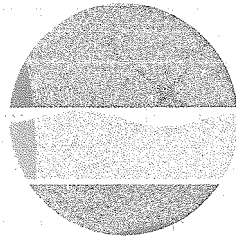


FINAL REMEDIATION REPORT



FORMER BOUCHARD JUNKYARD

Town of New Lebanon
Columbia County , New York
(Site Registry No. 4-11-014)

WORK ASSIGNMENT NO. D004446-23

Prepared For

**New York State Department
of Environmental Conservation**

AUGUST 2009



DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

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SITE NO. 4-11-014

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COLUMBIA COUNTY, NEW YORK

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Prepared for:

**NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**

Prepared by:

**DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
SYRACUSE, NEW YORK**

AUGUST 2009

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TOWN OF NEW LEBANON, NEW YORK**

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.0	INTRODUCTION.....	1-1
1.1	Project Objective and Scope	1-1
1.2	Report Organization.....	1-3
1.3	Site Location and Access	1-4
1.4	Site Description.....	1-4
1.5	Site History and Previous Investigations	1-5
1.5.1	September 1998-NYSDEC Initial Investigation.....	1-5
1.5.2	October 2001 to May 2002-D&B Remedial Investigation	1-6
1.5.3	July 2005-D&B Pre-Design Investigation	1-8
1.5.4	November 2007-D&B Wetland Pre-Excavation Characterization	1-10
2.0	PHYSICAL CHARACTERISTICS OF STUDY AREA	2-1
2.1	Geology.....	2-1
2.2	Hydrogeology	2-2
3.0	IDENTIFICATION OF STANDARDS, CRITERIA AND GUIDELINES	3-1
3.1	Surface Soil.....	3-1
3.2	Sediment	3-1
3.3	Groundwater	3-1
3.4	Potable Water Supply	3-2
4.0	REMEDIAL CONSTRUCTION ACTIVITIES	4-1
4.1	Contractor Submittals	4-1
4.2	Site Preparation and Security.....	4-2
4.2.1	Temporary Facilities and Controls.....	4-2
4.2.2	Temporary Utilities.....	4-3
4.2.3	Site Security and Temporary Fencing.....	4-4
4.2.4	Storm Water Management Controls	4-5
4.2.5	Site Survey.....	4-6
4.2.6	Underground Utility Survey	4-6
4.2.7	Pre-Construction Groundwater Sampling.....	4-7
4.2.8	Temporary On-Site Weight Scale.....	4-8
4.2.9	Temporary Haul Roads	4-8
4.2.10	Clearing and Grubbing.....	4-9
4.2.11	Groundwater Monitoring Well Abandonment.....	4-10

TABLE OF CONTENTS (continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
4.3	Health and Safety	4-10
	4.3.1 Personal Protective Equipment	4-11
	4.3.2 Air Monitoring	4-11
	4.3.3 Decontamination	4-13
4.4	Excavation, Removal and Handling of PCB-Contaminated Soil	4-13
	4.4.1 Waste Characterization Sampling	4-13
	4.4.2 Soil Excavation	4-14
	4.4.3 Wetland Excavation	4-17
	4.4.4 Excavation Endpoint Sampling	4-18
	4.4.5 Dewatering and Water Treatment	4-18
	4.4.6 Demarcation Material Installation	4-19
4.5	Off-Site Transportation and Disposal	4-20
4.6	Backfill and Compaction	4-23
	4.6.1 Upland Areas	4-23
4.6.2	Wetland Areas	4-25
4.7	Site Restoration	4-26
	4.7.1 Topsoil and Seed	4-26
	4.7.2 Planting	4-27
	4.7.3 Wetland Planting	4-29
	4.7.4 Access Road and Parking Areas	4-29
	4.7.5 Groundwater Monitoring Well Installation	4-30
	4.7.6 Post-Construction Groundwater Sampling	4-30
	4.7.7 Post-Construction Soil Sampling	4-31
4.8	Surveys and As-Built Drawings	4-32
4.9	Wetland Restoration Monitoring	4-32
4.10	Warranty and Guarantee Work	4-33
	4.10.1 Topsoil and Seed	4-33
	4.10.2 Access Roads and Parking Areas	4-34
	4.10.3 Surface Water Drainage Improvements	4-34
5.0	CHANGE ORDERS	5-1
	5.1 General	5-1
	5.2 Summary of Change Order No. 1	5-1
6.0	POST EXCAVATION SOIL ANALYTICAL RESULTS	6-1
	6.1 Post Excavation Soil Sampling Rational	6-1
	6.2 Post Excavation Soil Analytical Results Overview	6-2

TABLE OF CONTENTS (continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
7.0	CONCLUSIONS AND RECOMMENDATIONS.....	7-1
7.1	Conclusions.....	7-1
7.2	Recommendations.....	7-1
8.0	REFERENCES.....	8-1

List of Appendices

Survey and As-Built Drawings	A
Change Order	B
Pre- and Post-Construction Groundwater Analytical Results.....	C
Data Usability Summary Reports	D
Monitoring Well Abandonment Report.....	E
Air Monitoring Data Summary	F
Post-Excavation Endpoint Analytical Results	G
Disposal Records	H
Compaction Results	I
Wetland Restoration Report.....	J
Monitoring Well Logs.....	K
Daily Field Activity Reports.....	L
Chain of Custody Forms	M

List of Figures

1-1 Site Location Map.....	1-2
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List of Tables

4-1 Summary of Soil Disposal	4-22
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1.0 INTRODUCTION

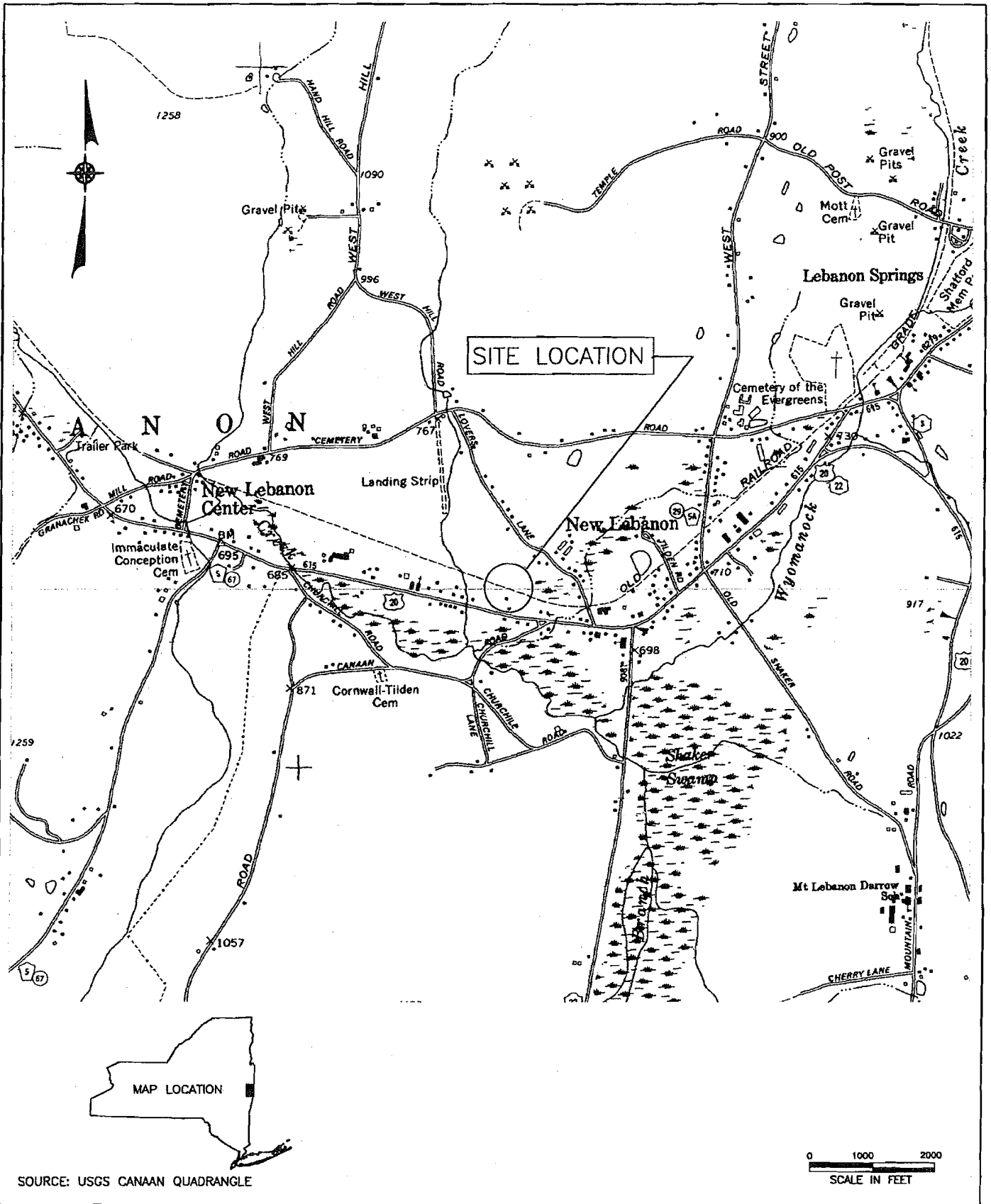
The Former Bouchard Junkyard Site, located in the Town of New Lebanon, Columbia County, New York (Figure 1-1) is a New York State Class 2 inactive hazardous waste disposal site (Registry No. 4-11-014). The New York State Department of Environmental Conservation (NYSDEC) issued a work assignment to Dvirka and Bartilucci Consulting Engineers (D&B) under D&B's State Standby Contract with NYSDEC to provide construction observation and documentation services during the remediation of the Former Bouchard Junkyard Site. The remediation of the site was performed with funds allocated under the New York State Superfund Program as part of New York's program to investigate and remediate hazardous waste sites.

This Final Remediation Report documents and certifies the completion of the work at the Former Bouchard Junkyard as specified in the Contract Documents entitled "Former Bouchard Junkyard, Site Number 4-11-014, Town of New Lebanon, Columbia County, New York;" dated January 2008.

1.1 Project Objective and Scope

The overall goal of the remedial program for the Former Bouchard Junkyard Site, as described in the September 2006 Record of Decision Amendment (RODA), was to eliminate or mitigate the significant threats to public health and/or the environment that were posed by the hazardous waste at the site. The major elements of the remedial program for the site, as presented in the RODA, are as follows:

- Excavation and off-site disposal of approximately 29,000 cubic yards of surface soil contaminated with polychlorinated biphenyls (PCBs) greater than 1 part per million (ppm) from the surface to a depth of 18 inches, 3,700 cubic yards of subsurface soil with PCBs greater than 10 ppm depth greater than 18 inches and 450 cubic yards of aquatic sediments with PCBs greater than 1 ppm;
- Restoration of the site with clean soil, grading, placement of topsoil, and seeding of excavated and/or filled areas;



SOURCE: USGS CANAAN QUADRANGLE

FORMER BOUCHARD JUNKYARD SITE
NEW LEBANON, NEW YORK

SITE LOCATION

FIGURE 1-1

- Development of a Site Management Plan to address residual contaminated soils that may be excavated from the site during future redevelopment. The plan would require soil characterization and, where applicable, disposal/reuse in accordance with Department regulations;
- Implementation of an environmental easement, in such form as the NYSDEC may approve, to require compliance with the approved Site Management Plan;
- Completion of a periodic certification by the property owner until the NYSDEC notifies the property owner in writing that the certification is no longer needed. The periodic certification would contain certification that the institutional controls put in place, pursuant to the RODA, are still in place, have not been altered, and are still effective; and
- Periodic collection of water samples from on-site monitoring wells, water supply wells, and surface water, at the discretion of the NYSDEC, to monitor the effectiveness of the remedy, as a component of the operation, maintenance, and monitoring for the site.

