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ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PRELIMINARY SITE ASSESSMENT

Bisonite Paint Company Site No. 915010

Town of Tonawanda Erie County



Prepared for:

**New York State
Department of
Environmental Conservation**

50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, *Commissioner*

Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., *Director*

By:

DUNN ENGINEERING COMPANY
in association with
TAMS CONSULTANTS, INC.

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March 1993

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EXECUTIVE SUMMARY

Site Description

The Bisonite Paint Company site is located at 2250 Military Road in the Town of Tonawanda, Erie County, New York (Figure ES-1). Prior to 1978, spent solvents amounting to approximately 1,800 gallons of mineral spirits per year and paint pigments were landspread over a one-acre portion of the property. In addition, a lagoon approximately 50 feet long, 30 feet wide, and 8 to 10 feet deep located in the northwest corner of the property was used to dispose of metal paint pigments and by-products from the manufacture of water-based paints (Figure ES-2). This waste reportedly contained titanium dioxide, calcium carbonate, lime, clay and calcium hypochlorite.

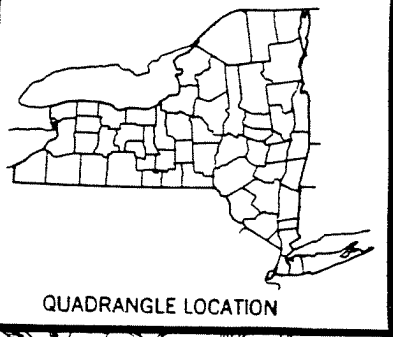
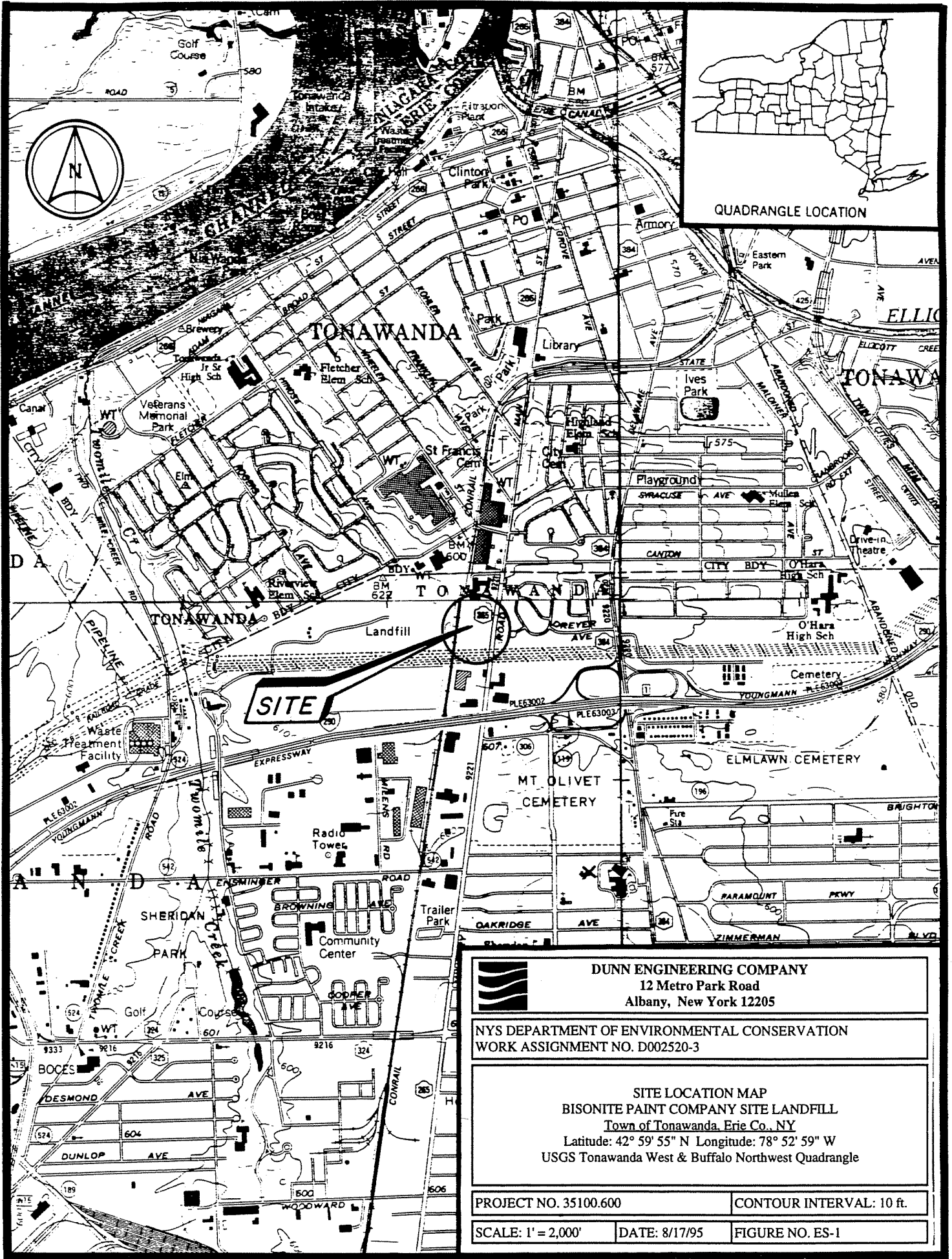
The landspreading operation ceased in 1978 when the NYSDEC notified Bisonite that wastes must be hauled off-site for disposal at an approved facility. Use of the waste lagoon also ceased in 1978. Conflicting reports indicate uncertainty whether the lagoon was dredged prior to its backfill and closure. Over a period of approximately four years, the lagoon was filled in and by early 1983 it was finally capped and seeded. A site inspection conducted on November 20, 1985 during a previous NYSDEC Phase I investigation noted that the lagoon was not properly covered and leachate was observed in small ponded areas on the ground surface. Also observed was a small 3 foot by 7 foot area of stained ground on the side of the former lagoon sloping west to the railroad tracks.

In the early 1980's, two underground storage tanks containing vinyl acetate were excavated and removed from the property. No records exist concerning their removal and no regulatory agency monitored the removal of the tanks.

Two site inspections conducted for this Preliminary Site Assessment (PSA) on July 27, 1990 and December 12, 1990 did not reveal any evidence of leachate in the area of the former lagoon nor were there any observed remnants of the landspreading practice. Several tanks currently filled with liquid raw materials were observed in the area where landspreading took place. Several areas of stressed vegetation were noted west of drum storage pad located adjacent to the former "resin building" (Figure ES-2). Several unmarked rusting waste drums (55 gallon) were observed on this pad during the first site inspection. These drums were removed by the time of the second site inspection.

Some of the early findings of the Data and Records Search (Task 1 of this PSA) prompted NYSDEC Resource Conservation and Recovery Act (RCRA) personnel to conduct a site visit in April 1991. A number of concerns regarding the handling, storage and disposal of paint, paint wastes and solvents were identified.

A formal RCRA inspection was triggered on September 18 1991, when two abandoned box trailers containing nearly 300 drums of waste paint from Bisonite were discovered in the City of Buffalo outside a warehouse. The subsequent inspection identified approximately 50,000 gallons of waste materials stored in tanks, drums and 5-gallon pails at the site. Samples collected from waste drums and tanks indicated the presence of several solvents including xylene, toluene, methyl ethyl ketone and methyl isobutyl ketone at concentrations ranging from low part-per-million (ppm) to percent levels.



