

April 6, 2011

# **POLLUTANT MINIMIZATION PLAN**

**BGF Industries, Inc.  
401 Amherst Avenue  
Altavista, Virginia**

*Prepared for*

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*Environmental Consulting & Management*

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## **1.0 INTRODUCTION**

On behalf of BGF Industries, Inc. (BGF), Roux Associates, Inc. (Roux Associates) has prepared this Pollutant Minimization Plan (PMP) for the BGF Altavista Plant (Site) located in Altavista, Virginia (Figure 1). This PMP is being submitted to the Virginia Department of Environmental Quality (VADEQ) and describes BGF's strategy to identify sources and minimize releases of polychlorinated biphenyls (PCBs) from the Site. This PMP was developed in accordance with the Site's Virginia Pollutant Discharge Elimination System (VPDES) Industrial Storm Water General Permit No. VAR051936, and the Delaware River Basin Commission's (DRBC's) January 26, 2006 "Recommended Outline for Pollutant Minimization Plan for Polychlorinated Biphenyls in the Delaware Estuary-Industrial Dischargers" (Recommended Outline). The DRBC's Recommended Outline was used as the VADEQ currently does not have available a preferred or required PMP format.

In 2010, the VADEQ directed BGF to prepare a PMP as part of its overall strategy to reduce PCB loadings to the Roanoke River. A recently completed Total Maximum Daily Load (TMDL) study for PCBs in the Roanoke River watershed identified the Site as a contributor of PCBs to the River. The TMDL is a calculated maximum value for a pollutant that the receiving water body can assimilate and maintain compliance with water quality standards. States are required to develop TMDLs for impaired water bodies pursuant to Section 303(d) of the Clean Water Act and the United States Environmental Protection Agency's (USEPA's) Water Quality Planning and Management Regulations (Title 40 Code of Federal Regulations Part 130).

As part of the TMDL study, the VADEQ collected and analyzed a limited number of water quality samples using a recently developed analytical method (USEPA Method 1668A) that allows PCB detection to extremely low picograms per liter (pg/L) levels. The water quality data were used in conjunction with sediment and fish tissue data to develop and initially calibrate a TMDL model for the watershed. The model was subsequently used to quantify allowable PCB discharge allocations for all permitted discharges to the Roanoke River. The VADEQ documented the findings of the TMDL study and the resulting TMDL allocations in a December 2009 report titled, "Roanoke River PCB TMDL Development". The USEPA approved TMDLs for the Roanoke River watershed on April 9, 2010. Consequently, the VADEQ notified BGF in an October 19, 2010 letter titled, "RE: Coverage under the VPDES Industrial Storm Water General Permit

VAR051936,” that the Site will have to meet a Waste Load Allocation (WLA) of 0.05 milligrams of PCB per year. The PMP presented and discussed in the following sections is the initial step in a structured process to address the assigned WLA.

## **1.1 Plan Organization**

The remainder of this PMP is organized as follows:

- Section 2.0: provides a brief overview of the Site’s current condition and a history of the Site focusing on known past PCB uses;
- Section 3.0: summarizes previous PCB remedial activities;
- Section 4.0: describes the known and potential onsite and offsite sources of PCBs;
- Section 5.0: presents BGF’s strategy to minimize the Site’s PCB loading to the Roanoke River;
- Section 6.0: details the protocols to measure, demonstrate, and report PCB minimization progress;
- Section 7.0: outlines a milestone schedule; and
- Section 8.0: lists the references that were used in this PMP.

Supporting information is shown on accompanying figures and plates.

## **2.0 FACILITY DESCRIPTION**

The Site consists of a 28-acre property located at 401 Amherst Avenue in the Town of Altavista, Campbell County, Virginia. Much of the property is developed and is used by BGF to manufacture and assemble specialty fiber products and nonwoven mats with industrial and commercial applications. Additional information regarding the Site's current conditions and historic use of PCBs follow in this section.

### **2.1 Current Site Setting**

The BGF Altavista facility is located in southern Altavista, near the county border of Campbell and Pittsylvania. Site features include manufacturing and administrative buildings, parking lots, paved roads, and grassy areas. Impervious surfaces cover approximately 20 acres (71 percent) of the Site. Surrounding the Site is a mix of residential and commercial properties. Bennett's Mechanical Co, Inc. lies to the east, while tracks owned by Norfolk Southern Railroad traverse the southern border. Beyond the railroad tracks are the Lane Furniture Factory and the Staunton River. Since the Staunton River is actually an 81 mile segment of the Roanoke River, the two names are considered interchangeable in this PMP.

As shown on Figure 2 and Plate 1, a network of underground storm sewers collects and directs the Site's stormwater across the Site and then east, below Nelson Avenue. The Site's stormwater is joined with general stormwater runoff from the Town of Altavista at approximately three locations, one west of the Central Yard, one at the rear parking lot, and the other at the Combined Outfall at the 30-inch diameter storm lateral ("Combined Outfall"). The combined outflow daylights to an energy dissipation basin and surface drainage ditch located immediately northwest of the Norfolk Southern Railroad right-of-way. This location corresponds to the Site's VPDES monitoring point. This water is then conveyed beneath the railroad right-of-way and discharged to the Roanoke River. Sanitary wastewater is conveyed separately to a local, publicly owned treatment works (POTW) for treatment and release.

### **2.2 Historic PCB Use and Site Characterization**

BGF purchased the facility in 1988 from the previous owner, Burlington Industries. Burlington Industries had used PCB oil as a heat transfer medium in finishing dryers and in a hot oil boiler. The dryer was installed in the early 1960s, used through 1972, and decommissioned on or before

April 1978. The associated boiler was installed outside the shop area in the Central Yard's courtyard. The location of the Central Yard is shown on Figure 2. Piping from the dryer and boiler ran up to the roof of the Greige Warehouse and connected to the penthouse. During the time the dryer was in service, PCB oil releases occurred inside the plant, on the roof, and on the grounds when the pump seal failed or other mechanical problems arose. Other past releases may be attributed to improper maintenance of PCB oil drums in storage areas. PCBs subsequently migrated to other parts of the facility via the sanitary and storm sewers and drainage ditches.

Although Burlington Industries had collected soil samples for analysis during the property transfer, PCB testing was not required at that time. Therefore, BGF was unaware of onsite PCB contamination until an environmental site assessment was conducted in 1998. BGF then retained ATC and Associates, Inc. to delineate the extent of PCB contamination. Approximately 1.3 acres of the Site were determined to be impacted by PCBs consisting of Aroclors 1242, 1248, and 1254. A Site Characterization Report (SCR) documenting these findings and remedial activities conducted in 1999 and 2000 (see Section 3.1) was submitted to the USEPA on April 3, 2001. After a more comprehensive study was completed, the SCR was amended on March 18, 2003 and subsequently approved by the USEPA in May 2004.

### **3.0 PREVIOUS PCB REMEDIAL ACTIVITIES**

This section describes actions performed by BGF during two rounds of voluntary PCB cleanup at the Site. These remedial activities decreased PCBs in stormwater leaving the Site from an average of 4.3 parts per billion (ppb) to less than 0.5 ppb.

#### **3.1 Remedial Activities: 1999 – 2000**

During the course of the ongoing site assessment and preparation of the SCR, BGF performed the following activities to halt offsite migration of PCBs:

- interior and exterior wall surfaces adjacent to the former location of the PCB recirculation system were cleaned;
- a groundwater and sump pump filtration system was installed;
- an above ground fuel oil tank was removed;
- stormwater sediment traps and silt fencing to minimize soil erosion were installed;
- two sediment dams in the drainage ditch were constructed to supplement the existing dam;
- a carbon filter system to address drainage and eliminate a potential migration pathway was installed; and
- fencing to prevent unauthorized access to the Site was erected.