The remedial program described in the following sections has been designed and constructed to meet the Remedial Action Objectives (RAOs) identified in the RODA.

1.2 Report Organization

The Final Remediation Report documents and certifies the completion of the work at the Former Bouchard Junkyard Site as specified in the Contract Documents. Section 1.0 provides a description of the site background, including the site history, site location, site ownership and access, and a summary of previous investigations. Section 2.0 provides a summary of the physical characteristics of the study area including geologic and hydrogeologic information for the site. Section 3.0 identifies Standards, Criteria, and Guidelines (SCGs) which were used as screening values to determine the significance of the analytical results, and to assess environmental conditions at the site. Section 4.0 provides a summary of the major components of the remedial action program completed by the Contractor. Section 5.0 discusses Change Orders required to complete the work. Section 6.0 presents a discussion of post-excavation confirmatory soil samples results. Section 7.0 presents conclusions and recommendations for the site.

1.3 Site Location and Access

As previously discussed, the Former Bouchard Junkyard Site is located in the Town of New Lebanon, Columbia County, New York in a rural/agricultural area. The site is located on the north side of United States (U.S.) Route 20 near the intersection of U.S. Route 20 and New York State (NYS) Route 22 (see Figure 1-1).

The site is not fenced and access can be gained by walking or driving onto the site from adjoining properties and/or roads. Although access to the site is unrestricted, routine access is obtained via one of the two gravel driveways on-site, which lead from U.S. Route 20 to gravel parking lots associated with the three on-site buildings. Dirt roads and trails also traverse the site allowing vehicle access to other portions of the property.

1.4 Site Description

The approximately 17-acre site is an irregular shaped parcel of land, which includes a regulated wetland area. The site is bounded on the north and east by Lovers Lane, on the south by U.S. Route 20, and on the west by residential properties. South of the property, across U.S. Route 20, are a construction company and residential properties. Residential properties are located to the north, east, and west of the site. Agricultural lands are situated to the northwest.

The limits of work encompassed the Former Bouchard Junkyard site as well as the adjoining residential properties to the north and west of the site. The survey and as-built drawings presented in Appendix A identify the limits of work and relevant site features.

A railroad formerly bisected the site from west to east. However, the only indication of the railroad now exists on the properties to the east and west. The site is relatively flat with a gentle downward slope to the southeast. Wyomanock Creek, a New York State Class C (TS) stream, is located southwest of the site and flows from southeast to northwest. Tributaries flow from north to south along the eastern and western boundaries of the site.

Three buildings are currently located at the site. One on-site building is currently rented by a theater group and is occupied by employees and customers during business hours. The other on-site buildings are currently unoccupied. The remainder of the property is mostly open field. The site and surrounding properties are served by private water supply wells.

1.5 Site History and Previous Investigations

The Former Bouchard Junkyard Site is the location of a former automobile junkyard operated from at least 1959 through February 1969 by Mr. Henri Bouchard. Mr. Edward Weisberg purchased the property from the widow of Mr. Bouchard in February 1969, and continued its use as a junkyard. The former automobile junkyard was ordered closed in 1971 for operating without a license. All salvage was removed from the site in the late 1970's. The property was purchased by Mr. Ralph Chittenden in 1985. Mr. Ralph Chittenden currently owns the site.

Prior to remediation activities, four environmental investigations had been conducted at the site. The following presents a brief summary and outline of the investigation activities conducted:

1.5.1 September 1998 – NYSDEC, Initial Investigation

Scope of Work: Conduct initial investigation to verify the existence of PCB contamination identified in a General Electric (GE) internal memorandum.

Work Performed

- Researched site history and historic literature obtained from GE;
- Reviewed aerial photographs of site; and
- Collected 36 surface and subsurface soil samples from locations identified as potential PCB contaminated areas after review of aerial photographs.

Results and Conclusions

- PCB soil sampling results indicated PCBs were present in on-site soils at concentrations ranging from 1 to 120 ppm;
- Five of the 36 samples collected exhibited concentrations above 50 ppm, which is the listed hazardous waste threshold level in New York State; and
- As a result of sampling, site conditions and the potentially responsible parties' non-cooperative position, NYSDEC listed the site as a Class 2 inactive hazardous waste disposal site and later a State Superfund Site.

1.5.2 October 2001 to May 2002 – D&B, Remedial Investigation

Scope of Work: Perform additional fieldwork to define the nature and extent of PCB contamination at the site.

Work Performed

- Developed a base map to identify site features including roads, trails, existing water supply wells, surface water bodies, and topography;
- A site survey by a licensed surveyor to determine property boundaries, locations of site features, elevations, a site sampling grid network, and sample locations;
- Site clearing and grubbing to facilitate access and field activities;
- Geophysical survey to identify locations of possible buried metallic objects;
- Surface soil sampling;
- Shallow subsurface soil sampling;
- Test pit excavations;
- Soil borings;
- Surface water sampling;
- Surface water sediment sampling;
- Monitoring well installations;

- In-situ hydraulic conductivity testing;
- Groundwater level monitoring;
- Groundwater monitoring well sampling;
- Water supply well sampling from adjacent homes and businesses;
- Ambient air monitoring during field investigation activities;
- Developed a Health and Safety Program for work conducted at the site; and
- Developed a Quality Assurance/Quality Control Program for field investigation activities.

Results and Conclusions

- Soil sample results indicated significant contamination existed at the site and there were site-related contaminants off-site;
- The primary contaminants of concern in terms of areal extent and concentrations were PCBs and to a lesser extent pesticides;
- Surface soil sampling results indicated 142 of the 239 samples, approximately 59 percent, exceeded the Standards, Criteria and Guideline (SCG) of 1 ppm for PCBs;
- Of the 142 surface soil samples with PCB concentrations greater than 1 ppm, 15 samples had concentrations greater than 50 ppm;
- Shallow subsurface soil sampling results indicated 6 of the 223 samples, approximately 3 percent, exceeded the SCG of 10 ppm for PCBs;
- Of the six shallow subsurface soil samples with PCB concentrations greater than 10 ppm, two samples had concentrations greater than 50 ppm;
- Pesticides were found above SCGs in 32 percent of the 28 surface soil samples analyzed for pesticides;
- Isolated, slightly elevated concentrations of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) and metals also occurred on-site;
- Off-site surface soil sampling results indicated the presence of PCBs and pesticides above site SCGs on a property west of the site;
- Surface water sampling results indicated no significant concerns;

- Surface water sediment sampling results detected PCBs in 46 percent of the samples and pesticides in 23 percent of the samples;
- On-site groundwater sampling results indicated the presence of PCBs within the central portion of the site in one monitoring well;
- Water supply well sampling results indicated site contaminants of concern were not present;
- Based on remedial investigation results and qualitative risk assessment, exposure to PCB- and pesticide-contaminated surface soil posed a significant risk to human health at the site; and
- PCB- and pesticide-contaminated sediment posed a potential risk to ecological receptors downgradient of the site.

1.5.3 July 2005 – D&B, Pre-Design Investigation

Scope of Work: Perform additional fieldwork to more accurately define the horizontal and vertical extent of site contamination and obtain additional information for the design of the selected remedial alternative.

Work Performed

- Developed a base map (initially developed during the remedial investigation) to identify site features altered or modified during pre-design activities;
- A site survey by a licensed surveyor to identify relevant site features completed during pre-design activities including elevations and locations of soil borings, sediment samples, and surface soil samples;
- Surface soil sampling;
- Subsurface soil sampling;
- Sediment sampling;
- Sieve analysis sampling;
- Groundwater level monitoring;
- Groundwater monitoring well sampling;

- Water supply well sampling;
- Soil borings;
- Surface water sampling;
- Ambient air monitoring during pre-design investigation activities;
- Developed a Health and Safety Program for work conducted at the site; and
- Developed a Quality Assurance/Quality Control Program for analytical work collected during pre-design investigation activities.

Results and Conclusions

- Surface soil sampling results indicated 7 of the 15 samples exceeded the SCG of 1 ppm for PCBs;
- Subsurface soil sampling results indicated 5 of the 13 samples exceeded the SCG of 10 ppm for PCBs;
- Sediment sampling results indicated 3 of the 22 samples exceeded the SCG of 1 ppm for PCBs;
- Groundwater sampling results indicated lower contaminant concentrations than identified in the Remedial Investigation;
- Water supply well sampling results indicated site contaminants of concern were not present (as reported during the Remedial Investigation); and
- Surface water sampling results indicated lower concentrations than identified in the Remedial Investigation.

Recommendations

- No additional pre-design investigation activities were recommended with respect to remediation of site soil.

1.5.4 November 2007 – D&B, Wetland Pre-Excavation Characterization

Scope of Work: Perform work to define existing hydrology, soil, and vegetation conditions that currently existed within the wetland area in order to specify the conditions by which post-remediation restoration work will be completed.

Work Performed

- Collected hydrology measurements at three separate intervals during the growing season to determine baseline water level conditions and flow direction of groundwater and surface water within the wetland area;
- Collected groundwater elevations from on-site monitoring wells;
- Installed water gauges throughout the wetland area and collected surface water elevations;
- Collected 26 sediment samples at 13 locations in the wetland area to characterize and assess soil conditions within the wetland area; and
- Characterized the existing vegetative structure within the wetland area including percent cover by vertical stratification (canopy), percent cover by species (community composition), overall percent cover and documented any invasive species.

Conclusions and Recommendations

- Post-excavation monitoring should ensure that the groundwater and surface water flows at the site continue to be toward the south;
- Fill material specified for areas of the wetland should be consistent with the physical and chemical results of the sediment samples collected; and
- Vegetative data collected were consistent with the 2001 Fish and Wildlife Impact Assessment, however, the distribution of planting zones within the wetlands area should be modified.

2.0 PHYSICAL CHARACTERISTICS OF STUDY AREA

2.1 Geology

Unconsolidated deposits at the site have been mapped as outwash sands and gravels (Cadwell and Dineen, 1986). Outwash sands and gravels consist of coarse to fine gravels with sand. These deposits are associated with proglacial fluvial deposition and are generally well rounded and stratified. The texture of these units is generally finer away from the ice border and the thickness is variable (6 to 60 feet).

Based on 14 borings and 34 test pits ranging from 3.0 to 25.5 feet deep, overburden on the site consists predominantly of brown to gray, poorly sorted fine to coarse sand, fine to coarse gravel and silt (0 to 14 feet below grade). A more uniform fine to medium sand with some silt exhibited in subparallel layers was observed from 14 feet below grade to 25.5 feet below grade at monitoring well MW-1, which was the deepest boring advanced at the site. Glacially derived cobbles and boulder-sized rock fragments were observed during the excavation of test pits. Some of these fragments are well rounded and exhibit lithologies suggesting their source is the Canadian Shield. These cobbles and boulders were transported and deposited during the Wisconsin Age glaciation.

Little is known about the geology or hydrogeology of the bedrock at the site. The deepest boring advanced during investigation of this site was terminated at a depth of 25.5 feet below grade. Bedrock at the site is approximately 90 feet deep based on the review of an invoice for the construction of a water supply well at the site. Bedrock geology in the vicinity of the site has been mapped as the Walloomsac formation of the Lorraine, Trenton and Black River Groups (Fisher, et. al., 1970). The Walloomsac formation is Middle Ordovician in age, and is composed of slate, phyllite, schist and metagraywacke.

2.2 Hydrogeology

The first occurrence of groundwater or saturated conditions is in the overburden layer above bedrock. Water level monitoring of the wells indicates that the depth of groundwater at the site averages 3.4 feet below ground surface with a range of 0.8 feet to 8.6 feet below ground surface. Precipitation falling on the site runs off-site to the perimeter ditches and streams or infiltrates downward through the unconsolidated materials. Where no ditches exist, shallow groundwater discharges create wetland areas adjacent to the site. Shallow groundwater at the site flows in a south-southeast direction.