SITE

DUNN ENGINEERING COMPANY
 12 Metro Park Road
 Albany, New York 12205

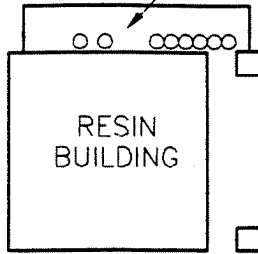
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 WORK ASSIGNMENT NO. D002520-3

SITE LOCATION MAP
BISONITE PAINT COMPANY SITE LANDFILL
 Town of Tonawanda, Erie Co., NY
 Latitude: 42° 59' 55" N Longitude: 78° 52' 59" W
 USGS Tonawanda West & Buffalo Northwest Quadrangle

PROJECT NO. 35100.600	CONTOUR INTERVAL: 10 ft.
SCALE: 1" = 2,000'	DATE: 8/17/95
	FIGURE NO. ES-1

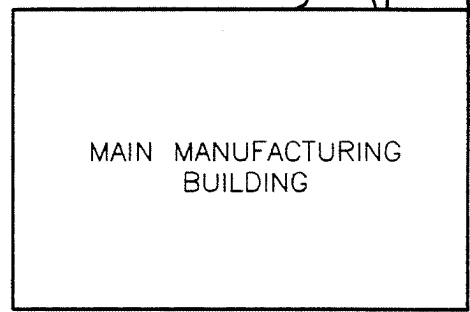
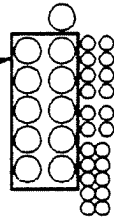


DRUM STORAGE AREA

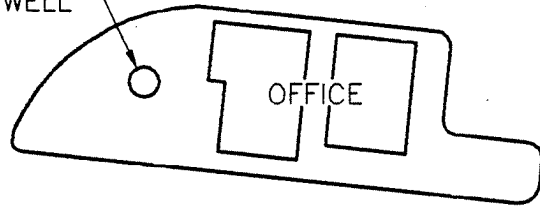


AREA OF LANDSPREADING

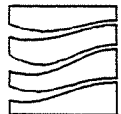
FORMER TANK FARM AND DRUM STORAGE AREA (REMOVED IN 1992)



COVERED FARM WELL



MILITARY ROAD



DUNN ENGINEERING COMPANY
495 Commerce Drive
Amherst, NY 14228

SITE FEATURES MAP

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WORK ASSIGNMENT NUMBER: D002520-3
BISONITE PAINT Co.

Town of Tonawanda, NY

PROJECT NO. 35100

DATE Feb., 1994

DWG. NO. 4A0081SD

SCALE Not To Scale

FIGURE NO. ES-2

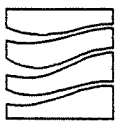
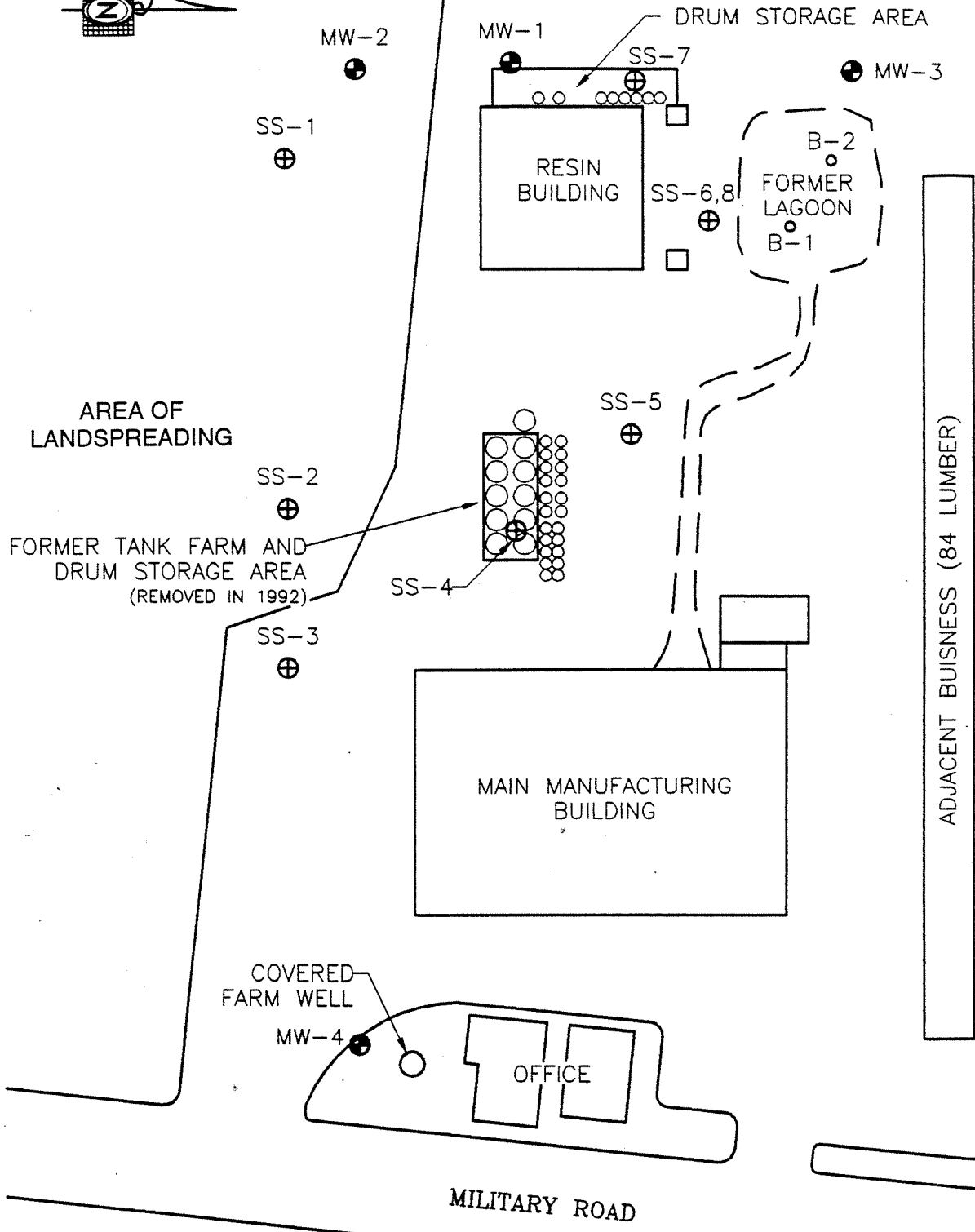
On May 31, 1991, manufacturing operations ceased at the plant. While NYSDEC prepared to enter into a Consent Order to clean up the site, Bisonite initiated a clean up of all tanks, drums and pails of paint, paint waste and solvents. A final Consent Order was issued on December 4, 1991 and Bisonite completed the site cleanup in the fall of 1992. The Consent Order did not address the possibility of buried waste in the closed lagoon, contaminated soils, or the impact of the site on groundwater.

Summary of Preliminary Site Assessment

Very little analytical data existed for this site prior the field investigation performed for this Preliminary Site Assessment (PSA). No analytical data existed for the sludge in the former lagoon, however, Bisonite collected two water samples from the lagoon in 1978. These indicated 8.5 ppm phenol and several metals including cadmium (0.1 ppm), copper (0.7 ppm), iron (130 ppm), hexavalent chromium (0.1 ppm), total chromium (0.2 ppm), manganese (0.2 ppm), mercury (0.36 ppm), selenium (0.012 ppm), zinc (5.0 ppm-n) and barium (30 ppm). Also, no data existed from the areas where the alleged landspreading of solvents and paint pigments occurred.