These initial voluntary cleanup activities were undertaken between December 1999 and early 2000 with the approval of the USEPA.

#### **3.2 Remedial Activities: 2006 – 2007**

Additional interim studies identified the cause and scope of PCB contamination and in 2005, a Voluntary Clean-up Plan was submitted to and approved for the Site by the USEPA. The second round of cleanup activities commenced on October 9, 2006 and was completed in August 2007. The remediation program targeted the Central Yard, storm sewer lines in the Central Yard and underneath the warehouse, East Yard, North Yard, and the drainage ditch west of the railroad tracks. Specific remedial activities included:

- rerouting and disconnecting several key storm sewer lines in order to bypass areas of the Site contaminated with PCBs;
- installation of a sediment basin at the discharge of the storm sewer drainage line;

- use of a multimedia and carbon filtration system at Outfall 006 and at the discharge of the twin 36-inch diameter drainage lines to prevent further offsite migration of residual PCBs;
- installation of a stabilization pond to manage sheet flow from Outfall 008;
- removal and disposal of over 15,000 tons of contaminated soil, including approximately 9,800 tons of soil containing greater than 50 parts per million (ppm) of PCBs, (i.e., hazardous waste); and
- restoration of remediated Site areas.

The lateral and vertical extents of excavation in the Central Yard, East Yard, and North Yard are shown on Figures 3, 4, and 5, respectively. Excavated soils exhibiting less than 25 ppm of PCBs were reused onsite as backfill, whereas soils containing between 25 and 50 ppm of PCBs were disposed as non-hazardous waste at an approved offsite disposal facility.

The remediation program was deemed a success as Site stormwater discharges met the then stipulated cleanup requirement of 3.0 ppb of PCBs.



## **4.0 SOURCE IDENTIFICATION PROCEDURES**

Identifying known and potential sources of PCBs at the Site is one of the first steps toward realizing the objective of the PMP. Roux Associates' identified the known and potential PCB sources described in this section based on a review of historical and current Site information.

### **4.1 Known Sources**

Known sources are those materials, equipment, processes, soils, and sediments that release PCBs to the environment. This includes materials, equipment, processes, soils, and sediments whose PCB concentrations are in compliance with regulatory standards, such as those promulgated under the Toxic Substances Control Act (TSCA).

There are four known sources of PCBs at the Site:

- Sewer lines;
- Soils impacted by historical spills and releases;
- Potable water from the Town of Altavista; and
- Atmospheric deposition.

Each of these known sources is discussed in greater detail in the following sections.

#### **4.1.1 Sewer Lines**

As discussed in Section 2.2, historic PCBs released from the hot oil boiler and finishing dryers were conveyed across the Site by the sanitary and storm sewer system. These releases concomitantly contaminated sediments, debris, and other solids accumulated within the sewers, some of which remain despite high pressure washing and vacuum truck cleaning of culverts and sewers performed during the second round of remedial activities. Sampling conducted between 2008 and 2010 (Plate 1) indicated that PCBs in excess of 1,000,000 pg/L (equivalent to 0.001 ppm) have been detected at the Combined Outfall. Solids collected from the twin 36-inch diameter lines exhibited PCBs in excess of 50 ppm. Entrainment of solids deposited in the twin 36-inch diameter lines as a result of natural flow and depositional patterns may explain the elevated PCB concentrations observed there.

#### **4.1.2 Onsite Soils**

As discussed in Section 2.2, PCB soil impacts were identified in the Central Yard, North Yard, and East Yard. Most of the PCB-impacted soils were excavated and disposed of in 2006 and 2007, as documented in the July 11, 2007 “Annual Log Summary Report for the Self-Implemented Cleanup of PCB”. Some potentially hazardous soils, however, were left in place to avoid compromising the structural stability of the following three structures:

- the corner of the plant adjacent to the boiler pit in the Central Yard, including the edge of the maintenance shop and the finishing bay, where adjacent soil to five feet below land surface (ft bls) exhibit 80 ppm of PCBs;
- the concrete dike around the No. 5 fuel oil tank in the Central Yard Courtyard, where adjacent soil to five ft bls exhibit 50 to 500 ppm of PCBs; and
- the white storage shed in the Central Yard Courtyard, where adjacent soil to five ft bls exhibit 50 to 500 ppm of PCBs.

These soils could not be remediated and thus are a documented onsite source of PCBs. Residual PCBs are also present in excavated soils containing less than 25 ppm of PCBs that were re-used as onsite backfill. Regulations promulgated under TSCA permit such use at the Site.

When stormwater or groundwater contacts the above soils, some of the PCBs can be mobilized as a result of soil to water partitioning. Stormwater runoff can also carry soil particles with adsorbed PCBs, some of which are deposited in the storm sewers and ultimately reach the Staunton River.

#### **4.1.3 Potable Water from the Town of Altavista**

On September 16, 2008, a sample of the Town of Altavista’s potable water was collected, analyzed via Method 1668A, and found to contain 6,280 pg/L of PCBs. Potable water has numerous uses at the Site and, consequently, is believed to contribute PCBs to the storm and sanitary sewer system.

#### **4.1.4 Atmospheric Deposition**

A recent study performed by the Department of Environmental Sciences at Rutgers University, titled “Direct and Indirect Atmospheric Deposition of PCBs to the Delaware River Watershed,” concluded that PCBs introduced via atmospheric deposition can exceed the TMDL. Specifically, the TMDL for the tidal Delaware River (water-quality zones 2-5) is 0.139 kilograms per year

(kg/yr), whereas the estimated PCB contributions from wet, dry particle, and gaseous absorption deposition are 0.6, 1.7, and 6.5 kg/yr, respectively. Similar PCB contributions from the atmosphere that impact stormwater runoff can be expected at the Site.

#### **4.2 Potential Sources**

Aside from the potable water discussed above, stormwater from the Town of Altavista that joins the Site's stormwater may contain detectable quantities of PCBs originating from atmospheric deposition or other historic sources. Sampling to quantify this and other potential offsite sources has not been fully performed to date.

#### **4.3 Baseline Load Assessment**

As documented in the January 26, 2009 "Report on Storm Water Test Results for Initial Testing for Permit Application" that BGF submitted to the VADEQ, multiple sampling events were conducted at the Site in 2008. The data were entered into a TMDL model to evaluate PCB release and migration. The model estimated the Site released between 0.1 to 0.23 kg/year of PCBs in 2008, 90 percent of which originated from Drainage Areas 004 and 006.

Due to uncertainties described in this paragraph, the 2008 evaluation should not be interpreted as a representative baseline load assessment. Method 1668 requires adhering to ultra clean sampling protocols, but whether these protocols were executed is unknown. The samples were collected at various times of the year instead of on the same day, adding temporal uncertainty to the interpretation. All locations except the Combined Outfall were sampled only once, so a confidence interval at almost all locations cannot be calculated. Some samples were collected during dry weather (i.e., base) flow while others were collected during wet weather (i.e., storm) flow. Without separate collection, the effects of first-flush, infiltration and inflow, and dilution on PCB discharges during storm and base flow conditions cannot be determined. Moreover, sampling should be conducted during storms of varying intensities to assess whether large and small storm events result in similar or different PCB loadings to the Roanoke River. Pending completion of a representative baseline load assessment, an appropriate PCB minimization strategy cannot be credibly developed and implemented.

## **5.0 PCB MINIMIZATION STRATEGY**

Although a robust PCB minimization strategy cannot be formulated at this time, applicable concepts based on site-specific knowledge (e.g., PCB sources, drainage areas, stormwater runoff flow patterns) have been developed for the Site and are presented and discussed in this section.

