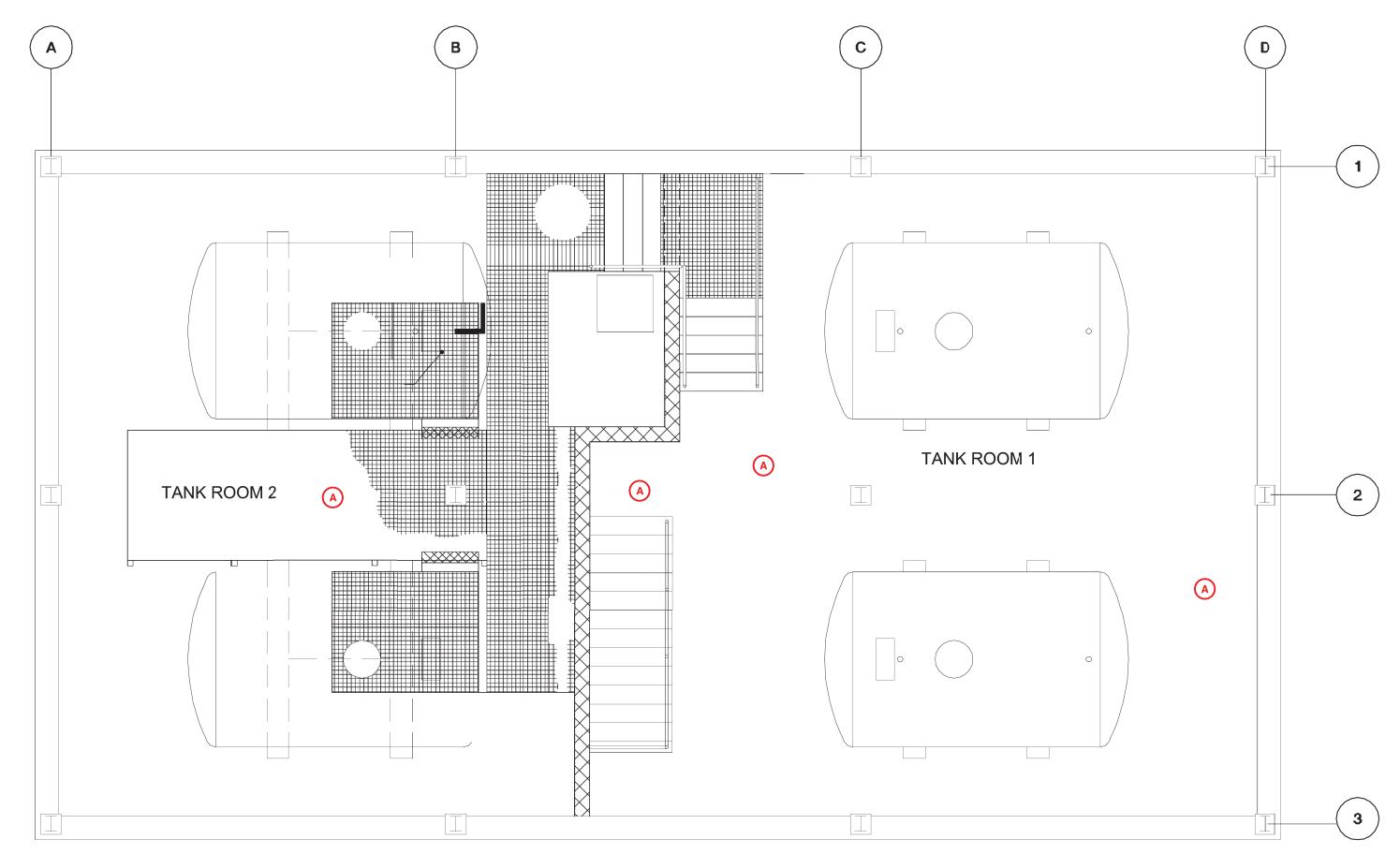
October 16, 2013 at 13:54



October 16, 2013 at 13:54



October 16, 2013 at 13:54





585 388 2060 [tel] [fax] 585 388 2070



CHEMICAL STORAGE BUILDING - SECOND FLOOR LEVEL

#83 Architectural



Issue Number: 83

Date Created: Oct 15, 2013 @ 17:26 Creator: Robert McCormick, AIA

Status: Open

Room: TANK ROOM 1

Description: Containment curb removed at top of

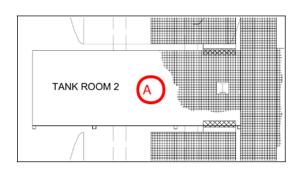
stair, quarry tile floor not patched, painted CMU walls and plank deck, QT floor with tile base this area only.

Photos (1)



October 16, 2013 at 13:51

#84 Architectural



Issue Number: 84

Date Created: Oct 15, 2013 @ 17:29 Creator: Robert McCormick, AIA

Status: Open

Room: TANK ROOM 2

Description: Floor grate 8 inches above conc floor

containment, which slopes to a basin

with alarm sensor.

Photos (4)







October 16, 2013 at 13:52

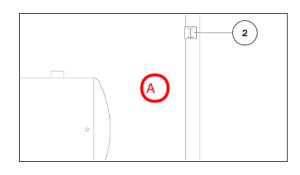


October 16, 2013 at 13:52



October 16, 2013 at 13:52

#85 Architectural



Issue Number: 85

Date Created: Oct 15, 2013 @ 17:34 Creator: Robert McCormick, AIA

Status: Open

Room: TANK ROOM 1

Description: Open floor penetrations adjacent to

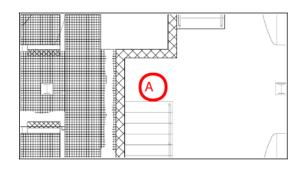
exterior wall.

Photos (1)



October 16, 2013 at 13:52

#86 Architectural



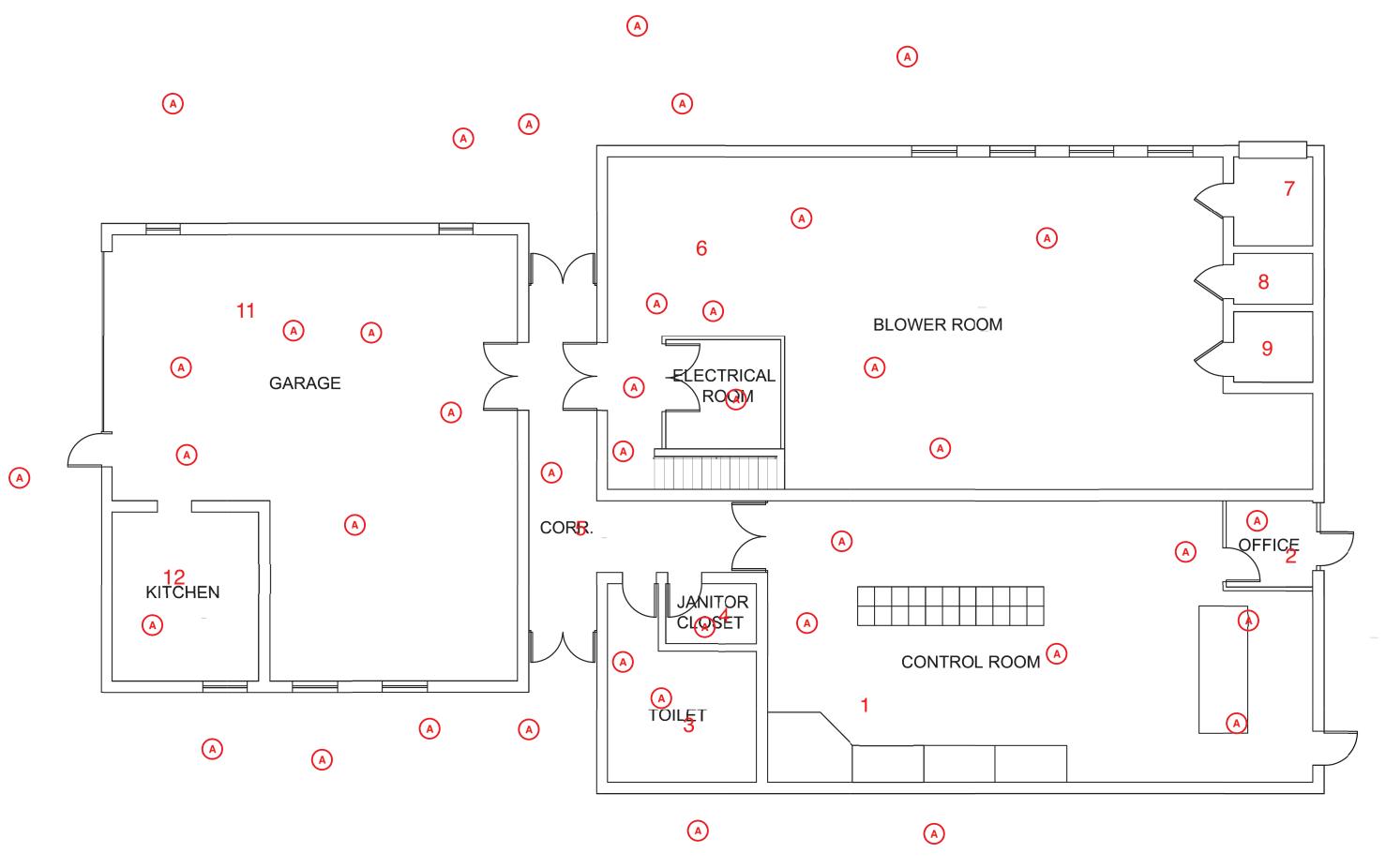
Issue Number: 86

Date Created: Oct 15, 2013 @ 17:37 Creator: Robert McCormick, AIA

Status: Open

Room: TANK ROOM 1

Description: Stair and pipe railing in good condition.





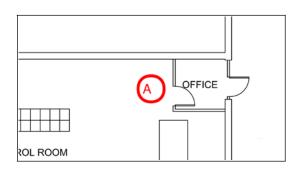
PESIGN
GROUP

ARCHITECTURE
FENGINEERING
555 Penbrooke Drive
Penfield NY 14526
585 388 2060 [tel]
[fax] 585 388 2070

Popli

CONTROL BUILDING - FIRST FLOOR

#13 Architectural



Issue Number: 13

Date Created: Oct 15, 2013 @ 12:44 Creator: Robert McCormick, AIA

Status: Open

Room: CONTROL ROOM

Description: VCT flooring in good condition,

painted conc plank. Roof deck in good condition. Painted CMU walls in good condition with minor settling

cracks.

Photos (3)



October 16, 2013 at 13:41

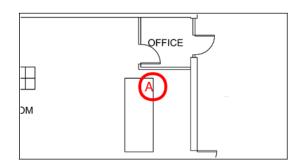


October 16, 2013 at 13:41



October 16, 2013 at 13:41

#14 Architectural



Issue Number: 14

Date Created: Oct 15, 2013 @ 12:49 Creator: Robert McCormick, AIA

Status: Open

Room: CONTROL ROOM

Description: Offce with wood stud and GWB walls

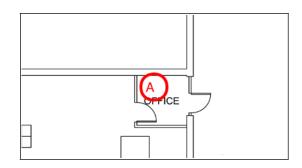
wood door and frame.

Photos (1)



October 16, 2013 at 13:41

#15 Architectural



Issue Number: 15

Date Created: Oct 15, 2013 @ 12:52 Creator: Robert McCormick, AIA

> Status: Open Room: OFFICE

Description: New exterior door installed in the past

year, lintel starting to rust, should be prepped and painted to extend life.

Photos (2)

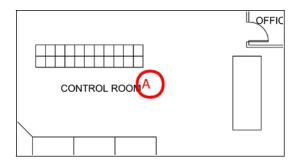


October 16, 2013 at 13:41



October 16, 2013 at 13:42

#16 Architectural



Issue Number: 16

Date Created: Oct 15, 2013 @ 12:53 Creator: Robert McCormick, AIA

Status: Open

Description: Concrete plank joint with evidence of

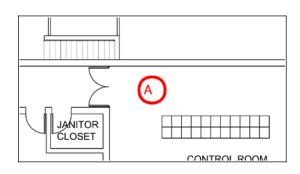
water infiltration

Photos (1)



October 16, 2013 at 13:41

#17 Architectural



Issue Number: 17

Date Created: Oct 15, 2013 @ 12:55 Creator: Robert McCormick, AIA

Status: Open

Room: CONTROL ROOM

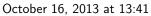
Description: Interior doors in good condition, door

hardware is non-ADA compliant, door vision light is non-ADA compliant for

height.

Photos (2)

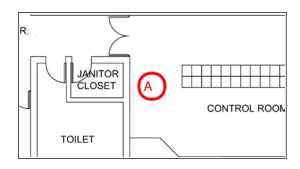






October 16, 2013 at 13:41

#18 Architectural



Issue Number: 18

Date Created: Oct 15, 2013 @ 12:59 Creator: Robert McCormick, AIA

Status: Open

Room: CONTROL ROOM

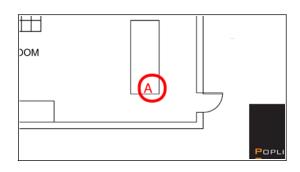
Description: Wall penetration are well sealed

Photos (1)



October 16, 2013 at 13:41

#19 Architectural



Issue Number: 19

Date Created: Oct 15, 2013 @ 13:00 Creator: Robert McCormick, AIA

Status: Open

Room: CONTROL ROOM

Description: Single HM exterior door is rusted out.

Missing closer hardware and weather stripping. knobs are non -ADA compliant. Interior sealant starting to

crack, exterior OK.

Photos (3)





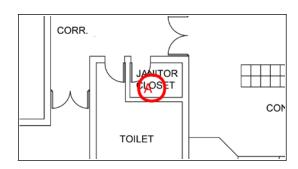


October 16, 2013 at 13:42



October 16, 2013 at 13:42

#20 Architectural



Issue Number: 20

Date Created: Oct 15, 2013 @ 13:08 Creator: Robert McCormick, AIA

Status: Open

Room: JANITOR CLOSET

Description: Painted conc floor, CMU walls, and

plank deck. No splash protection

around utility sink

Photos (2)

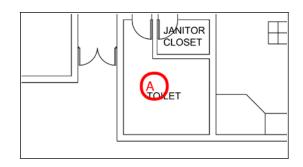






October 16, 2013 at 13:42

#21 Architectural



Issue Number: 21

Date Created: Oct 15, 2013 @ 13:12 Creator: Robert McCormick, AIA

Status: Open

Room: TOILET ROOM

Description: VCT flooring in good shape. Painted

CMU walls and plank deck. Metal toilet partitions are dated but in good shape as they have been re painted in the past, lockers are old and dated,

better coats hook are required

Photos (5)



October 16, 2013 at 13:42



October 16, 2013 at 13:42



October 16, 2013 at 13:42

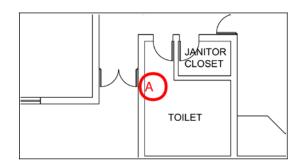


October 16, 2013 at 13:42



October 16, 2013 at 13:42

#22 Architectural



Issue Number: 22

Date Created: Oct 15, 2013 @ 13:20 Creator: Robert McCormick, AIA

Status: Open

Room: TOILET ROOM

Description: HM Door and frame in good con-

dition. Lacking hold feature on closer, and knobs are non-ADA com-

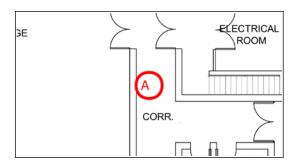
pliant

Photos (1)



October 16, 2013 at 13:42

#23 Architectural



Issue Number: 23

Date Created: Oct 15, 2013 @ 13:22 Creator: Robert McCormick, AIA

Status: Open

Room: CORRIDOR

Description: VCT flooring in good condition, miss-

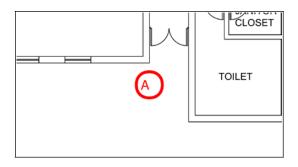
ing transition strip to garage area.

Photos (1)



October 16, 2013 at 13:42

#24 Architectural



Issue Number: 24

Date Created: Oct 15, 2013 @ 13:28 Creator: Robert McCormick, AIA

> Status: Open Room: EXTERIOR

Description: Double entrance doors dated but in

OK condition, weather-stripping is in

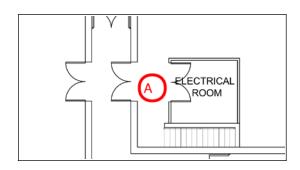
poor condition.

Photos (1)



October 16, 2013 at 13:42

#25 Architectural



Issue Number: 25

Date Created: Oct 15, 2013 @ 13:34 Creator: Robert McCormick, AIA

Status: Open

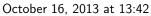
Room: BLOWER ROOM

Description: Carpet is torn in many locations, rub-

ber base is bad at outside corners.

Photos (2)

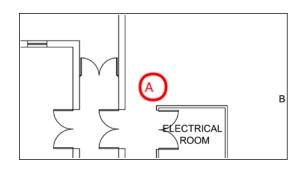






October 16, 2013 at 13:42

#26 Architectural



Issue Number: 26

Date Created: Oct 15, 2013 @ 13:37 Creator: Robert McCormick, AIA

Status: Open

Room: BLOWER ROOM

Description: Transformer room added.

Photos (2)

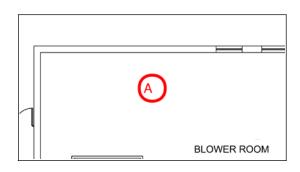


October 16, 2013 at 13:42



October 16, 2013 at 13:42

#27 Architectural



Issue Number: 27

Date Created: Oct 15, 2013 @ 13:38 Creator: Robert McCormick, AIA

Status: Open

Room: BLOWER ROOM

Description: Painted block walls and plank deck

are in good condition, minor cracks in walls. Dirt evident at air intake thru roof deck. Plank is cracked at this air

intake adj to bearing wall.

Photos (4)



October 16, 2013 at 13:42



October 16, 2013 at 13:43

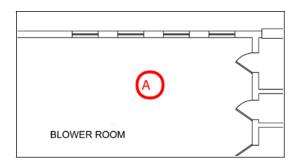


October 16, 2013 at 13:43



October 16, 2013 at 13:43

#28 Architectural



Issue Number: 28

Date Created: Oct 15, 2013 @ 13:48 Creator: Robert McCormick, AIA

Status: Open

Room: BLOWER ROOM

Description: Could not access small rooms while

blowers are running - air filtration high

voltage rooms.

Photos (3)



October 16, 2013 at 13:43

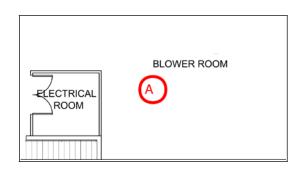


October 16, 2013 at 13:43



October 16, 2013 at 13:43

#29 Architectural



Issue Number: 29

Date Created: Oct 15, 2013 @ 13:51 Creator: Robert McCormick, AIA

Status: Open

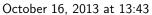
Room: BLOWER ROOM

Description: Electrical Room is stud and GWB

walls, corner at base damaged.

Photos (2)

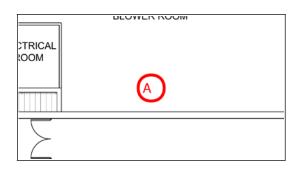






October 16, 2013 at 13:43

#30 Architectural



Issue Number: 30

Date Created: Oct 15, 2013 @ 13:53 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

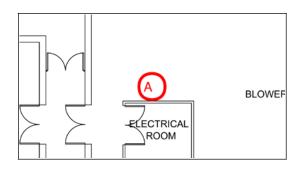
Description: Roof drain leader, OK

Photos (1)



October 16, 2013 at 13:43

#31 Architectural



Issue Number: 31

Date Created: Oct 15, 2013 @ 13:55 Creator: Robert McCormick, AIA

Status: Open

Room: BLOWER ROOM

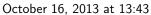
Description: HM Double doors into Blower room

and transf room OK, knobs are non-

ADA.

Photos (2)

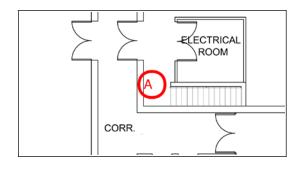






October 16, 2013 at 13:43

#32 Architectural



Issue Number: 32

Date Created: Oct 15, 2013 @ 13:58 Creator: Robert McCormick, AIA

Status: Open

Room: BLOWER ROOM

Description: Stairs and handrails in good condi-

tion, width only 31" between handrail

and wall.

Photos (2)

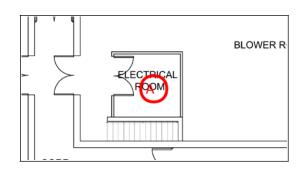






October 16, 2013 at 13:43

#33 Architectural



Issue Number: 33

Date Created: Oct 15, 2013 @ 14:02 Creator: Robert McCormick, AIA

Status: Open

Room: BLOWER ROOM

Description: Carpet floor in poor, stained condi-

tion. Painted GWB and plank roof deck. Light switch in bad location, at

inactive leaf of doors.

Photos (4)



October 16, 2013 at 13:43



October 16, 2013 at 13:43

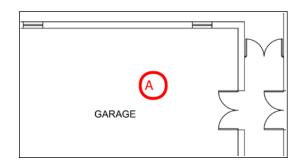


October 16, 2013 at 13:43



October 16, 2013 at 13:43

#34 Architectural



Issue Number: 34

Date Created: Oct 15, 2013 @ 14:07 Creator: Robert McCormick, AIA

> Status: Open Room: GARAGE

Description: Painted conc floor, CMU walls and

plank deck. Painted steel column and exposed roof beam, traveling hoist

beam

Photos (3)



October 16, 2013 at 13:43

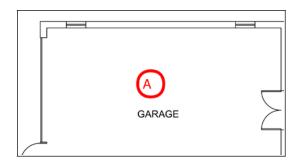


October 16, 2013 at 13:43



October 16, 2013 at 13:43

#35 Architectural



Issue Number: 35

Date Created: Oct 15, 2013 @ 14:12 Creator: Robert McCormick, AIA

> Status: Open Room: GARAGE

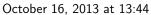
Description: 16' wide OH door is dated and not

insulated, operator should be replaced

with door.

Photos (3)





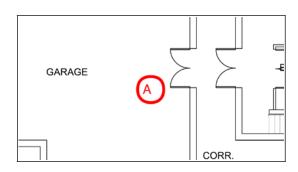


October 16, 2013 at 13:44



October 16, 2013 at 13:44

#36 Architectural



Issue Number: 36

Date Created: Oct 15, 2013 @ 14:16 Creator: Robert McCormick, AIA

> Status: Open Room: GARAGE

Description: HM double doors lack hold open fea-

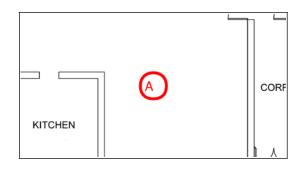
ture on closers, knobs are non-ADA.

Photos (1)



October 16, 2013 at 13:44

#37 Architectural



Issue Number: 37

Date Created: Oct 15, 2013 @ 14:19 Creator: Robert McCormick, AIA

> Status: Open Room: GARAGE

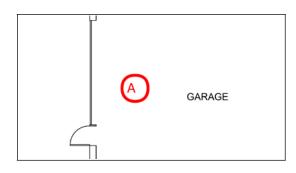
Description: Lack of ladder storage rack/system.

Photos (1)



October 16, 2013 at 13:44

#38 Architectural



Issue Number: 38

Date Created: Oct 15, 2013 @ 14:20 Creator: Robert McCormick, AIA

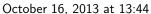
> Status: Open Room: GARAGE

Description: Break room door is light duty, shop

made, without proper hardware.

Photos (2)

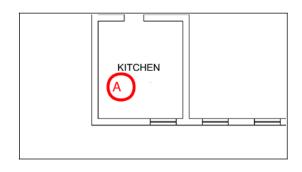






October 16, 2013 at 13:44

#39 Architectural



Issue Number: 39

Date Created: Oct 15, 2013 @ 14:22 Creator: Robert McCormick, AIA

> Status: Open Room: KITCHEN

Description: VCT flooring and base is in good con-

dition. window was filled in the past. Painted CMU walls. $12" \times 12"$ spline acoustic tile ceiling/ grid system in poor condition. Wood casework and Plam countertop is dated, in OK con-

dition.

Photos (5)







October 16, 2013 at 13:44



October 16, 2013 at 13:44

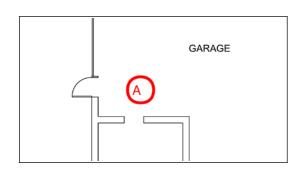


October 16, 2013 at 13:44



October 16, 2013 at 13:44

#40 Architectural



Issue Number: 40

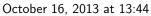
Date Created: Oct 15, 2013 @ 14:30 Creator: Robert McCormick, AIA

Status: Open Room: GARAGE

Description: HM Exterior door is rusted out at bottom.

Photos (3)





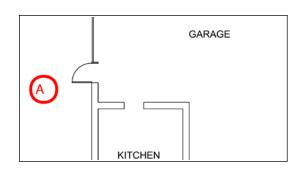


October 16, 2013 at 13:44



October 16, 2013 at 13:44

#41 Architectural



Issue Number: 41

Date Created: Oct 15, 2013 @ 14:32 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Mortar degrading at exhaust fan.

Photos (2)

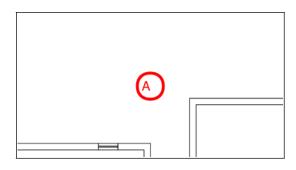


October 16, 2013 at 13:44



October 16, 2013 at 13:44

#42 Architectural



Issue Number: 42

Date Created: Oct 15, 2013 @ 14:33 Creator: Robert McCormick, AIA

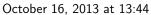
> Status: Open Room: EXTERIOR

Description: Lintel is rusted, minor repainting in

specific.

Photos (3)





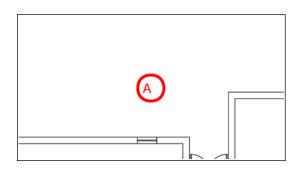


October 16, 2013 at 13:45



October 16, 2013 at 13:45

#43 Architectural



Issue Number: 43

Date Created: Oct 15, 2013 @ 14:38 Creator: Robert McCormick, AIA

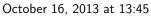
> Status: Open Room: EXTERIOR

Description: Sidewalk joints at building should be

replaced.

Photos (2)

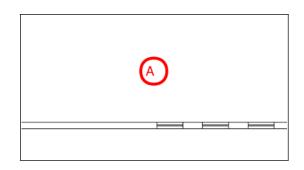






October 16, 2013 at 13:45

#44 Architectural



Issue Number: 44

Date Created: Oct 15, 2013 @ 14:41 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Sealant louver in poor condition. Step

is crack near louver should be re-

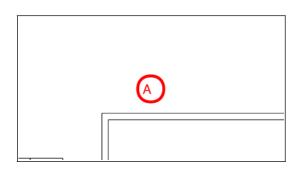
painted.

Photos (1)



October 16, 2013 at 13:45

#59 Architectural



Issue Number: 59

Date Created: Oct 15, 2013 @ 15:35 Creator: Robert McCormick, AIA

Status: Open Room: ROOF

Description: BUR roofing, 3 drains along longi-

tudinal centerline. Minimal apparent pitch, signs of moisture trapped behind larger curb of mounted equipment - no crickets provided. SS counter flashing in good condition.

Photos (10)



October 16, 2013 at 13:47



October 16, 2013 at 13:47



October 16, 2013 at 13:47



October 16, 2013 at 13:47



October 16, 2013 at 13:47



October 16, 2013 at 13:47



October 16, 2013 at 13:47



October 16, 2013 at 13:47

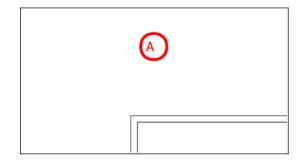


October 16, 2013 at 13:47



October 16, 2013 at 13:47

#60 Architectural



Issue Number: 60

Date Created: Oct 15, 2013 @ 15:46 Creator: Robert McCormick, AIA

> Status: Open Room: ROOF

Description: Lightning protection aerials and cable

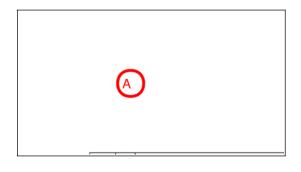
OK.

Photos (1)



October 16, 2013 at 13:48

#61 Architectural



Issue Number: 61

Date Created: Oct 15, 2013 @ 15:48 Creator: Robert McCormick, AIA

> Status: Open Room: ROOF

Description: Same BUR system, with 2 drains.

Photos (4)



October 16, 2013 at 13:48



October 16, 2013 at 13:48

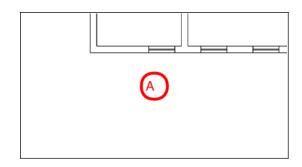


October 16, 2013 at 13:48



October 16, 2013 at 13:48

#73 Architectural



Issue Number: 73

Date Created: Oct 15, 2013 @ 16:43 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Louver perimeter sealant should be re-

placed.

Photos (3)



October 16, 2013 at 13:49

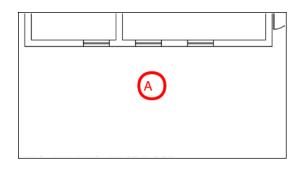


October 16, 2013 at 13:50



October 16, 2013 at 13:50

#74 Architectural



Issue Number: 74

Date Created: Oct 15, 2013 @ 16:45 Creator: Robert McCormick, AIA

Status: Open

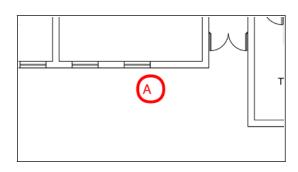
Description: Window infilled.

Photos (1)



October 16, 2013 at 13:50

#75 Architectural



Issue Number: 75

Date Created: Oct 15, 2013 @ 16:46 Creator: Robert McCormick, AIA

> Status: Open Room: EXTERIOR

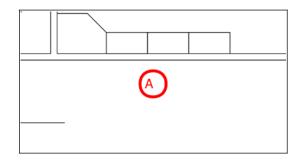
Description: Louver sealant OK.

Photos (1)



October 16, 2013 at 13:50

#101 Architectural



Issue Number: 101

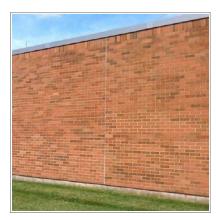
Date Created: Oct 15, 2013 @ 18:29 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Sealant should be replaced.

Photos (2)

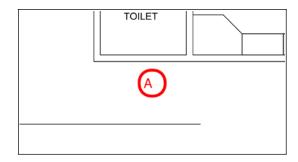


October 16, 2013 at 13:53



October 16, 2013 at 13:53

#105 Architectural



Issue Number: 105

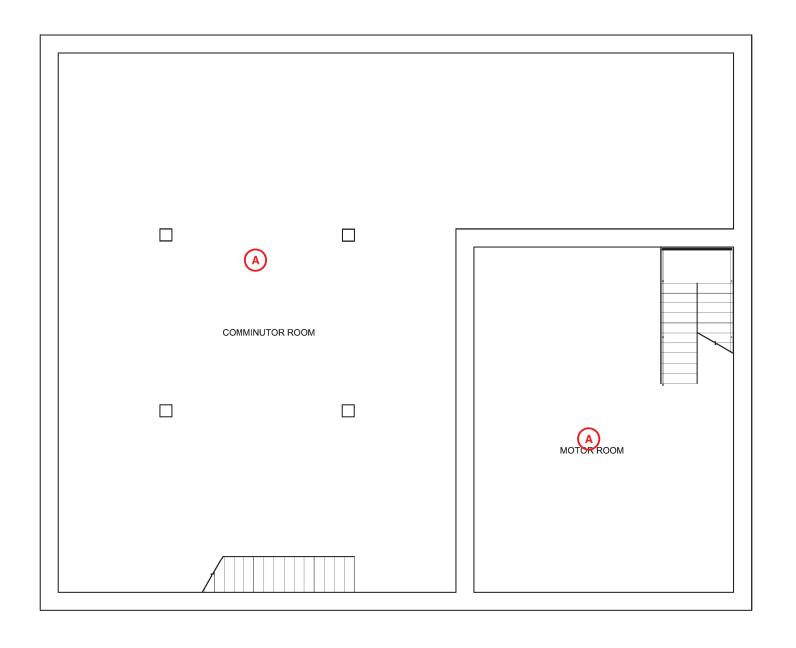
Date Created: Oct 15, 2013 @ 18:43 Creator: Robert McCormick, AIA

Status: Open
Room: EXTERIOR
Description: BUR system.

Photos (1)



October 16, 2013 at 13:54

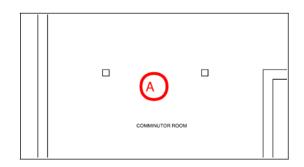






RAW SEWAGE PUMPING STATION - BASEMENT LEVEL

#66 Architectural



Issue Number: 66

Date Created: Oct 15, 2013 @ 16:13 Creator: Robert McCormick, AIA

Status: Open

Description: All exposed non painted conc floor

and walls deck. Stairs are narrow 31" wide. Epoxy floor finish on stairs is peeling. Steel floor plate slightly

rusted.

Photos (3)



October 16, 2013 at 13:48

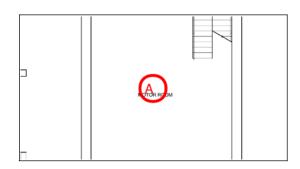


October 16, 2013 at 13:48



October 16, 2013 at 13:49

#69 Architectural



Issue Number: 69

Date Created: Oct 15, 2013 @ 16:23 Creator: Robert McCormick, AIA

Status: Open

Room: MOTOR ROOM

Description: Painted floor, no paint on exp conc

walls and deck.

Photos (3)



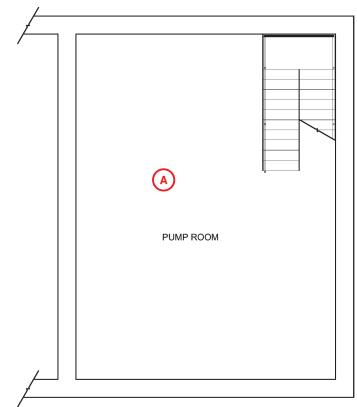


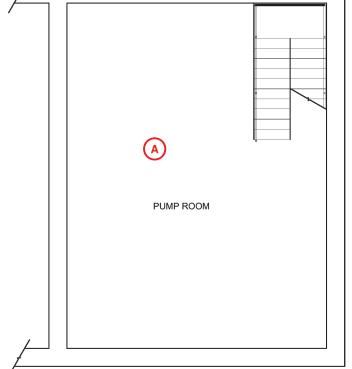


October 16, 2013 at 13:49



October 16, 2013 at 13:49



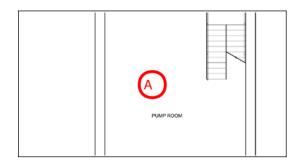






RAW SEWAGE PUMPING STATION - BASEMENT LEVEL 2

#70 Architectural



Issue Number: 70

Date Created: Oct 15, 2013 @ 16:26 Creator: Robert McCormick, AIA

Status: Open

Room: PUMP ROOM

Description: Lower level is damp, no signs of

standing water but dark moisture film

across entire floor.

Photos (3)



October 16, 2013 at 13:49

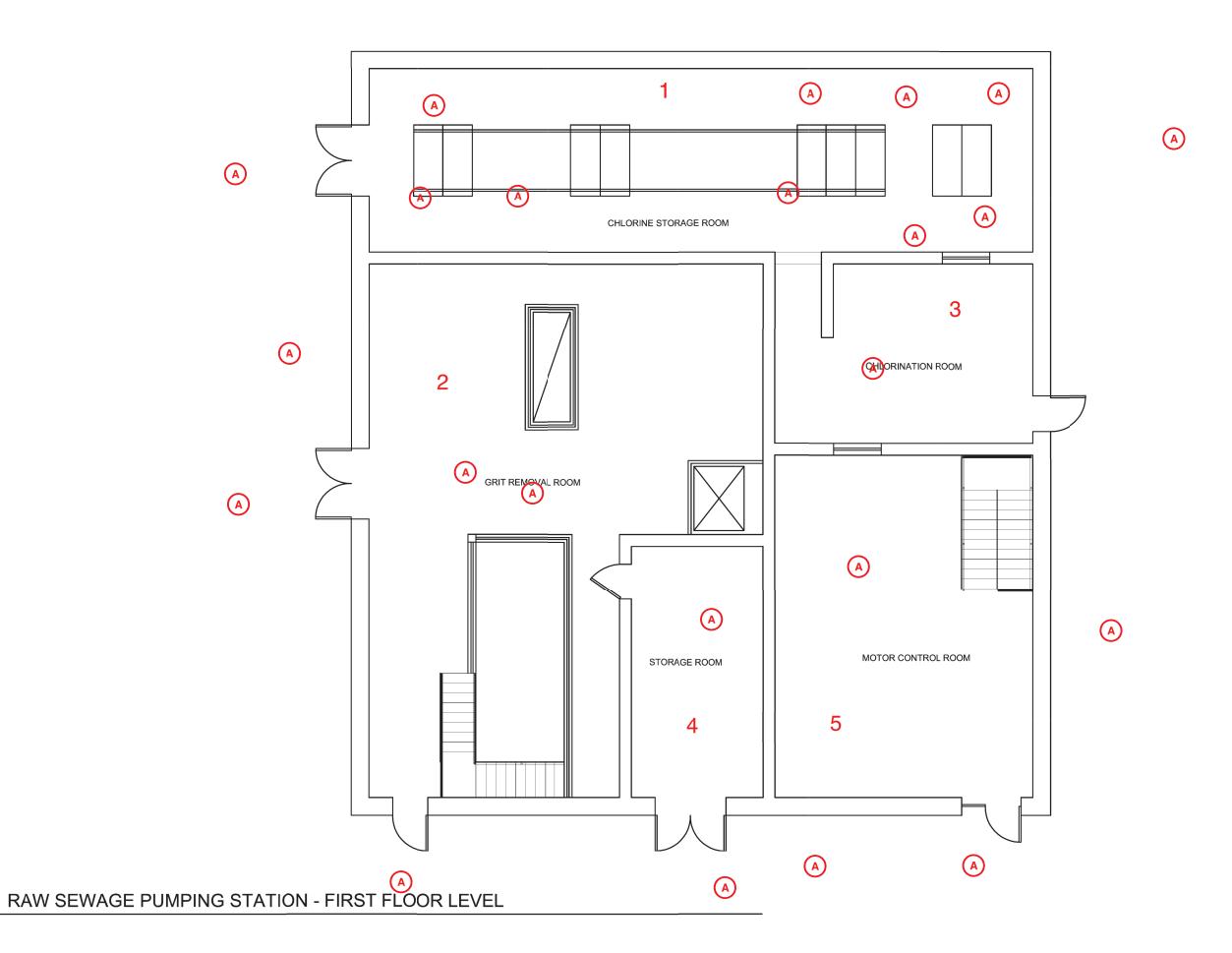


October 16, 2013 at 13:49



October 16, 2013 at 13:49



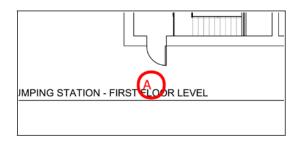




A R C H I T E C T U R E + E N G I N E E R I N G 555 Penbrooke Drive Penfield NY 14526 585 388 2060 [tel] [fax] 585 388 2070

RAW SEWAGE PUMPING STATION - FIRST FLOOR LEVEL

#45 Architectural



Issue Number: 45

Date Created: Oct 15, 2013 @ 14:49 Creator: Robert McCormick, AIA

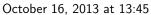
> Status: Open Room: EXTERIOR

Description: No hold open on Door hardware.

11.5" tall step up into building.

Photos (3)





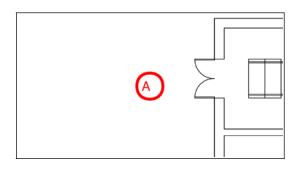


October 16, 2013 at 13:45



October 16, 2013 at 13:45

#46 Architectural



Issue Number: 46

Date Created: Oct 15, 2013 @ 14:55 Creator: Robert McCormick, AIA

> Status: Open Room: EXTERIOR

Description: Tall HM double doors are nearing poor

condition, finish is worn, weatherstrip-

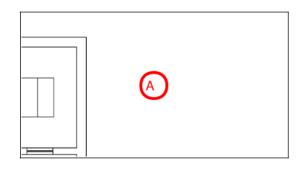
ping old, knobs.

Photos (1)



October 16, 2013 at 13:45

#47 Architectural



Issue Number: 47

Date Created: Oct 15, 2013 @ 14:58 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Building settling issue.

Photos (5)



October 16, 2013 at 13:45



October 16, 2013 at 13:45



October 16, 2013 at 13:46

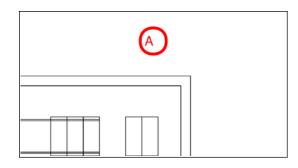


October 16, 2013 at 13:46



October 16, 2013 at 13:46

#48 Architectural



Issue Number: 48

Date Created: Oct 15, 2013 @ 15:02 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Chlorides eating mortar below (3)

fans.

Photos (3)



October 16, 2013 at 13:46

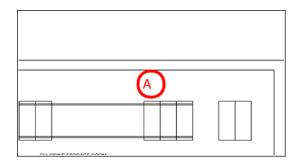


October 16, 2013 at 13:46



October 16, 2013 at 13:46

#49 Architectural



Issue Number: 49

Date Created: Oct 15, 2013 @ 15:05 Creator: Robert McCormick, AIA

Status: Open

Room: CHLORINE STORAGE ROOM

Description: Interior settling cracks in the tank

containment area adjacent to exterior

wall.

Photos (4)



October 16, 2013 at 13:46



October 16, 2013 at 13:46

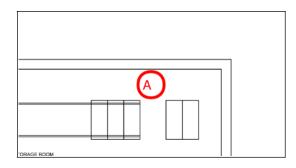


October 16, 2013 at 13:46



October 16, 2013 at 13:46

#50 Architectural



Issue Number: 50

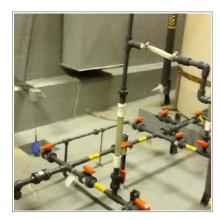
Date Created: Oct 15, 2013 @ 15:07 Creator: Robert McCormick, AIA

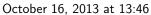
Status: Open

Room: CHLORINE STORAGE ROOM
Description: Chemical Containment Tank, cracks

extending to edges from the tank.

Photos (2)

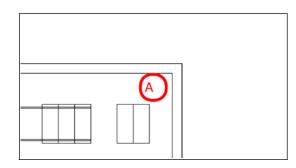






October 16, 2013 at 13:46

#51 Architectural



Issue Number: 51

Date Created: Oct 15, 2013 @ 15:12 Creator: Robert McCormick, AIA

Status: Open

Room: CHLORINE STORAGE ROOM

Description: Settling crack in exterior wall near corner of

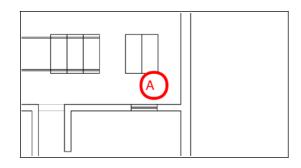
building.

Photos (1)



October 16, 2013 at 13:46

#52 Architectural



Issue Number: 52

Date Created: Oct 15, 2013 @ 15:13 Creator: Robert McCormick, AIA

Status: Open

Room: CHLORINE STORAGE ROOM

Description: Settling crack in exterior wall, 1/2" to

3/4" gap filled with spray foam insulation.

Photos (2)

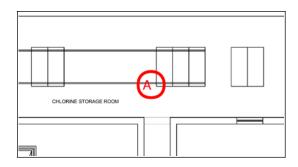


October 16, 2013 at 13:46



October 16, 2013 at 13:46

#53 Architectural



Issue Number: 53

Date Created: Oct 15, 2013 @ 15:14 Creator: Robert McCormick, AIA

Status: Open

Room: CHLORINE STORAGE ROOM

Description: Steps up to chlorination room in good

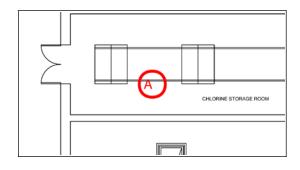
condition.

Photos (1)



October 16, 2013 at 13:46

#54 Architectural



Issue Number: 54

Date Created: Oct 15, 2013 @ 15:16 Creator: Robert McCormick, AIA

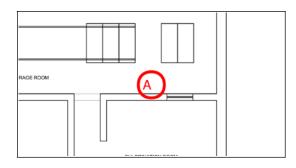
Status: Open

Room: CHLORINE STORAGE ROOM

Description: Painted conc floor - slab on grade in

this area, CMU walls and plank deck.

#55 Architectural



Issue Number: 55

Date Created: Oct 15, 2013 @ 15:17 Creator: Robert McCormick, AIA

Status: Open

Room: CHLORINE STORAGE ROOM

Description: Interior HM frame borrowed light win-

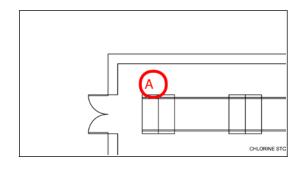
dow, lintel just starting to show rust.

Photos (1)



October 16, 2013 at 13:46

#57 Architectural



Issue Number: 57

Date Created: Oct 15, 2013 @ 15:24 Creator: Robert McCormick, AIA

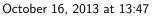
Status: Open

Room: CHLORINE STORAGE ROOM
Description: Roof drain leader paint is pealing

off.

Photos (3)





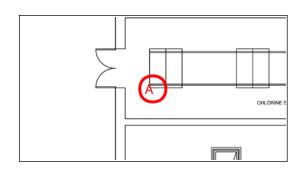


October 16, 2013 at 13:47



October 16, 2013 at 13:47

#58 Architectural



Issue Number: 58

Date Created: Oct 15, 2013 @ 15:29 Creator: Robert McCormick, AIA

Status: Open

Room: CHLORINE STORAGE ROOM
Description: Floor slab not level with door, foun-

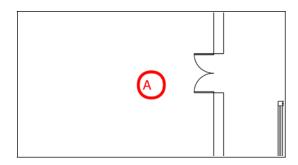
dation wall.

Photos (1)



October 16, 2013 at 13:47

#62 Architectural



Issue Number: 62

Date Created: Oct 15, 2013 @ 15:57 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Exterior loading dock doors OK, old

but decent hardware dock bumpers and stairs are in good condition.

Photos (4)



October 16, 2013 at 13:48



October 16, 2013 at 13:48

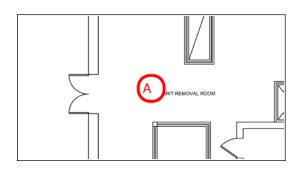


October 16, 2013 at 13:48



October 16, 2013 at 13:48

#63 Architectural



Issue Number: 63

Date Created: Oct 15, 2013 @ 16:02 Creator: Robert McCormick, AIA

Status: Open

Room: GRIT REMOVAL ROOM

Description: Painted conc elev slab floors-should

be recoated. Painted CMU walls, and plank deck. Sludge on deck near exhaust fans. Main loading dock door lintel is rusted. Overhead steel is rust-

ing - refinish.

Photos (7)



October 16, 2013 at 13:48



October 16, 2013 at 13:48



October 16, 2013 at 13:55



October 16, 2013 at 13:55



October 16, 2013 at 13:55

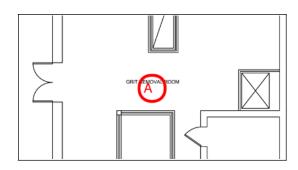


October 16, 2013 at 13:55



October 16, 2013 at 13:55

#64 Architectural



Issue Number: 64

Date Created: Oct 15, 2013 @ 16:05 Creator: Robert McCormick, AIA

Status: Open

Room: GRIT REMOVAL ROOM

Description: Pipe railing paint is worn, refinish.

Photos (2)

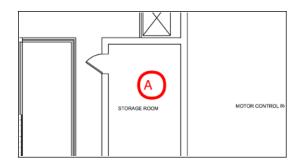


October 16, 2013 at 13:48



October 16, 2013 at 13:48

#65 Architectural



Issue Number: 65

Date Created: Oct 15, 2013 @ 16:07 Creator: Robert McCormick, AIA

Status: Open

Room: STORAGE ROOM

Description: Conc floor, painted CMU and plank

deck. Single light fixture inadequate. Daylight showing thru double doors.

Photos (4)



October 16, 2013 at 13:48



October 16, 2013 at 13:48

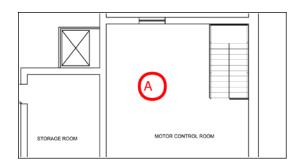


October 16, 2013 at 13:48



October 16, 2013 at 13:48

#67 Architectural



Issue Number: 67

Date Created: Oct 15, 2013 @ 16:18 Creator: Robert McCormick, AIA

Status: Open

Room: CONTROL ROOM

Description: Painted conc floor, CMU walls and

plank deck. Borrowed light into chlo-

rine room.

Photos (3)



October 16, 2013 at 13:49

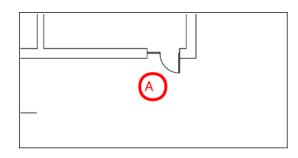


October 16, 2013 at 13:49



October 16, 2013 at 13:49

#68 Architectural



Issue Number: 68

Date Created: Oct 15, 2013 @ 16:21 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Double FRP replacement doors, day-

light showing thru, knob non-ADA.

Photos (3)





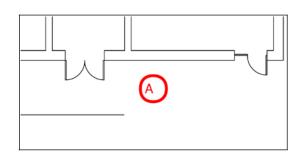


October 16, 2013 at 13:49



October 16, 2013 at 13:49

#71 Architectural



Issue Number: 71

Date Created: Oct 15, 2013 @ 16:31 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

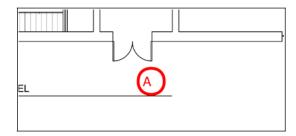
Description: Louver perimeter sealant is sound.

Photos (1)



October 16, 2013 at 13:49

#72 Architectural



Issue Number: 72

Date Created: Oct 15, 2013 @ 16:32 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

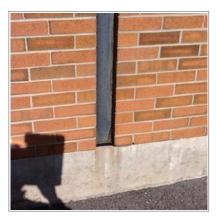
Description: Building vertical bands metal finish is

worn.

Photos (2)

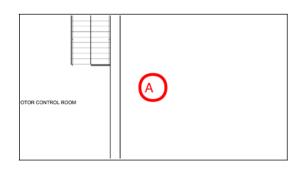






October 16, 2013 at 13:49

#104 Architectural



Issue Number: 104

Date Created: Oct 15, 2013 @ 18:42 Creator: Robert McCormick, AIA

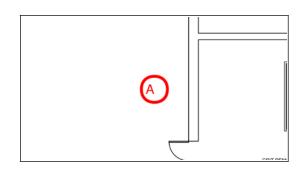
Status: Open Room: EXTERIOR Description: BUR system.

Photos (1)



October 16, 2013 at 13:54

#106 Architectural



Issue Number: 106

Date Created: Oct 15, 2013 @ 18:54 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Original BUR system -over 42 years

old, with 2 roof drains, lightning protection broken, missing or discon-

nected from 4 hoods.

Photos (12)



October 16, 2013 at 13:54



October 16, 2013 at 13:54



October 16, 2013 at 13:54



October 16, 2013 at 13:54



October 16, 2013 at 13:54



October 16, 2013 at 13:54



October 16, 2013 at 13:54



October 16, 2013 at 13:54



October 16, 2013 at 13:55



October 16, 2013 at 13:55

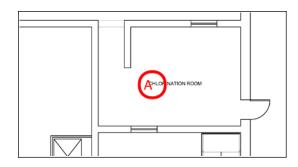


October 16, 2013 at 13:55



October 16, 2013 at 13:55

#107 Architectural



Issue Number: 107

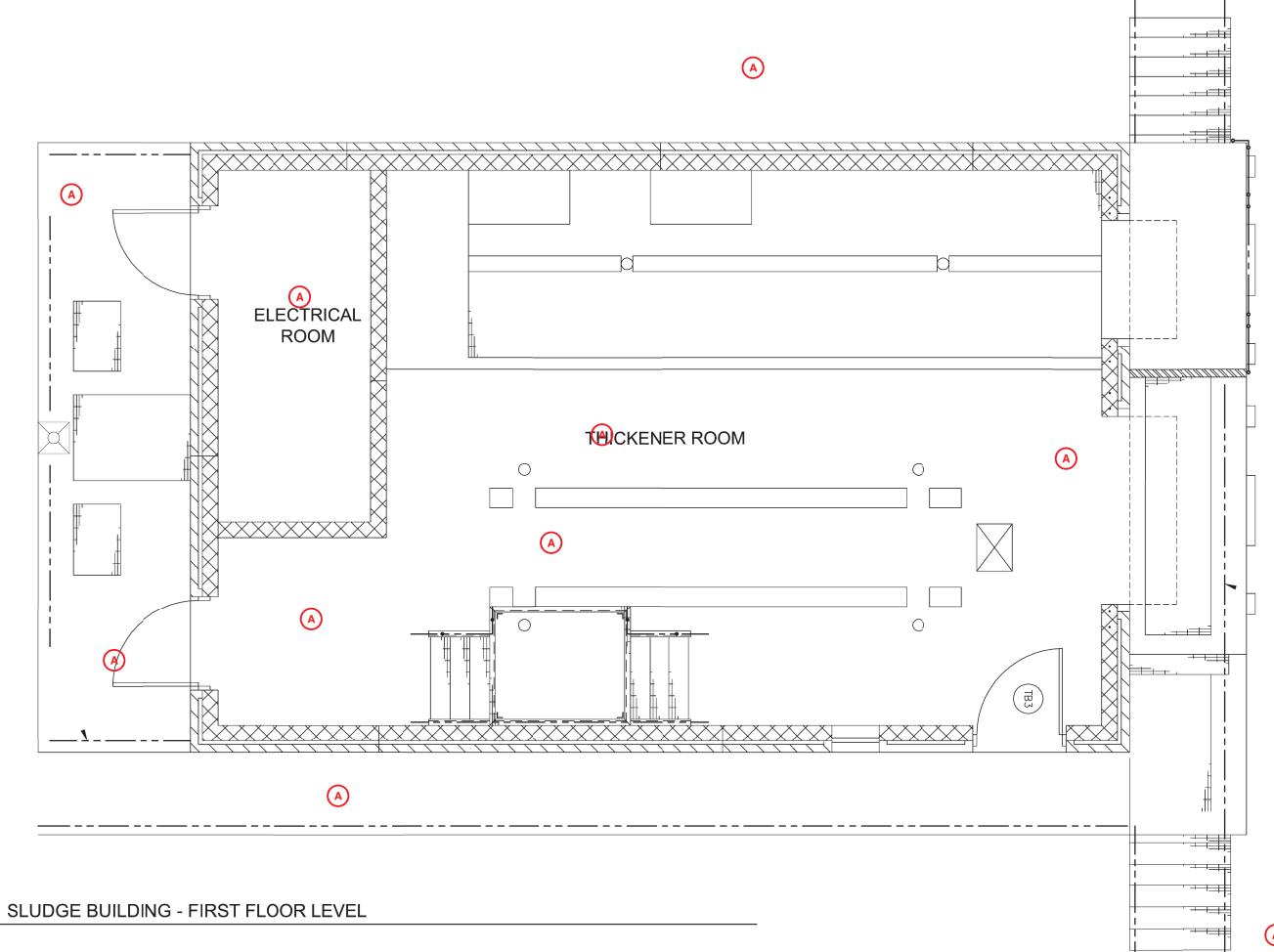
Date Created: Oct 16, 2013 @ 14:05 Creator: Robert McCormick, AIA

Status: Open

Room: CHLORINATION ROOM

Description: Painted conc elev slab floor, CMU

walls and plank deck.

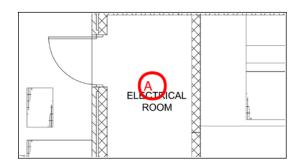






SLUDGE BUILDING - FIRST FLOOR LEVEL

#92 Architectural



Issue Number: 92

Date Created: Oct 15, 2013 @ 17:54 Creator: Robert McCormick, AIA

Status: Open

Room: ELECTRICAL ROOM

Description: Unpainted conc floor, painted CMU

walls and plank deck. Exterior HM door and frame in good shape, used a KD rather than welded frame. Edge

of plank repaired in the past.

Photos (4)



October 16, 2013 at 13:53



October 16, 2013 at 13:53

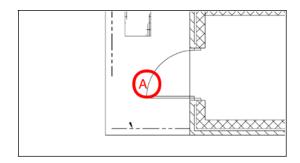


October 16, 2013 at 13:53



October 16, 2013 at 13:53

#93 Architectural



Issue Number: 93

Date Created: Oct 15, 2013 @ 17:59 Creator: Robert McCormick, AIA

Status: Open

Room: LOADING DOCK

Description: Exterior HM door is binding on strike

side of frame.

Photos (2)

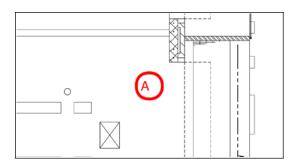


October 16, 2013 at 13:53



October 16, 2013 at 13:53

#94 Architectural



Issue Number: 94

Date Created: Oct 15, 2013 @ 18:01 Creator: Robert McCormick, AIA

Status: Open

Description: Coiling door not sealing at bottom,

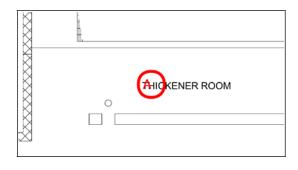
wraps being used.

Photos (1)



October 16, 2013 at 13:53

#95 Architectural



Issue Number: 95

Date Created: Oct 15, 2013 @ 18:03 Creator: Robert McCormick, AIA

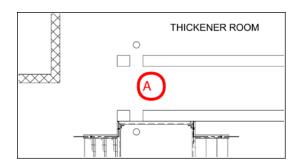
Status: Open

Room: THICKENER ROOM

Description: Unpainted conc floor, painted CMU

walls and plank deck.

#96 Architectural



Issue Number: 96

Date Created: Oct 15, 2013 @ 18:03 Creator: Robert McCormick, AIA

Status: Open

Room: THICKENER ROOM

Description: Underside of roof drain, in good con-

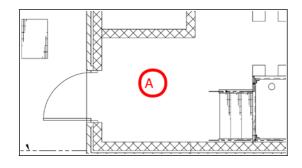
dition.

Photos (1)



October 16, 2013 at 13:53

#97 Architectural



Issue Number: 97

Date Created: Oct 15, 2013 @ 18:05 Creator: Robert McCormick, AIA

Status: Open

Room: THICKENER ROOM

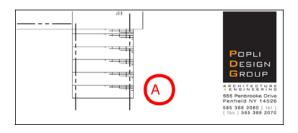
Description: Aluminum grate walk-over in good

condition.



October 16, 2013 at 13:53

#98 Architectural



Issue Number: 98

Date Created: Oct 15, 2013 @ 18:07 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

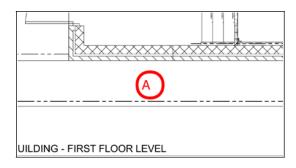
Description: Aluminum grate walkway and steps in

good condition.



October 16, 2013 at 13:53

#99 Architectural



Issue Number: 99

Date Created: Oct 15, 2013 @ 18:09 Creator: Robert McCormick, AIA

> Status: Open Room: EXTERIOR

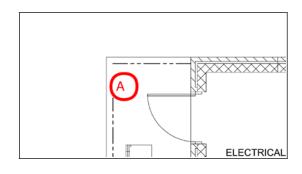
Description: Site lighting is old and dated.

Photos (1)



October 16, 2013 at 13:53

#100 Architectural



Issue Number: 100

Date Created: Oct 15, 2013 @ 18:10 Creator: Robert McCormick, AIA

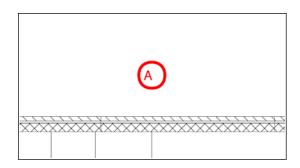
> Status: Open Room: EXTERIOR

Description: Site lighting old and dated.



October 16, 2013 at 13:53

#103 Architectural



Issue Number: 103

Date Created: Oct 15, 2013 @ 18:40 Creator: Robert McCormick, AIA

Status: Open

Room: EXTERIOR

Description: Roof BUR system, younger than other

buildings.



October 16, 2013 at 13:54



Physical Conditions Assessment: Structural Onondaga Cty Brewerton WWTP

Paul Lindemann, P.E.

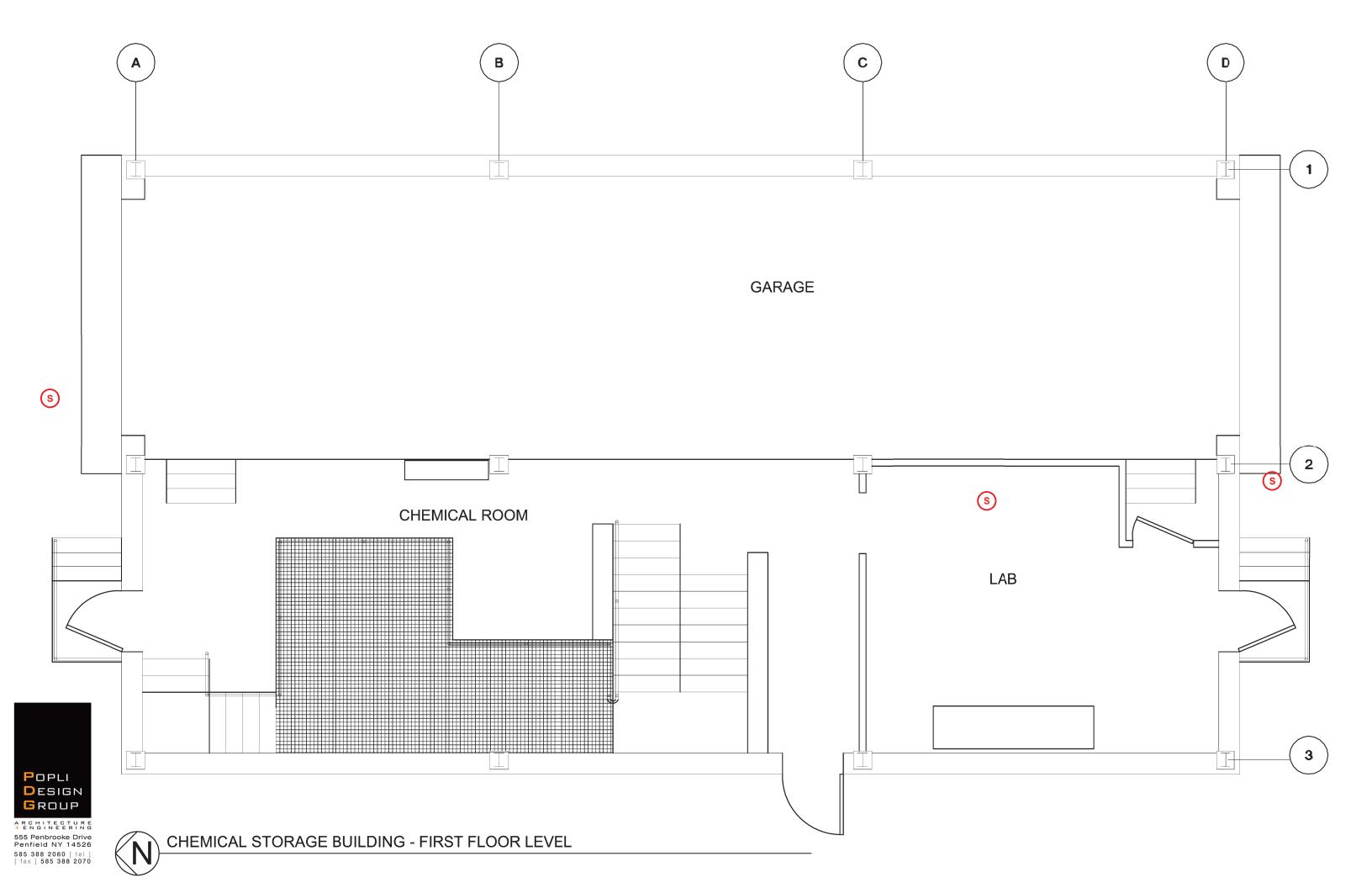
October 15, 2013

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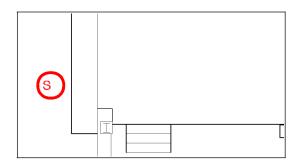
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#51 Structural	41



CHEMICAL STORAGE BUILDING - FIRST FLOOR LEVEL

#48 Structural



Issue Number: 48

Date Created: Oct 15, 2013 @ 15:53 Creator: Paul Lindemann, P.E.

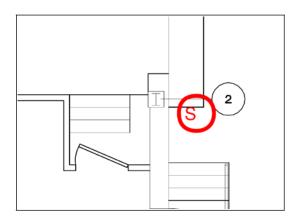
> Status: Open Room: Exterior

Description: Reference: West elevation.



October 16, 2013 at 14:18

#49 Structural



Issue Number: 49

Date Created: Oct 15, 2013 @ 15:54 Creator: Paul Lindemann, P.E.

> Status: Open Room: Exterior

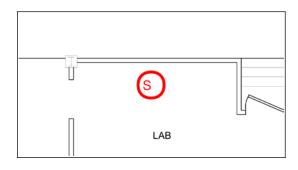
Description: Reference: East Elevation

Photos (1)



October 16, 2013 at 14:18

#53 Structural



Issue Number: 53

Date Created: Oct 15, 2013 @ 17:04 Creator: Paul Lindemann, P.E.

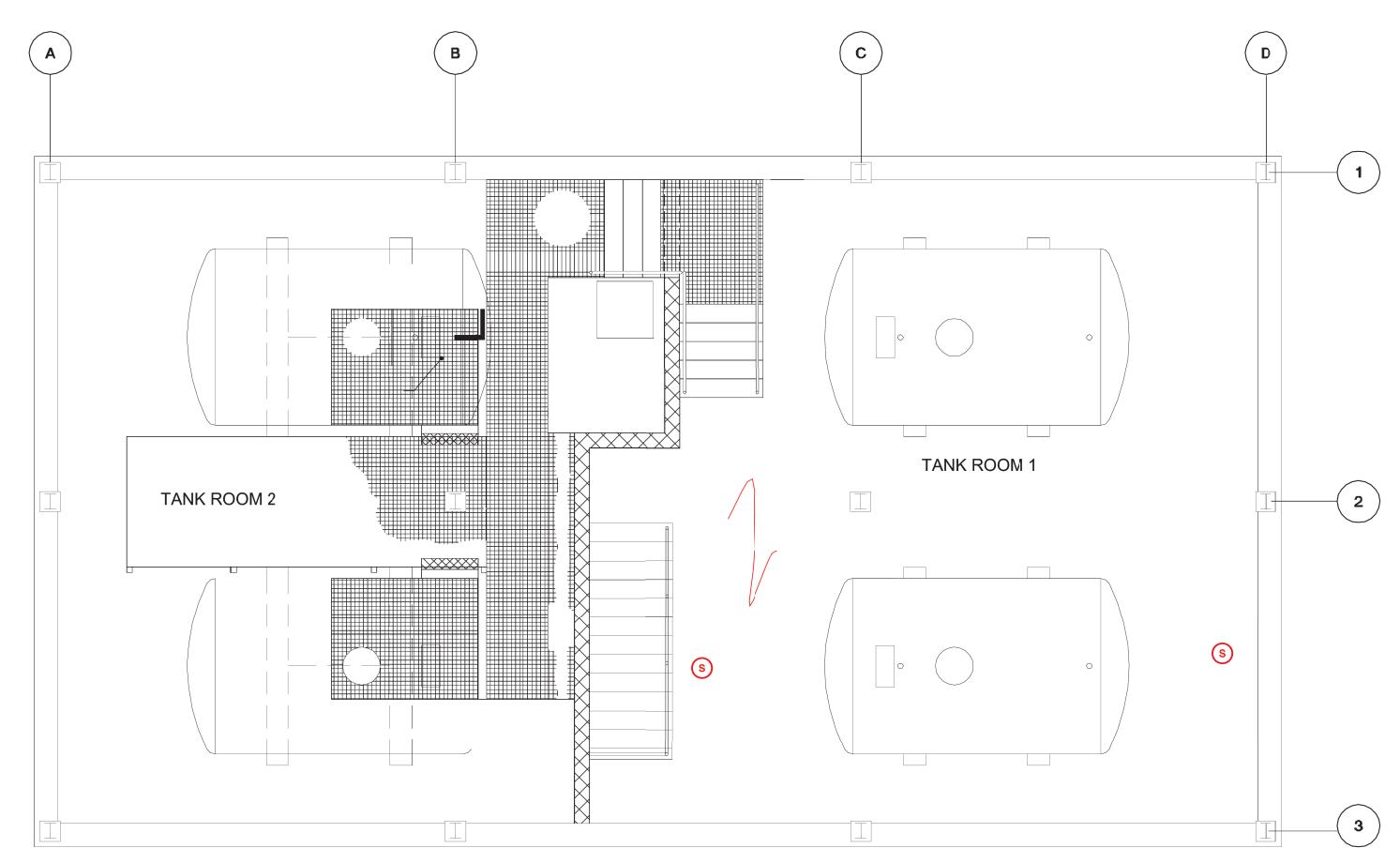
Status: Open

Room: Chemical Room

Description: Reference General view of framing.



October 16, 2013 at 14:18



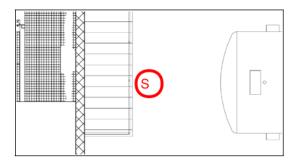


585 388 2060 [tel] [fax] 585 388 2070



CHEMICAL STORAGE BUILDING - SECOND FLOOR LEVEL

#50 Structural



Issue Number: 50

Date Created: Oct 15, 2013 @ 15:59 Creator: Paul Lindemann, P.E.