The 1991 inspections conducted by NYSDEC and the subsequent cleanup at the site performed under Consent Order confirmed that hazardous waste was generated at the site. Because the presence of hazardous waste had already been established, the PSA field investigation focused on whether buried hazardous waste existed in the former lagoon and whether soils and groundwater were contaminated, possibly resulting in a significant threat to public health or the environment. To address these issues, a field investigation program was implemented in the Fall of 1993 which involved the collection of eight surface soil samples; the drilling of two borings in the former lagoon area; and the installation of four groundwater monitoring wells (Figure ES-3).

Two of the surface soil samples showed elevated levels of volatile organics that exceed Recommended Soil Cleanup Objectives (RSCOS) established by NYSDEC in their Technical and Administrative Guidance Memorandum (TAGM) of November 16, 1992 (HWR-92- 4046). Surface soil sample BIS-SS-4, which was located beneath what was the former solvent tank farm and drum storage area, contained 400,000 parts per billion (ppb) ethylbenzene and 3,200,000 ppb of xylene. Sample BIS-SS-5 contained toluene (4,500 ppb) at three times the RSCO (1,500 ppb) for this compound. Benzo (a) pyrene (RSCO = 61 ppb) was identified in four samples at estimated concentrations ranging from 64 ppb to 1,200 ppb. Sample BIS-SS-1 also contained dibenzo (a,h) anthracene above the RSCO (14 ppb) at an estimated concentration of 70 ppb. Sampling location BIS-SS-7 contained three additional semi-volatile compounds: Benzo (a) anthracene (1,300 ppb, estimated); chrysene (1,500 ppb, estimated), and; benzo (k) fluoranthene (1,100 ppb, estimated), above their RSCOs of 990 ppb, 400 ppb and 1,100 ppb, respectively. PCB concentrations exceeded RSCOs at three surface sampling locations. Aroclor-1248 was detected at 1,900 ppb in BIS-SS-3 and Aroclor-1254 was detected at 2,500 ppb and 1,600 ppb in BIS-SS-6 and BIS-SS-7, respectively. The RSCO for PCBs in surface soil is 1,000 ppb. Seven different metal constituents were detected in surface soils at concentrations exceeding the background range for eastern U.S. soils. These metals are typical components used in the manufacture of paint and include arsenic, barium, cadmium, chromium, lead, mercury and zinc.



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 495 Commerce Drive
 Amherst, NY 14228

SOIL SAMPLE AND MONITORING WELL
 LOCATION DIAGRAM

BISONITE PAINT Co.

Town of Tonawanda, NY

PROJECT NO. 35100

DATE Feb., 1994

DWG. NO. 4A00B2SD

SCALE Not To Scale

FIGURE NO. ES-3

One subsurface sample from the area of the former lagoon indicated the presence of "resinlike" material which contained several VOCs at levels exceeding RSCOs. VOCs found included toluene (19,000,000 ppb), ethylbenzene (200,000 ppb) and xylene (1,000,000 ppb). Each of these solvents were used at the site in the manufacture of paint. Semi volatile and pesticide/PCB compounds were not detected in subsurface soils above their respective RSCOs. Six inorganic constituents (barium, cadmium, chromium, lead, mercury and zinc) exceed the background concentrations for eastern U.S. soils.

The Toxicity Characteristic Leaching Procedure (TCLP) analysis of subsurface soil samples obtained from the former lagoon indicate that the concentrations of each constituent analyzed via TCLP were non-detectable and below TCLP standards. Therefore, the samples collected from the lagoon are considered non-hazardous as defined by the TCLP. However, both the levels detected and the fact that xylene and toluene were identified in the waste drums sampled as part of the 1991 RCRA investigation indicates that these materials may be "listed" hazardous wastes. These include U220 (toluene) and U249 (xylene). The analytical results appear to indicate that the lagoon was not completely dredged when it was closed in 1978. As such, it is likely that remnant hazardous wastes as defined by 6 NYCRR Part 371 are still present in the lagoon area.

Analytical results from monitoring wells did not reveal an impact to groundwater beneath the site. However, since a clear direction of groundwater flow has not been established, the impact of site activities to groundwater should be considered inconclusive at this time. This is because well MW-4, which was installed as the upgradient monitoring well, exhibits anomalously low groundwater elevations. This may be a result of a much slower recovery than observed in the other site monitoring wells. Alternatively, groundwater in the vicinity of MW-4 may be influenced by sewer lines along Military Road that results in a localized diversion of westerly flowing groundwater to the northeast.

Conclusion

The results of this PSA suggest that hazardous waste as defined by 6 NYCRR Part 371 is present at the site. However, the site does not appear to present a significant threat to public health or the environment as defined in 6 NYCRR Part 375.

Recommendation

Based on the findings presented herein, DUNN recommends that the Bisonite Paint Company site (NYS Site No. 915010) be added to the Registry of Inactive Hazardous Waste Disposal Sites in New York State with a "Class 3" classification. This classification code indicates that the site does not present a significant threat to the public health or the environment and that action may be deferred.

DUNN further recommends that a Remedial Investigation/Feasibility Study (RI/FS) be performed to define the extent of residual contamination in surface soils and the former lagoon area and further define the potential threat to groundwater. Additionally, the RI/FS should evaluate appropriate methods for site remediation.

1.0 INTRODUCTION

This report, prepared for the New York State Department of Environmental Conservation (NYSDEC), presents the results of a Preliminary Site Assessment (PSA) of the Bisonite Paint Company (the site), NYS Site number 915010, EPA Site number NYD002114063, located in the Town of Tonawanda, Erie County, New York (Figure 1). This work has been performed pursuant to State Superfund Standby Contract Work Assignment No. D002520-3.

Dunn Engineering Company (DUNN), in association with TAMS Consultants Inc (TAMS), performed this investigation in order to determine if the disposal of hazardous waste as defined by 6 NYCRR Part 371 is documented, and if so, to determine if the site poses a threat to public health or the environment as a result of the presence of hazardous waste. This information is needed to either classify or delist the site as defined by Article 27, Title 13 of the Environmental Conservation Law (ECL).

In order to achieve the goals of the PSA, a review of the following information was performed:

- History of use;
- Topography;
- Geology and hydrology;
- Demographics of surrounding area;
- Proximity to possible receptors, and;
- Previously noted contamination or regulatory actions.

Sources used to obtain the above listed information include the following:

- New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH);
- Aerial photographs;
- Topographic maps;
- Drilling logs for local wells;
- The previous NYSDEC Phase I Investigation report, and;
- The previous USEPA Region II FIT site inspection report.

The following individuals and agencies were contacted:

- Mr. Mark Mateunas, NYSDEC, Bureau of Hazardous Site Control;
- Mr. Michael Rivara, NYSDOH, Bureau of Environmental Exposure Investigation;
- Mr. John Albert, Vice President of Bisonite Paint Company;
- Mr. Glenn May, NYSDEC Region 9, Hazardous Waste Site Remediation;
- Mr. Cameron O'Connor, NYSDOH Region 9, and;
- Jerome Miller, Erie County Department of Environment and Planning.