### **5.1 Onsite Sources**

Two of the four known sources of PCBs identified in Section 4.1 are onsite sources: sewer lines and soils. Sections 5.3.1 and 5.3.2 describe actions that can be implemented to minimize or identify residual PCBs released from known and potential onsite sources.

### **5.2 Offsite Sources**

Two of the four known sources of PCBs identified in Section 4.1 are offsite sources: the Town of Altavista's potable water supply and atmospheric deposition. The potential PCB source cited in Section 4.2, Town of Altavista's stormwater, is also an offsite source. There are no practical minimization measures to address the first two offsite sources. Sections 5.3.1 and 5.3.2 describe actions that can be implemented to minimize or characterize the potential offsite source.

### **5.3 Identification of Minimization Measures**

The core viewpoint to minimize the Site's PCB discharge is that PCB sources must be identified and, to the extent possible, isolated from contact with stormwater since stormwater is the predominant pathway of PCB entrainment and transport. Prior sections discussed the Site's PCB sources. This section presents potentially applicable measures to minimize the volume of PCB-impacted stormwater leaving the Site.

#### **5.3.1 Potential Actions to Minimize Known and Probable Sources**

The minimization measures listed below are those that appear applicable based on the current understanding of Site layout, drainage infrastructure, and PCB fate and transport processes.

- Good Housekeeping – Regular cleaning of building roofs across the Site. High pressure washing and vacuum truck cleaning of culverts and sewers following completion of surface mitigation measures.
- Source Area Isolation and/or Mitigation – Preventing or minimizing contact between stormwater and residual PCBs in surficial Site soils via an asphalt cap or vegetated soil cover.

- Stormwater Segregation – Segregating PCB-impacted from PCB-free storm sewer lines via installation of new lines or re-routing of existing lines.
- Stormwater Diversion – Intercepting and diverting stormwater away from contact with onsite soils or other features (i.e., sewers) containing residual PCBs via additional sewer lines or new lined swales or ditches.
- Stormwater Volume Reduction – Attenuating the volume of stormwater runoff that enters the sewer system via green roofs, green parking, grassed swales, rain gardens, porous asphalt pavement, or pervious concrete pavement.
- Stormwater Filtration – Removing dissolved and sorbed phase PCBs in the stormwater via grassed swales, infiltration trenches, vegetated filter strips, compost barriers, or catch basin inserts/sediment traps.
- Sewer Rehabilitation – Sliplining pipe sections containing cracks, holes, broken joints, or other deficiencies to eliminate PCB-impacted water from the surrounding soils from entering the drainage lines via infiltration and inflow.
- End-of-Pipe Treatment – Installing sedimentation basins, multimedia and carbon filtration system, or natural media filtration system to treat the stormwater effluent prior to final discharge to the Roanoke River.

The Site's PCB minimization strategy is expected to be a combination of many of the above measures to provide efficacy, robustness, and redundancy.

### **5.3.2 Actions to Identify and Control Potential Sources**

BGF proposes to collect composite samples from strategic locations across the Site for PCB analysis via SW-846 Method 8082 and/or Method 1668A or 1668C, as appropriate. Analytical protocols will follow those discussed in Section 6.1. The data will be used to determine the appropriate actions to address the potential sources identified.

### **5.4 Source Prioritization**

Based on the number of onsite and offsite sources and the practicality of the minimization actions, the storm sewer lines rank highest in priority. Plate 1 shows that the sewer network has been impacted by PCBs to varying degrees. Primary concentrations of concern (>1,000,000 pg/L) are associated with Drainage Areas 004 and 006 (see Plate 2), whereas secondary concentrations of concern (between 100,000 pg/L and 1,000,000 pg/L) are associated with Drainage Areas 005, 007,

and 008 (see Plate 2). The remaining drainage areas do not exhibit PCB levels greater than 100,000 pg/L and, thus, are considered of lower priority.

A further review and comparison of Figures 3 through 5 and Plate 2 shows that portions of Drainage Areas 004 and 006 receive stormwater runoff from the Central Yard, where the hot oil boiler and finishing dryers on the roof of machine shop room were located. Moreover, portions of Drainage Areas 005 and 008 receive stormwater runoff from the North Yard, and portions of Drainage Areas 007 receive stormwater runoff from the East Yard, both of which were areas of previous remediation or, in the case of the rear parking lot that comprises most of Drainage Area 005, was the contractor's staging area during remedial activities. These observations support the identification of sewer lines and onsite soils as known PCB sources.

## **6.0 MEASURING, DEMONSTRATING, AND REPORTING PROGRESS**

To achieve the objective of decreasing PCB loadings to the Roanoke River, BGF will prepare and submit to the VADEQ a PCB track down sampling plan expanding on the concepts in Section 6.1 after the VADEQ has approved this PMP. Findings from the PCB track down sampling plan will provide BGF with the basis for developing and prioritizing a comprehensive PCB minimization strategy encompassing those elements described in Section 5.0. The progress of the PCB minimization program will be assessed using the procedures discussed in Section 6.3.

### **6.1 Sampling and Analytical Procedures**

To determine the baseline PCB loading, BGF's conceptual sampling approach consists of collecting composite surface soil samples (0-1 ft bls) at selected locations across the Site, and composite dry weather and wet weather flow samples from Outfalls 002 to 008 and the Combined Outfall over the course of 12 months. Samples will not be collected from Outfall 001 since the effluent is runoff from the front parking lot (i.e., Drainage Area 001), which is paved and has limited potential to contribute PCBs beyond that from atmospheric deposition, which cannot be controlled in a practical manner. Water and sediment samples will also be collected from several locations along the storm sewer lines, namely the roof drains of the Greige warehouse, MH-5, MH-7, MH-10, MH-11, and other areas as needed to track down and refine PCB contributions from the individual branches of the storm sewer system. Both filtered and unfiltered water samples will be analyzed.

Method 8082 will be used for all initial PCB track down analyses as a lower cost alternative to Method 1668A or 1668C. Per discussions with laboratory personnel, the practical quantitation limit (PQL), also called the reporting limit (RL), of Method 8082 for aqueous solutions ranges from 0.25 – 0.50 micrograms per liter ( $\mu\text{g/L}$ ), equivalent to 250,000 – 500,000  $\text{pg/L}$ . The PQL/RL for soil samples ranges from 25 – 34 micrograms per kilogram ( $\mu\text{g/kg}$ ), equivalent to 0.025 – 0.034 milligrams per kilogram ( $\text{mg/kg}$ ). Stormwater discharge samples can be screened for PCBs to as low as 0.063  $\mu\text{g/L}$ , equivalent to 63,000  $\text{pg/L}$ . These PQLs/RLs and the number of congeners detected are sufficient to differentiate relative PCB contributions in the storm sewer system based on the PCB concentrations detected to date.

As applicable, samples that do not exhibit detectable concentrations of PCBs via Method 8082 will be analyzed using Method 1668A or 1668C.

## **6.2 Anticipated Reduction to Baseline Load**

Given the uncertainties associated with: a) the contribution percentages of various onsite and offsite sources to the Site's PCB loading, and b) the 2008 baseline load assessment, the anticipated baseline load reduction cannot be estimated at this time. The proposed PCB track down sampling plan will generate baseline data that can be used to quantify future load reductions as a result of implementation of PCB minimization measures.

## **6.3 Continuing Assessment**

Continuing assessment will be performed biannually (i.e., once every two years). The scope will consist of collecting an unfiltered and filtered composite sample and duplicate from Outfalls 002 through 008 and the Combined Outfall for PCB analysis via Method 8082. Biannual assessment is consistent with the guidelines provided in the DRBC's Recommended Outline. Sampling of all eight (8) outfalls will be completed concomitantly in accordance with the procedures detailed in Section 6.1. Only the duplicate of a sample exhibiting non-detect PCB concentration will be analyzed using Method 1668A or 1668C. Other duplicates will not be analyzed and will be disposed of properly by the laboratory. The findings will be used to determine the efficacy of the PCB minimization measures taken to date and to evaluate the necessity of further PCB minimization and assessment activities.