Status: Open

Room: Tank Room 1

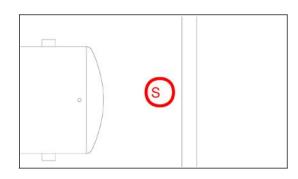
Description: Reference: Roof framing

Photos (1)



October 16, 2013 at 14:18

#52 Structural



Issue Number: 52

Date Created: Oct 15, 2013 @ 17:01 Creator: Paul Lindemann, P.E.

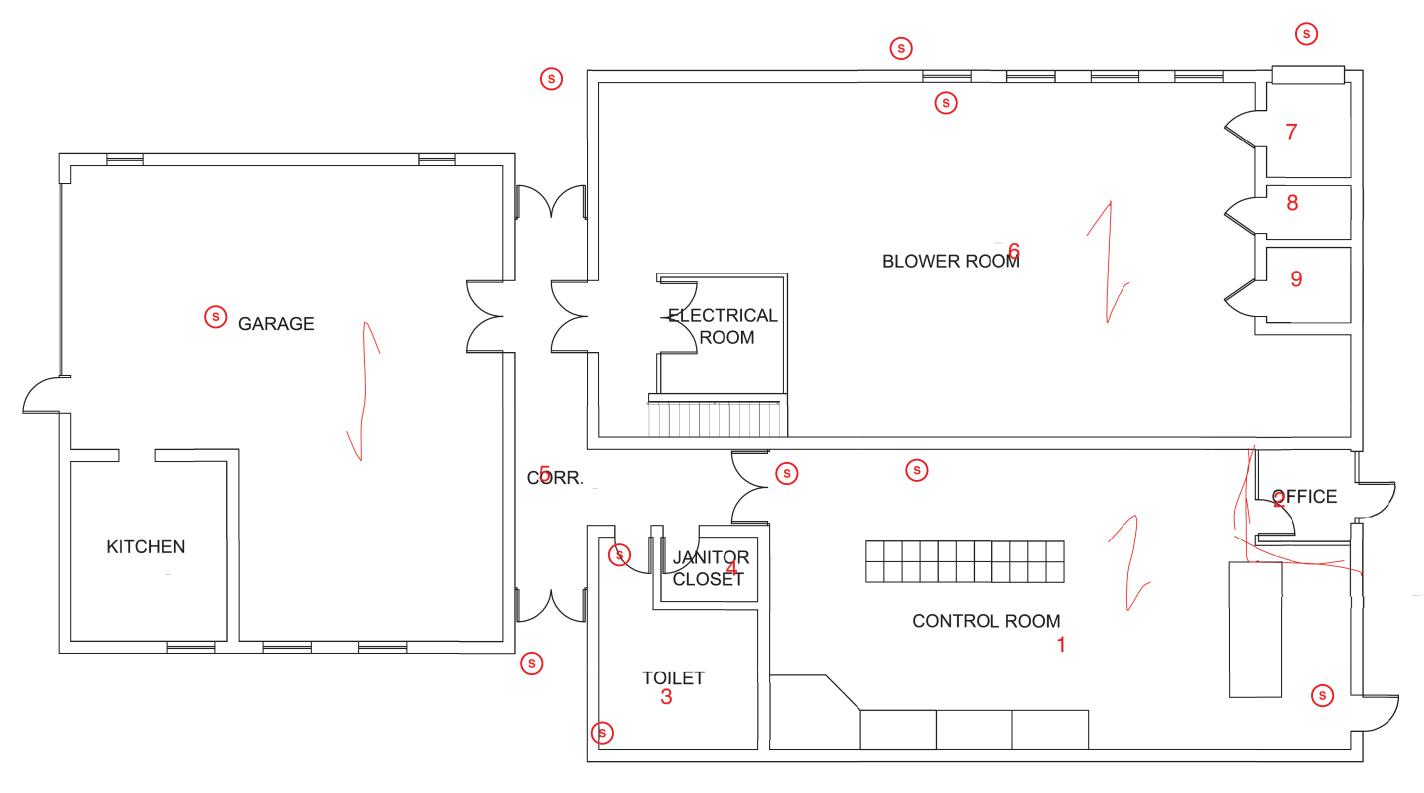
Status: Open

Room: Tank Room 2

Description: 96 x 112 knock out panel



October 16, 2013 at 14:18



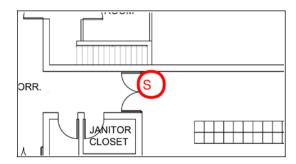


POPLI
DESIGN
GROUP

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[fax] 585 388 2070

CONTROL BUILDING - FIRST FLOOR

#12 Structural



Issue Number: 12

Date Created: Oct 15, 2013 @ 12:47 Creator: Paul Lindemann, P.E.

Status: Open

Room: Control Room

Description: Wide step cracks in corner of CMU

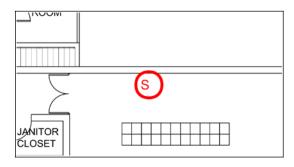
wall.

Photos (1)



October 16, 2013 at 14:13

#13 Structural



Issue Number: 13

Date Created: Oct 15, 2013 @ 12:51 Creator: Paul Lindemann, P.E.

Status: Open

Room: Control Room

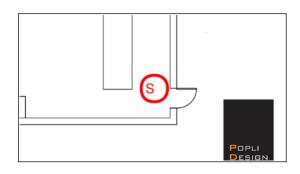
Description: Full height crack in CMU

wall.



October 16, 2013 at 14:13

#14 Structural



Issue Number: 14

Date Created: Oct 15, 2013 @ 12:53 Creator: Paul Lindemann, P.E.

Status: Open

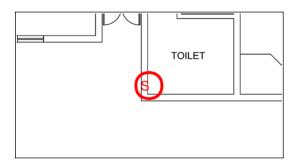
Room: Control Room

Description: Wide step crack in CMU above door.



October 16, 2013 at 14:14

#15 Structural



Issue Number: 15

Date Created: Oct 15, 2013 @ 12:57 Creator: Paul Lindemann, P.E.

Status: Open

Room: Toilet Room

Description: Medium Step crack. in

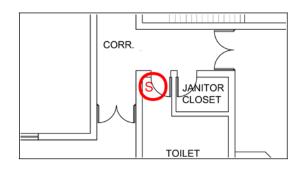
CMU wall.

Photos (1)



October 16, 2013 at 14:14

#16 Structural



Issue Number: 16

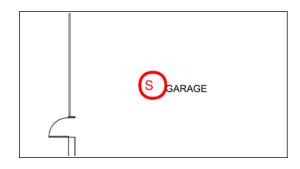
Date Created: Oct 15, 2013 @ 12:59 Creator: Paul Lindemann, P.E.

Status: Open Room: Toilet Room Description: Fine step crack.



October 16, 2013 at 14:14

#17 Structural



Issue Number: 17

Date Created: Oct 15, 2013 @ 13:05 Creator: Paul Lindemann, P.E.

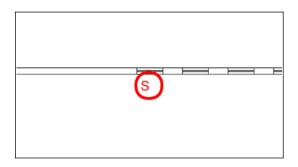
> Status: Open Room: Garage

Description: Cracks in floor slab.



October 16, 2013 at 14:14

#18 Structural



Issue Number: 18

Date Created: Oct 15, 2013 @ 13:08 Creator: Paul Lindemann, P.E.

Status: Open

Room: Boiler Room

Description: Crack in CMU above louvre that ex-

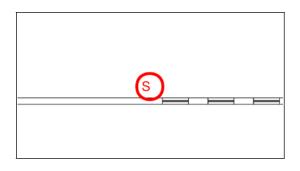
tends into roof plank.

Photos (1)



October 16, 2013 at 14:14

#19 Structural



Issue Number: 19

Date Created: Oct 15, 2013 @ 13:18 Creator: Paul Lindemann, P.E.

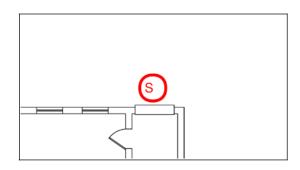
> Status: Open Room: Exterior

Description: Step crack in brick masonry above louvre.



October 16, 2013 at 14:14

#20 Structural



Issue Number: 20

Date Created: Oct 15, 2013 @ 13:21 Creator: Paul Lindemann, P.E.

> Status: Open Room: Exterior

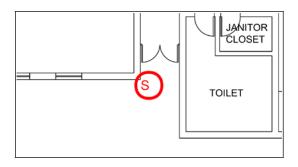
Description: Step crack at corner in brick masonry.

No distress noted in foundation wall.



October 16, 2013 at 14:14

#21 Structural



Issue Number: 21

Date Created: Oct 15, 2013 @ 13:24 Creator: Paul Lindemann, P.E.

> Status: Open Room: Exterior

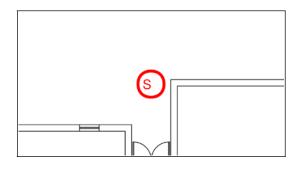
Description: Crack in step at main entrance.

Photos (1)



October 16, 2013 at 14:14

#54 Structural



Issue Number: 54

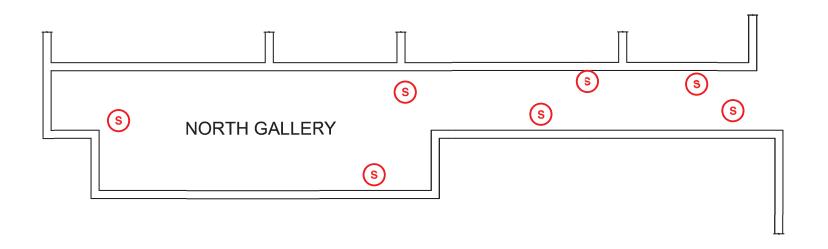
Date Created: Oct 15, 2013 @ 17:11 Creator: Paul Lindemann, P.E.

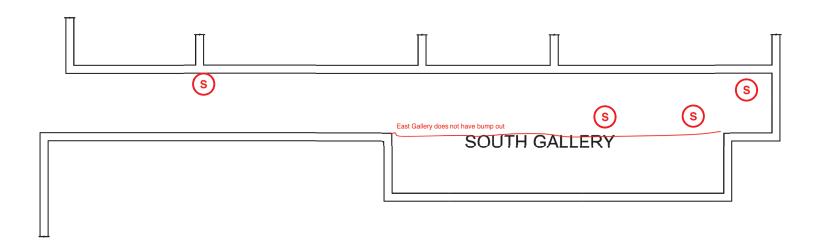
Status: Open Room: Exterior

Description: Cracked landing at rear entry.



October 16, 2013 at 14:18

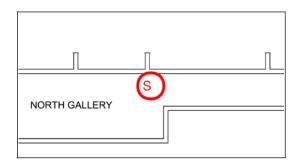






CONTROL BUILDING - GALLERY

#22 Structural



Issue Number: 22

Date Created: Oct 15, 2013 @ 13:47 Creator: Paul Lindemann, P.E.

> Status: Open Room: West Gallery

Description: Signs of leakage at the joint with

cracking and hollow sounding

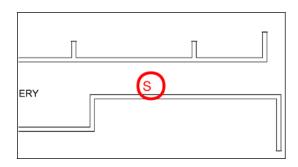
concrete.

Photos (1)



October 16, 2013 at 14:14

#23 Structural



Issue Number: 23

Date Created: Oct 15, 2013 @ 13:51 Creator: Paul Lindemann, P.E.

Status: Open

Room: West Gallery

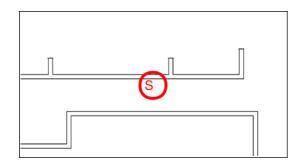
Description: Typical cracking of gallery wall with

efflorescence that is not typical.



October 16, 2013 at 14:14

#24 Structural



Issue Number: 24

Date Created: Oct 15, 2013 @ 13:54 Creator: Paul Lindemann, P.E.

Status: Open

Room: West Gallery

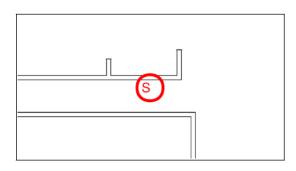
Description: Fine vertical crack in gallery wall that

extends into top slab.



October 16, 2013 at 14:15

#25 Structural



Issue Number: 25

Date Created: Oct 15, 2013 @ 13:56 Creator: Paul Lindemann, P.E.

> Status: Open Room: West Gallery

Description: Horizon. Crack in gallery wall w/

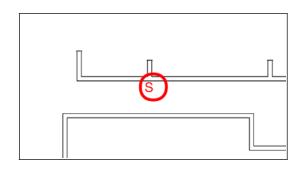
heavy efflorescence.

Photos (1)



October 16, 2013 at 14:15

#26 Structural



Issue Number: 26

Date Created: Oct 15, 2013 @ 13:59 Creator: Paul Lindemann, P.E.

Status: Open

Room: East Gallery

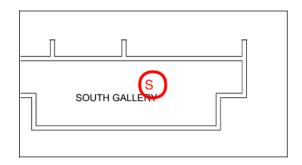
Description: Several vertical cracks w/ efflores-

cence in north wall of east gallery.



October 16, 2013 at 14:15

#27 Structural



Issue Number: 27

Date Created: Oct 15, 2013 @ 14:03 Creator: Paul Lindemann, P.E.

Status: Open

Room: East Gallery

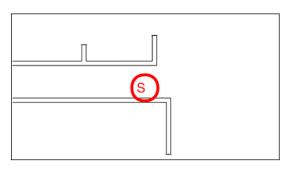
Description: Cracks in top slab of east gallery w/

signs of leakage and efflorescence.



October 16, 2013 at 14:15

#28 Structural



Issue Number: 28

Date Created: Oct 15, 2013 @ 14:07 Creator: Paul Lindemann, P.E.

Status: Open

Room: North Gallery

Description: Signs of leakage w/ signs of heavy

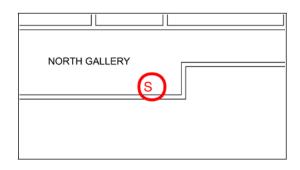
leakage and rust staining.

Photos (1)



October 16, 2013 at 14:15

#29 Structural



Issue Number: 29

Date Created: Oct 15, 2013 @ 14:09 Creator: Paul Lindemann, P.E.

Status: Open

Room: North Gallery

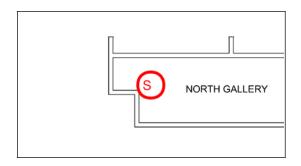
Description: Crack in top slab w/ heavy efflores-

cence.



October 16, 2013 at 14:15

#30 Structural



Issue Number: 30

Date Created: Oct 15, 2013 @ 14:11 Creator: Paul Lindemann, P.E.

Status: Open

Room: North Gallery

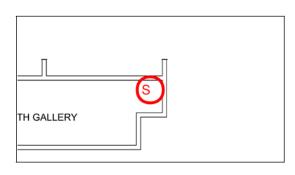
Description: Typical crack in top slab of North

Gallery.



October 16, 2013 at 14:15

#31 Structural



Issue Number: 31

Date Created: Oct 15, 2013 @ 14:15 Creator: Paul Lindemann, P.E.

Status: Open

Room: South Gallery

Description: Typical cracking in south gallery w/

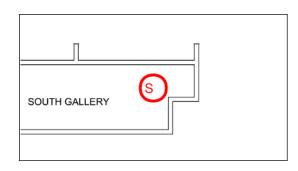
heavy efflorescence.

Photos (1)



October 16, 2013 at 14:15

#32 Structural



Issue Number: 32

Date Created: Oct 15, 2013 @ 14:23 Creator: Paul Lindemann, P.E.

Status: Open Room: East Gallery

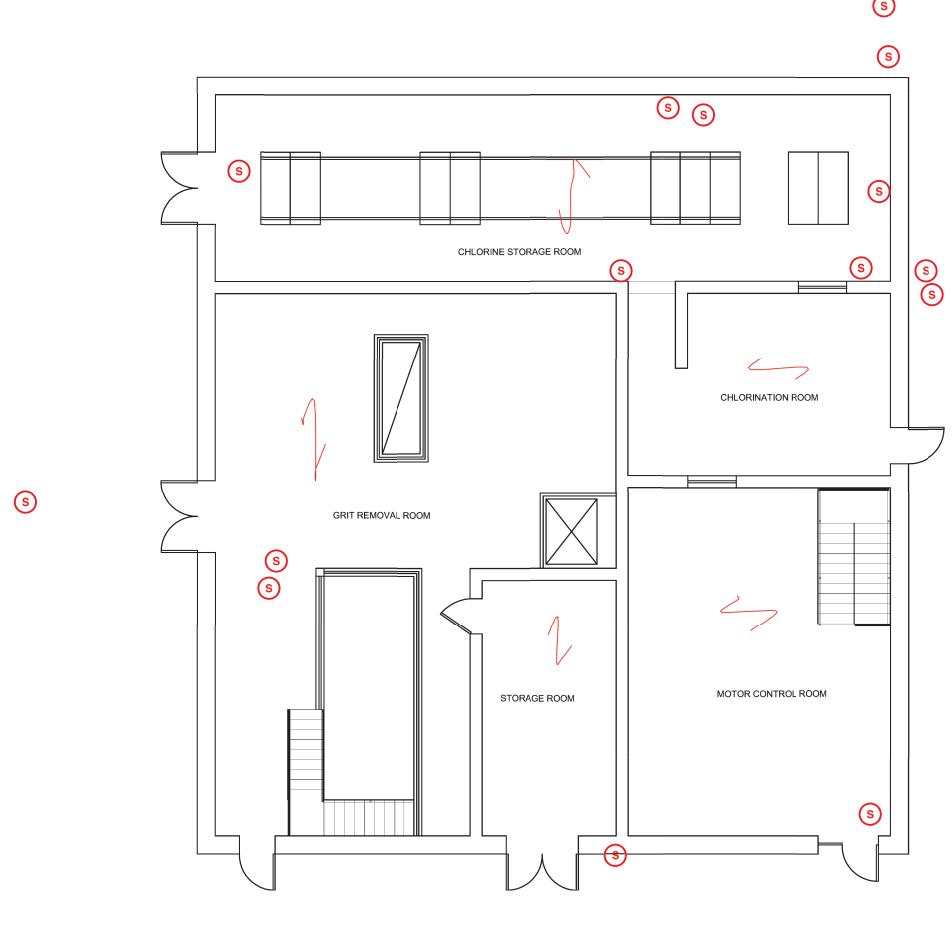
Description: Connection at south wall of east

gallery for stair landing support beam

is heavily rusted.



October 16, 2013 at 14:15



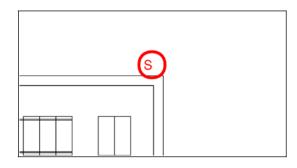


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RAW SEWAGE PUMPING STATION - FIRST FLOOR LEVEL

#33 Structural



Issue Number: 33

Date Created: Oct 15, 2013 @ 15:01 Creator: Paul Lindemann, P.E.

> Status: Open Room: Exterior

Description: Bottom portion of the wall has settled

and displaced approx. 1 in. At the

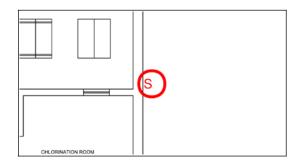
top.

Photos (1)



October 16, 2013 at 14:16

#34 Structural



Issue Number: 34

Date Created: Oct 15, 2013 @ 15:02 Creator: Paul Lindemann, P.E.

Status: Open Room: Exterior

Description: Settlement of addition has caused the

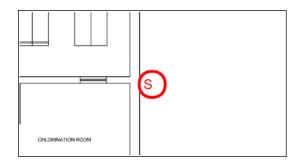
masonry to shift up to 1 in. At the

top of the wall.



October 16, 2013 at 14:16

#35 Structural



Issue Number: 35

Date Created: Oct 15, 2013 @ 15:05 Creator: Paul Lindemann, P.E.

> Status: Open Room: Exterior

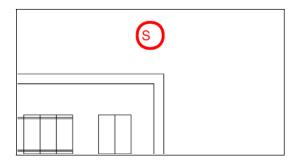
Description: Settlement of the addition caused gap

at original building.



October 16, 2013 at 14:16

#36 Structural



Issue Number: 36

Date Created: Oct 15, 2013 @ 15:07 Creator: Paul Lindemann, P.E.

> Status: Open Room: Exterior

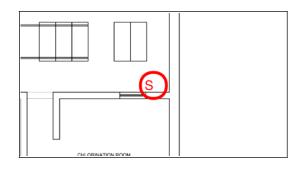
Description: Reference: General view of north elevation.

Photos (1)



October 16, 2013 at 14:16

#37 Structural



Issue Number: 37

Date Created: Oct 15, 2013 @ 15:09 Creator: Paul Lindemann, P.E.

Status: Open

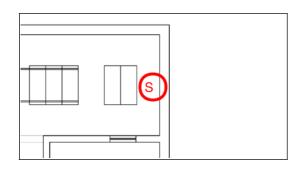
Room: Chlorine Storage Room
Description: Vertical and horizontal

cracking.



October 16, 2013 at 14:16

#38 Structural



Issue Number: 38

Date Created: Oct 15, 2013 @ 15:13 Creator: Paul Lindemann, P.E.

Status: Open

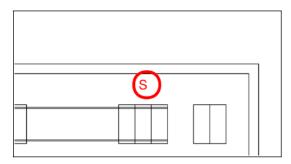
Room: Chlorine Storage Room Description: Gantry beam losing

embedment



October 16, 2013 at 14:16

#39 Structural



Issue Number: 39

Date Created: Oct 15, 2013 @ 15:14 Creator: Paul Lindemann, P.E.

Status: Open

Room: Chlorine Storage Room

Description: Crack in floor slab and spill curb of

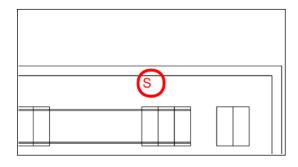
tank area.

Photos (1)



October 16, 2013 at 14:17

#40 Structural



Issue Number: 40

Date Created: Oct 15, 2013 @ 15:17 Creator: Paul Lindemann, P.E.

Status: Open

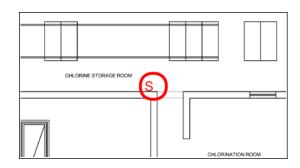
Room: Chlorine Storage Room

Description: Full height vertical crack in CMU wall.



October 16, 2013 at 14:17

#41 Structural



Issue Number: 41

Date Created: Oct 15, 2013 @ 15:22 Creator: Paul Lindemann, P.E.

Status: Open

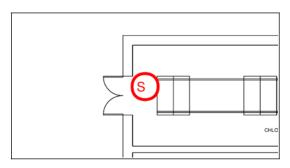
Room: Chlorine Storage Room

Description: Vertical cracking above door



October 16, 2013 at 14:17

#42 Structural



Issue Number: 42

Date Created: Oct 15, 2013 @ 15:24 Creator: Paul Lindemann, P.E.

Status: Open

Room: Chlorine Storage Room

Description: Step crack above the main door to

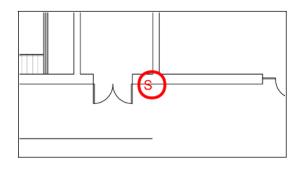
unit.

Photos (1)



October 16, 2013 at 14:17

#43 Structural



Issue Number: 43

Date Created: Oct 15, 2013 @ 15:27 Creator: Paul Lindemann, P.E.

Status: Open

Room: Storage Room

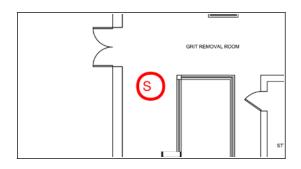
Description: Crack above door with 1/4 in. Horiz.

displacement.



October 16, 2013 at 14:17

#44 Structural



Issue Number: 44

Date Created: Oct 15, 2013 @ 15:31 Creator: Paul Lindemann, P.E.

Status: Open

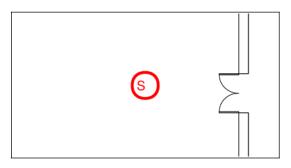
Room: Grit Removal Room

Description: Reference: view of framing.



October 16, 2013 at 14:17

#45 Structural



Issue Number: 45

Date Created: Oct 15, 2013 @ 15:38 Creator: Paul Lindemann, P.E.

> Status: Open Room: Exterior

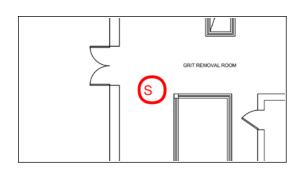
Description: Reference: view west elevation

Photos (1)



October 16, 2013 at 14:17

#46 Structural



Issue Number: 46

Date Created: Oct 15, 2013 @ 15:42 Creator: Paul Lindemann, P.E.

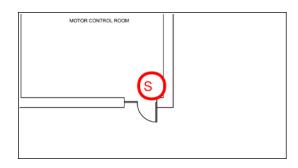
Status: Open

Room: Grit Removal Room
Description: Crack in suspended slab.



October 16, 2013 at 14:17

#47 Structural



Issue Number: 47

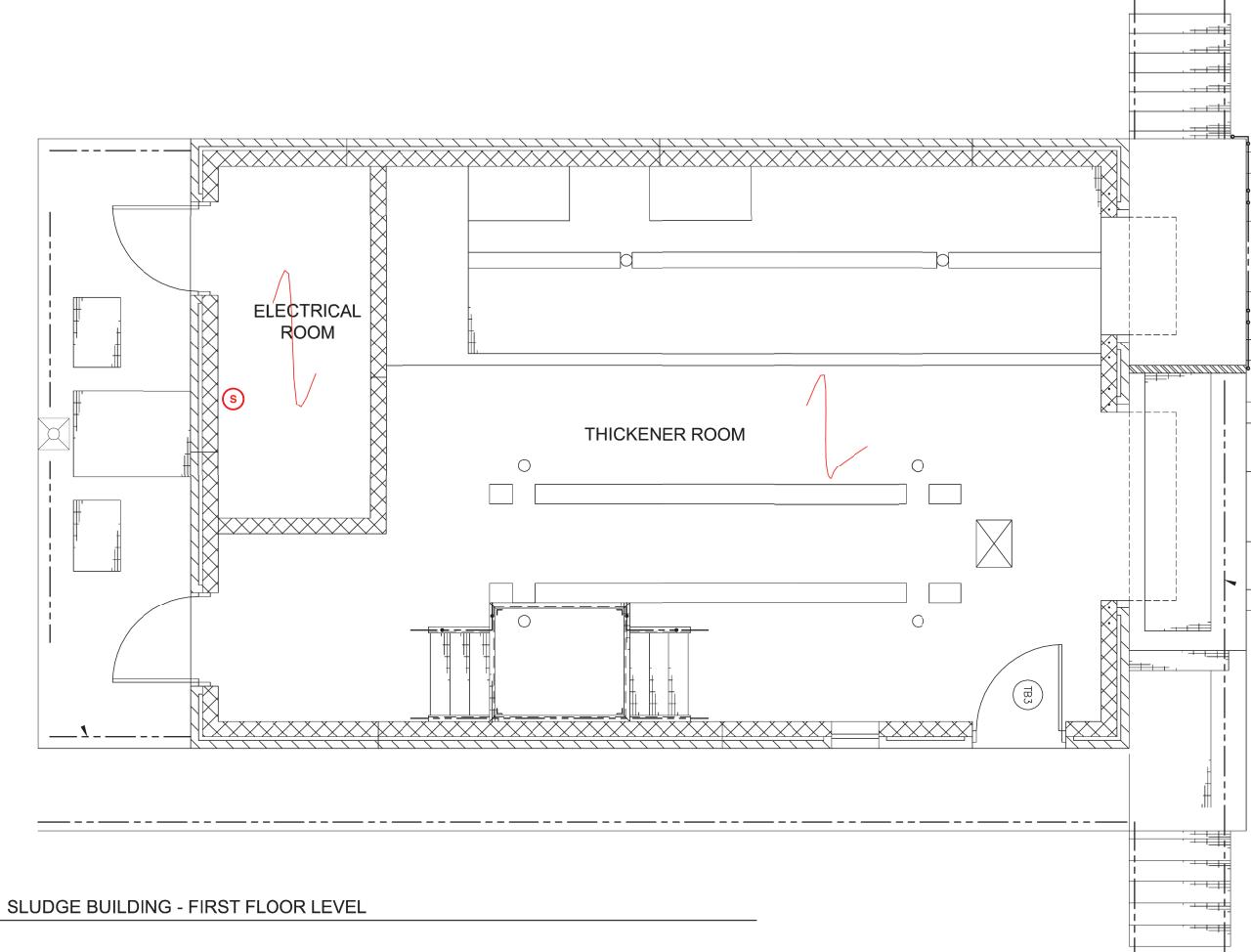
Date Created: Oct 15, 2013 @ 15:49 Creator: Paul Lindemann, P.E.

Status: Open

Room: Motor Control Room Description: Step crack at door.



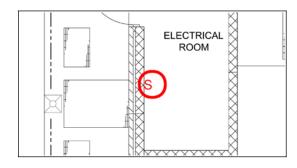
October 16, 2013 at 14:17





SLUDGE BUILDING - FIRST FLOOR LEVEL

#51 Structural



Issue Number: 51

Date Created: Oct 15, 2013 @ 16:43 Creator: Paul Lindemann, P.E.

Status: Open

Room: Electrical Room

Description: Repair to precast roof panel.



October 16, 2013 at 14:18



Physical Conditions Assessment: Electrical Onondaga Cty Brewerton WWTP

William Smith

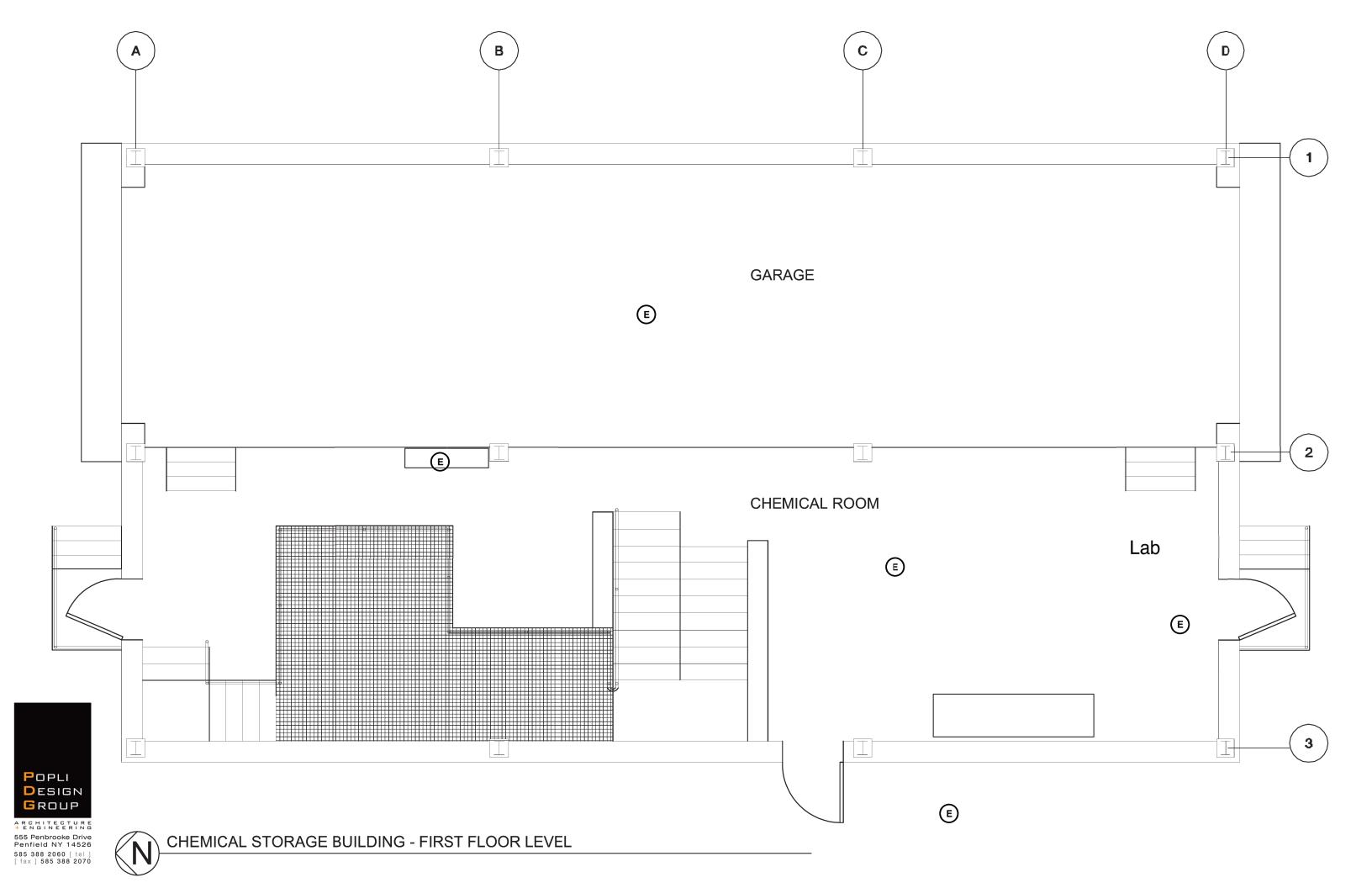
October 15, 2013

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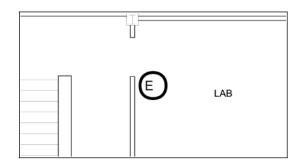
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CHEMICAL STORAGE BUILDING - FIRST FLOOR LEVEL

#68 Electrical



Issue Number: 68

Date Created: Oct 15, 2013 @ 17:02

Creator: William Smith

Status: Open

Room: Chemical Room

Description: Retrofitted lights with T8 lamps. Has

exit lights. No speaker. Open pullbox.

Bare lamp in light by door.

Photos (4)



October 17, 2013 at 20:48



October 17, 2013 at 20:48

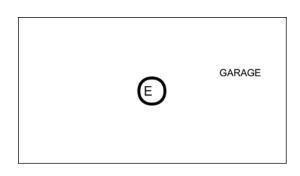


October 17, 2013 at 20:48



October 17, 2013 at 20:48

#69 Electrical



Issue Number: 69

Date Created: Oct 15, 2013 @ 17:06

Creator: William Smith

Status: Open Room: Garage

Description: Retrofitted lights with T8 lamps.

GFI outlets with covers.

Photos (2)

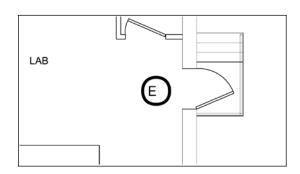


October 17, 2013 at 20:48



October 17, 2013 at 20:48

#70 Electrical



Issue Number: 70

Date Created: Oct 15, 2013 @ 17:10

Creator: William Smith

Status: Open Room: Lab

Description: Retrofitted light with T8 lamps plus

one wraparound light. GFI receptacles and

GFI protected outlets. Room has exit light. Room has speaker.

Photos (5)



October 17, 2013 at 20:48



October 17, 2013 at 20:48



October 17, 2013 at 20:48

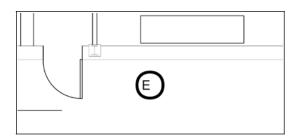


October 17, 2013 at 20:48



October 17, 2013 at 20:48

#71 Electrical



Issue Number: 71

Date Created: Oct 15, 2013 @ 17:15

Creator: William Smith

Status: Open Room: Exterior

Description: Wall packs with photocell at doors.

Building has lightning protection sys-

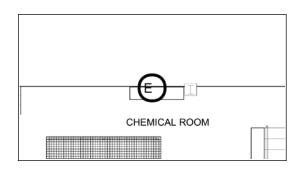
tem.

Photos (1)



October 17, 2013 at 20:48

#73 Electrical



Issue Number: 73

Date Created: Oct 16, 2013 @ 17:12

Creator: William Smith

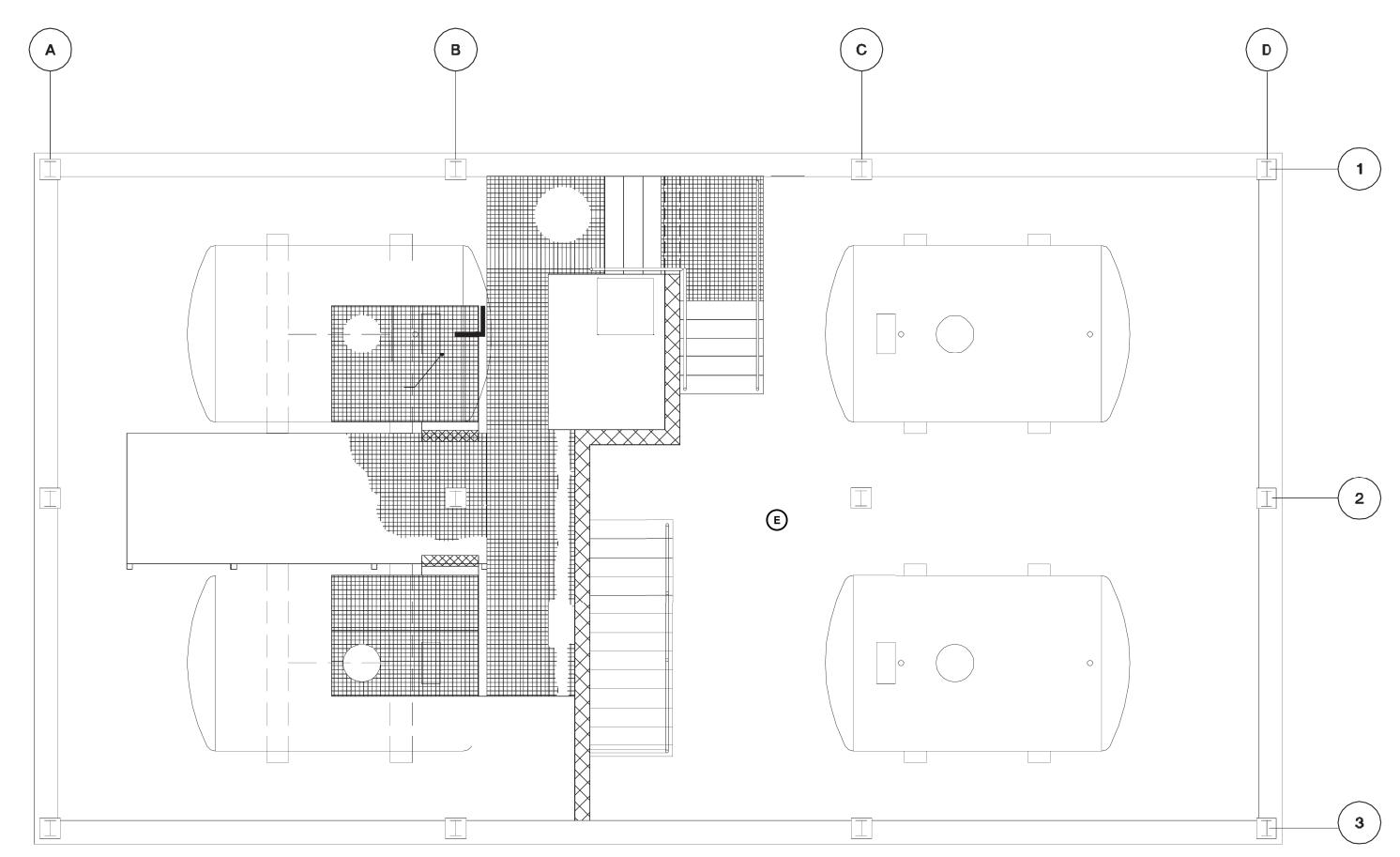
Status: Open

Room: Tank Room 1

Description: The motor control center is original

and components are failing. Replacement parts are increasingly difficult to

find.

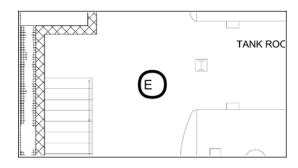






CHEMICAL STORAGE BUILDING - SECOND FLOOR LEVEL

#67 Electrical



Issue Number: 67

Date Created: Oct 15, 2013 @ 16:56

Creator: William Smith

Status: Open

Room: Tank Room 2

Description: Retrofitted lights with T8 lamps. No

exit light to stair down, sign only. Rigid conduits. Has speakers. Rusted unit heater disconnects. GFI pro-

tected receptacles.

Photos (2)

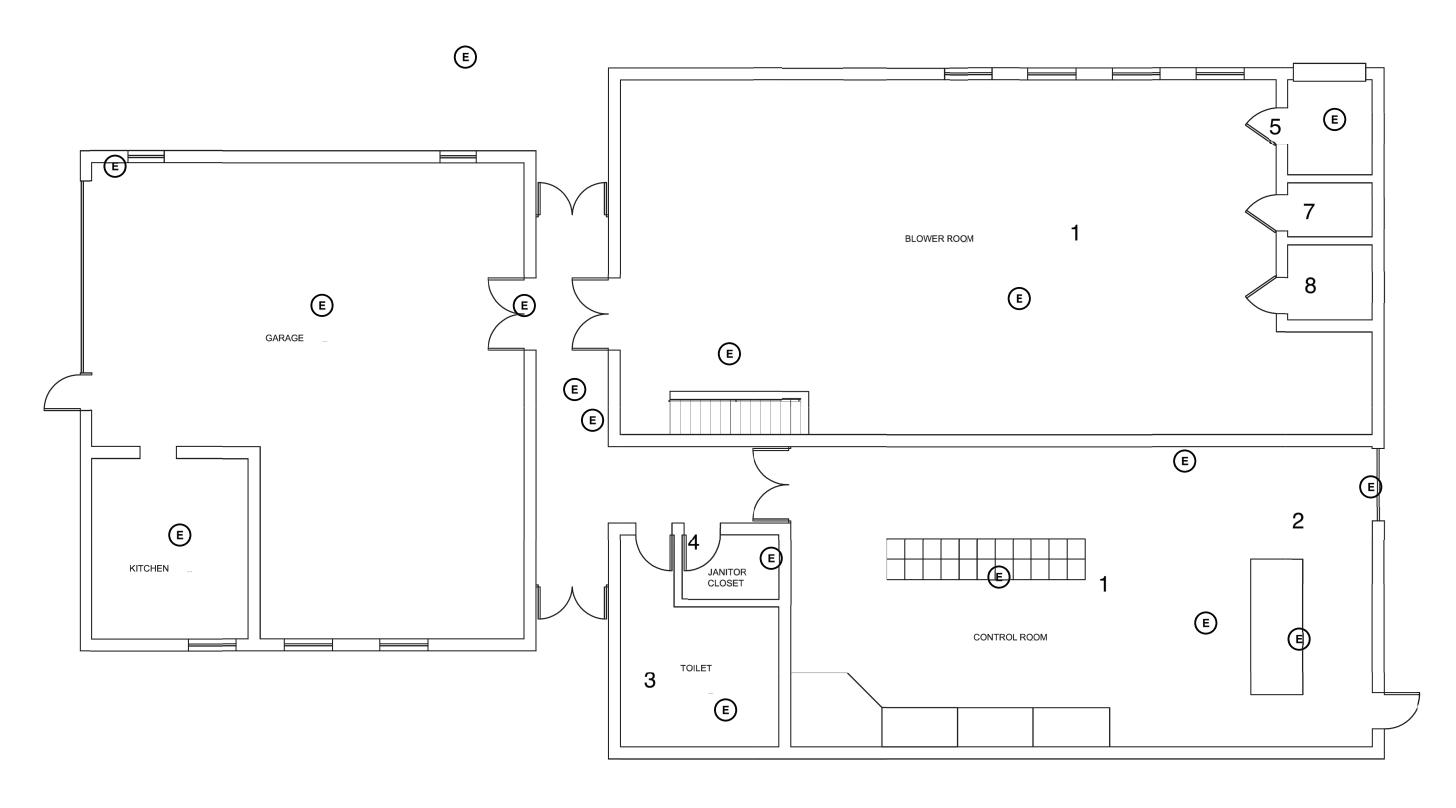


October 17, 2013 at 20:47



October 17, 2013 at 20:48



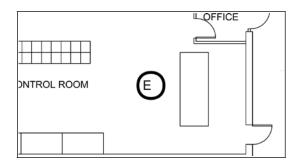






CONTROL BUILDING - FIRST FLOOR

#24 Electrical



Issue Number: 24

Date Created: Oct 15, 2013 @ 12:45

Creator: William Smith

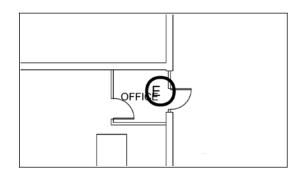
Status: Open

Room: Control Room

Description: Room has exit lights and emergency

lighting battery units.

#25 Electrical



Issue Number: 25

Date Created: Oct 15, 2013 @ 12:48

Creator: William Smith

Status: Open

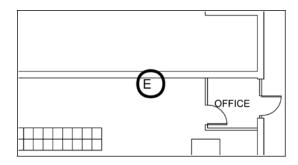
Room: Control Room Office

Description: Exit sign only, no exit light at door.



October 17, 2013 at 20:43

#29 Electrical



Issue Number: 29

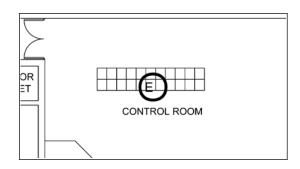
Date Created: Oct 15, 2013 @ 12:53

Creator: William Smith

Status: Open

Room: Control Room
Description: Broken receptacle.

#32 Electrical



Issue Number: 32

Date Created: Oct 15, 2013 @ 12:56

Creator: William Smith

Status: Open

Room: Control Room

Description: Motor control center components are worn and

failing. Replacement parts are increasingly

difficult to find.

Photos (4)



October 17, 2013 at 20:43



October 17, 2013 at 20:43

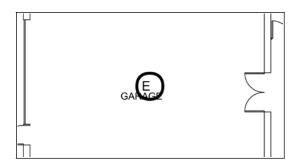


October 17, 2013 at 20:43



October 17, 2013 at 20:43

#33 Electrical



Issue Number: 33

Date Created: Oct 15, 2013 @ 13:00

Creator: William Smith

Status: Open Room: Garage

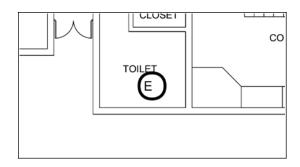
Description: No guards on 3 lights. 750kw diesel generator,

approx 5yrs old.



October 17, 2013 at 20:44

#34 Electrical



Issue Number: 34

Date Created: Oct 15, 2013 @ 13:00

Creator: William Smith

Status: Open

Room: Toilet Room

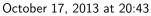
Description: No guards on lights. GFI receptacle wired

from light, not on dedicated circuit. Light switch

is weak.

Photos (2)

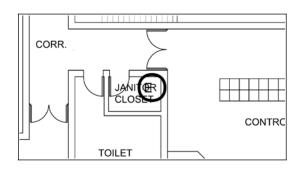






October 17, 2013 at 20:43

#36 Electrical



Issue Number: 36

 $\mbox{ Date Created:} \mbox{ Oct 15, 2013 @ 13:05}$

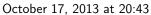
Creator: William Smith

Status: Open

Room: Janitor Closet
Description: No lens on light.

Photos (2)

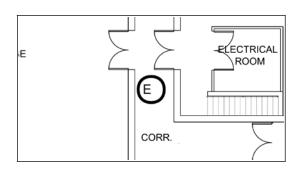






October 17, 2013 at 20:43

#37 Electrical



Issue Number: 37

Date Created: Oct 15, 2013 @ 13:08

Creator: William Smith

Status: Open Room: Corridor

Description: Has emergency lighting battery unit.

Retrofitted lights with T8 lamps.

Photos (2)

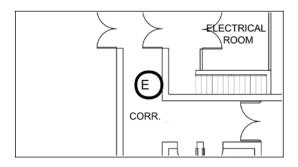


October 17, 2013 at 20:43



October 17, 2013 at 20:43

#38 Electrical



Issue Number: 38

Date Created: Oct 15, 2013 @ 13:10

Creator: William Smith

Status: Open Room: Corridor

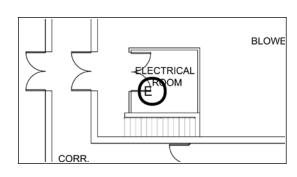
Description: Broken receptacle.

Photos (1)



October 17, 2013 at 20:44

#39 Electrical



Issue Number: 39

Date Created: Oct 15, 2013 @ 13:13

Creator: William Smith

Status: Open

Room: Electrical Room

Description: 2 newer lights and 1old one. Weak

switch. Exit sign only, no exit light.

Photos (2)

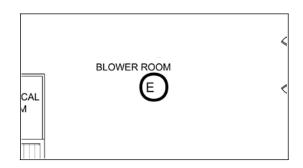






October 17, 2013 at 20:44

#40 Electrical



Issue Number: 40

Date Created: Oct 15, 2013 @ 13:17

Creator: William Smith

Status: Open

Room: Blower Room

Description: Retrofitted lights. Has exit light over

door but not visible from room. Panel

looks to be in good condition.

Photos (3)



October 17, 2013 at 20:44

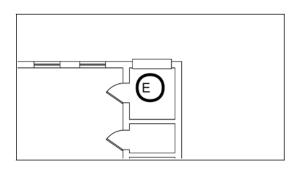


October 17, 2013 at 20:44



October 17, 2013 at 20:44

#41 Electrical



Issue Number: 41

Date Created: Oct 15, 2013 @ 13:23

Creator: William Smith

Status: Open

Room: Air Filtration/High Voltage Rooms

Description: Globe for the light is missing and the bulb

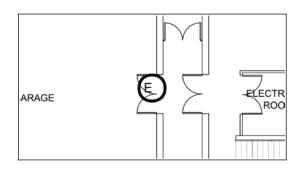
is exposed.

Photos (1)



October 17, 2013 at 20:44

#42 Electrical



Issue Number: 42

Date Created: Oct 15, 2013 @ 13:34

Creator: William Smith

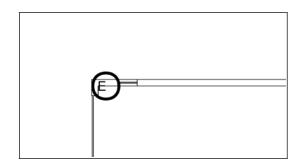
Status: Open Room: Garage

Description: Exit sign only, no exit light.



October 17, 2013 at 20:44

#43 Electrical



Issue Number: 43

Date Created: Oct 15, 2013 @ 13:35

Creator: William Smith

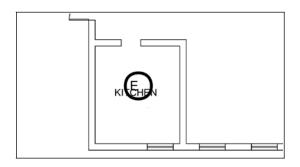
Status: Open Room: Garage

Description: Speaker hanging by wire.



October 17, 2013 at 20:44

#44 Electrical



Issue Number: 44

Date Created: Oct 15, 2013 @ 13:36

Creator: William Smith

Status: Open Room: Kitchen

Description: Recessed Incan lights. Power strip on

counter.

Photos (2)

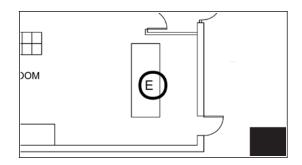






October 17, 2013 at 20:45

#45 Electrical



Issue Number: 45

Date Created: Oct 15, 2013 @ 13:40

Creator: William Smith

Status: Open

Room: Control Room

Description: Original ITE switchboard. Com-

ponents are failing and replacement parts are increasingly difficult to find.

Photos (2)

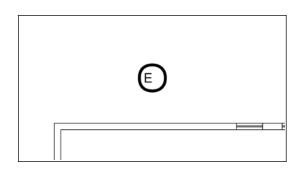






October 17, 2013 at 20:45

#54 Electrical



Issue Number: 54

Date Created: Oct 15, 2013 @ 14:41

Creator: William Smith

Status: Open Room: Exterior

Description: Building has lightning protection system. Pad

mounted transformer feeds bldg. Rags filling in hole where conduits exit. Has 1 speaker. Has photo cell controlled wall packs at exits. All roadway and site pole lights have old mercury vapor lamps that should be replaced with more

energy efficient led's.

Photos (8)



October 17, 2013 at 20:46



October 17, 2013 at 20:46



October 17, 2013 at 20:46



October 17, 2013 at 20:46



October 17, 2013 at 20:46



October 17, 2013 at 20:48

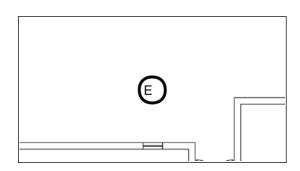


October 17, 2013 at 20:48



October 17, 2013 at 20:48

#63 Electrical



Issue Number: 63

Date Created: Oct 15, 2013 @ 16:24

Creator: William Smith

Status: Open Room: Roof

Description: 10 pieces of furniture without ground

terminals. Broken ground cable. No ground conductor to big SRV. Many ground cable supports missing.

Photos (4)



October 17, 2013 at 20:47



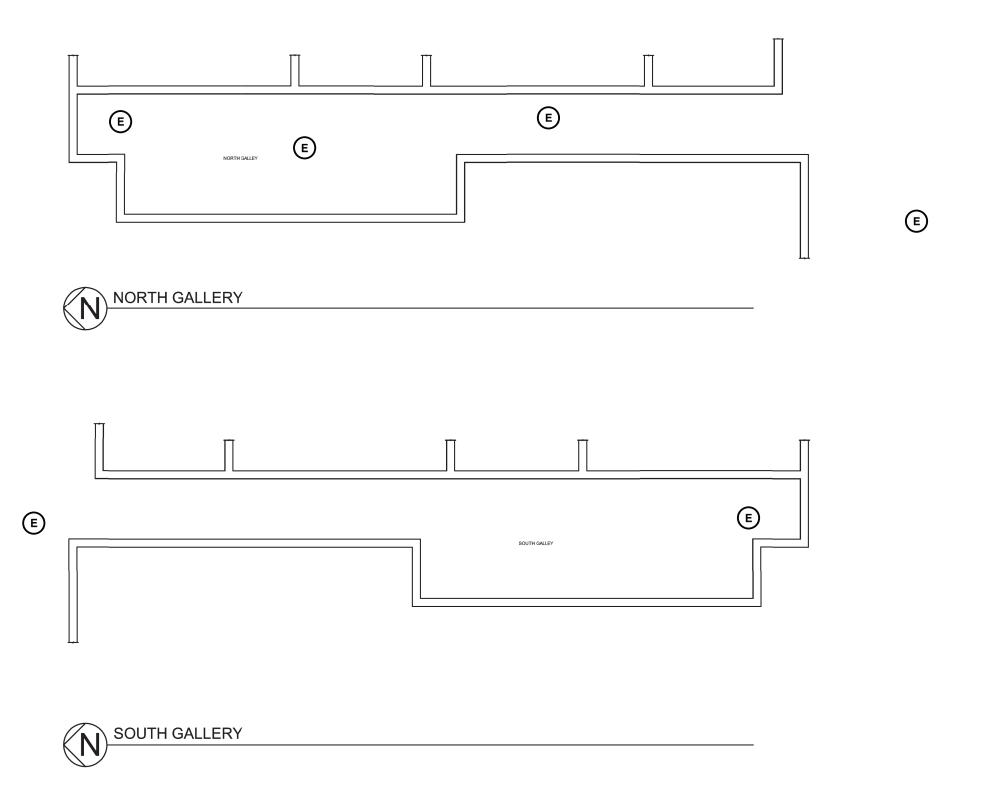
October 17, 2013 at 20:47



October 17, 2013 at 20:47



October 17, 2013 at 20:47

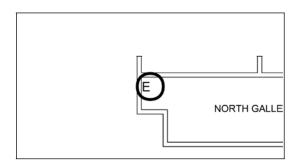






CONTROL BUILDING - GALLERY

#47 Electrical



Issue Number: 47

Date Created: Oct 15, 2013 @ 13:47

Creator: William Smith

Status: Open

Room: North Gallery

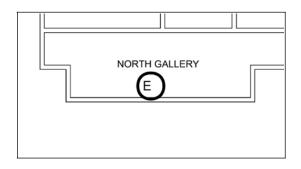
Description: Exit sign only no light.

Photos (1)



October 17, 2013 at 20:45

#48 Electrical



Issue Number: 48

Date Created: Oct 15, 2013 @ 13:50

Creator: William Smith

Status: Open

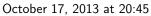
Room: North Gallery

Description: Retrofitted lights. GFI receptacles

Has speaker. Has step down transformer Ladder with exit sign only, no exit light.

Photos (2)

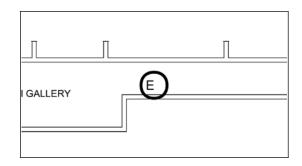






October 17, 2013 at 20:45

#49 Electrical



Issue Number: 49

Date Created: Oct 15, 2013 @ 13:52

Creator: William Smith

Status: Open

Room: North Gallery

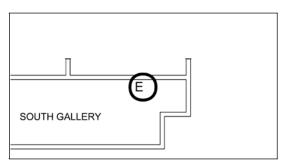
Description: Enclosed lights. GFI receptacles

Photos (1)



October 17, 2013 at 20:45

#51 Electrical



Issue Number: 51

Date Created: Oct 15, 2013 @ 13:56

Creator: William Smith

Status: Open

Room: South Gallery

Description: Conditions similar to North Gallery.

Photos (3)



October 17, 2013 at 20:45

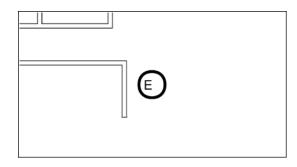


October 17, 2013 at 20:45



October 17, 2013 at 20:45

#52 Electrical



Issue Number: 52

Date Created: Oct 15, 2013 @ 14:00

Creator: William Smith

Status: Open

Room: West Gallery

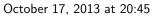
Description: Retrofitted lights. Exit ladder with exit

Sign only, no exit light. GFI receptacles.

Has speaker.

Photos (2)

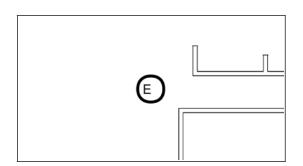






October 17, 2013 at 20:45

#53 Electrical



Issue Number: 53

Date Created: Oct 15, 2013 @ 14:07

Creator: William Smith

Status: Open

Room: West Gallery

Description: Conditions similar to East gallery

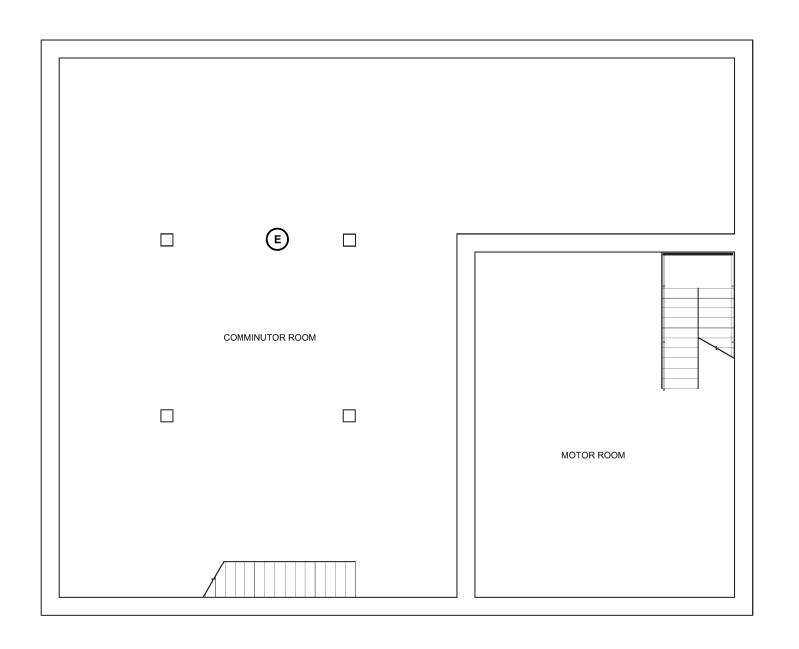
Photos (2)



October 17, 2013 at 20:45



October 17, 2013 at 20:45

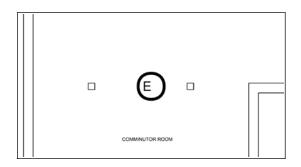






RAW SEWAGE PUMPING STATION - BASEMENT LEVEL

#55 Electrical



Issue Number: 55

Date Created: Oct 15, 2013 @ 15:09

Creator: William Smith

Status: Open

Room: Comminutor

Description: All explosion proof electrical; lights,

switches, and fittings. Electrical components covered with filth. No exit

light on this level.

Photos (3)



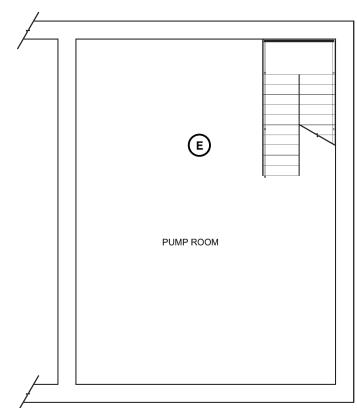
October 17, 2013 at 20:46

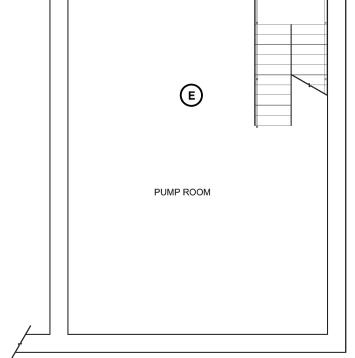


October 17, 2013 at 20:46



October 17, 2013 at 20:46

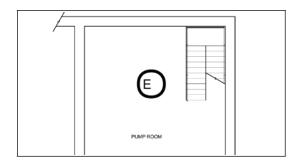






RAW SEWAGE PUMPING STATION - BASEMENT LEVEL 2

#60 Electrical



Issue Number: 60

Date Created: Oct 15, 2013 @ 15:27

Creator: William Smith

Status: Open

Room: Pump Room

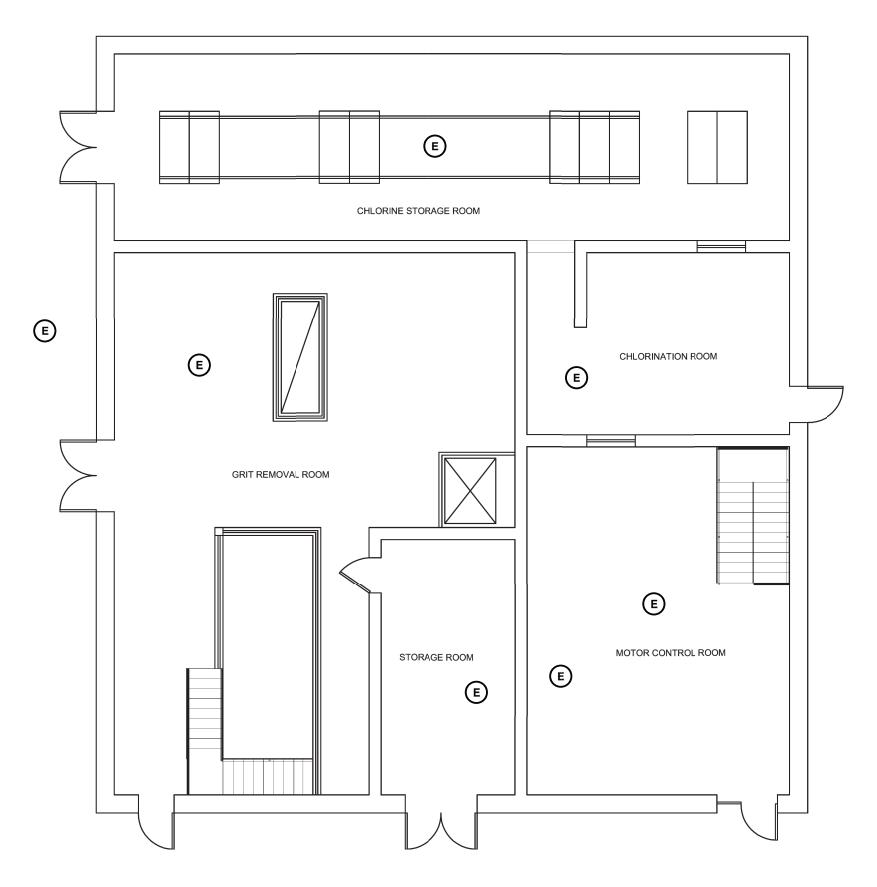
Description: Enclosed vapor tight with twist screw-in fluorescent

bulbs. Not explosion proof area. No exit lights.

Photos (1)



October 17, 2013 at 20:47

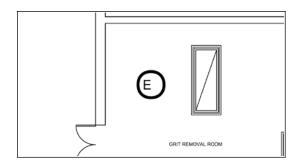




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RAW SEWAGE PUMPING STATION - FIRST FLOOR LEVEL

#56 Electrical



Issue Number: 56

Date Created: Oct 15, 2013 @ 15:15

Creator: William Smith

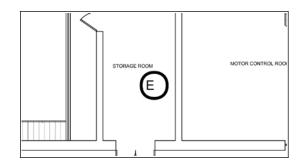
Status: Open

Room: Grit Removal Room

Description: Conditions similar to basement, but

with exit light. No speaker.

#57 Electrical



Issue Number: 57

Date Created: Oct 15, 2013 @ 15:15

Creator: William Smith

Status: Open

Room: Storage Room

Description: Conditions similar to Grit Removal

Room. No exit light at either door.

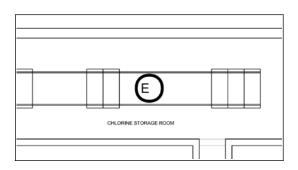
Signs only. No speaker

Photos (1)



October 17, 2013 at 20:46

#58 Electrical



Issue Number: 58

Date Created: Oct 15, 2013 @ 15:18

Creator: William Smith

Status: Open

Room: Chlorine Storage Room

Description: Enclosed fixtures with old T12 lamps.

Unpainted electrical equipment is rusting. Lots of PVC conduit also. Has 2 old exit lights. One working.

One not. No speaker.

Photos (5)



October 17, 2013 at 20:46



October 17, 2013 at 20:46



October 17, 2013 at 20:46

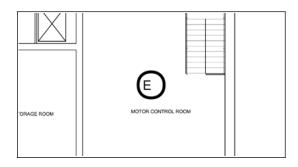


October 17, 2013 at 20:46



October 17, 2013 at 20:46

#59 Electrical



Issue Number: 59

Date Created: Oct 15, 2013 @ 15:23

Creator: William Smith

Status: Open

Room: Motor Control Room

Description: Retrofitted fluorescents. Nothing va-

por tight or explosion proof. Has speaker. Old exit light still function-

ing.

Photos (4)



October 17, 2013 at 20:46



October 17, 2013 at 20:46

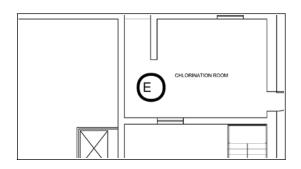


October 17, 2013 at 20:47



October 17, 2013 at 20:47

#61 Electrical



Issue Number: 61

Date Created: Oct 15, 2013 @ 15:31

Creator: William Smith

Status: Open

Room: Chlorination Room

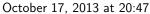
Description: Enclosed vapor tight lights. Rusted

electrical equipment similar to Chlorine Storage Room. Has old exit light on exterior door. Sign only at other door.

No speaker

Photos (2)

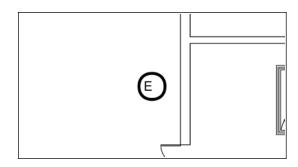






October 17, 2013 at 20:47

#62 Electrical



Issue Number: 62

Date Created: Oct 15, 2013 @ 15:37

Creator: William Smith

Status: Open Room: Exterior

Description: Small wall pack lights with photocell

at doors. Has lightning protection

system. Rusted stop switch.

Photos (3)





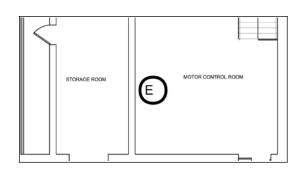


October 17, 2013 at 20:47



October 17, 2013 at 20:47

#72 Electrical



Issue Number: 72

Date Created: Oct 16, 2013 @ 17:10

Creator: William Smith

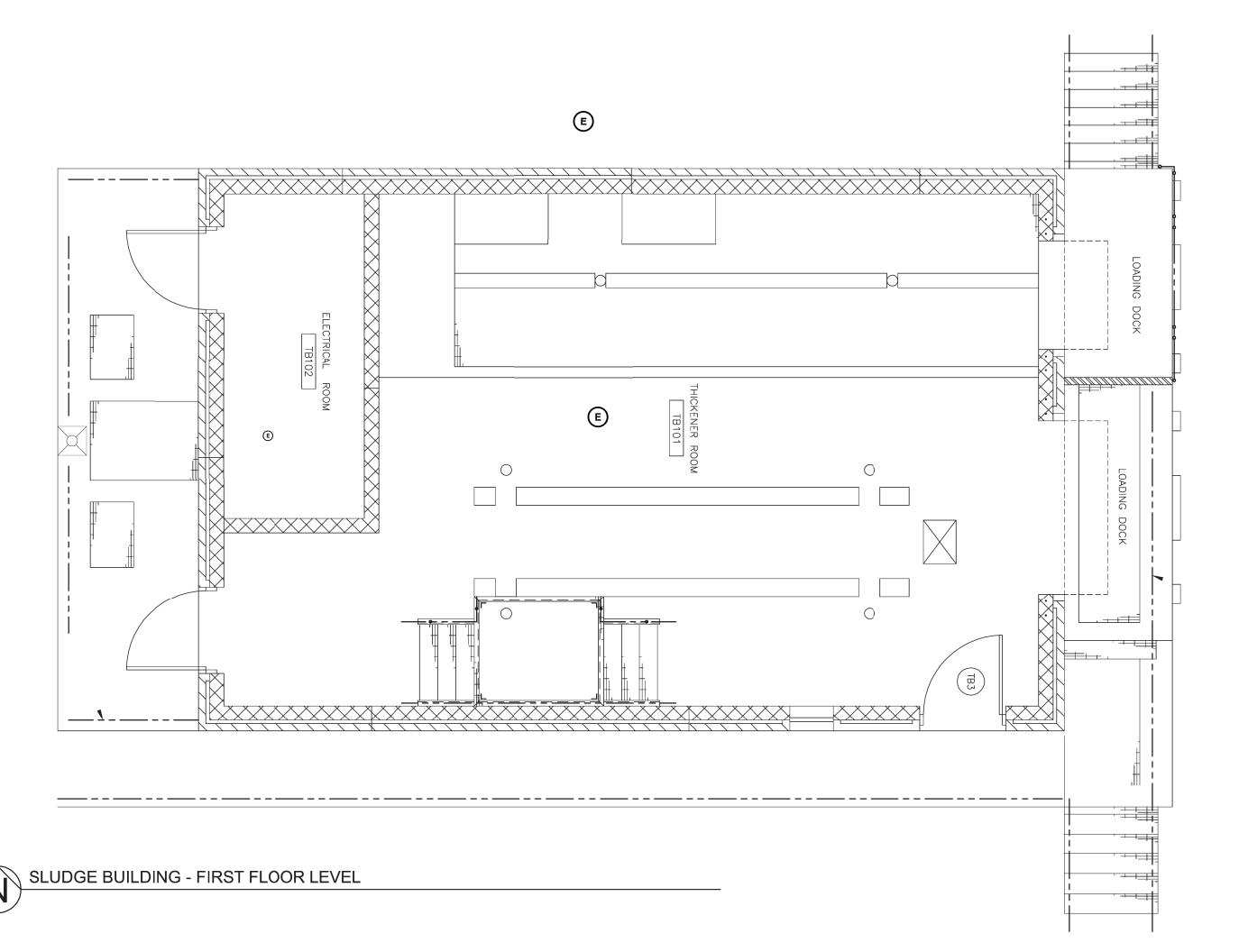
Status: Open

Room: Motor Control Room

Description: The motor control center is original.