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 12 Metro Park Road
 Albany, New York 12205

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 WORK ASSIGNMENT NO. D002520-3

SITE LOCATION MAP
 BISONITE PAINT COMPANY SITE LANDFILL
 Town of Tonawanda, Erie Co., NY
 Latitude: 42° 59' 55" N Longitude: 78° 52' 59" W
 USGS Tonawanda West & Buffalo Northwest Quadrangle

PROJECT NO. 35100.600	CONTOUR INTERVAL: 10 ft.
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SCALE: 1" = 2,000'	DATE: 8/17/95	FIGURE NO. 1
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Literature sources used to complete this report are listed in Appendix A. Specific documentation used in support of the text is listed in Appendix B. On July 19, 1990, a site reconnaissance was performed by George Moretti (DUNN) and Martin Derby (TAMS). During the site visit, Mr. John Albert, Vice President of Bisonite Paint Company, was interviewed. A second site visit was made on December 12, 1990 by George Moretti and Glen May of the NYSDEC Region 9 office. Color photographs are presented in Appendix C and a site inspection report (EPA 2070-13 Form) is presented in Appendix D. The proposed updated NYS Registry Form is presented in Appendix E.

2.0 SITE ASSESSMENT

2.1 Site History

The Bisonite Paint Company is located in the Town of Tonawanda, Erie County, New York. Prior to 1978, approximately 1,800 gallons of mineral spirits per year and paint pigments were landspread over a one-acre portion of the property. In addition, a lagoon approximately 50 feet long, 30 feet wide and 8 to 10 feet deep located in the northwest corner of the property was used to dispose of metal paint pigments and by-products from the manufacture of water-based paints (Figure 2). This waste reportedly contained titanium dioxide, calcium carbonate, lime, clay and calcium hypochlorite (Document B-1).

Both the landspreading operation and use of the waste lagoon ceased in 1978 when the NYSDEC notified Bisonite that wastes must be hauled off-site for disposal at an approved facility (Document B-2). Conflicting reports indicate uncertainty whether the lagoon was dredged prior to its backfill and closure. The lagoon was filled in over a period of approximately four years. By early 1983 it was finally capped and seeded. A site inspection conducted on November 20, 1985 during the NYSDEC Phase I investigation (Reference A-1) noted that the lagoon was not properly covered and leachate was observed in small ponded areas on the ground surface. Also observed was a small 3 feet by 7 feet area of stained ground on the side of the former lagoon sloping west to the railroad tracks.

On July 27 1990, a site reconnaissance was performed by a DUNN/TAMS team. Both the area where the lagoon was located and the field south of the resin building (where mineral spirits and other solvents had been used for weed control) appeared to be completely covered and were overgrown with grassy vegetation. A second site inspection was conducted on December 12, 1990 by George Moretti and Glenn May of NYSDEC Region 9 office. No additional contamination was observed during the second inspection but several filled waste drums previously stored on the drum storage pad west of the resin building were removed.

Some of the early findings of the Data and Records Search, in particular the 1972 aerial photograph (Figure 3) showing a messy operation, prompted NYSDEC Resource Conservation and Recovery Act (RCRA) personnel to conduct a site visit in April 1991 (Document B-11). A number of concerns regarding the handling, storage and disposal of paint, paint wastes and solvents were identified.

A formal RCRA inspection was triggered on September 18, 1991 when two abandoned box trailers containing nearly 300 drums of waste paint from Bisonite were discovered in the City of Buffalo outside a warehouse. The subsequent inspection identified approximately 50,000 gallons of waste materials stored in tanks, drums and five-gallon pails at the site (Document B-11). Samples collected from waste drums and tanks indicated the presence of several solvents including xylene, toluene, methyl ethyl ketone and methyl isobutyl ketone at concentrations ranging from low part per million (ppm) to percent levels.



AREA OF
LANDSPREADING

FORMER TANK FARM AND
DRUM STORAGE AREA
(REMOVED IN 1992)

RESIN
BUILDING

DRUM STORAGE AREA

FORMER
LAGOON

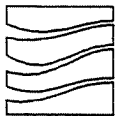
ADJACENT BUSINESS (84 LUMBER)

MAIN MANUFACTURING
BUILDING

COVERED
FARM WELL

OFFICE

MILITARY ROAD



DUNN ENGINEERING COMPANY

495 Commerce Drive
Amherst, NY 14228

SITE FEATURES MAP

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WORK ASSIGNMENT NUMBER: D002520-3
BISONITE PAINT Co.

Town of Tonawanda, NY

PROJECT NO. 35100

DATE Feb., 1994

DWG. NO. 4A0081SD

SCALE Not To Scale

FIGURE NO. 2



DUNN ENGINEERING COMPANY
12 Metro Park Road
Albany, New York 12205

1972 AERIAL PHOTOGRAPH
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Work Assignment Number: D002520-3
BISONITE PAINT CO.

Town of Tonawanda, NY

PROJECT NO. 35100.600

DATE: Feb.1994

DWG. NO. 4A0081SD

SCALE: Not To Scale

FIGURE NO. 3

During interviews, plant personnel revealed that manufacturing operations ceased on May 31, 1991; Bisonite was in the process of selling its assets to pay creditors. In addition, the site manager produced manifests for a waste tank which indicated the wastes were classified as D001 (ignitable).

The closing of the site and the presence of D001 wastes prompted NYSDEC to prepare for entering into a consent order with Bisonite. While Bisonite and NYSDEC negotiated the terms of the consent order, Bisonite proceeded with a cleanup of the site and addressed many of the concerns identified in an early draft of the consent order. A final consent order was issued to Bisonite on December 4, 1991. Bisonite completed the site cleanup in the fall of 1992.

While these RCRA actions were taking place at the site, the activities associated with this PSA were temporarily suspended. While the consent order addressed tanks, drums, debris and some of the more obviously contaminated surficial areas of the site, it did not address soil or groundwater contamination. Therefore, a field investigation for this PSA was performed in the fall of 1993. That investigation included the collection of surficial soil samples, subsurface soil samples (borings) and the collection of groundwater samples. The RCRA inspection confirmed the presence of hazardous waste at the site. The goal of the PSA field investigation was to assess whether hazardous waste disposal had occurred, and whether the waste at the site could pose a significant threat to human health or the environment through direct contact with surface soil contamination or through migration of contaminated groundwater.

2.2 Site Topography

The site is located in a topographically flat area at an elevation of approximately 610 feet above mean sea level (MSL). Run-off from the property can enter storm sewers located adjacent to the site. Run-off from the western portion of the site including the former lagoon probably drains to the railroad track bed which is approximately 10 feet below grade. The railroad tracks are located along the western boundary of the plant property.

The site is located in the greater than 500 year flood zone (Zone C) as designated by the Federal Emergency Management Agency (FEMA) (Reference A-2).

2.3 Geology

2.3.1 Physiography

New York State is subdivided into nine distinct physiographic provinces on the basis of relief and geology. The site is located within the Erie-Ontario Lowlands, a relatively low, flat-lying area south of Lake Erie and Lake Ontario. In Erie County, the area within this province typifies the topography of an abandoned lake bed with elevations ranging from approximately 570 feet MSL to approximately 1,000 feet MSL. The site lies at an elevation of approximately 610 feet MSL and the topography in the vicinity of the site slopes gently toward the Niagara River, located approximately one mile to the northwest.

2.3.2 Surficial Deposits

Unconsolidated deposits of clay, sand and till of Pleistocene (glacial) and Holocene (recent) age underlie the site. These materials consist of glacially derived material deposited during the latter part of the Pleistocene as well as lacustrine material (clay and silt) deposited during the Holocene. The United States Department of Agriculture (USDA) - Soil Conservation Service has classified the soils as Urban Land - Schoharie Complex (Reference A-3). The soils are well-drained and moderately well-drained clayey soils and are predominantly lake-laid sediments dominated by clay and silt. Permeability of these soils ranges from 10^{-5} centimeters per second (cm/sec) to 10^{-7} cm/sec.