3.0 IDENTIFICATION OF STANDARDS, CRITERIA AND GUIDELINES

This section provides a presentation of SCGs, which were used as screening values to determine the significance of the analytical results and to assess environmental conditions at the site.

3.1 Surface Soil

Screening levels for surface and subsurface soil analytical results were based on NYSDEC 6 NYCRR Part 375 regulations, effective December 14, 2006. These values were developed by the NYSDEC and New York State Department of Health (NYSDOH) based on human health criteria. Analytical results were compared to Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives.

3.2 Sediment

Screening levels for sediment analytical results were based on NYSDEC 6 NYCRR Part 375 regulations, effective December 14, 2006. These values were developed by the NYSDEC and NYSDOH based on human health criteria. Analytical results were compared to Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives.

3.3 Groundwater

The screening levels for the groundwater analytical results were obtained from the NYSDEC TOGS 1.1.1, "Ambient Water Quality Standards and Guidance Values," dated June 1998. Analytical results obtained for groundwater samples are compared to Class GA groundwater standards and guidance values.

3.4 Potable Water Supply

Screening for groundwater collected from private water supply wells is based on NYSDOH Drinking Water Standards contained in Part 5 of the Sanitary Code, effective May 1998.

4.0 REMEDIAL CONSTRUCTION ACTIVITIES

The Contractor selected to perform the remedial construction activities at the Former Bouchard Junkyard Site, based on competitive bids, was D.A. Collins Environmental Services, LLC (the Contractor or DAC). Major components of the remedial action program completed by the Contractor are presented below. The following list is not intended to be a comprehensive nor complete list of work performed at the site. Other tasks of lesser importance were also performed by the Contractor, but are not discussed in this Final Remediation Report. A discussion of these lesser tasks is not required to adequately describe the work performed at the site. The following are the major components of the work performed at the Former Bouchard Junkyard Site:

- Preparation of the specified and requested submittals;
- Preparation of the site;
- Excavation, transportation, and disposal of PCB-contaminated soil;
- Placement, grading, and compaction of clean backfill material;
- Site restoration activities; and
- Wetland restoration monitoring.

4.1 Contractor Submittals

As specified in the Contract Documents for remediation of the Former Bouchard Junkyard Site, required Contractor submittals included a Health and Safety Plan (HASP), Sampling Plan, Construction Quality Assurance/Quality Control Plan (CQA/QC), Work Plan and Storm Water Pollution Prevention Plan (SWPPP). In addition, the Contractor was required to submit copies of all laboratory results, chain-of-custody forms, waste manifests, bills of lading, correspondence to regulatory agencies, including all applications for permits, licenses, and approvals, and survey and record drawings. The Contractor's submittals were reviewed by NYSDEC and D&B for conformance with the requirements of the Contract Documents and revised by the Contractor in accordance with NYSDEC and D&B's comments.

4.2 Site Preparation and Security

The Contractor initialized mobilization to the site on May 5, 2008 and initiated site preparation activities and installation of temporary facilities. It should be noted that this date was prior to the Notice to Proceed Date (June 2, 2008) and all work completed prior to issuance of the Notice to Proceed was at the Contractor's risk. The following site preparation activities were undertaken by the Contractor:

- Installation of temporary facilities and controls;
- Installation of storm water management controls;
- Completion of an initial site survey;
- Completion of an underground utility survey;
- Completion of pre-construction groundwater sampling;
- Installation of a temporary weigh scale;
- Installation of temporary haul roads;
- Clearing and grubbing; and
- Groundwater monitoring well abandonment.

4.2.1 Temporary Facilities and Controls

The Contractor initiated installation of the temporary facilities and controls at the site on May 5, 2008. This included the Contractor's and NYSDEC's/Engineer's office trailers, Contractor's staging area, and temporary parking areas. Prior to installation of the temporary facilities, the Contractor excavated, sampled, and placed clean fill in the areas as specified in the Contract Documents. All excavated soil was temporarily stockpiled in Area 4 and covered with 6 mil polyethylene sheeting. The soil was transported and disposed of off-site during remedial excavation activities.

As specified in the Contract Documents, the Contractor installed a temporary sign, having the approximate dimensions of 3 feet high by 4 feet wide, on the exterior of the NYSDEC's/Engineer's office trailer identifying the trailer as the NYSDEC/Engineer Field Office. The Contractor installed a temporary project sign, having the approximate dimensions of 4 feet high by 8 feet wide, at the entrance to the site from New York State Route 20. The sign identified the project as a New York State funded project under the direction of the NYSDEC.

As requested by the NYSDEC, the Contractor also installed additional signage at the entrance to the site from New York State Route 20, which provided emergency contact information for DAC personnel. The sign was installed such that residents in the area could notify the NYSDEC and/or DAC in the event of an off-hour emergency at the site.

4.2.2 Temporary Utilities

The Contractor initiated and established temporary utilities and facilities, including electrical power, telephone service, internet service, lighting, heating and air conditioning, sanitary facilities, and potable water at the trailers during the period from May 5, 2008 through November 26, 2008. The electrical service was provided via a temporary pole installed in the vicinity of the office trailers and installation was coordinated with the local utility, New York State Gas and Electric, to initiate and establish the electrical service. Telephone and internet service was established through Fair Point Communications.

Sanitary service was provided by installing two temporary leaching tanks below grade in the vicinity of each office trailer. The Contractor excavated and removed the tanks at the completion of the work.

The Contractor also delivered and installed at the site a 1,000-gallon, above ground temporary storage tank. The tank was used to store and dispense diesel fuel, as needed, for off-highway equipment. The Contractor installed an earthen containment berm, lined with 6 mil

polyethylene sheeting, around the tank to act as secondary containment, in accordance with applicable environmental regulations.

4.2.3 Site Security and Temporary Fencing

The Contractor was responsible for the security of all work, equipment, materials, supplies, facilities, personnel and incidentals, including the office trailers throughout the duration of the project. The Contractor was responsible for the control of all persons and vehicles entering and leaving the site. Only persons associated with the project were admitted on-site. A sign-in sheet was maintained by the Contractor as a log of personnel on-site. Temporary perimeter fencing and gates were used to control access to the site and to protect pedestrians from site hazards. Any work completed outside of the temporary perimeter fencing was secured using diamond mesh fencing and temporary posts. No security incidents occurred during performance of the work.

The Contract Documents specified that a total of 2,320 linear feet of permanent fencing would be installed at the site. An alternative fence design, which enclosed the entire perimeter of the site using temporary chain link fence and driven posts and some free standing chain link fence panels, was used during the work. Additional wind screen fabric was also installed along the western extent of the fence. The alternate fence design provided additional site security and privacy during the performance of the work. The alternate fence design was accepted by the NYSDEC and D&B. The value of this bid item was deducted under Pay Item 6 as part of Change Order No. 1 and was used as a credit toward other work. The Change Order is discussed in Section 5.0 and presented in Appendix B.

As part of the site preparation activities, approximately 3,430 linear feet of 6-foot high, temporary post-driven chain link fence was installed by National Rent-A-Fence, a subcontractor to DAC, in May 2008 along the northern, western, southern and portions of the eastern perimeter of the site. Approximately 1,320 linear feet of temporary panel fence was installed along the eastern perimeter of the site in the vicinity of Areas 8 and 9 to provide for easy relocation of the fence during the performance of the work.

National Rent-A-Fence installed three gates, including two double swing gates and one man gate, at the site. One double swing gate, having the approximate dimensions of 6 feet high by 30 wide, was installed at the entrance to NYS Route 20. A second double swing gate, having the approximate dimensions of 6 feet high by 24 wide, was installed at the entrance to Area 4. One man gate, having the approximate dimensions of 6 feet high by 4 wide, was installed at the northern perimeter of Area 1 near Lovers Lane. In addition, approximately 2,000 linear feet of mono/mono (70 percent shading) windscreen fabric was installed along the western, southern and northern perimeter portions of the fence. Generally, the fence was installed on or within the limits of the work to minimize pedestrian and intruder hazards.

As an additional security measure, weekend site inspections were performed by the Contractor to ensure soil stockpiles on-site remained covered, soil erosion and control measure remained in-place, open excavations were secure, and temporary fencing was in-place while the site was not occupied by Contractor personnel. This was considered out of Contract work and was approved by NYSDEC and D&B. The value of the work was added as Pay Item 29 as part of Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

4.2.4 Storm Water Management Controls

During the period from May 20, 2008 through May 21, 2008, Donnelly Construction, a subcontractor to DAC, completed installation of sediment and storm water management controls at the site. The controls were installed in the accordance with the approved SWPPP. Sediment controls consisted mainly of silt fence installed around the entire perimeter of the site. Storm water controls consisted of the excavation areas, which acted as temporary containment basins for storm water that flowed onto the site. Soil stabilization, in the form of seeding and hay/mulch, was also performed throughout the duration of the project.

4.2.5 Site Survey

The Contractor initiated the site survey on May 5, 2008. All survey work was completed by Clark Engineering and Surveying, P.C. (Clark), a subcontractor to DAC and a New York State licensed surveyor.

The survey was conducted in accordance with the requirements of the Contract Documents. Initial conditions were surveyed at the site to establish pre-excavation site conditions and reference points. In addition, the survey showed the exact surveyed location and elevation of all work in relation to the accepted benchmarks and reference points, including, but not limited to:

- Aboveground and buried utilities;
- Property boundary and established reference points;
- Ground surface elevations measured across the entire site at the intersection points of a 50-foot by 50-foot grid;
- Existing site features (e.g., site structures, limits of paved areas, fence, and gates);
- Groundwater monitoring well locations and elevations of top of casings; and
- Limits of wetland areas and the 100-foot wetlands buffer area.

The Contractor was also responsible for the completion of intermediate and as-built surveys, as well as staking and marking out the location of the site-wide grid network and excavation limits, as identified on the Contract Drawings. Survey and as-built drawings are included in Appendix A.

4.2.6 Underground Utility Survey

The Contractor initiated the underground utility survey at the site on May 6, 2008. All underground utility survey work was completed by the Contractor using in-house resources and not an independent utility markout service, as was specified in the Contract Document, due to the

nature of the site utilities. NYSDEC and D&B indicated that this approach was acceptable during a meeting conducted at the NYSDEC's Albany office on May 1, 2008.

The mark-out consisted of test pitting in the area of suspect utilities to confirm location, depth, and configuration. Test pitting was performed using miscellaneous hand tools. All utility locations were updated on the Record Drawings. The Contractor also contacted Dig-Safely New York to markout all utilities located within the public right-of-way for NYS Route 20 and Lovers Lane.

4.2.7 Pre-Construction Groundwater Sampling

The Contractor initiated the pre-construction groundwater sampling at the site on May 20, 2008. The sampling was completed to confirm pre-construction groundwater conditions and to be used as a basis for comparison against post-construction groundwater samples collected at the completion of the excavation work. Sampling procedures were in accordance with the Contract Documents, as well as the approved Sampling Plan.

Wells sampled included two monitoring wells (MW-1 and MW-4) and six private water supply wells (WSW-1 through WSW-6) within the limits of the work. Samples collected were submitted to the Contractor's subcontracted laboratory, Mitkem Laboratories, and were analyzed for Target Compound List (TCL) VOCs, TCL SVOCs and TCL pesticides/PCBs in accordance with NYSDEC Analytical Services Protocol (ASP) Method SOW OLMO 4.2, Target Analyte List (TAL) metals in accordance with NYSDEC ASP Method SOW ILMO 4.0, and cyanide in accordance with NYSDEC ASP Method 335.2. Mitkem Laboratories is certified by the NYSDOH Environmental Laboratory Approval Program (ELAP) and Contract Laboratory Program (CLP) in all categories. Preliminary results were submitted to the NYSDEC and D&B with a 24-hour turnaround time and final results were submitted within 28 days from receipt of the sample by the laboratory. In addition, a Data Usability Summary Report (DUSR) was prepared for all final analytical reports by the Contractor's Quality Assurance Officer. A summary of the analytical results is provided in Appendix C and a copy of the DUSR report is provided in Appendix D.