Components are failing and replacement parts are increasingly difficult to

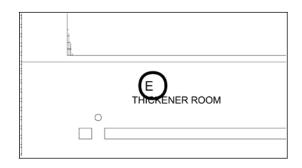
find.





SLUDGE BUILDING - FIRST FLOOR LEVEL

#64 Electrical



Issue Number: 64

Date Created: Oct 15, 2013 @ 16:35

Creator: William Smith

Status: Open

Room: Thickener Room

Description: Enclosed and gasketed fluorescent lights with T8 lamps.

All raceways are PVC. All devices are in PVC boxes and covers. Exit signs only, no lights.

Bigger disconnects are stainless steel.

Photos (4)



October 17, 2013 at 20:47



October 17, 2013 at 20:47

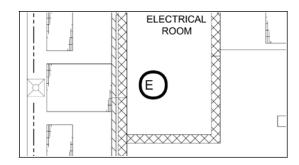


October 17, 2013 at 20:47



October 17, 2013 at 20:47

#65 Electrical



Issue Number: 65

Date Created: Oct 15, 2013 @ 16:41

Creator: William Smith

Status: Open

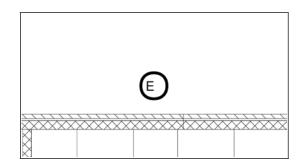
Room: Electrical Room

Description: Conditions similar to thickener room.

Has emergency lighting battery unit.

Newer electric panels.

#66 Electrical



Issue Number: 66

Date Created: Oct 15, 2013 @ 16:44

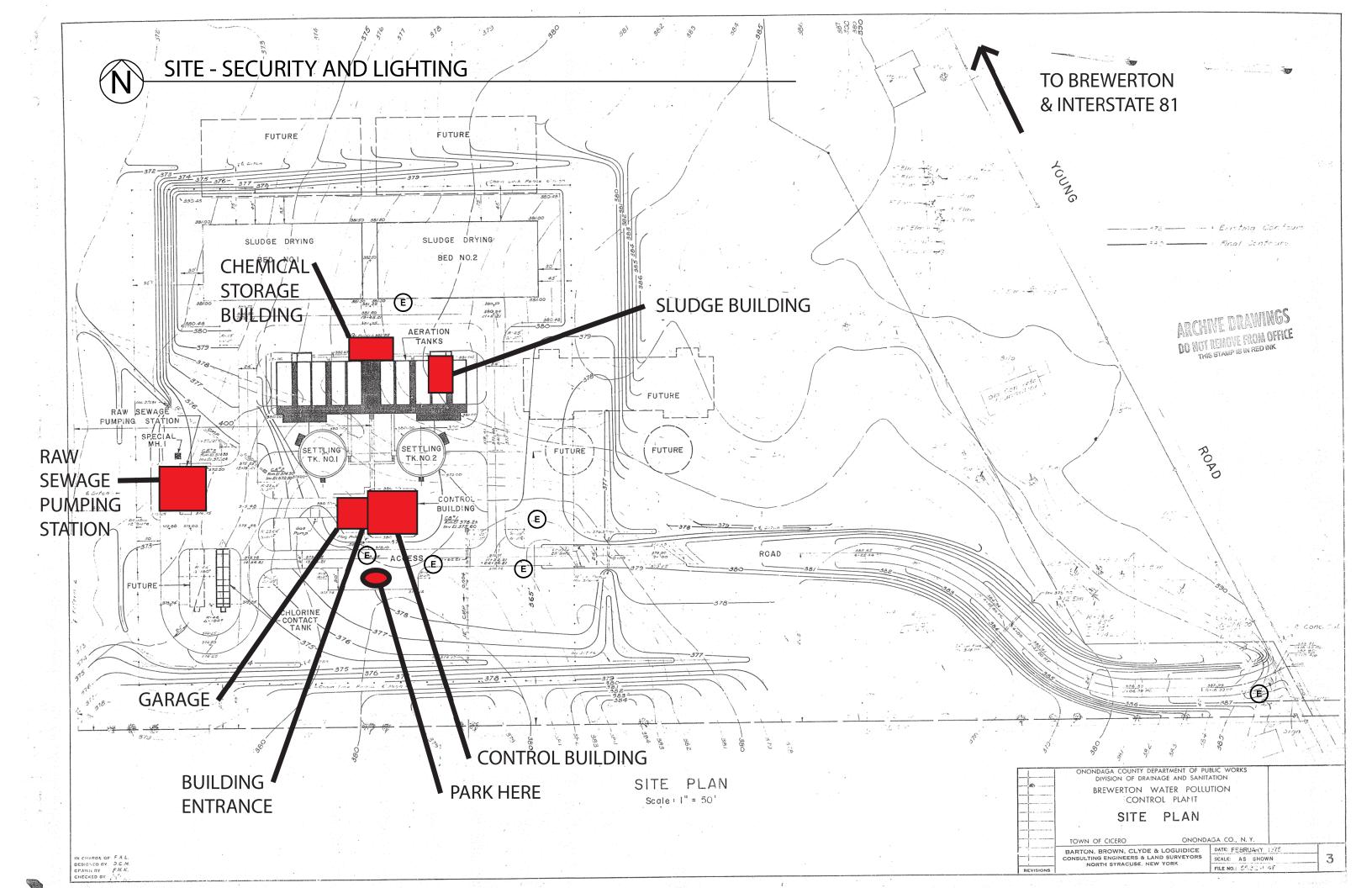
Creator: William Smith

Status: Open Room: Exterior

Description: Has wall packs with photocells at

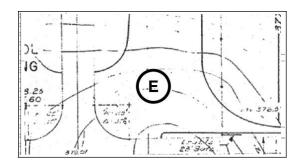
door. Has lightning protection sys-

tem.



SITE - SECURITY AND LIGHTING

#74 Electrical



Issue Number: 74

Date Created: Oct 15, 2013 @ 16:35

Creator: William Smith

Status: Open Room: N/A

Description: Mercury vapor light heads are old and inefficient,

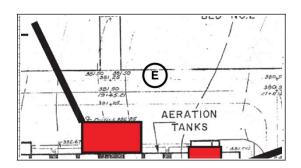
and should be replaced.

Photos (1)



October 17, 2013 at 20:47

#75 Electrical



Issue Number: 75

Date Created: Oct 15, 2013 @ 16:35

Creator: William Smith

 $\begin{array}{cc} \mathsf{Status:} & \mathsf{Open} \\ \mathsf{Room:} & \mathsf{N}/\mathsf{A} \end{array}$

Description: Mercury vapor light heads are old and inefficient,

and should be replaced including 10' poles.

Photos (3)



October 17, 2013 at 20:47

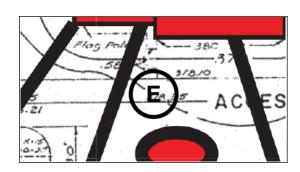


October 17, 2013 at 20:47



October 17, 2013 at 20:47

#76 Electrical



Issue Number: 76

Date Created: Oct 15, 2013 @ 16:35

Creator: William Smith

Status: Open Room: N/A

Description: Buildings lacking proximity reader access system

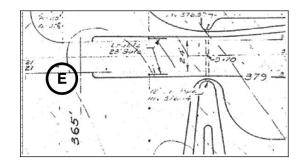
at entire facility.

Photos (1)



October 17, 2013 at 20:47

#77 Electrical



Issue Number: 77

Date Created: Oct 15, 2013 @ 16:35

Creator: William Smith

 $\begin{array}{cc} \mathsf{Status:} & \mathsf{Open} \\ \mathsf{Room:} & \mathsf{N}/\mathsf{A} \end{array}$

Description: Manually operated swing gate. Electrically

operated access gate is recommended.

Photos (3)

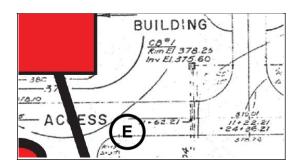


October 17, 2013 at 20:47



October 17, 2013 at 20:47

#78 Electrical



Issue Number: 78

Date Created: Oct 15, 2013 @ 16:35

Creator: William Smith

 $\begin{array}{cc} \text{Status:} & \text{Open} \\ \text{Room:} & \text{N/A} \end{array}$

Description: Facility lacking electronic surveillance system.

Security cameras are recommended at control building and chemical building, for 360 degree

coverage, in order to provide full facility

surveillance.



Physical Conditions Assessment: Mech. and Plumbing Onondaga Cty Brewerton WWTP

Robert Fassler, PE

October 15, 2013

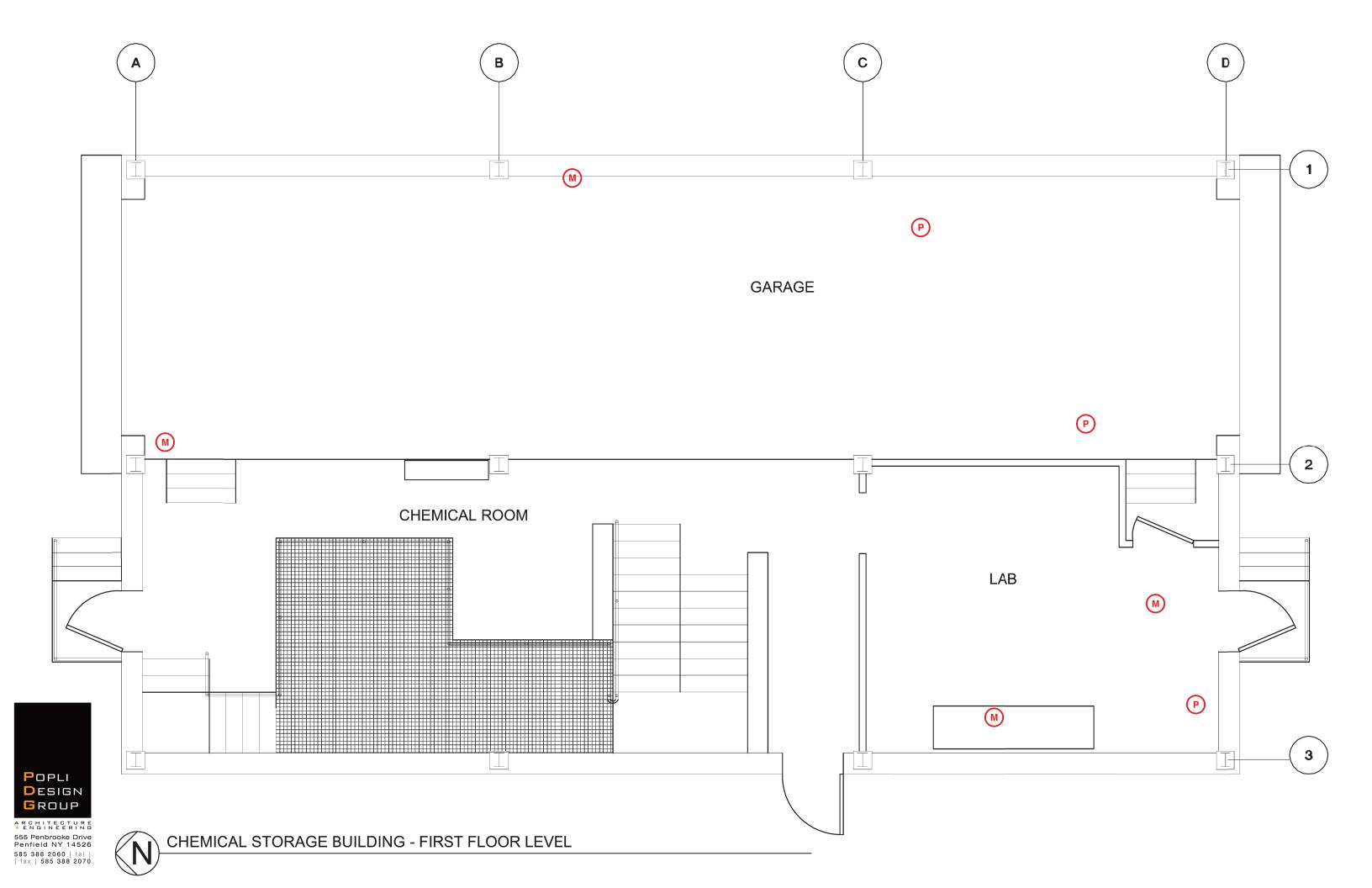
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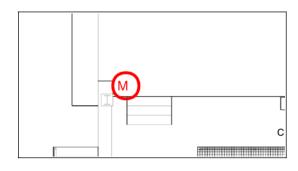
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// OO Maghawinal	0.2



CHEMICAL STORAGE BUILDING - FIRST FLOOR LEVEL

#100 Mechanical



Issue Number: 100

Date Created: Oct 15, 2013 @ 17:02 Creator: Robert Fassler, PE

Status: Open

Room: CHEMICAL ROOM
Description: Electric unit heater ok.

Photos (2)

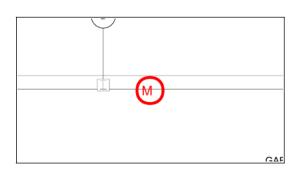


October 17, 2013 at 20:54



October 17, 2013 at 20:54

#101 Mechanical



Issue Number: 101

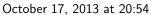
Date Created: Oct 15, 2013 @ 17:03 Creator: Robert Fassler, PE

Status: Open Room: GARAGE

Description: Electric heater is ok. louvers are good.

Photos (2)

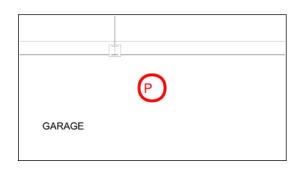






October 17, 2013 at 20:54

#102 Plumbing



Issue Number: 102

Date Created: Oct 15, 2013 @ 17:05 Creator: Robert Fassler, PE

Status: Open Room: GARAGE

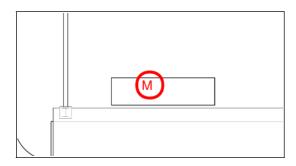
Description: Sand trap is good.

Photos (1)



October 17, 2013 at 20:54

#103 Mechanical



Issue Number: 103

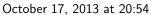
Date Created: Oct 15, 2013 @ 17:07 Creator: Robert Fassler, PE

> Status: Open Room: LAB

Description: Unit heater is good.

Photos (2)

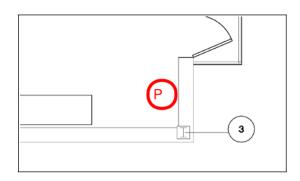






October 17, 2013 at 20:54

#104 Plumbing



Issue Number: 104

Date Created: Oct 15, 2013 @ 17:09 Creator: Robert Fassler, PE

> Status: Open Room: LAB

Description: Sink is in good condition. Eyewash

is ok. Instantaneous water heater is good. H and c fed from plant water?

Photos (6)



October 17, 2013 at 20:54



October 17, 2013 at 20:54



October 17, 2013 at 20:54



October 17, 2013 at 20:54

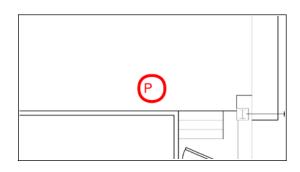


October 17, 2013 at 20:54



October 17, 2013 at 20:54

#105 Plumbing



Issue Number: 105

Date Created: Oct 15, 2013 @ 17:13 Creator: Robert Fassler, PE

Status: Open Room: GARAGE

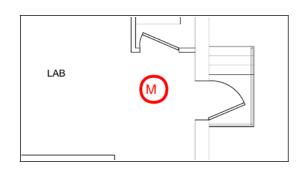
Description: Eyewash is good.

Photos (1)



October 17, 2013 at 20:55

#106 Mechanical



Issue Number: 106

Date Created: Oct 15, 2013 @ 17:14 Creator: Robert Fassler, PE

Status: Open Room: GARAGE Description: Heater ok

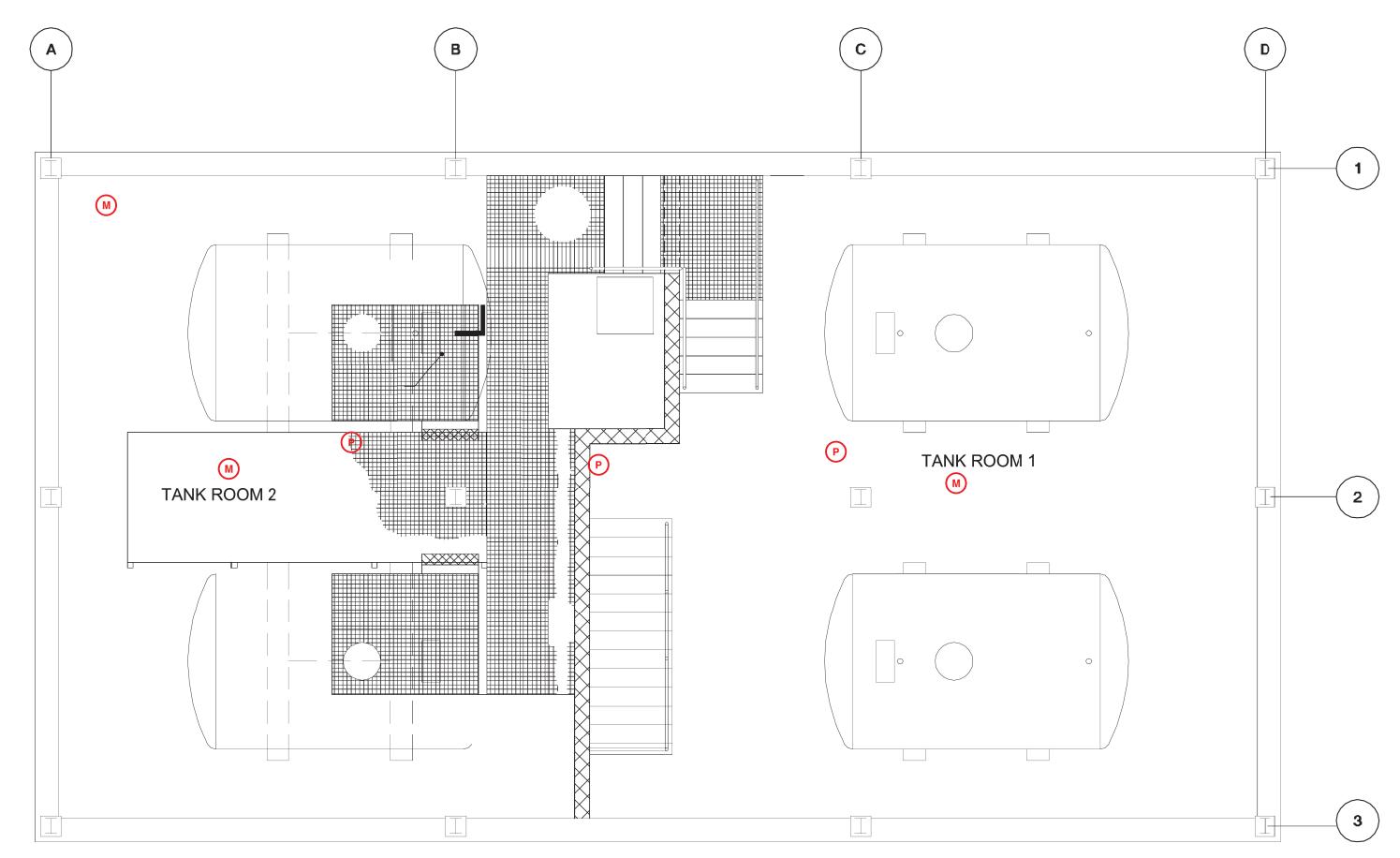
Photos (2)



October 17, 2013 at 20:55



October 17, 2013 at 20:55



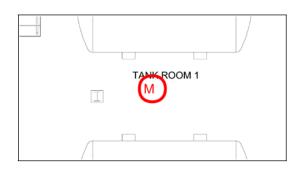


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CHEMICAL STORAGE BUILDING - SECOND FLOOR LEVEL

#107 Mechanical



Issue Number: 107

Date Created: Oct 15, 2013 @ 17:19 Creator: Robert Fassler, PE

Status: Open

Room: TANK ROOM 2

Description: Exhaust fan good. Typ for 2.

Photos (2)

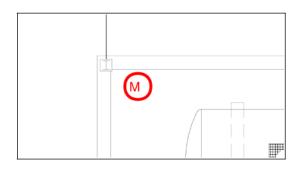






October 17, 2013 at 20:55

#108 Mechanical



Issue Number: 108

Date Created: Oct 15, 2013 @ 17:24 Creator: Robert Fassler, PE

Status: Open

Room: TANK ROOM 1

Description: Electric unit heater is good. Typical

for 4.

Photos (5)



October 17, 2013 at 20:55



October 17, 2013 at 20:55



October 17, 2013 at 20:55



October 17, 2013 at 20:55



October 17, 2013 at 20:55

#109 Plumbing



Issue Number: 109

Date Created: Oct 15, 2013 @ 17:27 Creator: Robert Fassler, PE

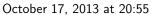
Status: Open

Room: TANK ROOM 1

Description: Roof drain and piping are good.

Photos (3)





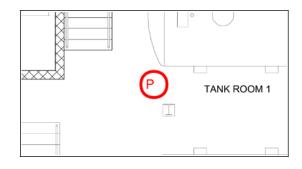


October 17, 2013 at 20:55



October 17, 2013 at 20:55

#110 Plumbing



Issue Number: 110

Date Created: Oct 15, 2013 @ 17:30 Creator: Robert Fassler, PE

Status: Open

Room: TANK ROOM 2

Description: Eyewash and shower good.

Photos (2)

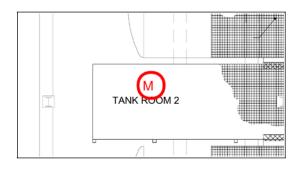


October 17, 2013 at 20:55



October 17, 2013 at 20:55

#112 Mechanical



Issue Number: 112

Date Created: Oct 15, 2013 @ 18:36 Creator: Robert Fassler, PE

> Status: Open Room: ROOF

Description: Exhaust fans are in good condition.

Photos (2)

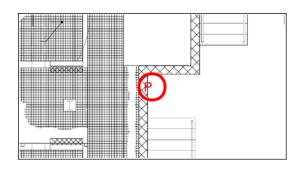


October 17, 2013 at 20:55



October 17, 2013 at 20:55

#113 Plumbing



Issue Number: 113

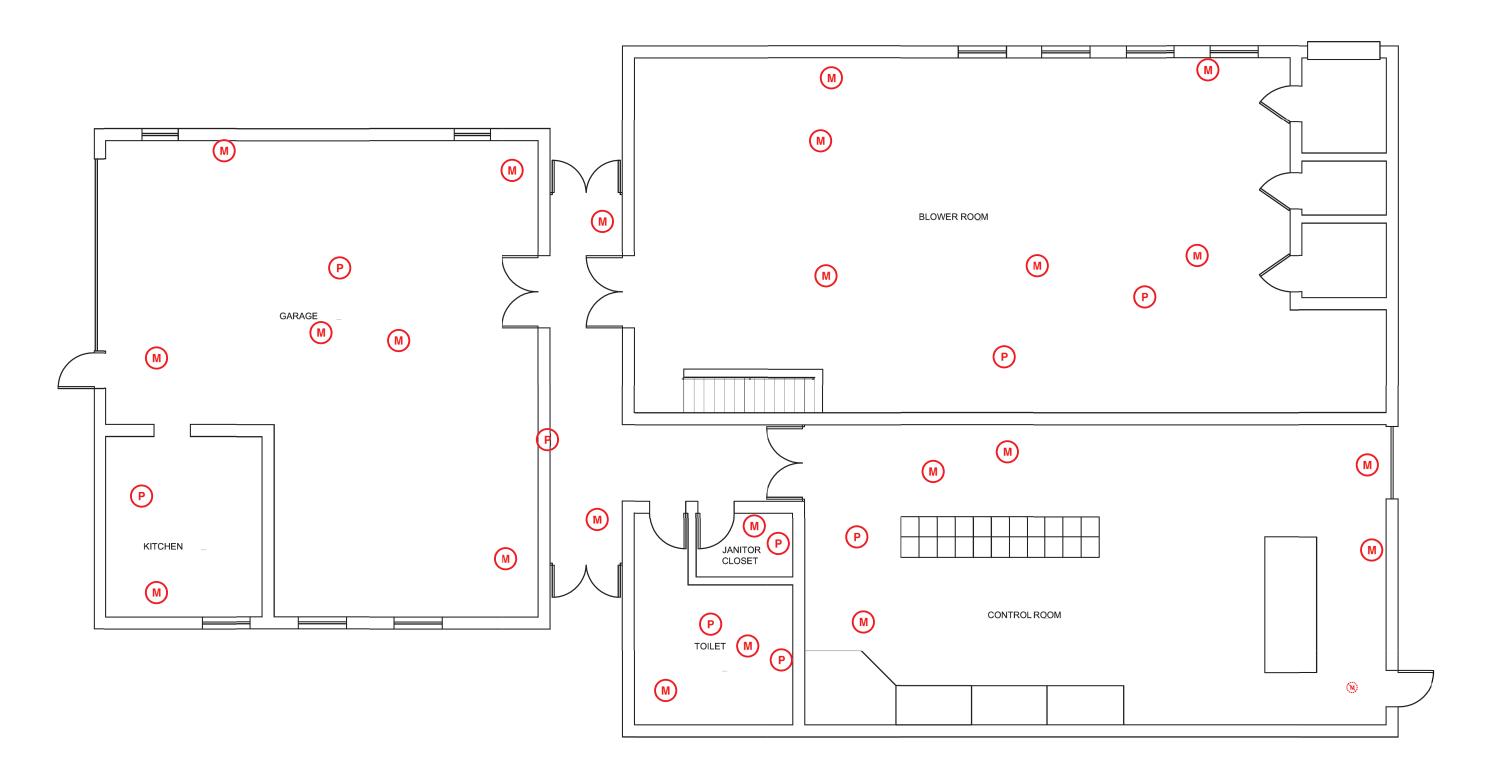
Date Created: Oct 15, 2013 @ 18:38 Creator: Robert Fassler, PE

> Status: Open Room: ROOF

Description: Cast roof drain in good condition.



October 17, 2013 at 20:56

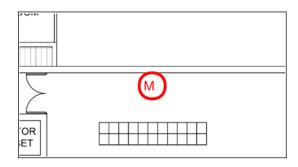






CONTROL BUILDING - FIRST FLOOR

#19 Mechanical



Issue Number: 19

Date Created: Oct 15, 2013 @ 12:36 Creator: Robert Fassler, PE

Status: Open

Room: CONTROL ROOM

Description: Ventilation unit does not have heat.

Roof top unit does not work in heat-

ing.

Photos (3)



October 17, 2013 at 20:42

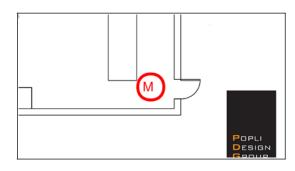


October 17, 2013 at 20:42



October 17, 2013 at 20:43

#20 Mechanical



Issue Number: 20

Date Created: Oct 15, 2013 @ 12:42 Creator: Robert Fassler, PE

Status: Pending

Room: CONTROL ROOM

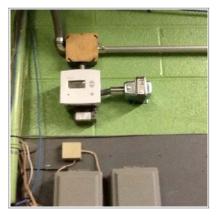
Description: Electric heater is in good condition.

Wall stat is good.

Photos (2)

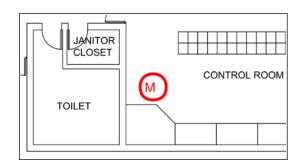






October 17, 2013 at 20:42

#21 Mechanical



Issue Number: 21

Date Created: Oct 15, 2013 @ 12:44 Creator: Robert Fassler, PE

Status: Open

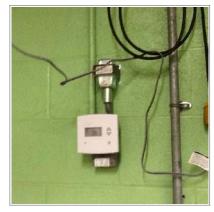
Room: CONTROL ROOM

Description: Electric heater in good condition.

Photos (2)

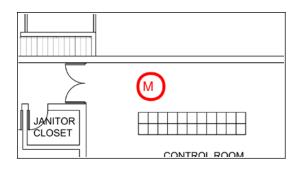


October 17, 2013 at 20:42



October 17, 2013 at 20:43

#22 Mechanical



Issue Number: 22

Date Created: Oct 15, 2013 @ 12:46 Creator: Robert Fassler, PE

Status: Open

Room: CONTROL ROOM

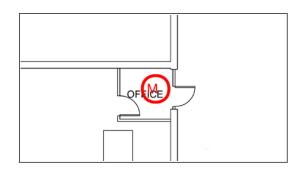
Description: Exhaust fan is in operable condition.

Photos (1)



October 17, 2013 at 20:42

#23 Mechanical



Issue Number: 23

Date Created: Oct 15, 2013 @ 12:53 Creator: Robert Fassler, PE

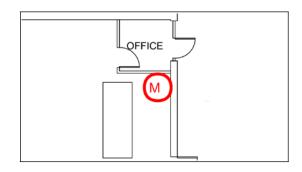
> Status: Open Room: OFFICE

Description: Electric heater is good.



October 17, 2013 at 20:43

#24 Mechanical



Issue Number: 24

Date Created: Oct 15, 2013 @ 12:55 Creator: Robert Fassler, PE

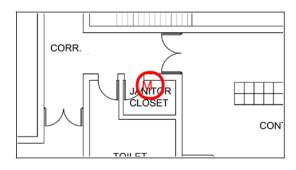
Status: Open

Room: CONTROL ROOM Description: Damper is good.



October 17, 2013 at 20:43

#25 Mechanical



Issue Number: 25

Date Created: Oct 15, 2013 @ 13:01 Creator: Robert Fassler, PE

Status: Open

Room: JANITOR CLOSET

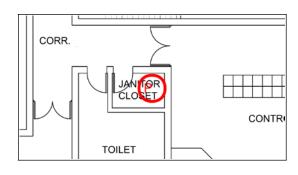
Description: No exhaust. Electric heater is good.

Photos (1)



October 17, 2013 at 20:43

#26 Plumbing



Issue Number: 26

Date Created: Oct 15, 2013 @ 13:02 Creator: Robert Fassler, PE

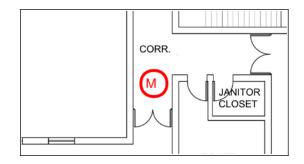
Status: Open

Room: JANITOR CLOSET
Description: Sink is in good condition.



October 17, 2013 at 20:43

#27 Mechanical



Issue Number: 27

Date Created: Oct 15, 2013 @ 13:04 Creator: Robert Fassler, PE

Status: Open

Room: CORRIDOR

Description: Electric cabinet heaters in good condition.

Photos (2)

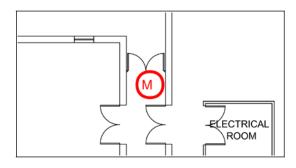


October 17, 2013 at 20:43



October 17, 2013 at 20:43

#28 Mechanical



Issue Number: 28

Date Created: Oct 15, 2013 @ 13:05 Creator: Robert Fassler, PE

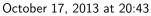
Status: Open

Room: CORRIDOR

Description: Cabinet heater in good condition.

Photos (2)

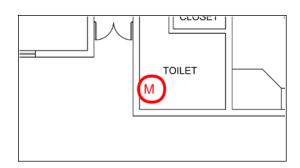






October 17, 2013 at 20:43

#29 Mechanical



Issue Number: 29

Date Created: Oct 15, 2013 @ 13:07 Creator: Robert Fassler, PE

Status: Open

Room: TOILET ROOM

Description: Electric heater in good condition.

Photos (2)







October 17, 2013 at 20:43

#30 Plumbing



Issue Number: 30

Date Created: Oct 15, 2013 @ 13:09 Creator: Robert Fassler, PE

Status: Open

Room: TOILET ROOM

Description: Fixtures in good condition. Lavatory

faucet handles need replacing.

Photos (6)



October 17, 2013 at 20:43



October 17, 2013 at 20:43



October 17, 2013 at 20:43





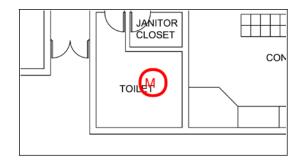


October 17, 2013 at 20:44



October 17, 2013 at 20:44

#31 Mechanical



Issue Number: 31

Date Created: Oct 15, 2013 @ 13:14 Creator: Robert Fassler, PE

Status: Open

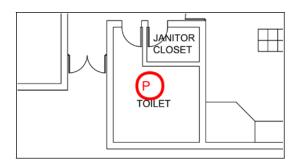
Room: TOILET ROOM

Description: Exhaust fan is operable, but noisy.



October 17, 2013 at 20:44

#32 Plumbing



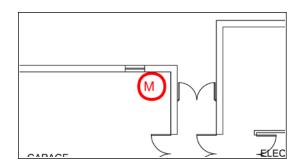
Issue Number: 32

Date Created: Oct 15, 2013 @ 13:18 Creator: Robert Fassler, PE

Status: Open

Room: TOILET ROOM
Description: Floor drain is good.

#33 Mechanical



Issue Number: 33

Date Created: Oct 15, 2013 @ 13:19 Creator: Robert Fassler, PE

> Status: Open Room: GARAGE

Description: 4 electric heaters in good condition.

Photos (4)



October 17, 2013 at 20:44



October 17, 2013 at 20:44

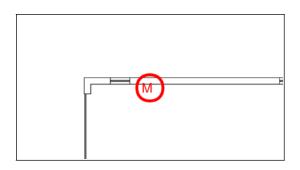


October 17, 2013 at 20:44



October 17, 2013 at 20:44

#34 Mechanical



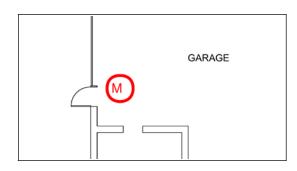
Issue Number: 34

Date Created: Oct 15, 2013 @ 13:27

Creator: Robert Fassler, PE

Status: Open **GARAGE** Room:

#35 Mechanical



Issue Number:

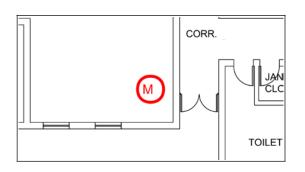
Date Created: Oct 15, 2013 @ 13:27

35

Creator: Robert Fassler, PE

Status: Open Room: **GARAGE**

#36 Mechanical

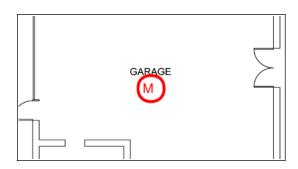


Issue Number: 36

Date Created: Oct 15, 2013 @ 13:28 Creator: Robert Fassler, PE

Status: Open Room: GARAGE

#37 Mechanical



Issue Number: 37

Date Created: Oct 15, 2013 @ 13:28 Creator: Robert Fassler, PE

> Status: Open Room: GARAGE

Description: Roof exhaust fan is good.

Photos (2)

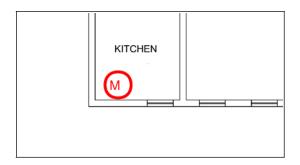


October 17, 2013 at 20:44



October 17, 2013 at 20:44

#38 Mechanical



Issue Number: 38

Date Created: Oct 15, 2013 @ 13:32 Creator: Robert Fassler, PE

> Status: Open Room: KITCHEN

Description: Wall AC unit in fair condition. Electric

baseboard is in fair condition.

Photos (2)

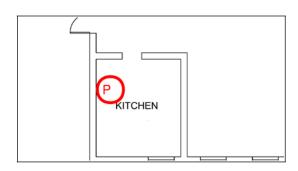






October 17, 2013 at 20:45

#39 Plumbing



Issue Number: 39

Date Created: Oct 15, 2013 @ 13:36 Creator: Robert Fassler, PE

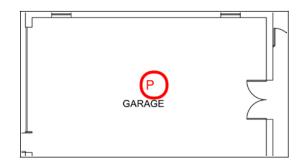
> Status: Open Room: KITCHEN

Description: Stainless steel sink is in good condition.



October 17, 2013 at 20:45

#40 Plumbing



Issue Number: 40

Date Created: Oct 15, 2013 @ 13:38 Creator: Robert Fassler, PE

> Status: Open Room: GARAGE

Description: Sand trap is good. Roof drain, vent,

and. Domestic piping is in good con-

dition.

Photos (6)



October 17, 2013 at 20:45



October 17, 2013 at 20:45



October 17, 2013 at 20:45





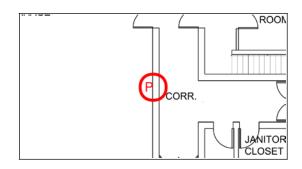


October 17, 2013 at 20:45



October 17, 2013 at 20:45

#41 Plumbing



Issue Number: 41

Date Created: Oct 15, 2013 @ 13:43 Creator: Robert Fassler, PE

> Status: Open Room: GARAGE

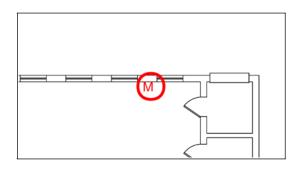
Description: Hose Bibb does not have

vacuum breaker. Fair condition.



October 17, 2013 at 20:45

#42 Mechanical



Issue Number: 42

Date Created: Oct 15, 2013 @ 13:46 Creator: Robert Fassler, PE

Status: Open

Room: BLOWER ROOM

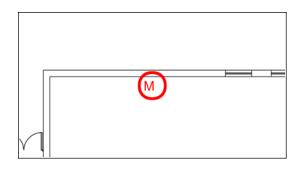
Description: Electric heater in good condition.

Photos (1)



October 17, 2013 at 20:45

#43 Mechanical



Issue Number: 43

Date Created: Oct 15, 2013 @ 13:48 Creator: Robert Fassler, PE

Status: Open

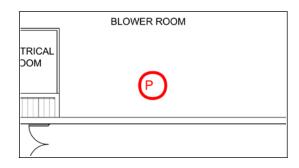
Room: BLOWER ROOM

Description: Heater is in good condition.



October 17, 2013 at 20:45

#44 Plumbing



Issue Number: 44

Date Created: Oct 15, 2013 @ 13:49 Creator: Robert Fassler, PE

Status: Open

Room: BLOWER ROOM
Description: Roof drain piping good.

Photos (2)

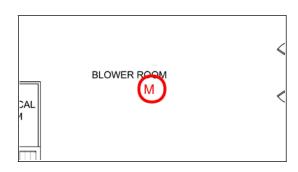


October 17, 2013 at 20:45



October 17, 2013 at 20:45

#45 Mechanical



Issue Number: 45

Date Created: Oct 15, 2013 @ 13:50 Creator: Robert Fassler, PE

Status: Open

Room: BLOWER ROOM

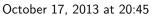
Description: Roof exhaust fans in operable condi-

tion. Four outside air fixed. lovers in good condition. Two power roof ven-

tilators in good condition.

Photos (3)





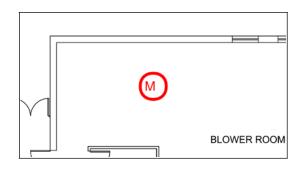


October 17, 2013 at 20:45



October 17, 2013 at 20:45

#46 Mechanical



Issue Number: 46

Date Created: Oct 15, 2013 @ 13:54 Creator: Robert Fassler, PE

Status: Open

Room: BLOWER ROOM

Description: Ductwork in good condition.

Photos (2)

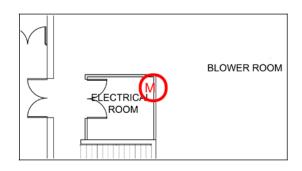






October 17, 2013 at 20:45

#47 Mechanical



Issue Number: 47

Date Created: Oct 15, 2013 @ 13:59 Creator: Robert Fassler, PE

Status: Open

Room: ELECTRICAL ROOM

Description: Air conditioning unit in good con-

dition. Has fan and intake filtered

damper.

Photos (4)



October 17, 2013 at 20:46



October 17, 2013 at 20:46

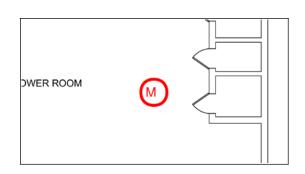


October 17, 2013 at 20:46



October 17, 2013 at 20:46

#91 Mechanical



Issue Number: 91

Date Created: Oct 15, 2013 @ 16:19 Creator: Robert Fassler, PE

> Status: Open Room: ROOF

Description: Gallery supply fan is new. Blower rm

supply fans are good but need new bird screens. Toilet and control rm fans are good. Rooftop unit is in poor

condition. No heat.

Photos (6)



October 17, 2013 at 20:52



October 17, 2013 at 20:52



October 17, 2013 at 20:53





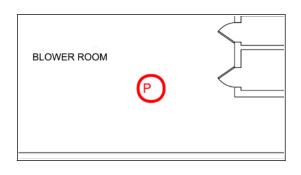


October 17, 2013 at 20:53

October 17, 2013 at 20:53

October 17, 2013 at 20:53

#92 Plumbing



Issue Number: 92

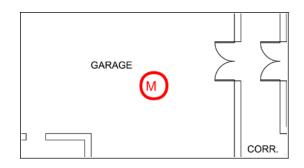
Date Created: Oct 15, 2013 @ 16:31 Creator: Robert Fassler, PE

Status: Open Room: ROOF Description: Roof drains



October 17, 2013 at 20:52

#93 Mechanical



Issue Number: 93

Date Created: Oct 15, 2013 @ 16:33 Creator: Robert Fassler, PE

> Status: Open Room: ROOF

Description: Equip is good.

Photos (3)



October 17, 2013 at 20:53

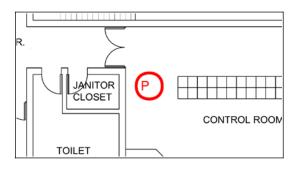


October 17, 2013 at 20:53



October 17, 2013 at 20:53

#111 Plumbing



Issue Number: 111

Date Created: Oct 15, 2013 @ 17:57 Creator: Robert Fassler, PE

Status: Open

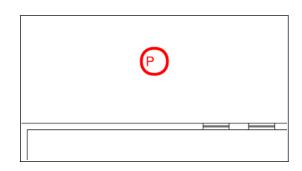
Room: CONTROL ROOM
Description: EWC in good condition.

Photos (1)



October 17, 2013 at 20:55

#120 Plumbing



Issue Number: 120

Date Created: Oct 16, 2013 @ 17:36 Creator: Robert Fassler, PE

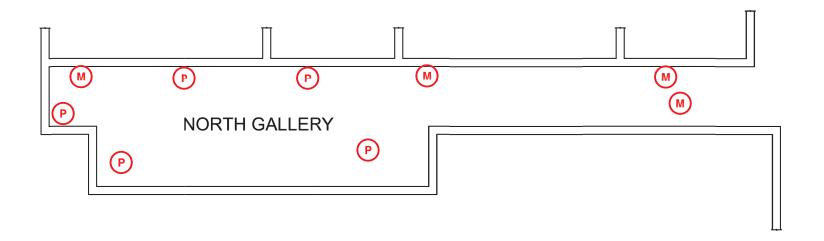
Status: Open

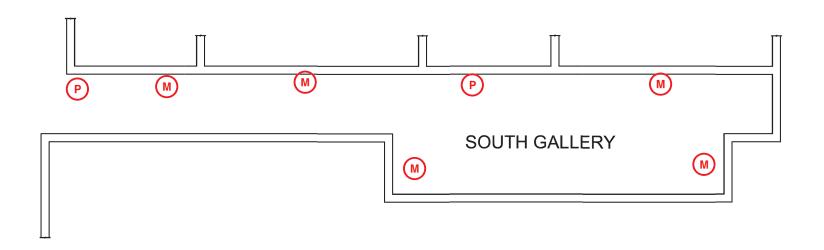
Room: EXTERIOR

Description: Note that the yard hydrants are not

usable due to leaks in the buried effluent piping which supplied these hy-

drants.



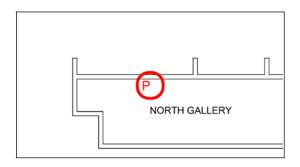






CONTROL BUILDING - GALLERY

#48 Plumbing



Issue Number: 48

Date Created: Oct 15, 2013 @ 14:05 Creator: Robert Fassler, PE

Status: Open

Room: SOUTH GALLERY

Description: Service sink is good. Water heater is

good. No recirculation pump or pip-

ing. Sump pump is operable.

Photos (4)



October 17, 2013 at 20:46



October 17, 2013 at 20:46

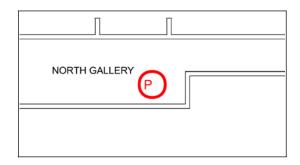


October 17, 2013 at 20:46



October 17, 2013 at 20:46

#49 Plumbing



Issue Number: 49

Date Created: Oct 15, 2013 @ 14:11 Creator: Robert Fassler, PE

Status: Open

Room: SOUTH GALLERY

Description: Water services with back flow in good

condition.

Photos (4)



October 17, 2013 at 20:46



October 17, 2013 at 20:46

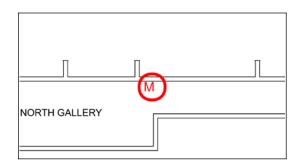


October 17, 2013 at 20:46



October 17, 2013 at 20:46

#50 Mechanical



Issue Number: 50

Date Created: Oct 15, 2013 @ 14:16 Creator: Robert Fassler, PE

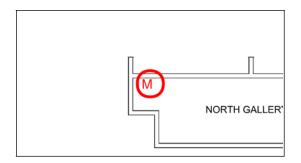
Status: Open

Room: SOUTH GALLERY Description: Ventilation duct is good.



October 17, 2013 at 20:46

#51 Mechanical



Issue Number: 51

Date Created: Oct 15, 2013 @ 14:24 Creator: Robert Fassler, PE

Status: Open

Room: NORTH GALLERY

Description: Electric heaters in good condition.

Exhaust fan in good condition.

Photos (7)



October 17, 2013 at 20:47



October 17, 2013 at 20:47



October 17, 2013 at 20:47



October 17, 2013 at 20:47



October 17, 2013 at 20:47

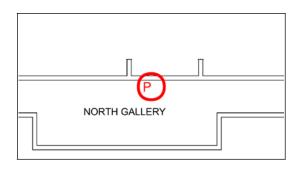


October 17, 2013 at 20:47



October 17, 2013 at 20:54

#52 Plumbing



Issue Number: 52

Date Created: Oct 15, 2013 @ 14:27 Creator: Robert Fassler, PE

Status: Open

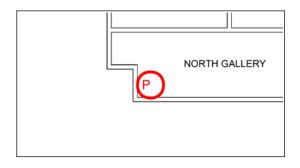
Room: NORTH GALLERY

Description: Drainage piping is in good condition.



October 17, 2013 at 20:47

#53 Plumbing



Issue: NORTH GALLERY

Number: 53

Date: Oct 15, 2013 @ 14:30

Created: Open

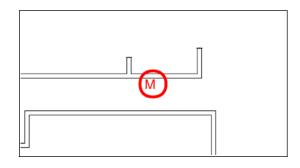
Creator: Robert Fassler, PE

Description: Potable and plant water piping, is

steel, in good condition, and un-

insulated.

#54 Mechanical



Issue Number: 54

Date Created: Oct 15, 2013 @ 14:33 Creator: Robert Fassler, PE

Status: Open

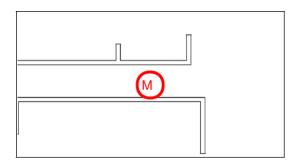
Room: NORTH GALLERY

Description: Electric heater shows signs of corrosion.



October 17, 2013 at 20:47

#55 Mechanical



Issue: NORTH GALLERY

Number: 55

Date: Oct 15, 2013 @ 14:34

Created: Open

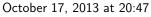
Creator: Robert Fassler, PE

Descrition: Power roof ventilator pan in poor

condition.

Photos (2)

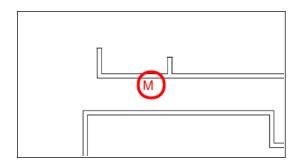






October 17, 2013 at 20:54

#56 Mechanical



Issue Number: 56

Date Created: Oct 15, 2013 @ 14:36 Creator: Robert Fassler, PE

Status: Open

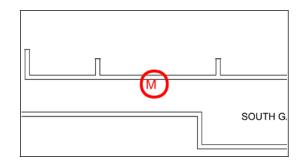
Room: SOUTH GALLERY

Description: Power roof ventilator pan in poor condition.



October 17, 2013 at 20:47

#57 Mechanical



Issue Number: 57

Date Created: Oct 15, 2013 @ 14:38 Creator: Robert Fassler, PE

Status: Open

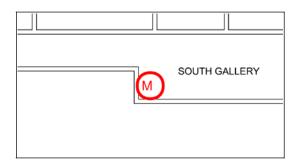
Room: SOUTH GALLERY

Description: Electric heater in good condition.



October 17, 2013 at 20:47

#58 Mechanical



Issue Number: 58

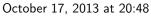
Date Created: Oct 15, 2013 @ 14:39 Creator: Robert Fassler, PE

Status: Open

Room: SOUTH GALLERY Description: Electric heater is good.

Photos (2)

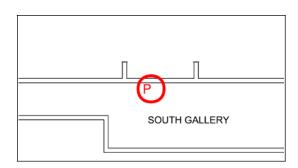






October 17, 2013 at 20:48

#59 Plumbing



Issue Number: 59

Date Created: Oct 15, 2013 @ 14:40 Creator: Robert Fassler, PE

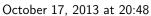
Status: Open

Room: SOUTH GALLERY

Description: Exterior corrosion on waste piping.

Photos (3)





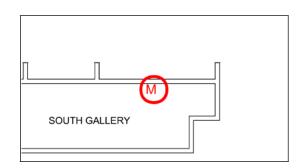


October 17, 2013 at 20:48



October 17, 2013 at 20:48

#60 Mechanical



Issue Number: 60

Date Created: Oct 15, 2013 @ 14:42 Creator: Robert Fassler, PE

Status: Open

Room: SOUTH GALLERY Description: Electric heater is good.

Photos (2)

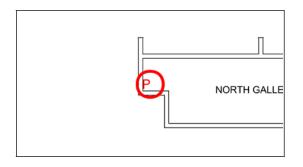


October 17, 2013 at 20:48



October 17, 2013 at 20:4

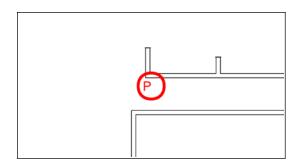
#61 Plumbing



Issue: Open Number: 61

Date: Oct 15, 2013 @ 14:47 Created: Robert Fassler, PE Room: EAST GALLERY Description: Sink is good.

#62 Plumbing



Issue Number: 62

Date Created: Oct 15, 2013 @ 14:48 Creator: Robert Fassler, PE

Status: Open

Room: EAST GALLERY

Description: Sink is good. Sink waste is piped to

sump.

Photos (3)



October 17, 2013 at 20:48

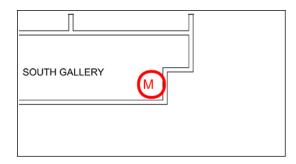


October 17, 2013 at 20:48



October 17, 2013 at 20:48

#99 Mechanical



Issue: Open Number: 99

Date: Oct 15, 2013 @ 16:58 Created: Robert Fassler, PE

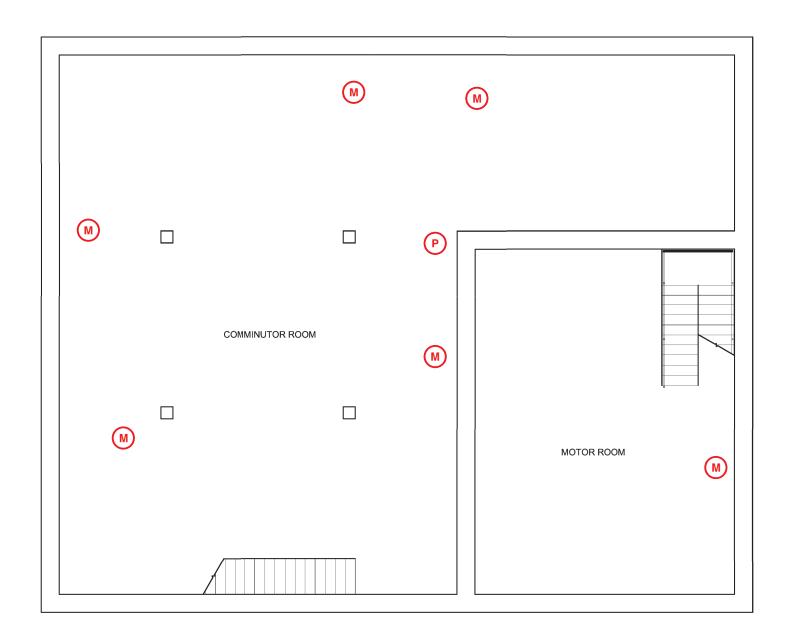
Room: Roof

Description: Pre is good.

Photos (1)



October 17, 2013 at 20:54

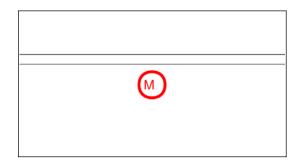






RAW SEWAGE PUMPING STATION - BASEMENT LEVEL

#63 Mechanical



Issue Number: 63

Date Created: Oct 15, 2013 @ 15:09 Creator: Robert Fassler, PE

Status: Open

Room: COMMINUTOR ROOM

Description: Explosion proof electric heaters are in

good condition.

Photos (5)



October 17, 2013 at 20:48



October 17, 2013 at 20:48



October 17, 2013 at 20:48

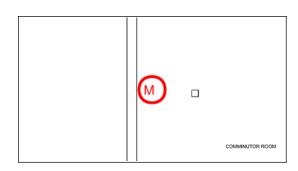






October 17, 2013 at 20:49

#64 Mechanical



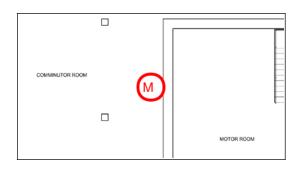
Issue Number: 64

Date Created: Oct 15, 2013 @ 15:11 Creator: Robert Fassler, PE

Status: Open

Room: COMMINUTOR ROOM

#65 Mechanical



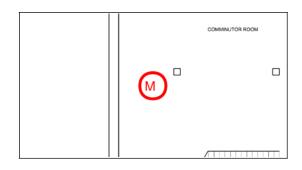
Issue Number: 65

Date Created: Oct 15, 2013 @ 15:12 Creator: Robert Fassler, PE

Status: Open

Room: COMMINUTOR ROOM

#66 Mechanical



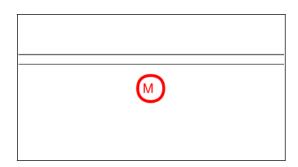
Issue Number: 66

Date Created: Oct 15, 2013 @ 15:12 Creator: Robert Fassler, PE

Status: Open

Room: COMMINUTOR ROOM

#67 Mechanical



Issue Number: 67

Date Created: Oct 15, 2013 @ 15:13 Creator: Robert Fassler, PE

Status: Open

Room: COMMINUTOR ROOM

Description: Ventilation duct at end of useful life.

Photos (4)



October 17, 2013 at 20:49



October 17, 2013 at 20:49

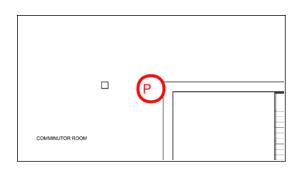


October 17, 2013 at 20:49



October 17, 2013 at 20:49

#68 Plumbing



Issue Number: 68

Date Created: Oct 15, 2013 @ 15:15 Creator: Robert Fassler, PE

Status: Open

Room: COMMINUTOR ROOM

Description: Waste piping in good condition.

Photos (3)



October 17, 2013 at 20:50

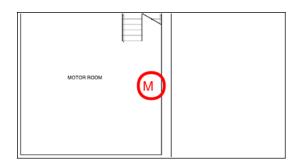


October 17, 2013 at 20:50



October 17, 2013 at 20:50

#86 Mechanical



Issue Number: 86

Date Created: Oct 15, 2013 @ 15:57 Creator: Robert Fassler, PE

Status: Open

Room: MOTOR ROOM
Description: Electric heaters good.

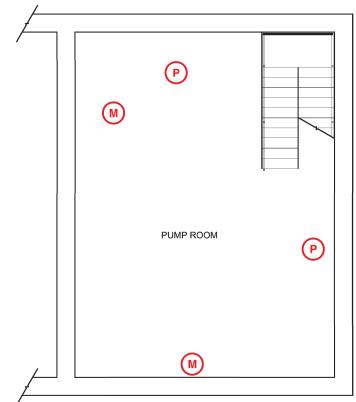
Photos (2)

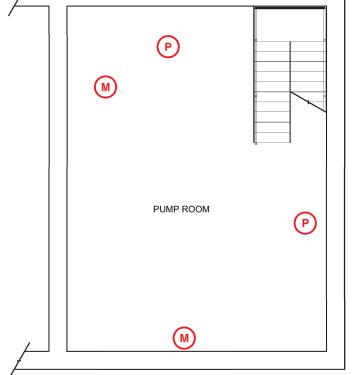


October 17, 2013 at 20:52



October 17, 2013 at 20:52



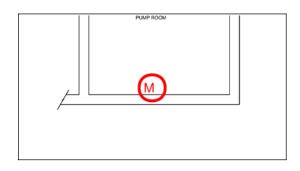






RAW SEWAGE PUMPING STATION - BASEMENT LEVEL 2

#87 Mechanical



Issue Number: 87

Date Created: Oct 15, 2013 @ 16:00 Creator: Robert Fassler, PE

Status: Open

Room: PUMP ROOM

Description: Vent duct ok Electric heater ok

Photos (3)



October 17, 2013 at 20:52

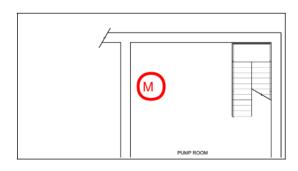


October 17, 2013 at 20:52



October 17, 2013 at 20:52

#88 Mechanical



Issue Number: 88

Date Created: Oct 15, 2013 @ 16:01 Creator: Robert Fassler, PE

Status: Open

Room: PUMP ROOM Description: Heater ok

Photos (1)



October 17, 2013 at 20:52

#89 Plumbing



Issue Number: 89

Date Created: Oct 15, 2013 @ 16:02 Creator: Robert Fassler, PE

Status: Open

Room: PUMP ROOM

Description: Waste piping corroded.

Photos (2)

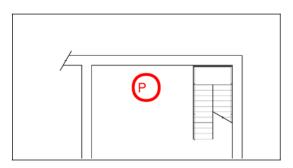


October 17, 2013 at 20:52



October 17, 2013 at 20:52

#90 Plumbing



Issue Number: 90

Date Created: Oct 15, 2013 @ 16:04 Creator: Robert Fassler, PE

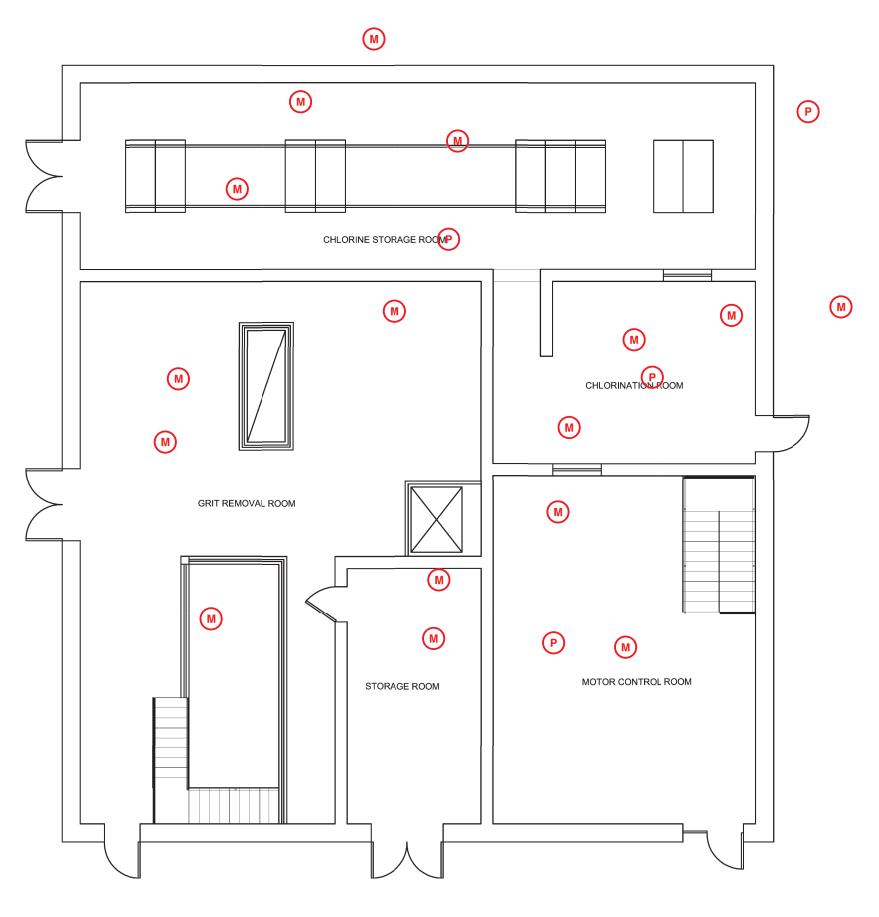
Status: Open

Room: PUMP ROOM

Photos (1)



October 17, 2013 at 20:52



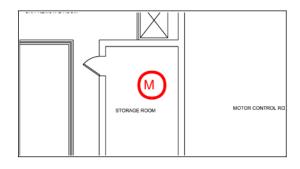




585 388 2060 [tel] [fax] 585 388 2070

RAW SEWAGE PUMPING STATION - FIRST FLOOR LEVEL

#69 Mechanical



Issue Number: 69

Date Created: Oct 15, 2013 @ 15:18 Creator: Robert Fassler, PE

Status: Open

Room: STORAGE ROOM

Description: Exhaust fan not running. Fan on roof

is good.

Photos (2)

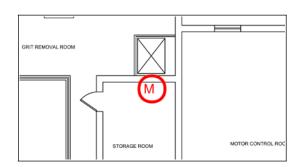


October 17, 2013 at 20:50



October 17, 2013 at 20:50

#70 Mechanical



Issue Number: 70

Date Created: Oct 15, 2013 @ 15:19 Creator: Robert Fassler, PE

Status: Open

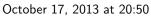
Room: STORAGE ROOM

Description: Explosion proof electric cabinet heater

is in fair condition.

Photos (2)

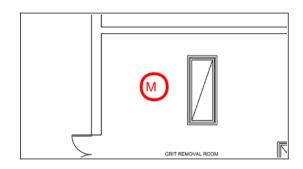






October 17, 2013 at 20:50

#71 Mechanical



Issue Number: 71

Date Created: Oct 15, 2013 @ 15:22 Creator: Robert Fassler, PE

Status: Open

Room: GRIT REMOVAL ROOM

Description: Roof supply fan in good condition.

Explosion proof electric heaters in

good condition.

Photos (6)



October 17, 2013 at 20:50



October 17, 2013 at 20:50



October 17, 2013 at 20:50

Photos (3)





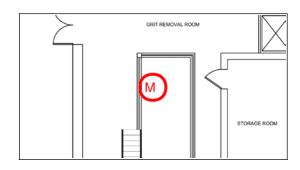


October 17, 2013 at 20:50



October 17, 2013 at 20:50

#72 Mechanical



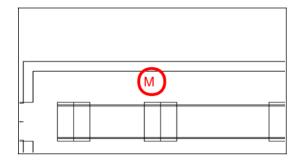
Issue Number: 72

Date Created: Oct 15, 2013 @ 15:25 Creator: Robert Fassler, PE

Status: Open

Room: GRIT REMOVAL ROOM Description: Fan is in good condition.

#74 Mechanical



Issue Number: 74

Date Created: Oct 15, 2013 @ 15:29 Creator: Robert Fassler, PE

Status: Open

Room: CHLORINE STORAGE ROOM

Assignee: Robert Fassler, PE

Description: Electric heater is showing signs of

corrosion.



October 17, 2013 at 20:50

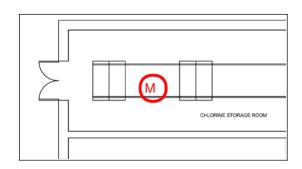


October 17, 2013 at 20:50



October 17, 2013 at 20:50

#75 Mechanical



Issue Number: 75

Date Created: Oct 15, 2013 @ 15:32 Creator: Robert Fassler, PE

Status: Open

Room: CHLORINE STORAGE ROOM

Description: Three power roof ventilator pans are

in fair condition.

Photos (3)



October 17, 2013 at 20:50



October 17, 2013 at 20:51



October 17, 2013 at 20:51

#76 Mechanical



Issue Number: 76

Date Created: Oct 15, 2013 @ 15:34 Creator: Robert Fassler, PE

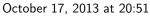
Status: Open

Room: CHLORINATION ROOM

Description: Electric unit heater in good condition.

Photos (2)







October 17, 2013 at 20:51

#77 Mechanical



Issue Number: 77

Date Created: Oct 15, 2013 @ 15:36 Creator: Robert Fassler, PE

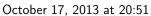
Status: Open

Room: CHLORINATION ROOM

Description: Electric heater ok.

Photos (2)

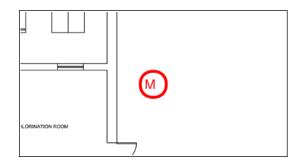






October 17, 2013 at 20:51

#78 Mechanical



Issue Number: 78

Date Created: Oct 15, 2013 @ 15:38 Creator: Robert Fassler, PE

Status: Open

Room: EXTERIOR

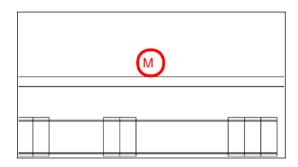
Description: Power wall exhaust fan in fair condition.

Photos (1)



October 17, 2013 at 20:51

#79 Mechanical



Issue Number: 79

Date Created: Oct 15, 2013 @ 15:40 Creator: Robert Fassler, PE

> Status: Open Room: EXTERIOR

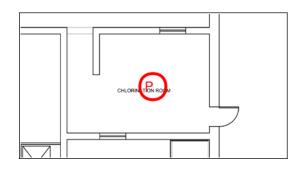
Description: Three wall exhaust fans in good condition.

Photos (1)



October 17, 2013 at 20:51

#80 Plumbing



Issue Number: 80

Date Created: Oct 15, 2013 @ 15:42 Creator: Robert Fassler, PE

Status: Open

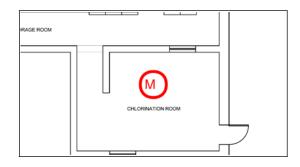
Room: CHLORINATION ROOM
Description: Cast iron floor drain is good.

Photos (1)



October 17, 2013 at 20:51

#81 Mechanical



Issue Number: 81

Date Created: Oct 15, 2013 @ 15:44 Creator: Robert Fassler, PE

Status: Open

Room: CHLORINATION ROOM

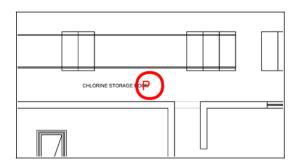
Description: Static roof vent pan in fair condition.

Photos (1)



October 17, 2013 at 20:51

#82 Plumbing



Issue Number: 82

Date Created: Oct 15, 2013 @ 15:45 Creator: Robert Fassler, PE

Status: Open

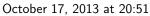
Room: CHLORINE STORAGE ROOM

Description: Emergency eyewash and shower in

good condition.

Photos (2)

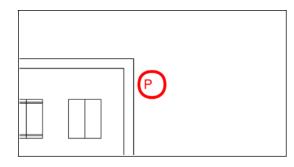






October 17, 2013 at 20:51

#83 Plumbing



Issue Number: 83

Date Created: Oct 15, 2013 @ 15:47 Creator: Robert Fassler, PE

> Status: Open Room: EXTERIOR

Description: Roof drain piping is good.

Photos (2)

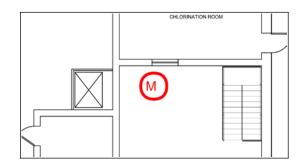






October 17, 2013 at 20:51

#84 Mechanical



Issue Number: 84

Date Created: Oct 15, 2013 @ 15:50 Creator: Robert Fassler, PE

Status: Open

Room: MOTOR CONTROL ROOM Description: Electric heater is good.