2.3.3 Bedrock

Bedrock underlying the site consists of the Camillus Shale of the Salina Group of Upper Silurian age. The Camillus Shale varies in thickness from thin-bedded shale to massive mudstone; it is gray to brownish gray with some reddish or greenish beds (Reference A-4). Studies of the Camillus Shale indicate the presence of gray limestones and dolostones interbedded with the shales. Gypsum has also been noted as a significant part of the Camillus Shale with beds as thick as five feet. The Camillus Shale is estimated to be approximately 400 feet thick with a southward dip of approximately 40 feet per mile (Reference A-6). Two wells at the Linde Division, Union Carbide Corporation, approximately two miles south of the site, encountered the Camillus Shale at approximately 86 feet below the ground surface.

2.4 Hydrogeology

2.4.1 Groundwater

The depth to groundwater in the overburden deposits was determined during the PSA to be approximately four to 10 feet below ground surface (BGS). Regional groundwater flow through the more permeable horizons within the till overburden was thought to be to the west or northwest toward the Niagara River; however, groundwater elevations measured in the site wells are inconclusive as to the direction of groundwater flow. A discussion of overburden groundwater flow conditions is presented in Section 4.4.

The Camillus Shale which underlies the site at an unknown depth is a very productive bedrock aquifer due to its extensive network of joints, fractures and solution cavities. Cavities that yield significant quantities of water were formed by the solution of gypsum in groundwater. Yields of wells installed in the Camillus Shale are highly productive with specific capacities of up to 83 gallons per minute per foot. Well records from two industrial wells drilled in 1944, two miles south of the site, indicated depth to water at approximately 90 feet in a gypsiferous zone of the Camillus Shale. Water levels measured in these wells in 1944 were reportedly 115 feet and 82 feet below grade, but the levels were likely depressed by pumping at the time of measurement (Reference A-6).

The degree to which the site may be hydraulically connected to the underlying bedrock is uncertain at this point due to limited site information. However, due to the high clay content and

associated low permeability of the surficial deposits, the degree of hydraulic connection may be limited. Potential pathways may exist for groundwater movement into the fractured Camillus Shale if the lateral extent of the low permeability overburden materials is limited.

2.5 Proximity to Potential Receptors

2.5.1 Surface Water

The site is located one mile from Two Mile Creek and 1.5 miles from the Niagara River. Two Mile Creek has been designated as a Class B waterway (Reference A-7) making it suitable for primary contact recreation and any other uses except as a source of drinking water. The Niagara River has been classified as Class A Special (international boundary waters) and is a source of drinking water.

There are no Federally-designated endangered or threatened species within three miles of the site. However, there is a NYSDEC Significant Coastal Fish and Wildlife Habitat 1.9 miles northwest of the site. The small white Ladyslipper (*Cypripedium Candidum*), a State-designated endangered species, was found 2.6 miles from the site.

2.5.2 Population

A wood-storage building (part of an adjacent lumber company) is located approximately 20 feet north of the site. The nearest commercial buildings are the lumber company's main building located approximately 150 to 200 feet north of the site and a self-serve gas station located directly across Military Road east of the site. Additional commercial buildings are located north of the site on both sides of Military Road. Immediately to the south and west are undeveloped fields. The nearest private residences are located directly east across Military Road approximately 300 to 500 feet from the site.

The City and Town of Tonawanda are highly developed with both commercial and residential areas. It is estimated that approximately 107,000 people reside within three miles of the site (Document B-8). Drinking water for the Buffalo/Tonawanda area is supplied from the Niagara River (Reference A-10). There is an unused farm well on the property south of the office, however, no information could be found referencing this well (Document B-9). The well opening (approximately two feet in diameter) is presently covered by a granite boulder. There are no private wells within three miles of the site.

2.5.3 Agricultural Land

No agricultural land is located within three miles of the site.

2.5.4 Commercial Land

The surrounding area is predominantly commercial with a lumber yard adjacent to the north side of the site. A self-serve gasoline station is located across military road to the east. Undeveloped fields are located immediately south and west of the site.

3.0 TASK DISCUSSION

The information presented herein has been based on the results of a data and records search (Task 1) of State and local agency files. Evaluation of this information initiated development of a site-specific Work Plan/Health and Safety Plan (Task 2) and implementation of non-intrusive (Task 3) and intrusive (Task 4) investigations.

3.1 Task 1 - Data and Records Search

File information at the NYSDEC Region 9 office indicates that sludge in the lagoon was periodically dredged and disposed at the CECOS/BFI landfill (Document B-10). NYSDEC file information also indicated that prior to its closure, the lagoon was cleaned in 1978 and allowed to collect rain water run-off until it was covered in 1982 (Document B-4). However, the manager of the facility, John Albert, does not recall the lagoon ever having been dredged and believes the lagoon may have been covered with the sludge in place (Document B-9). No analytical data exists for the sludge material from the lagoon.

Bisonite collected two water samples from the lagoon in 1978. Analytical results for the samples indicated the presence of phenol (8.5 ppm), cadmium (0.1 ppm), copper (0.7 ppm), iron (130 ppm), hexavalent chromium (0.1 ppm), total chromium (0.2 ppm), manganese (0.2 ppm), mercury (0.36 ppm), selenium (0.012 ppm), zinc (5.0 ppm) and barium (30 ppm; Document B-5).

Two underground storage tanks used for the storage of vinyl acetate were removed in the early 1980s (Document B-9). No information exists which describes the removal of the tanks, nor was there any regulatory oversight during their removal.

Correspondence from the NYSDEC refers to the practice of paint sludge separation from paint machinery wash water performed in a split oil tank. In 1981, the NYSDEC requested the practice be stopped or modified so that contaminated water did not run onto and soak into the ground (Document B-4). The NYSDEC also requested that drums of hazardous waste which had been staged on-site for several years be removed.

It is unclear exactly when the lagoon became operational (Document B-9). However, an aerial photograph (Figure 3) taken in 1972 indicated the lagoon was in use at the site. The photograph shows a significant amount of debris, including drums and tanks strewn about the site and a general lack of "housekeeping". While it is difficult to be certain on a black and white photograph, it appears that many of the "wet" areas on the photograph are product or waste spills emanating from drums or tanks on-site.

The site inspection conducted on November 20, 1985 by Recra Environmental for the NYSDEC Phase I investigation indicated that an oily film was observed on ponded water located in the area of the former lagoon but no samples were collected to characterize this film.

During the site inspection conducted by DUNN and TAMS representatives in July 1990, no obvious surficial contamination was observed in the area of the former lagoon or the area of landspreading on the southern portion of the property. Several waste drums were observed on

an unbermed pad in back of the resin building. Also observed was some stressed vegetation adjacent to this pad which may have been caused by drum spills or leaks from this pad. The site looked much improved with regard to housekeeping as compared to the 1972 photograph. Drums which were strewn about in the field along the southern portion of the site had been removed. No additional contamination was observed during the subsequent site inspection conducted December 12, 1990.