4.2.8 Temporary On-Site Weigh Scale

The Contractor initiated the installation of the temporary on-site weigh scale at the site on June 3, 2008. The scale was installed in order to record the mass of soil and other materials that was transported from the site and to act as a check for the final mass recorded at the off-site disposal facility. The scale was installed in accordance with the Contract Documents and the manufacturers' specifications

The Contractor provided an approved alternate temporary weigh scale, model 12070-EPR-LF, manufactured by the Cardinal Scale Manufacturing Company. The scale was installed immediately adjacent to the Contractor's trailer, such that the trailer could be used as the scale house, and in-line with the site entrance from NYS Route 20 to provide easy access for all trucks entering and exiting the site. Scale Services, Inc., a subcontractor to DAC, provided assistance and oversight to complete the weigh scale connections, the weigh scale calibration, and the Columbia County certification process for the scale. In addition, Scale Services, Inc. provided training and certification to the Contractor's personnel who operated the scale.

4.2.9 Temporary Haul Roads

The Contractor initiated the installation of the temporary on-site haul roads at the site on May 21, 2008. The haul roads were installed as part of the Contractor's Truck Routing Plan, which was submitted and approved as part of the Contractor's Work Plan. The haul roads provided access for both the off-site waste haulers and the clean fill deliveries and limited the exposure of these vehicles to PCB-contaminated soil.

The haul roads were approximately 14 feet wide and were installed through Areas 1, 2, 3, 4, 8 and 9. Prior to installation of the haul roads, the Contractor excavated and sampled the soil as specified in the Contract Documents. Excavated soil was temporarily stockpiled in Area 4 and covered with 6 mil polyethylene sheeting. The soil was transported and disposed of off-site as part of the remedial excavation activities. Demarcation fabric and/or stabilization fabric was then installed along the bottom and sides of the excavation to isolate the clean fill for the roads from the adjacent impacted material. A portion of the fabric was also left on either side of the

road to overlap the impacted material. One foot of common fill material was placed and compacted as a base for the road, and 6 inches of crusher run stone was placed as the top layer.

4.2.10 Clearing and Grubbing

The Contract Documents specified removal of PCB-contaminated soil around existing large trees in Areas 6 and Area 7 would be completed by hand within the root zone of the trees. Prior to the start of remedial excavation activities, the property owner stipulated that the trees would need to be removed and replaced with saplings. As a result, it was necessary to clear and grub additional trees, stumps, and roots not originally specified. The value of this bid item was added as new Pay Item 25 under Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

The Contractor initiated clearing and grubbing at the site on May 7, 2008. Clearing and grubbing at the site was necessary to facilitate removal all PCB-contaminated soil and to gain access to densely vegetated portions of the site. The Contractor cleared and grubbed light brush, grass, and small diameter trees. Galusha and Sons, LLC and Donovan Tree Service, Inc., subcontractors to DAC, cleared and grubbed all large diameter trees.

Prior to clearing and grubbing, trees requiring protection were marked by flagging and encircled with orange construction fence. Any trees that were to be replaced at the completion of the excavation work were located and documented by the surveyor or Contractor, such that they could provide a layout for the replacement plantings during restoration.

Light clearing and grubbing was performed using traditional methods for cutting and stockpiling trees and brush, such as chainsaws, excavators, and wood chippers. Heavy clearing and grubbing in Areas 6, 7, and 8 was performed using a fellerbuncher, grapple skidder, excavator, wood chipper, and stump grinder. In general, all small diameter trees, tree limbs, and brush were cleared from the work area and chipped on-site. Wood chips were then stockpiled and used for dust control, as needed, on the site access roads. Larger logs were cut into manageable sections and trucked off-site. Stump grubbing was performed using an excavator or

stump grinder during the soil excavation and removal phases. Stumps, which were removed from the ground whole, were stockpiled, transported and disposed of separately from the PCB-contaminated soil.

4.2.11 Groundwater Monitoring Well Abandonment

The Contractor completed groundwater monitoring well abandonment at the site during the period from June 5, 2008 through June 6, 2008. The abandonment was completed to permanently remove four groundwater monitoring wells (MW-2, MW-3, MW-5 and MW-6) located within the limits of work. The wells were abandoned since they were damaged or no longer required for long term monitoring at the site.

Well abandonment was completed by Aztech Technologies, Inc., a subcontractor to DAC and a NYSDEC licensed well driller. Abandonment procedures were in accordance with the Contract Documents, as well as the NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures," dated April 2003. At the completion of the work, Aztech Technologies, Inc. completed a Groundwater Monitoring Well Abandonment Report, which was reviewed and approved by the NYSDEC and D&B. A copy of the report is included in Appendix E.

4.3 Health and Safety

The Contract Documents specified that a total of 210 days of health and safety services would be required during the performance of the work. The actual number of days requiring health and safety services was 195.5. The value of this bid item was deducted under Pay Item 3 as part of Change Order No. 1 and was used as a credit toward other work. The Change Order is discussed in Section 5.0 and presented in Appendix B.

A site-specific Health and Safety Plan was prepared by the Contractor in accordance with the requirements of the Occupational Health and Safety Administration (OSHA) and the Contract Documents, for work conducted at the site. The HASP was prepared to provide site-specific health and safety information, as well as to provide for worker and community

protection. The HASP was reviewed and accepted by the NYSDEC. All activities conducted as part of the remedy were implemented in accordance with the HASP.

4.3.1 Personal Protective Equipment

The highest level of personal protective equipment used during performance of the work was Level C. Level C was required for the investigation of a buried drum identified while excavating within Grid J-18 in Area 2. Level C required the donning of polyethylene-coated disposable coveralls with hood and boot covers, full face air purifying respirator with combination high efficiency particulate air (HEPA)/P100 series (dusts, fumes, aerosols) and organic vapor cartridges, surgical inner gloves, nitrile rubber outer gloves, chemically resistant outer boot covers, safety shoes, hard hat, and field clothes.

The level of PPE used during the performance of the majority of the work was Level D. Level D was used for the majority of site activities including, but not limited to, site preparation, soil excavation, backfilling, and site restoration. Level D required donning of field cloths, hard hats, safety glasses, safety shoes, and gloves.

4.3.2 Air Monitoring

Air monitoring for dust and organic vapors was conducted on a continual basis during all ground intrusive work. Air monitoring was conducted using a Gilian GilAir-5 meter for dust and a MiniRAE 2000 for organic vapors. The exclusion zone action level of 2.5 time background and/or greater than 150 microgram per cubic meter ($\mu\text{g}/\text{m}^3$) for dust and 5 ppm for VOCs in the breathing zone was not exceeded during the performance of work.

As part of the documentation sampling program, the Contract Documents specified that samples for total nuisance dust would be collected at perimeter air monitoring stations during the performance of intrusive activities. Prior to the start of site work, NYSDEC determined that perimeter air samples should also be analyzed for PCBs in dust. As a result, collection of PCBs in dust was added as new Pay Item 24 under Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

The Contractor was responsible for implementing a Community Air Monitoring Plan (CAMP) as part of the air monitoring program. Four perimeter air monitoring stations (one upwind and three downwind) were setup to continuously monitoring air quality at the perimeter of the site. Each station was equipped with a dust meter and organic vapor meter, as specified above. The meters were setup to output results based on a 15 minute real-time average. The stations were positioned based on the area(s) of the site that the Contractor worked and the current weather conditions. At no time during the work was the perimeter action level of 5 ppm for VOCs exceeded. The perimeter action level of 150 ug/m³ for dust was exceeded on several occasions throughout the course of the work, however the exceedances were only temporary and the Contractor quickly mitigated the problem with dust suppression measures.

The Contractor was also responsible for the completion of documentation monitoring for two "high risk" workers and at each perimeter air monitoring station. Documentation monitoring for "high risk" workers included collection of air samples to analyze for PCBs, metals, pesticides and dust particulates. Documentation monitoring at the perimeter included the collection of total nuisance dust using PVC collection filters. As discussed above, out of Contract sampling was also completed for PCBs at each perimeter air monitoring station.

Air samples collected were submitted to Con-Test Analytical Laboratory, a subcontractor to DAC, and were analyzed for total dust in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 0500, PCBs in accordance with United States Environmental Protection Agency (USEPA) Method TO-10A, metals in accordance with NIOSH Method 7300 and pesticides in accordance with USEPA Method TO-10. Con-Test Analytic Laboratory is certified by the NYSDOH ELAP and CLP in all categories. Preliminary results were submitted to the NYSDEC, NYSDOH and D&B with a 24-hour turnaround time and final results were submitted within 28 days from receipt of the sample by the laboratory. In addition, all air data were reviewed on a monthly basis by J. Whitehouse & Associates, Inc., a subcontractor to DAC and a Certified Industrial Hygienist (CIH). Analytical results, real-time meter readings, weather conditions, and copies of data review letters received from J. Whitehouse & Associates, Inc. are provided in Appendix F.

The exclusion zone action level of 2.5 times background and/or greater than 150 ug/m³ for dust and 5 ppm for VOCs in the breathing zone was not exceeded during the performance of work.

4.3.3 Decontamination

Personnel decontamination procedures were performed in accordance with the Contractor's HASP and were specific to the Level of PPE used to perform the work and type(s) of hazardous substances encountered while performing the work.

An equipment decontamination pad was constructed as specified in the Contract Documents, with one exception. Due to the limited availability of high density polyethylene (HDPE) in the required dimensions, the Contractor substituted linear low density polyethylene (LLDPE). The modification was approved by the NYSDEC and D&B.

General cleanup of equipment utilized to handle non-Toxic Substance Control Act (TSCA) contaminated material included gross removal of bulk debris at the equipment decontamination pad by brushing or scraping followed by thorough decontamination with a pressure washer. Equipment utilized to handle TSCA regulated contaminated materials was decontaminated in accordance with TSCA requirements as set forth in Title 40 Code of Federal Regulations (CFR) 761.79(c). Small tools and equipment that could not be safely pressure washed were hand washed with a warm detergent solution within the equipment decontamination pad. In addition, the Contractor performed PCB wipe tests for each piece of equipment to verify that they were successfully decontaminated prior to demobilizing the equipment from the site.

4.4 **Excavation, Removal and Handling of PCB-Contaminated Soil**

4.4.1 Waste Characterization Sampling

Prior to the excavation of PCB-contaminated soil from the site, the Contractor was required to perform waste characterization sampling to confirm the locations designated as hazardous/TSCA regulated PCB-contaminated soil (PCBs greater than 50 ppm), as well as to

confirm that all other locations designated as non-hazardous PCB-contaminated soil were less than 50 ppm.

The Contractor completed waste characterization sampling at the site during the period from May 12, 2008 through May 13, 2008. A four point in-situ composite soil sample was collected from each approximate 100-foot by 100-foot grid area (WC-01 through WC-70), as determined by the grid system for the site setup by the Contractor's surveyor. Samples were submitted to Mitkem Laboratories and analyzed for PCBs by USEPA Method 8082. All results were submitted to the NYSDEC and D&B for review.

The proposed Treatment Storage and/or Disposal Facilities (TSDF) also required some additional sample results prior to accepting the PCB-contaminated, excavated soil. The additional samples included the following: one composite sample from each excavation area (Area 1 through Area 9) analyzed for full Toxicity Characteristic Leaching Procedure (TCLP) parameters; one composite sample from TSCA Areas 3, 5, 6, 10 and 17 analyzed for TCLP Pesticides/Herbicides; and one composite sample from TSCA Areas 5, 6, 7, 8, 10 and 11 analyzed for TCLP Metals. All results were submitted to the NYSDEC and D&B for review.