## **7.0 TRACK DOWN SAMPLING PLAN AND MILESTONE SCHEDULE**

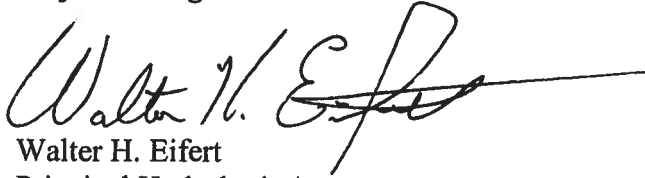
Ninety (90) days after the VADEQ has approved this PMP, BGF will submit a PCB track down sampling plan expanding on and detailing the concepts presented in Section 6.1. The scope of work in the PCB track down sampling plan will be implemented within 60 days after receiving approval from the VADEQ. Data collection will then commence and continue over the next 12 months. BGF will submit a report documenting the actions performed and findings of the investigation 120 days after receipt of laboratory data from the last sampling round. Depending on the data and subsequent analyses, further investigation or a site-specific pollutant minimization strategy will be proposed for implementation.

Respectfully submitted,

ROUX ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Wai Kwan". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Wai Kwan, Ph.D.  
Senior Engineer/  
Project Manager

A handwritten signature in black ink, appearing to read "Walter H. Eifert". The signature is bold and cursive, with a long horizontal stroke extending to the right.

Walter H. Eifert  
Principal Hydrologist/  
Vice President

## **8.0 REFERENCES**

BGF Industries, Inc., Annual Log Summary Report for the Self-Implemented Cleanup of PCB USEPA Number: VAD119071314. July 11, 2007.

BGF Industries, Inc., Report on Storm Water Test Results for Initial Testing for Permit Application. January 26, 2009.

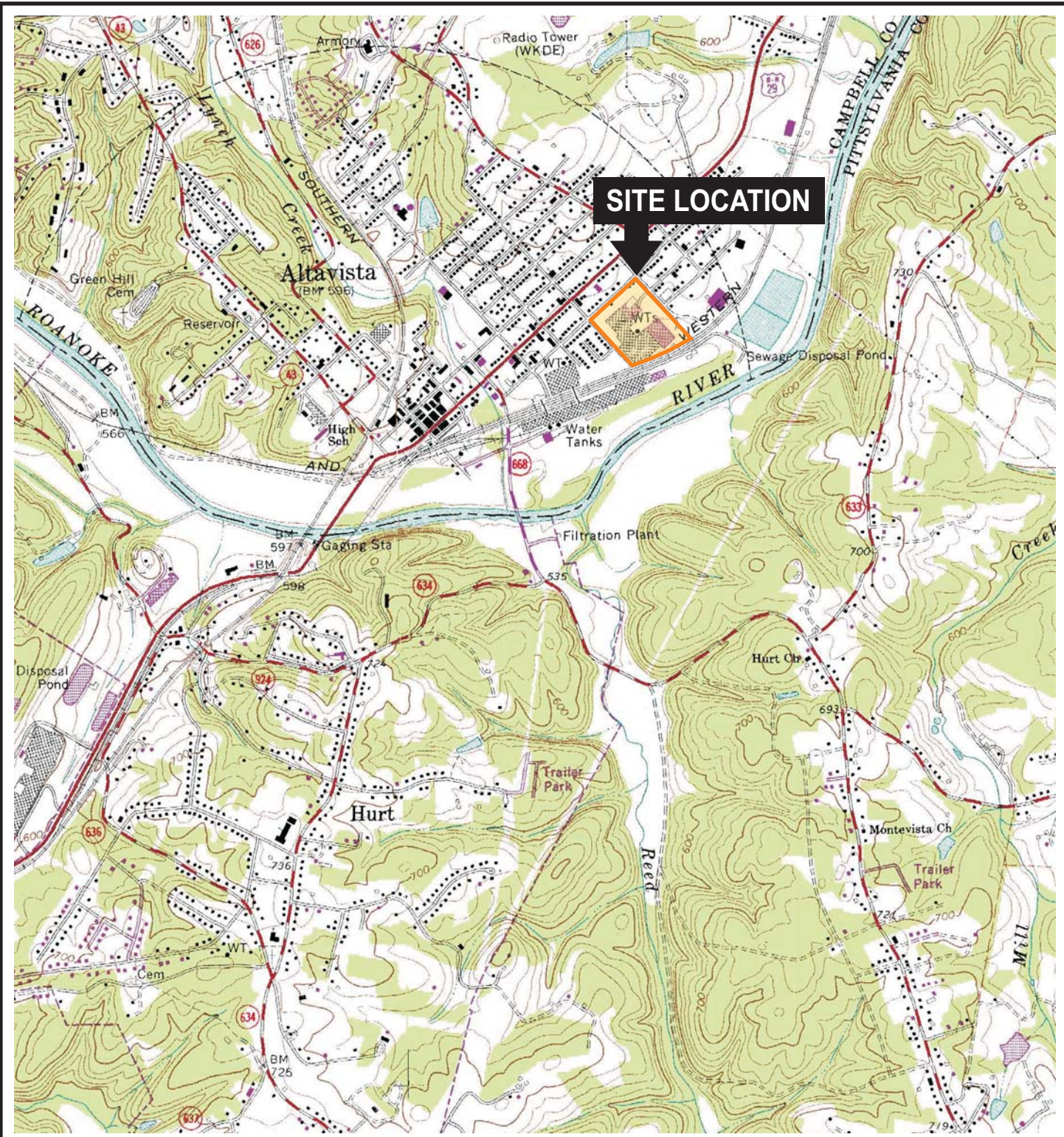
Delaware River Basin Commission, Recommended Outline for Pollutant Minimization Plan for Polychlorinated Biphenyls in the Delaware Estuary-Industrial Dischargers. January 26, 2006.

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Totten, L.A., et al., Direct and Indirect Atmospheric Deposition of PCBs to the Delaware River Watershed. *Environmental Science and Technology*. Vol. 40, Issue 7, pp. 2171-2176. April 1, 2006.

VADEQ, RE: Coverage under the VPDES Industrial Storm Water General Permit VAR051936. October 19, 2010.





QUADRANGLE LOCATION



SOURCE:  
USGS; 1978, Altavista, VA  
7.5 Minute Topographic Quadrangle

Title:

**SITE LOCATION MAP**

POLLUTANT MINIMIZATION PLAN

Prepared for:

**BGF INDUSTRIES, INC**  
**ALTAVISTA, VIRGINIA**

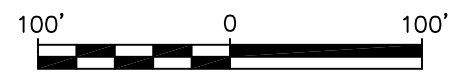
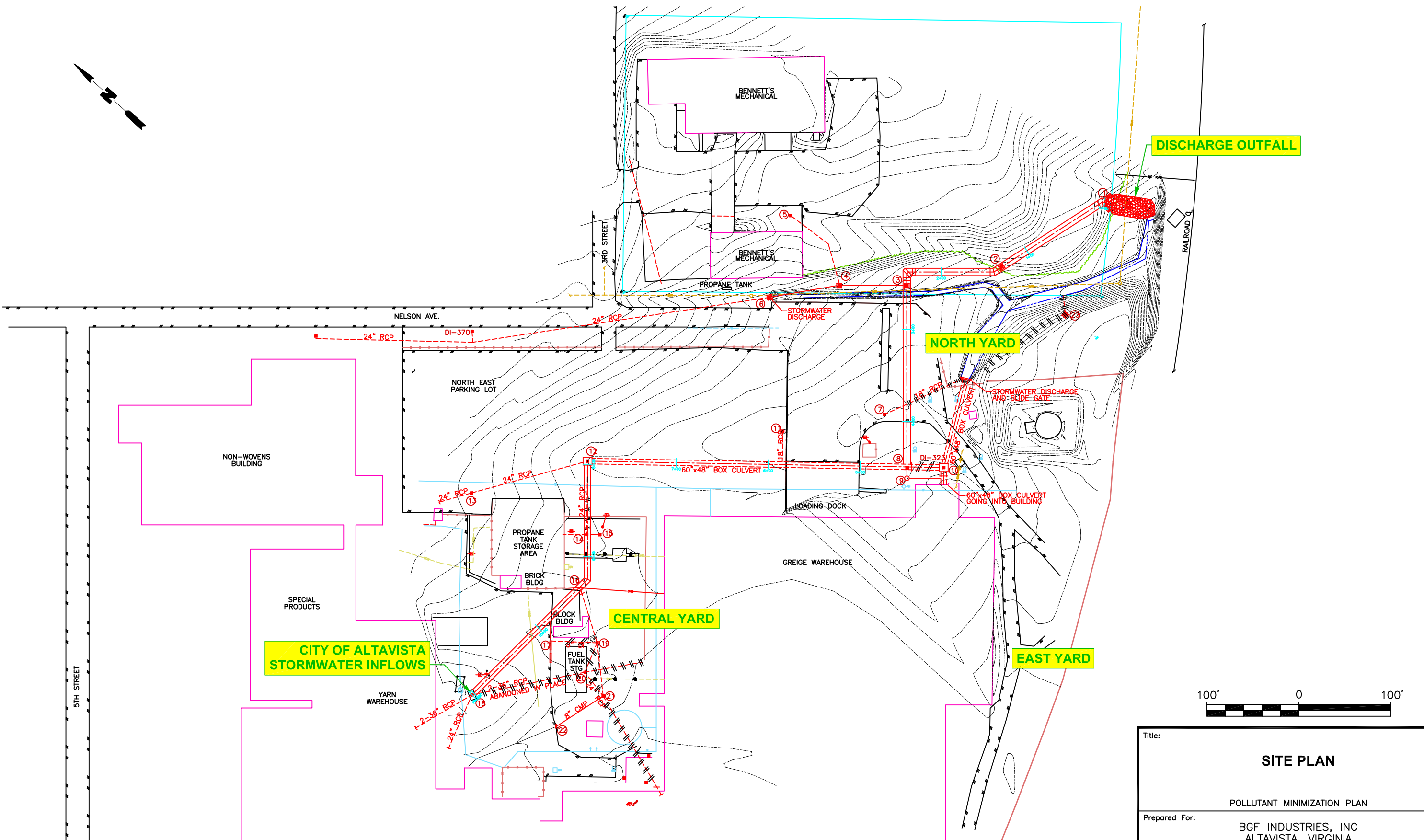
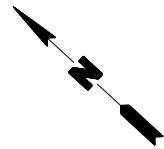
**ROUX**  
ROUX ASSOCIATES, INC.  
Environmental Consulting  
& Management


Compiled by: C.M.P.	Date: 11MAR11
Prepared by: J.A.D.	Scale: AS SHOWN
Project Mgr.: W.K.	Project No.: 1882.0001Y002
File: 1882.0001Y101.01	

FIGURE

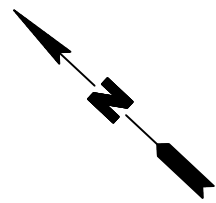
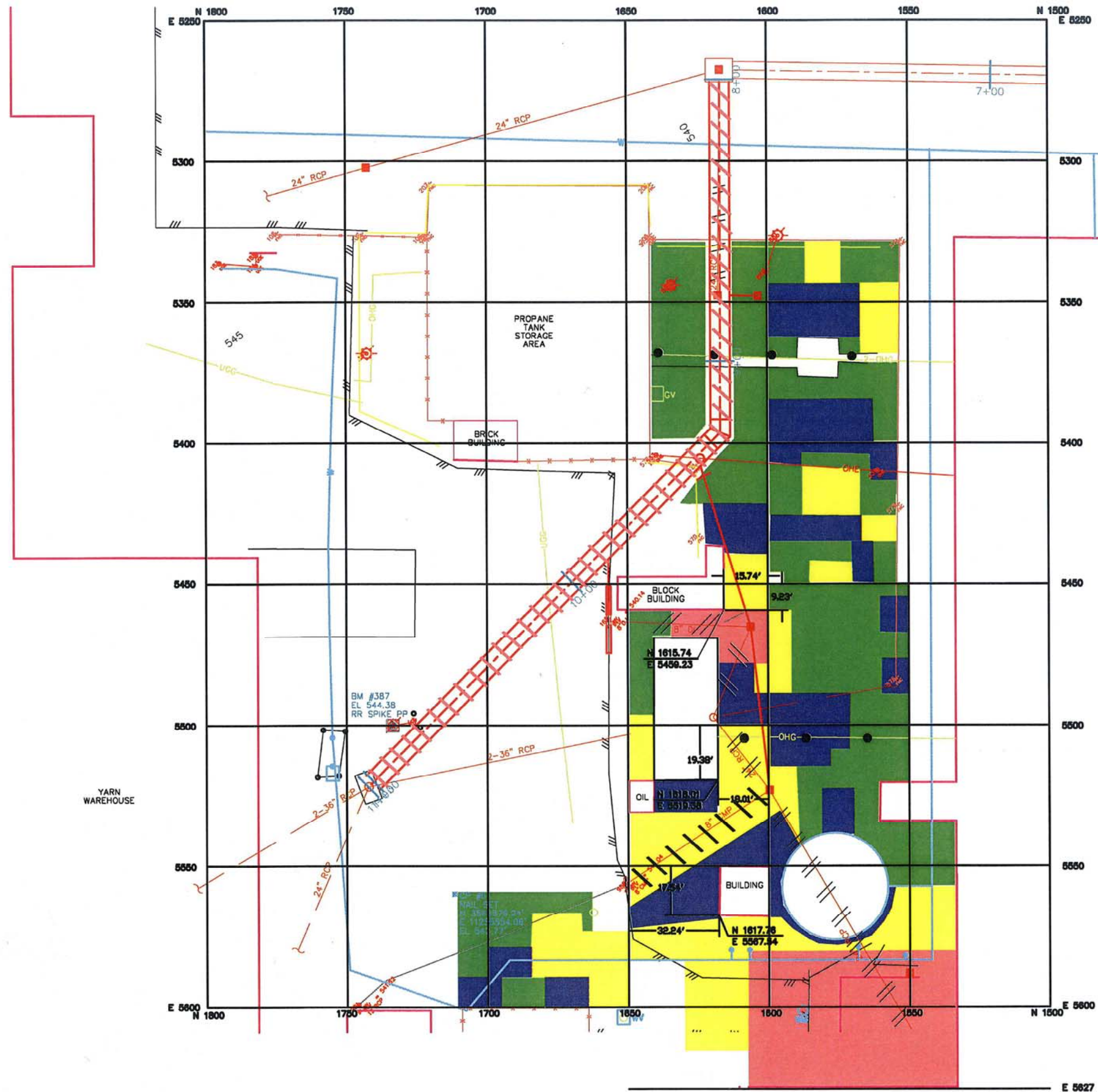
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Title:			<b>SITE PLAN</b>
POLLUTANT MINIMIZATION PLAN			
Prepared For:			BGF INDUSTRIES, INC ALTAVISTA, VIRGINIA
			