As a result of the site inspection of the facility in April 1991, NYSDEC scheduled several subsequent site inspections which included the collection of samples of suspected hazardous waste. On October 1, 1991 three paint sludge samples and one surface water sample were collected. The samples were analyzed for methyl ethyl ketone (MEK), toluene and total xylene. The surface water was free of these compounds while the sludge samples indicated toluene in concentrations ranging from 0.2% to 3.2% and xylene in concentrations ranging from 0.8% to 4.8% (Document B-11). Other materials determined to be on-site include methyl isobutyl ketone (MIBK), PCBs (at concentrations less than 50 ppm) and metals, including chromium and lead.

3.2 Tasks A and 2 - Global Work Plan and Site-Specific Documents

3.2.1 Global Work Plan

Task A consisted of preparation of a global Work Plan, Quality Assurance Project Plan (QAPP) and Master Health and Safety Plan (HASP). The project documents discussed information relevant to work planned at all 19 PSA sites. The work plan included:

- a description of the major tasks to be performed;
- a detailed work assignment project schedule with milestones and deliverables;
- a staffing plan; and
- a detailed work assignment budget.

The global QAPP was prepared for the 19 PSA site investigations. The QAPP provided descriptions, methodologies and Quality Assurance/Quality Control (QA/QC) procedures for the field activities proposed at each of the sites. General sampling and analytical protocols were also discussed.

A Master HASP was prepared to provide the general health and safety procedures to be followed by all DUNN employees and subcontractors during site investigation activities. Activity-specific health and safety procedures were also included.

3.2.2 Site Specific Documents

A site-specific work plan, QAPP and HASP were developed in Task 2 for each of the 19 PSA sites. The site-specific work plan described the proposed site-specific activities, objectives, methodology and schedule of implementation for Tasks 3 and 4. The site-specific QAPP provided the analytical program for each site as well as other information. The site-specific HASP provided detailed information, including known or suspected contaminants, health and

safety levels of protection required, special monitoring equipment, emergency information and procedures, and a route-to-hospital map.

3.3 Task 3 - Non-Intrusive Investigations

3.3.1 Initial Environmental Sampling

The initial environmental sampling included collection of surficial soil samples at selected locations on the site. These samples were collected by DUNN personnel on October 26, 1993.

3.3.2 Surface Soil Sampling

The surface soil sampling program consisted of collecting seven surface soils (BIS-SS-1 through BIS-SS-7) and one blind duplicate sample (BIS-SS-8) at the site. The sampling locations were in areas of stressed vegetation and potential source areas as depicted in the 1972 aerial photograph of the site. The approximate soil sampling locations are presented in Figure 4.

All surface soil samples were collected using dedicated stainless steel trowels and stainless steel mixing bowls. Portions of the sample to be analyzed for volatile organics were transferred directly into the appropriate sample container. The remainder of the sample was placed in the mixing bowl, mixed until a representative sample was achieved and placed in the appropriate containers. Field sampling records prepared for each sample are presented in Appendix F.

After collection, each sample was placed in an insulated cooler chilled with wet ice to maintain a temperature of four degrees centigrade and shipped by overnight courier to the analytical laboratory under chain-of-custody protocols and procedures. Samples were analyzed by NYTEST Environmental Inc. of Port Washington, New York for the full suite of Target Compound List/Target Analyte List (TCL/TAL) parameters according to NYSDEC Analytical Services Protocol-Contract Laboratory Program Procedures of December 1991 (NYSDEC-ASP-CLP, 12/91). Analytical results for the surface soils are presented in Section 4.1

3.4 Task 4 - Subsurface Investigations

Subsurface investigations at the site included the advancement of six soil borings, four of which were converted to groundwater monitoring wells. The two soil borings (BIS-B1 and BIS-B2) not converted to monitoring wells were positioned to determine the absence or presence of residual contamination in the former lagoon. The four remaining soil borings were located at the periphery of the property and converted into monitoring wells to evaluate groundwater quality at the site boundaries. The locations of the soil borings and groundwater monitoring wells are presented in Figure 4.

3.4.1 Soil Borings

All soil borings were advanced through unconsolidated overburden deposits using 4.25- inch inside diameter (ID) hollow stem augers. Subsurface soils were sampled continuously at two-foot intervals using standard split spoon samplers as described in ASTM Method D-1586,

"Standard Method of Penetration Testing and Split Spoon Sampling of Soils." Classification and screening of subsurface soils using an HNU-101 photoionization detector was conducted by the on-site geologist. Test boring logs were prepared for each borehole and are presented in Appendix G. All split spoons, drill rods and augers were steam cleaned between each boring location to prevent cross-contamination.

Three subsurface soil samples were collected. Two samples (BIS-B1-4'-6' and BIS-B1-6'-8') were obtained to characterize the soils in the former lagoon where previous waste disposal has been documented. These samples were analyzed for the full suite of TCL/TAL parameters and Toxicity Characteristic Leaching Procedure (TCLP) to document the absence or presence of hazardous waste. The remaining soil sample (MW-4-2'-4') was obtained from the upgradient boring location to characterize background soil conditions at the site. The background soil sample was analyzed for the full suite of TCL/TAL parameters. A discussion and summary of the analytical results is presented in Section 4.2.

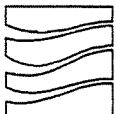
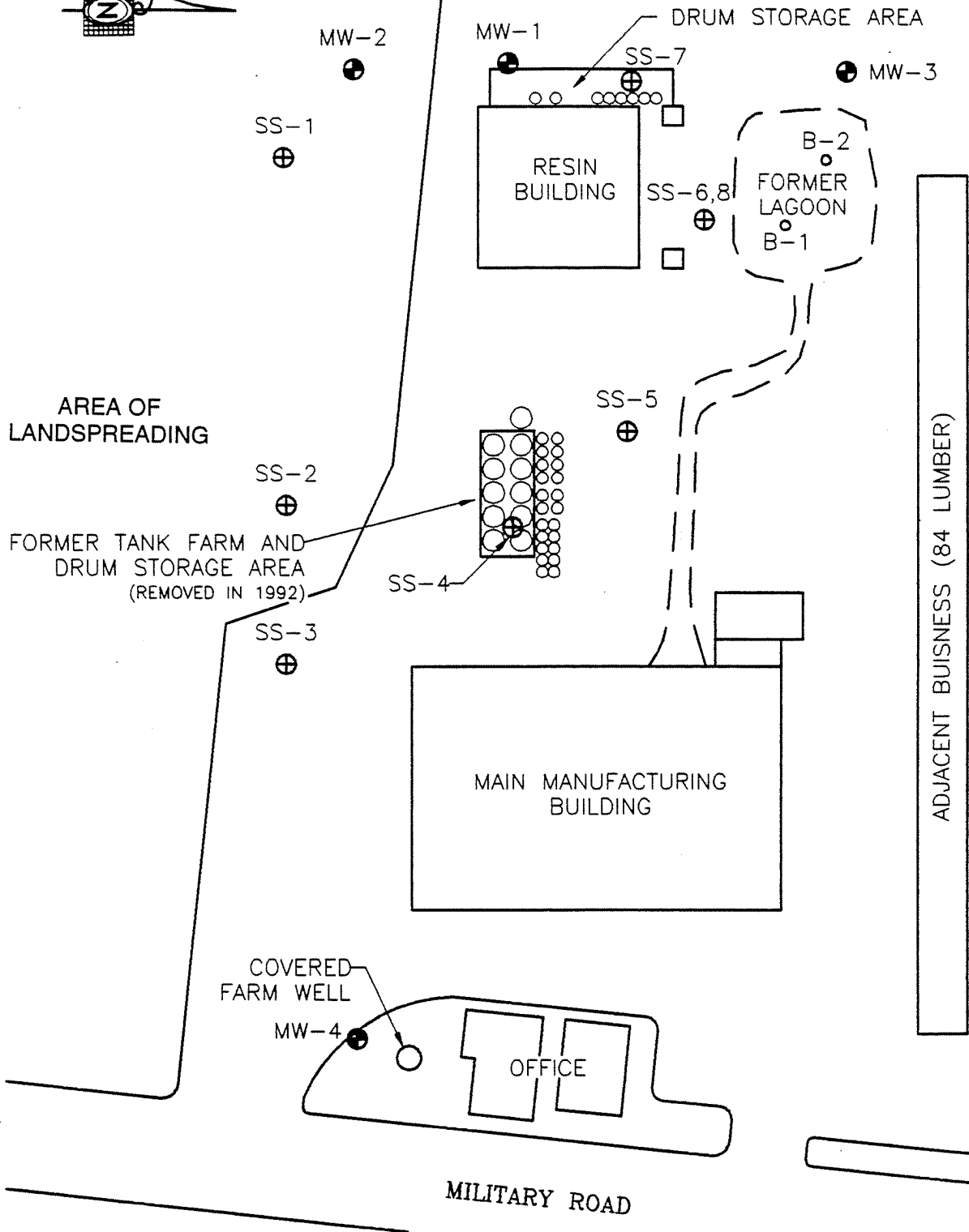
3.4.2 Monitoring Well Installation