As a result of the waste characterization sampling, several grid areas (WC-12(4), WC-16, WC-27, WC-31, WC-32, WC-35(2), WC-35(4), WC-36(1), WC-36(3), WC-49, and WC-63(2)) that were previously characterized as non-hazardous, were re-characterized as hazardous due to the analytical results for total PCBs (greater than 50 ppm). In addition, TSCA Area 10 and waste characterization area WC-27A were recharacterized as hazardous, TSCA/Resource Conservation and Recovery Act (RCRA) regulated due to the analytical result for TCLP lead (greater than 5 micrograms per liter). All area re-characterization was reviewed and approved by the NYSDEC and D&B.

4.4.2 Soil Excavation

The Contract Documents specified the excavation of approximately 37,700 cubic yards of PCB-contaminated soil. The actual measured excavated volume of PCB-contaminated soil was 44,512 cubic yards. The value of the additional excavated soil was added to Pay Item 7 under

Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

Soil excavation was accomplished by means of mechanical equipment during the period from May 21, 2008 through November 21, 2008. Link Belt 240 and 130LX excavators and a New Holland 2120 front-end loader were used to excavate soil. Prior to removal of the contaminated soil, the limits of excavation were marked out by the Contractor's surveyor based on the New York State Plane (NY East), North American Datum (NAD) of 1983 coordinates, as provided in the Contract Documents.

Soil excavation was completed in the accordance with the Contract Documents to the horizontal and vertical limits specified. However, as a result of excavation endpoint samples greater than the site SCOs (as defined in Section 3.0), additional PCB-contaminated soil was excavated at the site. The following provides a brief summary by excavation area for the additional excavation that was required:

- Area 1: The north-western boundary near Grids D-24 through G-24 was extended north onto the adjoining residential property; Grids G-19, G-20, H-18, H-19, and H-20 were excavated deeper.
- Area 2: The south-western boundary near Grids G-13 and G-14 was extended; the eastern boundary near Grids O-17, P-15, P-16, and Q-14 was extended; Grids H-17, F-17, and G-17 were excavated deeper.
- Area 3: The north-western boundary near Grid G-12 was extended; Grids G-8, G-9, I-8, I-9, and M-10 were excavated deeper.
- Area 4: The western boundary near Grids A-6 through A-10 was extended; Grid C-10 was excavated deeper.
- Area 5: The southern boundary near Grids F-1 through I-1 was extended into the NYS Route 20 right-of-way to facilitate the excavation of the 8-foot deep excavation areas; Grids B-1 and D-1 were excavated deeper.
- Area 6: The southern and eastern boundaries near Grids YA-6 through YA-11 were extended.
- Area 7: The northern boundary near Grids ZA-5 and A-6 was extended; the south-western boundary near Grids YA-1 through YA-3 and XA-3 was extended.

- Area 8: Grids T-11, T-12, U-11, and U-12 were excavated deeper.
- Area 9: The south-eastern boundary near Grids L-1 through L-4 and M-1 through M-5 was extended; the eastern boundary near Grids Q-7 and Q-8 was extended.

Additionally, excavation endpoint samples indicated PCB-contaminated soil extended beneath the septic drain field in Area 6. As a result, it was necessary to remove and replace approximately 300 linear feet of perforated PVC pipe and associated fittings to remove the PCB-contaminated soil. The value of the septic drain field was added as Pay Item 31 under Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

The depth and extent of the excavations are shown on the as-built drawings in Appendix A.

The Contractor also excavated various other materials that were identified during the performance of the work, including but not limited to, tires, glass, metal debris and tree stumps. All material was segregated from the PCB-contaminated soil, if possible, and was stockpiled separately for off-site disposal. In addition, several unknown buried structures were also identified during the performance of the work, including a corroded 55-gallon drum near Grid J-18 and an underground holding tank near the south-eastern corner of Building 666. The 55-gallon drum was properly sampled, overpacked, and removed from the site by Veolia ES Technical Solution, LLC., a subcontractor to DAC. The liquid and sludge contents of the holding tank were sampled, the contents were pumped to the on-site water treatment system, the tank was flushed with clean water and the tank was filled with concrete/flowable fill material.

Handling of the 55-gallon drum and underground holding tank was considered out of Contract work and was approved by the NYSDEC and D&B prior to completion. Drum sampling, removal and disposal were added as Pay Item 26 under Change Order No. 1 and decommissioning of the underground holding tank was added as Pay Item 28 under Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

The excavation of non-hazardous versus hazardous/TSCA regulated PCB-contaminated soil was completed in separate phases for each area, as specified in the Contract Documents.

The Contractor also designated separate excavator buckets for handling each type of PCB-contaminated soil, to minimize the chance for cross contamination and to minimize the amount of decontamination needed between excavation areas. This method of excavation was approved by the NYSDEC and D&B.

Dust suppression measures were performed continuously throughout the performance of the work, based on the daily weather conditions, and consisted of the application of water with a water truck to the excavation areas, haul roads and public right-of-ways.

4.4.3 Wetland Excavation

The Contract Documents specified the excavation of approximately 2,300 cubic yards of PCB-contaminated wetlands sediment. The actual measured excavated volume of PCB-contaminated wetland sediment was 2,410 cubic yards. The value of the additional excavated wetland sediment was added to Pay Item 8 under Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

Wetland soil excavation was accomplished by means of mechanical equipment (i.e., Kobelco SK290 long-stick excavator and Komatsu CD110R ATV dump truck) during the period from September 25, 2008 through October 13, 2008. Prior to removal of the PCB-contaminated wetland soil, the limits of excavation were marked out by the Contractor's surveyor based on the New York State Plane (NY East), NAD of 1983 coordinates, as provided in the Contract Documents.

Excavation was completed in accordance with the Contract Documents to the horizontal and vertical limits specified and in accordance with the NYSDEC Freshwater Wetlands Permit and U.S. Army Corps of Engineers Nationwide Permits Numbers 33 and 38, as held by the NYSDEC. The depth and extent of the excavation are shown on the as-built drawings in Appendix A.

4.4.4 Excavation Endpoint Sampling

The Contract Documents specified approximately 670 excavation endpoint samples would be collected as part of the work. The actual measured number of excavation endpoint samples collected was 1,009. The value of the additional excavation endpoint samples was added to Pay Item 9 under Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

Once the Contractor excavated the PCB-contaminated soil as specified in the Contract Documents, excavation endpoint samples were collected to verify that the concentration of total PCBs at the bottom and sidewalls of each area was below the site SCOs. Excavation endpoint sample locations were determined based on guidance provided in NYSDEC's document entitled "DER-10 – Technical Guidance for Site Remediation and Investigation" dated December 12, 2005, as well as consultation with the NYSDEC and D&B during the completion of the work. Each sample location was marked in the field and surveyed by the Contractor's surveyor. Samples were submitted to Mitkem Laboratories and analyzed for PCBs by USEPA Method 8082. All results were submitted to the NYSDEC and D&B for review.

The locations of all excavation endpoint samples collected are shown on the as-built drawings in Appendix A. The excavation endpoint sample analytical results are provided Appendix G. A discussion of the excavation endpoint sample results is provided in Section 6.0.

4.4.5 Dewatering and Water Treatment

The Contractor was responsible for all dewatering of the excavation areas as needed throughout the performance of the work. Based on surface water and groundwater chemical analytical results obtained during previous investigations, the proposed discharge point for the water (intermittent stream along the northwestern boundary of the site) and site-specific discharge requirements from the NYSDEC Division of Water, treatment of the water was required. As a result, the Contractor constructed and installed a temporary water treatment system at the site near the northwestern corner of Area 3. The system was constructed in accordance with the Contractor's approved Work Plan. A secondary containment area was also

constructed around the water treatment system in accordance with the decontamination pad detail found in the Contract Documents, with the exception of the overall size and utilizing an LLDPE liner in lieu of HDPE liner.

In accordance with the temporary discharge requirements issued by the NYSDEC, the Contractor was required to collect treated water effluent samples at a frequency of once per batch (approximately every 20,000 gallons treated) prior to discharge. Samples were submitted to Mitkem Laboratories and analyzed for herbicides in accordance with USEPA Method 8151, pesticides in accordance with USEPA Method 8081, TAL Metals in accordance with NYSDEC ASP Method SOW ILMO 4.1, oil and grease in accordance with USEPA Method 1664, PCBs in accordance with USEPA Method 608, nitrogen (nitrate) in accordance with USEPA Method 353.2, total dissolved/suspended solids in accordance with American Society for Testing and Materials (ASTM) Method 2540C/D, pH in accordance with ASTM Method 4500, nitrogen (ammonia)-(organic) in accordance with ASTM Method 4500B-C, biological oxygen demand (5-day) in accordance with USEPA Method 405.1, methylene blue active substances (MBAS) in accordance with USEPA Method 425.1 and turbidity in accordance with USEPA Method 180.1. Several samples collected during the course of the work were above the discharge limits specified by the NYSDEC Division of Water; however the Contractor modified the treatment system process and retreated/resampled the water prior to discharge. All results were submitted to the NYSDEC and D&B for review and approval prior to discharge.

A total of 617,000 gallons of water was collected, treated, and discharged as part of the site work.

4.4.6 Demarcation Material Installation

The Contract Documents specified approximately 56,000 square yards of demarcation fabric would be required as part of the site work. However, only 4,245 square yards of demarcation fabric were used at the site. The value of this bid item was deducted under Pay Item 18 as part of Change Order No. 1 and was used as a credit toward other work. The Change Order is discussed in Section 5.0 and presented in Appendix B.

Once the Contractor excavated the PCB-contaminated soil and collected the appropriate excavation endpoint samples as specified in the Contract Documents, the results were compared to the site SCOs. As specified in the Contract Documents, if residual PCB soil contamination was detected above 1 ppm, but less than 10 ppm at 1.5 feet bgs or more, a geotextile demarcation layer would be placed throughout the entire area tested prior to backfilling. However, as approved by the NYSDEC, all areas that did exhibit residual contamination were excavated until excavation endpoint sample results were less than 1 ppm for all depths. Due to restrictions associated with working in the U.S. Route 20 right-of-way and potential adverse impacts to the road surface, excavation was suspended prior to removing all PCB-contaminated soil from the southern excavation boundary in Areas 5, 7, and 9. A discussion of the excavation endpoint sample results associated with this area is provided in Section 6.0. The location of installed demarcation layer material is shown on the as-built drawings in Appendix A.

4.5 Off-Site Transportation and Disposal

The Contract Documents specified the off-site transportation and disposal of approximately 54,000 tons of non-hazardous PCB-contaminated soil and approximately 6,800 tons of TSCA regulated PCB-contaminated soil. However, it was necessary to transport and dispose of 59,298.15 tons of non-hazardous PCB-contaminated soil and 16,014.27 tons TSCA regulated PCB-contaminated soil as part of the work. The value of the additional non-hazardous PCB-contaminated soil was added to Pay Item 14 under Change Order No. 1 and the value of additional TSCA regulated PCB-contaminated soil was added to Pay Item 15 under Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

The Contract Document specified the off-site transportation and disposal of approximately 5 tons of tires and approximately 25 tons of scrap metal. However, it was necessary to transport and dispose of 55.53 tons of tires as part of the work. It was not necessary to transport and dispose of any scrap metal as part of the remedial excavation work. The value of the additional tires was added to Pay Item 16 under Change Order No. 1. The value of the scrap metal was deducted under Pay Item 17 as part of Change Order No. 1 and was used as a credit toward other work. The Change Order is discussed in Section 5.0 and presented in Appendix B.