Photos (4)



October 17, 2013 at 20:51



October 17, 2013 at 20:52



October 17, 2013 at 20:52



October 17, 2013 at 20:52

#85 Mechanical



Issue Number: 85

Date Created: Oct 15, 2013 @ 15:51 Creator: Robert Fassler, PE

Status: Open

Room: MOTOR CONTROL ROOM

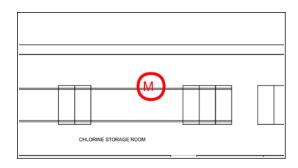
Description: Exhaust fan ok. Fan on roof is good.

Photos (1)



October 17, 2013 at 20:52

#114 Mechanical



Issue Number: 114

Date Created: Oct 15, 2013 @ 18:54 Creator:: Robert Fassler, PE

Status:: Open Room:: ROOF

Description: One has belt missing. Exhaust fans. Three

typical need new bird screens. One hood

needs replacing.

Photos (4)



October 17, 2013 at 20:56



October 17, 2013 at 20:56

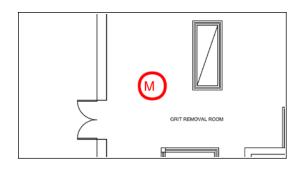


October 17, 2013 at 20:56



October 17, 2013 at 20:56

#115 Mechanical



Issue Number: 115

Date Created: Oct 15, 2013 @ 18:59 Creator:: Robert Fassler, PE

Status:: Open Room:: ROOF

Description: Two fairly new supply fans.

Photos (2)

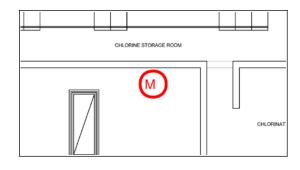


October 17, 2013 at 20:56



October 17, 2013 at 20:56

#116 Mechanical



Issue Number: 116

Date Created: Oct 15, 2013 @ 19:01 Creator: Robert Fassler, PE

> Status: Open Room: ROOF

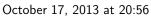
Description: Fairly new exhaust fan. Fiberglass

coated Lightning protection. Is not

connected.

Photos (2)

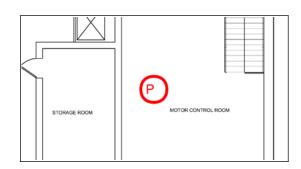






October 17, 2013 at 20:56

#119 Plumbing



Issue Number: 119

Date Created: Oct 15, 2013 @ 19:10 Creator: Robert Fassler, PE

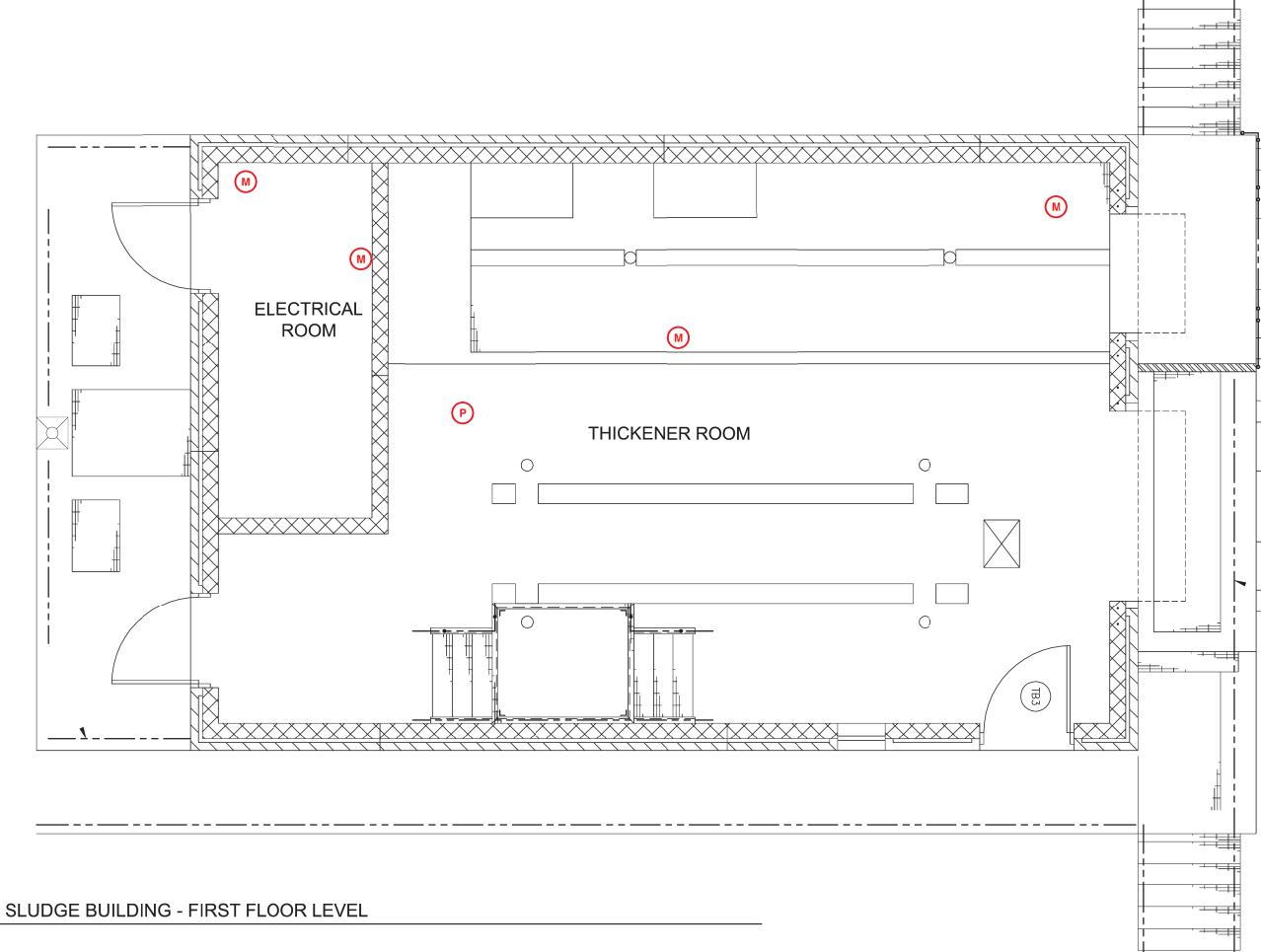
> Status: Open Room: ROOF

Description: Roof drain is good.

Photos (1)



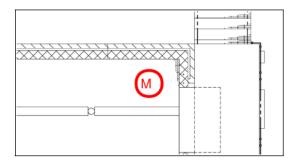
October 17, 2013 at 20:56





SLUDGE BUILDING - FIRST FLOOR LEVEL

#94 Mechanical



Issue Number: 94

Date Created: Oct 15, 2013 @ 16:36 Creator: Robert Fassler, PE

Status: Open

Room: THICKENER ROOM Description: Unit heaters are good.

Photos (2)

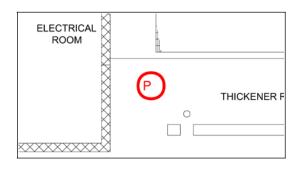


October 17, 2013 at 20:53



October 17, 2013 at 20:53

#95 Plumbing



Issue Number: 95

Date Created: Oct 15, 2013 @ 16:39 Creator: Robert Fassler, PE

Status: Open

Room: THICKENER ROOM

Description: Sink connected to roof conductor. In-

stantaneous heater is good. Sink is new. Eyewash and shower are good.

Photos (5)



October 17, 2013 at 20:53



October 17, 2013 at 20:53



October 17, 2013 at 20:53

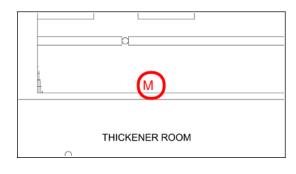


October 17, 2013 at 20:53



October 17, 2013 at 20:53

#96 Mechanical



Issue Number: 96

Date Created: Oct 15, 2013 @ 16:44 Creator: Robert Fassler, PE

Status: Open

Room: THICKENER ROOM
Description: Ventilation duct is good.

Photos (2)

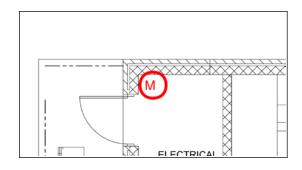


October 17, 2013 at 20:53



October 17, 2013 at 20:53

#97 Mechanical



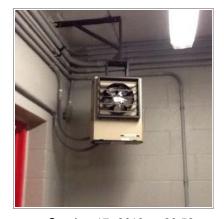
Issue Number: 97

Date Created: Oct 15, 2013 @ 16:48 Creator: Robert Fassler, PE

Status: Open

Room: ELECTRICAL ROOM Description: Electric heater is ok

Photos (2)

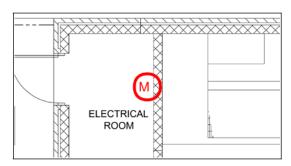


October 17, 2013 at 20:53



October 17, 2013 at 20:53

#98 Mechanical



Issue Number: 98

Date Created: Oct 15, 2013 @ 16:49 Creator: Robert Fassler, PE

Status: Open

Room: ELECTRICAL ROOM
Description: Exhaust fan and srv ok

Photos (3)



October 17, 2013 at 20:54



October 17, 2013 at 20:54



October 17, 2013 at 20:54

Appendix D

Inspection of Outfall with Remotely Operated Vehicle Report, October 23, 2013, Aquatic Sciences

(available on DVD following Appendices)



REPORT

Submitted to CRA Infrastructure & Engineering, Inc.

October 23, 2013

Onondaga County Department of Water Environment Protection

Brewerton Water Pollution Control Plant Cicero, NY

Inspection of Sewer Outfall with a Remotely Operated Vehicle (ROV)

Inspection Completed: September 12, 2013

Aquatic Sciences LP Project #RU13-001



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2.0	EQUIPMENT 2.1 Underwater Remotely Operated Vehicle (ROV) 2.1.1 Navigation Sonar 2.1.2 Profiling Sonar 2.2 Metering Sheave	3
3.0	INSPECTION PROCESS	5
4.0	INSPECTION OBSERVATIONS	<i>6</i>

List of Appendices

Appendix 1: Drawings

Appendix 2: Equipment

Appendix 3: Video Images

Appendix 4: Sonar Profiles

Appendix 5: Inspection Video (DVD)



REPORT

CRA Infrastructure & Engineering, Inc.

Onondaga County Department of Water Environment Protection Brewerton of Water Pollution Control Plant, Cicero, NY Inspection of Sewer Outfall with a Remotely Operated Vehicle (ROV)

Inspection Completed - September 12, 2013

1.0 INTRODUCTION

Aquatic Sciences L.P. (ASLP) of Orchard Park, NY, was contracted by CRA Infrastructure & Engineering, Inc. on behalf of Onondaga County Department of Water Environment Protection to provide underwater inspection services in the Brewerton Water Pollution Control Plant Sewer Outfall (see Figure 1).

The primary objective of the underwater inspection was to assess the general condition of the sewer outfall using an ROV with video and sonar.



Figure 1: Brewerton Water Pollution Control Plant

The sewer outfall is a 36 inch diameter pipeline that runs from the Brewerton Water Pollution Control Plant into the Seneca River. The following drawings provided by CRA are provided in Appendix 1.

Drawing	Title
55-32	Brewerton WPCP – Site Plan
55-32-09F	Brewerton WPCP – Sewer Profiles

2.0 EQUIPMENT

2.1 Underwater Remotely Operated Vehicle (ROV)

ASLP chose the SeaBotix LBV300XL ROV due to its capabilities and size (see Figure 2). Specifications are provided in Appendix 2. The vehicle is ballasted to be neutrally buoyant in fresh water and uses 6 electric thrusters to propel itself through the water. Two horizontal thrusters are used for forward travel, capable of pulling long tether lengths. The SeaBotix LBV300XL has a vertical and a lateral thruster to enable the operator to move the ROV vertically and laterally through the water column. The vehicle is equipped with two variable intensity 50W Quartz-halogen lights to illuminate the area of inspection for the high resolution color camera. The ROV is also equipped with a second wide-angle HD video and 5 megapixel camera.



Figure 2: LBV ROV Prior to Deployment

The system utilizes 2,690 feet of neutrally buoyant high visibility umbilical cable. This umbilical houses both signal and power conductors (fiber-optic and copper respectively), along with a Kevlar strength member and abrasion resistant protective jacket. The umbilical is neutrally buoyant in water to reduce the drag and allow for longer umbilical lengths. An ROV pilot controls the vehicle movement, lighting, and camera position from the surface with the use of a handheld control console.

The video signal is routed to the surface through a fiber-optic cable in the umbilical. The fiber-optic signal is converted in the reel junction box to an analog video signal which is then fed into a high resolution video monitor for the pilot to view. The video signal is also recorded in real-time onto a digital video recorder (DVR) in digital format.

2.1.1 Navigation Sonar

A Tritech Micron DST scanning sonar operating at 700 kHz was mounted on the ROV for navigation purposes. The sonar, mounted upright, scanned on a horizontal plane generating a plan view image of the surrounding area using an acoustic beam 35 degrees wide (Figure 3).

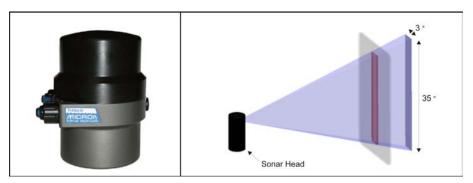


Figure 3: Tritech Micron DST Sonar Beam

The sonar is positioned so as to provide a full 360 degree view around the ROV. Targets are identified by strong returns (yellow) and shadows (black) (Figure 4).

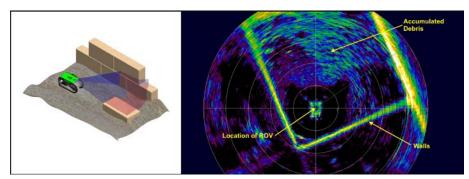


Figure 4: Navigation Sonar (representation image only - not from this project)

2.1.2 Profiling Sonar

An Imagenex 831A profiling sonar operating at 2.25 MHz mounted to the bottom of the ROV provided the cross-sectional profiling capability. The Imagenex sonar provided a pencil beam acoustic pulse of only 1.4 degrees providing detailed measurements (Figure 5).

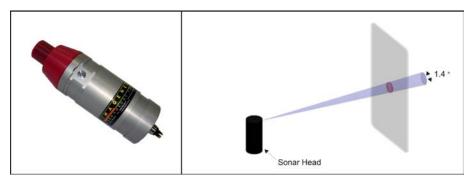


Figure 5: Imagenex 831A Profiling Sonar

The ROV and profile sonar are aligned with the structure using navigation sonar to ensure cross-sectional profiles are collected perpendicular to walls of the structure. Typically, profile measurements are collected while the ROV is stationary against the structure.

The profiling beam of the sonar rotates a full 360 degrees, while collecting measurements along the circumference of the pipe, shown on the left of Figure 6. On the right of Figure 6 is a representative example of a profile scan inside a pipeline structure. The ROV pilot monitors these scans in real time on the PC display and records the data for reporting purposes.

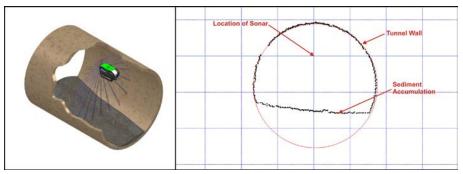


Figure 6: Profiling Sonar Mounted on ROV (representative image only - not from this project)

2.2 Metering Sheave

For small ROV systems, ASLP has built a metering sheave that outputs cable payout to a video overlay system. The excursion distance of the ROV is measured and displayed as part of the inspection (Figure 7). This sheave is battery operated and uses wireless technology to send the data to the pilot station that can be located several hundred feet from the sheave with intervening concrete walls and floors. This provides accurate location and logging of defects or items of interest that are identified during the inspection.

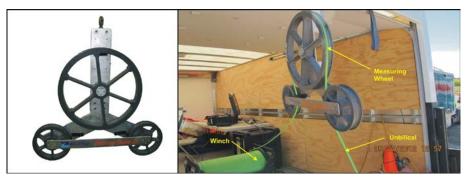


Figure 7: Metering Sheave

3.0 INSPECTION PROCESS

The ROV equipment was mobilized by truck and enclosed trailer to the Brewerton Water Pollution Control Plant on Friday, September 12, 2013. ASLP personnel met with CRA and plant personnel and performed a walk-down of the site to ensure all parties understood the work plan and objectives of the inspection.

This inspection configuration required two ASLP personnel; the pilot and an umbilical tender.

The truck and trailer were staged adjacent to Manhole #12. The manhole cover was removed by plant personnel.



Figure 8: Manhole #12; Gantry with Metering Sheave

The ROV control equipment and umbilical winch was set up inside ASLP's enclosed trailer (see Figure 9).



Figure 9: ROV Control Console

The ROV was launched through Manhole #12 (see Appendix 1 – Drawings, Site Plan) and the ROV was piloted down the manhole shaft, approximately 5 vertical feet, to the horizontal portion of the outfall. The downstream portion of the outfall was inspected first. Once the ROV was stationed inside the outfall, the metering sheave was reset to zero. All measured cable was referenced to this zero location.

The ROV was maneuvered through the outfall travelling with flow to the end of the outfall, at the river end, collecting video and sonar profiles. Sonar profiles were collected at approximately 100 foot intervals. The end of the outfall at the river was reached at a total cable out of 1060 ft.

The ROV was recovered back to the Manhole #12 access. The pilot turned the ROV around and proceeded to travel upstream, against flow, towards the plant. The ROV reached the open settling tank at a total cable out of 85 ft. The ROV was pulled back to the manhole access and recovered. The manhole cover was reinstalled and equipment demobilized.

4.0 INSPECTION OBSERVATIONS

The following appendices provide supplemental information to the written observations:

- Appendix 1 contains drawings provided by client.
- Appendix 2 includes equipment descriptions.
- Appendix 3 includes selected video still images
- Appendix 4 includes sonar profile cross-sections.
- Appendix 5 includes two edited DVD videos of the inspection.

The ROV inspection began in Manhole #12. The ladder rungs were noted down the east side and appeared intact (see Appendix 3, Image 3-1). The invert at the bottom of the manhole was observed to be clean; only a light layer of material was noted on all surfaces (see Appendix 3, Image 3-3). At a cable out of 25 ft., downstream of Manhole #12, material was observed along the invert. At 130 ft., material was visually visible (see Appendix 3, Image 3-4) and measured to be approximately 5 to 6 inches along the east side using the sonar profile collected at this location (see Appendix 4, Image 4-3).

Title protocol for all sonar images in Appendix 4 is as follows:

Example:

1437 - 5602 ft.

Time data was collected (24hr clock)

Distance measured from the entry portal

Sonar profiles collected at approximate 100 foot intervals provided accurate measurements of the material accumulation throughout the outfall. The depths measured are based on an assumed 36 inch diameter pipe.

Manhole #11 was observed at a payout of 170 ft. (see Appendix 3, Image 3-5). Two openings in the crown were noted at 427 ft. and 762 ft. and assumed to be Clean Out #2 and Clean Out #1 respectively (Appendix 3, Image 3-7 and Image 3-8).



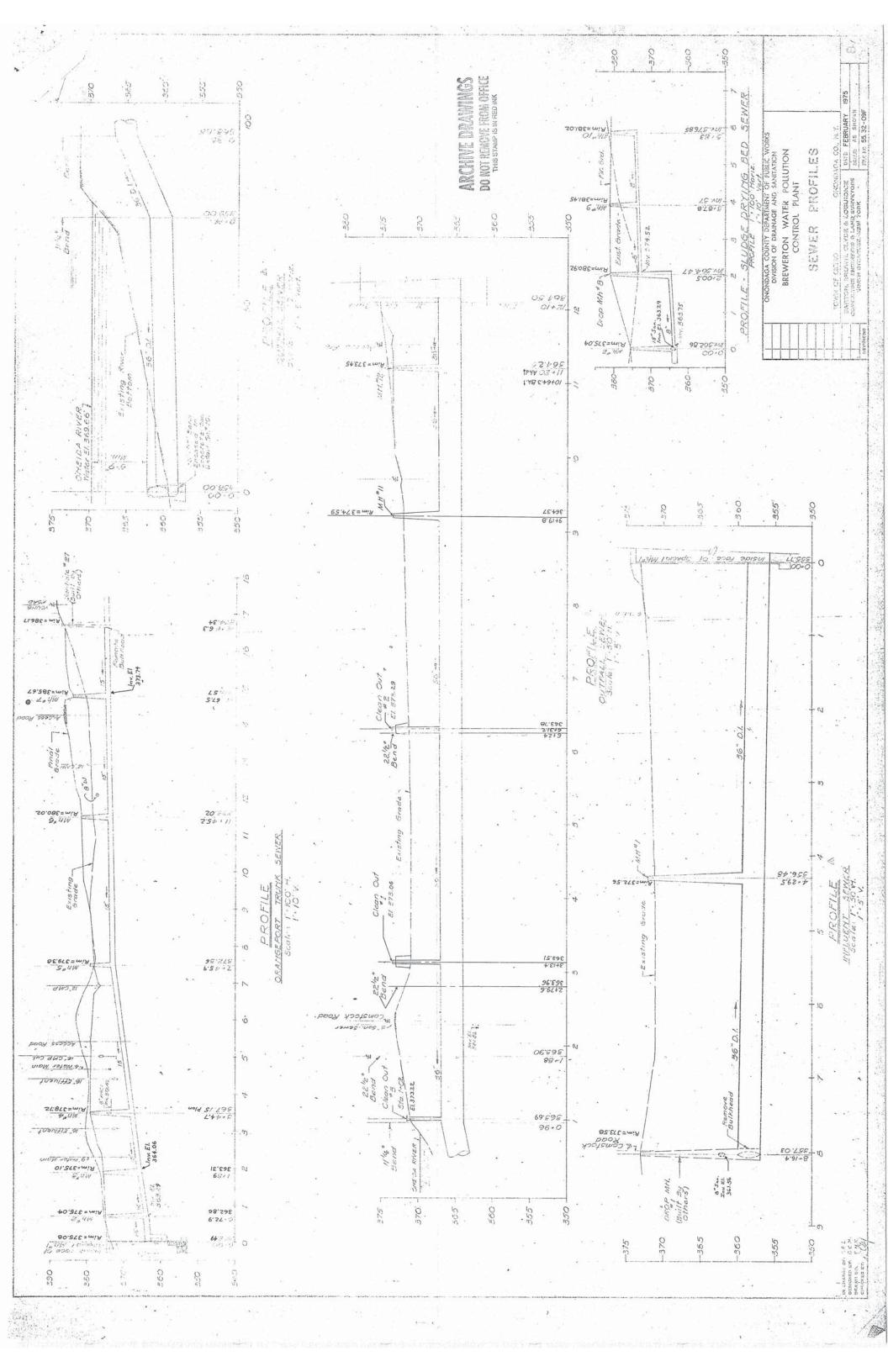
Observed joints were noted to be smooth in transition with no separation or offset (see Appendix 3, Image 3-6). Small air pockets were also observed along the length of the outfall (see Appendix 3, Image 3-8).

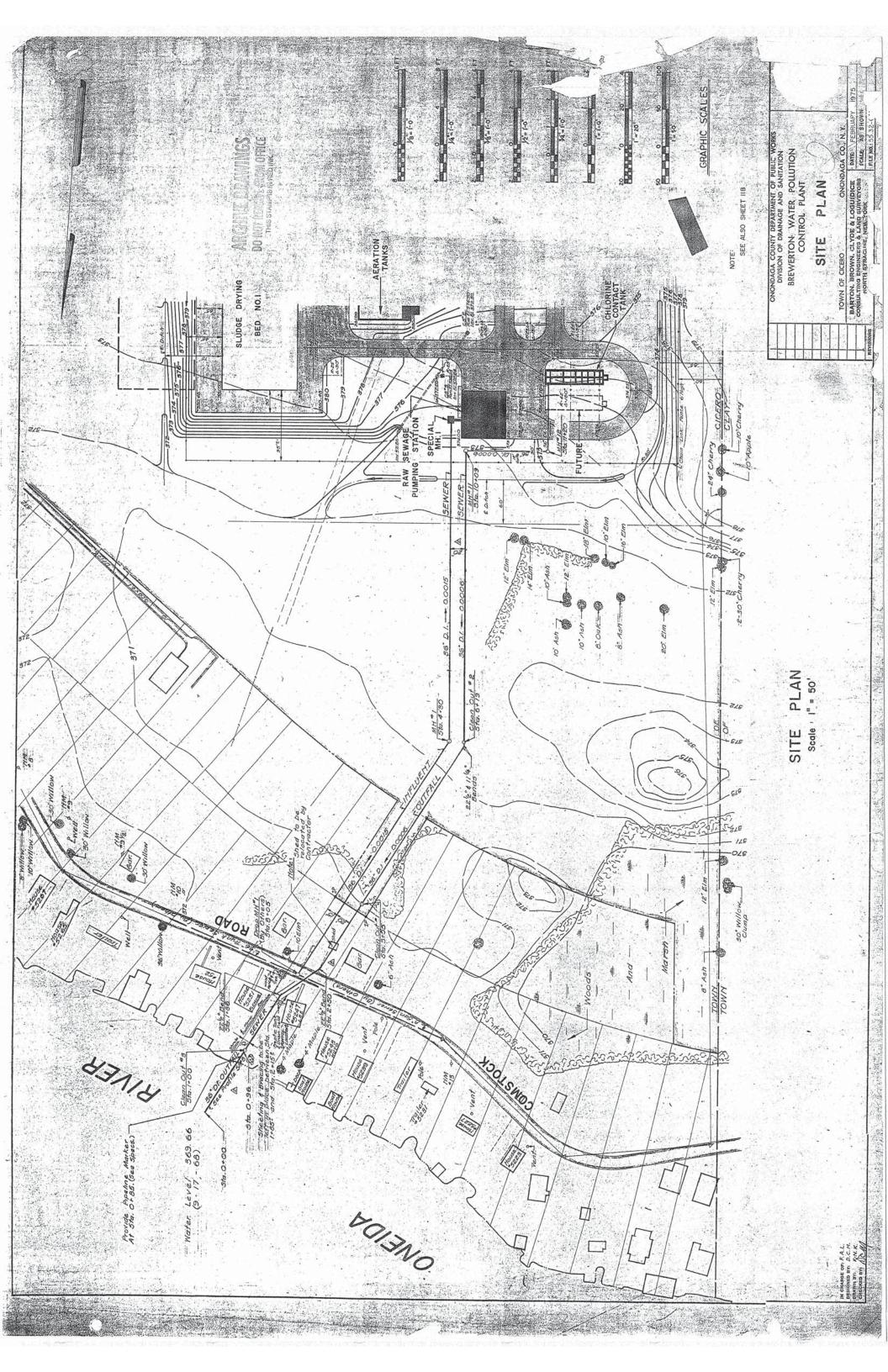
A change in elevation of the outfall was observed between 875 and 970 ft.; going down approximately 5 ft. at 875 ft. at a sharp angle, leveling out until 967 ft. and transitioning back to the previous elevation (see Appendix 3, Image 3-10). This siphon-like anomaly is not indicated on the drawings provided by the client (see Appendix 1 – Drawings, Sewer Profiles), however it appears to correlate to the location of Comstock Road.

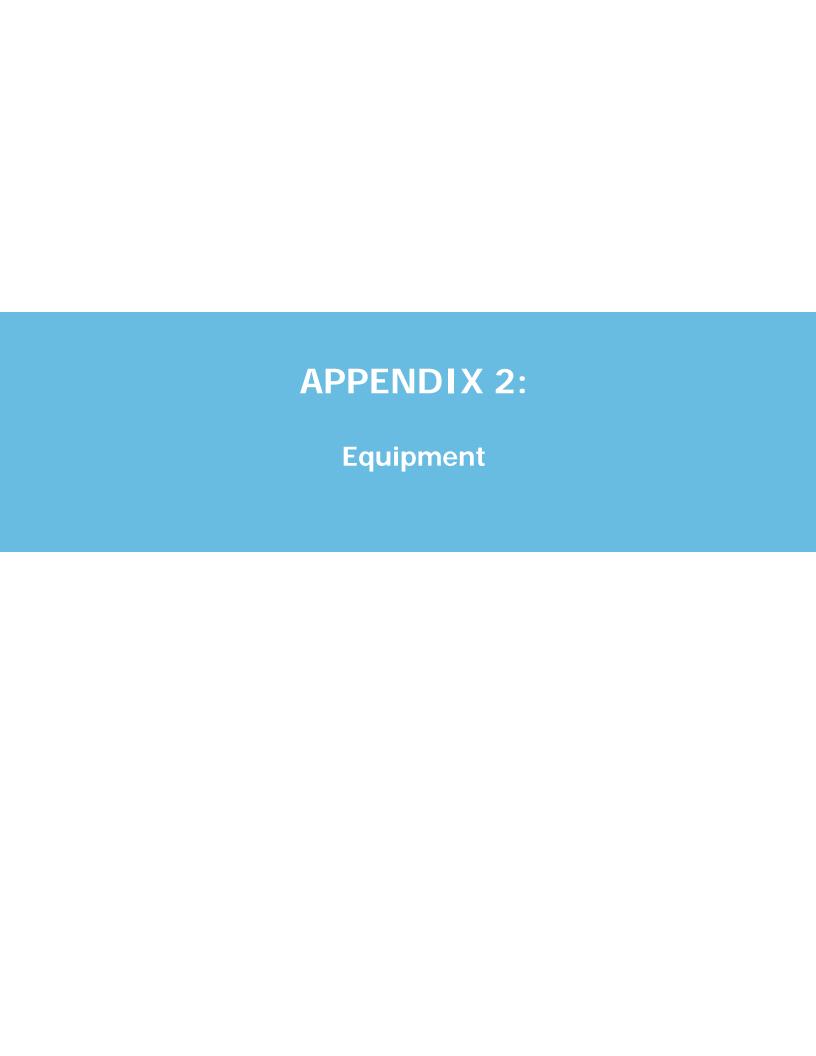
The discharge end of the outfall, located in the Seneca River, was observed at a cable out of 1060 ft. The opening appeared free and clear of debris (see Appendix 3, Image 3-12).

The 85 ft. length of pipe, heading upstream from Manhole #12, was visually inspected. Sonar profile collection was attempted at various instances through this length, but suspended particulate in the water flowing through the outfall prohibited the collection of sonar profiles with useful information. The visual inspection indicated the invert was covered in a light layer of accumulation.











40 Centre Drive, Quaker Centre Business Park Orchard Park, NY, 14127 Tel: 716-667-3507 Fax: 716-667-3509

Vehicle Dimensions				
	Metric	Imperial		
Length	0.53 m	1.75 ft.		
Width	0.25 m	0.83 ft.		
Minimum Diameter of Tunnel	0.38 m	1.25 ft.		
Depth Rating	300 m	1000 ft.		
Umbilical Details				
Length	2.5 km	1.6 mi.		
	1.1 km	3600 ft.		
	750 m	2460 ft.		
	250 m	820 ft.		
All 4-46				

All tethers consist of copper conductors for power transmission, fibre optic components for vehicle telemetry (sensors, control), strength members and a protective jacket. This provides a system for the transmission of high quality video without the interference from electrical noise.

Camera and Sonar Equipment

- 2 high resolution colour cameras mounted in front housing to provide 270° range of view
- Variable intensity 2x50 watts of external lighting
- Variable intensity LED array for supplemental lighting that tracks with camera tilt
- Tritech navigation sonar
- Video overlay for display of compass heading, depth, date and time, and vehicle status parameters

Standard Equipment

- · Brushless DC thrusters
- 2 or 4 horizontal thrusters for increased thrust, 1 lateral and 1 vertical thruster
- Distributed intelligence control system
- · Integral system diagnostics

Optional Equipment

- · Single function manipulator
- Profiling sonar
- Metal thickness probe (UT)
- · Rotary brush cleaner
- · Specialized tooling on project specific basis

Power Requirements

- Single phase A/C power for hotel loads (computers, monitors, recorders) 120 VAC at 1.5 kW 50/60 Hz
- Single phase A/C power for ROV 100-130 VAC at 2 kW 50/60 Hz (can be modified for 200-250 VAC supply)
- Single phase A/C power input for 2.5 km winch 208-240 VAC at 4 kW 50/60 Hz (other umbilical lengths are hand tended)

ASI LBV300XL

REMOTELY OPERATED VEHICLE



ASI LBV300XL

The ASI LBV300XL has been customized by the ASLP ROV engineering team to operate with a 2.5 km/1.6 mi. umbilical, the longest tether for this type or class of vehicle in the world. This is the smallest ROV in ASLP's fleet of tunnel and pipeline inspection vehicles and the most mobile. The regular system fits into the back of a pick-up truck and the ROV can be easily deployed by one person.

For regular open-water projects and shorter excursions, we have maintained the vehicle's off-the-shelf capabilities to operate with the shorter lengths of tether as well, providing a truly unique service with this class of ROV.











Micron DST Sonar Ultra Compact CHIRP Digital Sonar



Features

- Extremely compact our smallest sonar yet
- Digital CHIRP system
- Full software functionality
- True acoustic zoom
- Instant scan reversal and sector scan options
- Inverted mode operation
- Hard boot protection for transducer
- · Cost effective and reliable
- Target size measurement
- 750m depth rating
- Simple to operate

Applications

- Small ROV obstacle avoidance and target recognition
- AUV guidance



If the new generation of very small and low cost ROVs are to develop their full potential it is essential they are equipped with the vital tools and sensors expected on larger ROVs.

Along with the camera, the most important sensor for any vehicle is its obstacle avoidance sonar. The all new Tritech Micron DST (Digital Sonar Technology) sets new standards in compact sonar technology. It is the smallest digital CHIRP sonar in the world. CHIRP technology dramatically improves the range resolution compared with conventional sonars - it is a feature normally associated with much larger, more expensive systems.

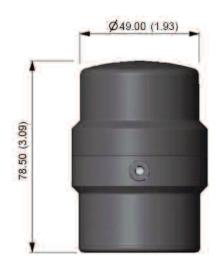
Based on experience gained from Tritech's world class range of SeaKing and SeaPrince sonars, the Micron DST incorporates the most advanced acoustic features and software available today. The sonar can be controlled by a customer supplied PC or laptop and it can be configured for either RS232 or RS485 protocols. Micron DST has an auxiliary port to allow it to interface with other Tritech sensors.

This sonar incorporates the very latest surface mounted digital electronics and many software features normally found only on full sized commercial systems. Tritech believe that although the Micron DST is small in both size and cost it should offer the full range of functionality expected from a professional product.



Specifications







Operating frequency Chirped 650kHz to 750kHz

Other frequency bands available on request

Beamwidth, vertical 35° **Beamwidth, horizontal** 3°

Range settings From 2m (6ft) to 75m (250ft)

Scan sectors User selectable up to 360° continuous

Step speed Normal, Fast or Very Fast

True acoustic zoom Yes
Instant reversal Yes
Image measurement Yes
Inverted head operation Yes

Power requirements 12V - 50V @ 4 VA (Average)

Data communication RS 485 (twisted pair), RS 232 (via modem up to 115kb/s) **Communication requirements** Maximum cable length 1000 metres (using RS 485)

Topside control Customer supplied PC or Laptop using standard serial comms port.

Windows 2000 or XP or Vista Operating System.

Software Tritech SeaNet(OEM) display and control or low level direct

command protocol

Maximum diameter56mm (2.20 inches)Maximum height78.5mm (3.09 inches)Weight in air324g (10.25 ounces)Weight in water180g (5.15 ounces)

Maximum operational depth 750m (2,460ft) standard (3000m - 9,842ft version available)

Operating temperature -10°C to +35°C Storage temperature -20°C to +50°C

All specifications are subject to change in line with Tritech's policy of continual product development.

Ref: EDS-SON-001.9



Tritech International Limited

Peregrine Road • Westhill Business Park • Aberdeen AB32 6JL • United Kingdom

T: +44 (0)1224 744111 F: +44 (0)1224 741771 E-mail: sales@tritech.co.uk Website: www.tritech.co.uk Marketed by:

^{*}NB The Tritech Micron DST is only for use on vehicles with voltage spike protection on power supplies and communication lines.



IMAGENEX MODEL 831A DIGITAL PIPE PROFILING SONAR

APPLICATIONS:

- Profiling
- Pipeline Inspection
- Scientific Research

FEATURES:

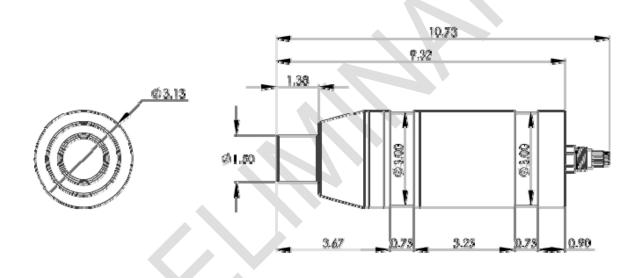
- Programmable
- High performance
- Scans 360° in 1 sec (up to 1 m range)
- Low power
- Digital telemetry
- 0.25 m to 6 m operation (full scale)
- Compact size
- Communication format available to user



HARDWARE		
SPECIFICATIONS:		
FREQUENCY	2.25 MHz	
TRANSDUCER	Profiling type, fluid compensated	
TRANSDUCER BEAM WIDTH	1.4° conical	
RANGE RESOLUTION	1/250 of full scale range (e.g. 1 mm at 250 mm)	
MIN. DETECTABLE RANGE	50 mm (~ 2")	
MAX. OPERATING DEPTH	1000 m	
MAX. CABLE LENGTH	1000 m on typical twisted shielded pair (RS-485)	
INTERFACE	RS-485 serial interface @ 115.2 kbps (or optional RS-232)	
CONNECTOR	End mounted, four conductor, wet mateable	
	(Impulse MCBH-4-MP-SS)	
POWER SUPPLY	20 – 36 VDC at less than 5 Watts	
DIMENSIONS	79.4 mm (3.125") diameter x 273 mm (10.73") overall length	
WEIGHT: In Air	1.4 kg (3 lbs)	
In Water	0.5 kg (1 lb)	
MATERIALS	6061-T6 Aluminum & Polyurethane	
FINISH	Hard Anodize	



SOFTWARE	PipeSonar.exe	
SPECIFICATIONS:		
WINDOWS™ OPERATING SYSTEM	Windows™ 95, 98, Me, NT, 2000, XP, Vista	
MODES	Polar	
RANGE SCALES	0.25 m, 0.50 m, 0.75 m, 1 m, 2 m, 3 m, 4 m, 5 m, 6 m	
STEP SIZE	0.9°	
GRID TYPES	Polar	
FILE FORMAT	(filename).31A	
RECOMMENDED	100 MHz Pentium	
MINIMUM COMPUTER	16 MB RAM	
REQUIREMENTS:	1 GB Hard Disk	
	800 x 600 x 256 colour graphics	



ORDERING INFORMATION:					
1000 m UNIT	Standard	831A-000-200			
RS-232	Option	-006			
Interface source code in "C" (TEST831A.C)	Option	-018			

Product and company names listed are trademarks or trade names of their respective companies.

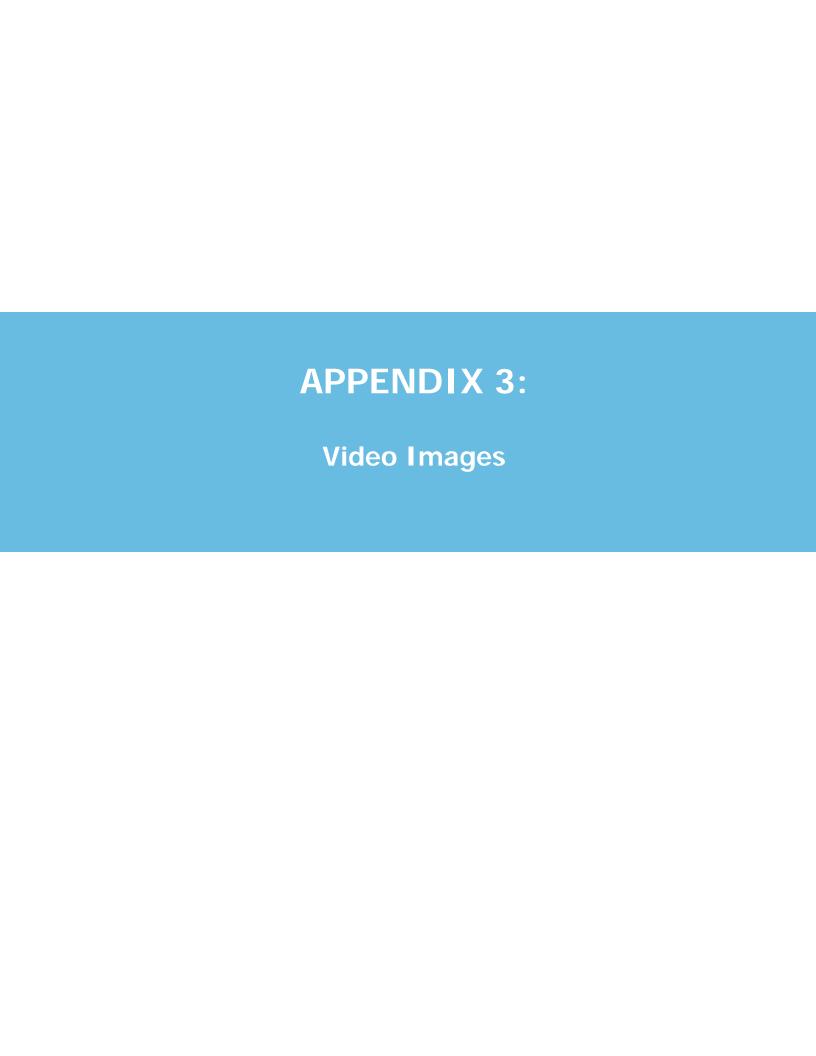




Image 3-01: 0 ft - Ladder in Manhole #1



Image 3-02: 0 ft - Outfall transition in Manhole #12





Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Video Images

Inspection of Sewer Outfall

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Image 3-03: 0 ft - Invert near Manhole #12; clean invert



Image 3-04: 130 ft - Accumulated material on invert





Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Video Images

Inspection of Sewer Outfall

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3

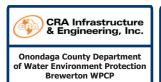
Sheet 2 of 7



Image 3-05: 170 ft - Manhole #11



Image 3-06: 400 ft - Typical joint; no separation or offset





Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Video Images

Inspection of Sewer Outfall

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3

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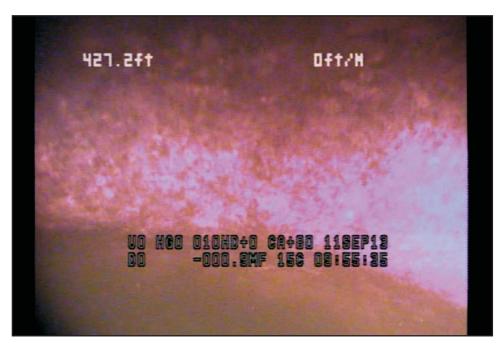
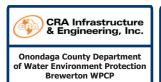


Image 3-07: 427 ft - Opening in crown; assumed Clean Out #2



Image 3-08: 560 ft - Small air pocket at crown





Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Video Images

Inspection of Sewer Outfall

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3

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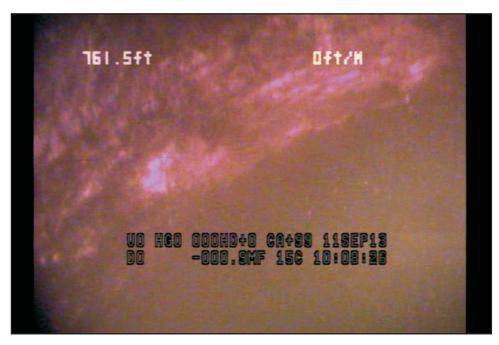


Image 3-09: 762 ft - Opening in crown; assumed Clean Out #1



Image 3-10: 964 ft - Siphon





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Video Images

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Image 3-11: 1040 ft - Minor accumulation on invert



Image 3-12: 1059 ft - End of outfall





Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Video Images

Inspection of Sewer Outfall

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3

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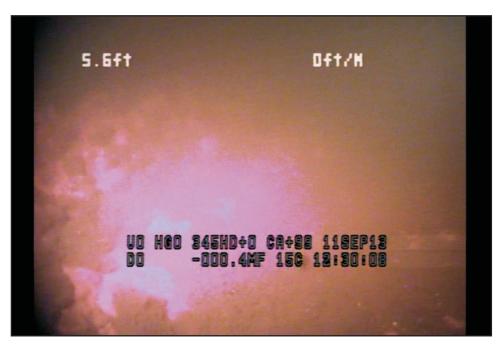


Image 3-13: 5.6 ft - Invert covered in light layer of accumulation



Onondaga County Department of Water Environment Protection Brewerton WPCP



ASI Project No: RU13-001

Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

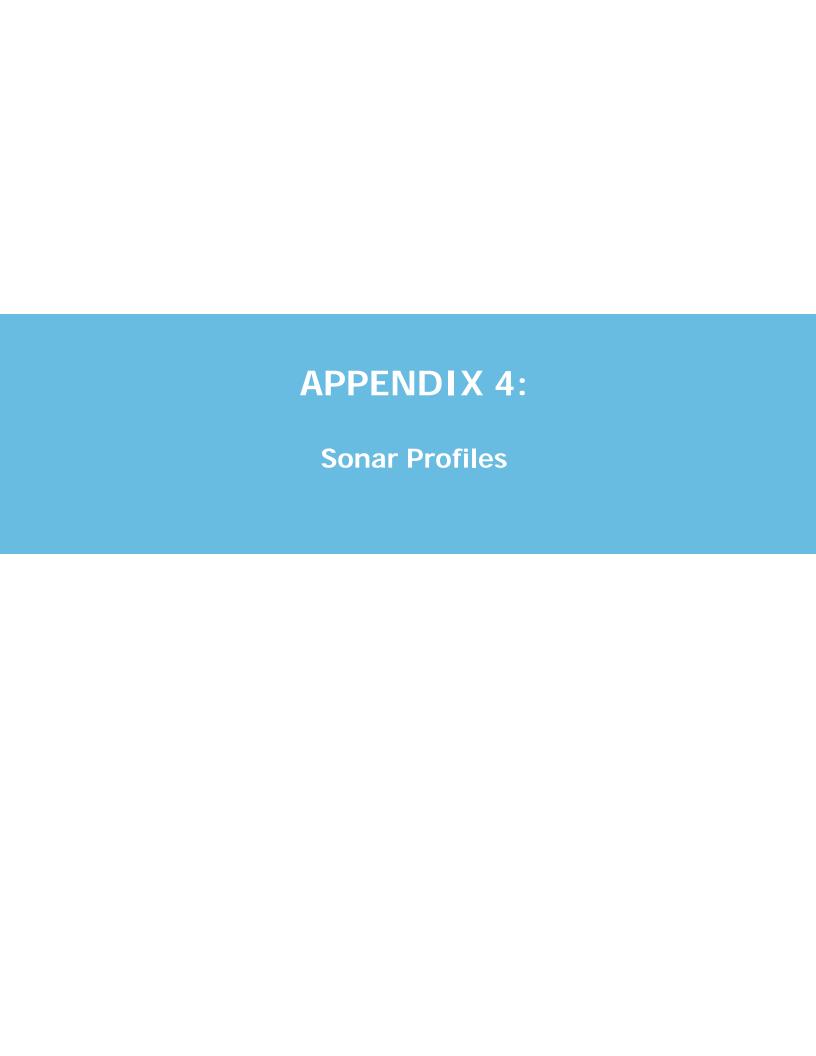
Video Images

Inspection of Sewer Outfall

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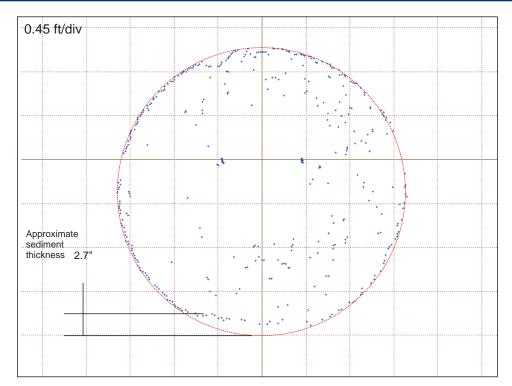


Image 4-01: 0930-0025 ft - Sonar profile

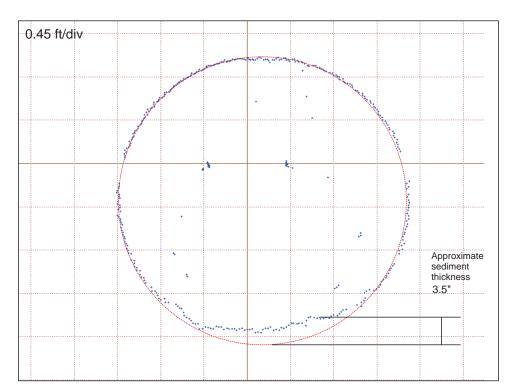


Image 4-02: 0934-0105 ft - Sonar profile





Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Sonar Profiles

Inspection of Sewer Outfall

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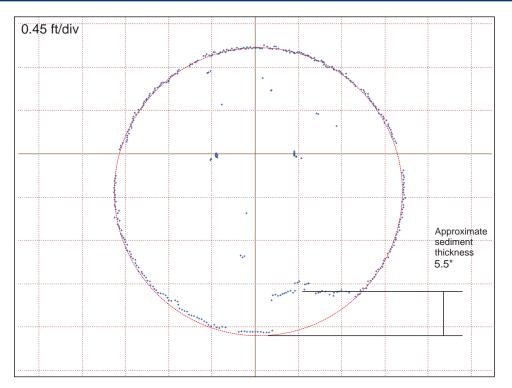


Image 4-03: 0936-0130 ft - Sonar profile

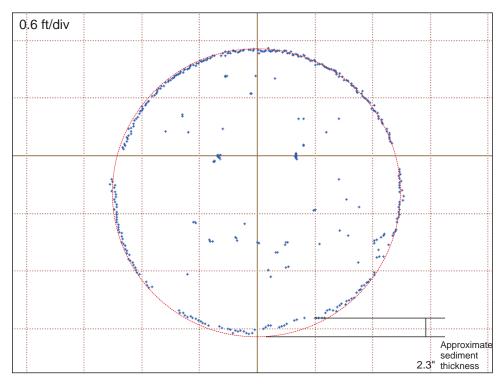


Image 4-04: 0944-0203 ft - Sonar profile



Aquatic Sciences

ASI Project No: RU13-001

Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Sonar Profiles

Inspection of Sewer Outfall

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Sheet 2 of 7

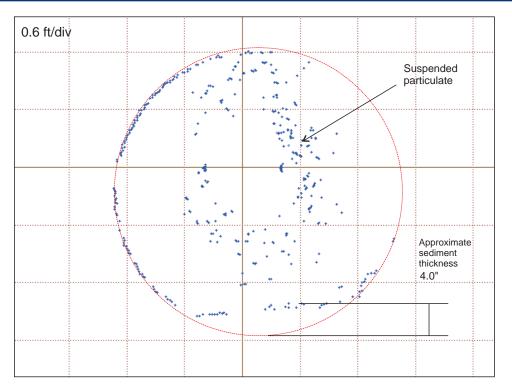


Image 4-05: 0947-0292 ft - Sonar profile

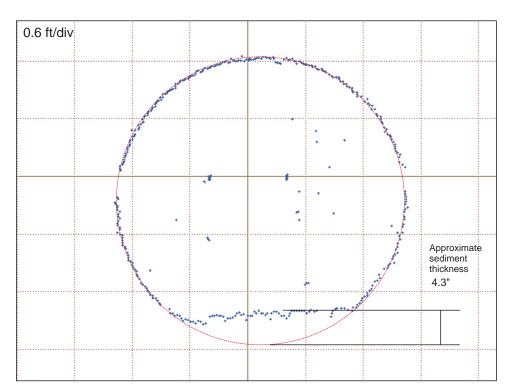


Image 4-06: 0949-0300 ft - Sonar profile





Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Sonar Profiles

Inspection of Sewer Outfall

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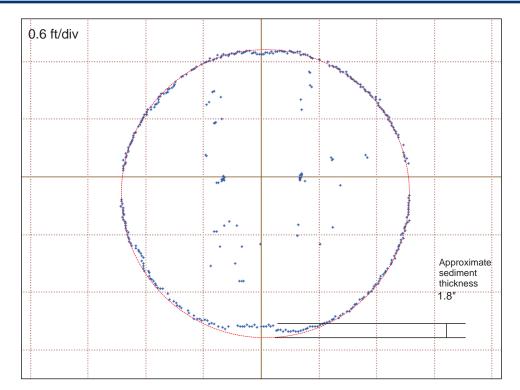


Image 4-07: 0951-0400 ft - Sonar profile

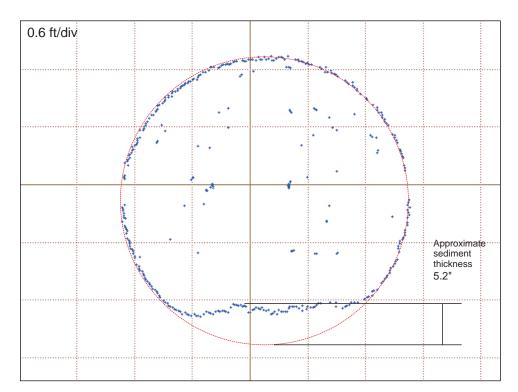


Image 4-08: 0959-0502 ft - Sonar profile





Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Sonar Profiles

Inspection of Sewer Outfall

Appendix Number:

4

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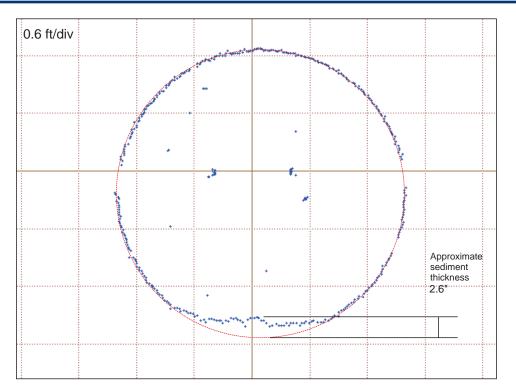


Image 4-09: 1002-0599 ft - Sonar profile

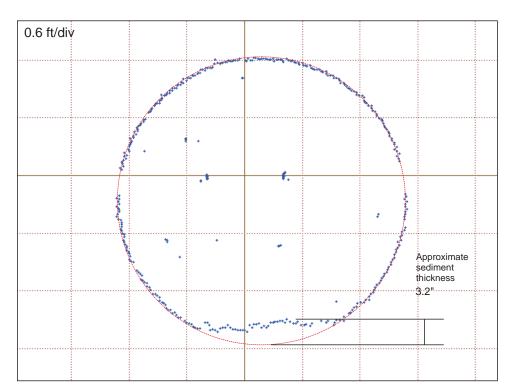


Image 4-10: 1006-0707 ft - Sonar profile





Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Sonar Profiles

Inspection of Sewer Outfall

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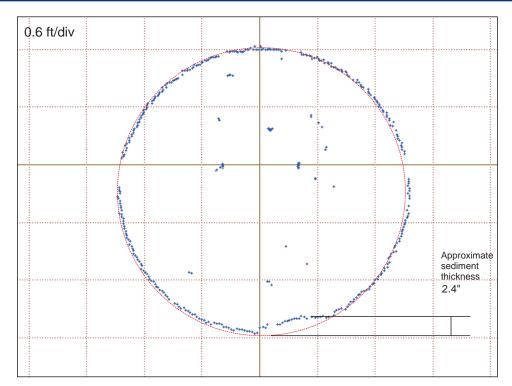


Image 4-11: 1010-0800 ft - Sonar profile

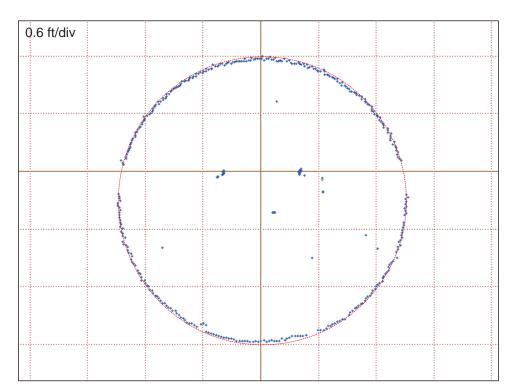


Image 4-12: 1013-0900 ft - Sonar profile



Aquatic Sciences

ASI Project No: RU13-001

Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

Sonar Profiles

Inspection of Sewer Outfall

Appendix Number:

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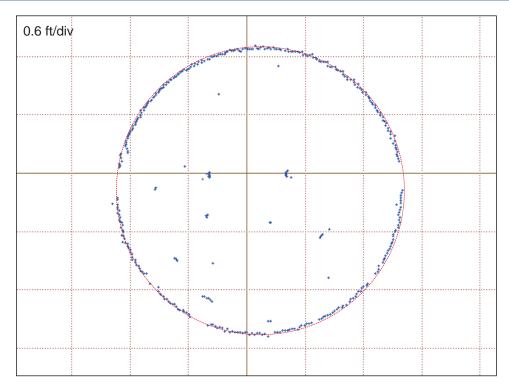


Image 4-13: 1020-0997 ft - Sonar profile



Onondaga County Department of Water Environment Protection Brewerton WPCP



ASI Project No: RU13-001

Project Date: Sept. 12, 2013

Drawn By: A. van Overbeeke

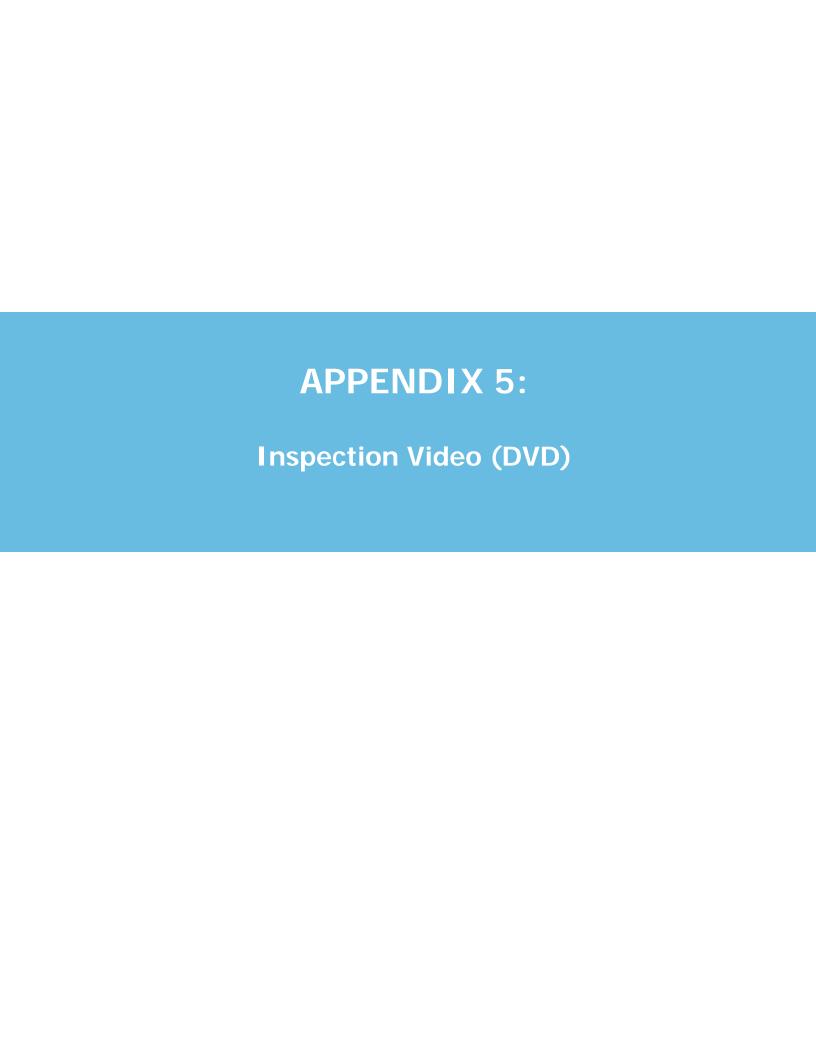
Sonar Profiles

Inspection of Sewer Outfall

Appendix Number:

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Sheet 7 of 7



Appendix E

Updated Asbestos Survey,
August 11, 2014, Popli Design Group
(available on DVD following Appendices)



Asbestos Inspection Report

FOR

Brewerton Water Pollution Control Plant (WPCP)

5225 Guy Young Rd Brewerton, Onondaga County

Onondaga County Dept of Water Environment Protection

DATE: August 11, 2014



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APPENDIX- B: SITE LOCATION MAP

APPENDIX- C: ACM & PCB SAMPLE LOCATION PLANS

APPENDIX- D: LABORATORY REPORTS AND ASSOCIATED CUSTODY DOCUMENTATION

APPENDIX- E: PHOTOS OF NOTABLE SAMPLED BUILDING MATERIALS & SCANNED SURFACE AREAS

APPENDIX- F: 1991 NET Brewerton WTP Asbestos Survey Report

1.0 Introduction

1.1 Purpose

Popli Design Group (PDG) was retained by Onondaga County Department of Water Environment Protection (OCWEP) to perform a limited asbestos survey of select areas associated with future improvements to several rooms, situated in the Brewerton Water Pollution Control Plant. The limited asbestos survey was performed between October 14th to October 16th of 2013. The purpose of the limited asbestos survey was to identify asbestos-containing materials (ACM) that are present on exposed surfaces within the subject areas, and may have a significant impact on planned renovation activities. A PCB survey and a Lead-Based Paint Survey were also conducted at the time of the limited asbestos survey. The limited asbestos survey procedures and report format that follow are in general compliance with applicable local, state, and federal rules and regulations.

1.2 Project Team and Certifications

The asbestos inspection was performed by Richard Hodgson and Michael Crawford, P.E. Certifications for Richard Hodgson, Michael Crawford and a copy of applicable company licenses maintained by PDG are included in Appendix A.

The PCB survey and Lead-Based Paint survey were performed by Michael Crawford, P.E. Certifications were not needed for either of the two surveys.

2.0 Scope Of Work

2.1 Project Description

The project site is located at 5225 Guy Young Road, Brewerton, Onondaga County, New York. A Site Location Map depicting the general location of the project site is included in Appendix B. The asbestos survey and the PCB survey were limited to the Control Building, The Control Building Garage, The Chemical Building, The Thickener Building, the Raw Sewage Pumping Station Building, and the underground galleries. The Lead Paint survey was performed everywhere within the perimeter fence.

The intent of the limited asbestos survey was to identify suspect ACM that are located within designated areas of the subject site that are scheduled for renovation activities. This is accomplished by collecting samples, and having the samples tested to determine whether the materials are ACM.

The Intent of the PCB survey was to identify suspect materials that contain PCB that are located within designated areas of the subject site that are scheduled for renovation activities. This is accomplished by collecting samples, and having the samples tested to determine whether the materials contain PCB.

The Intent of the Lead-Based Paint survey was to identify suspect materials with lead paint that are located within designated areas of the subject site that are scheduled for renovation activities. This is

accomplished by using a spectrum analyzer portable X-Ray Fluorescence (XRF) paint tester to determine if there is lead and what concentration is on the material in question.

2.2 ACM in Inaccessible Areas

The extent of inaccessible areas is dependent upon the building type, construction materials, history of renovations and repairs, and project scope. Concealed materials may exist in areas that are not readily exposed to view. Although this limited asbestos survey was performed to identify ACM within the subject areas, potential ACM may have escaped detection that could be encountered during future building demolition and/or renovation activities. Wall, ceiling, floor, roofing, and/or other component systems may contain concealed suspect ACM. If any suspect ACM is encountered during demolition and/or renovation activities, the activities disturbing the suspect ACM must stop and the material must be sampled and laboratory analyzed in accordance with applicable regulations.

2.3 Document Review

As Built record plans show that the site was first constructed in 1974. This included the Control Building, The Control Building Garage, The Raw Sewage Pumping Station Building, the Chemical Building and the Galleries. In 2000 the Thickener Building was constructed. It is assumed that buildings built in 2000 or later do not use ACM in their construction.

A previous asbestos survey was performed by National Environmental Testing, Inc. (NET) on October 22nd through October 24th of 1990. The report was issued on March 29th, 1991. In this report the inspectors found that the 2-ft by 4-ft white ceiling tiles in the Control Building hallway tested positive as ACM. The report also found AC roof flashing on the Control Building, the Control Building Garage and the Raw Sewage Pumping Station Building to be tested positive as ACM. Due to the inaccessibility of the roof of the Chemical Building, the AC flashing on the Chemical Building roof was designated as a presumed asbestos containing material (PACM). The 2-ft by 4-ft ceiling tiles and the roof AC flashing will now be designated as PACM in this report as both of these materials have been tested positive for ACM.

2.4 Limitations

This report should not be used as abatement specifications or design documents. The findings, conclusions, and recommendations presented in this report are based on the field observations made by representatives of PDG.

Quantities and locations of sampled materials are approximate and should be verified by the abatement contractor(s) prior to providing actual cost estimates and/or initiating abatement activities. Variations in reported quantities and locations for sampled materials, in addition to the discovery of suspect materials not identified in this report, are possible due to the presence of inaccessible areas, as described in Section 2.2 of this report.

The findings and opinions are relevant to the dates of our site work and should not be relied on to represent conditions at substantially later dates.

3.0 ASBESTOS

3.1 Methodology

A visual examination of the subject areas was conducted by the field survey team to identify suspect ACM. Functional space identifications were assigned to field drawings to assist the survey team while locating suspect ACM. A functional space is defined as a spatially distinct area within a building that contains identifiable populations of building occupants. A functional space may include a room, a group of rooms, or other defined area. Several functional spaces may comprise a single homogeneous sampling area. A homogeneous sampling area is defined as an area that is uniform by color, texture, construction/application, and general appearance. Each identified functional space was visually examined to determine the locations of suspect ACM. These materials were then delineated into homogeneous sampling areas.

Samples of each accessible homogeneous area were collected and placed in clean, labeled Ziploc bags. The appropriate custody documentation was completed and the suspect ACM samples were submitted to Paradigm Environmental Services, Inc. (Paradigm), located in Rochester, New York. The samples were laboratory analyzed by polarized light microscopy (PLM) and transmission electron microscopy (TEM) methodologies, as applicable. Paradigm is a New York State Department of Health (HYSDOH) certified laboratory for PLM and TEM analysis under Environmental Laboratory Approval Program (ELAP) No. 10958. Paradigm is also accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

3.2 Regulatory Compliance

In New York State, there are multiple regulatory agencies that have jurisdiction over ACM in buildings. Asbestos survey requirements are primarily regulated or specified by the New York State Department of Labor (NYSDOL), the NYSDOH, the Occupational Safety and Health Administration (OSHA), and the United States Department of Environmental Protection Agency (EPA).

The NYSDOL established Part 56 of the Official Compilation of Codes, Rules, and Regulations (cited as 12 NYCRR, Part 56) to address the proper identification, handling, removal, and disposal of ACM in buildings. Asbestos survey requirements are specified in Subpart 56-5.1 "Asbestos Survey Requirements for Building/Structure Demolition, Renovation, Remodeling and Repair." The NYSDOL also works in conjunction with the NYSDOH to establish and maintain asbestos safety training program requirements, and enforce personnel certifications and licensing protocol for asbestos contractors.

The OSHA defines requirements for asbestos surveys and identification of ACM and presumed asbestos-containing materials (PACM) in 29 CFR 1926.1101 (k) "Communication of Hazards." Under this regulation, OSHA makes reference to conduction inspections according to 1926.1101 (k)(5)(ii)(B) and 1926.1101 (k)(5)(iii) or pursuant to the requirements of the Asbestos Hazard Emergency Response Act (AHERA) 40 CFR Part 763, Subpart E "Asbestos-Containing Materials in Schools." The AHERA is regulated by the EPA, and applies to primary and secondary schools only. However, the procedures mandated under AHERA are generally considered the industry standards for surveys; as these are typically the most stringent.

3.3 Summary of Findings

A total of 57 homogeneous areas of suspect ACM were identified during the visual examination, from which 111 bulk samples were collected and subsequently submitted to a NYSDOH approved laboratory for analysis. Approximate sample locations are depicted on the Sample Location Plan, contained in Appendix C. A copy of the October 31st 2013 laboratory reports and associated sample custody documentation are contained in Appendix D. Table I below provides a summary of the identified suspect ACM and associated analytical results.