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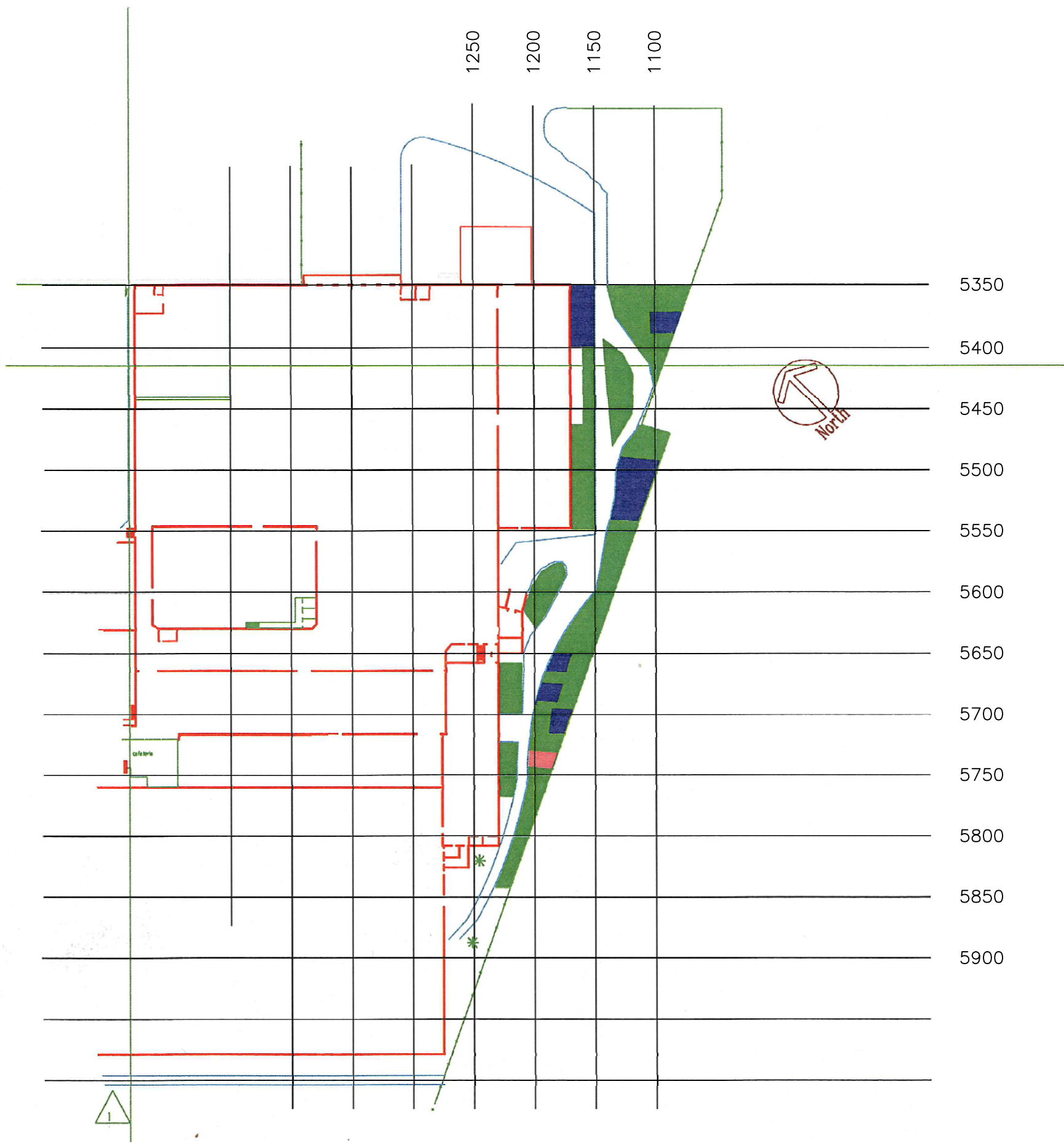


LEGEND





- 9" - 15"
- 1' - 3'
- 3' - 5'
- 5' - 16'
- 5' - 10'  
STORMWATER PIPE  
OR CULVERT
- 2' - 5'  
SANITARY PIPE


<p>Title:</p> <h2 style="margin: 0;">CENTRAL YARD DEPTHS</h2> <p style="margin: 0;">POLLUTANT MINIMIZATION PLAN</p>			
<p>Prepared For:</p> <p><b>BGF INDUSTRIES, INC</b> ALTAVISTA, VIRGINIA</p>			
<p><b>ROUX ASSOCIATES, INC.</b> <i>Environmental Consulting and Management</i></p>	<p>Compiled by: C.M.P.    Date: 11MAR11</p> <p>Prepared by: J.A.D.    Scale: AS SHOWN</p> <p>Project Mgr: W.K.    Project: 1882.0001Y002</p> <p>File: 1882.0001Y101.03</p>	<p>FIGURE</p> <p style="font-size: 24px; font-weight: bold;">3</p>	

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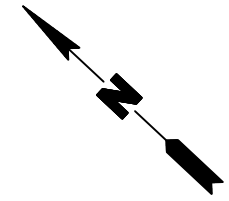
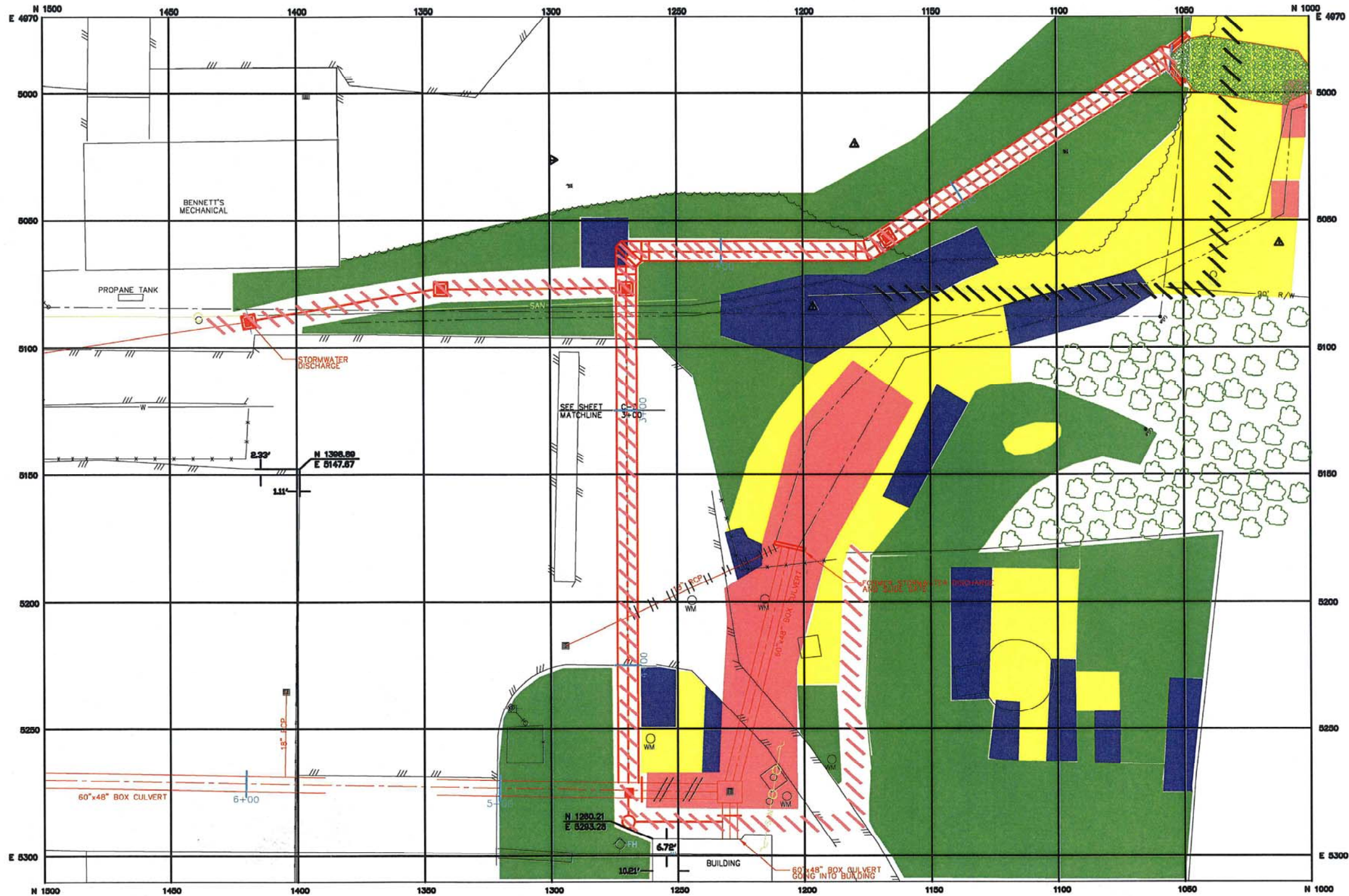
LEGEND