As discussed in Section 4.4, TSCA Area 10 and waste characterization area WC-27A were re-characterized as hazardous, RCRA/TSCA regulated due to the analytical result for TCLP lead. Subsequently, the value of this item was added as Pay Item 32 as part of Change Order No. 1. The Change Order is discussed in Section 5.0 and presented in Appendix B.

A summary of PCB-contaminated soil disposed as part of the project is provided in Table 4-1.

The Contractor completed the off-site transportation and disposal of PCB-contaminated soil and other materials at the site during the period from June 11, 2008 through November 21, 2008. Longhorn Trucking Company, Inc., ANJ Morris Corporation, Mangiardi Brothers Trucking, Inc., Ackner Trucking Company, Ron Allen Trucking, Inc., Cedar Hill Trucking, Inc., Goulet Trucking, Inc., and Cason, Inc., subcontractors to DAC and NYSDEC permitted waste transporters, were responsible for the off-site transportation of non-hazardous PCB-contaminated soil from the site. Non-hazardous PCB-contaminated soil was disposed at the Ontario County Landfill, located in Stanley, New York, and the Chemung County Sanitary Landfill, located in Lowman, New York. Tree stumps with residual PCB-contaminated soil were disposed of at Chemung County Sanitary Landfill. Tires were disposed of at Ontario County Landfill. Both facilities are permitted by the NYSDEC and operated by Casella Waste Systems, Inc., a subcontractor to DAC.

Mangiardi Brothers Trucking, Inc and Goulet Trucking, Inc. were responsible for the off-site transportation of TSCA and RCRA/TSCA regulated PCB-contaminated soil. TSCA and RCRA/TSCA regulated PCB-contaminated soil was disposed at the CWM Chemical Services, LLC's RCRA/TSCA disposal facility located in Model City, NY. CWM Chemical Services, LLC's RCRA/TSCA disposal facility is permitted by the NYSDEC and operated by CWM Chemical Services, LLC, a subcontractor to DAC.

Table 4-1

**FORMER BOUCHARD JUNKYARD SITE
FINAL REMEDIATION REPORT
SUMMARY OF SOIL DISPOSAL**

Item Description	Unit	Unit Quantity
Non-Hazardous PCB-Contaminated Soil	Ton	59,298.15
TSCA Regulated PCB-Contaminated Soil	Ton	16,014.27
RCRA/TSCA Regulated PCB-Contaminated Soil	Ton	1,102.54
	Total	76,414.96

All trucks were routed onto the site via NYS Route 20. Trucks were first directed to the on-site weigh scale to obtain a tare weight. Once they were weighed, trucks were routed around the site via the clean haul roads and the Contractor then loaded all soil directly from the excavation areas or from stockpiles into the trucks by mechanical means utilizing Link Belt 130LX and 240LX excavators. Trucks were underlain with 6 mil polyethylene sheeting during loading. Trucks were dry-brushed, as necessary; to remove soil adhered to the tires, body, and undercarriage. In addition, at the Contractor's discretion, trucks were directed to the decontamination pad for additional cleaning. After decontamination, trucks were directed to the on-site weigh scale to obtain a final weight. All weights were logged and recorded by the Contractor using a computer, truck scale data management program. The final weight was also recorded on the appropriate waste management form. Copies of all disposal records for the site are provided in Appendix H.

4.6 Backfill and Compaction

4.6.1 Upland Areas

The Contract Documents estimated that 22,000 cubic yards of imported clean backfill material would be placed, graded, and compacted as part of the backfill of the upland areas of the site. The actual measured and calculated in-place volume of imported clean fill placed, graded, and compacted was 30,785 cubic yards. The additional volume of clean backfill material was due to over excavation based on failed excavation endpoint sample results. The value of the additional backfill was added to Pay Item 12 under Change Order No. 1. All imported clean backfill material was placed, graded, and compacted in conformance with the Contract Documents.

Backfilling of the excavation areas was accomplished by means of mechanical equipment during the period from June 3, 2008 through November 26, 2008. Backfill material was delivered to the site from Troy Sand & Gravel Co., Inc.'s Tayer Road Stephentown Mine using dump trucks. Backfill material was temporarily stockpiled in the remediated portions of the site on a daily basis during performance of the work. A Kawasaki 80ZV front-end loader, Caterpillar 6465 bulldozer, and a John Deere 650 bulldozer were used to place and grade the backfill

material in the excavation areas. A Hamm 2593 vibratory compaction roller was then used to compact the backfill material.

Chemical and physical testing of the backfill material was required to ensure that its quality met the minimum requirements set forth in the Contract Documents. The Contract Documents specified that the backfill material would be tested at a frequency of no less than one sample per 500 cubic yards of material. NYSDEC and D&B approved a reduced testing frequency of one sample per 1,000 cubic yard of material for physical parameters. The Contract Documents specified that all samples would be analyzed for TCL VOCs, TCL SVOCs, TCL pesticides, TCL PCBs, TAL metals, cyanide, gradation, characterization, and moisture/density relationship. However, as specified in the Contract Documents, since a New York State Department of Transportation (NYSDOT) approved source was used for backfill, only one set of chemical analyses was required.

Two composite samples, one from the 0-7.5 foot bgs interval and one from the 7.5-15 foot bgs interval, were collected from the borrow source area dedicated for the site and submitted to Mitkem Laboratories for chemical analysis, as specified above. All results were submitted to the NYSDEC and D&B for review and approval. The NYSDEC 6 NYCRR Part 375 – Unrestricted Use Soil Cleanup Objectives were used as SCGs to screen the backfill chemical analysis results. There were no VOCs, SVOCs, pesticides, or PCBs detected in any of the backfill samples collected in excess of SCGs. Several metals were detected, however all results were below the SCGs with the exception of total chromium. Total chromium was above the SCGs for hexavalent chromium, but less than the SCGs for trivalent chromium. The total chromium results were also compared to site background samples collected during previous investigations, and the backfill results were within the ranges detected. Based on the background information, the NYSDEC and D&B approved the chemical results for the backfill materials.

A total of 18 samples of the backfill material were collected and analyzed for geotechnical parameters, as specified above. The results of the analyses indicated that several of the samples collected did not meet the gradation requirements as specified in the Contract Documents; however, the material was approved by the NYSDEC and D&B for use as backfill material at the site.

The Contractor was required to compact the backfill material to 95 percent in accordance with ASTM D 1157 (Modified Proctor Test). The Contractor achieved the degree of compaction required. The compaction field density test results are provided in Appendix I.

The final grades achieved are shown on the as-built drawings in Appendix A.

4.6.2 Wetland Areas

The Contract Documents estimated that 600 cubic yards of imported clean wetland backfill material would be placed and graded as part of backfill for the wetland areas. The actual measured and calculated in-place volume of imported clean wetland backfill placed and graded was 1,924 cubic yards. The value of the additional backfill was added to Pay Item 13 under Change Order No. 1. All imported clean backfill material was placed and graded in conformance with the Contract Documents.

Backfilling of the wetland excavation areas was accomplished by means of mechanical equipment during the period from October 27, 2008 through November 26, 2008. Backfill material was delivered to the site from Troy Sand & Gravel Co., Inc.'s Tayer Road Stephentown Mine using dump trucks. Wetland backfill material was temporarily stockpiled in remediated portions of the site on a daily basis during performance of the work. A Kobelco SK290 long-stick excavator was used to place and grade the wetland backfill material in the wetland excavation areas.

Chemical and physical testing of the wetland backfill material was required to ensure that its quality met the minimum requirements set forth in the Contract Documents. The Contract Documents specified that the wetland backfill material would be tested at a frequency of no less than one sample per 500 cubic yards of material. NYSDEC and D&B approved a reduced testing frequency of 1,000 cubic yard of material. The Contract Documents specified that all samples would be analyzed for TCL VOCs, TCL SVOCs, TCL pesticides, TCL PCBs, TAL metals, cyanide, gradation, characterization, total organic carbon, pH, nitrogen and phosphate.

Samples were collected of the wetland backfill material and submitted to Mitkem Laboratories for chemical analysis, as specified above. All results were submitted to the NYSDEC and D&B for review and approval. The NYSDEC 6 NYCRR Part 375 – Unrestricted Use Soil Cleanup Objectives were used as SCGs were used to screen the backfill chemical analysis results. There were no VOCs, SVOCs, pesticides, or PCBs detected in any of the backfill samples collected in excess of SCGs. Several metals were detected, however all results were below the SCGs with the exception of total chromium. Total chromium was above the SCGs for hexavalent chromium, but less than the SCGs for trivalent chromium. The total chromium results were also compared to site background samples collected during previous investigations, and the backfill results were within the ranges detected. Based on the background information, the NYSDEC and D&B approved the chemical results for the backfill materials.

A total of two samples of the wetland backfill material were collected and analyzed for geotechnical parameters, as specified above. The results of the analyses indicated that the samples collected did not meet the requirements specified in the Contract Documents; however, the material was approved by the NYSDEC and D&B for use as wetland backfill material at the site.

The Contractor was required to place and grade the backfill material using minimal effort. The areas within the wetlands, as well as adjacent transition areas, were uniformly graded in accordance with the tolerances specified in the Contract Documents. The final grades achieved are shown on the as-built drawings in Appendix A.

4.7 Site Restoration

4.7.1 Topsoil and Seed

The Contract Documents estimated that 16.7 acres of topsoil and seed would be placed and graded as part of the remedial program at the Former Bouchard Junkyard Site. However, due to the additional excavation that was required due to excavation endpoint samples above site SCOs, additional areas was excavated in order to complete the work. The actual measured and calculated area of imported topsoil and seed placed and graded was 16.96 acres. All materials

were quantified via a review of the survey provided by Clark. The value of the additional backfill was added to Pay Item 19 under Change Order No. 1. The final extent and grades of the areas restored are shown on the as-built drawings in Appendix A.

Placement of the 6-inch layer of topsoil over the backfilled material was accomplished by means of mechanical equipment during the period from August 27, 2008 through November 26, 2009. The topsoil was dumped at various portions of the site during the work. A New Holland 2120 front-end loader and Caterpillar and John Deere 650 bulldozers were used to spread and grade the topsoil over the excavation area. Generally, the topsoil was graded to conform to the grade of the underlying backfill material.

After placing the topsoil, the areas to be seeded were scarified using a landscape rake. Areas of the site that were not accessible with the landscape rake were cultivated by hand. Hydroseeding of all the areas was then completed by Cloverleaf Landscaping, a subcontractor to DAC. The hydroseed mixture provided was in accordance with the requirements of the Contract Documents. In addition, material certifications were provided for the seed mixtures and fertilizer, which were reviewed and approved by the NYSDEC and D&B.

4.7.2 Planting

The Contract Documents specified the replacement of 115 existing trees and 230 shrubs removed from the site to perform the work. However, due to the additional excavation that was required, more trees were cleared and grubbed in order to complete the work. The actual measured number of trees planted was 229. The value of the additional trees was added to Pay Item 20A under Change Order No. 1. Fewer shrubs were cleared than were estimated. The actual measured number of shrubs planted was 32. The value of the shrubs was deducted under Pay Item 20B as part of Change Order No. 1 and used a credit towards other work.