TABLE I
SUMMARY OF SUSPECT ACM AND ANALYTICAL RESULTS

GALLERIES

Material	Sample Location ¹	Friable	NOB ^{2,3}	% Asbestos ^{4,5,6,7,8}	Reference Sample Numbers	Estimated Quantity ^{9,10}
Light Gray Insulation Caulk	51 & 52 Building Joints in West & South Galleries	NO	YES	NAD ⁷	CLK-9-1, CLK-9-2	NA
Thermal Pipe Insulation	53 Pipes in West Gallery	YES	NO	NAD	TSI-1-4	NA
Thermal Pipe Insulation Mudded Joint	54 Pipes in West Gallery	YES	NO	NAD	TDIMJ-1-4	NA

THICKENER (SLUDGE) BUILDING

Material	Sample Location ¹	Friable	NOB ^{2,3}	% Asbestos ^{4,5,6,7,8}	Reference Sample Numbers	Estimated Quantity ^{9,10}
Light Gray Pipe Caulk	1 Pipes in Thickener Room	NO	YES	NAD ⁷	CLK-12-1	NA
Black Pipe Caulk	2 Pipes in Thickener Room	NO	YES	NAD ⁷	CLK-13-1	NA
Light Gray Insulation Caulk	3 & 4 Exterior Doors in Thickener Room	NO	YES	NAD ⁷	CLK-14-1, CLK-14-2	NA

CHEMICAL BUILDING

Material	Sample Location ¹	Friable	NOB ^{2,3}	% Asbestos ^{4,5,6,7,8}	Reference Sample Numbers	Estimated Quantity ^{9,10}
Light Gray Insulation Caulk	1 & 2 Building Joints in Chemical Room	NO	YES	TRACE ⁷	CLK-10-1-1, CLK-10-1-2	100 LF
Light Gray Insulation Caulk	6 & 7 Louvers in Exterior	NO	YES	NAD ⁷	CLK-10-2-1, CLK-10-2-2	NA
Light Gray Insulation Caulk	8 & 9 Foundation Joints in Exterior	NO	YES	NAD ⁷	CLK-10-3-1, CLK-10-3-2	NA
Light Gray Insulation Caulk	3 & 10 Garage Door in Garage	NO	YES	NAD ⁷	CLK-11-1-1, CLK-11-1-2	NA
Light Gray Insulation Caulk	5 & 11 Exterior Doors in Lab & Chemical Room	NO	YES	NAD ⁷	CLK-11-2-1, CLK-11-2-2	NA
Light Gray Pipe Caulk	14 & 15 Pipes in Second Floor	NO	YES	NAD ⁷	CLK-11-3-1, CLK-11-3-2	NA
Light Gray Pipe Grout	16 & 17 Pipes in Second Floor	YES	NO	NAD	M-4-1, M-4-2	NA
Orange Floor Tile	12 & 13 Floor in Second Floor	NO	NO	TRACE	FT-2-1, FT-2-2	800 SF
White / Gray Floor Tile Grout	12 & 13 Floor in Second Floor	YES	NO	TRACE	FTG-1-1, FTG-1-2	800 SF
Black AC Roof Flashing	Roof	NO	YES	PACM ⁸	NA	170 LF

RAW SEWAGE PUMPING STATION BUILDING

Material	Sample Location ¹	Friable	NOB ^{2,3}	% Asbestos ^{4,5,6,7,8}	Reference Sample Numbers	Estimated Quantity ^{9,10}
Clear Yellow	1 & 10 Pipes in Grit	NO	YES	NAD ⁶	CLK-17-1,	NA
Pipe Caulk	Room &				CLK-17-2	
	Chlorination Room			7		
Light Gray	2 & 3 Exterior	NO	YES	NAD ⁷	CLK-18-1,	NA
Insulation Caulk	Doors in Grit Room			7	CLK-18-2	
Light Gray	4 & 7 Window in	NO	YES	TRACE 7	CLK-19-1,	64 LF
Insulation Caulk	Motor Control				CLK-19-2	
	Room &					
	Chlorination Room			7		
Light Gray	5 Louver Exterior	NO	YES	NAD ⁷	CLK-20-1	NA
Insulation Caulk	_			7		
Light Gray Pipe	8, 11 & 13 Pipes in	NO	YES	NAD ⁷	CLK-21-1,	NA
Caulk	Chlorination Room				CLK-21-2,	
	& Chlorine Storage				CLK-21-3	
	Room			7		
Black Pipe Caulk	9 Pipes in	NO	YES	NAD ⁷	CLK-22-1	NA
	Chlorination Room			7		
Light Gray	12 Building Joints in	NO	YES	NAD ⁷	CLK-23-1	NA
Insulation Caulk	Chlorine Storage					
	Room					
Grey Pipe Grout	6 Pipes in Motor	YES	NO	NAD	M-5-1	NA
	Room			6		
Black Rubber	14 Under Motor in	NO	YES	NAD ⁶	M-6-1	NA
Vibration Pad	Motor Control					
	Room			0		
Black AC Roof	Roof	NO	YES	PACM ⁸	NA	216 LF
Flashing	_					
Red Fire Doors	Internal Entrance	NO	NO	PACM ⁸	NA	2 EA
	to Storage Room,					
	Chlorine Storage					
	Room &					
	Chlorination Room					

CONTROL BUILDING

Material	Sample Location ¹	Friable	NOB ^{2,3}	% Asbestos ^{4,5,6,7,8}	Reference Sample Numbers	Estimated Quantity ^{9,10}
Light Gray	1, 5 & 11 Internal	NO	YES	TRACE 7	CLK-1-1,	190 LF
Insulation Caulk	Doors in Control				CLK-1-2,	
	Room & Hallway			7	CLK-1-3	
Light Gray	3, 4 & 9 Louver in	NO	YES	NAD ⁷	CLK-2-1,	NA
Insulation Caulk	Control Room &				CLK-2-2,	
	Exterior			7	CLK-2-3	
Light Gray	6 & 7 Exterior	NO	YES	NAD ⁷	CLK-3-1,	NA
Insulation Caulk	Doors			_	CLK-3-2	
Red Insulation Caulk	8 Louver Exterior	NO	YES	NAD ⁷	CLK-4-1	NA
Black Pipe Caulk	14 & 15 Pipes in	NO	YES	NAD ⁷	CLK-5-1,	NA
	Control Room				CLK-5-2	
Light Gray Pipe	16, 17 & 37 Pipes in	NO	YES	TRACE 7	CLK-6-1,	20 LF
Caulk	Control Room &				CLK-6-2,	
	Transformer Room				CLK-6-3	
Light Gray Sink	22 Sink in Janitor	NO	YES	NAD ⁷	CLK-7-1	NA
Caulk	Room					
Light Gray	40 & 41 Louver in	NO	YES	NAD ⁷	CLK-8-1,	NA
Insulation Caulk	Filter Rooms off				CLK-8-2	
	Blower Room					
Brown Roof	21 & 27a Roof	YES	NO	VNAD ⁷	M-1-1,	NA
Vent Mudded	Vents in Control				M-1-2	
Vermiculite	Room & Bathroom					
Black Rubber	38 & 39 Doors to	NO	YES	NAD ⁷	M-2-1,	NA
Gasket	Filter Rooms off				M-2-2	
	Blower Room					
Black Rubber	50a & 50b Under	NO	YES	NAD ⁶	M-6-2,	NA
Vibration Pad	Blowers in Blower				M-6-3	
	Room					
Light Gray w/	18, 19 & 27 Floor	NO	YES	NAD ⁷	FT-1-1,	NA
White Specks	Tile in Control				FT-1-2,	
Floor Tile	Room & Bathroom				FT-1-3	
Yellow Brown	18, 19 & 27 Under	NO	YES	TRACE ⁵	FTM-1-1,	1567 SF
Floor Tile Mastic	Light Gray w/				FTM-1-2,	
	White Specks Floor				FTM-1-3	
	Tile in Control					
	Room & Bathroom					
Orange /	42, 43 & 44 Under	NO	YES	NAD ⁷	FM-1-1,	NA
Reddish Brown	Green Carpet in				FM-1-2,	
Carpet Mastic	Blower Room				FM-1-3	

CONTROL BUILDING CONTINUED

Material	Sample Location ¹	Friable	NOB ^{2,3}	% Asbestos ^{4,5,6,7,8}	Reference Sample Numbers	Estimated Quantity ^{9,10}
Gray Vinyl Edging	18 & 27 Edging in Control Room & Bathroom	NO	YES	NAD ⁶	E-1-1, E-1-3	NA
Yellow / Brown Edging Mastic	18 & 27 Under Gray Vinyl Edging in Control Room & Bathroom	NO	YES	1.8%	EM-1-1, EM-1-3	195 LF
Brown Vinyl Edging	34, 35 & 36 Edging in Blower Room	NO	YES	NAD ⁷	E-2-1, E-2-2, E-2-3	NA
Yellow Edging Mastic	34, 35 & 36 Under Brown Edging in Blower Room	NO	YES	NAD ⁷	EM-2-1, EM-2-2, EM-2-3	NA
White Plaster & Grey Sheet Rock	12 & 13 Under Orange Paint in Control Room & Under Gray Paint in Control Room Office	YES	NO	NAD	P-1-1, P-1-2	NA
White Plaster & Grey Sheet Rock	31, 32 & 33 in Blower Room & Transformer Room	YES	NO	NAD	P-2-1, P-2-2, P-2-3	NA
White Joint Compound	28, 29 & 30 on Corners of Walls on Exterior of Transformer Room	YES	NO	NAD	PJC-1-1, PJC-1-2, PJC-1-3	NA
Pipe Thermal Insulation	23, 25 & 26 Pipes in Janitor Room, Hallway above ACT & Bathroom	YES	NO	NAD	TSI-1-1, TSI-1-2, TSI-1-3	NA
Thermal Pipe Insulation Mudded Joint	24, 25 & 26 Pipes in Janitor Room, Hallway above ACT & Bathroom	YES	NO	NAD	TSIMJ-1-1, TSIMJ-1-2, TSIMJ-1-3	NA
Yellow Duct Insulation	20 in Duct in Control Room	YES	NO	NAD	TSI-2-1	NA
Packaged 2'x4' White Acoustic Ceiling Tile	56 Package in Blower Room	YES	NO#	NAD ⁷	CT-2-1	NA

CONTROL BUILDING CONTINUED

Material	Sample Location ¹	Friable	NOB ^{2,3}	%	Reference Sample	Estimated
				Asbestos ^{4,5,6,7,8}	Numbers	Quantity ^{9,10}
2'x4' White	57, 58 & 59 Ceiling	YES	NO#	NAD ⁷	CT-1-1 (7/25/14),	NA
Acoustic Ceiling	of Hallway				CT-1-2 (7/25/14),	
Tile					CT-1-3 (7/25/14)	
Black AC Roof	Roof	NO	YES	PACM ⁸	NA	314 LF
Flashing						
Red Fire Doors	Internal Entrance	NO	NO	PACM	NA	8 EA
	to Control Room,					
	Janitor Room,					
	Bathroom, Blower					
	Room & Garage					

GARAGE

Material	Sample Location ¹	Friable	NOB ^{2,3}	% Asbestos ^{4,5,6,7,8}	Reference Sample Numbers	Estimated Quantity ^{9,10}
Light Gray Insulation Caulk	10 Garage Door in Garage	NO	YES	NAD ⁷	CLK-3-3	NA
Black Insulation Caulk	55 AC Window Unit for Kitchen	NO	YES	NAD ⁷	CLK-16-1	NA
Light Gray w/ White Specks Floor Tile	46 & 47 Floor Tile in Kitchen	NO	YES	NAD ⁷	FT-1-4, FT-1-5	NA
Orange / Brown Floor Tile Mastic	46 & 47 Under Light Gray w/ White Specks Floor Tile in Kitchen	NO	YES	NAD ⁷	FTM-1-4, FTM-1-5	NA
Gray Leveling Compound	46 & 47 Under Orange / Brown Floor Tile Mastic in Kitchen	YES	NO	NAD	M-3-1, M-3-2	NA
Gray Vinyl Edging	45 Edging in Kitchen	NO	YES	NAD ⁶	E-1-4	NA
Yellow / Brown Edging Mastic	45 Under Gray Vinyl Edging in Kitchen	NO	YES	1.8%	EM-1-4	53 LF
White Acoustic Ceiling Tile	48, 49 & 50 Ceiling Tile in Kitchen	YES	NO	NAD	CT-1-1, CT-1-2, CT-1-3	NA
Black AC Roof Flashing	Roof	NO	YES	PACM ⁸	NA	170 LF

ASBESTOS KEY

Notes:

¹Sample Location Plans are enclosed in Appendix C.

²NOB = Non-friable Organically Bound.

³NO# = Not NOB but analyzed using ELAP Method 198.5 & 198.6 per NYSDOH.

⁴VNAD = Material was analyzed for asbestos in vermiculite using ELAP Method 198.1 & 198.6 per NYSDOH. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

⁵NAD = No Asbestos Detected.

⁶NAD due to less than 1.0% Residue Remaining.

⁷TEM (Transmission Electron Microscopy) methods were used to analyze sample.

⁸PACM – This building material is PACM (Presumed Asbestos Containing Material) as per NET 1991 Brewerton WTP Asbestos Survey enclosed in Appendix F.

⁹Quantities and locations are approximate and must be verified by asbestos abatement contractors prior to providing actual cost estimations and/or initiating abatement activities.

¹⁰NA = Not Applicable.

The EPA, NYSDOL, and other regulatory agencies define ACM as any material containing greater than 1% of asbestos. Materials listed in bold font in Table I above were determined or assumed to be ACM.

Materials containing trace asbestos (i.e. less than 1%) are not considered ACM. However, the OSHA recognized materials that contain trace amounts of asbestos, and require these materials to be handled in accordance with their standard interpretation letter titled "Requirements for Demolition Operations Involving Material Containing <1% asbestos", dated August 13, 1999. As shown in Table I above, 3 types of materials were determined to contain trace amounts of asbestos.

3.4 Asbestos-Containing Materials Conclusions

Concealed regulated ACM may exist at the site that could be encountered during future building renovation activities. Wall, ceiling, floor, roofing, and/or other component systems may contain concealed suspect ACM. If any suspect ACM is encountered during demolition and/or renovation activities, the activities disturbing the suspect ACM must stop and the material must be sampled and laboratory analyzed in accordance with applicable regulations.

The materials listed in bold font in Table I of Section 3.3 were determined to be ACM. Photos of these materials can be found in Appendix E. These materials include:

248 linear feet of yellow / brown edging mastic under gray vinyl edging was analyzed as ACM. This material can be found as edging in the Control Room and the Bathroom located in the Control Building and in the Kitchen located in the Garage. Fire doors were found throughout the property and are listed in bold font in Table I of Section 3.3 with the PACM designation. These materials are presumed asbestos containing materials. Fire doors cannot be analyzed for asbestos without destroying the integrity of the door.

10 red fire doors were designated as PACM. These doors were found at interior entrances within the Raw Sewage Pumping Station Building to the Storage Room and the connection between the Chlorine Storage room and the Chlorination Room. These doors were also found at interior entrances within the Control Building to the Control Room, the Bathroom, the Janitor Room, the Blower Room and the connection between the Control Building and the Garage.

The materials listed in bold font in Table I of Section 3.3 with the PACM⁸ designation are materials that are presumed asbestos containing materials per asbestos testing performed previously by per NET in 1990. The full 1991 NET Brewerton WTP Asbestos Survey in displayed Appendix F.

870 linear feet of black AC roof flashing was designated as PACM. This material can be found on the roofs of the Chemical Building, Raw Sewage Pumping Station Building, Control Building and the Garage.

The referenced table also shows materials that contain trace concentrations of asbestos and are regulated under OSHA. Photos of these materials can be found in Appendix E. This includes:

- o 100 linear feet of light gray insulation caulk was analyzed as having a trace of asbestos. This material can be found as building joints in the Chemical Room of the Chemical Building.
- 800 square feet of white / gray floor tile grout and orange floor tile were analyzed as having a trace of asbestos. These materials can be found as flooring on the second floor of the Chemical Building.
- 64 linear feet of light gray insulation caulk was analyzed as having a trace of asbestos. This material was found around a window between the Chlorination Room and The Motor Control Room in the Raw Sewage Pumping Station Building.
- o 190 linear feet of light gray insulation caulk was analyzed as having a trace of asbestos. This material was found around the internal doors of all rooms in the Control Building.
- 20 linear feet of light gray pipe caulk analyzed as having a trace of asbestos. This material was found around the pipes into the walls of the Control Room and the Transformer Room in the Control Building.
- 1567 square feet of yellow brown floor tile mastic under the light gray with white specks floor tile was analyzed as having a trace of asbestos. This material can be found as flooring in the Control Room and the Bathroom in the Control Building

Also of note; Vermiculite was analyzed in the mudded thermal insulation around the fanned ceiling vent assemblies. This material was analyzed as NAD (No Asbestos Detected) by Paradigm using ELAP Method 198.1 & 198.6 per NYSDOH. Vermiculite had historically been designated as PACM but due to the new testing protocols, it can now be tested for asbestos. The new testing methods do come with a disclaimer. The testing method does not remove vermiculite and may underestimate the level of

asbestos present in a sample containing greater than 10% vermiculite. This material is found around all fanned ceiling vents in all buildings. Photos of this material can be found in Appendix E.

The White 2 FT X 4 FT Ceiling Tile found in the Hallway of the Control Building was originally viewed as PACM as per NET 1991 Brewerton WTP Asbestos Survey enclosed in Appendix F. Richard Hodgson sampled three Hallway Ceiling Tile locations in the Control Building on July 25th, 2014. These samples were sent into Paradigm Labs for testing. Lab analysis using ELAP Method 198.1 and 198.6 per NYSDOH by Paradigm Labs concluded that the ceiling tile was not asbestos. See Appendix D for the August 5th 2014 Laboratory Analysis.

Subpart 56-5(g) of 12 NYCRR Part 56 specifies requirements for transmittal of asbestos survey information by the owner or owner's agent. One copy of the asbestos survey report shall be sent to the local government entity charged with issuing a permit for such demolition, renovation, remodeling, or repair work under applicable State or local laws. If controlled demolition or pre-demolition activities will be performed, one copy of the asbestos survey report shall be submitted to the appropriate Asbestos Control Bureau district office. One copy of the asbestos survey report must be kept on the construction site throughout the duration of the asbestos project and any associated demolition, renovation, remodeling, or repair project.

4.0 PCBs

4.1. General

The EPA has learned that caulk containing polychlorinated biphenyls (PCBs) was used in many buildings during building construction, renovation, or repair from the 1950s through the late 1970s. PCBs were generally added to caulk products to enhance flexibility. PCBs were not added to caulk after 1978. Therefore, in general, buildings built after 1978 do not contain caulk made with PCBs.

Exposure to PCBs can cause a variety of adverse health effects in animals and humans. PCBs have been shown to cause cancer in animals, as well as a number of serious non-cancer health effects, including effects on the immune system, reproduction system, nervous system, endocrine system and other health effects. In humans, PCBs are potentially cancer-causing and can cause other non-cancer effects as well.

4.2. Methodology

A visual examination of the subject areas were conducted by the field survey team to identify suspect materials that may contain PCBs. Samples were collected and placed in clean, labeled Ziploc bags. The appropriate custody documentation was completed and the suspect PCB samples were submitted to Paradigm Environmental Services, Inc. (Paradigm), located in Rochester, New York. The samples were laboratory analyzed using EPA Methods 8082A and 3550C. These methodologies test for the following Aroclor series PCBs to see if they are at or above the action level of 50 mg/kg at which point these materials are considered dangerous.

- PCB-1016
- PCB-1221

- PCB-1232
- PCB-1242
- PCB-1248
- PCB-1254
- PCB-1260
- PCB-1262
- PCB-1268

Paradigm is a New York State Department of Health (HYSDOH) certified laboratory for PCBs analysis under Environmental Laboratory Approval Program (ELAP) No. 10958. Paradigm is also accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

4.3. Summary of Findings

A total of 54 bulk samples were identified during the visual examination, collected and subsequently submitted to a NYSDOH approved laboratory for analysis. Approximate sample locations are depicted on the Sample Location Plan, contained in Appendix C. A copy of the laboratory reports and associated sample custody documentation are contained in Appendix D. Table II below provides a summary of the identified suspect materials that may contain PCBs and associated analytical results.

TABLE II
SUMMARY OF SUSPECT PCBS AND ANALYTICAL RESULTS

GALLERIES

Material	Sample Location ¹	PCB Results (mg/kg) ²	At or Above Action Level of 50 mg/kg (Y/N)	Reference Sample Numbers	Estimated Quantity ^{3,4}
Light Gray Insulation Caulk	51 Building Joints in West Gallery	<17.5	NO	CLK-9-1-PCB	NA
Light Gray Insulation Caulk	52 Building Joints in South Gallery	<17.1	NA	CLK-9-2-PCB	NA

THICKENER (SLUDGE) BUILDING

Material	Sample Location ¹	PCB Results (mg/kg) ²	At or Above Action Level of 50 mg/kg (Y/N)	Reference Sample Numbers	Estimated Quantity ^{3,4}
Light Gray Pipe	1 Pipes in	<13.3	N	CLK-12-1-PCB	NA
Caulk	Thickener Room				
Black Pipe Caulk	2 Pipes in	<12.1	N	CLK-13-1-PCB	NA
	Thickener Room				

Light Gray	3 Interior Doors in	<17.9	N	CLK-14-1-PCB	NA
Insulation Caulk	Thickener Room				
Light Gray	4 Exterior Doors in	<14.8	N	CLK-14-2-PCB	NA
Insulation Caulk	Thickener Room				

CHEMICAL BUILDING

Material	Sample Location ¹	PCB Results (mg/kg) ²	At or Above Action Level of 50 mg/kg (Y/N)	Reference Sample Numbers	Estimated Quantity ^{3,4}
Light Gray Insulation Caulk	1 Building Joints in Chemical Room	<18.9	N	CLK-10-1-1-PCB	NA
Light Gray Insulation Caulk	2 Building Joints in Chemical Room	<17.4	N	CLK-10-1-2-PCB	NA
Light Gray Insulation Caulk	6 Louvers in Exterior	<16.3	N	CLK-10-2-1-PCB	NA
Light Gray Insulation Caulk	7 Louvers in Exterior	<16.0	N	CLK-10-2-2-PCB	NA
Light Gray Insulation Caulk	8 Foundation Joints in Exterior	<20.0	N	CLK-10-3-1-PCB	NA
Light Gray Insulation Caulk	9 Foundation Joints in Exterior	<18.2	N	CLK-10-3-2-PCB	NA
Light Gray Insulation Caulk	3 Garage Door in Garage	<17.4	N	CLK-11-1-1-PCB	NA
Light Gray Insulation Caulk	10 Garage Door in Garage	<19.4	N	CLK-11-1-2-PCB	NA
Light Gray Insulation Caulk	5 Exterior Door in Lab	<16.0	N	CLK-11-2-1-PCB	NA
Light Gray Insulation Caulk	11 Exterior Door in Chemical Room	<12.8	N	CLK-11-2-2-PCB	NA
Light Gray Pipe Caulk	14 Pipes on Second Floor	<18.5	N	CLK-11-3-1-PCB	NA
Light Gray Pipe Caulk	15 Pipes on Second Floor	<18.2	N	CLK-11-3-2-PCB	NA

RAW SEWAGE PUMPING STATION BUILDING

Material	Sample Location ¹	PCB Results (mg/kg) ²	At or Above Action Level of 50 mg/kg (Y/N)	Reference Sample Numbers	Estimated Quantity ^{3,4}
Clear Yellow	1 Pipes in Grit	<13.5	N	CLK-17-1-PCB	NA
Pipe Caulk	Room				
Clear Yellow Pipe Caulk	10 Pipes in Chlorination Room	<17.4	N	CLK-17-2-PCB	NA
Light Gray Insulation Caulk	2 Exterior Doors in Grit Room	<14.5	N	CLK-18-1-PCB	NA
Light Gray Insulation Caulk	3 Exterior Doors in Grit Room	<10.2	N	CLK-18-2-PCB	NA
Light Gray Insulation Caulk	4 Window Between Motor Control Room & Chlorination Room	<11.5	N	CLK-19-1-PCB	NA
Light Gray Insulation Caulk	7 Window Between Motor Control Room & Chlorination Room	<11.3	N	CLK-19-2-PCB	NA
Light Gray Insulation Caulk	5 Louver in Exterior	<13.2	N	CLK-20-1-PCB	NA
Light Gray Pipe Caulk	8 Pipes in Chlorination Room	<18.7	N	CLK-21-1-PCB	NA
Light Gray Pipe Caulk	11 Pipes in Chlorine Storage Room	<13.4	N	CLK-21-2-PCB	NA
Light Gray Pipe Caulk	13 Pipes in Chlorine Storage Room	<12.4	N	CLK-21-3-PCB	NA
Black Pipe Caulk	9 Pipes in Chlorination Room	<14.3	N	CLK-22-1-PCB	NA
Light Gray Pipe Caulk	12 Building Joints in Chlorine Storage Room	<15.5	N	CLK-23-1-PCB	NA
Black Rubber Vibration Pad	14 Under Motor in Motor Control Room	<16.9	N	M-6-1	NA

CONTROL BUILDING

Material	Sample Location ¹	PCB Results	At or Above	Reference	Estimated
		(mg/kg) ²	Action Level of 50	Sample Numbers	Quantity ^{3,4}
			mg/kg	Numbers	
			(Y/N)		
Light Gray	1 Internal Doors in	<12.2	N	CLK-1-1-PCB	NA
Insulation Caulk	Control Room to				
	Hallway				
Light Gray	5 Internal Door in	<14.4	N	CLK-1-2-PCB	NA
Insulation Caulk	Control Room				
Light Gray	11 Internal Doors	<16.9	N	CLK-1-3-PCB	NA
Insulation Caulk	in Hallway to				
	Garage				
Light Gray	3 Louver in	<16.5	N	CLK-2-1-PCB	NA
Insulation Caulk	Control Room				
Light Gray	4 Louver in	<14.4	N	CLK-2-2-PCB	NA
Insulation Caulk	Exterior				
Light Gray	9 Louver in	<11.9	N	CLK-2-3-PCB	NA
Insulation Caulk	Exterior				
Light Gray	6 Exterior Doors in	<16.1	N	CLK-3-1-PCB	NA
Insulation Caulk	Exterior				
Light Gray	7 Exterior Doors in	<14.7	N	CLK-3-2-PCB	NA
Insulation Caulk	Exterior				
Red Insulation	8 Louver in	<18.9	N	CLK-4-1-PCB	NA
Caulk	Exterior				
Black Pipe Caulk	14 Pipes in	<17.2	N	CLK-5-1-PCB	NA
	Control Room				
Black Pipe Caulk	15 Pipes in	<13.6	N	CLK-5-2-PCB	NA
	Control Room				
Light Gray Pipe	16 Pipes in	<18.9	N	CLK-6-1-PCB	NA
Caulk	Control Room				
Light Gray Pipe	17 Pipes in	<14.2	N	CLK-6-2-PCB	NA
Caulk	Control Room				
Light Gray Pipe	37 Pipes in	<15.5	N	CLK-6-3-PCB	NA
Caulk	Transformer				
	Room				
Light Gray Sink	22 Sink in Janitor	<19.0	N	CLK-7-1-PCB	NA
Caulk	Room				
Light Gray	40 Louver in Filter	<19.4	N	CLK-8-1-PCB	NA
Insulation Caulk	Rooms off Blower				
	Room				
Light Gray	41 Louver in Filter	<17.7	N	CLK-8-2-PCB	NA
Insulation Caulk	Rooms off Blower				
	Room				

CONTROL BUILDING CONTINUED

Material	Sample Location ¹	PCB Results (mg/kg) ²	At or Above Action Level of 50 mg/kg (Y/N)	Reference Sample Numbers	Estimated Quantity ^{3,4}
Black Rubber	38 Doors to Filter	<26.5	N	M-2-1-PCB	NA
Gasket	Rooms off Blower				
	Room				
Black Rubber	39 Doors to Filter	<17.5	N	M-2-2-PCB	NA
Gasket	Rooms off Blower				
	Room				
Black Rubber	50a Under	<12.5	N	M-6-2-PCB	NA
Vibration Pad	Blowers in Blower				
	Room				
Black Rubber	50b Under	<11.6	N	M-6-3-PCB	NA
Vibration Pad	Blowers in Blower				
	Room				

GARAGE

Material	Sample Location ¹	PCB Results (mg/kg) ²	At or Above Action Level of 50 mg/kg (Y/N)	Reference Sample Numbers	Estimated Quantity ^{3,4}
Light Gray Insulation Caulk	10 Garage Door in Garage	<18.9	N	CLK-3-3-PCB	NA
Black Insulation Caulk	55 AC Window Unit for Kitchen	<18.0	N	CLK-16-1-PCB	NA

PCB KEY

Notes:

The EPA and other regulatory agencies define materials with PCBs at hazardous levels as any material containing greater than or equal to 50 mg/kg of PCBs. Materials listed in bold font in Table I above were determined or assumed to be PCB containing materials in hazardous quantities.

¹Sample Location Plans are enclosed in Appendix C.

²"<" = Analyzed for but not detected at or above the quantitation limit.

³Quantities and locations are approximate and must be verified by asbestos abatement contractors prior to providing actual cost estimations and/or initiating abatement activities.

⁴NA = Not Applicable.

4.4. PCBs Conclusions

Based on the results found in Table II in Section 4.3, there are no PCBs at hazardous levels at this site within the limited survey areas noted in Section 2.1.

5.0 LEAD-BASED PAINT

5.1 General

Lead is a highly toxic metal that was used for many years in products, such as Lead-Based Paint, found in and around homes and commercial buildings. Lead-Based Paint use was banned in 1978 and is regulated by the EPA and the Housing and Urban Development (HUD) in the Residential Lead Based Paint Hazard Reduction Act of 1992, including the Residential Lead Based Paint Disclosure Program Section 1018, as well as the Residential Lead Hazard Standards in TSCA Section 403. In addition, OSHA regulates worker protection during renovation and/or demolition of structures with Lead-Based Paint.

The lead in dust and paint chips is toxic if ingested or inhaled. The smallest lead dust particles cannot be seen, but if they get into the body, the lead can cause numerous health problems. Children and pregnant women are particularly susceptible to lead poisoning, which can cause reduced IQ and learning disabilities by affecting developing nervous systems, as well as causing slowed growth, hearing problems and behavior problems. Adults are also susceptible to lead, which can result in high blood pressure, headaches, digestive problems, memory and concentration problems, kidney damage, mood changes, nerve disorders, sleep disturbances, and muscle or joint pain.

A single, very high exposure to lead can cause lead poisoning. Lead-Based Paint that is in poor condition, or that is disturbed during renovation and remodeling projects, such as demolition, drysanding, scraping, brushing, or burning surfaces with a layer of Lead-Based Paint, can produce dust with lead, which can be inhaled, or enter the body from hand-to-mouth contact. If renovation work is not conducted properly, lead dust can remain in a home or building long after the work is done. Some painted surfaces may obtain levels of lead below 1.0 mg/cm², which could create lead dust or lead-contaminated soil hazards if the paint is turned into dust by abrasion, scraping, or sanding. Typically, a risk assessment is performed to help determine additional hazards associated with potential lead dust.

5.2 Methodology

Selected sites in each area, including all walls in rooms and one site for each type of component tested, as well as the exterior were surveyed for the presence of Lead-Based Paint using a spectrum analyzer portable X-Ray Fluorescence (XRF) paint tester, Thermo Fisher Niton model XL3t, serial number 15885 (cadmium source assay date 10/1/07.)

The spectrum analyzer automatically subtracts from a spectrum the fluorescence from the substrate of the paint, to give an accurate reading of lead content without taking samples or stripping the paint. This is performed via a computer program stored in the analyzer, which gives an instantaneous readout of the lead content of a site in milligrams of lead per square centimeter of surface area (mg/cm2). The instrument performance is checked before and after the project survey by scanning a standard

reference material sheet with a 1.0 mg/cm2 Lead Paint Film three times. The instrument performance is similarly checked during the survey at least once every four hours.

5.3 Summary of Findings

A total of 472 surface areas were analyzed with a XRF analyzer. Of those, 20 different surface areas between 65 scans resulted in positive scans for Lead-Based Paint. Table III below provides a summary of the all the positive surface areas that may contain Lead-Based Paint.

TABLE III
SUMMARY OF POSITIVE LEAD-BASED PAINT SCANS

GALLERIES

Surface Area & Color ¹	Sample Location ²	Lead- Based Paint (mg/cm²)³	At or Above Action Level of 1.0 mg/cm² (Y/N)	Estimated Quantity ⁴
White Metal Sink	Wall C of West Gallery near Stairs to Control Building	8.6	Y	10 SF
White Metal Sink	Wall A of East Gallery near Gallery Intersection	7.8	Y	10 SF

CONTROL BUILDING

Surface Area &	Sample Location ²	Lead-	At or Above	Estimated
Color ¹		Based	Action Level of	Quantity⁴
		Paint	1.0 mg/cm ² (Y/N)	
		(mg/cm ²) ³		
White Metal	Wall A in Janitor Room	8.9	Υ	10 SF
Sink				
Brown & Blue /	3 Doors Between	1.1 Avg.	Υ	105 SF
Green Metal	Blower Room & Filter	(6 Scans)		
Doors	Rooms on Wall A in			
	Blower Room			
Blue / Green	6 Green Metal Frames	1.2 Avg	Υ	18 SF
Metal Frames	around the filters in	(3 Scans)		
	the Filter Room in the			
	Control Building			

GARAGE

Surface Area & Color ¹	Sample Location ²	Lead- Based Paint (mg/cm²)³	At or Above Action Level of 1.0 mg/cm ² (Y/N)	Estimated Quantity ⁴
Red Wooden Door	Door Between Kitchen and Garage on Wall D in Kitchen	3.1	Y	27 SF

CHEMICAL BUILDING

Surface Area & Color ¹	Sample Location ²	Lead- Based Paint (mg/cm²)³	At or Above Action Level of 1.0 mg/cm ² (Y/N)	Estimated Quantity ⁴
White Metal Sink	Wall B in Lab Room	6.5	Y	10 SF
Gray Wooden Cabinet	Wall A on Second Floor	1.2	Υ	32 SF
Yellow Concrete Bollards	2 Bollards Just Off Exterior Wall D	1.0 Avg (2 Scans)	Y	4 LF
Yellow Metal Fire Hydrant	Just off Exterior Wall D	3.8	Υ	3 SF
Yellow Metal Railing	Exterior Wall C off Door from Chemical Room	2.4	Y	26 LF

RAW SEWAGE PUMPING STATION BUILDING

Surface Area & Color ¹	Sample Location ²	Lead- Based Paint (mg/cm²) ³	At or Above Action Level of 1.0 mg/cm² (Y/N)	Estimated Quantity ⁴
Orange Exterior	Exterior Wall B in Front	8.7 Avg	Υ	90 LF
Metal I-Beams	of Grit Room Doors & Chlorine Storage Doors	(4 Scans)		
Yellow Exterior	Exterior Wall B in Front	1.3	Υ	10 LF
Concrete Curb	of Grit Room Doors			
Orange Metal	Just off Exterior Wall C	3.9	Υ	5 SF
Equipment	of Raw Sewage			
	Pumping Station			
Yellow Metal	Just off Wall C in Grit	3.5	Υ	10 SF
Grit Bucket	Room			
Yellow Metal	Just off Wall C in Grit	1.3	Υ	1 SF
Grit Bucket	Room			
Controls				
Orange Painted	On Ceiling attached to	2.3 Avg	Υ	5 SF
Metal	Gray I-Beam in Motor	(3 Scans)		
Components of	Control Room			
Ceiling Crane				
Yellow Metal	Wall C in Comminutor	1.3	Υ	16 LF
Railing	Room			

PROPERTY EXTERIOR

Surface Area &	Sample Location ²	Lead-	At or Above	Estimated
Color ¹	,	Based	Action Level of	Quantity ⁴
		Paint	1.0 mg/cm ² (Y/N)	•
		$(mg/cm^2)^3$		
Blue Metal	Around Aeration Tank	1.8 Avg	Υ	75 LF
Railing	at NW Portion of	(3 Scans)		
	Property West of Raw			
	Sewage Pumping			
	Station			
2 Blue Metal	Valves Around	1.4 Avg	Υ	4 SF
Valve Wheels &	Aeration Tank at NW	(2 Scans)		
Assemblies	Portion of Property			
	West of Raw Sewage			
	Pumping Station			
Blue Metal	Around Aeration Tanks	2.2 Avg	Υ	200 LF
Railing	& Settling Tanks in	(15 Scans)		
	Center of Property			
4 Blue Metal	Valves Around	1.4 Avg	Υ	8 SF
Valve Wheels &	Aeration Tanks &	(4 Scans)		
Assemblies	Settling Tanks in			
	Center of Property			
Blue Equipment	Equipment for Bridges	4.3 Avg	Υ	20 SF
for Settling	to Center of Settling	(4 Scans)		
Tanks	Tanks			
Blue Metal	Next to Yellow Rail at	2.0	Υ	5 SF
Stairs	Chemical Room			
	Entrance of Chemical			
	Building			
Orange Metal	Just off Exterior Wall A	2.9	Υ	10 SF
Crane	of Northern Penthouse			
Red Metal Valve	Valve in Aeration Tank	1.3	Υ	1 SF
Wheel &	Just of Exterior Wall C			
Assembly	of Chemical Building			
Yellow Fire	North of Garage	6.9	Υ	3 SF
Hydrant				
Orange Metal	Around Old Aeration	3.7 Avg	Υ	30 SF
Railing Fixtures	Tank at E Portion of	(3 Scans)		
& Equipment	Property E of Chemical			
	Building			4.5
Orange Metal	Around Old Aeration	2.1 Avg	Y	150 LF
Railing	Tank at E Portion of	(3 Scans)		
	Property E of Chemical			
	Building			

LEAD-BASED PAINT KEY

Notes:

¹Pictures and location descriptions of the surface areas in question are enclosed in Appendix E.

5.4 Lead-Based Paint Conclusions

All materials listed in Table III of Section 5.3 were determined to be positive for Lead-Based Paint. Photos of these materials can be found in Appendix E. These materials include:

- 4 white metal sinks with 40 total square feet of surface area scanned positive for Lead-Based Paint. This surface area can be found in the Janitor Room in the Control Building, in the East and West Galleries, and in the Lab in the Chemical Building.
- 105 square feet between 3 brown and blue / green metal doors scanned positive for Lead-Based Paint. This surface area can be found in between the Blower Room and the Filter Rooms in the Control Building.
- o 18 square feet of blue / green metal frames scanned positive for Lead-Based Paint. This surface area can be found around the inlet filters in the Filter Rooms in the Control Building.
- o 27 square feet of red wooden door scanned positive for Lead-Based Paint. This surface area can be found at the entrance in to the Kitchen in the Garage.
- 32 square feet of gray wooden cabinet scanned positive for Lead-Based Paint. This surface area can be found on the second floor of the Chemical Building.
- 4 linear feet of yellow concrete bollards scanned positive for Lead-Based Paint. This surface area can be found just off the eastern exterior wall of the Chemical Building.
- o 6 square feet of yellow metal fire hydrant scanned positive for Lead-Based Paint. This surface area can be found just off the eastern exterior wall of the Chemical Building and north of the Garage.
- 42 linear feet of yellow metal railing scanned positive for Lead-Based Paint. This surface area can be found on the northern exterior wall off the Chemical Room door of the Chemical Building and in the Communitor Room of the Raw Sewage Pumping Station Building.
- 90 linear feet of orange exterior metal I-beams scanned positive for Lead-Based Paint. This surface area can be found just off the western exterior wall of the Raw Sewage Pumping Station Building.
- o 10 linear feet of yellow exterior concrete curb scanned positive for Lead-Based Paint. This surface area can be found just off the western exterior wall of the Raw Sewage Pumping Station Building.

²Wall A, B, C, and D are in reference to cardinal direction where wall C is North for all instances.

³An average of scan results were taken with number of scans in parentheses.

⁴Quantities and locations are approximate and must be verified by asbestos abatement contractors prior to providing actual cost estimations and/or initiating abatement activities.

- o 10 square feet of yellow metal grit bucket scanned positive for Lead-Based Paint. This surface area can be found in the Grit Room of the Raw Sewage Pumping Station Building.
- 1 square foot of yellow metal grit bucket controls scanned positive for Lead-Based Paint. This surface area can be found in the Grit Room of the Raw Sewage Pumping Station Building.
- 5 square feet of orange painted metal components of the ceiling crane scanned positive for Lead-Based Paint. This surface area can be found in the Chlorination Room of the Raw Sewage Pumping Station Building.
- 275 linear feet of blue metal railing scanned positive for Lead-Based Paint. This surface area can be found around the aeration tanks west of the Raw Sewage Pumping Station. This surface area can also be found around the aeration tanks and settling tanks between the Control Building and the Chemical Building.
- o 12 square feet between 6 blue metal valve wheels and assemblies scanned positive for Lead-Based Paint. This surface area can be found around the aeration tanks west of the Raw Sewage Pumping Station. This surface area can also be found around the aeration tanks and settling tanks between the Control Building and the Chemical Building.
- 20 square feet of blue equipment for the settling tanks scanned positive for Lead-Based Paint.
 This surface area can be found around the settling tanks between the Control Building and the Chemical Building.
- 5 square feet of blue metal stairs scanned positive for Lead-Based Paint. This surface area can be found just off the northwest exterior corner of the Chemical Building next to the exit to the Chemical Room.
- 10 square feet of orange metal crane scanned positive for Lead-Based Paint. This surface area can be found at the southwestern corner of the northern Penthouse.
- 1 square foot of red metal valve wheel and assembly scanned positive for Lead-Based Paint. This surface area can be found just off the northwest exterior corner of the Chemical Building next to the exit to the Chemical Room.
- 30 square feet of orange metal railing fixtures and equipment scanned positive for Lead-Based
 Paint. This surface area can be found at east of the Chemical Building.
- o 150 linear feet of orange metal railing scanned positive for Lead-Based Paint. This surface area can be found at east of the Chemical Building.

6.0 Survey Conclusions

6.1 Asbestos Conclusions

The following materials were determined to be ACM.

248 linear feet of yellow / brown edging mastic under gray vinyl edging was analyzed as ACM.

The following materials were determined to be PACM.

- o 10 red fire doors were designated as PACM.
- o 870 linear feet of black AC roof flashing was designated as PACM.

6.2 PCB Conclusions

PCBs in hazardous concentrations were not found on this project site.

6.3 LEAD-BASED PAINT CONCLUSIONS

The following surface areas had positive scans for Lead-Based Paint.

- 4 white metal sinks with 40 total square feet of surface area scanned positive for Lead-Based Paint.
- 105 square feet between 3 brown and blue / green metal doors scanned positive for Lead-Based Paint
- o 18 square feet of blue / green metal frames scanned positive for Lead-Based Paint.
- o 27 square feet of red wooden door scanned positive for Lead-Based Paint.
- 32 square feet of gray wooden cabinet scanned positive for Lead-Based Paint.
- o 4 linear feet of yellow concrete bollards scanned positive for Lead-Based Paint.
- 6 square feet of yellow metal fire hydrant scanned positive for Lead-Based Paint.
- o 42 linear feet of yellow metal railing scanned positive for Lead-Based Paint.
- o 90 linear feet of orange exterior metal I-beams scanned positive for Lead-Based Paint.
- 10 linear feet of yellow exterior concrete curb scanned positive for Lead-Based Paint.
- 10 square feet of yellow metal grit bucket scanned positive for Lead-Based Paint.
- o 1 square foot of yellow metal grit bucket controls scanned positive for Lead-Based Paint.
- 5 square feet of orange painted metal components of the ceiling crane scanned positive for Lead-Based Paint.
- o 275 linear feet of blue metal railing scanned positive for Lead-Based Paint.
- 12 square feet between 6 blue metal valve wheels and assemblies scanned positive for Lead-Based Paint.
- 20 square feet of blue equipment for the settling tanks scanned positive for Lead-Based Paint.

- o 5 square feet of blue metal stairs scanned positive for Lead-Based Paint.
- o 10 square feet of orange metal crane scanned positive for Lead-Based Paint.
- o 1 square foot of red metal valve wheel and assembly scanned positive for Lead-Based Paint.
- 30 square feet of orange metal railing fixtures and equipment scanned positive for Lead-Based Paint.
- o 150 linear feet of orange metal railing scanned positive for Lead-Based Paint.

Appendix- A: Licenses and Certifications

New York State – Department of Labor Division of Safety and Health,

Division of Safety and Health License and Certificate Unit State Campus, Building 12 Albany, NY 12240

ASBESTOS HANDLING LICENSE

Popli, Architecture + Engineering & LS, PC (dba Popli Design Group)

555 Penbrooke Drive

Penfield, NY 14526

FILE NUMBER: 99-1030 LICENSE NUMBER: 29356

LICENSE CLASS: RESTRICTED DATE OF ISSUE: 01/25/2013

EXPIRATION DATE: 02/28/2014

Duly Authorized Representative - Om P Popli

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license of a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Eileen M. Franko, Acting Director For the Commissioner of Labor

SH 432 (8/12)



MI C. DET

MICHAELP GRAWFORD CLASS(EXPRES) DINSP(01/14)

CERT# 11-07939 DMV# 882222282

MUST BE CARRIED ON ASBESTOS PROJECTS

STATE OF NEW YORK - DEPARTMENT OF LABOR ASBESTOS CERTIFICATE





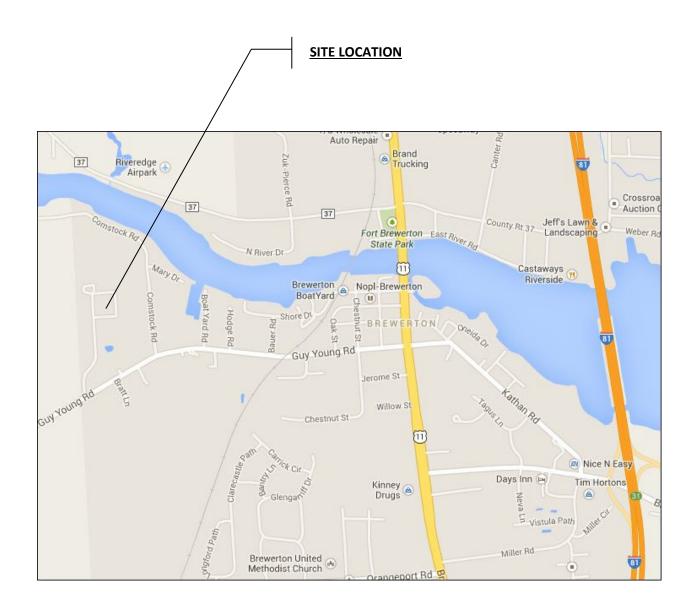
RICHARD M HODGSON CLASS(EXPIRES) D INSP(05/15)

> CERT# |2-17893 DMV# 454326831

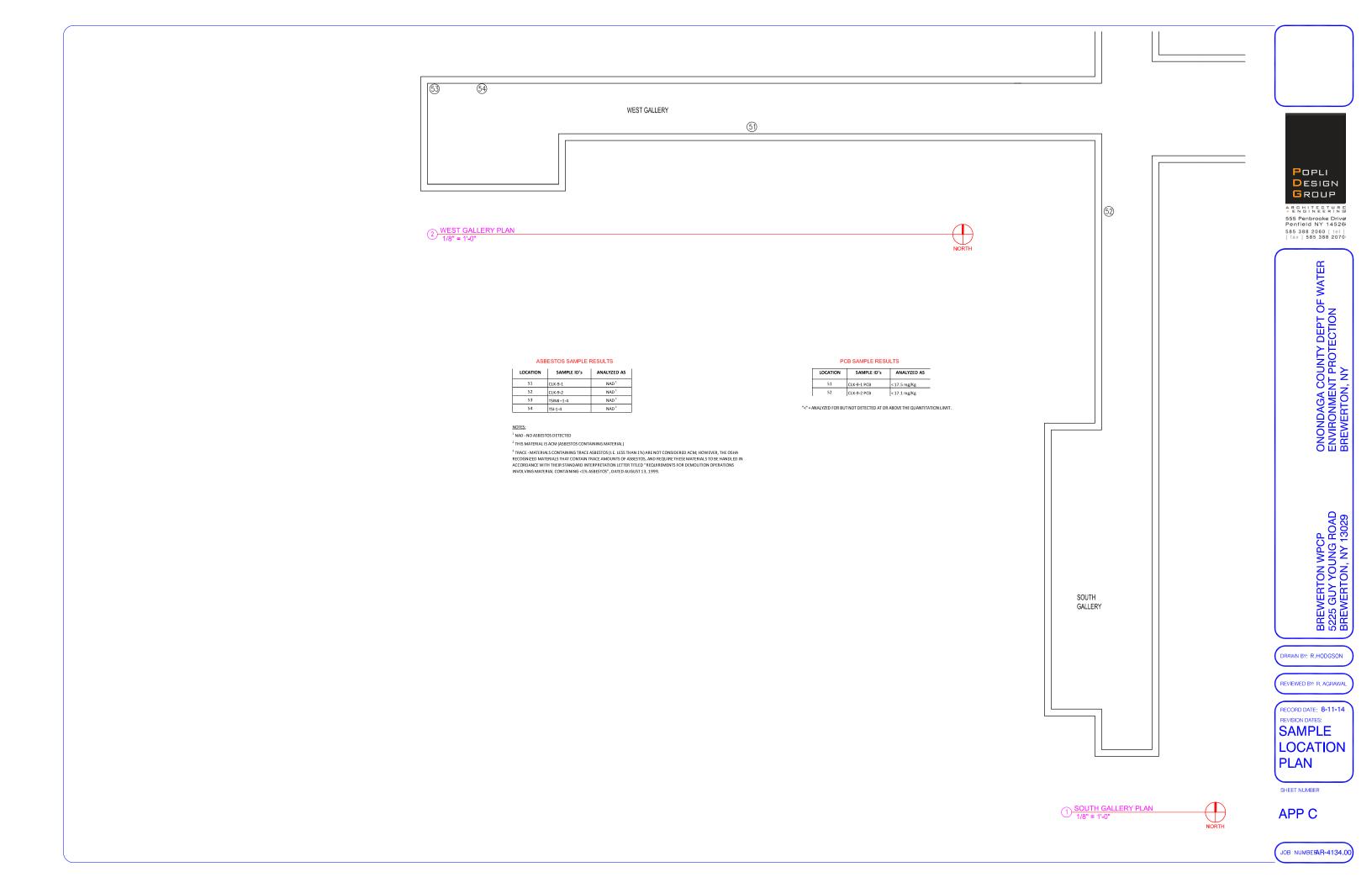
MUST BE CARRIED ON ASBESTOS PROJECTS

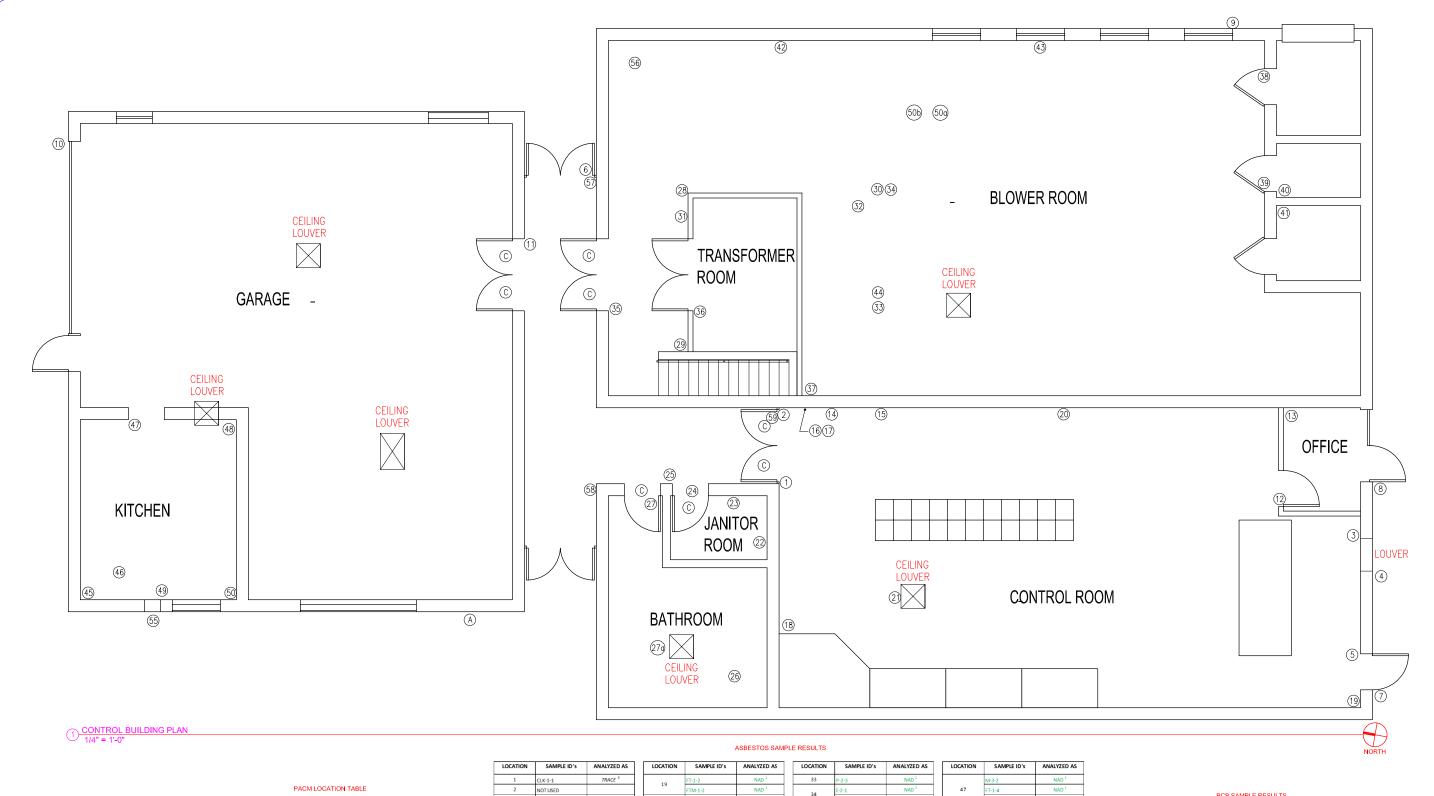
Appendix- B: Site Location Map

Site Location Map



Appendix- C: ACM & PCB Sample Location Plans





LOCATION	TYPE OF PACM
А	CONTROL BUILDING 484 LF OF AC FLASHING ON ROOF ¹
C	8 CONTROL BUILDING INTERIOR FIRE DOORS

1 PACM - THIS BUILDING MATERIALIS PACM (PRESUMED ASBESTOS CONTAINING MATERIAL) AS PER TESTING DONE PREVIOUSLY

ACM NOTES:

² THIS MATERIAL IS ACM (ASBESTOS CONTAINING MATERIAL)

³ Trace - MATERIAL S CONTAINING TRACE ASBESTOS (I.E. LESS THAN 1 %) ARE NOT CONSIDERED ACM; HOWEVER, THE OSHA RECOGNIZED MATERIALS THAT CONTAIN TRACE AMOUNTS OF ASBESTOS, AND REQUIRE THESE MATERIALS TO BE HANDLED IN ACCORDANCE WITH THEIR STANDARD INTERPRETATION LETTER TITLED "REQUIREMENTS FOR DEMOLITION OPERATIONS INVOLVING MATERIAL CONTAINING 3.4% ASSESTOS", DATED AUGUST 13, 1999.

⁴ NAD -DUE TO LESS THAN 1.0% RESIDUE REMAINING.

1	CLK-1-1	TRACE 3	19	FT-1-2	NAD
2	NOT USED		19	FTM-1-2	NAD
3	CLK-2-1	NAD 1	20	TSI-2-1	NAD
4	CLK-2-2	NAD 1	21	M-1-1	NAD
5	CLK-1-2	NAD 1	22	CLK-7-1	NAD
6	CLK-3-2	NAD 1	23	TSI-1-1	NAD
7	CLK-3-1	NAD 1	24	TSIMJ-1-1	NAD
8	CLK-4-1	NAD 1	25	TSI-1-2	NAD
9	CLK-2-3	NAD 1	25	TSIMJ-1-2	NAD
10	CLK-3-3	NAD 1	26	TSI-1-3	NAD
11	CLK-1-3	NAD 1		TSIMJ-1-3	NAD
12	P-1-1	NAD 1	27	E-1-3	NAD
13	P-1-2	NAD 1		EM-1-3	1.8%
14	CLK-5-1	NAD 1		FT-1-3	NAD
15	CLK-5-2	NAD 1		FTM-1-3	NAD
16	CLK-6-1	TRACE 3	27a	M-1-2	NAD
17	CLK-6-2	NAD 1	28	PJC-1-1	NAD
	E-1-1	NAD ⁴	29	PJC-1-2	NAD
18	EM-1-1	1.8% 2	30	PJC-1-3	NAD
10	FT-1-1	NAD 1	31	P-2-1	NAD
	FTM-1-1	NAD 1	32	P-2-2	NAD

LUCATION	SAIVIPLE ID'S	ANALYZED AS
33	P-2-3	NAD 1
34	E-2-1	NAD 1
34	EM-2-1	NAD 1
	E-2-2	NAD 1
35	EM-2-2	NAD 1
	E-2-3	NAD 1
36	EM-2-3	NAD 1
37	CLK-6-3	NAD 1
38	M-2-1	NAD 1
39	M-2-2	NAD 1
40	CLK-8-1	NAD 1
41	CLK-8-2	NAD 1
42	FM-1-1	NAD 1
43	FM-1-2	NAD 1
44	FM-1-3	NAD 1
45	E-1-4	NAD ⁴
45	EM-1-4	1.8% 2
	FT-1-5	NAD 1
46	FTM-1-5	NAD 1
	M-3-1	NAD 1

	M-3-2	NAD 1
47	FT-1-4	NAD 1
	FTM-1-4	NAD 1
48	CT-1-1	NAD 1
49	CT-1-2	NAD 1
50	CT-1-3	NAD 1
50A	M-6-2	NAD 1
50B	M-6-3	NAD ⁴
55	CLK-16-1	NAD 1
56	CT-2-1	NAD 1
57	CT-1-1 (7/25/14)	NAD 1
58	CT-1-2 (7/25/14)	NAD 1
59	CT-1-3 (7/25/14)	NAD 1

		PCB SAMPL	EF	RESULTS		
LOCATION	SAMPLE ID's	ANALYZED AS		LOCATION	SAMPLE ID's	ANALYZED AS
1	CLK-1-1 PCB	< 12.2 mg/Kg		17	CLK-6-2 PCB	<14.2 mg/Kg
3	CLK-2-1 PCB	< 16.5 mg/Kg		22	CLK-7-1 PCB	<19.0 mg/Kg
4	CLK-2-2 PCB	<14.4 mg/Kg		37	CLK-6-3 PCB	<15.5 mg/Kg
5	CLK-1-2 PCB	<14.4 mg/Kg		38	M-2-1 PCB	<26.5 mg/Kg
6	CLK-3-2 PCB	<14.7 mg/Kg		39	M-2-2 PCB	<17.5 mg/Kg
7	CLK-3-1 PCB	<16.1 mg/Kg		40	CLK-8-1 PCB	<19.4 mg/Kg
8	CLK-4-1 PCB	<18.9 mg/Kg		41	CLK-8-2 PCB	<17.7 mg/Kg
9	CLK-2-3 PCB	<11.9 mg/Kg		50A	M-6-2 PCB	<12.5 mg/Kg
10	CLK-3-3 PCB	< 18.9 mg/Kg		50B	M-6-3 PCB	<11.6 mg/Kg
11	CLK-1-3 PCB	< 16.9 mg/Kg		55	CLK-16-1 PCB	< 18.0 mg/Kg
14	CLK-5-1 PCB	<17.2 mg/Kg				
15	CLK-5-2 PCB	<13.6 mg/Kg				
16	CLK-6-1 PCB	< 18.9 mg/Kg				

"<" = ANALYZED FOR BUT NOT DETECTED AT OR ABOVE THE QUANTITATION LIMIT.

APP C

JOB NUMBERAR-4134.00

Popli Design

GROUP

ARCHITECTURE + ENGINEERING

555 Penbrooke Drive Penfield NY 14526 585 388 2060 [tel] [fax] 585 388 2070

ONONDAGA COUNTY DEPT OF WATER ENVIRONMENT PROTECTION BREWERTON, NY

BREWERTON WPCP 5225 GUY YOUNG ROAD BREWERTON, NY 13029

DRAWN BY: R.HODGSON

REVIEWED BY: R. AGRAWA

RECORD DATE: 8-11-14 SAMPLE

LOCATION

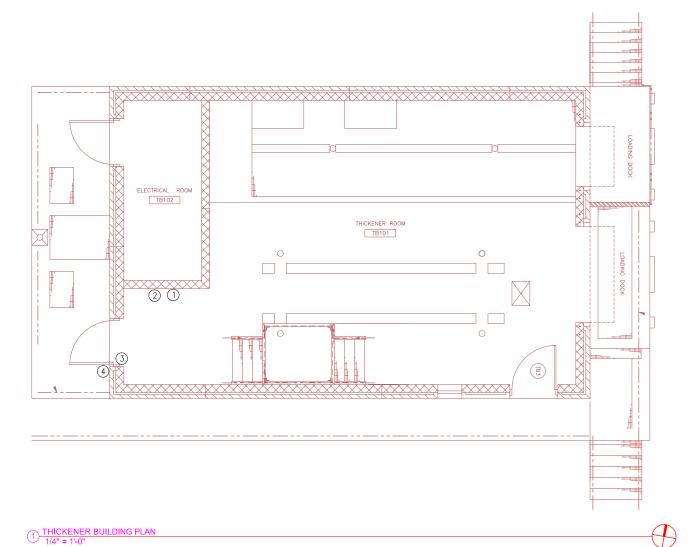
PLAN

SHEET NUMBER

SHEET NUMBER



JOB NUMBERAR-4134.00



ASBESTOS SAMPLE RESULTS

LOCATION	SAMPLE ID's	ANALYZED AS
1	CLK-12-1	NAD 1
2	CLK-13-1	NAD 1
3	CLK-14-1	NAD 1
4	CLK-14-2	NAD 1

¹ NAD - NO ASBESTOS DETECTED

² THIS MATERIAL IS ACM (ASBESTOS CONTAINING MATERIAL)

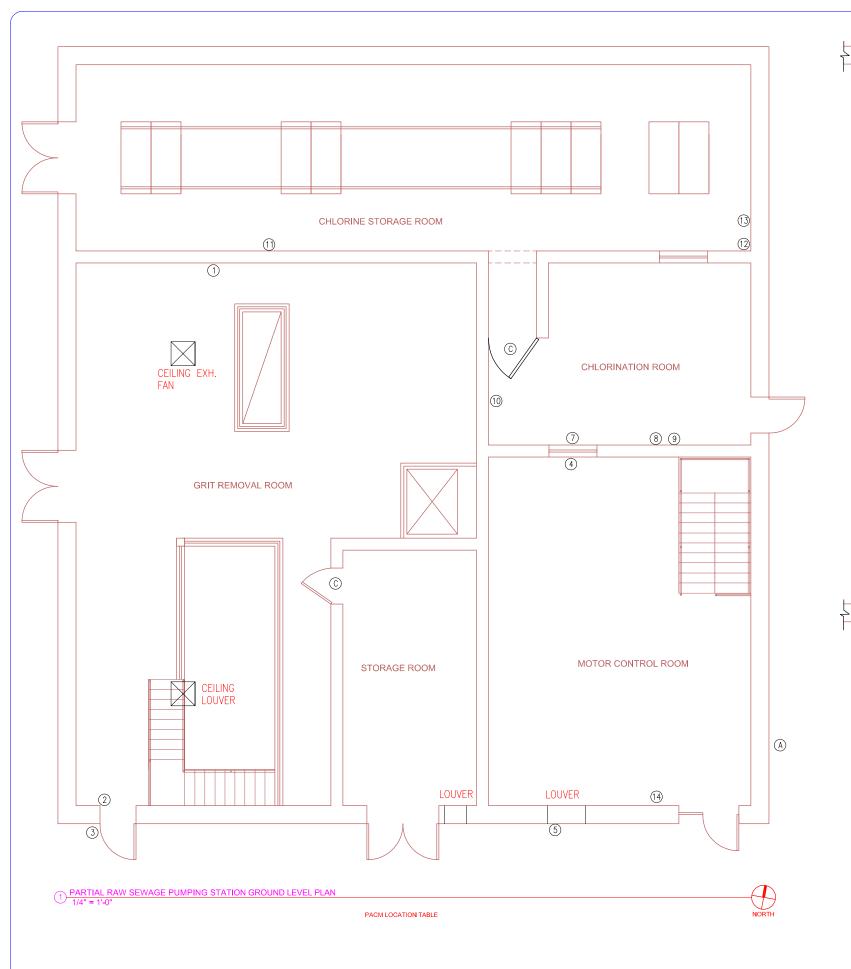
³ TRACE - MATERIALS CONTAINING TRACE ASBESTOS (I.E. LESS THAN 1%) ARE NOT CONSIDERED ACM; HOWEVER, THE OSHA RECOGNIZED MATERIALS THAT CONTAIN TRACE AMOUNTS OF ASSESTOS, AND REQUIRE THESE MATERIALS TO BE HANDLED IN ACCORDANCE WITH THER STANDARD INTERPRETATION LETTER TILD: PREQUIREMENTS FOR DEMOLITION OPERATIONS INVOLVING MATERIAL CONTAINING <1% ASSESTOS", DATED AUGUST 13, 1999.

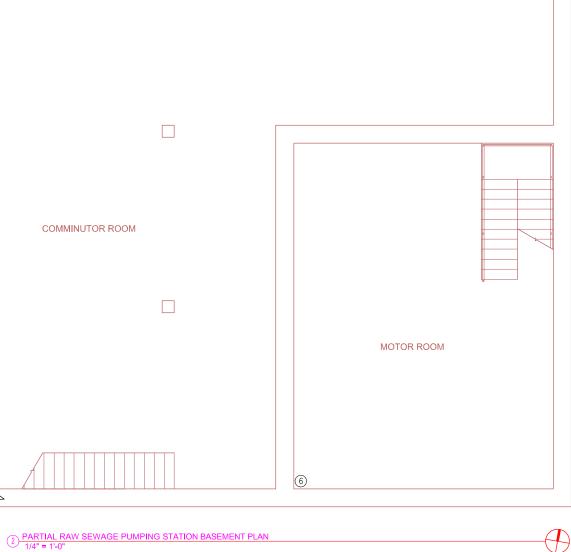
 $^{\rm 4}$ NAD -DUE TO LESS THAN 1.0% RESIDUE REMAINING.

LOCATION	SAMPLE ID's	ANALYZED AS
1	CLK-12-1 PCB	< 13.3 mg/Kg
2	CLK-13-1 PCB	< 12.1 mg/Kg
3	CLK-14-1 PCB	< 17.9 mg/Kg
4	CLK-14-2 PCB	< 14.8 mg/Kg

PCB SAMPLE RESULTS

"<" = ANALYZED FOR BUT NOT DETECTED AT OR ABOVE THE QUANTITATION LIMIT.





ASBESTOS SAMPLE RESULTS

LOCATION	SAMPLE ID's	ANALYZED AS
1	CLK-10-1-1	TRACE *
2	CLK-10-1-2	TRACE *
3	CLK-11-1-1	NAD1
4	NOT USED	
5	CLK-11-2-1	NAD 1
6	CLK-10-2-1	NAD 1
7	CLK-10-2-2	NAD 1
8	CLK-10-3-1	NAD 1
9	CLK-10-3-2	NAD 1
10	CLK-11-1-2	NAD 1
11	CLK-11-2-2	NAD 1
12	FT-2-1	TRACE "
12	FTG-1-1	NAD1
13	FT-2-2	NAD1
	FTG-1-2	TRACE "
14	CLK-11-3-1	NAD 1
15	CLK-11-3-2	NAD 1
16	M-4-1	NAD1
17	M-4-2	NAD1

ACM	NOTES:

¹ NAD - NO ASBESTOS DETECTED

² THIS MATERIAL IS ACM (ASBESTOS CONTAINING MATERIAL)

³ TRACE - MATERIAL S CONTAINING TRACE ASBESTOS (I.E. LESS THAN 1 %) ARE NOT CONSIDERED ACM; HOWEVER, THE OSHA RECOGNIZED MATERIALS THAT CONTAIN TRACE AMOUNTS OF ASBESTOS, AND REQUIRE THESE MATERIALS TO BE HANDLED IN ACCORDANCE WITH THEM STANDARD INTERPRETAINON LETTER TITLE OF REQUIREMENTS FOR DEMOLITION OPERATIONS INVOLVING MATERIAL CONTAINING < 1% ASBESTOS*, DATED AUGUST 13, 1999.</p>

 $^{\rm 4}\,{\rm NAD}$ -DUE TO LESS THAN 1.0% RESIDUE REMAINING.

PCB SAMPLE RESULTS

LOCATION	SAMPLE ID's	ANALYZED AS
1	CLK-17-1 PCB	<13.5 mg/Kg
2	CLK-18-1 PCB	<14.5 mg/Kg
3	CLK-18-2 PCB	<10.2 mg/Kg
4	CLK-19-1 PCB	<11.5 mg/Kg
5	CLK-20-1 PCB	<13.2 mg/Kg
6	NOT USED	
7	CLK-19-2 PCB	<11.3 mg/Kg
8	CLK-21-1 PCB	<18.7 mg/Kg
9	CLK-22-1 PCB	<14.3 mg/Kg
10	CLK-17-2 PCB	<17.4 mg/Kg
11	CLK-21-2 PCB	<13.4 mg/Kg
12	CLK-23-1 PCB	<15.5 mg/Kg
13	CLK-21-3 PCB	<12.4 mg/Kg
14	M-6-1 PCB	<16.9 mg/Kg

"<" = ANALYZED FOR BUT NOT DETECTED AT OR ABOVE THE QUANTITATION LIMIT.