	9" - 15"
	1' - 3'
	3' - 5'
	5' - 16'

Title:			
<b>EAST YARD DEPTHS</b>			
POLLUTANT MINIMIZATION PLAN			
Prepared For:			
BGF INDUSTRIES, INC ALTAVISTA, VIRGINIA			
 ROUX ASSOCIATES, INC. <i>Environmental Consulting and Management</i>	Compiled by: C.M.P.	Date: 11MAR11	FIGURE
	Prepared by: J.A.D.	Scale: AS SHOWN	
	Project Mgr: W.K.	Project: 1882.0001Y002	
File: 1882.0001Y101.03		<b>4</b>	



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LEGEND

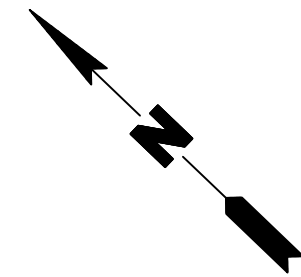
- 9" - 15"
- 1' - 3'
- 3' - 5'
- 5' - 16'
- 5' - 10'  
STORMWATER PIPE  
OR CULVERT
- 2' - 5'  
SANITARY PIPE

Title:			
<b>NORTH YARD DEPTHS</b>			
POLLUTANT MINIMIZATION PLAN			
Prepared For:			
BGF INDUSTRIES, INC ALTAVISTA, VIRGINIA			
<b>ROUX</b> ROUX ASSOCIATES, INC. <i>Environmental Consulting and Management</i>	Compiled by: C.M.P.	Date: 11MAR11	FIGURE
	Prepared by: J.A.D.	Scale: AS SHOWN	<b>5</b>
	Project Mgr: W.K.	Project: 1882.0001Y002	
	File: 1882.0001Y101.03		

**Pollutant Minimization Plan**

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**PLATES**



OTHER SITE SAMPLING RESULTS

TOWN POTABLE SUPPLY		BACKGROUND		COMPOSITE YARD			
DATE	PG/L	DATE	PG/L	NOTE	DATE	PG/L	OUTFALLS
9/16/08	6,280	3/03/09	217	TALEX	12/01/10	442,000	002,007,008

OUTFALL 005	
DATE	PG/L
12/11/08	146,929

OUTFALL 004 & 006			
DATE	PG/L	MH	
8/27/08	37,200,000	004	
8/27/08	829,000	006	

COMBINED OUTFALL		
DATE	PG/L	MH
7/16/08	2,450,000	
8/27/08	4,830,000	
10/03/08	2,740,000	
12/01/10	1,160,000	

OUTFALL 008	
DATE	PG/L
9/16/08	277,000

OUTFALL 004		
DATE	MG/KG	LOC.
12/17/08	534	DEBRIS
4/23/09	4.3	C Y SOIL

OUTFALL 004		
DATE	PG/L	MH
9/16/08	4,860,000	

SANITARY MANHOLE		
DATE	MG/KG	LOC.
12/17/08	7,530	DEBRIS

OUTFALL 003	
DATE	PG/L
9/16/08	32,900

OUTFALL 004		
DATE	PG/L	MH
3/13/09	10,300,000	SUMP

SANITARY MANHOLE			
DATE	MG/KG	PG/L	LOC.
2/6/09	257	63,400	LINE A
2/6/09	1400	DRY	LINE B
2/6/09	17.3	7,360	LINE C
2/6/09	207	FLOODED	LINE D

OUTFALL 006		
DATE	PG/L	MH
9/9/08	277,000	END OF PIPE
3/2/09	6,750,000	ROOF DRAINS
3/16/09	5,430,000	
3/16/09	330,000	12" INLET

OUTFALL 007	
DATE	PG/L
3/16/09	497,000

UNIT 8 MH		
DATE	PG/L	
3/17/09	5,540	NE PIPE
3/17/09	1,170	SW PIPE

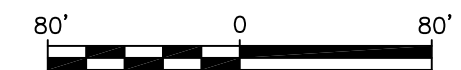
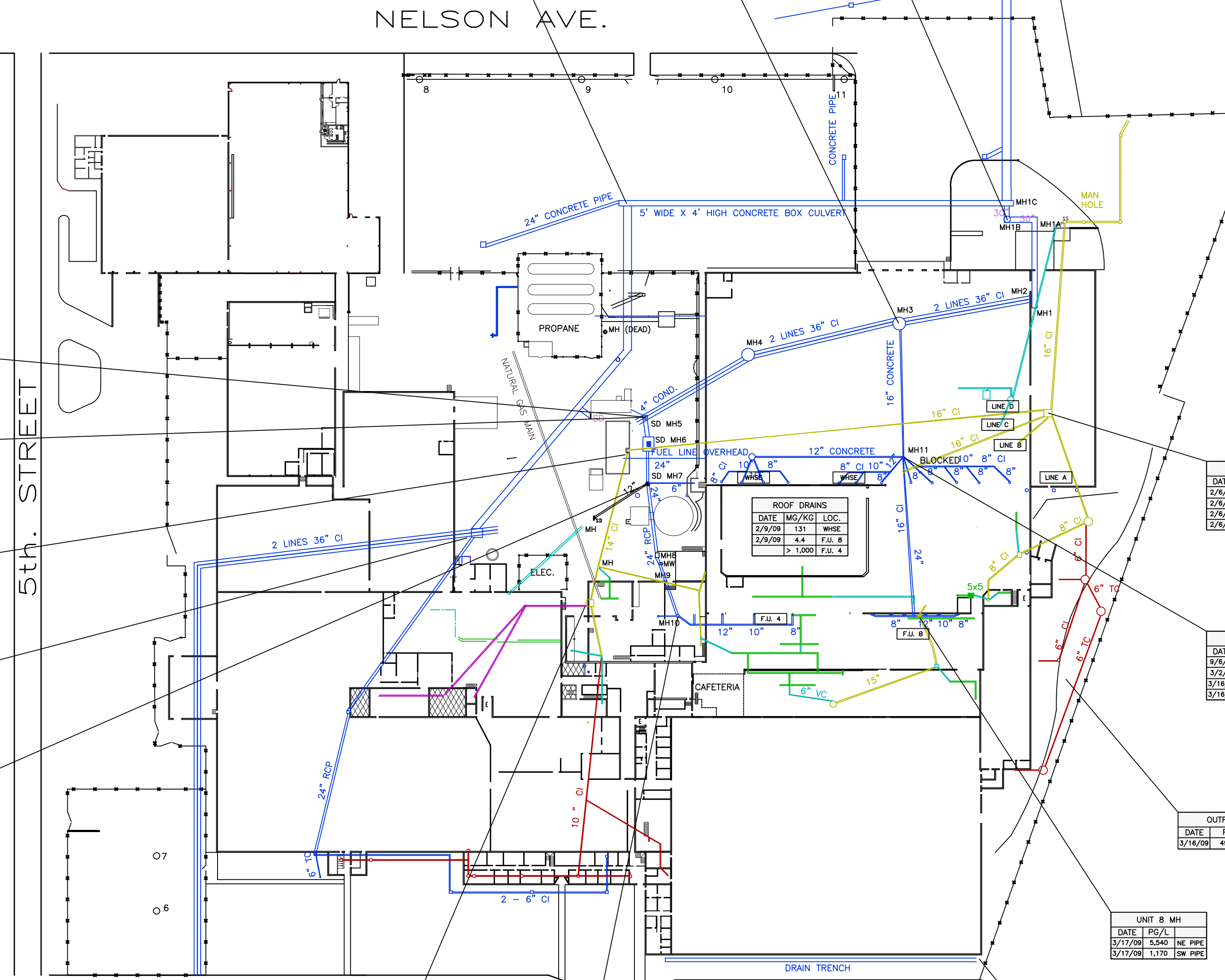
OUTFALL 002	
DATE	PG/L
9/16/08	1,240