Upon completion of selected soil borings, four boreholes were converted to overburden groundwater monitoring wells. One upgradient well (MW-4) and three downgradient wells (MW-1 through MW-3) were installed to evaluate the groundwater quality and flow conditions at the site. The overburden monitoring wells were constructed through the hollow stem augers and consisted of two-inch ID, Schedule 40, PVC slotted screen (0.010 inch) and flush threaded, Schedule 40, PVC riser. A clean silica sand pack was installed in the annulus between the borehole wall and the well screen to a minimum of two-feet above the top of the screen. Approximately two feet of bentonite was placed immediately above the sand pack, whereupon, the annulus of the borehole was grouted to the surface using a thick cement/bentonite grout installed via the tremie method. A locking, steel protective casing completed the well installation. The well construction details of each overburden monitoring well are presented in Appendix H.

In order to determine the relative elevation of the ground surface and top of PVC casing at each monitoring well location, an elevation survey was completed on November 5, 1993. The elevations were referenced to a NYS Department of Public Works bench mark set at 653 feet MSL. Unless otherwise indicated, all elevations presented and utilized in this report are relative to this datum.

3.4.3 Monitoring Well Development and Sampling

Monitoring well development was performed on October 27 and 28, 1993 to increase the hydraulic connection between the sand pack and the surrounding formation. Each monitoring well was developed by evacuating up to ten well volumes of groundwater using a suction-lift pump, well dedicated polyethylene tubing and foot valves. Field parameters including pH, specific conductance, temperature and turbidity were recorded after each well volume was removed. Well development logs were prepared for each monitoring well and are presented in Appendix I.



DUNN ENGINEERING COMPANY
 495 Commerce Drive
 Amherst, NY 14228

SOIL SAMPLE AND MONITORING WELL
 LOCATION DIAGRAM

BISONITE PAINT Co.

Town of Tonawanda, NY

PROJECT NO. 35100

DATE Feb., 1994

DWG. NO. 4A00B2SD

SCALE Not To Scale

FIGURE NO. 4

All four newly installed groundwater monitoring wells were sampled on November 4, 1993 and analyzed for the full suite of TCL/TAL parameters. As part of the QA/QC program, onematrix spike/matrix spike duplicate (MS/MSD) sample was collected from BIS-MW-1.

Prior to sampling, a minimum of three well volumes were purged from each monitoring well. Well-dedicated PVC bailers were used to purge the monitoring wells and collect the respective groundwater samples. Field parameter measurements were recorded during purging and after sampling and are included in the groundwater sampling logs presented in Appendix I. Each sample was handled in accordance with chain-of-custody protocols and procedures and shipped by overnight courier to NYTEST. Analytical results are summarized in Section 4.3.

4.0 RESULTS OF INVESTIGATION

Analytical data obtained during the field investigation are summarized and tabulated in the following Sections. Table 1 and Table 2 summarize the analytical results of both the surface and subsurface soils while Table 3 summarizes the groundwater results. Shaded values in Table 1 indicate concentrations which exceed the Recommended Soil Clean-up Objectives (RSCOs) established by NYSDEC in Technical and Administrative Guidance Memorandum (TAGM) of November 16, 1992 (HWR-92-4046). Shaded values in Table 2 represent soil concentrations of inorganic constituents in excess of the background range given for eastern U.S. soils. Shaded values in Table 3 indicate concentrations which exceed the Groundwater Standards/Guidance Values established by 6 NYCRR Part 703. .

4.1 Initial Environmental Sampling

4.1.1 Surface Soil Sampling

A total of eight samples were collected at seven locations for the surficial soil sampling program. The analytical results presented in Table 1 indicate that two samples (BIS-SS-4 and BIS-SS-5) exhibited concentrations of volatile organic compounds (VOCs) in excess of RSCOs. Ethylbenzene was identified in sample BIS-SS-4 at a concentration of 400,000 parts per billion (ppb) while xylene (total) was detected at 3,200,000 ppb. These concentrations are in excess of the 5,500 ppb and 1,200 ppb RSCOs, respectively. Sample BIS-SS-5 contained 4,500 ppb toluene; three times the 1,500 ppb RSCO for this compound. Both xylene and toluene were identified in the waste drums sampled as part of the 1991 RCRA investigation. Methylene chloride and acetone were identified in soil samples at concentrations similar to those detected in associated laboratory blanks. As such, these compounds are interpreted to be laboratory artifacts and are not considered site related.

Semi-volatile data indicates five compounds in excess of RSCOs in four surface soil samples: BIS-SS-1; BIS-SS-3; BIS-SS-5, and; BIS-SS-7. Benzo (a) pyrene (RSCO = 61 ppb) was identified in each of the four samples at estimated concentrations ranging from 164 ppb to 1,200 ppb. Sample BIS-SS-1 also contained dibenzo (a,h) anthracene above the RSCO (14 ppb) at an estimated concentration of 70 ppb. Sampling location BIS-SS-7 contained three additional semi-volatile compounds: Benzo (a) anthracene (1,300 ppb, estimated); chrysene (1,500 ppb, estimated); and benzo (k) fluoranthene (1,100 ppb, estimated) above their RSCOs of 220 ppb, 400 ppb and 1,100 ppb, respectively. Bis (2-ethylhexyl) phthalate was also detected in each sample at concentrations similar to those detected in associated laboratory blanks. As such, this compound is not considered site related.

The pesticide/PCB data presented in Table 1 indicates that PCB concentrations exceeded RSCOs at three surface sampling locations. Aroclor-1248 was detected at 1,900 ppb in BIS-SS-3 and Aroclor-1254 was detected at 2,500 ppb and 1,600 ppb in BIS-SS-6 and BIS-SS-7, respectively. The RSCO for PCBs in surface soil is 1,000 ppb.