Cloverleaf Landscaping, a subcontractor to DAC, completed the plantings at the site during the period from September 22, 2008 through July 10, 2009. The following provides a summary of the number and type of trees and shrubs that were planted at the site:

- One hundred ninety three, 4-foot Blue Spruce trees
- Two 4-foot Red Maple trees
- Two 8-foot Red Maple trees
- Five 3-foot Lilac shrubs
- Twenty-five Scotch Pine trees
- One 3-foot Honey Suckle bush
- Two 3-foot Wigelia shrubs
- Six green seedless grape vines
- Six red seedless grape vines
- Six Concord grape vines
- Six other red-type grape vines
- Two Cherry trees
- One Pear tree
- One Granny Smith apple tree
- One Empire apple tree
- One Cortland apple tree
- One Northern Spy apple tree

Prior to planting, the location of each tree was surveyed by Clark. Cloverleaf Landscaping utilized a Toro Dingo TX545 Roto Driller with a solid stem auger attachment to advance a 1-foot deep boring at each planting location. Generally, the pits were approximately 2 feet in diameter and 1 foot deep. Cloverleaf used a Caterpillar 420D Backhoe to transport trees and shrubs to planting locations. The trees and shrubs were then planted by hand and backfilled with a mixture of mulch and the removed top soil.

4.7.3 Wetland Planting

The Contractor completed the wetland planting during November 2008. The Contract Documents specified the restoration of the wetland areas in accordance with the Wetland Restoration Plan. The Contract Documents specified the replacement of approximately 245 trees and 490 shrubs. Due to the saturated soil in the wetland area, less trees and shrubs were planted than specified. The actual measured number of trees planted was 90. The value of the trees was deducted under Pay Item 21A as part of Change Order No. 1 and used a credit towards other work. The actual measured number of shrubs planted was 132. The value of the shrubs was deducted under Pay Item 21B as part of Change Order No. 1 and used a credit towards other work. The types of trees and shrubs planted was determined based on a vegetative survey and analysis that was completed by Ecologic, LLC, a subcontractor to D&B, and was provided as a part of the Limited Site Data Summary Report.

Upon completion of the wetland planting, the Contractor prepared a Wetland Restoration report, documenting the final elevations and planting layout, as well as a summary of corrective actions that were taken during restoration to address issues that occurred during construction of the project. A copy of the report is provided as Appendix J.

4.7.4 Access Road and Parking Areas

The Contractor completed the construction of access road and parking areas at the site during the period from May 2008 through November 2008. The Contract Documents estimated that 3,900 square yards of access road and parking areas would be restored as part of the remedial program at the Former Bouchard Junkyard Site. However, due to the additional excavation that was required due to excavation endpoint samples above site SCOs, additional area was excavated in order to complete the work. The actual measured and calculated area of access road and parking area restored was 7,230 square yards. The value of the additional access road and parking area was added to Pay Item 5 under Change Order No. 1. In addition, it was necessary to remove and replace 499 square feet of an asphalt driveway in Area 7 to excavate PCB-contaminated soil. The value of the driveway was added to Pay Item 30 under Change Order No. 1.

The final extent and grades of the areas restored are shown on the as-built drawings in Appendix A.

4.7.5 Groundwater Monitoring Well Installation

The Contractor replaced two groundwater monitoring wells at the site on November 24, 2008. The replacement wells (MW-2R and MW-6R) were installed immediately adjacent to the original locations of MW-2 and MW-6 that were abandoned due to damage. The installations were in accordance with the Contract Documents, as well as the well construction logs for the old wells (MW-2 and MW-6) provided in the Limited Site Data Summary Report.

Well installation was completed by Aztech Technologies, Inc., a subcontractor to DAC and a NYSDEC licensed well driller. At the completion of the installation, Aztech Technologies, Inc. developed the monitoring wells as specified in the Contract Documents. D&B personnel provided oversight of the installation and prepared monitoring well construction logs for the wells. A copy of the well construction logs is included in Appendix K.

4.7.6 Post-Construction Groundwater Sampling

Upon completion of the groundwater monitoring well installation, the Contractor initiated post-construction groundwater sampling at the site on December 4, 2008. The sampling was completed to confirm that on-site construction activities did not impact the groundwater conditions at the site, based on a comparison to pre-construction groundwater conditions collected prior to the start of excavation work. Sampling procedures were in accordance with the Contract Documents, as well as the Contractor's reviewed and approved Sampling Plan.

On-site wells sampled included four monitoring wells (MW-1, MW-2R, MW-4 and MW-6R) and six private water supply wells (WSW-1 through WSW-6) within the limits of the work. Samples collected were submitted to Mitkem Laboratories, and were analyzed for TCL VOCs, TCL SVOCs, and TCL pesticides/PCBs in accordance with NYSDEC ASP Method SOW OLMO 4.2, TAL metals in accordance with NYSDEC ASP Method SOW ILMO 4.0 and

cyanide in accordance with NYSDEC ASP Method 335.2. Preliminary results were submitted to the NYSDEC and D&B with a 24-hour turnaround time and final results were submitted within 28 days from receipt of the sample by the laboratory. In addition, a DUSR was prepared for all final analytical reports by the Contractor's Quality Assurance Officer. Based on a comparison of the pre-construction groundwater monitoring results and the post-construction groundwater monitoring results, the on-site construction activities did not impact groundwater quality on-site. A summary of the analytical results is provided in Appendix C and copies of the DUSR reports are provided in Appendix D.

4.7.7 Post-Construction Soil Sampling

Upon completion of excavation activities at the site and demobilization of equipment, the Contractor completed post-construction soil sampling. The post-construction soil sampling was completed during the period from September 28, 2008 through November 24, 2008. The sampling was completed to confirm that areas of the site heavily used during the work (decontamination pad, water treatment system, Contractor's staging and storage, clean haul roads and parking areas) did not contain any PCB-contaminated soil above applicable SCOs. Sampling procedures were in accordance with the Contract Documents, as well as the Contractor's reviewed and approved Sampling Plan.

The following samples were collected as part of the post-construction soil sampling at the site: a four point composite sample from beneath the area of the wastewater treatment system; a four point composite sample from beneath the area of the decontamination pad; 25 surface soil samples along the length of the temporary haul roads; a four point composite sample from beneath the area of the Contractor's staging and storage; and six surface soil samples from the construction entrance. Samples collected were submitted to Mitkem Laboratories, and were analyzed for PCBs in accordance with USEPA Method 8082. Preliminary results were submitted to the NYSDEC and D&B with a 24-hour turnaround time and final results were submitted within 28 days from receipt of the sample by the laboratory. All areas tested as part of the post-construction soil sampling were below the site SCO of 1 ppm for soil.

4.8 Surveys and As-Built Drawings

An initial boundary and topographic survey was performed at the Former Bouchard Junkyard by Clark. The base map was developed as described in Section 4.2.5. The map was developed at a scale of 1 inch equals 60 feet. Topographic contours were plotted at 1-foot intervals. The vertical datum is referenced to the North American Vertical Datum 83.

Clark performed multiple intermediate surveys following the excavation of contaminated soil to the limits of the Contract Documents throughout the performance of the work. The purpose of the intermediate surveys was to obtain limits of the excavation areas, elevations of excavation area bottoms, volume of PCB-contaminated soil removed and locations of all excavation endpoint samples.

Clark performed a final topographic survey following backfilling of the excavation areas, restoration with topsoil, seed and plantings. The purpose of the survey was to obtain elevations of final surfaces of general fill, the volume of backfill placed at the site, elevations of final surfaces of topsoil and the extent of topsoil and seed placed at the site.

Survey and as-built drawings are included in Appendix A.

4.9 Wetland Restoration Monitoring

As part of the long-term monitoring at the site, the Contractor will be required to monitor the success of the wetland area restoration for a minimum of 1 year following final acceptance of the work. This will include, but is not limited to, collection of hydrologic data and soil data in both disturbed and undisturbed areas of the wetland, collection of vegetation data along established transects in the wetland area in spring (May-June), summer (July-August) and fall (September-October), collection of local climatological data for the monitoring period, and monitoring for invasive species. The Contractor has prepared a Wetland Restoring Monitoring Plan describing how they will conduct the 1-year monitoring, which was submitted, reviewed and approved by the NYSDEC and D&B.

Upon completion of the wetland restoration monitoring, the Contractor will submit all collected information to document that the current conditions present in the wetland areas are similar to those conditions which existed prior to completion of the work. The information will be reviewed by the NYSDEC and D&B, and upon approval, this Final Remediation Report will be appended to include a discussion of the results.

4.10 Warranty and Guarantee Work

Upon substantial completion of the work activities, the Contractor is responsible for warranty and guarantee work for a period of 12 months. The following sections discuss warranty and guarantee work performed by the Contractor to date.

4.10.1 Topsoil and Seed

During the winter season, previously placed topsoil and seed eroded from several areas of the site. The Contractor repaired the eroded areas in June 2009 by placing additional topsoil over the exposed backfilled material. Placement of the topsoil over the backfilled material was accomplished by means of mechanical equipment. The topsoil was hauled to the site from an approved off-site source using tri-axle dump trucks. A Bobcat® 250 front-end loader and Caterpillar D46 bulldozer were used to spread and grade the topsoil over the damaged areas. Generally, the newly placed topsoil was graded to conform to surrounding areas to create a relatively uniform surface. A DynoPac CA140 vibratory compaction roller was then used to compact the topsoil.

After placing the topsoil, the areas to be seeded were scarified using a New Holland tractor with a landscape rake. Areas of the site that were not accessible with the tractor were cultivated by hand. Hydroseeding of all the areas was then completed by the Contractor.

D&B inspected the repaired areas in June 2009 and no deficiencies were noted.

4.10.2 Access Roads and Parking Areas

The Contractor repaired areas along the site access roads where settling occurred during the winter season. The Contractor repaired the areas in June 2009 by placing additional stone on the roads. Placement of the stone was accomplished by means of mechanical equipment. The stone was hauled to the site from an approved off-site source using tri-axle dump trucks and unloaded along various portions of the road. A Bobcat® 250 front-end loader and New Holland tractor were used to place and grade the stone.

D&B inspected the repaired areas in June 2009 and no deficiencies were noted.

4.10.3 Surface Water Drainage Improvements

As previously discussed, land surface is at a high near the north end of the site. The land surface of the site decreases gently in elevation to the southeast. As a result, surface water drainage is primarily to the south and east.

Area 8

During the winter season, previously placed topsoil and seed eroded from the restored wetland buffer zone and wetland area. The Contractor repaired the eroded areas in June 2009 by placing additional topsoil and seed over the exposed backfilled material. To prevent future damage, the Contractor installed a stone-lined swale having the approximate dimension of 100 feet long by 70 wide. The sidewalls of the swale were graded on a slope to a maximum depth of approximately 0.5 feet below grade. The swale was installed within the wetland buffer zone and was oriented from the northwest to the southeast. The purpose of the swale is to reduce the velocity of surface water flow through the wetland buffer zone. A Bobcat® 250 front-end loader and Caterpillar D46 bulldozer were used to construct the swale.

D&B inspected the repaired areas in June 2009 and no deficiencies were noted.

Areas 5, 7 and 9

During periods of prolonged precipitation, surface water drainage accumulates in the southern portions of Areas 5, 7 and 9 along U.S. Route 20. The Contractor improved surface water drainage in these areas by installing two French drains. One French drain, having the approximate dimensions of 300 feet long by 3 feet wide, is located in Areas 6 and 7 along the west side of the driveway to Chuck's Automotive. Flow along the drain is to the south from a high point located near Chuck's Automotive.

The second French drain, having approximate dimensions of 290 feet long by 3 feet wide, is situated at the southern edge of Area 5 and Area 9 along the U.S. Route 20 right of way. The southern drain and the western drain are connected at the southwest corner of the driveway. The southern drain flows in an easterly direction and discharges to an existing storm water catch basin near monitoring well MW-5.

The drains were excavated utilizing a Kobelco SK210LC track-mounted excavator to a depth ranging between 1.5 to 4.0 feet below grade. A 6-inch diameter perforated HDPE pipe was installed at the base of the drains. Crushed stone was placed in the drains to a depth of 6 inches below grade. The drains were restored at grade in-kind with the same material that was originally in place. That is, areas with topsoil and seed were restored with topsoil and seed, areas with stone were restored with stone.