SANITARY LINE	
DATE	PG/L
3/13/09	71,500

OUTFALL 004		
DATE	PG/L	MH
3/16/09	128,000,000	10

LEGEND

- SANITARY
  - MIXED LINES
  - INDUSTRIAL TRENCH
  - INDUSTRIAL DRAIN
  - STORM DRAIN
  - BOILER/A.C.
  - NATURAL GAS
- MG/KG – MILLIGRAMS PER KILOGRAM  
PG/L – PICOGRAMS PER LITER



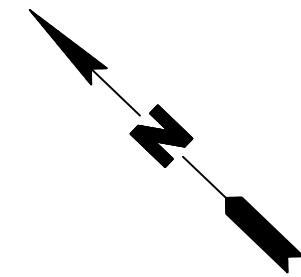
Title: **PCB RESULTS MARCH 31, 2011**

POLLUTANT MINIMIZATION PLAN

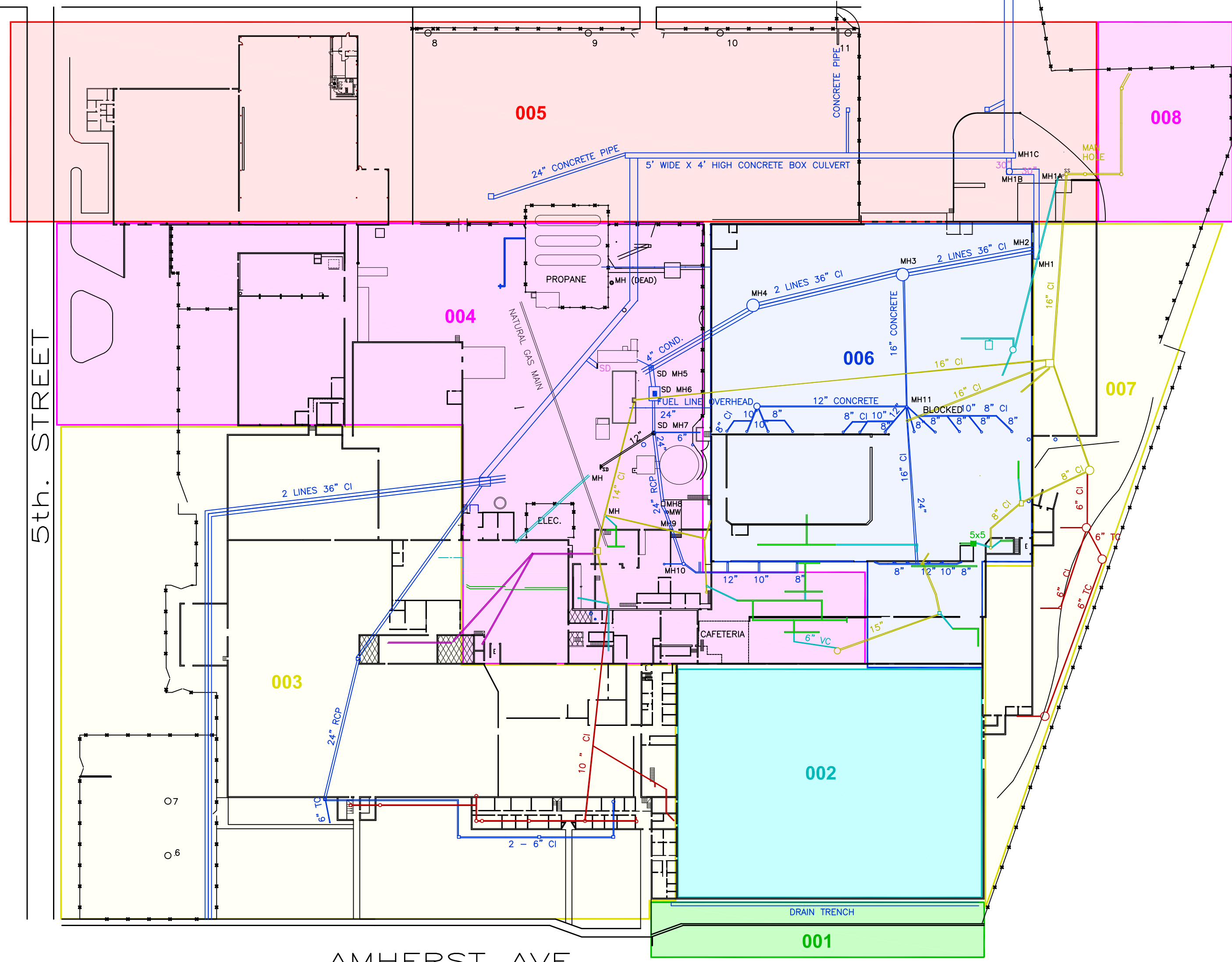
Prepared For: **BGF INDUSTRIES, INC  
ALTAVISTA, VIRGINIA**

 <b>ROUX ASSOCIATES, INC.</b> <i>Environmental Consulting and Management</i>	Compiled by: C.M.P. Date: 06APR11	PLATE
	Prepared by: J.A.D. Scale: AS SHOWN	1
	Project Mgr: W.K. Project: 1882.0001Y002	
	File: 1882.0001Y101.04	

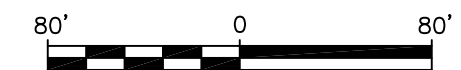
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NELSON AVE.



- LEGEND
- SANITARY
  - MIXED LINES
  - INDUSTRIAL TRENCH
  - INDUSTRIAL DRAIN
  - STORM DRAIN
  - BOILER/A.C.
  - NATURAL GAS
  - 001 DESIGNATION AND EXTENT OF DRAINAGE AREA



Title:		
<b>SITE DRAINAGE AREAS</b>		
POLLUTANT MINIMIZATION PLAN		
Prepared For:		BGF INDUSTRIES, INC ALTAVISTA, VIRGINIA
<b>ROUX</b> ROUX ASSOCIATES, INC. <i>Environmental Consulting and Management</i>	Compiled by: C.M.P.	Date: 01APR11
	Prepared by: J.A.D.	Scale: AS SHOWN
	Project Mgr: W.K.	Project: 1882.0001Y002
	File: 1882.0001Y101.04	
		<b>2</b>

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