LOCATION	TYPE OF PACM ¹	
A	PUMPING STATION 216 LF OF AC FLASHING ON ROOF ¹	
С	8 CONTROL BUILDING INTERIOR FIRE DOORS	
NOTEC:		

¹ PACM - THIS BUILDING MATERIAL IS PACM (PRESUMED ASBESTOS CONTAINING MATERIAL) AS PER TESTING DONE PREVIOUSLY

JOB NUMBERAR-4134.0

Popli Design GROUP

ARCHITECTURE + ENGINEERING 555 Penbrooke Drive Penfield NY 14526 585 388 2060 [tel] [fax] 585 388 2070

ONONDAGA COUNTY DEPT OF WATER ENVIRONMENT PROTECTION BREWERTON, NY

BREWERTON WPCP 5225 GUY YOUNG ROAD BREWERTON, NY 13029

DRAWN BY: R.HODGSON

REVIEWED BY: R. AGRAWA

RECORD DATE: 8-11-14 SAMPLE **LOCATION PLAN**

SHEET NUMBER

APP C



555 Penbrooke Drive Penfield NY 14526 585 388 2060 [tel] [fax] 585 388 2070

ONONDAGA COUNTY DEPT OF WATER ENVIRONMENT PROTECTION BREWERTON, NY

BREWERTON WPCP 5225 GUY YOUNG ROAD BREWERTON, NY 13029

DRAWN BY: R.HODGSON

PCB SAMPLE RESULTS LOCATION SAMPLE ID'S ANALYZED AS CLK-10-1-1 PCB < 18.9 mg/Kg CLK-10-1-2 PCB <17.4 mg/Kg

CLK-11-1-1 PCB <17.4 mg/Kg

5 CLK-11-2-1 PCB <16.0 mg/Kg

6 CLK-10-2-1 PCB <16.3 mg/Kg 7 CLK-10-2-2 PCB <16.0 mg/Kg

9 CLK-10-3-2 PCB < 18.2 mg/Kg

10 CLK-11-1-2 PCB <19.4 mg/Kg

11 CLK-11-2-2 PCB <12.8 mg/Kg 14 CLK-11-3-1 PCB <18.5 mg/Kg

15 CLK-11-3-2 PCB <18.2 mg/Kg

"<" = ANALYZED FOR BUT NOT DETECTED AT OR ABOVE THE QUANTITATION LIMIT.

CLK-10-3-1 PCB < 20.0 mg/Kg

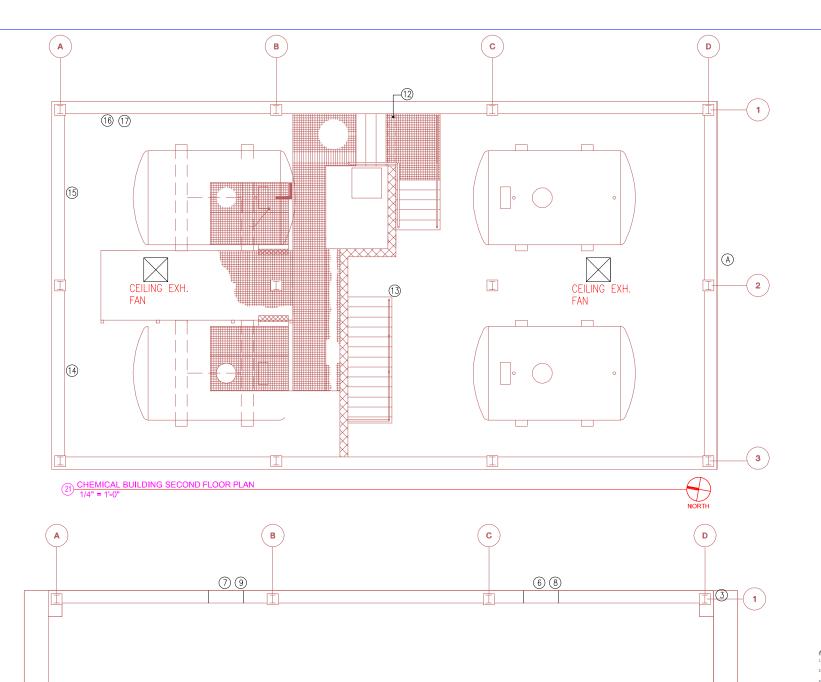
REVIEWED BY: R. AGRAWA

RECORD DATE: 8-11-14 REVISION DATES: SAMPLE **LOCATION PLAN**

SHEET NUMBER

APP C

JOB NUMBERAR-4134.00



GARAGE

LABORATORY

CHEMICAL ROOM

2

CHEMICAL BUILDING GROUND FLOOR PLAN
1/4" = 1'-0"

ASSESTOS SAMDIE DESILITS

ASBESTOS SAMPLE RESULTS				
LOCATION	SAMPLE ID's	ANALYZED AS		
1	CLK-10-1-1	TRACE 3		
2	CLK-10-1-2	TRACE 3		
3	CLK-11-1-1	NAD 1		
4	NOT USED			
5	CLK-11-2-1	NAD 1		
6	CLK-10-2-1	NAD 1		
7	CLK-10-2-2	NAD 1		
8	CLK-10-3-1	NAD 1		
9	CLK-10-3-2	NAD 1		
10	CLK-11-1-2	NAD 1		
11	CLK-11-2-2	NAD 1		
12	FT-2-1	TRACE 3		
12	FTG-1-1	NAD 1		
13	FT-2-2	NAD 1		
15	FTG-1-2	TRACE 3		
14	CLK-11-3-1	NAD 1		
15	CLK-11-3-2	NAD 1		
16	M-4-1	NAD 1		
17	M-4-2	NAD 1		

ACM NOTES:

(3)

1 NAD - NO ASBESTOS DETECTED

THIS MATERIAL IS ACM (ASBESTOS CONTAINING MATERIAL)

"TRACE—MATERIALS CONTAINING TRACE ASBESTOS (I.E. LESSTHAN 1%) ARE NOT CONSIDERED ACM, HOWEVER, THE OSHA RECOGNIZED MATERIALS THAT CONTAIN TRACE AMOUNTS OF ASBESTOS. AND RECURIE THESE MATERIALS TO BE HANDLED IN ACCORDANCE WITH THER STANDARD INTERPRETATION LETTER TITLE OF "REQUIREMENTS FOR DEMOLITION OPERATIONS INVOLVING MATERIAL CONTAINING 4.3% ASBESTOS", DATED AUGUST 13, 1999.

PACM LOCATION TABLE

LOCATION	TYPE OF PACM ¹
A	CHEMICAL BUILDING 170 LF OF AC FLASHING ON ROOF
-	ASSUMED: NO ACCESS TO ROOF & SAME AGE AS OTHER BUILDINGS
NOTEC:	

NOTES: 1 PACM MATERI

M - THIS BUILDING MATERIAL IS PACM (PRESUMED ASBESTOS CONTAINING
RIAL) AS PER TESTING DONE PREVIOUSLY

⁴ NAD -DUE TO LESS THAN 1.0% RESIDUE REMAINING.

Appendix- D: Laboratory Reports and Associated Custody Documentation

Paradigm Labs October 31st 2013 Laboratory Analysis and Chain of Custody



Client:Popli Design GroupJob No: 3188-13BLocation:Brewerton WTPPage: 1 of 24

5225 Guy Young Road, Brewerton, New York

Sample Date: 10/16/2013 **Sample Received Date:** 10/25/2013

Sample Da	ipie Date: 10/16/2013 Sample Received Date: 10/25/2013									
			_	PLM Asbestos	PLM Total	N	TEM Asbestos	TEM	PLM	Non-
				Fibers Type &	Asbestos	0	Fibers Type &	Total	Non-Asbestos	Fibrous
Client ID	Lab ID	Sampling Location	Description	Percentage		В	Percentage	Asbestos	Fibers Type &	Matrix
		1 0	•				8		Percentage	Material
										%
CLK-1-1	30419	Control Building/	Gray Caulk	Inconclusive.	<1.0%	Ì	Trace	<1.0%	None Detected	100%
CLK-1-1	00117	Control Room (1) Door	druj duum	Trace Chrysotile	11070	1/	Anthophyllite	12.070	Trone Beteeted	10070
		In		Detected		"				
	20420	C + ID :II: /	C C 11	y 1 ·	00/		N D · · · l	1.00/	N. D I	1000/
CLK-1-2	30420	Control Building/	Gray Caulk	Inconclusive.	0%	١.	None Detected	<1.0%	None Detected	100%
		Control Room (5) Door		No Asbestos		V				
		In		Detected						
CLK-1-3	30421	Control Building/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Control Room (11) Door		No Asbestos		V				
		In		Detected		-				
CLK-2-1	30422	Control Building/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
CER 2 I		Control Room (3)		No Asbestos	- 70	V				,0
		Louvre In		Detected		'				
CI II O O	30423	Control Building/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
CLK-2-2	30423	Control Room (4)	Gray Caulk	No Asbestos	0%	١,	None Detected	<1.0%	None Detected	100%
		Louvre Out		Detected		V				
CLK-2-3	30424	Control Building/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Control Room (9)		No Asbestos		V				
		Louvre Out		Detected						
CLK-3-1	30425	Control Building/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
CER 5 I		Control Room (7) Door	-	No Asbestos		V				
		Out		Detected		•				
CLK-3-2	30426	Control Building/	Gray Caulk	Inconclusive.	0%	1	None Detected	<1.0%	None Detected	100%
CLK-3-2	30420	Control Room (6) Door	dray Caurk	No Asbestos	0 70	.,	None Detected	V1.070	None Detected	10070
		Out		Detected		V				
CLK-3-3	30427	Control Building/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Control Room (10) Door		No Asbestos		V				
		Out		Detected						
CLK-4-1	30428	Control Building/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
_		Control Room (8)		No Asbestos		V				
		Louvre Out		Detected		ľ				
		1			I			ı		

ELAP ID No.: 11955

Eric Fischer

New York State Department of Health, ELAP Method 198.1,198.4 and 198.6 ("Polarized Light Microscopy and Transmission Electron Microscopy Methods for Identifying and Quantitating Asbestos in Bulk Samples and in Non-Friable Organically Bound Bulk Samples.").

 $\sqrt{\text{NOB}}$ (non-friable organically bound) Classified for Analytical Purposes Only.

denotes material analyzed by ELAP Method 198.4 and 198.6 per NYSDOH.

** Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. *Quantitative transmission electron microscopy* is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

PLM Date Analyzed:10/31/2013TEM Date Analyzed:10/31/2013PLM Analyst:A. DembskiTEM Analyst:E. FischerMicroscope:Olympus BH-2 #225026Microscope:Hitachi 600 AB

Laboratory Results Approved By:

Paradigm Environmental Services, Inc. is not responsible for the data supplied by an independent inspector. New York State Department of Health Environmental Laboratory Approval Program (ELAP) requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This Bulk report relates ONLY to the items tested as received by the lab. This report must not be used to claim product endorsement by NYS ELAP or any agency of the U.S. Government. Quality control data (including 95% confidence limits and laboratory or analysts' accuracy and precision) is available upon request.

Asbestos Technical Director



Client:Popli Design GroupJob No: 3188-13BLocation:Brewerton WTPPage: 2 of 24

5225 Guy Young Road, Brewerton, New York

Sample Date: 10/16/2013 **Sample Received Date:** 10/25/2013

Sample Da		10/10/2013					bampie Recei			
	ĺ			PLM Asbestos		N		TEM	PLM	Non-
				Fibers Type &	Asbestos	0	Fibers Type &	Total	Non-Asbestos	Fibrous
Client ID	Lab ID	Sampling Location	Description	Percentage		В	Percentage	Asbestos	Fibers Type &	Matrix
									Percentage	Material
										%
CLK-5-1		Control Building/ Control Room (14) Wall Pipe	Dark Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-5-2	30430	Control Building/ Control Room (15) Wall Pipe	Dark Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-6-1	30431	Control Building/ Control Room (16) Wall Pipe	Gray Caulk	Inconclusive. Trace Chrysotile Detected	<1.0%	V	Trace Chrysotile	<1.0%	None Detected	100%
CLK-6-2		Control Building/ Control Room (17) Wall Pipe	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-6-3	30433	Control Building/ Transmission Room (37) Wall Pipe	Gray Caulk	Inconclusive. No Asbestos Detected	0%	٧	None Detected	<1.0%	None Detected	100%
CLK-7-1	30434	Control Building/ Janitors Closet (22) Sink	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-8-1		Control Building/ Blower Room-Filter Room (40) Louvre In	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-8-2	30436	Control Building/ Blower Room-Filter Room (41) Louvre In	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-9-1	30437	West Galley (51) Building Joint	Gray Caulk	Inconclusive. No Asbestos Detected	0%	٧	None Detected	<1.0%	None Detected	100%
CLK-9-2	30438	South Galley (52) Building Joint	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%

ELAP ID No.: 11955

New York State Department of Health, ELAP Method 198.1,198.4 and 198.6 ("Polarized Light Microscopy and Transmission Electron Microscopy Methods for Identifying and Quantitating Asbestos in Bulk Samples and in Non-Friable Organically Bound Bulk Samples.").

 $\sqrt{\text{NOB}}$ (non-friable organically bound) Classified for Analytical Purposes Only.

denotes material analyzed by ELAP Method 198.4 and 198.6 per NYSDOH.

** Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. *Quantitative transmission electron microscopy* is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

PLM Date Analyzed:10/31/2013TEM Date Analyzed:10/31/2013PLM Analyst:A. DembskiTEM Analyst:E. FischerMicroscope:Olympus BH-2 #225026Microscope:Hitachi 600 AB

Laboratory Results Approved By:

Asbestos Technical Director

Eric Fischer



Client:Popli Design GroupJob No: 3188-13BLocation:Brewerton WTPPage: 3 of 24

5225 Guy Young Road, Brewerton, New York

Sample Da	ıe:	10/16/2013 Sample Received Date: 10/25/2013								
Client ID	Lab ID	Sampling Location	Description	PLM Asbestos Fibers Type & Percentage	PLM Total Asbestos	N O B	TEM Asbestos Fibers Type & Percentage	TEM Total Asbestos	PLM Non-Asbestos Fibers Type & Percentage	Non- Fibrous Matrix Material
									rereemage	%
CLK-16-1	30439	Garage - Lunchroom (55) AC Exterior	Black Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-10-1- 1	30440	Chemical Building/1st Floor/Interior (1) Building Corner	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	Trace Chrysotile	<1.0%	None Detected	100%
CLK-10-1- 2	30441	Chemical Building/1st Floor/Interior (2) Building Corner	Gray Caulk	Inconclusive. No Asbestos Detected	0%	٧	Trace Chrysotile	<1.0%	None Detected	100%
CLK-10-2- 1	30442	Chemical Building/1st Floor/Exterior (6) Louvre Out	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-10-2- 2	30443	Chemical Building/1st Floor/Exterior (7) Louvre Out	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-10-3- 1	30444	Chemical Building/1st Floor/Exterior (8) Foundation Joint	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-10-3- 2	30445	Chemical Building/1st Floor/Exterior (9) Foundation Joint	Gray Caulk	Inconclusive. No Asbestos Detected	0%	٧	None Detected	<1.0%	None Detected	100%
CLK-11-1- 1	30446	Chemical Building/1st Floor/Exterior (3) Garage Door	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-11-1- 2	30447	Chemical Building/1st Floor/Exterior (10) Garage Door	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
CLK-11-2- 1	30448	Chemical Building/1st Floor/Exterior (5) Door	Gray Caulk	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%

ELAP ID No.: 11955

New York State Department of Health, ELAP Method 198.1,198.4 and 198.6 ("Polarized Light Microscopy and Transmission Electron Microscopy Methods for Identifying and Quantitating Asbestos in Bulk Samples and in Non-Friable Organically Bound Bulk Samples.").

√ NOB (non-friable organically bound) Classified for Analytical Purposes Only.

denotes material analyzed by ELAP Method 198.4 and 198.6 per NYSDOH.

** Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. *Quantitative transmission electron microscopy* is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

PLM Date Analyzed:10/31/2013TEM Date Analyzed:10/31/2013PLM Analyst:A. DembskiTEM Analyst:E. FischerMicroscope:Olympus BH-2 #225026Microscope:Hitachi 600 AB

Laboratory Results Approved By:

Asbestos Technical Director

Eric Fischer



Client:Popli Design GroupJob No: 3188-13BLocation:Brewerton WTPPage: 4 of 24

5225 Guy Young Road, Brewerton, New York

Sample Da	te:	10/16/2013 Sample Received Date: 10/25/2013								
				PLM Asbestos	PLM Total	N	TEM Asbestos	TEM	PLM	Non-
				Fibers Type &	Asbestos	0	Fibers Type &	Total	Non-Asbestos	Fibrous
Client ID	Lab ID	Sampling Location	Description	Percentage		В	Percentage	Asbestos	Fibers Type &	Matrix
			-	J			J		Percentage	Material
									S	%
CLK-11-2-	30449	Chemical Building/1st	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
2		Floor/Exterior (11)		No Asbestos		V				
_		Door		Detected						
CLK-11-3-	30450	Chemical Building/2nd	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
	00100	Floor/Wall (14) Wall	druy duam	No Asbestos	070	v	Trone Beteeted	12.0 70	Trone Beteeted	10070
1		Pipe		Detected		ľ				
CLK-11-3-	30451	Chemical Building/2nd	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
	30431	Floor/Wall (15) Wall	dray Gauik	No Asbestos	0.70	.,	None Detected	\1.0 70	None Detected	10070
2		Pipe		Detected		V				
07 77 40 i	20452	•	C CII-	Inconclusive.	00/		Name Date of 3	-1.00/	Mana Data at 1	100%
CLK-12-1	30452	Sludge Building/	Gray Caulk	No Asbestos	0%	١.	None Detected	<1.0%	None Detected	100%
		Interior(1) Wall Pipe		Detected		V				
CLK-13-1	30453	Sludge Building/	Black Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Interior(2) Wall Pipe		No Asbestos		V				
				Detected						
CLK-14-1	30454	Sludge Building/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Interior(3) Door In		No Asbestos		V				
				Detected						
CLK-14-2	30455	Sludge Building/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Exterior(4) Door Out		No Asbestos		V				
				Detected		•				
CLK-17-1	30456	Pumping Station/Grit	Clear Brown Caulk	<1.0% Residue	N/A		N/A	N/A	N/A	N/A
CER 17 1		Room/1st Floor (1) Wall		Remaining. PLM	,	١,	,	,	,	,
		Pipe		and TEM Not		V				
		•		Required						
CLK-17-2	30457	Pumping Station/	Clear Yellow Caulk	<1.0% Residue	N/A		N/A	N/A	N/A	N/A
		Entrance Room to		Remaining. PLM		V				
		Chlorite Room (10) Wall		and TEM Not						
	20150	Pipe	0 0 11	Required	22/			4.004		1000/
CLK-18-1	30458	Pumping Station/1st	Gray Caulk	Inconclusive.	0%	١.	None Detected	<1.0%	None Detected	100%
		Floor (2) Door In		No Asbestos		V				
				Detected						

ELAP ID No.: 11955

New York State Department of Health, ELAP Method 198.1,198.4 and 198.6 ("Polarized Light Microscopy and Transmission Electron Microscopy Methods for Identifying and Quantitating Asbestos in Bulk Samples and in Non-Friable Organically Bound Bulk Samples.").

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denotes material analyzed by ELAP Method 198.4 and 198.6 per NYSDOH.

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PLM Date Analyzed:10/31/2013TEM Date Analyzed:10/31/2013PLM Analyst:A. DembskiTEM Analyst:E. FischerMicroscope:Olympus BH-2 #225026Microscope:Hitachi 600 AB

Laboratory Results Approved By:
Asbestos Technical Director

Eric Fischer



Client:Popli Design GroupJob No: 3188-13BLocation:Brewerton WTPPage: 5 of 24

5225 Guy Young Road, Brewerton, New York

Sample Date: 10/16/2013 **Sample Received Date:** 10/25/2013

Sample Da	e Date: 10/16/2013 Sample Received Date: 10/25/2013									
				PLM Asbestos		N		TEM	PLM	Non-
				Fibers Type &	Asbestos	0	Fibers Type &	Total	Non-Asbestos	Fibrous
Client ID	Lab ID	Sampling Location	Description	Percentage		В	Percentage	Asbestos	Fibers Type &	Matrix
									Percentage	Material
										%
CLK-18-2	30459	Pumping Station/1st	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Floor (3) Door Out		No Asbestos		V				
				Detected						
CLK-19-1	30460	Pumping Station/1st	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Floor (4) Window		No Asbestos		V				
				Detected		•				
CLK-19-2	30461	Pumping Station/1st	Gray Caulk	Inconclusive.	0%		Trace	<1.0%	None Detected	100%
CLIC 17 2		Floor (7) Window		No Asbestos		1 /	Anthophyllite			
				Detected		"				
CLK-20-1	30462	Pumping Station/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
CLK-20-1	50102	Control Room/ Exterior	druy duuni	No Asbestos	070	١.	None Beteeted	11.070	None Detected	10070
		(5) Louvre Out		Detected		V				
		(-)								
CLK-21-1	30463	Pumping Station/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Entrance Room to		No Asbestos		V				
		Chlorite Room (8) Wall		Detected						
ar ** a 4 a	20464	Pipe	C C . 11	Taranal at a	0%		N D l	<1.0%	Maria Datasta I	100%
CLK-21-2	30464	Pumping Station/ Chlorite Room (11) Wall	Gray Caulk	Inconclusive. No Asbestos	0%	١.	None Detected	<1.0%	None Detected	100%
		Pipe		Detected		V				
		ī								
CLK-21-3	30465	Pumping Station/	Gray Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Chlorite Room (13) Wall		No Asbestos		V				
		Pipe		Detected						
CLK-22-1	30466	Pumping Station/	Black Caulk	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Entrance Room to		No Asbestos		v				
		Chlorite Room (9) Wall		Detected		"				
ar ** aa :	20467	Pipe Station (C C . 11	T l '	00/		No Date of 3	-1.00/	Maria Datasta 3	1000/
CLK-23-1	30467	Pumping Station/	Gray Caulk	Inconclusive.	0%	l _	None Detected	<1.0%	None Detected	100%
		Chlorite Room (12) Corner Joint		No Asbestos Detected		V				
		ŕ		Detected						
M-1-1	30468	Control Building/	Brown Grout	None Detected	0%		Not Required	N/A	Vermiculite 13%	87%
		Control Room/Roof				Ÿ				
		Vent (21)								

ELAP ID No.: 11955

New York State Department of Health, ELAP Method 198.1,198.4 and 198.6 ("Polarized Light Microscopy and Transmission Electron Microscopy Methods for Identifying and Quantitating Asbestos in Bulk Samples and in Non-Friable Organically Bound Bulk Samples.").

 \mathring{V} This Method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

denotes material analyzed by ELAP Method 198.4 and 198.6 per NYSDOH.

** Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. *Quantitative transmission electron microscopy* is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

PLM Date Analyzed:	10/31/2013	TEM Date Analyzed:	10/31/2013
PLM Analyst:	A. Dembski	TEM Analyst:	E. Fischer
Microscope:	Olympus BH-2 #225026	Microscope:	Hitachi 600 AB

Laboratory Results Approved By:

Asbestos Technical Director

Eric Fischer



Client:Popli Design GroupJob No: 3188-13BLocation:Brewerton WTPPage: 6 of 24

5225 Guy Young Road, Brewerton, New York

Sample Da	ite.	10/10/2015 Sample Received Date: 10/25/2015								
				PLM Asbestos	PLM Total	N	TEM Asbestos	TEM	PLM	Non-
				Fibers Type &	Asbestos	0	Fibers Type &	Total	Non-Asbestos	Fibrous
Client ID	Lab ID	Sampling Location	Description	Percentage		В	Percentage	Asbestos	Fibers Type &	Matrix
									Percentage	Material
									•	%
M-1-2	30469	Control Building/	Brown Grout	None Detected	0%		Not Required	N/A	Vermiculite 25%	75%
		Bathroom/Roof Vent				Ï				
		(27a)								
M-2-1	30470	Control Building/	Black Gasket	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Blower Room/ Filter		No Asbestos		V				
		Room Door (38)		Detected		ľ				
M-2-2	30471	Control Building/	Black Gasket	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Blower Room/ Filter		No Asbestos		V				
		Room Door (39)		Detected		-				
M-3-1	30472	Garage/ Lunch	Gray Leveling	None Detected	0%		Not Required	N/A	None Detected	100%
1101		Room/Floor (46)	Compound				•	,		
M-3-2	30473	Garage/ Lunch	Gray Leveling	None Detected	0%		Not Required	N/A	None Detected	100%
141 3 2		Room/Floor (47)	Compound				1	,		
M-4-1	30474	Chemical Building/ 2nd	Gray Grout	None Detected	0%		Not Required	N/A	None Detected	100%
111111		Floor/ Wall (16)					1	,		
		, , ,								
M-4-2	30475	Chemical Building/2nd	Gray Grout	None Detected	0%		Not Required	N/A	None Detected	100%
141-4-2	30173	Floor/ Wall (17)	dray droat	None Beteeted	070		Not nequired	11,711	None Beteeted	10070
		, ,								
M-5-1	30476	Pumping Station/	Gray Grout	None Detected	0%		Not Required	N/A	None Detected	100%
M-2-1	30170	Basement From Control	dray droat	None Detected	070		Not Required	14/11	None Detected	10070
		Room (6)								
M-6-1	30477	Pumping Station/	Black Rubber	<1.0% Residue	N/A		N/A	N/A	N/A	N/A
M-0-1	30477	Control Room/ Air	Diack Rubbei	Remaining. PLM	N/A	١.	N/A	N/A	N/A	N/A
		Compressor Vib Pad		and TEM Not		V				
		(14)		Required						
M-6-2	30478	Control Building/	Black Rubber	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Blower Room/Vib Pad		No Asbestos		V				
		(50a)		Detected						

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PLM Analyst: A. Dembski / M. McDonough TEM Analyst: E. Fischer
Microscope: Olympus BH-2 #225026 Microscope: Hitachi 600 AB

Laboratory Results Approved By:

Asbestos Technical Director

Eric Fischer



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5225 Guy Young Road, Brewerton, New York

Sample Date: 10/16/2013 Sample Received Date: 10/25/2013

Sample Da	ite.	10/10/2013					sample Recei	veu Date.	10/23/2013	
				PLM Asbestos	PLM Total	N	TEM Asbestos	TEM	PLM	Non-
				Fibers Type &	Asbestos	0	Fibers Type &	Total	Non-Asbestos	Fibrous
Client ID	Lab ID	Sampling Location	Description	Percentage		В	Percentage	Asbestos	Fibers Type &	Matrix
			_						Percentage	Material
										%
M-6-3	30479	Control Building/	Black Rubber	<1.0% Residue	N/A		N/A	N/A	N/A	N/A
		Blower Room/Vib Pad		Remaining. PLM		V				
		(50b)		and TEM Not		V				
				Required						
FT-1-1	30480	Control Building/	Light Gray with	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Control Room (18)	White Specks Floor	No Asbestos		V				
			Tile	Detected						
FT-1-2	30481	Control Building/	Light Gray with	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Control Room (19)	White Specks Floor	No Asbestos		V				
			Tile	Detected		•				
FT-1-3	30482	Control Building/	Light Gray with	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
11-1-3	00102	Bathroom (27)	White Specks Floor	No Asbestos	0,0	v	Trone Beteeted	11070	Trone Beteeted	10070
		, ,	Tile	Detected		ا				
ET 4 4	30483	Garage/ Lunch Room	Light Gray with	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
FT-1-4	30403	(47)	White Specks Floor	No Asbestos	0%	_,	None Detected	<1.0%	None Detected	100%
		(47)	Tile	Detected		٧				
	20101	0 (X 1 D	-		00/			1.00/		1000/
FT-1-5	30484	Garage/ Lunch Room	Light Gray with	Inconclusive.	0%	_	None Detected	<1.0%	None Detected	100%
		(46)	White Specks Floor	No Asbestos		V				
			Tile	Detected						
FT-2-1	30485	Chemical Building/2nd	Pink/Brown Floor	Trace Chrysotile	<1.0%		Not Required	N/A	None Detected	100%
		Floor (12)	Tile							
FT-2-2	30486	Chemical Building/2nd	Brown Floor Tile	None Detected	0%		Not Required	N/A	None Detected	100%
-		Floor (13)						-		
FTM-1-1	30487	Control Building/	Yellow/Brown	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
1 11/1-1-1		Control Room (18)	Floor Tile Mastic	No Asbestos	- 7.0	V	,	,0		/3
				Detected		"				
FTM-1-2	30488	Control Building/	Yellow/Brown	Inconclusive.	<1.0%		None Detected	<1.0%	None Detected	100%
r 1 M-1-Z	30408	Control Room (19)	Floor Tile Mastic	Trace Chrysotile	<1.0%	.,	None Detected	<1.0%	None Detected	100%
		Control Room (19)	FIOOI THE MASUL	Detected		V				
	I		ĺ	Detected			1		l	

ELAP ID No.: 11955

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5225 Guy Young Road, Brewerton, New York

Sample Da	ite:	• • • • • • • • • • • • • • • • • • • •								
Client ID	Lab ID	Sampling Location	Description	PLM Asbestos Fibers Type & Percentage	PLM Total Asbestos	N O B	TEM Asbestos Fibers Type & Percentage	TEM Total Asbestos	PLM Non-Asbestos Fibers Type &	Non- Fibrous Matrix
		. 0	•	S			, and the second		Percentage	Material %
FTM-1-3	30489	Control Room/ Bathroom (27)	Yellow/Gray Floor Tile Mastic	Inconclusive. No Asbestos Detected	0%	V	None Detected	<1.0%	None Detected	100%
FTM-1-4	30490	Garage/ Lunch Room (47)	Brown Floor Tile Mastic	Inconclusive. No Asbestos Detected	0%	v	None Detected	<1.0%	None Detected	100%
FTM-1-5	30491	Garage/ Lunch Room (46)	Orange/Brown Floor Tile Mastic	Inconclusive. No Asbestos Detected	0%	٧	None Detected	<1.0%	None Detected	100%
FTG-1-1	30492	Chemical Building/2nd Floor (12)	White/Gray Floor Tile Grout	None Detected	0%		Not Required	N/A	None Detected	100%
FTG-1-2	30493	Chemical Building/2nd Floor (13)	White/Gray Floor Tile Grout	Trace Chrysotile	<1.0%		Not Required	N/A	None Detected	100%
FM-1-1	30494	Control Building/ Blower Room (42)	Red/Brown Floor Mastic	Inconclusive. No Asbestos Detected	0%	٧	None Detected	<1.0%	None Detected	100%
FM-1-2	30495	Control Building/ Blower Room (43)	Orange/Brown Floor Mastic	Inconclusive. No Asbestos Detected	0%	v	None Detected	<1.0%	None Detected	100%
FM-1-3	30496	Control Building/ Blower Room (44)	Tan Floor Mastic	Inconclusive. No Asbestos Detected	0%	٧	None Detected	<1.0%	None Detected	100%
E-1-1	30497	Control Building/ Control Room (18)	Gray Vinyl Edging	<1.0% Residue Remaining. PLM and TEM Not Required	N/A	v	N/A	N/A	N/A	N/A
E-1-3	30498	Control Building/ Bathroom (27)	Gray Vinyl Edging	<1.0% Residue Remaining. PLM and TEM Not Required	N/A	٧	N/A	N/A	N/A	N/A

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Client:Popli Design GroupJob No: 3188-13BLocation:Brewerton WTPPage: 9 of 24

5225 Guy Young Road, Brewerton, New York

Sample Da	ate:	10/16/2013 Sample Received Date: 10/25/2013								
				PLM Asbestos	PLM Total	N	TEM Asbestos	TEM	PLM	Non-
				Fibers Type &	Asbestos	0	Fibers Type &	Total	Non-Asbestos	Fibrous
Client ID	Lab ID	Sampling Location	Description	Percentage		В	Percentage	Asbestos	Fibers Type &	Matrix
									Percentage	Material
										%
E-1-4	30499	Garage/ Lunch Room	Gray Vinyl Edging	<1.0% Residue	N/A		N/A	N/A	N/A	N/A
		(45)		Remaining. PLM		V				
				and TEM Not		ľ				
EM-1-1	30500	Control Building/	Brown Mastic	Required Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
FM-1-1	30300	Control Room (18)	Di own Mastic	No Asbestos	070	V	None Beteeted	11.0 70	None Beteeteu	10070
				Detected		"				
EM-1-3	30501	Control Building/	Yellow Mastic	Inconclusive.	<1.0%		Chrysotile 0.90%	1.8%	None Detected	100%
EM-1-2	30301	Bathroom (27)	Tenow Mastic	Trace Chrysotile	1.070	١.	Tremolite 0.90%	1.070	None Detected	10070
		244 00 (27)		Detected		V	11011101110 013 0 70			
EM-1-4	30502	Garage/ Lunch Room	Yellow/Brown	Inconclusive.	0%		STOP POSITIVE	N/A	None Detected	100%
		(45)	Mastic	No Asbestos		V	**			
				Detected			NO TEM			
E-2-1	30503A	Control Building/	Black Vinyl Eding	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Blower Room (34)		No Asbestos		V				
				Detected						
EM-2-1	30503B	Control Building/	Brown Vinyl Edging	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Blower Room (34)	Mastic	No Asbestos		V				
				Detected		-				
E -2-2	30504A	Control Building/	Black Vinyl Eding	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Blower Room (35)		No Asbestos		V				
				Detected		ľ				
EM-2-2	30504B	Control Building/	Yellow Vinyl Edging	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
		Blower Room (35)	Mastic	No Asbestos		V				
				Detected						
E-2-3	30505A	Control Building/	Black Vinyl Eding	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
223		Blower Room (36)		No Asbestos		V				
				Detected		•				
EM-2-3	30505B	Control Building/	Brown Vinyl Edging	Inconclusive.	0%		None Detected	<1.0%	None Detected	100%
21.1 2 3		Blower Room (36)	Mastic	No Asbestos		V				
				Detected						
	1	1				1	1		I	I

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									rereentage	%
P-1-1	30506	Control Building/ Control Room (12)	Orange on Gray Plaster & Sheetrock	None Detected	0%		Not Required	N/A	Cellulose 5% Fiberglass 1%	94%
P-1-2	30507	Control Building/ Control Room Office (13)	Gray on Gray Fibrous Plaster & Sheetrock	None Detected	0%		Not Required	N/A	Cellulose 20% Fiberglass 5%	75%
P-2-1		Control Building/ Blower Room (31)	White Plaster & Sheetrock	None Detected	0%		Not Required	N/A	None Detected	100%
P-2-2		Control Building/ Transmission Room (32)	White Plaster & Sheetrock	None Detected	0%		Not Required	N/A	Cellulose 1%	99%
P-2-3	30510	Control Building/ Blower Room (33)	Gray Plaster & Sheetrock	None Detected	0%		Not Required	N/A	None Detected	100%
PJC-1-1	30511	Control Building/ Blower Room (28)	Yellow on White Plaster Joint Compound	None Detected	0%		Not Required	N/A	None Detected	100%
PJC-1-2	30512	Control Building/ Blower Room (29)	Yellow on White Plaster Joint Compound	None Detected	0%		Not Required	N/A	None Detected	100%
PJC-1-3	30513	Control Building/ Blower Room (30)	Yellow on White Plaster Joint Compound	None Detected	0%		Not Required	N/A	None Detected	100%
CT-1-1		Garage/ Lunch Room (48)	White/Gray Fibrous Acoustical Ceiling Tile	None Detected	0%		Not Required	N/A	Mineral Wool 80%	20%
CT-1-2	30515	Garage/ Lunch Room (49)	White/Gray Fibrous Acoustical Ceiling Tile	None Detected	0%		Not Required	N/A	Mineral Wool 80%	20%

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5225 Guy Young Road, Brewerton, New York

Sample Da		10/10/2013		DIAGA '	DI 14		Sample Recei			
Client ID	Lab ID	Sampling Location	Description	PLM Asbestos Fibers Type & Percentage	PLM Total Asbestos	O B	TEM Asbestos Fibers Type & Percentage	TEM Total Asbestos	PLM Non-Asbestos Fibers Type & Percentage	Non- Fibrous Matrix Material %
CT-1-3	30516	Garage/ Lunch Room (50)	White/Gray Fibrous Acoustical Ceiling Tile	None Detected	0%		Not Required	N/A	Mineral Wool 80%	20%
CT-2-1		Control Building/ Blower Room (56)	Gray Packaged Ceiling Tile Same as Hallway	Inconclusive. No Asbestos Detected	0%	#	None Detected	<1.0%	None Detected	100%
TSI-1-1	30518	Control Building/ Janitors Closet (23)	Blue on Yellow Fibrous Thermal System Insulation on Pipe	None Detected	0%		Not Required	N/A	Cellulose 60% Fiberglass 20%	20%
TSI-1-2	30519	Control Building/ Hallway (25)	Blue on Yellow Fibrous Thermal System Insulation on Pipe	None Detected	0%		Not Required	N/A	Cellulose 40% Fiberglass 40%	20%
TSI-1-3	30520	Control Building/ Bathroom (26)	Blue on Yellow Fibrous Thermal System Insulation on Pipe	None Detected	0%		Not Required	N/A	Cellulose 30% Fiberglass 50%	20%
TSI-1-4	30521	West Galley (54)	Blue on Yellow Fibrous Thermal System Insulation on Pipe	None Detected	0%		Not Required	N/A	Cellulose 20% Fiberglass 50%	30%
TSI 2-1	30522	Control Building/ Control Room (20)	Yellow Fibrous Duct Insulation	None Detected	0%		Not Required	N/A	Fiberglass 80%	20%
TSIMJ-1-1	30523	Control Building/ Janitors Closet (24)	Light Gray Thermal System Insulation Mudded Joint on Pipe	None Detected	0%		Not Required	N/A	Mineral Wool 30%	70%
TSIMJ-1-2	30524	Control Building/ Hallway (25)	Light Gray Thermal System Insulation Mudded Joint on Pipe	None Detected	0%		Not Required	N/A	Mineral Wool 30%	70%
TSIMJ-1-3	30525	Control Building/ Bathroom (26)	Light Gray Thermal System Insulation Mudded Joint on Pipe	None Detected	0%		Not Required	N/A	Mineral Wool 30%	70%

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denotes material analyzed by ELAP Method 198.4 and 198.6 per NYSDOH.

** Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. *Quantitative transmission electron microscopy* is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

 PLM Date Analyzed:
 10/31/2013
 TEM Date Analyzed:
 10/31/2013

 PLM Analyst:
 A. Dembski / M. McDonough
 TEM Analyst:
 E. Fischer

 Microscope:
 Olympus BH-2 #225026
 Microscope:
 Hitachi 600 AB

Laboratory Results Approved By:

Asbestos Technical Director Eric Fischer



Client:Popli Design GroupJob No: 3188-13BLocation:Brewerton WTPPage: 12 of 24

5225 Guy Young Road, Brewerton, New York

Sample Date: 10/16/2013 **Sample Received Date:** 10/25/2013

Sample Da	···	10/16/2013					sampie Recei			
				PLM Asbestos	PLM Total	N	TEM Asbestos	TEM	PLM	Non-
				Fibers Type &	Asbestos	0	Fibers Type &	Total	Non-Asbestos	Fibrous
CI ID	r .1. rp	C	D		Asbestos					
Client ID	Lab ID	Sampling Location	Description	Percentage		В	Percentage	Asbestos	Fibers Type &	Matrix
									Percentage	Material
										%
TSIMJ-1-4	30526	West Galley (53)	Light Gray Thermal	None Detected	0%		Not Required	N/A	Mineral Wool 30%	% 70%
1311111-1-4			System Insulation				1.	,		
			Mudded Joint on							
			Pipe							
			1 ipe							
										-
<u> </u>										
						<u> </u>				

ELAP ID No.: 11955

New York State Department of Health, ELAP Method 198.1,198.4 and 198.6 ("Polarized Light Microscopy and Transmission Electron Microscopy Methods for Identifying and Quantitating Asbestos in Bulk Samples and in Non-Friable Organically Bound Bulk Samples.").

√ NOB (non-friable organically bound) Classified for Analytical Purposes Only.

denotes material analyzed by ELAP Method 198.4 and 198.6 per NYSDOH.

** Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. *Quantitative transmission electron microscopy* is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

PLM Date Analyzed:	10/31/2013	TEM Date Analyzed:	10/31/2013
PLM Analyst:	A. Dembski / M. McDonough	TEM Analyst:	E. Fischer
Microscope:	Olympus BH-2 #225026	Microscope:	Hitachi 600 AB

Laboratory Results Approved By:

Asbestos Technical Director Eric Fische

Fax: 585-647-3311

PARA DIGM

CHAIN OF CUSTODY FOR PLM/TEM BULK ASBESTOS ANALYSIS

be analyzed by the appropriate New York State Department of	he appropriate New		Date: All samples will		Sampled By:
Cault	1	Grey	tuo-suare 3"	82 —	# CIK-4-1
Caulk	"	Grey L	11 0 000 out	27	9 C) K 3-3
aux	*	Grey	"@ Dor ou+	26	8 C/K-3-2
Caulk	*	Grey Stap	"O Dorroct	25	7C/K=3-1
Caulk	*	Grey &	" D Course-out	24	6 C)K-2-3
Cault	*	Grey	" (1) Louvre-out	23	5 C)k-2-2
Culk	*	Grey Stap	" (3) Louve-in	22	4 CIK-2-1
Caulk	11	Grey +	(Decr-)	2	3 C/K-1-3
Caulk	1	Grey)	" Do Do - 1	20	2 C/K-1-2
Cailk	non fable	Gray stand	Control Bldg / Control Rom (1) Poor-in	30419	1 C/K-1-1
ze Type of Material	Material Size	Color	Sampling Location	Lab ID	Client ID
	(100) West of the control of the con	₹d, Brewerton, NY	Project Location: Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY	Y 14526	Penfield, NY 14526
Date Logged In: 10/28/13 Logged In By: AM	TEM L	Material Type/Quantity: Friable NOB X 1	Date Sampled: Material 7	oke Drive	555 Penbrooke Drive
Page of	Other P	ime:	Results To Turn Around T	ss: n Group	Client Mailing Address: Popli Design Group
Job #: 3188-13B	<u> </u>	er: 5853882070	Phone Number: 5853882060 Fax Number:		
OFFICE USE ONLY		Mike Crawford	Client: Contact: Popli Design Group		invariantique Al Renvices (Re

Received By:

JOHN CHAIR

Transported to Paradigm By:

Date:

10/16/2013

10/24/13/12:00

or provide TEM contact name: Mike Crawford

TOTAL NUMBER OF SAMPLES ON ALL CHAINS OF

5

108

CUSTODY:

Health methods (198.1,198.4 and 198.6) unless other methods are requested.

CHECK TO AUTOMATICALLY PERFORM TEM ON NOBS

Mike Crawford

CHAIN OF CUSTODY FOR PLM/TEM BULK ASBESTOS ANALYSIS

L CHAINS OF	MPLES ON ALI	TOTAL NUMBER OF SAMPLES ON ALL CHAINS OF CUSTODY:	TOTAL NU	Date: 1200pm	Date: /0/24		Received By:
Contact name: Mike Crawford	CALLY PERFOR e: Mike Crawford	IO AUTOMATICA e TEM contact name:	or provide TEM	ate: 10/25/13/12100	$\frac{\text{Date:}}{ o/2 }$	radigm by:	ransported to Faradigm by:
Health methods (198.1,198.4 and 198.6) unless other methods are requested.	198.6) unless other	hods (198.1,198.4 and	Health met	10/16/2013		Mike Crawford	N
All samples will be analyzed by the appropriate New York State Department of	he appropriate Nev	s will be analyzed by t	All sample		Date:		Sampled By:
" Caulk	\(\lambda\)	Grey I	1	(1) (2)	South Galley	1 38	# CLK-9-2
1 Cault	h	Gray Stap (34	(E) 8/2, Joint	West Galley	V	9 CCK-9-1
" Caolk	V	Grey St	(h) " "	, (,	<u>ي</u>	8 CL 18-2
" Galk	u	Grey Stope	tours (A)	Roon- Filter Roon	Control Bldg / Franciscon-Filter Room	~	7 ak-8-1
" Caulk	۶	Grey	ر. م لا الا	10/00+ (22) Sinh	Contal Blig) Janta Closet	2	6 CLK-7-1
" Caulk	f	Grey L	٥	mes , on (37)	Control Blds / Transmission Krom (37)	S	5 CLK-6-3
" Caulk	ŧ	Grey	11	, (<u>(b)</u> ,	\$	2	4 CLK-6-2
" Caulk	4	Grey Fr	") (6) (7)	*	2	3 CL H-6-1
" Caulk	") (3) (4)	S	30	2 CLK-S-2
Caulh	hon-fricole	Dark Gray Gyo	Mall pipe	(1)	Control Bldy/Control Rum	30429	1 CLk-5-1
ze Type of Material	Material Size	Color		Sampling Location	Sam	Lab ID	Client ID
nerallynens vir and status	and the second s	werton,	Guy Young R	Brewerton WTP - 5225 Guy Young Rd, Bre	Project Location: Brev	Y 14526	Penfield, NY 14526
Date Logged In: $ \phi zs B$ Logged In By: AA	TEM L	nantity:	Material Type/Qu Friable)13	Date Sampled: 10/16/2013	oke Drive	555 Penbrooke Drive
Page of	Other	nd Time:	Turn Around Time:	ford	Results To Mike Crawford	ss: In Group	Client Mailing Address: Popli Design Group
Job #: 3/88-13B		er: 5853882070	Fax Number:	5853882060	Phone Number: 5853		
OFFICE USE ONLY		Mike Crawford	Contact:	eroup .	Client: Popli Design Group	6	THY FORWARD AL SERVICES. THE

PARADIGM.

CHAIN OF CUSTODY FOR PLM/TEM BULK ASBESTOS ANALYSIS

be analyzed by the annronriate New York State Denartment of	he annronriate New		Date: All samples will		Sampled By:
					#
" (m) x	-	Grey &		Access 1	9 CLK-11-1-2
" Cwlk		Gray Stoff	Cherical Bldg/10 Floor / Externor 3 Garage Boor	£	8 CCK-19-1-1
" Caulk	\(\)	Grea Y	" (9 " "	- C	7ak-10-3-2
" Caulk	11	Grey Stap A	Cherical Bldy (1 of floor) Exterior @ Foundation ; and Gray	£.	6 (21-10-3-1
Cwlk	11	Grey I	1 " D * "	Ü	5 ak 10-2-2
Caulk	"	Gray Shop®	Chemical Blds 11 of floor / Exterior @ Lowers out	7	4 CLH-10-2-1
Caulk	1	Grey &	"Q" "		3 Cl K-10-2-2
Caulh	* "	Gray Stop (1)	Chemical Bldg /1st floor / Interior (1) 8189 GERGETE	S.	2 CLK-10-1-1
Cault	ron-frable	Black	Garage - Luncham (55) AC Extern	30429	1 CLK-16-1
e Type of Material	Material Size	Color	Sampling Location	Lab ID	Client ID
		d, Brewerton, NY	Project Location: Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY	Y 14526	Penfield, NY 14526
Date Logged In: /0/28/3 Logged In By: Att	TEM L.	Material Type/Quantity: Friable NOB X	Date Sampled: 10/16/2013 Material T	ke Drive	555 Penbrooke Drive
1 age 01/	Other	5 X	Mike Crawford	n Group	Popli Design Group
ا نر	4	5853882070	5853882060		Client Mailing Address:
Joh#: 3/88/-1383	<u> </u>	1	Fax Numb		
OFFICE USE ONLY		Mike Crawford	Client: Contact: Contact:		

Received By

Transported to Paradigm By:

Date:

10/16/2013

All samples will be analyzed by the appropriate New York State Department of Health methods (198.1,198.4 and 198.6) unless other methods are requested.

CHECK TO AUTOMATICALLY PERFORM TEM ON NOBS

10/24/13/17:09

or provide TEM contact name: Mike Crawford

TOTAL NUMBER OF SAMPLES ON ALL CHAINS OF

29

30

CUSTODY:

Mike Crawford

Fax: 585-647-3311

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CHAIN OF CUSTODY FOR PLM/TEM BULK ASBESTOS ANALYSIS

All samples will be analyzed by the appropriate New York State Department of	he appropriate New	les will be analyzed by 1	All sampl	Date:		Sampled By:
" Ca.14	٤	of dear yellow 1	c for w (10) "	Pumping Stal Entrance range to Chlorite room 10 " " clear yellow	T 57	# CLK-17-2
" Carl K	¥		D wall pipe	Pumping Sto / Got room / 1st floor @ wall pipe	Se	9 Cc K-17-1
" Carly	F	Grey	(y) Dorrant	Sludge Bldy/ Esterior (9) \$	X	8 C17-11-1
" Cellk		Gray Stop#	3 0 000-10		2	7 CCK-14-1
" Caulk	*	8/ack) / :	* @	\$	6 CLK-13-1
" Carlot	<i>;</i>	Grey	9 () "	Sludge Bldg / Interne		5 CLK-12-1
" Cault	F	Grey 1	(E) " "	The state of the s	<u>\</u>	4 CCK-))-3-2
" Caulk	" "	Grey Stop (14) Wall Pipe	Chenical bld, 12nd Plans I wall (50	3 CUT-11-3-)
	*	Gray +	(I) " "	"(2 CLK-11-2-2
Caulk	Non froble	Grey Stop @	(S) D	Chemical bldg /1st floor /Exterior	30448	1 CLX-11-2-1
e Type of Material	Material Size	Color		Sampling Location	Lab ID	Client ID
		Rd, Brewerton, NY	Guy Young	Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY	Y 14526	Penfield, NY 14526
			-	Project Location:		
Logged In Bv: A.	TEM L	×	Friable	10/16/2013	oke Drive	555 Penbrooke Drive
Date Logged In: 10 10 10		Material Type/Ouantity:	Material	Date Sampled:		
Annoon weeks and a find a second and a second a	Other	2 3 5 X		MIKE CIAWIOIG	n Group	Popli Design Group
Page i of 2	P:	Turn Around Time:	Turn Aro	Results To	SS:	Client Mailing Address:
Job#: 3/88/33	Jo	ber: 5853882070	Fax Number:	Phone Number: 5853882060		
OFFICE USE ONLY		Mike Crawford	Contact:	Client: Popli Design Group		CONTROL CONTROL STATE (CE), THE

Received By:

10/24/13 120pm

CUSTODY:

10/24/13/12:00

or provide TEM contact name: Mike Crawford

TOTAL NUMBER OF SAMPLES ON ALL CHAINS OF

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Transported to Paradigm By:

Date:

10/16/2013

Health methods (198.1,198.4 and 198.6) unless other methods are requested.

CHECK TO AUTOMATICALLY PERFORM TEM ON NOBS

All samples will be analyzed by the appropriate New York State Department of

Mike Crawford

Fax: 585-647-3311

PARADIGM

CHAIN OF CUSTODY FOR PLM/TEM BULK ASBESTOS ANALYSIS

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		e: Mike Crawford	or provide TEM contact name:	or provide	10/24/13/12:00	200	\frac{1}{2}
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	hods are requested.	(198.1,198.4 and 198.6) unless other methods are requested		Health methods	10/16/2013	Mike Crawford	Mi
ıf	rk State Department o	be analyzed by the appropriate New York State Department of		All samples will	Date:		Sampled By:
	Caclk	" "	Grey	12 Corner Joint	Pumping Sta/Chlorite soon (12) Col	1 67 8	# CLK-23-)
	Ceulk	11	Black		fumping sh / Enformance room to Christe Room (1) "	66	9 CCK-22-1
	Caclk		Sey (" (J3) "	\$ P	8 CLK-21-3
	Caulk	W.	6 rey	All pipe	Pumping Sta/Chlarite soon (1) wall	<u></u>	7 CCK-21-2
	Caulk	*	Grey Strp &	0 wall	Pumping Stal Entrace room to Chlonte Room (8) unll	ි. දි	6 CLK-21-1
	Caulk		Gray	Lourec-not	Pumping Stn/Control room /Externo Blower-at Gray	62 Pe	5 CLK-20-1
	Cault	1	Ļ	``	" @ (7) ~	6	4 CLK-19-2
	Caulh		Con Stop A		Pumping Staljet Plan (9 mindow	E	3 CLK - 19-)
	Cault	£	Grey t		" 3 Door-out	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	2 CLK-18-2
	Caulk	mathable	Gray Stop (A)	5	Purping Ston/12+ Floor 3 Door-	30458 P	1 CLK-18-1
rial	Type of Material	Material Size	Color		Sampling Location	Lab ID	Client ID
			d, Brewerton, NY	Suy Young R	Project Location: Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY		Penfield, NY 14526
[D	Date Logged In: $10 8 $ 3 Logged In By: $4 A $	TEM Logg	Material Type/Quantity: Friable NOB X T	Material T	Date Sampled: 10/16/2013		555 Penbrooke Drive
	0 u /c	Other	5. X	1 2 3	Mike Crawford	Group	Popli Design Group
***************************************		D 200 H	5853882070	1	5853882060		Cliest Medica Address
-	ころう		PT-	Fax Number	Phone Number:	<u> </u>	
ΧC	OFFICE USE ONLY	0	Mike Crawford	Contact:	Client: Popli Design Group		TRAVIAGEMEET AL SERV COS, 14C

Received By:

| **Date:** | | つり//ろ

CUSTODY:

TOTAL NUMBER OF SAMPLES ON ALL CHAINS OF

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Yol log	IBER OF SAMPLES ON ALL CHAINS OF	NUMBER OF SAI	TOTAL NUM	Date:	1.5	Received By:
	e: Mike Crawford	or provide TEM contact name:	or provid	10/24/13/12:00	N CH	Z.
TEM ON NOBS X	CHECK TO AUTOMATICALLY PERFORM TEM ON NOBS	TO AUTOMATIC	CHECK	Date:	radigm By:	Transported to Paradigm By:
ods are requested.	(198.1,198.4 and 198.6) unless other methods are requested		Health methods	10/16/2013	Mike Crawford	3
k State Department of	be analyzed by the appropriate New York State Department of		All samples will	Date:		Sampled By:
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Grut	2	6 rey	9	Punping Stal Base ment from control from	76	9 M-S-1
Sout	4	Gien V		" (T)	7	8 M-4-2
S.v+	11	Gray Strp 1		Chemical Bld, 12nd floor /wall (6	Control of the second	7 M-4-1
Leveling Compound	1	Grey I		" (f)	23	6 M-3-2
Leveling Compaced		Grey Stipp		Garage / Lunch Room / Floor (46)	72	5 M-3-1
Gastiet - NOB	" "	Black L	"(39) (39)	***		4 M-2-2
Gustle + - NOB	non-Friable	Bleck Stop	Filter Roon Door 38	Control Bldy / Transport on Room /Filter R	3	3 1 2 - 1
Grant	" 0	Brun L	(Ta)	Control Bldg/Buthroom/ronfront 6	650	2M-1-2
Grot	frable	Brown Stop A		Control Bldg / Control Room / Routvent (21)	33468	1 M-)-)
Type of Material	Material Size	Color		Sampling Location	Lab ID	Client ID
	State of the second state	≀d, Brewerton, NY	Guy Young R	Project Location: Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY		Penfield, NY 14526
Date Logged In: 10/12/13 Logged In By: AM	TEM Logge	Material Type/Quantity: Friable NOB 1	Material T	Date Sampled: 10/16/2013		555 Penbrooke Drive
6 of 12	Other Page	me: 3 5 X	Turn Around Ti	Results To Mike Crawford	Group	Client Mailing Address: Popli Design Group
3188-133	Job #:	er: 5853882070	Fax Number:	Phone Number: 5853882060		
OFFICE USE ONLY	0	Mike Crawford	Contact:	Client: Popli Design Group		ENVIRONMENTAL SERVICES, INC

Received By:

Date: 10)241/13 /200pin-

CUSTODY:

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	CHAINS OF	BER OF SAMPLES ON ALL CHAINS OF	M	TOTAL NUM			Received By:
	rd	e: Mike Crawford	or provide TEM contact name:	or provid	10/24/13/12:00		2 g
Ś	NUTOMATICALLY PERFORM TEM ON NOBS	CALLY PERFOI	TO AUTOMATIC	CHECK TO A	Date:	adigm By:	Transported to Paradigm By:
•	Health methods (198.1,198.4 and 198.6) unless other methods are requested	198.6) unless other	thods (198.1,198.4 and	Health me	10/16/2013	Mike Crawford	S
it of	All samples will be analyzed by the appropriate New York State Department of	he appropriate New	s will be analyzed by t	All sample	Date:		Sampled By:
	" flor +/c		Brown	(G)		+ 86 -	# FT-2-2
	" floor the	II.	Post-Brown stop	(2)	Chemical Blds / 2nd floor	85	9 FT-2-1
	+lortle	" "	*	(34)		S.	8 F7-1-S
	" fhor the	n,		(47)	Garage Hunch For	\$	7 FT-1-4
	floor tile	4		(23)	Control Bldg / Bethroom	8	6FT-1-3
	1) tle	-		(E)		S.	5 FT-1-2
	floor tile		white specks state	(F)	Control Bldy /Control Room	~	4 FT-)-)
Nog	Rubber like	11	Black 1	कि		3	3 M-C-3
NoB	Rubber- like	"	8)cch	So a	Contra) Bldy / Blomar Room / V.b Pad	78	2 M-6-2
NoB	Rubber-like	No Friable	8/col 517p€	V. b Pad (14)	Pump Stal Cata Room/Ar Compressor V. b Rad (14)	30477	1 M-C-1
iter	e Type of Material	Material Size	Color		Sampling Location	Lab ID	Client ID
			₹d, Brewerton, NY	Buy Young F	Project Location: Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY		Penfield, NY 14526
To Desira	Date Logged In: 10	TEM L	nob X	Material Type/Qı Friable	Date Sampled: 10/16/2013		555 Penbrooke Drive
7	Page / of _	Other P:	5 X	Turn Around Time:	Results To Mike Crawford	Group	Client Mailing Address: Popli Design Group
100	Job#: 3188-138	Jo	er: 5853882070	Fax Number:	Phone Number: 5853882060	F	
Z	OFFICE USE ONLY		Mike Crawford	Contact:	Client: Popli Design Group		TENNING IMPERIENCE SERVICESS, UNIC

Fax: 585-647-3311

CHAIN OF CUSTODY FOR PLM/TEM BULK ASBESTOS ANALYSIS

Client Mailing Address: Popli Design Group	oup	Client: Popli Design Group Phone Number: 5853882060 Results To Mike Crawford	Contact: Mike Crawford Fax Number: 5853882070 Turn Around Time: 1 2 3 5 X	d 70 X Other	OFFICE USE ONLY Job #: 3/88-/3/5 Page 8 of /2
Penfield NY 14	526	Project Location: Brewerton WTP - 5225 Gi	uv Young Rd. Brewerton, I	֡֟֝֓֓֓֓֓֓֟֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֓֓֓֓֓֟	# 1
Penfield, NY 14526	526	(3)	Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY	Y	
Client ID	Lab ID	Sampling Location	Color	Material Size	Size Type of Material
1 FTM-1-1 3	30487	Control Bldy/Control Room (8	Boats variety	Priable	Maltic
2 FTM-1-2	88	" (19)) Yellowa Brown	* "	Mastic
3 FTM-1-3	22	Control Bldg/Bath Room (27)	Yellow Grew	" "	Mast, C
4 FTm-1-4	3	Garage/Lunch Room (47)	Brown	w /	Misho
5 FTm-1-5	Le record	1, (46)	Brown	, · · · · · · · · · · · · · · · · · · ·	Mashc
6 FT 6 -1-1	ನ	Chemical Bldg/2nd floor (12)	Book Hope	Mon frieble	le 600 +
7 FT6-1-2	5	" (3)	Great C	1	" Grut
8 FM-1-1	-5	Control Bldg/Blower Room (42) Red Stop A	A Friable	Nesho
9 Fm-1-2		, 43		*	" Mahe
# FB-1-3	96	° (44)	Tan	11	nestic
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Mike C	Mike Crawford	10/16/2013		4 and 198.6) unless ot	(198.1,198.4 and 198.6) unless other methods are requested.
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\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	//	12/27/13/16:00	or provide 1 Fivi contact	M contact name: Mike Crawtord	VIOID

Received By:

Date: 10/24//3 1200pm

CUSTODY:

TOTAL NUMBER OF SAMPLES ON ALL CHAINS OF

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be analyzed by the appropriate New York State Department of	e appropriate New Y		All samples will	Date:	A TOTAL A TOTA	Sampled By:
	Manufacture of the Control of the Co					#
/ 80 U	W //	Brown J	S		T 05 B	9 E+Em-2-3
Y 100 //	1		(왕)	"	04 <i>F</i> B	8 FTEM-2-2
Vinyl Fdying + heite	*	Till-words-un The	34)	Control Blody Blower Room	· 03 AB	7 Et EM-2-1
Mustic	11 //	Yellow Co	E	Garage/Lunch Room	02	6 EM-1-4
Mastic	7	Yell	(Z)	Control Bldg / Bathroom		5 EM-1-3
Mest.c	i. "	Brown Strp A	(8)	Control Bldg / Control Room	30500	4 Ex-1-1
Ving Calo ing No		6 mg ct	(F)	Garage / Lunch man	rad C	3 E-1-4
Vins) edgina Nos		600	(52)	Control Bldy / Bathroom	\$	2 E-1-3
Vinyl edging NOB	Non Freble	Grand Stape	9	Control Bldy/Control Room	30497	1 [-)-)
Type of Material	Material Size	Color	מי	Sampling Location	Lab ID	Client ID
	(45) (55) (55)	₹d, Brewerton, NY	5225 Guy Young I	Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY	Y 14526	Pentield, NY 14526
				Project Location:		
Date Logged In: 10/25/13 Logged In By: AA	TEM Log	Material Type/Quantity: Friable NOB T	Material 7 Friable	Date Sampled: 10/16/2013	oke Drive	555 Penbrooke Drive
	Other	3 5 X	1 2	Mike Crawford	n Group	Popli Design Group
ge - q of 2	Раос	und Time:	Turn Around T	Results To	SS:	Client Mailing Address:
Job #: 3/88-133	Jot	ber: 5853882070	Fax Number:	Phone Number: 5853882060		A CONTRACTOR OF THE CONTRACTOR
OFFICE USE ONLY		Mike Crawford	Contact:	Client: Popli Design Group		THE SOMETION STREET, INC.

Received By

Transported to Paradigm By:

Date: | 19/24/13/12:20

10/16/2013

Health methods (198.1,198.4 and 198.6) unless other methods are requested.