D&B inspected the repaired areas in June 2009 and no deficiencies were noted.

5.0 CHANGE ORDERS

5.1 General

One change order was necessary to complete the work at the Former Bouchard Junkyard site. Eleven overrun pay items including Pay Item 5, Pay Item 7, Pay Item 8, Pay Item 9, Pay Item 12, Pay Item 13, Pay Item 14, Pay Item 15, Pay Item 16, Pay Item 19, and Pay Item 20A and nine out of Contract work pay items including Pay Item 24, Pay Item 25, Pay Item 26, Pay Item 27, Pay Item 28, Pay Item 29, Pay Item 30, Pay Item 31, and Pay Item 32 were the primary reasons for Change Order Number 1. These items accounted for an increase in the contract cost of \$2,376,786.55. A credit in the amount of \$189,520.47 from 9 underutilized pay items including Pay Item 2, Pay Item 3, Pay Item 6, Pay Item 10, Pay Item 17, Pay Item 18, Pay Item 20B, Pay Item 21A, and Pay Item 21B, was used to offset some of the increase to the Contract cost. The total increase to the contract price under Change Order Number 1 was \$2,187,266.08. A copy of the executed Change Order Number 1 is included as Appendix B.

5.2 Summary of Change Order No. 1

A summary of Change Order Number 1 Items is provided below, which reflects adjustments to the originally specified contract amount:

Change Order Item	Pay Item	Amount
A	Pay Item 2 – Site Services (<i>Decreased quantity</i>)	(\$16,582.50)
B	Pay Item 3 – Health and Safety Services (<i>Decreased quantity</i>)	(\$18,125.00)
C	Pay Item 5 – Gravel Access Road and Parking Area Construction (<i>Increased quantity</i>)	\$8,496.00
D	Pay Item 6 – Fencing (<i>Increase quantity and Decreased unit price</i>)	(\$10,966.72)
E	Pay Item 7 – Excavation of PCB-Contaminated Soil (<i>Increased quantity</i>)	\$29,150.00
F	Pay Item 8 – Excavation of PCB-Contaminated Wetlands Soil (<i>Increased quantity</i>)	\$4,000.00
G	Pay Item 9 – Excavation Endpoint Sampling and Analysis (NYSDEC ASP Method 8082) (<i>Increased quantity</i>)	\$29,832.00
H	Pay Item 10 – Sheet piling (<i>Decreased quantity</i>)	(\$26,250.00)

Change Order Item	Pay Item	Amount
I	Pay Item 12 – Backfill – Excavated Areas <i>(Increased quantity)</i>	\$209,100.00
J	Pay Item 13 – Backfill – Excavated Wetland Areas <i>(Increased quantity)</i>	\$4,500.00
K	Pay Item 14 – Transportation and Off-Site Disposal of Non-hazardous PCB-Contaminated Soil <i>(Increased quantity)</i>	\$312,590.85
L	Pay Item 15 – Transportation and Off-Site Disposal of Hazardous, TSCA Regulated PCB-Contaminated Soil <i>(Increased quantity)</i>	\$1,289,997.80
M	Pay Item 16 – Transportation and Off-Site Disposal of Tires <i>(Increased quantity)</i>	\$41,181.95
N	Pay Item 17 – Transportation and Off-Site Disposal of Scrap Metal <i>(Decreased quantity)</i>	(\$1,750.00)
O	Pay Item 18 – Demarcation Layer <i>(Decreased quantity)</i>	(\$38,816.25)
P	Pay Item 19 – Site Restoration (Topsoil/Seeding) <i>(Increased quantity)</i>	\$60,000.00
Q	Pay Item 20A – Site Restoration – Planting (Trees) <i>(Increased quantity)</i>	\$33,250.00
R	Pay Item 20B – Site Restoration – Planting (Shrubs) <i>(Decreased quantity)</i>	(\$8,880.00)
S	Pay Item 21A – Wetland Restoration – Planting (Area 8 Trees) <i>(Decreased quantity)</i>	(\$53,650.00)
T	Pay Item 21B – Wetland Restoration – Planting (Area 8 Shrubs) <i>(Decreased quantity)</i>	(\$14,500.00)
U	Pay Item 24 – Low Volume PCB Air Sampling <i>(New pay item added to Contract)</i>	\$35,716.04
V	Pay Item 25 – Additional Clearing and grubbing Areas 6 and 7 <i>(New pay item added to Contract)</i>	\$34,495.20
W	Pay Item 26 – Drum Sampling, Removal, and Disposal <i>(New pay item added to Contract)</i>	\$2,851.73
X	Pay Item 27 – Off-Site Potable Well Sampling <i>(New pay item added to Contract)</i>	\$231.00
Y	Pay Item 28 – Tank Decommissioning <i>(New pay item added to Contract)</i>	\$2,946.88
Z	Pay Item 29 – Weekend Inspections <i>(New pay item added to Contract)</i>	\$13,777.63
AA	Pay Item 30 - Area 7 Driveway Replacement <i>(New pay item added to Contract)</i>	\$14,363.36
BB	Pay Item 31 - Area 6 Septic Drain Field Replacement <i>(New pay item added to Contract)</i>	\$8,065.61
CC	Pay Item 32 - Transportation and Off-Site Disposal of Hazardous, RCRA/TSCA Regulated PCB-Contaminated Soil <i>(New pay item added to Contract)</i>	\$242,240.50
TOTAL		\$2,187,266.08

Original Contract Price	\$6,968,999.00
Net INCREASE due to this Change Order No. 1	\$2,187,266.08
New Contract Price including this Change Order	\$9,156,265.08

	Calendar Days	Substantial Completion Date	Final Completion Date
Original Contract	270	12/29/2008	2/27/2009
Net Change due to this Change Order No. 1	120	12/29/2008	6/27/2009
New	390	12/29/2008	6/27/2009

6.0 POST EXCAVATION SOIL ANALYTICAL RESULTS

The discussion of the post-excavation soil sampling performed at the Former Bouchard Junkyard Site is provided below.

6.1 Post Excavation Soil Sampling Rational

When the excavation reached the minimum grades and extents specified in the Contract Documents, post-excavation endpoint samples were collected from the excavation sidewall and bottom and analyzed by the laboratory, to document the removal of PCB-contaminated soil. Generally, one soil sample was collected from the top of each excavation sidewall for every 100 linear feet and one soil sample was collected from the excavation bottom for every 2,500 square feet. All soil sample analytical results were reviewed by NYSDEC and D&B, and compared to unrestricted SCOs set forth in NYSDEC 6 NYCRR Part 375 regulations. If PCBs were detected at concentrations greater than 1 ppm, additional excavation and sampling was performed until PCBs were detected at a concentration of 1 ppm or less. Using this approach, all soil except a portion along the U.S. Route 20 right-of-way, containing PCBs in excess of unrestricted SCOs was removed from the site.

As discussed in Section 4.4.2, the southern excavation boundary in Areas 5, 7, and 9 was extended into the U.S. Route 20 right-of-way to facilitate removal PCB-contaminated soil. However, due to restrictions associated with working in the right-of-way and potential adverse impacts to the road surface, excavation was suspended prior to removing all PCB-contaminated soil from these areas. As a result, demarcation fabric was placed along a portion of the excavation sidewall in Area 5 and Area 9 that contains PCB-contaminated soil from grade surface to the excavation bottom. Demarcation was not placed along the southern excavation boundary in Area 7 containing residual PCB contamination. As depicted on the as-built drawings, the demarcation fabric extends from the area near Grid B-1 east toward the area near Grid K-1. Post-excavation soil samples results associated with the area along the U.S. Route 20 right-of way are discussed in Section 6.2 below.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the Former Bouchard Junkyard Site remedial program, the following conclusions and recommendations are presented below:

7.1 Conclusions

Construction was completed at the Former Bouchard Junkyard in accordance with the September 2006 Record of Decision Amendment and Contract Documents entitled: Former Bouchard Junkyard Site, Site Number 4-11-014, Town of New Lebanon, Columbia County, New York dated February 2008.

Dvirka and Bartilucci Consulting Engineers
330 Crossways Park Drive
Woodbury, New York 11797

P.E. Seal



Signed: Brian Veith

Dated: 8/24/09

7.2 Recommendations

It is recommended that a Site Management Plan (SMP) be developed and implemented to ensure that the site is operated in a manner consistent with the requirements identified in the RODA. Generally, a SMP is developed following the final phase of the remediation. The final

phase of the remediation begins with the approval of this final remediation report and/or issuing of the certificate of completion and continues until the RAOs for the site have been satisfied and the site is closed out. Specifically, the purpose of the SMP document shall be to:

- Ensure that any institutional and/or engineering controls specified for the site remain in place and continue to be effective;
- Detail the steps necessary to inspect, monitor and report the performance and effectiveness of the remedy, both short and long-term; and
- Specify site management reporting requirements as well as criteria for site close out.

Components of the SMP should include the following:

- Institutional and Engineering Control Plan;
- Soil Management Plan; and
- Monitoring Plan.

The Institutional and Engineering Control Plan should be developed to include the steps necessary to manage and implement any institutional and engineering controls for the site, consistent with the requirements of the RODA. The Institution and Engineering Control Plan should identify issues to be specifically evaluated with respect to the institutional and engineering control certification and should allow for continued use, reuse or redevelopment of the site, within the constraints of the site remedy.

The Institutional and Engineering Control Plan should also identify requirements to be placed on future site development activities within the restricted areas of the site (i.e., property boundary along U.S. Route 20 right-of-way), which contain residual soil contamination. These requirements are necessary to ensure that any disturbance of soil within this area does not result in unacceptable exposure of residual soil contamination to the public and the environment.

Limited handling of PCB-contaminated soil in the area along U.S. Route 20 may be required as part of on- or off-site infrastructure improvements. As a result, a Soil Management

Plan should be implemented at the site. The Soil Management Plan, at a minimum, should include requirements for excavating, handling, storing, sampling, transporting, and disposing of PCB-contaminated soil.

A Monitoring Plan should be implemented at the site. The Monitoring Plan should include the collection and analysis of groundwater samples from existing site monitoring wells MW-1, MW-2R, MW-4 and MW-6R, the collection and analysis of surface water sample from the wetland area and intermittent streams and the collection of wetland restoration monitoring soil samples. The purpose of the sampling program is to monitor the effectiveness of the remedial action and the wetland restoration activities.

8.0 REFERENCES

- Cadwell and Dineen, 1986. Surficial Geologic Map of New York, Hudson-Mohawk Sheet. New York State Museum – Geological Survey, Map and Chart Series #40.
- D&B, 2002. Remedial Investigation Report. Former Bouchard Junkyard Site, Site Number 4-11-014, Town of New Lebanon, Columbia County, New York. August 2002.
- D&B, 2005. Pre-Design Investigation Report. Former Bouchard Junkyard Site, Site Number 4-11-014, Town of New Lebanon, Columbia County, New York. July 2005.
- D&B, 2008. Contract Documents. Former Bouchard Junkyard Site, Site Number 4-11-014, Town of New Lebanon, Columbia County, New York. January 2008.
- Fisher, et. al., 1970. Geologic Map of New York, Hudson-Mohawk Sheet. New York State Museum and Science Service, Map and Chart Series #15.
- NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).
- NYSDEC, 2006. Record of Decision Amendment. Former Bouchard Junkyard Site. Site Number 4-11-014, Town of New Lebanon, Columbia County, New York. September 2006
- NYSDEC, 2006. 6 NYCRR Part 375, Environmental Remediation Programs, Subparts 375-1 to 375-4 & 375-6, effective December 14, 2006.
- NYSDOH, 1998. Drinking Water Standards, NYCRR Title 10, Part 5, effective May 1998.
- United States Department of Agriculture, 1989. Soil Survey of Columbia County, New York. Soil Conservation Service.