CHECK TO AUTOMATICALLY PERFORM TEM ON NOBS

or provide TEM contact name: Mike Crawford

TOTAL NUMBER OF SAMPLES ON ALL CHAINS OF

10/24/13 100p

CUSTODY:

Mike Crawford



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TO TO SOLVE	Ų.	TOTAL NUMBER OF SAN	TOTA			Received Rv.
_	:: Mike Crawford	or provide TEM contact name:	or prov	[9/24//3//21/2	de pl	Z
I TEM ON NOBS X	ALLY PERFORM		CHEC	Date:	aradigm By:	Transported to Paradigm By:
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		Grey on		Cnatrol 8/2/ / Cnotrol Room/office (3)	07	2 1-1-2
Planter + check roc	fruble	Coop Stop		Control Bldg / Catron Room (2)	3050b	1 P-1-1
Type of Material	Material Size	Color		Sampling Location	Lab ID	Client ID
		Rd, Brewerton, NY	Guy Young	Project Location: Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY		Penfield, NY 14526
Date Logged In: $10/28/13$ Logged In By: APA	TEM Date	Material Type/Quantity: Friable X NOB 1	Materia Friable	Date Sampled: 10/16/2013	``	555 Penbrooke Drive
10 of 12	Other Page	Turn Around Time:	Turn Ar	Results To Mike Crawford	Group	Client Mailing Address: Popli Design Group
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OFFICE USE ONLY		: Mike Crawford	Contact:	Client: Popli Design Group		



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Type of Material	Material Size	Color		Sampling Location		Lab ID	Client ID
		Rd, Brewerton, NY	25 Guy Young F	Project Location: Brewerton WTP - 5225 Guy Young Rd, Brewerton, NY	Project	IY 14526	Penfield, NY 14526
Date Logged In: $10/18 D$ Logged In By: AM	TEM Date	Material Type/Quantity: Friable X NOB 7	Material 7 Friable	ampled: 10/16/2013	Date Sampled	oke Drive	555 Penbrooke Drive
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#: <u>3188-13B</u>	Job #:	er: 5853882070	Fax Number:	Phone Number: 5853882060	Phone I		
OFFICE USE ONLY		Mike Crawford	Contact:	Popli Design Group	Client:		

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10/24/13 /200m	10/24/13/12/00	Date:	10/16/2013	Date:							West Galley (53	Contal Bldy / Buth room (26)	Control Bldg / Hallmay (2	Control Oldy/Janiter Closet C	Sampling Location	Project Location: Brewerton WTP - 5225	Date Sampled: 10/16/2013	Results To Mike Crawford	Phone Number: 5853882060	Client: Popli Design Group
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ON ALL CHAINS OF 105		UTOMATICALLY PERFORM TEM ON NOBS X	nless other methods are requested.	priate New York State Department of							" " "	1 11	" "	ble TSI moded Joint	Material Size Type of Material		Date Logged In: 10/28/13 Logged In By: AM	Page /2 of /2	Job#: 3188-13B	OFFICE USE ONLY



Analytical Report For

Popli Design Group

For Lab Project ID

134073

Referencing

Brewerton WTP

Prepared

Thursday, October 31, 2013

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-1-1 PCB Control Bldg 1

Lab Sample ID:134073-01Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	Units Qualifier	Date/Time Analyzed
PCB-1016	< 12.2	mg/Kg	10/29/2013 08:20
PCB-1221	< 12.2	mg/Kg	10/29/2013 08:20
PCB-1232	< 12.2	mg/Kg	10/29/2013 08:20
PCB-1242	< 12.2	mg/Kg	10/29/2013 08:20
PCB-1248	< 12.2	mg/Kg	10/29/2013 08:20
PCB-1254	< 12.2	mg/Kg	10/29/2013 08:20
PCB-1260	< 12.2	mg/Kg	10/29/2013 08:20
PCB-1262	< 12.2	mg/Kg	10/29/2013 08:20
PCB-1268	< 12.2	mg/Kg	10/29/2013 08:20

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-1-2 PCB Control Bldg 5

Lab Sample ID:134073-02Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 14.4	mg/Kg	10/29/2013 08:43
PCB-1221	< 14.4	mg/Kg	10/29/2013 08:43
PCB-1232	< 14.4	mg/Kg	10/29/2013 08:43
PCB-1242	< 14.4	mg/Kg	10/29/2013 08:43
PCB-1248	< 14.4	mg/Kg	10/29/2013 08:43
PCB-1254	< 14.4	mg/Kg	10/29/2013 08:43
PCB-1260	< 14.4	mg/Kg	10/29/2013 08:43
PCB-1262	< 14.4	mg/Kg	10/29/2013 08:43
PCB-1268	< 14.4	mg/Kg	10/29/2013 08:43

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-1-3 PCB Control Bldg 11

Lab Sample ID:134073-03Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 16.9	mg/Kg	10/29/2013 09:06
PCB-1221	< 16.9	mg/Kg	10/29/2013 09:06
PCB-1232	< 16.9	mg/Kg	10/29/2013 09:06
PCB-1242	< 16.9	mg/Kg	10/29/2013 09:06
PCB-1248	< 16.9	mg/Kg	10/29/2013 09:06
PCB-1254	< 16.9	mg/Kg	10/29/2013 09:06
PCB-1260	< 16.9	mg/Kg	10/29/2013 09:06
PCB-1262	< 16.9	mg/Kg	10/29/2013 09:06
PCB-1268	< 16.9	mg/Kg	10/29/2013 09:06

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-2-1 PCB Control Bldg 3

Lab Sample ID:134073-04Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 16.5	mg/Kg	10/29/2013 09:30
PCB-1221	< 16.5	mg/Kg	10/29/2013 09:30
PCB-1232	< 16.5	mg/Kg	10/29/2013 09:30
PCB-1242	< 16.5	mg/Kg	10/29/2013 09:30
PCB-1248	< 16.5	mg/Kg	10/29/2013 09:30
PCB-1254	< 16.5	mg/Kg	10/29/2013 09:30
PCB-1260	< 16.5	mg/Kg	10/29/2013 09:30
PCB-1262	< 16.5	mg/Kg	10/29/2013 09:30
PCB-1268	< 16.5	mg/Kg	10/29/2013 09:30

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-2-2 PCB Control Bldg 4

Lab Sample ID:134073-05Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 14.4	mg/Kg	10/29/2013 09:53
PCB-1221	< 14.4	mg/Kg	10/29/2013 09:53
PCB-1232	< 14.4	mg/Kg	10/29/2013 09:53
PCB-1242	< 14.4	mg/Kg	10/29/2013 09:53
PCB-1248	< 14.4	mg/Kg	10/29/2013 09:53
PCB-1254	< 14.4	mg/Kg	10/29/2013 09:53
PCB-1260	< 14.4	mg/Kg	10/29/2013 09:53
PCB-1262	< 14.4	mg/Kg	10/29/2013 09:53
PCB-1268	< 14.4	mg/Kg	10/29/2013 09:53
		<i>8,</i> 8	, ,

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-2-3 PCB Control Bldg 9

Lab Sample ID:134073-06Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 11.9	mg/Kg	10/29/2013 17:02
PCB-1221	< 11.9	mg/Kg	10/29/2013 17:02
PCB-1232	< 11.9	mg/Kg	10/29/2013 17:02
PCB-1242	< 11.9	mg/Kg	10/29/2013 17:02
PCB-1248	< 11.9	mg/Kg	10/29/2013 17:02
PCB-1254	< 11.9	mg/Kg	10/29/2013 17:02
PCB-1260	< 11.9	mg/Kg	10/29/2013 17:02
PCB-1262	< 11.9	mg/Kg	10/29/2013 17:02
PCB-1268	< 11.9	mg/Kg	10/29/2013 17:02

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-3-1 PCB Control Bldg 7

Lab Sample ID:134073-07Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 16.1	mg/Kg	10/29/2013 17:25
PCB-1221	< 16.1	mg/Kg	10/29/2013 17:25
PCB-1232	< 16.1	mg/Kg	10/29/2013 17:25
PCB-1242	< 16.1	mg/Kg	10/29/2013 17:25
PCB-1248	< 16.1	mg/Kg	10/29/2013 17:25
PCB-1254	< 16.1	mg/Kg	10/29/2013 17:25
PCB-1260	< 16.1	mg/Kg	10/29/2013 17:25
PCB-1262	< 16.1	mg/Kg	10/29/2013 17:25
PCB-1268	< 16.1	mg/Kg	10/29/2013 17:25

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-3-2 PCB Control Bldg 6

Lab Sample ID:134073-08Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 14.7	mg/Kg	10/29/2013 17:48
PCB-1221	< 14.7	mg/Kg	10/29/2013 17:48
PCB-1232	< 14.7	mg/Kg	10/29/2013 17:48
PCB-1242	< 14.7	mg/Kg	10/29/2013 17:48
PCB-1248	< 14.7	mg/Kg	10/29/2013 17:48
PCB-1254	< 14.7	mg/Kg	10/29/2013 17:48
PCB-1260	< 14.7	mg/Kg	10/29/2013 17:48
PCB-1262	< 14.7	mg/Kg	10/29/2013 17:48
PCB-1268	< 14.7	mg/Kg	10/29/2013 17:48

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-3-3 PCB Control Bldg 10

Lab Sample ID:134073-09Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 18.9	mg/Kg	10/29/2013 18:58
PCB-1221	< 18.9	mg/Kg	10/29/2013 18:58
PCB-1232	< 18.9	mg/Kg	10/29/2013 18:58
PCB-1242	< 18.9	mg/Kg	10/29/2013 18:58
PCB-1248	< 18.9	mg/Kg	10/29/2013 18:58
PCB-1254	< 18.9	mg/Kg	10/29/2013 18:58
PCB-1260	< 18.9	mg/Kg	10/29/2013 18:58
PCB-1262	< 18.9	mg/Kg	10/29/2013 18:58
PCB-1268	< 18.9	mg/Kg	10/29/2013 18:58

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-4-1 PCB Control Bldg 8

Lab Sample ID:134073-10Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 18.9	mg/Kg	10/29/2013 19:21
PCB-1221	< 18.9	mg/Kg	10/29/2013 19:21
PCB-1232	< 18.9	mg/Kg	10/29/2013 19:21
PCB-1242	< 18.9	mg/Kg	10/29/2013 19:21
PCB-1248	< 18.9	mg/Kg	10/29/2013 19:21
PCB-1254	< 18.9	mg/Kg	10/29/2013 19:21
PCB-1260	< 18.9	mg/Kg	10/29/2013 19:21
PCB-1262	< 18.9	mg/Kg	10/29/2013 19:21
PCB-1268	< 18.9	mg/Kg	10/29/2013 19:21

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-5-1 PCB Control Bldg 14

Lab Sample ID:134073-11Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	Units Qualifier	Date/Time Analyzed
PCB-1016	< 17.2	mg/Kg	10/29/2013 19:44
PCB-1221	< 17.2	mg/Kg	10/29/2013 19:44
PCB-1232	< 17.2	mg/Kg	10/29/2013 19:44
PCB-1242	< 17.2	mg/Kg	10/29/2013 19:44
PCB-1248	< 17.2	mg/Kg	10/29/2013 19:44
PCB-1254	< 17.2	mg/Kg	10/29/2013 19:44
PCB-1260	< 17.2	mg/Kg	10/29/2013 19:44
PCB-1262	< 17.2	mg/Kg	10/29/2013 19:44
PCB-1268	< 17.2	mg/Kg	10/29/2013 19:44

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-5-2 PCB Control Bldg 15

Lab Sample ID:134073-12Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 13.6	mg/Kg	10/29/2013 20:07
PCB-1221	< 13.6	mg/Kg	10/29/2013 20:07
PCB-1232	< 13.6	mg/Kg	10/29/2013 20:07
PCB-1242	< 13.6	mg/Kg	10/29/2013 20:07
PCB-1248	< 13.6	mg/Kg	10/29/2013 20:07
PCB-1254	< 13.6	mg/Kg	10/29/2013 20:07
PCB-1260	< 13.6	mg/Kg	10/29/2013 20:07
PCB-1262	< 13.6	mg/Kg	10/29/2013 20:07
PCB-1268	< 13.6	mg/Kg	10/29/2013 20:07

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-6-1 PCB Control Bldg 16

Lab Sample ID:134073-13Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 18.9	mg/Kg	10/29/2013 20:30
PCB-1221	< 18.9	mg/Kg	10/29/2013 20:30
PCB-1232	< 18.9	mg/Kg	10/29/2013 20:30
PCB-1242	< 18.9	mg/Kg	10/29/2013 20:30
PCB-1248	< 18.9	mg/Kg	10/29/2013 20:30
PCB-1254	< 18.9	mg/Kg	10/29/2013 20:30
PCB-1260	< 18.9	mg/Kg	10/29/2013 20:30
PCB-1262	< 18.9	mg/Kg	10/29/2013 20:30
PCB-1268	< 18.9	mg/Kg	10/29/2013 20:30

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-6-2 PCB Control Bldg 17

Lab Sample ID:134073-14Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 14.2	mg/Kg	10/29/2013 20:53
PCB-1221	< 14.2	mg/Kg	10/29/2013 20:53
PCB-1232	< 14.2	mg/Kg	10/29/2013 20:53
PCB-1242	< 14.2	mg/Kg	10/29/2013 20:53
PCB-1248	< 14.2	mg/Kg	10/29/2013 20:53
PCB-1254	< 14.2	mg/Kg	10/29/2013 20:53
PCB-1260	< 14.2	mg/Kg	10/29/2013 20:53
PCB-1262	< 14.2	mg/Kg	10/29/2013 20:53
PCB-1268	< 14.2	mg/Kg	10/29/2013 20:53

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-6-3 PCB Control Bldg 37

Lab Sample ID:134073-15Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 15.5	mg/Kg	10/29/2013 21:17
PCB-1221	< 15.5	mg/Kg	10/29/2013 21:17
PCB-1232	< 15.5	mg/Kg	10/29/2013 21:17
PCB-1242	< 15.5	mg/Kg	10/29/2013 21:17
PCB-1248	< 15.5	mg/Kg	10/29/2013 21:17
PCB-1254	< 15.5	mg/Kg	10/29/2013 21:17
PCB-1260	< 15.5	mg/Kg	10/29/2013 21:17
PCB-1262	< 15.5	mg/Kg	10/29/2013 21:17
PCB-1268	< 15.5	mg/Kg	10/29/2013 21:17

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-7-1 PCB Control Bldg 22

Lab Sample ID:134073-16Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	Units Qualifier	Date/Time Analyzed
PCB-1016	< 19.0	mg/Kg	10/29/2013 21:40
PCB-1221	< 19.0	mg/Kg	10/29/2013 21:40
PCB-1232	< 19.0	mg/Kg	10/29/2013 21:40
PCB-1242	< 19.0	mg/Kg	10/29/2013 21:40
PCB-1248	< 19.0	mg/Kg	10/29/2013 21:40
PCB-1254	< 19.0	mg/Kg	10/29/2013 21:40
PCB-1260	< 19.0	mg/Kg	10/29/2013 21:40
PCB-1262	< 19.0	mg/Kg	10/29/2013 21:40
PCB-1268	< 19.0	mg/Kg	10/29/2013 21:40

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-8-1 PCB Control Bldg 40

Lab Sample ID:134073-17Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 19.4	mg/Kg	10/29/2013 22:03
PCB-1221	< 19.4	mg/Kg	10/29/2013 22:03
PCB-1232	< 19.4	mg/Kg	10/29/2013 22:03
PCB-1242	< 19.4	mg/Kg	10/29/2013 22:03
PCB-1248	< 19.4	mg/Kg	10/29/2013 22:03
PCB-1254	< 19.4	mg/Kg	10/29/2013 22:03
PCB-1260	< 19.4	mg/Kg	10/29/2013 22:03
PCB-1262	< 19.4	mg/Kg	10/29/2013 22:03
PCB-1268	< 19.4	mg/Kg	10/29/2013 22:03

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-8-2 PCB Control Bldg 41

Lab Sample ID:134073-18Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 17.7	mg/Kg	10/29/2013 22:26
PCB-1221	< 17.7	mg/Kg	10/29/2013 22:26
PCB-1232	< 17.7	mg/Kg	10/29/2013 22:26
PCB-1242	< 17.7	mg/Kg	10/29/2013 22:26
PCB-1248	< 17.7	mg/Kg	10/29/2013 22:26
PCB-1254	< 17.7	mg/Kg	10/29/2013 22:26
PCB-1260	< 17.7	mg/Kg	10/29/2013 22:26
PCB-1262	< 17.7	mg/Kg	10/29/2013 22:26
PCB-1268	< 17.7	mg/Kg	10/29/2013 22:26

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-16-1 PCB Control Bldg 55

Lab Sample ID:134073-19Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 18.0	mg/Kg	10/29/2013 22:49
PCB-1221	< 18.0	mg/Kg	10/29/2013 22:49
PCB-1232	< 18.0	mg/Kg	10/29/2013 22:49
PCB-1242	< 18.0	mg/Kg	10/29/2013 22:49
PCB-1248	< 18.0	mg/Kg	10/29/2013 22:49
PCB-1254	< 18.0	mg/Kg	10/29/2013 22:49
PCB-1260	< 18.0	mg/Kg	10/29/2013 22:49
PCB-1262	< 18.0	mg/Kg	10/29/2013 22:49
PCB-1268	< 18.0	mg/Kg	10/29/2013 22:49

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-9-1 PCB West Galley 51

Lab Sample ID:134073-20Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

PCB-1016 < 17.5 mg/Kg 10/30/2013 03:04 PCB-1221 < 17.5 mg/Kg 10/30/2013 03:04	<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1221 <17.5 mg/Kg 10/30/2013 03:04	PCB-1016	< 17.5	mg/Kg	10/30/2013 03:04
	PCB-1221	< 17.5	mg/Kg	10/30/2013 03:04
PCB-1232 < 17.5 mg/Kg 10/30/2013 03:04	PCB-1232	< 17.5	mg/Kg	10/30/2013 03:04
PCB-1242 <17.5 mg/Kg 10/30/2013 03:04	PCB-1242	< 17.5	mg/Kg	10/30/2013 03:04
PCB-1248 < 17.5 mg/Kg 10/30/2013 03:04	PCB-1248	< 17.5	mg/Kg	10/30/2013 03:04
PCB-1254 < 17.5 mg/Kg 10/30/2013 03:04	PCB-1254	< 17.5	mg/Kg	10/30/2013 03:04
PCB-1260 < 17.5 mg/Kg 10/30/2013 03:04	PCB-1260	< 17.5	mg/Kg	10/30/2013 03:04
PCB-1262 < 17.5 mg/Kg 10/30/2013 03:04	PCB-1262	< 17.5	mg/Kg	10/30/2013 03:04
PCB-1268 < 17.5 mg/Kg 10/30/2013 03:04	PCB-1268	< 17.5	mg/Kg	10/30/2013 03:04

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-9-2 PCB South Galley 52

Lab Sample ID:134073-21Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 17.1	mg/Kg	10/30/2013 03:27
PCB-1221	< 17.1	mg/Kg	10/30/2013 03:27
PCB-1232	< 17.1	mg/Kg	10/30/2013 03:27
PCB-1242	< 17.1	mg/Kg	10/30/2013 03:27
PCB-1248	< 17.1	mg/Kg	10/30/2013 03:27
PCB-1254	< 17.1	mg/Kg	10/30/2013 03:27
PCB-1260	< 17.1	mg/Kg	10/30/2013 03:27
PCB-1262	< 17.1	mg/Kg	10/30/2013 03:27
PCB-1268	< 17.1	mg/Kg	10/30/2013 03:27

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-10-1-1 PCB Chemical Bldg 1st 1

Lab Sample ID:134073-22Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	Units Qualifier	Date/Time Analyzed
PCB-1016	< 18.9	mg/Kg	10/30/2013 03:50
PCB-1221	< 18.9	mg/Kg	10/30/2013 03:50
PCB-1232	< 18.9	mg/Kg	10/30/2013 03:50
PCB-1242	< 18.9	mg/Kg	10/30/2013 03:50
PCB-1248	< 18.9	mg/Kg	10/30/2013 03:50
PCB-1254	< 18.9	mg/Kg	10/30/2013 03:50
PCB-1260	< 18.9	mg/Kg	10/30/2013 03:50
PCB-1262	< 18.9	mg/Kg	10/30/2013 03:50
PCB-1268	< 18.9	mg/Kg	10/30/2013 03:50

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-10-1-2 PCB Chemical Bldg 1st 2

Lab Sample ID:134073-23Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	Units Qualifier	Date/Time Analyzed
PCB-1016	< 17.4	mg/Kg	10/30/2013 04:13
PCB-1221	< 17.4	mg/Kg	10/30/2013 04:13
PCB-1232	< 17.4	mg/Kg	10/30/2013 04:13
PCB-1242	< 17.4	mg/Kg	10/30/2013 04:13
PCB-1248	< 17.4	mg/Kg	10/30/2013 04:13
PCB-1254	< 17.4	mg/Kg	10/30/2013 04:13
PCB-1260	< 17.4	mg/Kg	10/30/2013 04:13
PCB-1262	< 17.4	mg/Kg	10/30/2013 04:13
PCB-1268	< 17.4	mg/Kg	10/30/2013 04:13

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-10-2-1 PCB Chemical Bldg 1st 6

Lab Sample ID:134073-24Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 16.3	mg/Kg	10/30/2013 05:23
PCB-1221	< 16.3	mg/Kg	10/30/2013 05:23
PCB-1232	< 16.3	mg/Kg	10/30/2013 05:23
PCB-1242	< 16.3	mg/Kg	10/30/2013 05:23
PCB-1248	< 16.3	mg/Kg	10/30/2013 05:23
PCB-1254	< 16.3	mg/Kg	10/30/2013 05:23
PCB-1260	< 16.3	mg/Kg	10/30/2013 05:23
PCB-1262	< 16.3	mg/Kg	10/30/2013 05:23
PCB-1268	< 16.3	mg/Kg	10/30/2013 05:23

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-10-2-2 PCB Chemical Bldg 1st 7

Lab Sample ID:134073-25Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 16.0	mg/Kg	10/30/2013 05:46
PCB-1221	< 16.0	mg/Kg	10/30/2013 05:46
PCB-1232	< 16.0	mg/Kg	10/30/2013 05:46
PCB-1242	< 16.0	mg/Kg	10/30/2013 05:46
PCB-1248	< 16.0	mg/Kg	10/30/2013 05:46
PCB-1254	< 16.0	mg/Kg	10/30/2013 05:46
PCB-1260	< 16.0	mg/Kg	10/30/2013 05:46
PCB-1262	< 16.0	mg/Kg	10/30/2013 05:46
PCB-1268	< 16.0	mg/Kg	10/30/2013 05:46

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-10-3-1 PCB Chemical Bldg 1st 8

Lab Sample ID:134073-26Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 20.0	mg/Kg	10/30/2013 06:09
PCB-1221	< 20.0	mg/Kg	10/30/2013 06:09
PCB-1232	< 20.0	mg/Kg	10/30/2013 06:09
PCB-1242	< 20.0	mg/Kg	10/30/2013 06:09
PCB-1248	< 20.0	mg/Kg	10/30/2013 06:09
PCB-1254	< 20.0	mg/Kg	10/30/2013 06:09
PCB-1260	< 20.0	mg/Kg	10/30/2013 06:09
PCB-1262	< 20.0	mg/Kg	10/30/2013 06:09
PCB-1268	< 20.0	mg/Kg	10/30/2013 06:09

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-10-3-2 PCB Chemical Bldg 1st 9

Lab Sample ID:134073-27Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	Result	Units Qualifier	Date/Time Analyzed
PCB-1016	< 18.2	mg/Kg	10/30/2013 06:32
PCB-1221	< 18.2	mg/Kg	10/30/2013 06:32
PCB-1232	< 18.2	mg/Kg	10/30/2013 06:32
PCB-1242	< 18.2	mg/Kg	10/30/2013 06:32
PCB-1248	< 18.2	mg/Kg	10/30/2013 06:32
PCB-1254	< 18.2	mg/Kg	10/30/2013 06:32
PCB-1260	< 18.2	mg/Kg	10/30/2013 06:32
PCB-1262	< 18.2	mg/Kg	10/30/2013 06:32
PCB-1268	< 18.2	mg/Kg	10/30/2013 06:32

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-11-1-1 PCB Chemical Bldg 1st 3

Lab Sample ID:134073-28Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 17.4	mg/Kg	10/30/2013 06:55
PCB-1221	< 17.4	mg/Kg	10/30/2013 06:55
PCB-1232	< 17.4	mg/Kg	10/30/2013 06:55
PCB-1242	< 17.4	mg/Kg	10/30/2013 06:55
PCB-1248	< 17.4	mg/Kg	10/30/2013 06:55
PCB-1254	< 17.4	mg/Kg	10/30/2013 06:55
PCB-1260	< 17.4	mg/Kg	10/30/2013 06:55
PCB-1262	< 17.4	mg/Kg	10/30/2013 06:55
PCB-1268	< 17.4	mg/Kg	10/30/2013 06:55

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-11-1-2 PCB Chemical Bldg 1st 10

Lab Sample ID:134073-29Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	Result	Units Qualifier	Date/Time Analyzed
PCB-1016	< 19.4	mg/Kg	10/30/2013 07:18
PCB-1221	< 19.4	mg/Kg	10/30/2013 07:18
PCB-1232	< 19.4	mg/Kg	10/30/2013 07:18
PCB-1242	< 19.4	mg/Kg	10/30/2013 07:18
PCB-1248	< 19.4	mg/Kg	10/30/2013 07:18
PCB-1254	< 19.4	mg/Kg	10/30/2013 07:18
PCB-1260	< 19.4	mg/Kg	10/30/2013 07:18
PCB-1262	< 19.4	mg/Kg	10/30/2013 07:18
PCB-1268	< 19.4	mg/Kg	10/30/2013 07:18

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-11-2-1 PCB Chemical Bldg 1st 5

Lab Sample ID:134073-30Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 16.0	mg/Kg	10/30/2013 07:42
PCB-1221	< 16.0	mg/Kg	10/30/2013 07:42
PCB-1232	< 16.0	mg/Kg	10/30/2013 07:42
PCB-1242	< 16.0	mg/Kg	10/30/2013 07:42
PCB-1248	< 16.0	mg/Kg	10/30/2013 07:42
PCB-1254	< 16.0	mg/Kg	10/30/2013 07:42
PCB-1260	< 16.0	mg/Kg	10/30/2013 07:42
PCB-1262	< 16.0	mg/Kg	10/30/2013 07:42
PCB-1268	< 16.0	mg/Kg	10/30/2013 07:42

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-11-2-2 PCB Chemical Bldg 1st 11

Lab Sample ID:134073-31Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 12.8	mg/Kg	10/30/2013 08:05
PCB-1221	< 12.8	mg/Kg	10/30/2013 08:05
PCB-1232	< 12.8	mg/Kg	10/30/2013 08:05
PCB-1242	< 12.8	mg/Kg	10/30/2013 08:05
PCB-1248	< 12.8	mg/Kg	10/30/2013 08:05
PCB-1254	< 12.8	mg/Kg	10/30/2013 08:05
PCB-1260	< 12.8	mg/Kg	10/30/2013 08:05
PCB-1262	< 12.8	mg/Kg	10/30/2013 08:05
PCB-1268	< 12.8	mg/Kg	10/30/2013 08:05

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-11-3-1 PCB Chemical Bldg 2nd 14

Lab Sample ID:134073-32Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 18.5	mg/Kg	10/30/2013 08:28
PCB-1221	< 18.5	mg/Kg	10/30/2013 08:28
PCB-1232	< 18.5	mg/Kg	10/30/2013 08:28
PCB-1242	< 18.5	mg/Kg	10/30/2013 08:28
PCB-1248	< 18.5	mg/Kg	10/30/2013 08:28
PCB-1254	< 18.5	mg/Kg	10/30/2013 08:28
PCB-1260	< 18.5	mg/Kg	10/30/2013 08:28
PCB-1262	< 18.5	mg/Kg	10/30/2013 08:28
PCB-1268	< 18.5	mg/Kg	10/30/2013 08:28

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-11-3-2 PCB Chemical Bldg 2nd 15

Lab Sample ID:134073-33Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 18.2	mg/Kg	10/30/2013 08:51
PCB-1221	< 18.2	mg/Kg	10/30/2013 08:51
PCB-1232	< 18.2	mg/Kg	10/30/2013 08:51
PCB-1242	< 18.2	mg/Kg	10/30/2013 08:51
PCB-1248	< 18.2	mg/Kg	10/30/2013 08:51
PCB-1254	< 18.2	mg/Kg	10/30/2013 08:51
PCB-1260	< 18.2	mg/Kg	10/30/2013 08:51
PCB-1262	< 18.2	mg/Kg	10/30/2013 08:51
PCB-1268	< 18.2	mg/Kg	10/30/2013 08:51

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-12-1 PCB Sludge Bldg 1

Lab Sample ID:134073-34Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 13.3	mg/Kg	10/30/2013 09:14
PCB-1221	< 13.3	mg/Kg	10/30/2013 09:14
PCB-1232	< 13.3	mg/Kg	10/30/2013 09:14
PCB-1242	< 13.3	mg/Kg	10/30/2013 09:14
PCB-1248	< 13.3	mg/Kg	10/30/2013 09:14
PCB-1254	< 13.3	mg/Kg	10/30/2013 09:14
PCB-1260	< 13.3	mg/Kg	10/30/2013 09:14
PCB-1262	< 13.3	mg/Kg	10/30/2013 09:14
PCB-1268	< 13.3	mg/Kg	10/30/2013 09:14

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-13-1 PCB Sludge Bldg 2

Lab Sample ID:134073-35Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 12.1	mg/Kg	10/30/2013 09:37
PCB-1221	< 12.1	mg/Kg	10/30/2013 09:37
PCB-1232	< 12.1	mg/Kg	10/30/2013 09:37
PCB-1242	< 12.1	mg/Kg	10/30/2013 09:37
PCB-1248	< 12.1	mg/Kg	10/30/2013 09:37
PCB-1254	< 12.1	mg/Kg	10/30/2013 09:37
PCB-1260	< 12.1	mg/Kg	10/30/2013 09:37
PCB-1262	< 12.1	mg/Kg	10/30/2013 09:37
PCB-1268	< 12.1	mg/Kg	10/30/2013 09:37

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-14-1 PCB Sludge Bldg 3

Lab Sample ID:134073-36Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 17.9	mg/Kg	10/30/2013 10:01
PCB-1221	< 17.9	mg/Kg	10/30/2013 10:01
PCB-1232	< 17.9	mg/Kg	10/30/2013 10:01
PCB-1242	< 17.9	mg/Kg	10/30/2013 10:01
PCB-1248	< 17.9	mg/Kg	10/30/2013 10:01
PCB-1254	< 17.9	mg/Kg	10/30/2013 10:01
PCB-1260	< 17.9	mg/Kg	10/30/2013 10:01
PCB-1262	< 17.9	mg/Kg	10/30/2013 10:01
PCB-1268	< 17.9	mg/Kg	10/30/2013 10:01

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-14-2 PCB Sludge Bldg 4

Lab Sample ID:134073-37Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	Units Qualifier	Date/Time Analyzed
PCB-1016	< 14.8	mg/Kg	10/30/2013 10:24
PCB-1221	< 14.8	mg/Kg	10/30/2013 10:24
PCB-1232	< 14.8	mg/Kg	10/30/2013 10:24
PCB-1242	< 14.8	mg/Kg	10/30/2013 10:24
PCB-1248	< 14.8	mg/Kg	10/30/2013 10:24
PCB-1254	< 14.8	mg/Kg	10/30/2013 10:24
PCB-1260	< 14.8	mg/Kg	10/30/2013 10:24
PCB-1262	< 14.8	mg/Kg	10/30/2013 10:24
PCB-1268	< 14.8	mg/Kg	10/30/2013 10:24

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-17-1 PCB Pump Stn 1

Lab Sample ID:134073-38Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 13.5	mg/Kg	10/30/2013 10:47
PCB-1221	< 13.5	mg/Kg	10/30/2013 10:47
PCB-1232	< 13.5	mg/Kg	10/30/2013 10:47
PCB-1242	< 13.5	mg/Kg	10/30/2013 10:47
PCB-1248	< 13.5	mg/Kg	10/30/2013 10:47
PCB-1254	< 13.5	mg/Kg	10/30/2013 10:47
PCB-1260	< 13.5	mg/Kg	10/30/2013 10:47
PCB-1262	< 13.5	mg/Kg	10/30/2013 10:47
PCB-1268	< 13.5	mg/Kg	10/30/2013 10:47

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-17-2 PCB Pump Stn 10

Lab Sample ID:134073-39Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 17.4	mg/Kg	10/30/2013 11:10
PCB-1221	< 17.4	mg/Kg	10/30/2013 11:10
PCB-1232	< 17.4	mg/Kg	10/30/2013 11:10
PCB-1242	< 17.4	mg/Kg	10/30/2013 11:10
PCB-1248	< 17.4	mg/Kg	10/30/2013 11:10
PCB-1254	< 17.4	mg/Kg	10/30/2013 11:10
PCB-1260	< 17.4	mg/Kg	10/30/2013 11:10
PCB-1262	< 17.4	mg/Kg	10/30/2013 11:10
PCB-1268	< 17.4	mg/Kg	10/30/2013 11:10

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-18-1 PCB Pump Stn 2

Lab Sample ID:134073-40Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	Result	Units Qualifier	Date/Time Analyzed
PCB-1016	< 14.5	mg/Kg	10/30/2013 20:27
PCB-1221	< 14.5	mg/Kg	10/30/2013 20:27
PCB-1232	< 14.5	mg/Kg	10/30/2013 20:27
PCB-1242	< 14.5	mg/Kg	10/30/2013 20:27
PCB-1248	< 14.5	mg/Kg	10/30/2013 20:27
PCB-1254	< 14.5	mg/Kg	10/30/2013 20:27
PCB-1260	< 14.5	mg/Kg	10/30/2013 20:27
PCB-1262	< 14.5	mg/Kg	10/30/2013 20:27
PCB-1268	< 14.5	mg/Kg	10/30/2013 20:27

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-18-2 PCB Pump Stn 3

Lab Sample ID:134073-41Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 10.2	mg/Kg	10/30/2013 21:37
PCB-1221	< 10.2	mg/Kg	10/30/2013 21:37
PCB-1232	< 10.2	mg/Kg	10/30/2013 21:37
PCB-1242	< 10.2	mg/Kg	10/30/2013 21:37
PCB-1248	< 10.2	mg/Kg	10/30/2013 21:37
PCB-1254	< 10.2	mg/Kg	10/30/2013 21:37
PCB-1260	< 10.2	mg/Kg	10/30/2013 21:37
PCB-1262	< 10.2	mg/Kg	10/30/2013 21:37
PCB-1268	< 10.2	mg/Kg	10/30/2013 21:37

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-19-1 PCB Pump Stn 4

Lab Sample ID:134073-42Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 11.5	mg/Kg	10/30/2013 22:00
PCB-1221	< 11.5	mg/Kg	10/30/2013 22:00
PCB-1232	< 11.5	mg/Kg	10/30/2013 22:00
PCB-1242	< 11.5	mg/Kg	10/30/2013 22:00
PCB-1248	< 11.5	mg/Kg	10/30/2013 22:00
PCB-1254	< 11.5	mg/Kg	10/30/2013 22:00
PCB-1260	< 11.5	mg/Kg	10/30/2013 22:00
PCB-1262	< 11.5	mg/Kg	10/30/2013 22:00
PCB-1268	< 11.5	mg/Kg	10/30/2013 22:00

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-19-2 PCB Pump Stn 7

Lab Sample ID:134073-43Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 11.3	mg/Kg	10/30/2013 22:23
PCB-1221	< 11.3	mg/Kg	10/30/2013 22:23
PCB-1232	< 11.3	mg/Kg	10/30/2013 22:23
PCB-1242	< 11.3	mg/Kg	10/30/2013 22:23
PCB-1248	< 11.3	mg/Kg	10/30/2013 22:23
PCB-1254	< 11.3	mg/Kg	10/30/2013 22:23
PCB-1260	< 11.3	mg/Kg	10/30/2013 22:23
PCB-1262	< 11.3	mg/Kg	10/30/2013 22:23
PCB-1268	< 11.3	mg/Kg	10/30/2013 22:23

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-20-1 PCB Pump Stn 5

Lab Sample ID:134073-44Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 13.2	mg/Kg	10/30/2013 22:46
PCB-1221	< 13.2	mg/Kg	10/30/2013 22:46
PCB-1232	< 13.2	mg/Kg	10/30/2013 22:46
PCB-1242	< 13.2	mg/Kg	10/30/2013 22:46
PCB-1248	< 13.2	mg/Kg	10/30/2013 22:46
PCB-1254	< 13.2	mg/Kg	10/30/2013 22:46
PCB-1260	< 13.2	mg/Kg	10/30/2013 22:46
PCB-1262	< 13.2	mg/Kg	10/30/2013 22:46
PCB-1268	< 13.2	mg/Kg	10/30/2013 22:46

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-21-1 PCB Pump Stn 8

Lab Sample ID:134073-45Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 18.7	mg/Kg	10/30/2013 23:09
PCB-1221	< 18.7	mg/Kg	10/30/2013 23:09
PCB-1232	< 18.7	mg/Kg	10/30/2013 23:09
PCB-1242	< 18.7	mg/Kg	10/30/2013 23:09
PCB-1248	< 18.7	mg/Kg	10/30/2013 23:09
PCB-1254	< 18.7	mg/Kg	10/30/2013 23:09
PCB-1260	< 18.7	mg/Kg	10/30/2013 23:09
PCB-1262	< 18.7	mg/Kg	10/30/2013 23:09
PCB-1268	< 18.7	mg/Kg	10/30/2013 23:09

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-21-2 PCB Pump Stn 11

Lab Sample ID:134073-46Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 13.4	mg/Kg	10/30/2013 23:32
PCB-1221	< 13.4	mg/Kg	10/30/2013 23:32
PCB-1232	< 13.4	mg/Kg	10/30/2013 23:32
PCB-1242	< 13.4	mg/Kg	10/30/2013 23:32
PCB-1248	< 13.4	mg/Kg	10/30/2013 23:32
PCB-1254	< 13.4	mg/Kg	10/30/2013 23:32
PCB-1260	< 13.4	mg/Kg	10/30/2013 23:32
PCB-1262	< 13.4	mg/Kg	10/30/2013 23:32
PCB-1268	< 13.4	mg/Kg	10/30/2013 23:32

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-21-3 PCB Pump Stn 13

Lab Sample ID:134073-47Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 12.4	mg/Kg	10/30/2013 23:55
PCB-1221	< 12.4	mg/Kg	10/30/2013 23:55
PCB-1232	< 12.4	mg/Kg	10/30/2013 23:55
PCB-1242	< 12.4	mg/Kg	10/30/2013 23:55
PCB-1248	< 12.4	mg/Kg	10/30/2013 23:55
PCB-1254	< 12.4	mg/Kg	10/30/2013 23:55
PCB-1260	< 12.4	mg/Kg	10/30/2013 23:55
PCB-1262	< 12.4	mg/Kg	10/30/2013 23:55
PCB-1268	< 12.4	mg/Kg	10/30/2013 23:55

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-22-1 PCB Pump Stn 9

Lab Sample ID:134073-48Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 14.3	mg/Kg	10/31/2013 00:19
PCB-1221	< 14.3	mg/Kg	10/31/2013 00:19
PCB-1232	< 14.3	mg/Kg	10/31/2013 00:19
PCB-1242	< 14.3	mg/Kg	10/31/2013 00:19
PCB-1248	< 14.3	mg/Kg	10/31/2013 00:19
PCB-1254	< 14.3	mg/Kg	10/31/2013 00:19
PCB-1260	< 14.3	mg/Kg	10/31/2013 00:19
PCB-1262	< 14.3	mg/Kg	10/31/2013 00:19
PCB-1268	< 14.3	mg/Kg	10/31/2013 00:19

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: CLK-23-1 PCB Pump Stn 12

Lab Sample ID:134073-49Date/Time Sampled: 10/18/2013Matrix:CaulkDate Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	Units Qualifier	Date/Time Analyzed
PCB-1016	< 15.5	mg/Kg	10/31/2013 00:42
PCB-1221	< 15.5	mg/Kg	10/31/2013 00:42
PCB-1232	< 15.5	mg/Kg	10/31/2013 00:42
PCB-1242	< 15.5	mg/Kg	10/31/2013 00:42
PCB-1248	< 15.5	mg/Kg	10/31/2013 00:42
PCB-1254	< 15.5	mg/Kg	10/31/2013 00:42
PCB-1260	< 15.5	mg/Kg	10/31/2013 00:42
PCB-1262	< 15.5	mg/Kg	10/31/2013 00:42
PCB-1268	< 15.5	mg/Kg	10/31/2013 00:42

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: M-2-1 PCB Control Bldg 38

 Lab Sample ID:
 134073-50
 Date/Time Sampled: 10/18/2013

 Matrix:
 Solid
 Date Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 26.5	mg/Kg	10/31/2013 01:05
PCB-1221	< 26.5	mg/Kg	10/31/2013 01:05
PCB-1232	< 26.5	mg/Kg	10/31/2013 01:05
PCB-1242	< 26.5	mg/Kg	10/31/2013 01:05
PCB-1248	< 26.5	mg/Kg	10/31/2013 01:05
PCB-1254	< 26.5	mg/Kg	10/31/2013 01:05
PCB-1260	< 26.5	mg/Kg	10/31/2013 01:05
PCB-1262	< 26.5	mg/Kg	10/31/2013 01:05
PCB-1268	< 26.5	mg/Kg	10/31/2013 01:05

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: M-2-2 PCB Control Bldg 39

 Lab Sample ID:
 134073-51
 Date/Time Sampled: 10/18/2013

 Matrix:
 Solid
 Date Received:
 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 17.5	mg/Kg	10/31/2013 01:28
PCB-1221	< 17.5	mg/Kg	10/31/2013 01:28
PCB-1232	< 17.5	mg/Kg	10/31/2013 01:28
PCB-1242	< 17.5	mg/Kg	10/31/2013 01:28
PCB-1248	< 17.5	mg/Kg	10/31/2013 01:28
PCB-1254	< 17.5	mg/Kg	10/31/2013 01:28
PCB-1260	< 17.5	mg/Kg	10/31/2013 01:28
PCB-1262	< 17.5	mg/Kg	10/31/2013 01:28
PCB-1268	< 17.5	mg/Kg	10/31/2013 01:28

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: M-6-1 PCB Pump Stn 14

 Lab Sample ID:
 134073-52
 Date/Time Sampled: 10/18/2013

 Matrix:
 Solid
 Date Received: 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 16.9	mg/Kg	10/31/2013 01:51
PCB-1221	< 16.9	mg/Kg	10/31/2013 01:51
PCB-1232	< 16.9	mg/Kg	10/31/2013 01:51
PCB-1242	< 16.9	mg/Kg	10/31/2013 01:51
PCB-1248	< 16.9	mg/Kg	10/31/2013 01:51
PCB-1254	< 16.9	mg/Kg	10/31/2013 01:51
PCB-1260	< 16.9	mg/Kg	10/31/2013 01:51
PCB-1262	< 16.9	mg/Kg	10/31/2013 01:51
PCB-1268	< 16.9	mg/Kg	10/31/2013 01:51

Method Reference(s): EPA 8082A EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: M-6-2 PCB Control Bldg 50a

 Lab Sample ID:
 134073-53
 Date/Time Sampled: 10/18/2013

 Matrix:
 Solid
 Date Received:
 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 12.5	mg/Kg	10/31/2013 02:14
PCB-1221	< 12.5	mg/Kg	10/31/2013 02:14
PCB-1232	< 12.5	mg/Kg	10/31/2013 02:14
PCB-1242	< 12.5	mg/Kg	10/31/2013 02:14
PCB-1248	< 12.5	mg/Kg	10/31/2013 02:14
PCB-1254	< 12.5	mg/Kg	10/31/2013 02:14
PCB-1260	< 12.5	mg/Kg	10/31/2013 02:14
PCB-1262	< 12.5	mg/Kg	10/31/2013 02:14
PCB-1268	< 12.5	mg/Kg	10/31/2013 02:14

Method Reference(s): EPA 8082A

EPA 3550C



Client: Popli Design Group

Project Reference: Brewerton WTP

Sample Identifier: M-6-3 PCB Control Bldg 50b

 Lab Sample ID:
 134073-54
 Date/Time Sampled: 10/18/2013

 Matrix:
 Solid
 Date Received:
 10/24/2013

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u> <u>Qualifier</u>	Date/Time Analyzed
PCB-1016	< 11.6	mg/Kg	10/31/2013 02:37
PCB-1221	< 11.6	mg/Kg	10/31/2013 02:37
PCB-1232	< 11.6	mg/Kg	10/31/2013 02:37
PCB-1242	< 11.6	mg/Kg	10/31/2013 02:37
PCB-1248	< 11.6	mg/Kg	10/31/2013 02:37
PCB-1254	< 11.6	mg/Kg	10/31/2013 02:37
PCB-1260	< 11.6	mg/Kg	10/31/2013 02:37
PCB-1262	< 11.6	mg/Kg	10/31/2013 02:37
PCB-1268	< 11.6	mg/Kg	10/31/2013 02:37

Method Reference(s): EPA 8082A EPA 3550C



Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

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All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.

"E" = Result has been estimated, calibration limit exceeded.

"Z" = See case narrative.

"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.

"M" = Matrix spike recoveries outside OC limits. Matrix bias indicated.

"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

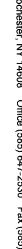
"V" = Sample concentration is >10 times the spike. No meaningful Spike Recovery can be calculated.

"I" = Result estimated between the quantitation limit and half the quantitation limit.

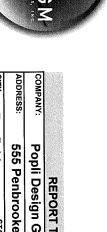
"L" = Laboratory Control Sample recovery outside accepted OC limits.

"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958







Brewerton WTP PROJECT NAME/SITE NAME: CITY: :NTTA COMMENTS: PHONE: 5853882060 Mike Crawford Penfield Popli Design Group 555 Penbrooke Dr. REPORT TO: FAX: STATE: NY 5853882070 14526 CITY: PHONE: :NTTA COMPANY: ADDRESS: REQUESTED ANALYSIS Same INVOICE TO: FAX: TURNAROUND TIME: (WORKING DAYS) Quotation # 1340 73 LAB PROJECT #: ယ × 5 CLIENT PROJECT #: STD OTHER

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10/18/13			×	CLH-1-3 PCB	Caulk	<u>_</u>	×				11 2	(3		03	1
10/18/13			×	CL4-2-1 PCB	Caulk		×				7	"			0 4	
10/18/13			×	CLK-2-2 PCB	Caulk	<u> </u>	X				11 /	=	9		0 5	<u></u>
10/18/13			×	CC 1-2-3 PCB	Caulk		×				"	"	9	<u> </u>	06	<u>. </u>
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	REPORT TO:	AN	INVOICE TO:	
PARADIGM	COMPANY: Popli Design Group	COMPANY: Sar	LAB PROJECT #:	CLIENT PROJECT #:
	ADDRESS: 555 Penbrooke Dr.	ADDRESS:	1340/5	
	CITY: Penfield STATE:	NY ZIP: 14526 CITY:	STATE: ZIP: TURNAROUND TIME: (WORKING DAYS)	RKING DAYS)
	PHONE: 5853882060 FAX: 5	5853882070 PHONE:	FAX:	STD OTHER
PROJECT NAME/SITE NAME:	ATTN: Mike Crawford	ATTN:	2	3 × 5
Brewerton WTP	COMMENTS:		Quotation #	
		REQUESTE	ED ANALYSIS	
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1 10/18/13	× Clh-S-1 PCB	Caulk 1 x	Control Blds (14)	-
2 10/18/13	X CLK-5-2 PCB	Caulk 1 x	5	2
3 10/18/13	X CCK-G-1 PCB	Caulk 1 x	" (6)	- 3
4 10/18/13	× CL15-6-2 PCB	Caulk 1 x	u " (7)	1 4
5 10/18/13	x CCM-6-3 PCB	Caulk 1 x	(37)	- \ \
6 10/18/13	x CLK-7-1 PCB	Caulk 1 x	" (29)	1 6
7 10/18/13	× CLM- 8-1 PCB	Caulk 1 x	" (49)	
8 10/18/13	x CCK-8-2 PCB	Caulk 1 x	n (2)	~
9 10/18/13	x CLK-16-1 PCB	Caulk 1 x	(53)	6 9
10 10/18/13	x CLK-9-1 PCB	Caulk 1 x	West Galley (S)	10 10
LAB USE ONLY BELOW THIS LINE	INE**			
Sample Condition: Per NELAC/ELAP 210/241/242/243/244 Receipt Parameter N	241/242/243/244 NELAC Compliance	-	•	
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Preservation:	z	Men Of	10/24/13/12:00	\$
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Chain of Custody Supplement

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Paradigm Labs August 5th 2014 Laboratory Analysis and Chain of Custody



PLM & TEM BULK ASBESTOS REPORT

Client: Location: Popli Design Group

Brewerton Water Treatment

Job No: 8328-14

Page: 1 of 2

Sample Date:

7/25/2014

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NYLAP Lab Code 200530-0 for PLM Analysis

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ELAP ID No.: 10958

V This Method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

PLM Bulk Asbestos Analysis by BPA 600/M4-82-020 per 40 CFR 763 and/or BPA 600/R-93/116 (NVLAP Lab Code 2000530-0), New York State Department of Health, ELAP Method 198.1,198.4 and 198.6 ("Polarized Light Microscopy and Transmission Electron Microscopy Methods for Identifying and Quantitating Asbestos in Bulk Samples and in Non-Priable Organically Bound Bulk Samples.").

 $\sqrt{\mathsf{NOB}}$ (non-friable organically bound) Classified for Analytical Purposes Only.

denotes material analyzed by ELAP Method 198.4 and 198.6 per NYSDOH.

** Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-fitable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this

material can be considered or treated as non-asbestos containing.

PLM Date Analyzed: 8/4/2014 Microscope: Olympus B

Olympus BH-2 #232953

Analyst:

M. Dohr

TEM Date Analyzed: 8/5/2014

TEM Analyst: F. Weining

Laboratory Results Approved By:

Asbestos Technical Director

Mary Dohr

Paradigm Environmental Services, Inc. is not responsible for the data supplied by an independent inspector. National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government. Quality control data (including 95% confidence limits and laboratory and analysis' and precision) is available upon request.

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Appendix- E: Photos of Notable Sampled Building Materials & Scanned Surface Areas

ACM Related Pictures



Yellow-Brown Edging Mastic under Gray Vinyl Edging Located in the Control Room & Bathroom in Control Building & Kitchen in the Garage.

PACM Related Pictures



Red Fire Doors

Located at interior entrances within the Raw Sewage Pumping Station Building to the Storage Room and the connection between the Chlorine Storage room and the Chlorination Room. These doors were also found at interior entrances within the Control Building to the Control Room, the Bathroom, the Janitor Room, the Blower Room and the connection between the Control Building and the Garage.



AC Roof Flashing

Located on the roofs of the Control Building, Garage, Chemical Building & Raw Sewage Pumping Station Building.

Trace ACM Related Pictures



Light Gray Insulation Caulk
Found as building joints located in the Chemical Room of the Chemical Building.



Orange Floor Tile & White-Gray Floor Tile Grout Located on the second floor of the Chemical Building.



Light Gray Insulation Caulk

Located on the window between the Chlorination Room & the Motor Control Room in the Raw Sewage Pumping Station Building.



Light Gray Insulation Caulk Located around the interior doors of all rooms in the Control Building.



Light Gray Pipe Caulk
Located in the Control Room & Transformer Room in Control Building.



Yellow-Brown Floor Tile Mastic under the Light-Gray with White Specks Floor Tile Located in the Control Room & Bathroom in the Control Building & in the Kitchen of the Garage.

Vermiculite Related Pictures



Vermiculite Mudded Thermal Insulation just below the Vent Fan Assembly
Located in Ceiling Vents throughout the Control Building, Garage, Chemical Building and Raw Sewage
Pumping Station Building.

Lead-Based Paint Related Pictures



White Metal Sinks

Located in the Janitor Room of the Control Building, in the West Gallery under the stairs to the Blower Room, in the East Gallery near the Gallery intersection, in the Lab in the Chemical Room.



3 Brown & Blue-Green painted doors Located between the Blower Room



6 Brown & Blue-Green painted frames
Located in the Filter Rooms in the Control Building.



Red Wooden Door Located at the entrance to the Kitchen in the Garage.



Gray Wooden Cabinet
Located on the second floor of the Chemical Building.



Yellow Concrete Bollards
Located just off the eastern exterior wall of the Chemical Building.



Yellow Metal Fire Hydrants Located just off the eastern exterior wall of the Chemical Building and north of the Garage.



Located on the northern exterior of the Chemical Room & in the Comminutor Room in the Raw Sewage

Pumping Station Building.



Orange Metal I-Beams
Located on the western exterior of the Raw Sewage Pumping Station Building.



Yellow Metal Grit Bucket & Controls
Located in the Grit Room of the Raw Sewage Pumping Station Building.



Orange Metal Components of the Ceiling Crane Located on the ceiling of the Motor Control Room in the Sewage Pumping Station Building.



Blue Metal Railing

Located around the aeration tanks west of the Raw Sewage Pumping Station Building and around the aeration tanks and settling tanks between the Control Building and the Chemical Building.



6 Blue Metal Valve Wheels & Assembly

Located around the aeration tanks west of the Raw Sewage Pumping Station Building and around the aeration tanks between the Control Building and the Chemical Building.



Blue Metal Equipment related to the Settling Tanks Located on the 2 settling tanks between the Control Building and the Chemical Building.



Blue Metal Equipment Stairs
Located on the exterior northwestern corner of the Chemical Building.



Orange Metal Crane Located on the exterior southwestern corner of the northern Penthouse.



Red Metal Valve Wheel Located just off the exterior northwestern corner of the Chemical Building.



Orange Metal Railing and Railing Fixtures & Equipment Located east of the Chemical Building.

July 25th 2014 Control Building Hallway Ceiling Tile Sampling Pictures



2-ft by 4-ft White Acoustic Ceiling Tiles Located in the hallway of the Control Building originally viewed as PACM by the NET 1991 Brewerton WTP Asbestos Survey

Appendix- F: 1991 NET Brewerton WTP Asbestos Survey Report

BREWERTON



NET Atlantic, Inc. Technical Services Division 5854 Butternut Drive E. Syracuse, NY 13057 Tel: 315-446-8645 Fax: 315-446-2619

ONONDAGA COUNTY DEPARTMENT OF DRAINAGE & SANITATION

SURVEY FOR ASBESTOS-CONTAINING MATERIAL

AT

THE BREWERTON SEWAGE TREATMENT PLANT

SURVEY CONDUCTED ON:

OCTOBER 22 & 24, 1990 & FEBRUARY 4, 1991

REPORT ISSUED:

MARCH 29, 1991

PREPARED BY:

GRAHAM A. SMITH

ASSISTANT INDUSTRIAL HYGIENIST

REVIEWED AND APPROVED BY:

JEAN M. O'NEILL, CIH

DIVISION MANAGER- INDUSTRIAL HYGIENE



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RECOMMENDATIONS	13
APPENDIX A ASSESSMENT SUMMARY	
APPENDIX B: LABORATORY ANALYSIS REPORTS	
APPENDIX C: BULK SAMPLE DATA	
APPENDIX D: PROJECT DIAGRAMS	



PROJECT PERSONNEL

PERSON	TITLE	AFFILIATION
Jean M. O'Neill	Division Manager Industrial Hygiene	NET Atlantic-Syracuse Division
John M. Karanik	Commissioner- Department of Drainage & Sanitation	Onondaga County
Robert Hanley	Head of Operations Brewerton Sewage Treatment Plant	Onondaga County
Graham A. Smith	Assistant Industrial Hygienist	NET Atlantic-Syracuse Division
Brian Mikler	Assistant Industrial Hygienist	NET Atlantic-Syracuse Division
Daniel R. Hoosock	Asbestos Services Manager	NET Atlantic-Syracuse Division
Terrt Covert	Laboratory Analyst	NET Atlantic-Syracuse Division



INTRODUCTION

In accordance with the request of Mr. John M. Karanik Commissioner - Department of Drainage & Sanitation - Onondaga County, NET Atlantic - Syracuse Division (NET) surveyed the Brewerton Sewage Treatment Plant located on Guy Young Road in Brewerton, New York for asbestos-containing materials (ACM). The survey took place on October 22 & 24, 1990, and February 4, 1991. A total of twenty-one (21) bulk samples (NET sample #'s 28969-28978, 29189-29196, and 13-14) of various materials suspected to contain asbestos were collected and analyzed by NET. The quantity of material found to contain asbestos was estimated and the potential health risk it posed to the public and/or building occupants was assessed. Based on the potential health risk, the ACM was prioritized with respect to the need for remedial response.

Two hundred and twelve (212) square feet of asbestos-containing (AC), white two foot by four foot ceiling tile and eight hundred and seventy (870) linear feet of (AC) roof flashing material was quantified. Brian Mikler and Graham A. Smith conducted all field work with on-going consultation with Daniel R. Hoosock. Mr. John M. Karanik and Mr. Robert Hanley defined the scope of the project and assisted in determining areas of concern. Please be advised that all recommendations made by NET are based on conditions that existed at the time of the survey.



BACKGROUND INFORMATION

HEALTH EFFECTS:

Asbestos, a naturally occurring fibrous mineral silicate, was used extensively in building products from the early 1900's to the late 1970's. Asbestos was primarily used for thermal and acoustical insulation, fireproofing, and decorative purposes. When these materials deteriorate or are disturbed they may release microscopic fibers into the air. Once airborne, the fibers may remain suspended for extended periods and be readily inhaled by building occupants. Because of their small size and aerodynamic shape the fibers can easily migrate throughout a building via the ventilation system and fluctuating air currents. Extensive medical evidence has shown that the inhalation of asbestos can cause asbestosis, lung cancer, pleural peritoneal mesothelioma (cancer of the lining of the lungs and stomach, respectively) and gastrointestinal cancer. diseases have a latency period of between ten (10) and forty (40) years and are usually fatal. The risk of disease is directly related to the amount of exposure (each exposure accumulates in the body). This is referred to as a dose-response relationship. Presently, medical models rely on the data gained from patients exposed to high occupational levels of asbestos fibers. Extrapolations are made to estimate the risk of disease at lower However, there is no evidence of a threshold exposure levels. level below which the risk of cancer is not increased.



gravity of this situation has prompted many government agencies to promulgate regulations designed to reduce occupational and environmental exposures to asbestos.

GOVERNMENT REGULATIONS:

Governmental authorities on both the state and federal level have promulgated asbestos regulations. The U.S. Occupational Safety and Health Administration (OSHA) and the U.S. Environmental Protection Agency (EPA) are the major regulators on the federal level.

OSHA has set asbestos regulations for both general industry and the construction industry (see section 29 Code of Federal Regulations (CFR) 1910.1001 and 29 CFR 1926.58, respectively). OSHA is primarily concerned with occupational exposures to asbestos and has established a permissible exposure limit (PEL) of 0.2 fibers per cubic centimeter of air (f/cc) based on an eight (8) hour time weighted average (TWA). An "action level" of 0.1 f/cc for an eight (8) hour TWA, which triggers requirements such as medical surveillance, was also set. The standards also mandate methods of compliance, exposure monitoring, work practices, and record keeping. Separate standards for general industry and the construction industry, including demolition and renovation projects, were developed in recognition of the fact that there are inherent differences between them.



The EPA primarily regulates atmospheric asbestos emissions and asbestos in schools (see 40 CFR Part 61, Subpart M, and 40 CFR Part 763, respectively). In the present case, only 40 CFR Part 61, Subpart M must be considered. These regulations were promulgated under the National Emissions Standards for Hazardous Air Pollutants (NESHAPS). They specify methods for controlling fiber release during mining, milling, manufacturing operations, and demolition projects. EPA notification is required before demolition of facilities containing friable asbestos. material is able to be crushed, crumbled, or otherwise reduced to powder by hand pressure when dry or otherwise non-friable asbestos materials that would be damaged during demolition or renovation to the extent that significant amounts of asbestos fibers would be released to the atmosphere. EPA notification is also required for renovation projects which involve the removal of asbestos materials defined in the NESHAP regulation. Ten (10) day notification prior to the start of a project is required. The regulations also specify methods of transportation and disposal for asbestos containing materials. The NESHAP regulation was recently revised with the Final Rule issued on November 20, 1990.

On the state level, the New York State Department of Labor (DOL) asbestos regulations (see Part 56 of Title 12 NYCRR commonly referred to as Code Rule 56) are designed to protect the public from asbestos exposures. They require training and certification of asbestos handlers, and licensing of asbestos



contractors. Standard work practices are abatement specified. DOL notification is required before the initiation of Recordkeeping regulations projects. large asbestos compliance criteria have also been established. The regulations designate projects which disturb greater than 160 ft.2 or 260 linear ft. of ACM as large asbestos abatement projects. Projects involving the disturbance of between 10 ft.2 and ft.² or between 25 linear ft. and 260 linear ft. of ACM are designated as small asbestos abatement projects. Projects involving 10 ft.2 or less or 25 linear ft. or less are described as minor asbestos projects. The level of regulation is adjusted progressively with each project designation. Recently, the DOL issued several variances to Code Rule 56 (please refer to Applicable Variances (AV) 83 to 93A). The DOL is currently in the process of revising Code Rule 56.

METHODOLOGY

The collection of bulk samples was conducted as follows: After the technician donned appropriate protective equipment, the suspect material was dampened with amended water at the sample location to minimize fiber release. A portion of the material was removed using a coring device or similar implement and placed in a labelled sample container. The sample area was repaired using a spray adhesive and duct tape as needed. In the case of roof sampling, the sample area is repaired with a roof patching kit. An identification label was affixed in the vicinity of the



sample to mark the area for future reference. The sampling instrument was wiped clean after each sample was taken to prevent cross contamination of samples. All contaminated towels and protective equipment were placed in sealed containers and treated as asbestos-containing waste. Photographs of the areas were taken and the samples were transported to NET for analysis. Each sample was logged in upon arrival.

All bulk samples were analyzed by NET using polarized light microscopy (PLM) according to the EPA " Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (40 CFR 763, Vol. 47, No. 103, 5/27/82, Appendix A). According to this method, bulk samples of building materials were first examined for homogeneity and preliminary fiber identification using a low Positive binocular microscope. powered stereoscopic identification of suspect fibers was made using the polarized light microscope. When discrete strata were identified in a sample, each was analyzed and the amount of asbestos was quantified in that layer only. Then the results for each layer were combined to yield an estimate of the asbestos content the whole sample. Fiber identification required determination of the following optical properties: morphology, color and pleochroism, refractive index, birefringence, extinction characteristics and sign of elongation. asbestos fibers exhibit distinct optical properties. The relative percentages of asbestos and other materials in sample were based upon the empirical observations of the



microscopist. Please refer to Appendix B for the Laboratory Analysis Reports.

DISCUSSION

The survey consisted of a thorough inspection of accessible areas at the Brewerton Sewage Treatment Plant. The plant consisted of three buildings (Control, Raw Sewage Pumping Station, and Chemical), four underground galleries (North, South, East, and West) and two access buildings. The West gallery connects with the Control building, while the East gallery connects to the Chemical building. The North and South galleries are connected to the access buildings.

Each building was partitioned into several functional areas. Materials suspected to contain asbestos were then identified and representatively sampled. The quantity of ACM was estimated using measurements taken in the field. It should be noted that typically some of the ACM within a building is either encased, enclosed, obscured, or inaccessible during the time a survey is conducted. Therefore, please be advised that it is unlikely that NET has quantified all ACM within the Brewerton Sewage Treatment Plant.

The assessment of the potential health threat posed by the ACM observed was based on the following criteria:



- 1) The potential for asbestos fiber release.
- 2) The potential for exposure of building occupants to airborne asbestos fibers.

For example, friable material in poor condition, with a high potential for fiber release, located in an area of high activity, may release fibers and expose building occupants. This situation is considered to pose a high potential health risk. Conversely, non-friable material with little potential for fiber release or exposure is considered to pose little significant health risk. Material which exhibits a mixture of the characteristics used to determine the two extremes above is considered to be a moderate health risk. Each building may be discussed more specifically as follows:

CONTROL BUILDING

The Control Building consists of a garage, control room, blower room, lavatory, and hallway.

The ACM in this building included a total of two hundred and twelve (212) square feet of white, two foot by four foot ceiling tile located in the hallway. At the time the survey was conducted, the ceiling tile was in good condition and unlikely to release asbestos fibers. No ACM was present in the garage, blower room, control room or lavatory.



Also, a total of four hundred and eighty-four (484) linear feet of AC flashing was quantified on the roof of the Control Building. The material is non-friable and in good condition. Therefore, the material is unlikely to release any asbestos fibers unless disturbed.

RAW SEWAGE PUMP STATION

This building consists of a chlorine storage room, chlorination room, motor control room, and the grit removal room. No ACM was located within the Raw Sewage Pump Station.

A total of two hundred and sixteen (216) linear feet of AC flashing material was located on the roof of the Raw Sewage Pump Station. The material is non-friable and in good condition. Therefore, the material is unlikely to release any asbestos fibers unless disturbed.

CHEMICAL BUILDING

The Chemical Building consists of a garage area, lab, chemical area on the first floor, and a tank storage area on the second floor. No ACM was located within the Chemical Building.

A total of one hundred and seventy (170) linear feet of AC flashing was was assumed to be on the roof of the Chemical Building. Access to the roof was hindered because there was no



exit onto the roof from inside the building, and because of the height of the building. Since the Chemical Building was built at the same time as the other two buildings, the roofing and flashing material are assumed to be the same.

NORTH ACCESS BUILDING

No ACM was located within the North Access Building. Also, no flashing was present on the roof. Only built up roofing material was present.

SOUTH ACCESS BUILDING

No ACM was located within the South Access Building. Also, no flashing was present on the roof. Only built up roofing material was present.

UNDERGROUND GALLERIES

No ACM was located within the underground galleries.

RECOMMENDATIONS

Listed below are four (4) response actions generally available to prevent or limit the release of asbestos fibers from ACM. Please refer to Appendix A for recommendations on remedial measures for specific sites within the Brewerton Sewage Treatment



Page 14 Plant:

T

- 1) Implementation of an operations and maintenance program (O&M). This response action is a set of standard operating procedures used by in house maintenance personnel which are designed to clean-up fibers previously released and limit future asbestos exposures by instituting preventative measures (ie. personnel training, material repair, special cleaning, etc.).
- 2) Encapsulation. This response action limits fiber release by chemical means. That is, either a hard impermeable barrier between the material and the environment is created (bridging encapsulant) or the material is penetrated and its fibers are bound together in a hard matrix (penetrating encapsulant).
 - 3) Enclosure. Enclosure of asbestos entails the construction of a permanent, physical, airtight, impermeable barrier between the ACM and the environment using material such as cement block, gypsum board, tongue and groove or spline jointed plywood, etc.
 - 4) Removal. Removal is a process by which ACM is stripped from its underlying substrate in a controlled manner so as to prevent building contamination.



AREA PRIORITIZATION:

The need to initiate remedial measures was prioritized based on the above hazard assessment. Specifically, abatement of ACM which was assessed as a high potential health risk is considered to be necessary in the very near future and is designated a high priority. Abatement of material which exhibited a relatively moderate potential health threat is considered to be a moderate priority. A low priority designation has been given to material which poses no immediate health risk unless it is disturbed. The viability of each response action has been evaluated for the ACM within the Brewerton Sewage Treatment Plant. Based on this evaluation, it has been determined that the application of an O & M program for the materials identified at the Brewerton Sewage Treatment Plant is most appropriate. (Please refer to Appendix A: Assessment Summary for prioritization of areas.)

The United States Environmental Protection Agency (USEPA) has recently issued a publication addressing Operations and Maintenance programs. This document, Managing Asbestos in Place - A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials (USEPA Publication 20T-2003), may be obtained by writing to the following address:

Environmental Assistance Division USEPA

TSCA Assistance Information Service



401 M Street, NW Washington, DC 20460



Brewerton

APPENDIX A:

ASSESSMENT SUMMARY



Browerton

ASSESSMENT OF MATERIALS FOUND TO CONTAIN ASBESTOS

LOCATION	MATERIAL	PRIORITY	QUANTITY RE	COMMENDATION
CONTROL BUILDING			15% amounte	``
HALLWAY	WHITE 2 FOOT BY 4 FOOT CEILING TILE	LOW	212 SQ.FT.	O & M
ROOF	FLASHING MATERIAL	LOW	484 FEET	O & M
RAW SEWAGE PUMP STATION		· .		
ROCF	FLASHING MATERIAL	LOW	216 FEET	O & M
CHEMICAL BUILDING				
ROOF	FLASHING MATERIAL	LOW	170 FEET	O & M



APPENDIX B:
LABORATORY ANALYSIS REPORTS



NATIONAL ENVIRONMENTAL TESTING, INC.

NET Atlantic, Inc. Syracuse Division 5854 Butternut Drive East Syracuse, NY 13057 Tel: (315) 446-8795 Fax: (315) 449-1611

TOPONO HOLE HANDE LATE AND A SERVICE										
{************************************	**********	**************************************			For	nerly:	NET N	orthea	st. In	c.
TO: ONONDAGA COUNTY DEPT. OF D&S	DATE	: October 24 1990 *			API	FIBRO PROXI	ius m Mate	ATER:	(ALS	{%}
SYACUSE, NY 13204	JOB :	: 667.820.09 *			ASBE	STOS		NO	I-AS	BESTO
ATTENTION: JOHN KARANIK		# #						F		
PROJECT LOCATION: OMEN CO D & S - NET warrants that any sampling and performed in accordance with the a stated in Federal Register, Vol. A applicable professional standards, resulting from deficient work othe will not accept any liability as a	analyses conducted analytical industri 47, No. 103, 5/27/E NET will not ass	ed as part of this report are # les recognized methodology as # 32, Appendix A, and its # sume liability for any damages #	I B R	C H R Y S	A	C R O C I D		I B R O U	C E L L	
*************	tresult.ot data 19	terpretation by the client. *		0 T	0 S	0 L	0 T	6	U	-
LAB				Ţ	J	I	H	L A	L	T H
NO. SAMPLE ID/LOCATION	DATE DATE COLLECTED RECEIVED			L E	T E	T E	E R	S	S	E R
28968 BP-1-FL.1 HALL NEAR GEN. ROOM	•	Clear innomogeneous fibrous material with white paint	-1-1 Y		15		 0	75	•	-I 8
28969 BP-2-FL.1 HALL NEAR ENTRANCE		Clear inhomogeneous fibrous material with white paint	Y	8	15	0	0	75	2	8
8970 BP-3-FL.1 HALL NEAR MENS ROOM	98/13/22 98/10/22	Clear inhomogeneous fibrous	Y	8	15	0	0	75	2	8
8971 BP-4-FL.1 LAVATORY	98/10/22 90/10/22	material with white paint Light gray inhomogeneous powdery	Y	8	8	8	9	48	20	40
9972 BP-5-FL.1 LUNCHRM./GARAGE S/W	98/19/22 98/19/22	mortar w/ clear fibers and canvas Clear inhomogeneous fibrous	Υı	a	0	0	0	90	2	8
0073 AB #		material with white paint Clear inhomogeneous fibrous	Υ (-	0	-	8	90 90	2	o A
9974 BP-7-FL.1 LUNCHRM./GARAGE N/E		matematal with this	Υ (_		0		2	о 8
3975 BP-8-FL.1 GENERATOR/GARAGE		material with white paint Dark inhomogeneous fibrous material	- 1		-	_	8	_	-	-
1976 BP-9-FL. 1 GENERATOR/GARAGE		with paper and foil White and gray inhomogeneous mortar					-			5
		With paper and foil			8	0 (3	15	58	35
SC TO-TE-1 GENERATION/OHRHA	30/10/22 30/10/22	Dark inhomogeneous fibrous material with paper and foil	Y () (0	0 (8	85	10	5



NET Atlantic, Inc. Syracuse Division 5854 Butternut Drive East Syracuse, NY 13057 Tel: (315) 446-8795 Fax: (315) 449-1611

****************************	******************	*********	H#		Form	eriy: N	NET No	rtheas	t. Inc.	
TO: ONONDAGA COUNTY DEPT. OF D&S 650 HIAWATHA BLYD. WEST	DATE: October 24 1990		*				us Ma Mate			
SYACUSE, NY 13204	JOB #: 557.820.00		*	_	ASBE	STOS		NON	-ASB	STOS
ATTENTION: JOHN KARANIK			*					F		
PROJECT LOCATION: ONON CO D & S - Brewerton Sewage Treatment - West Gallery ** NET warrants that any sagaling and analysis								I		
NET warrants that any sampling and an	erton Sewage Treatment - West	Gallery	¥			Ç		В		
performed in accordance with the analy	lyses conducted as part of thi tical industries recognized so	s report are	*	C D		C R		B R		
performed in accordance with the analy stated in Federal Register, Vol. 47. N	lyses conducted as part of thi tical industries recognized me o. 103. 5/27/82. Opportiv 0	s report are thodology as	* * * *	C F H I R		C R O C		B R O U	C E	
performed in accordance with the analy stated in Federal Register, Vol. 47, N applicable professional standards. NF	lyses conducted as part of thi tical industries recognized me to. 103, 5/27/82, Appendix A, a T will not assume limbility for	s report are thodology as and its	* * * * * *	I R B Y	A	C R O C		B R O U S	C E L	
performed in accordance with the analy stated in Federal Register, Vol. 47, Mapplicable professional standards. Me resulting from deficient work other the will not accept any liability as a res	lyses conducted as part of thi tical industries recognized me to. 103, 5/27/82, Appendix A, a I will not assume liability for an reperformance or cost of sault of data interpretation by	s report are thodology as and its r any damages id work and	* * * * * *	I R B Y R S	M	C R C C I	n	B R U S	CELL	n
performed in accordance with the analy stated in Federal Register, Vol. 47, Mapplicable professional standards. Me resulting from deficient work other the will not accept any liability as a res	lyses conducted as part of thi tical industries recognized me to. 103, 5/27/82, Appendix A, a I will not assume liability for an reperformance or cost of sault of data interpretation by	s report are thodology as and its r any damages id work and	* * * * * * * *	I R B Y	• • •	C R O C I D O L	0 T	B R O U S	CELLUL	0 T
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28978 BP-11-BASEMENT-WEST GALLERY

90/10/22 90/10/22 Light gray inhomogeneous powdery mortar with clear fibers and canvas

Y 0 0 0 0 40 20

APPROVED BY: Daniel F. Hood

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Atlantic, Inc. Syracuse Division 5854 Butternut Drive East Syracuse, NY 13057 Tel: (315) 446-8795 Fax: (315) 449-1611

LABORATORY ANALYSIS REPORT Formerly: NET Northeast, Inc. FIBROUS MATERIALS & * TO: ONONDAGA COUNTY DEPT. OF D&S DATE: October 31 1990 APPROXIMATE CONTENT (%) 658 HIAWATHA BLVD. NEST SYACUSE, NY 13204 JOB #: 667.820.00 **ASBESTOS** NON-ASBESTOS * ATTENTION: JOHN KARANIK F * PROJECT LOCATION: ONON CO D & S - Brewerton Sewage Treatment - Control Bldg I * NET warrants that any sampling and analyses conducted as part of this report are C В performed in accordance with the analytical industries recognized methodology as F H * stated in Federal Register, Vol. 47, No. 103, 5/27/82, Appendix A, and its C I R £ applicable professional standards. NET will not assume liability for any damages BY * resulting from deficient work other than reperformance or cost of said work and R S * will not accept any liability as a result of data interpretation by the client. 0 0 П G 0 UT S S ·I Ι LAB DATE Τ Τ Ε S NO. SAMPLE ID/LOCATION COLLECTED RECEIVED S PHYSICAL DESCRIPTION ? E Ε Ε 29189 BP-12-FL.1 CONTROL ROOM OFFICE 90/10/24 90/10/24 White inhomogeneous powdery mortar Y 0 15 20 65 with paper layer and clear fibers 29190 BP-13-FL.1 CONTROL ROOM OFFICE 90/10/24 90/10/24 White inhomogeneous powdery mortar Y 0 15 15 70 with paper layer and clear fibers 29191 BP-14-FL.1 CONTROL ROOM SIDE 90/10/24 90/10/24 White inhomogeneous powdery mortar $\,\,$ Y $\,$ 0 15 15 78 with paper layer and clear fibers 29192 BP-15-BSMT. MOTOR CONTROL ROOM 90/10/24 98/10/24 Grayish inhomogeneous powdery 20 40 mortar with canvas layer and paint 29193 BP-16-LOWER ROOF TO UPPER ROOF 90/10/24 90/10/24 Black inhomogeneous material with white fibers and wood fibers 29194 BP-17-LOWER ROOF/LRG. AIR COND. 90/10/24 90/10/24 Black inhomogeneous material with white fibers and wood fibers 29195 BP-18-UPPER ROOF/MIDDLE 90/10/24 90/10/24 Black inhomogeneous material with Y 0 wood fibers and white particles

APPROVED BY: Jean M. D'hell DATE: 11/1/90

NYSDOH - ELAP #10067, NVLAP #1077



NATIONAL ENVIRONMENTAL TESTING, INC.

NET Atlantic, Inc. Syracuse Division 5854 Butternut Drive East Syracuse, NY 13057 Tel: (315) 446-8795 Fax: (315) 449-1611

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SYACUSE, NY 13204	JOB #: 667.820.00	*		ASBESTOS			NON	-ASE	ESTO:	
ATTENTION: JOHN KARANIK		*								
The state of the s	<u> </u>	*						F		
PROJECT LOCATION: ONON CO D & S - B	rewerton - South Gallery Access Bldg	#				_		I		
NET warrants that any sampling and	analyses conducted as part of this report ar	*		_		E		В		
performed in accordance with the an	malyses conducted as part of this report are malytical industries recognized methodology a	- 	_	Ε.		R		R		
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will not accept any liability as a	result of data interpretation by the client.	Ŧ	0	0	0	0	0	6	U	0
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3487 BD 40 BBB 94								-	•	
9195 BP-19-ROOF/MIDDLE	90/10/24 90/10/24 Black inhomogeneous materia wood fibers and debris	al with	Y	0	0	Ø	9	5	45	50



NET Atlantic, Inc. Syracuse Division 5854 Butternut Drive East Syracuse, NY 13057 Tel: (315) 446-8795 Fax: (315) 449-1611

•	LABORATORY ANALYSIS REPORT			PAGE 1			F	ormer	ıy. NE	Nort	heast.	inc	•
•	TO: ONONDAGA COUNTY DEPT 650 HIAWATHA BLVD WE			DATE: #2/12/1991						•			
	SYRACUSE, NY 13204	••		JOB NO: 91.0002						DUS M Enate			£ {\$}
	ATTENTION: JOHN KARANIK			ACCT NO: 66782			•		BESTO				SBESTO:
	f merunaatodii 92 259660 1606	empling and ccordance wi eral Registe fessional st from defici not accept	analyses co th the anal r, Vol. 47, andards. M ent work ot	ytical industries recognized Mo. 103, 5/27/82, Appendix ET will not assume liability her than reperformance or	H M O G E N	F I 8	C H R	A	C R O C I		F I B R O U	(E 1	
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A8 ^.	SAMPLE ID/LOCATION	DATE COLLECTED	DATE RECEIVED	PHYSICAL DESCRIPTION		\$?	I L E	Ţ	I I E	E	- A S S	0 S E	H E R
	BP-24 - HIDDLE OF ROOF			Brown and black, fibrous material		· Y		0	•	 B	 		38
	BP-21 - N/W CORNER OF ROOF	0 2/ 0 4/1991	02/04/1991	Tar with white fiber bundles	N	Y	20	9	ê	8	8		80

APPROVED BY: Daniel R. Howoch DATE: 2/12/91



APPENDIX C:

BULK SAMPLE DATA



1 .

The formula for the calculation of the priority index numbers listed in Appendix C was developed by Princeton Testing Laboratory, Inc. (PTL) at the request of Onondaga County. The numbers are used by Onondaga County only as a planning tool. Onondaga County has requested that NET calculate this priority index number for material that has been identified as ACM by NET.

Please be advised that both NET and Onondaga County recognize that numerical rating systems are of limited usefulness containing materials.



Tel: (315) 446-8795 Fax: (315) 449-1611

Formerly CS Environmental Laboratory, Inc.

NET NORTHEAST, INC.

GENERAL INFORMATION BLDGAB: Control FLOOR: First ROOM: Hallway SAMP#: 28968	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST R LOW% O 15	HIGH%	. 0	
DESCRIPTION: White 2 foot by 4 foot ceiling tile.	ASBESTOS TOTAL OTHER MATERIALS	0 15 LOW%	0 15 HIGH%	0 15 4 AVG%	
SURVEY DATE: 90-10-22 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	75 2 8	75 2 8	75 2 . 8	
ACM ? : Y (Y OR N)	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N		NCTION	ERIAL APPLICAT	
COMMENTS Sampled from hallway near garage.	FIBROUS: Y COLOR: White	IN	REPROOF: SULATE: OUSTIC:		: N : Y

LINEAR FEET O SQUARE FEET O

PRIORITY INDEX 776.2500

7.

PHOTO NOT AVAILABLE

EXPOSURE FAC	TOR	
FRIABILITY	M	
ACCESSIBLE	M	
ACTIVITY	M	
CONDITION	G	
RESTRICTION	U	
1		
		·
OCCUPANCY OF	AREA	
OCCUPANCY OF EMPLOYEES	AREA 5	4 HRS
:1		4 HRS 1 HRS
EMPLOYEES	5	
EMPLOYEES VISITORS	5 4	1 HRS



Tel: (315) 446-8795 Fax: (315) 449-1611

Formerly CS Environmental Laboratory, Inc.

NET NORTHEAST, INC.

GENERAL INFORMATION BLDGAB: Control FLOOR: First ROOM: Hallway SAMP#: 28969	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST LOW O 15	A HIGHX	AVG% 0 15 0	
DESCRIPTION: White 2 foot by 4 foot ceiling tile.	ASBESTOS TOTAL OTHER MATERIALS	0 15	0 15	0 15	
SURVEY DATE: 90-10-22 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	LOW: 75 2 8	X НІСНХ 75 2 6	AVGX 75 2 8	
ACM 7 : Y (Y OR N) COMMENTS Sampled in hallway near the entrance.	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N FIBROUS: Y COLOR: White	f: In		N DUCT	N N Y

LINEAR FEET O SQUARE FEET O

PRIDRITY INDEX 776.2500

PHOTO NOT AVAILABLE

EXPOSURE FACT FRIABILITY ACCESSIBLE ACTIVITY CONDITION RESTRICTION	TOR M M M G U	
OCCUPANCY OF EMPLOYEES VISITORS PESIDENTS TOTAL	AREA 5 4 0	4 HRS 1 HRS 0 HRS 5 HRS



Tel: (315) 446-8795 Fax: (315) 449-1611

Formerly CS Environmental Laboratory, Inc.

NET NORTHEAST, INC.

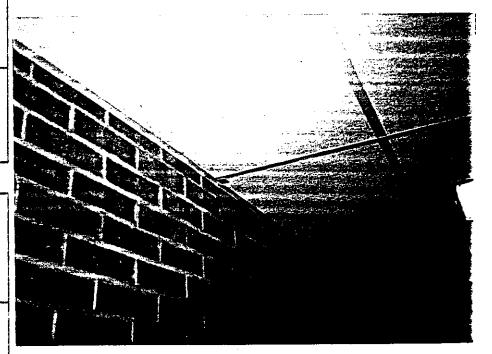
GENERAL INFORMATION BLDGAB: Control FLOOR: First ROOM: Hallway SAMP#: 28970	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST RES	SULTS HIGH% 0 15 0	AVG% 0 15 0	
DESCRIPTION: 2 foot by 4 foot ceiling tile.	ASBESTOS TOTAL OTHER MATERIALS	15 LOW%	15 HIGH%	15 AV6%	
SURVEY DATE: 90-10-22 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	75 2 8	75 2 8	75 2 8	
COMMENTS Sampled in nallway near the lavatory.	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N FIBROUS: Y COLOR: White	FIRE INSU	OTION A EPROOF: JLATE:	RIAL PPLICATION PIPE: N DUCT: Y CEIL: WALL: FLR:	N

LINEAR FEET O SQUARE FEET O

PRIORITY INDEX 776.2500

EXPOSURE FACTOR
FRIABILITY M
ACCESSIBLE M
ACTIVITY M
CONDITION G
RESTRICTION U

DECUPANCY	СF	AREA		
EMPLOYEES		5	4	HRS
VISITORS		4	1	HRS
RESIDENTS		0	O	HRS
TOTAL		9	5	HRS





Tel: (315) 446-8795 Fax: (315) 449-1611

Formerly CS Environmental Laboratory, Inc.

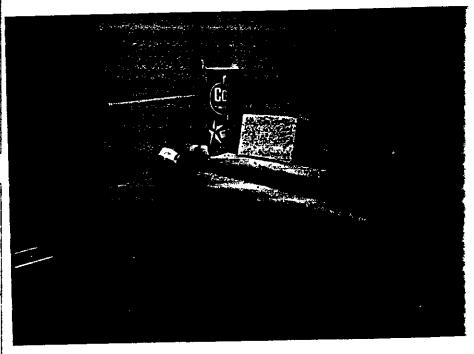
NET NORTHEAST, INC.

GENERAL INFORMATION	ACM LABORATORY				
BLDGAB: Control	ASBESTOS TYPE	LOW%	HIGH%	AVG%	
FLOOR: First	CHRYSOTILE:	Q	O	O	
ROOM: Lavatory	AMOSITE:	0	ø	O	
SAMP#: 28971	CROCIDOLITE:	Q	Q	O	
	4	Q	Ç	Q	
DESCRIPTION: Hard pack fitting on	ASBESTOS TOTAL	ø .	0	O	
F.G. insulated pipe.	OTHER MATERIALS	LOW%	HIGH%	AVG%	
	FIBROUS GLASS:	40	40	40	
SURVEY	CELLULOSE:	20	20	20	
DATE : 90-10-22 MGR : G. Smith	UNSFECIFIED:	40	40	40	
MON : G. SHITTH	SAMPLE APPEARANCE		MATE	RIAL	
ACM ? : N (Y OR N)	HOMOGENOUS: N	FLINC	TION A	PPLICATI	ON
	LAYERS: N	FIRE	PROOF:	N PIPE:	Ν
COMMENTS	FIBROUS: Y	INSL	LATE:	N DUCT:	N
	COLOR: Tan	ACOL	STIC:	N CEIL:	Ν
				WALL:	Ν
				FLR:	Ν

LINEAR FEET 0 SQUARE FEET 0

PRIDRITY INDEX
0.0000

EXPOSURE FACTOR FRIABILITY ACCESSIBLE Н ACTIVITY M MOITIGNOO G RESTRICTION OCCUPANCY OF AREA **EMPLOYEES** 5 4 HRS 5 VISITORS 1 HRS RESIDENTS O O HRS TOTAL 5 HRS 10





Tel: (315) 446-8795 Fax: (315) 449-1611

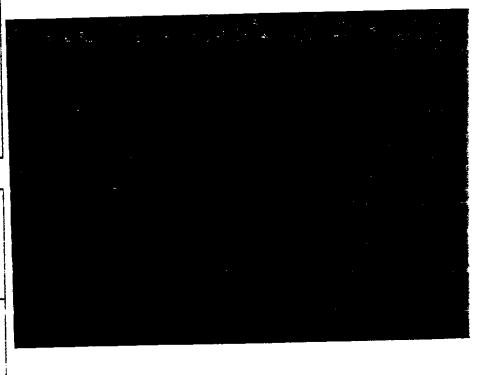
Formerly CS Environmental Laboratory, Inc.

NET NORTHEAST, INC.

GENERAL INFORMATION BLDGAB: Control FLOOR: First ROOM: Lunch BAMP#: 28972	ACM LABORATORY ASSESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST RES	O O O HIGHX O	0 0 0 0	
DESCRIPTION: white 12 inch by 12 inch ceiling tile.	ASBESTOS TOTAL OTHER MATERIALS FIBROUS GLASS:	© 190 190	OE HIGHX	90 AVB% O	
SURVEY DATE : 90-10-22	CELLULOSE:	a	22 8	8	
MGR : G. Smith ACM ? : N (Y OR N) COMMENTS Lunch Am. 1s in the NW corner of garage.	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N FIBROUS: Y COLOR: Tan	FIR INS			Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z

LINEAR FEET SQUARE FEET	0
PRIDRITY INDEX 0.0000	

EXPOSURE FAC	TOR		
FRIABILITY	M		
ACCESSIBLE	M		
ACTIVITY	H		
CONDITION	G		
RESTRICTION	U		
<u> </u>			
OCCUPANCY OF	AREA		
OCCUPANCY OF EMPLOYEES	AREA 5	10	HRS
1		10	HRS HRS
EMPLOYEES	5		
EMPLOYEES VISITORS	5 5	1	HRS





Tel: (315) 446-8795 Fax: (315) 449-1611

Formerly CS Environmental Laboratory, Inc.

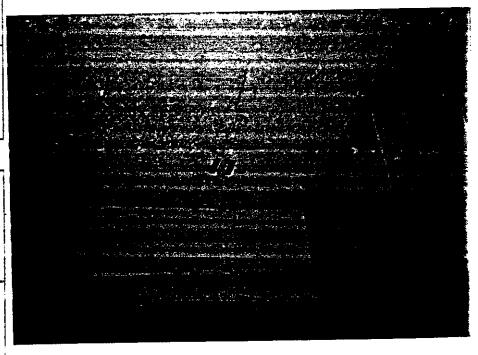
NET NORTHEAST, INC.

GENERAL INFORMATION SLDGAB: Control	ACM LABORATORY ASBESTOS TYPE	TEST RE		AVG%	
FLOOR: First	CHRYSOTILE:	ø	0	Q	
ROOM: Lunch	AMOSITE:	O	O	Q	İ
SAMP#: 28973	CROCIDOLITE:	Ç	Q	Q	
	4	O	O.	Q	
DESCRIPTION: White 12 inch by 12	ASBESTOS TOTAL	Ç	0	Ç	
inch ceiling tile.	OTHER MATERIALS	LOW%	нІ Сн%	AVG%	
	FIBROUS GLASS:	90	90	90	
SURVEY	CELLULOSE:		in the second	22	
DATE : 90-10-22	UNSPECIFIED:	Э	8	3 .	
MGR : G. Smith	SAMPLE APPEARANCE			ERIAL	
ACM ? : N (Y OR N)	HOMOGENOUS: N		CTION		
	LAYERS: N		EPROOF:		
COMMENTS	FIBROUS: Y		ULHTE:		T: N
Lunch Rm. is in the	COLOR: Tan	ACO	USTIC:	Y CEI	L: Y
NW corner of garage.	1			MAL	_ N
,				FLA	i: N

LINEAR FEET O SQUARE FEET O

PRIORITY INDEX 0.0000

EXPOSURE FACTOR FRIABILITY ACCESSIBLE М ACTIVITY COMPITION 3 RESTRICTION OCCUPANCY OF AREA 5 10 HRS EMPLOYEES 5 1 HRS VISITORS Q HRS DESIDENTS O 11 HRS TOTAL 10





Tel: (315) 446-8795 Fax: (315) 449-1611

Formerly CS Environmental Laboratory, Inc.

NET NORTHEAST, INC.

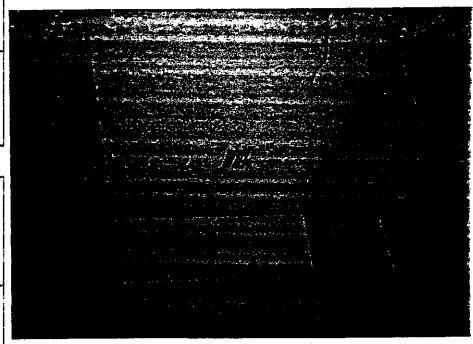
GENERAL INFORMATION BLDGAB: Control FLOOR: First ROOM: Lunch SAMF#: 28974	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	0 0 0 0 0 0 0	0 0 0 HIGHW	0	
DESCRIPTION: White 12 inch by 12 inch ceiling tile.	ASBESTOS TOTAL OTHER MATERIALS	0 0	O O HIGH%	O O AVG%	
SURVEY DATE : 90-10-22 MGR : G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	8 90	90 2 8	90 2 9	
ACM ? : N (Y OR N)	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N		MATE TION A		ì
COMMENTS Lunch Rm. is in the NW corner of garage.	FIGROUS: Y COLOR: Tan	INS	:PRODE: JLATE: JSTIC:	N DUCT	: N : Y

LINEAR FEET O

PRIDRITY INDEX
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Γ.

ļ	EXPOSURE FACTOR		
I	FRIABILITY M		
l	ACCESSIBLE M		
l	ACTIVITY H		
l	CONDITION G		
l	RESTRICTION U		
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ŀ	CCCUPANCY OF AR	<u></u>	
-			HRS
-	DODUPANCY OF AR	10	HRS HRS
1	CCCUPANCY OF AR EMPLOYEES 5	10	—





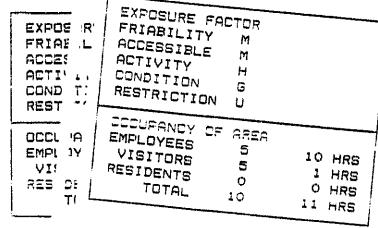


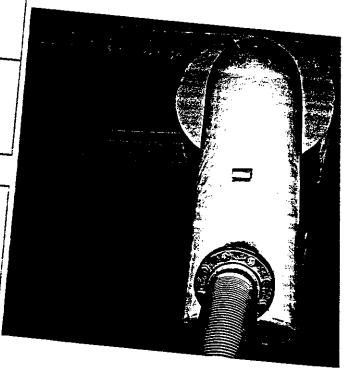
Formerly CS Environm

N. 58 Ea Te Fa)

ŀ		GENERAL INFORMATION	MET NORTHEAST, INC.	Formerly CS Environm
`	GENERAL INF BLDGAB: C: FLOOR: F: 'S ROOM: G: -: SAMP#: 2	FLOOR: First ROOM: Garage SAMP#: 28975	ACM LABORATORY ASSESTOS TYPE CHRYSOTILE: AMOSITE:	LOWN HII
	DESCRIPTIC 1: Generator breeching,	DESCRIPTION: Generator exhaust breeching.	CROCIDOLITE:	0000
	SURVEY DATE : MGR : 1.	DATE : 90-10-22 MGR : G. Smith	OTHER MATERIALS FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	LOW% HIG; 65 65 10 10
	ACM ? :	ACM ? : N (Y DR N) COMMENTS	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N FIBROUS: Y COLOR: Tan	5 5 MA FUNCTION FIREPROOF INSULATE: ACOUSTIC:
i. !				_ •

LINEAR F	LINEAR FEET SQUARE FEET	0
PRIORI	PRIDRITY INDEX 0.0000	







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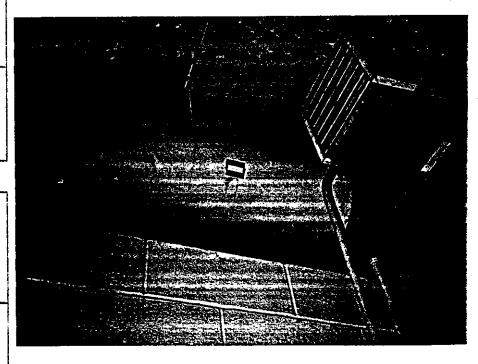
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GENERAL INFORMATION BLDGAB: Control FLOOR: First ROOM: Garage SAMF#: 28977	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDULITE:	TEST RES LOW% O O O	HISHX O O O O	AVG% 0 0 0	
DESCRIPTION: Generator exhaust breeching.	ASBESTOS TOTAL OTHER MATERIALS FIBROUS GLASS:	0 LOW% 85	0 HIGH% 85	O AVG% 85]
SURVEY DATE: 90-10-22 MGR: G. Smith	CELLULOSE: UNSPECIFIED:	10	10	10	
SCM 7 : N (Y OR.N)	SAMPLE APPEARANCE HOMOGENOUS: N L9YERS: N FIBROUS: Y COLOR: Tan	FIR INS	OTION P EPROOF: JLATE:	RIAL PPLICAT N PIPE N DUCT N CEIL WALL FLR:	. Z . Z

LINEAR FEET SQUARE FEET	0	
PRIORITY INDEX 0.0000		

EXPOSURE FACT		
FRIABILITY ACCESSIBLE	M	
ACTIVITY	H	
CONDITION	G	
RESTRICTION	u	
OCCUPANCY OF EMPLOYEES VISITORS RESIDENTS	5 5 0	10 HRS 1 HRS 0 HRS
TOTAL	10	: HRS





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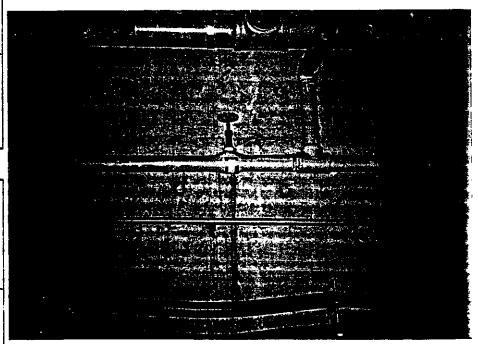
GENERAL INFORMATION BLDGAB: Control FLOOR: Basement ROOM: W. Gallery SAMP#: 28978	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	0 0 LBW%	H1GH% 0 0	0	
DESCRIPTION: Hard pack fitting on f.G. insulated pipe.	ASBESTOS TOTAL OTHER MATERIALS	0 0 LDW%	O O HIGH%	0 0 AVE%	
SURVEY DATE: 90-10-22 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	40 20 40	, -	40 20 40	-
ACM ? : N (Y OR N) COMMENTS West Gallery.	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N FIBROUS: Y COLOR: Gray	FUNC FIRE INCL			: Z : Z

LINEAR FEET 0 SQUARE FEET 0

PRIDRITY INDEX
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EXPOSURE FACTOR FRIABILITY ACCESSIBLE Н ACTIVITY CONDITION Ġ RESTRICTION CCCUPANCY OF AREA **EMPLOYEES** 3 3 HRS VISITORS 1 HRS RESIDENTS 0 O HRS TOTAL 4 388





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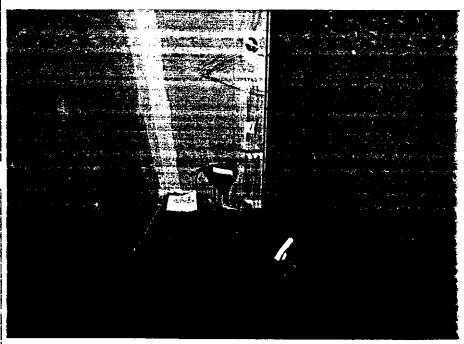
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GENERAL INFORMATION BLDGAB: Control FLOOR: First ROOM: Control SAMP#: 29189	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST RES LOW% O O O	SULTS HIGH% O O O	AVG% 0 0 0	
DESCRIPTION: Drywall.	ASBESTOS TOTAL OTHER MATERIALS	rowx o	O HIGH%		
SURVEY DATE: 90-10-24 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	15 20 65	15 20 65	15 20 65	
ACM ? : N (Y OR N)	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N			ERIAL APPLICA	TION E: N
COMMENTS Control room office	FIBROUS: Y COLOR: White	INSL	LATE: USTIC:	N DUC N CEI WAL FLR	T: N L: N L: N

LINEAR FEET SQUARE FEET	0
PRIORITY INDEX 0.0000	

EXPOSURE FAC	TOR		
FRIABILITY	L		
ACCESSIBLE	Н		
ACTIVITY	M		
CONDITION	G		
RESTRICTION	บ		
OCCUPANCY OF	AREA	·	
EMPLOYEES	2	5	HRS
VISITORS	2	1	HRS
RESIDENTS	Ö	0	HRS
TOTAL	4	6	HRS
j .			





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GENERAL INFORMATION BLDGAB: Control FLOOR: First ROOM: Control SAMP#: 29190	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST RE LOW% O O	SULTS HIGH% O O O	AVG% O O O	
DESCRIPTION: Drywall	ASBESTOS TOTAL OTHER MATERIALS	O Low%	о нісни	O AVG%	
SURVEY DATE: 90-10-24 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	15 15 70	15 15 70	15 15 70	
ACM ? : N (Y OR N)	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N			ERIAL APPLICAT N PIPE	- 13
COMMENTS Control room office.	FIBROUS: Y COLOR: White	INS	ULATE: USTIC:	N DUCT	: N : N : N

LINEAR FEET O SQUARE FEET O

PRIORITY INDEX
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EXPOSURE FACTOR FRIABILITY ACCESSIBLE Н ACTIVITY М CONDITION G RESTRICTION OCCUPANCY OF AREA **EMPLOYEES** 2 5 HRS **VISITORS** 2 1 HRS RESIDENTS 0 O HRS TOTAL 4 6 HRS





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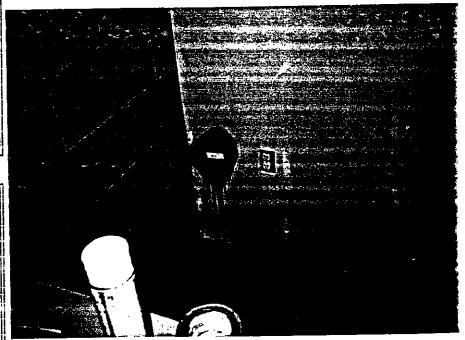
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GENERAL INFORMATION BLDGAB: Control FLOOR: First ROOM: Control SAMP#: 29191	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST RES LOW% O O O O	SULTS HIGH% O O O O	AVG% 0 0 0 0	
DESCRIPTION: Drywall SURVEY DATE: 90-10-24	ASBESTOS TOTAL OTHER MATERIALS FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	0 Low% 15 15 70	0 HIGH% 15 15 70	0 AVG% 15 15 70	
MGR : G. Smith ACM ? : N (Y OR N) COMMENTS Control room office.	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: N FIERCUS: Y COLOR: White	FIRE	CTION A	ERIAL APPLICAT N PIPE N DUCT N CEIL WALL FLR:	2: N : N : N

LINEAR FEET SQUARE FEET	0
PRIORITY INDEX O.0000	

EXPOSURE FACTOR	
FRIABILITY L	
ACCESSIBLE H	
ACTIVITY M	
CONDITION G	
RESTRICTION U	
# GCGUPANCY OF AREA	
EMPLOYEES 2	5 HRS
EMPLOYEES 2 VISITORS 2	5 HRS 1 HRS
11	•
VISITORS 2	1 HRS





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GENERAL INFORMATION BLDGAB: Raw Sewage FLOOR: Basemerit ROOM: Motor Cntl SAMP#: 25192	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDULITE:	0 0 0 0 0 0	0 0 HIGH%	AVG% 0 0	
DESCRIPTION: Hard pack fitting on F.G. insulated pipe.	ASBESTOS TOTAL OTHER MATERIALS	rāmk o o	o o high%	o o AVG%	
SURVEY DATE: 90-10-24 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	40 ≥0 40	40 20 40	40 20 40	
ACM ? : N (Y OR'N)	SAMPLE APPEARANCE HOMOGENOUS: N	FUNC	CTION P	RIAL APPLICATI	
COMMENTS Raw Sewage Pump St. Motor Control Room.	LAYERS: N FIBROUS: Y COLOR: Gray	INSL	PROOF: ULATE: USTIC:	N DUCT:	N N

LINEAR FEET O SQUARE FEET O

PRIDRITY INDEX
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EXPOSURE FAC FRIABILITY ACCESSIBLE ACTIVITY CONDITION RESTRICTION	TOR M H L P U	
OCCUPANCY OF EMPLOYEES VISITORS RESIDENTS TOTAL	AREA 2 1 0 3	1 HRS 1 HRS 0 HRS 2 HRS





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GENERAL INFORMATION BLDGAB: Control FLOOR: Lower Roof ROOM: SAMP#: 29193	ACM LABORATORY ASSESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST RE LOWN 10 0 0	0 10 HIGH%	0 0 0 0 0 0 0	
DESCRIPTION: Flashing material.	ASBESTOS TOTAL OTHER MATERIALS	10 10	10 HIGH%	10 AV6%	
SURVEY DATE: 90-10-24 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	50 40	0 50 40	0 50 40	
COMMENTS Flashing from lower to upper roof.	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: Y FIBROUS: Y COLOR: Black	FIF			E: N Y: N L: N

LINEAR FEET 0 SQUARE FEET 0

PRIDRITY INDEX 0.0250

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EXPOSURE FACTOR FRIABILITY ACCESSIBLE Н ACTIVITY CONDITION RESTRICTION OCCUPANCY OF AREA **EMPLOYEES** 1 1 HRS O VISITORS O HRS RESIDENTS O HRS TOTAL 1 1 HRS





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GENERAL INFORMATION BLDGAB: Control FLOOR: Lower Roof ROOM: SAMP#: 29194	ACM LABORATORY ASSESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	LOW% 40 0 0	HIGH% 40 0 0	AVB% 40 0 0	
DESCRIPTION: Flashing around large air fan.	ASBESTOS TOTAL OTHER MATERIALS	0 40 LOW%	0 40 НІВНХ	0 40 AVG%	
SURVEY DATE : 90-10-24 MGR : G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	0 ≌0 40	20 40	0 20 40	
ACM ? : Y (Y OR N) COMMENTS	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: Y FIBROUS: Y COLOR: Black	FUNI FIRS INSL	TION PEPROOF:	RIAL APPLICATI N PIPE; N DUCT: N CEIL: WALL: FLR:	Z Z Z

LINEAR	FEET	Ü
SQUARE	FEET	¢

PRIORITY INDEX 0.0250

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Ì	FRIABILITY	L	•
Ī	ACCESSIBLE	H	
İ	ACTIVITY	L	
ļ	CONDITION	G	
Ì	RESTRICTION	U	
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	DOOLIDONOV DE	0950	
	CCCUPANCY OF	AREA	
	CCCUPANCY OF EMPLOYEES	98EA 1	1 HRS
	- -	9859 1 0	1 HRS O HRS
	EMPLOYEES	1	
	EMPLOYEES VISITORS	1	O HRS





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GENERAL INFORMATION BLDGAB: Control FLOOR: Upper Roof ROOM: Middle SAMP#: 29195	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	0 0 0 0 0	0 0 HIGHW	AVG% 0 0 0	
DESCRIPTION: Roofing material.	ASBESTOS TOTAL OTHER MATERIALS	га <u>м</u> ж 0	O O HIGH%	o AVG%	
SURVEY DATE: 90-10-24 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	# 60 35	5 60 35	5 60 35	
ACM ? : N (Y OR N)	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: Y FIBROUS: Y COLOR: Black	FIF	• • • • •	RIAL APPLICATI N PIPE: N DUCT: N CEIL: WALL:	2 2 2

LINEAR	FEET	٥
SQUARE	FEST	Ç

PRIDRITY INDEX 0.0000

TOTAL

EXPOSURE FACERIABILITY ACCESSIBLE ACTIVITY CONDITION RESTRICTION	TOR LHLSD	
OCCUPANCY OF EMPLOYEES VISITORS RESIDENTS	AREA 1 0	1 HRS 0 HRS 0 HRS

1 HRS





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GENERAL INFORMATION BLDGAB: Access FLOOR: Roof ROOM: South Gall SAMP#: 29196	ACM LABORATORY ASSESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST RE	H1GH% 0 0 0	0 0 0
DESCRIPTION: Roofing material.	ASSESTOS TOTAL OTHER MATERIALS	0 0 LDW%	о о ні <u>с</u> н%	0 0 AV6%
SURVEY DATE : 90-10-24 MGR : G. Smith	FIBROUS GLASS; CELLULOSE; UNSPECIFIED;	5 45 50	5 45 50	5 45 50
ACM ? : N (Y DR N) COMMENTS South Gallery Access Building.	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: Y FIBROUS: Y COLOR: Black	FUN FIR INS	ICTION F EPROOF:	RIAL APPLICATION A PIPE: N N DUCT: N N CEIL: N WALL: N FLR: N

LINEAR FEET O SQUARE FEET O

PRIORITY INDEX 0.0000

EXPOSURE FACTOR FRIABILITY ACCESSIBLE Н ACTIVITY CONDITION RESTRICTION CCCUFANCY OF AREA **EMPLOYEES** 1 1 HRS VISITORS O O HRS RESIDENTS Ó O HRS TOTAL 1 HRS





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GENERAL INFORMATION BLDGAB: Raw Sewage FLOOR: ROOI ROOM: Mladle SAMP#: 13	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	LOW% O O	HIGH% O O	AVG% 0 0 0	
DESCRIPTION: Built up roofing	ASBESTOS TOTAL	o O	0	0	***************************************
material.	OTHER MATERIALS FIBROUS GLASS:	Low%	нісн%	AVG%	
SURVEY DATE: 91-02-04 MGR: G. Smith	CELLULOSE: UNSPECIFIED:	0 70 30	0 70 30	0 70 30	
ACM ? : N (Y OR N)	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: Y			RIAL PPLICATI N PIPE:	, , 11
COMMENTS Raw Sewage Pumping Station.	FIBROUS: Y COLOR: Black	INS		N FIFE: N DUCT: N CEIL: WALL: FLR:	N

LINEAR FEET SQUARE FEET	0	
PRIORITY INDEX O.0000		

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FRIABILITY	L		
ACCESSIBLE	L		
ACTIVITY	L		
CONDITION	Ġ		
RESTRICTION	ប		
} }			
OCCUPANCY OF	AREA		
OCCUPANCY OF EMPLOYEES	AREA 1	1	HRS
11		_	HRS HRS
EMPLOYEES	1	ō	
EMPLOYEES VISITORS	1	ō	HRS





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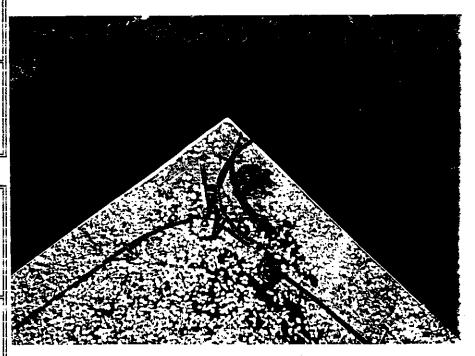
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GENERAL INFORMATION SLDGAB: Raw Sewage FLOOR: Roof ROOM: NW corner SAMP#: 14	ACM LABORATORY ASBESTOS TYPE CHRYSOTILE: AMOSITE: CROCIDOLITE:	TEST RES LOW% 20 0	HIGH% 20 0 0	AVG% 20 0 0	-
DESCRIPTION: Flashing material.	ASBESTOS TOTAL OTHER MATERIALS	0 20 LOW%	O 20 HIGH%	20 AVG%	
SURVEY DATE: 91-02-04 MGR: G. Smith	FIBROUS GLASS: CELLULOSE: UNSPECIFIED:	0 0 80	0 0 80	0 0 80	
ACM ? : Y (Y OR N)	SAMPLE APPEARANCE HOMOGENOUS: N LAYERS: Y			ERIAL APPLICAT N PIPE	•
COMMENTS Raw Sewage Pumping Station.	FIBROUS: Y COLOR: Black	INS	ULATE: USTIC:	N DUCT	r: N _: N _: N

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PRIORITY INDEX 0.0000

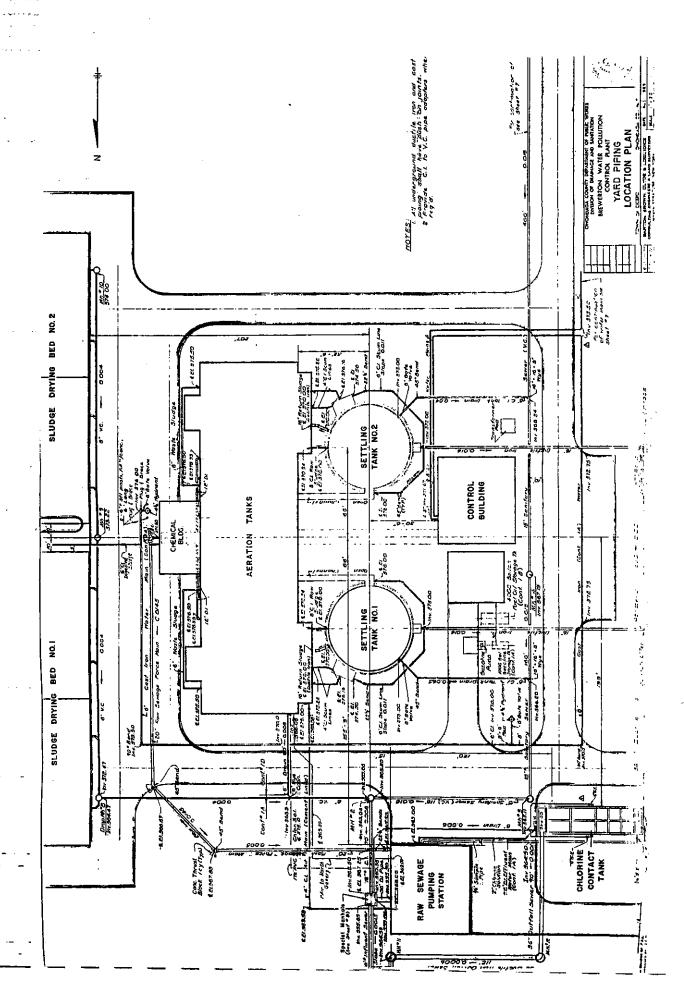
EXPOSURE FACTOR FRIABILITY ACCESSIBLE ACTIVITY L CONDITION G RESTRICTION OCCUPANCY OF AREA **EMPLOYEES** 1 1 HRS **VISITORS** 0 O HRS RESIDENTS 0 O HRS TOTAL 1 1 HRS



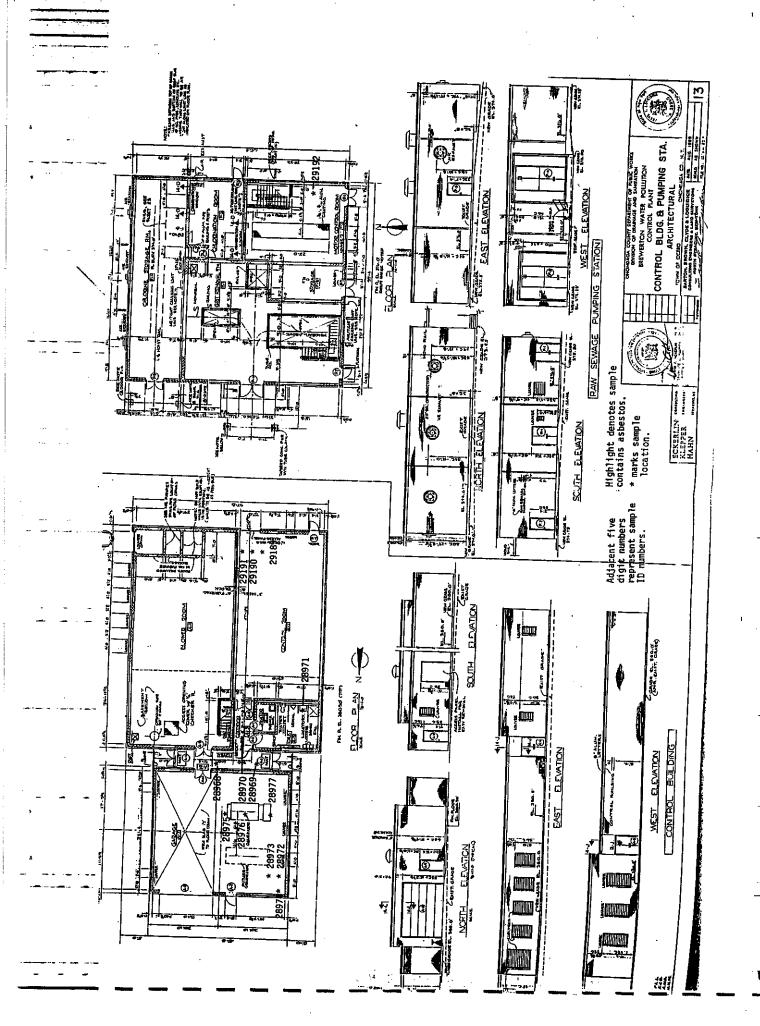


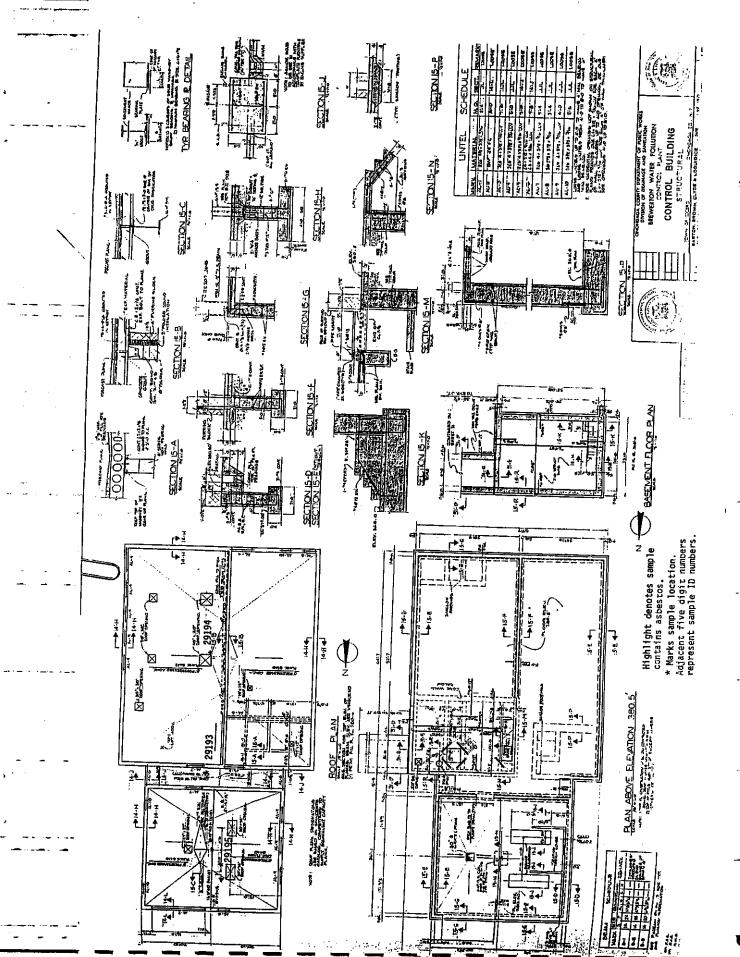
APPENDIX D:

PROJECT DIAGRAMS

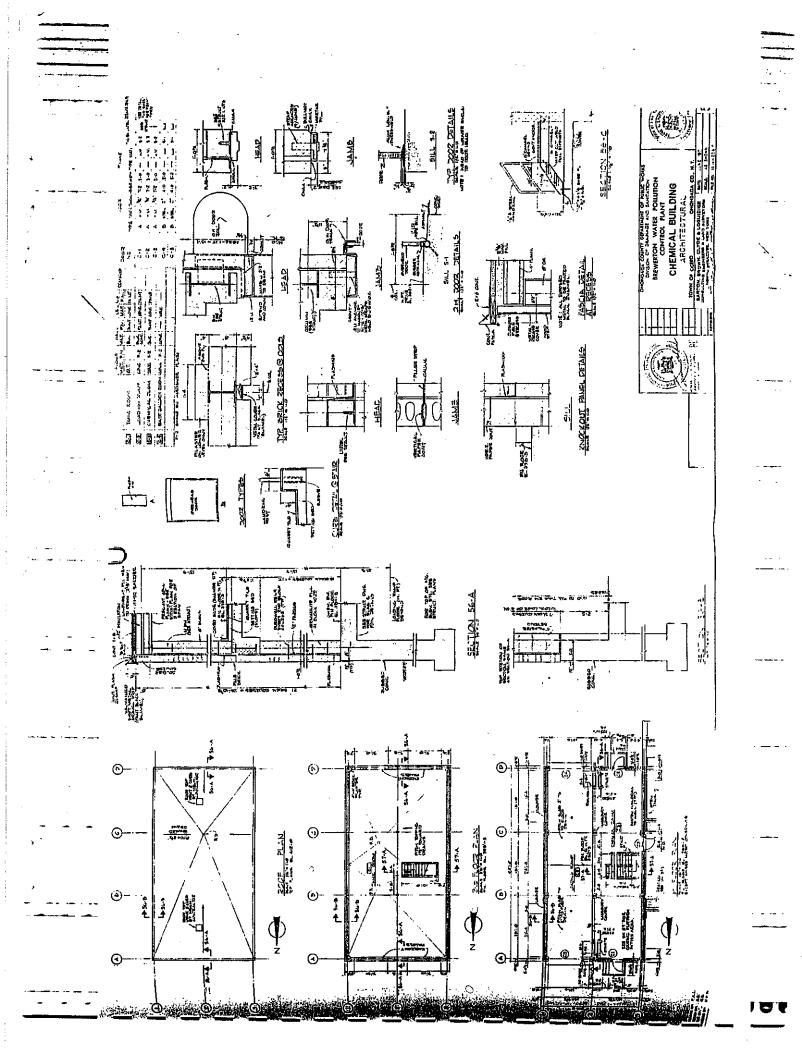


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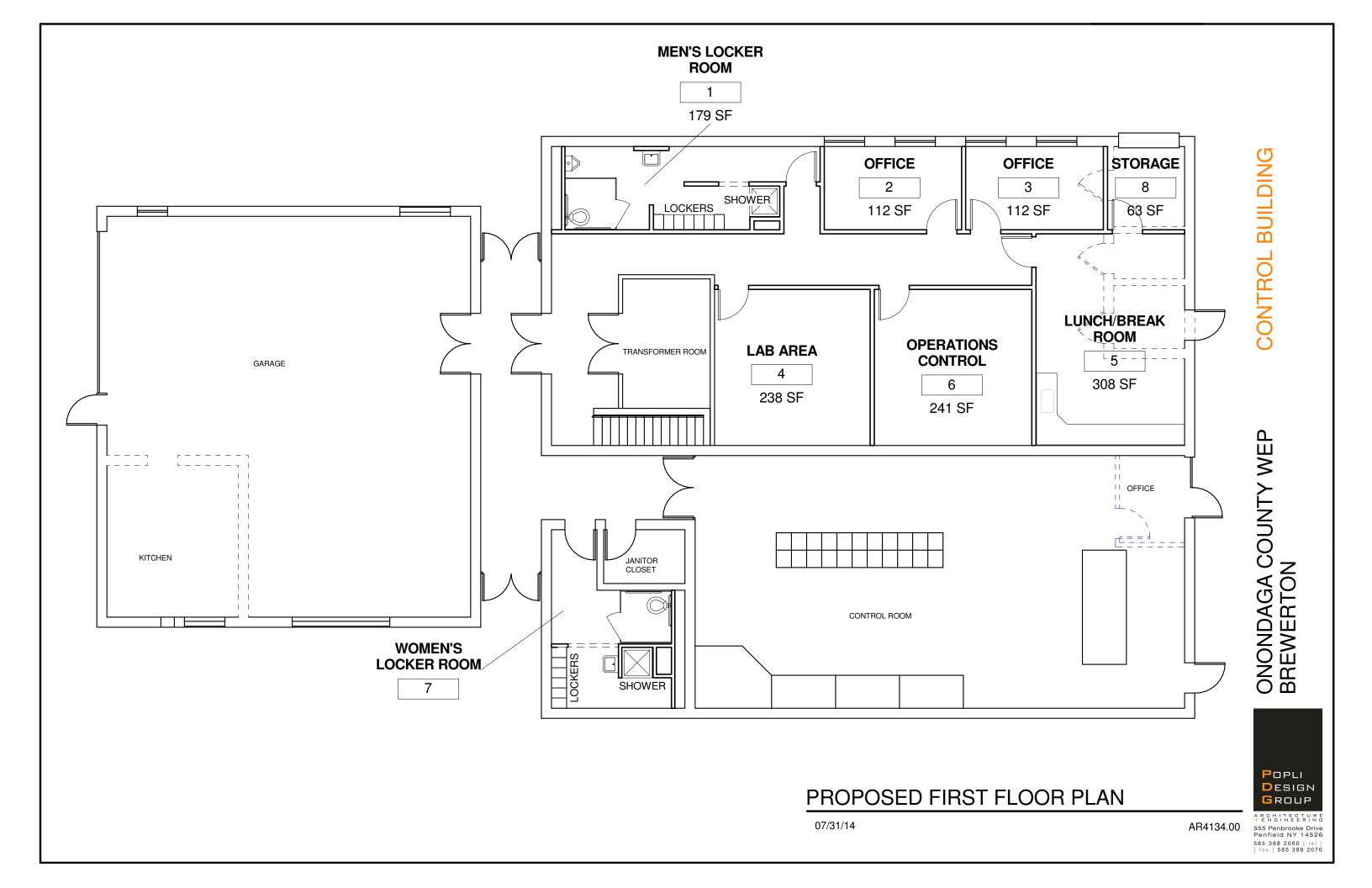
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Appendix F

Control Building First Floor Conceptual Layout





Appendix G

Project Bundling Cost Estimates



630986 ONONDAGA COUNTY DEPARTMENT OF WATER ENVIRONMENT PROTECTION BREWERTON WATER POLLUTION CONTROL PLANT CAPITAL IMPROVEMENT PLAN SUMMARY

RAS Pump Improvements North Gallery RAS Pumps 1, 2, 3 and 4, associated VFDs and associated flow meters 5 69,000 CCT Gates, 3729, 3730, 4835 Gate Improvements Chlorine Contact Tank Slide Gates 1 and 2, ML Tank Slide Gates (2), Sludge Concentration Tank Slide Gates (2), Sludge Co	Priority	Asset #	Issue Number	Project Title	Project Components / Description	5 Year (2015-2019)	10 Year (2020-2024)	20 Year (2025-2034)
Section Sect	1					\$ 3,090,000		
1	2					\$ 1,530,000		
Second Mandania Second Man	3	3456, 3457, 9736, 9737				\$ 90,000		
1	4	1778, 1482, 1334, 1424, 1216				\$ 1,060,000		
Society Soci	5	9845	E74-78		Site Security Improvements (Fire Alarm, Building Access, Gate Access and Site Lighting)	\$ 870,000		
1	6	N/A			Replace/rehab plant water piping and hydrants	\$ 450,000		
1	7	N/A	101), M(19,25,31,91), P(30,120), E(29,32,34,	Control Building Upgrades	Upgrade Control Building control room, lunch room and locker rooms	\$ 620,000		
9	8	N/A			Plant and Pump Station Odor Control	\$ 510,000		
Piss Piss	9	N/A		Structural Upgrades	except Control Building), MLSS Channel Improvements and telescoping valve replacement,	\$ 640,000		
12	10	9846			Upgrade interior building lighting, mechanical, plumbing and electrical systems		\$ 650,000	
12 1/3 1/4	11						\$ 1,020,000	
13 169-, 1405, 1066 Improvements Ferrous Christian Ferro	12	4797, 4798, 4799, 4800, 4801, 4803			Replace MCCs 11, 12, 13, 15, 21, 23		\$ 690,000	
14 2674, 2675, 7885, 7886 Improvements Chem Bidg - 2 Fl Tank 1 and 2 and Level Meters S 120,000 15 4808, 4810, 4811 Phase 4 Electrical Improvements Electrical Room Panels L-6A, L-6B, L-4 S 460,000 16 N/A Building Roof Improvements Replace Building Roofs S 940,000 17 4783 Influent Screening Improvements Replace/rehab Influent Screening System S 460,000 18 3015, 9847 Phase 3 Electrical Improvements Replace/rehab Influent Screening System S 460,000 19 8352, 8353, 8354, 8355 RAS Pump Improvements North Gallery RAS Pumps 1, 2, 3 and 4, associated VFDs and associated flow meters S 690,000 19 CCT Gates, 3729, 3730, 4835 Gate Improvements Chlorine Contact Tank Slide Gates 1 and 2, ML Tank Slide Gates (2), Sludge Concentration Tank Sluice Gate S 300,000 21 7253, 7254, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 Digester and Thickener Feed Improvements Peed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 1 and 2 Rotary Drum Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 8 Thickener Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 1 and 2 Rotary Drum Feed Pumps 8 Thickener Feed Pumps 1 and 2 Rotary Drum Feed Pumps 1 and 2 Rotary Drum Feed Pumps 1 and	13	1064, 1065, 1066			Replace/rehab Raw Sewage Pumps 1-3		\$ 690,000	
Improvements Letcrical Room Panes Lea, Les, Les, Les, Les, Les, Les, Les, Les	14	2674, 2675, 7885, 7886			Chem Bldg - 2 Fl Tank 1 and 2 and Level Meters		\$ 120,000	
Improvements Replace Building Roots Influent Screening Improvements Influent Screening System Influent Screening Replace/rehab Influent Screening System Influent Screening Replace/rehab Influent Screening System Phase 3 Electrical Improvements Improvements Phase 3 Electrical Improvements Improvements Improvements RAS Pump Improvements Orange Generator Replacement and Additional Electrical Equipment (Asset #9847) For a state of the stat	15	4808, 4810, 4811			Electrical Room Panels L-6A, L-6B, L-4		\$ 460,000	
Improvements S 460,000 18 3015, 9847 Phase 3 Electrical Improvements Garage Generator Replacement and Additional Electrical Equipment (Asset #9847) \$ 5,00,000 19 8352, 8353, 8354, 8355 RAS Pump Improvements North Gallery RAS Pumps 1, 2, 3 and 4, associated VFDs and associated flow meters \$ 690,000 20 CCT Gates, 3729, 3730, 4835 Gate Improvements Chlorine Contact Tank Slide Gates 1 and 2, ML Tank Slide Gates (2), Sludge Concentration Tank \$ 300,000 21 7253, 7254, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 Phase 2 Electrical Phase 2 Electrical Phase 3 Electrical Improvements Phase 3 Electrical Phase 3 Ele	16	N/A			Replace Building Roofs		\$ 940,000	
Improvements Garage Generator Replacement and Additional Electrical Equipment (Asset #9947) 8 8352, 8353, 8354, 8355 RAS Pump Improvements North Gallery RAS Pumps 1, 2, 3 and 4, associated VFDs and associated flow meters 5 690,000 CCT Gates, 3729, 3730, 4835 Gate Improvements Chlorine Contact Tank Slide Gates 1 and 2, ML Tank Slide Gates (2), Sludge Concentration Tank Sluce Gate Control Valve Improvements Replace Facility Control Valves 21 7253, 7254, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 Digester and Thickener Feed Pumps 1 and 2, Rotary Drum, Digested Sludge Pumps 1 and 2, Rotary Drum Feed Improvements Feed Pumps & Thickener Feed Pumps 1 and 2 13 N/A HVAC from Electric to Convert plant HVAC system from electric to natural gas	17	4783			Replace/rehab Influent Screening System		\$ 460,000	
Chlorine Contact Tank Slide Gates 1 and 2, ML Tank Slide Gates (2), Sludge Concentration Tank Sludge Concentrat	18	3015, 9847			Garage Generator Replacement and Additional Electrical Equipment (Asset #9847)			\$ 500,000
State improvements Stuice Gate S 300,000	19	8352, 8353, 8354, 8355		RAS Pump Improvements	North Gallery RAS Pumps 1, 2, 3 and 4, associated VFDs and associated flow meters			\$ 690,000
21 7253, 7254, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 22 4493, 3677, 3678, 2050, 2051, 15711, 15712 23 N/A HVAC from Electric to Convert plant HVAC system from electric to natural gas	20	CCT Gates, 3729, 3730, 4835		Gate Improvements				\$ 300,000
22 4493, 3677, 3678, 2050, 2051, 15711, 15712 Digester and Thickener Replace/rehab Thickener Rm-Rotary Drum, Digested Sludge Pumps 1 and 2, Rotary Drum Feed Improvements Feed Pumps & Thickener Feed Pumps 1 and 2 N/A HVAC from Electric to Convert plant HVAC system from electric to natural gas	21				Replace Facility Control Valves			\$ 360,000
23 N/A HVAC from Electric to Convert plant HVAC system from electric to natural gas	22							\$ 870,000
Naturai gas S90,00°	23	N/A		HVAC from Electric to Natural gas	Convert plant HVAC system from electric to natural gas			\$ 890,000

*NOTES: 1) All estimated costs are in 2014 dollars, 2) Issue numbers reference Popli Design Group Assessment Reports (Appendix C)

High Priority	\$	8,860,000
Intermediate Priority	\$	5,030,000
Future Priority	\$	3,610,000
Total	Ś	17.500.000

630986 - WEP Brewerton WPCP 20-year Capital Improvement Plan Phase 1 - High Priority Projects Cost Estimate

	Aeration System Improvements					
Item	Description	Qty		Estimated Project Cost		
1	Aeration Blower Upgrades and Relocation	7	EA	\$ 665,000		
2	Aeration Piping Replacement	1	LS	\$ 100,000		
3	Fine Bubble Aeration Diffuser Upgrades (SR and MLSS Tanks)	1	LS	\$ 350,000		
4	Coarse Bubble Aeration Diffuser Upgrades (North Digester Tanks)	1	LS	\$ 150,000		
5	Grit System Aeration Improvements	1	LS	\$ 75,000		
6	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$ 335,000		
7	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 134,000		
8	Contractor Profit (20%)	1	LS	\$ 335,000		
9	Contingency (25%)	1	LS	\$ 420,000		
10	Engineering/Legal/Administrative (20%)	1	LS	\$ 520,000		
	Total Estimated Project Bundle Cost (rounded)	•	-	\$ 3,090,000		

Phase 1 Electrical System Upgrades					
Item	Project Description	Qty		Estimated Project Cost	
1	PLC Replacement	6	EA	\$ 300,000	
2	Main Distribution Switchgear/Associated Equipment	1	EA	\$ 250,000	
3	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$ 138,000	
4	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 56,000	
5	Contractor Profit (20%)	1	LS	\$ 138,000	
6	Contingency (25%)	1	LS	\$ 180,000	
7	Integration & Programming	1	LS	\$ 200,000	
8	Engineering/Legal/Administrative (20%)	1	LS	\$ 260,000	
	Total Estimated Project Bundle Cost (rounded)			\$ 1,530,000	

Hypochlorite Tank Improvements				
Item	Project Description	Qty		Estimated Project Cost
1	Hypochlorite Tank - 1000 gal	2	EA	\$ 25,000
2	Level Sensor	2	EA	\$ 5,000
3	Eye Wash Stations	5	EA	\$ 12,500
4	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 4,000
5	Contractor Profit (20%)	1	LS	\$ 9,000
6	Contingency (25%)	1	LS	\$ 11,000
7	Engineering/Legal/Administrative (20%)	1	LS	\$ 14,000
	Total Estimated Project Bundle Cost (rounded)			\$ 90,000

	Raw Sewage Pumping Station Improvements					
Item	Project Description	Qty		Estimated Project Cost		
1	Grit Chamber Clam Bucket and Hoist System	1	EA	\$ 300,000		
2	Grit Chamber Air Diffuser Hoist Replacement	1	EA	\$ 100,000		
4	Special Manhole 1 Improvements	1	LS	\$ 60,000		
5	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$ 115,000		
6	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 46,000		
7	Contractor Profit (20%)	1	LS	\$ 115,000		
8	Contingency (25%)	1	LS	\$ 144,000		
9	Engineering/Legal/Administrative (20%)	1	LS	\$ 176,000		
	Total Estimated Project Bundle Cost (rounded)			\$ 1,060,000		

	Site Security Improvements						
Item	Project Description	Project Description Qty		Estimated Project Cost			
1	Site Lighting Upgrades	1	LS	\$ 100,000			
2	Fire Alarm Upgrades	1	LS	\$ 175,000			
3	Building and Gate Access	1	LS	\$ 100,000			
4	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$ 94,000			
5	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 38,000			
6	Contractor Profit (20%)	1	LS	\$ 94,000			
7	Contingency (25%)	1	LS	\$ 118,000			
8	Engineering/Legal/Administrative (20%)	1	LS	\$ 144,000			
	Total Estimated Project Bundle Cost (rounded)			\$ 870,000			

Replacement of Plant Water Piping/Hydrants						
Item	Project Description	Qty		Estimated Project Cost		
1	Plant Water Piping and Hydrant Improvements	1	EA	\$ 241,500		
2	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 20,000		
3	Contractor Profit (20%)	1	LS	\$ 49,000		
4	Contingency (25%)	1	LS	\$ 61,000		
5	Engineering/Legal/Administrative (20%)	1	LS	\$ 75,000		
	Total Estimated Project Bundle Cost (rounded)			\$ 450,000		

Control Building Upgrades						
Item	Project Description	Qty		Estimated Project Cost		
1	Control Building Upgrades	1	EA	\$ 325,000		
2	Demolition	1	EA	\$ 10,000		
3	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 27,000		
4	Contractor Profit (20%)	1	LS	\$ 67,000		
5	Contingency (25%)	1	LS	\$ 84,000		
6	Engineering/Legal/Administrative (20%)	1	LS	\$ 103,000		
	Total Estimated Project Bundle Cost (rounded)					

	Odor Control Upgrades						
Item	Project Description	Qty		Estimated Project Cost			
1	Pump Station Odor Control Upgrades	1	LS	\$ 70,000			
2	Raw Sewage Odor Control Upgrades	1	LS	\$ 75,000			
3	Sludge Handling Odor Control Upgrades	1	LS	\$ 94,500			
4	Specialized Hatch/Steel Floor Plating/Miscellaneous	1	LS	\$ 35,000			
5	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 22,000			
6	Contractor Profit (20%)	1	LS	\$ 55,000			
7	Contingency (25%)	1	LS	\$ 69,000			
8	Engineering/Legal/Administrative (20%)	1	LS	\$ 85,000			
	Total Estimated Project Bundle Cost (rounded)	•		\$ 510,000			

Structural Upgrades						
Item	Project Description	Qty		Estimated Project Cost		
1	Rehabilitate Structural and Architectural Building Components	1	LS	\$ 300,000		
2	Rehabilitate the MLSS Channels	1	LS	\$ 30,000		
3	Replace telescoping valves and level scum pits	2	EA	\$ 16,000		
4	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 28,000		
5	Contractor Profit (20%)	1	LS	\$ 70,000		
6	Contingency (25%)	1	LS	\$ 87,000		
7	Engineering/Legal/Administrative (20%)	1	LS	\$ 107,000		
	Total Estimated Project Bundle Cost (rounded)			\$ 640,000		

Total Phase 1 - High Priority Improvements	\$ 8,860,000

NOTE: All estimated costs are in 2014 dollars

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Phase 2 - Intermediate Priority Projects Cost Estimate

Interior Building Improvements						
Item	Project Description	Qty		Estimat	ed Project Cost	
1	Upgrade interior lighting, plumbing and electrical systems	1	LS	\$	350,000	
2	Mobilization, Bonding, Insurance (8%)	1	LS	\$	28,000	
3	Contractor Profit (20%)	1	LS	\$	70,000	
4	Contingency (25%)	1	LS	\$	90,000	
5	Engineering/Legal/Administrative (20%)	1	LS	\$	110,000	
	Total Estimated Project Bundle Cost (rounded)			\$	650,000	

	Settling Tank Improvements						
Item	Project Description	Qty		Estima	ited Project Cost		
1	Settling Tank Sludge Collectors, Drives, Drive Motors and Pumps	1	LS	\$	550,000		
2	Mobilization, Bonding, Insurance (8%)	1	LS	\$	44,000		
3	Contractor Profit (20%)	1	LS	\$	110,000		
4	Contingency (25%)	1	LS	\$	138,000		
5	Engineering/Legal/Administrative (20%)	1	LS	\$	169,000		
	Total Estimated Project Bundle Cost (rounded)				1,020,000		

	Phase 2 Electrical Improvements					
Item	Project Description	Qty		Estimated Project Cost		
1	Motor Control Center (MCC) Replacement/Rehab	6	EA	\$	300,000	
2	Ancillary Electrical Improvements (25%)	1	EA	\$	75,000	
3	Mobilization, Bonding, Insurance (8%)	1	LS	\$	30,000	
4	Contractor Profit (20%)	1	LS	\$	75,000	
5	Contingency (25%)	1	LS	\$	94,000	
6	Engineering/Legal/Administrative (20%)	1	LS	\$	115,000	
	Total Estimated Project Bundle Cost (rounded) \$				690,000	

Raw Sewage Pump Improvements						
Item	Project Description	Project Description Qty			Estimated Project Cost	
1	Replace Raw Sewage Pumps 1,2 and 3	3	EA	\$	300,000	
2	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$	75,000	
3	Mobilization, Bonding, Insurance (8%)	1	LS	\$	30,000	
4	Contractor Profit (20%)	1	LS	\$	75,000	
5	Contingency (25%)	1	LS	\$	94,000	
6	Engineering/Legal/Administrative (20%)	1	LS	\$	115,000	
	Total Estimated Project Bundle Cost (rounded)				690,000	

	Ferrous Chloride Improvements						
Item	Project Description			Estimated Project Cost			
1	Ferrous Chloride Tank 1 and 2 Replacement - 5000 gal	2	EA	\$	40,000		
2	Tank Level Meter and Mechanical Appurtenances Replacement	2	LS	\$	10,000		
3	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$	13,000		
4	Mobilization, Bonding, Insurance (8%)	1	LS	\$	6,000		
5	Contractor Profit (20%)	1	LS	\$	13,000		
6	Contingency (25%)	1	LS	\$	16,000		
7	Engineering/Legal/Administrative (20%)	1	LS	\$	20,000		
	Total Estimated Project Bundle Cost (rounded)	\$	120,000				

Phase 4 Electrical Improvements						
Item	Project Description	Project Description Qty		Estimated Project (
1	Electrical Room Panel Replacement	5	EA	\$	200,000	
2	Ancillary Electrical Improvements (25%)	1	LS	\$	50,000	
3	Mobilization, Bonding, Insurance (8%)	1	LS	\$	20,000	
4	Contractor Profit (20%)	1	LS	\$	50,000	
5	Contingency (25%)	1	LS	\$	63,000	
6	Engineering/Legal/Administrative (20%)	1	LS	\$	77,000	
	Total Estimated Project Bundle Cost (rounded)	-		\$	460,000	

	Building Roof Improvements						
Item	Project Description Qty			Estimated Project Cost			
1	Replace Building Roofs	1	LS	\$	405,000		
3	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$	102,000		
4	Mobilization, Bonding, Insurance (8%)	1	LS	\$	41,000		
5	Contractor Profit (20%)	1	LS	\$	102,000		
6	Contingency (25%)	1	LS	\$	127,000		
7	Engineering/Legal/Administrative (20%)	1	LS	\$	156,000		
	Total Estimated Project Bundle Cost (rounded)	<u>-</u>		\$	940,000		

Replace Influent Screening System						
Item	Project Description	Qty		Estimat	ated Project Cost	
1	Replace Influent Screen	1	EA	\$	250,000	
2	Mobilization, Bonding, Insurance (8%)	1	LS	\$	20,000	
3	Contractor Profit (20%)	1	LS	\$	50,000	
4	Contingency (25%)	1	LS	\$	63,000	
5	Engineering/Legal/Administrative (20%)	1	LS	\$	77,000	
	Total Estimated Project Bundle Cost (rounded)	•	•	\$	460,000	

Total Phase 2 - Intermediate Priority Improvements	\$ 5,030,000

NOTE: All estimated costs are in 2014 dollars

630986 - WEP Brewerton WPCP 20-year Capital Improvement Plan Phase 3 - Future Priority Projects Cost Estimate

	Phase 3 Electrical Improvements						
Item	Project Description	Qty		Estima	ted Project Cost		
1	Garage Generator Rehab	1	EA	\$	150,000		
2	Miscellaneous Electrical Equipment Upgrades	1	LS	\$	50,000		
3	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$	50,000		
4	Mobilization, Bonding, Insurance (8%)	1	LS	\$	20,000		
5	Contractor Profit (20%)	1	LS	\$	50,000		
6	Contingency (25%)	1	LS	\$	63,000		
7	Engineering/Legal/Administrative (20%)	1	LS	\$	77,000		
	Total Estimated Project Bundle Cost (rounded)			\$	500,000		

	Return Activated Sludge Pump Improvements						
Item	Project Description	Qty		Estimat	ted Project Cost		
1	Replace RAS Pumps 1, 2, 3 and 4 and associated VFDs	4	EA	\$	240,000		
2	Replace RAS Pump Flow Meters	4	EA	\$	60,000		
3	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$	75,000		
4	Mobilization, Bonding, Insurance (8%)	1	LS	\$	30,000		
5	Contractor Profit (20%)	1	LS	\$	75,000		
6	Contingency (25%)	1	LS	\$	94,000		
7	Engineering/Legal/Administrative (20%)	1	LS	\$	115,000		
	Total Estimated Project Bundle Cost (rounded)				690,000		

	Gate Improvements						
Item	Project Description	Qty		Estimated Project Cost			
1	Replace Chlorine Contact Tank Slide Gates 1 and 2	2	EA	\$ 50,000			
2	Replace MLSS Tank Slide Gates 1 and 2	2	EA	\$ 50,000			
3	Replace Sludge Concentration Tank Sluice Gate	1	EA	\$ 25,000			
4	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$ 32,000			
5	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 13,000			
6	Contractor Profit (20%)	1	LS	\$ 32,000			
7	Contingency (25%)	1	LS	\$ 40,000			
8	Engineering/Legal/Administrative (20%)	1	LS	\$ 50,000			
	Total Estimated Project Bundle Cost (rounded)			\$ 300,000			

Control Valve Improvements						
Item	Project Description	Qty		Estima	ted Project Cost	
1	Replace Facility Control Valves	10	EA	\$	150,000	
2	Ancillary Mechanical/Electrical Improvements (25%)	1	LS	\$	38,000	
3	Mobilization, Bonding, Insurance (8%)	1	LS	\$	16,000	
4	Contractor Profit (20%)	1	LS	\$	38,000	
5	Contingency (25%)	1	LS	\$	50,000	
6	Engineering/Legal/Administrative (20%)	1	LS	\$	60,000	
	Total Estimated Project Bundle Cost (rounded)			\$	360,000	

	Digester and Thickener Feed Improvements						
Item	Project Description	Qty		Estimated Project Cost			
1	Replace Thickener Rotary Drum	1	EA	\$ 250,000			
2	Replace Digested Sludge Pumps 1 and 2	2	EA	\$ 100,000			
3	Replace Rotary Drum Feed Pumps	2	EA	\$ 60,000			
4	Replace Thickener Feed Pumps 1 and 2	2	EA	\$ 60,000			
5	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 38,000			
6	Contractor Profit (20%)	1	LS	\$ 94,000			
7	Contingency (25%)	1	LS	\$ 118,000			
8	Engineering/Legal/Administrative (20%)	1	LS	\$ 144,000			
	Total Estimated Project Bundle Cost (rounded)			\$ 870,000			

Convert Plant HVAC from Electric to Natural Gas						
Item	Project Description	Qty		Estimated Project Cost		
1	Condensing High Efficiency Boiler System	1	LS	\$ 130,000		
2	Natural Gas Service	1	LS	\$ 100,000		
3	Hot Water Piping	1	LS	\$ 100,000		
4	Hot Water Heating Units	2	LS	\$ 150,000		
5	Mobilization, Bonding, Insurance (8%)	1	LS	\$ 39,000		
6	Contractor Profit (20%)	1	LS	\$ 96,000		
7	Contingency (25%)	1	LS	\$ 120,000		
8	Engineering/Legal/Administrative (20%)	1	LS	\$ 147,000		
	Total Estimated Project Bundle Cost (rounded)			\$ 890,000		

Total Phase 3 - Future Priority Improvements	\$ 3,610,000

NOTE: All estimated costs are in 2014 dollars