Table 1

Bisonite Paint Company
Soil Boring and Surface Soil Analytical Data Summary
Volatile, Semi-Volatile, Pesticides/PCB Data

(All values are in ppb)

Compound	BIS-SS-1	BIS-SS-2	BIS-SS-3	BIS-SS-4	BIS-SS-5	BIS-SS-6	BIS-SS-7	BIS-SS-8	B1-4-6	B2-6-8	NM4-2-4	RSC0 Values
Volatile Organics												
Methylene Chloride	4 BU	4 BU	11 BU	110000 BU	1100 BU	3 BU	15 BU	11 BU	11 BU	1100000 BU/D	1 BU	100
Acetone	ND	ND	ND	50000 BU	870 BU	ND	ND	6 BU	ND	1300000 BU/D	ND	200
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	54	ND	300
4-Methyl-2-Pentanone	ND	ND	ND	ND	220 J	ND	ND	ND	ND	ND	ND	1000
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	210	ND	.60
Tetrachloroethene	ND	ND	ND	ND	ND	ND	6 J	ND	ND	10 J	ND	1400
Toluene	ND	ND	3 J	ND	4500	ND	5 J	ND	ND	19000000 D	ND	1500
Ethyl Benzene	ND	ND	1 J	400000	2500	ND	ND	ND	14	2000000 DU	ND	5500
Styrene	ND	ND	ND	ND	220 J	ND	ND	ND	ND	ND	ND	-
Xylene(totl)	ND	ND	ND	3200000	ND	ND	ND	ND	36	10000000 D	ND	1200
Total Volatile TIC's	160 J	16 J	1322 J	ND	86800 J/N	558 J	70 J	38 J	41 J	26310 J	16 J	-
Semi-Volatile organics												
2,4-Dimethylphenol	ND	ND	ND	940	ND	ND	ND	ND	ND	ND	ND	-
Naphthalene	61 J	ND	85 J	100 J	4200 D	ND	ND	ND	ND	3900 J	ND	13000
2-Methylnaphthalene	ND	ND	ND	ND	4600 D	ND	ND	ND	ND	610 J	ND	36400
Acenaphthene	ND	ND	ND	ND	50 J	ND	ND	ND	ND	ND	ND	50000
Phenanthrene	66 J	ND	56 J	ND	260 J	ND	1500 J	ND	ND	ND	ND	50000
Anthracene	ND	ND	ND	ND	44 J	ND	450 J	ND	ND	ND	ND	50000
Di-n-Butylphthalate	ND	ND	ND	ND	82 J	ND	420 J	ND	ND	ND	ND	8100
Fluoranthene	130 J	ND	75 J	ND	170 J	ND	2200 J	430 J	ND	ND	ND	50000
Pyrene	150 J	ND	320 J	ND	620 DU	580 J	2000 J	ND	ND	ND	ND	50000
Butylbenzylphthalate	ND	ND	53 J	ND	730 DU	ND	ND	ND	ND	ND	ND	50000
Benzofluoranthene	ND	ND	ND	ND	ND	ND	1300 J	ND	ND	ND	ND	2200
Chrysene	190 J	ND	ND	ND	ND	ND	1500 J	ND	ND	ND	ND	400
1,2,4-Trichlorobenzene	1200 B	490 B	940000 BDE	150 BU	14000 BD	6200 B	1900 J	14000 B	590 B	7700 B	530 B	50000
Benzofluoranthene	250 J	ND	69 J	ND	220 J	ND	1000 J	ND	ND	ND	ND	1100
Benzofluoranthene	190 J	ND	51 J	ND	170 J	ND	1100 J	ND	ND	ND	ND	1100
Benzofluoranthene	110 J	ND	64 J	ND	120 J	ND	1200 J	ND	ND	ND	ND	610
Indeno(1,2,3-cd)pyrene	240 J	ND	55 J	ND	190 J	ND	730 J	ND	ND	ND	ND	3200
Dibenz(a,h)anthracene	70 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
Benzofluoranthene	230 J	ND	56 J	ND	170 J	ND	690 J	ND	ND	ND	ND	50000
Semi-Volatile TIC's	11377 J	10520 J	8590 J	12390 J	15990 J	122400 J	33570 J	16900 J	11926 J	156600 J	2152 J	-
Pesticides/PCBs												
beta-BHC	ND	ND	53 J	ND	ND	ND	21 J	ND	ND	ND	ND	200
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14 J	300
Heptachlor	ND	ND	ND	ND	ND	19 J	24 J	ND	ND	ND	ND	100
Endrin aldehyde	14 J	ND	ND	ND	ND	ND	54	ND	ND	ND	ND	-
Atroclor-1242	ND	ND	210 J	15 J	ND	ND	ND	ND	28 J	ND	ND	-
Atroclor-1248	ND	1900	250	22 J	610	2500	1600	960	27 J	190 J	ND	-
Atroclor-1254	260	ND	250	22 J	610	2500	1600	960	27 J	190 J	ND	-

* RSC0 - Recommended Soil Clean-up Objectives: NVSDEC, TAGM, November 1992
 # USEPA Health Based RSCOs are more stringent
 Shaded values indicate concentrations which equal or exceed RSCOs
 - An RSCO has not been developed for this compound
 ND indicates not detected
 B This compound was also detected in an associated laboratory blank of a similar concentration
 J indicates estimated concentration
 D reported concentration from analysis of a diluted sample
 E reported concentration exceeds the concentration range of the instrument

Table 2 summarizes the inorganic analytical results of each surface soil sample obtained at the site. These results were compared to the background range for eastern U.S. soils as presented in the TAGM HWR-92-4046 (November 16, 1992), and also the inorganic concentrations in the soil sample from well MW-4. This sample (MW-4-2'-4') was collected during the drilling program at a depth of 2.0 feet to 4.0 feet to represent background soil concentrations at the site. As depicted by the shaded values in Table 2, seven different metal constituents were detected in surface soils at concentrations exceeding the background range for eastern U.S. soils. These metals are typical components used in the manufacture of paint and include: arsenic, barium, cadmium, chromium, lead, mercury and zinc. Eastern U.S. background ranges for the inorganic constituents are included in Table 2. Additionally, some of the samples exhibited cobalt, copper and/or manganese in concentrations that were at least three times the concentration of these constituents in the site background sample (MW-4-2'-4') but within the background range for eastern U.S. soils.

4.2 Soil Borings

4.2.1 Subsurface Conditions

Split spoon soil samples obtained from soil borings subsequently converted to monitoring wells (MW-1 and MW-4) indicate that native subsurface soils at the site consist primarily of brown to brown-red silty clay till with intervals of sandy silt to silty sand. Total organic vapor readings obtained during drilling of these borings did not indicate concentrations above background for any interval.

Two soil borings (B-1 and B-2) advanced through the former lagoon indicated subsurface soils consisting of brown silty clay fill containing brick fragments and resinous waste to a depth of approximately 8.0 feet below grade. Waste materials within the fill included a white powdery substance, a fibrous dried resin material and a brown to red rubbery resinous material. Elevated volatile organic vapor readings associated with the waste fill ranged from approximately 400 ppm to 700 ppm (Appendix G). Undisturbed brown red silty clay till was encountered below the resinous waste fill.

One subsurface soil sample (MW-4-2'-4') was obtained and analyzed for the full suite of TCL/TAL parameters to establish representative background soil concentrations at the site. Additionally, one subsurface soil sample was obtained from each boring advanced in the former lagoon (B-1-4'-6' and B-2-6'-8') and analyzed for the full suite of TCL/TAL parameters. These two soil samples were also analyzed for the Toxicity Characteristic Leaching Procedure (TCLP) parameters in order to determine whether the waste encountered in the former lagoon is hazardous as defined by 6 NYCRR Part 371.

Table 2
 Soil Borings and Surface Soil Analytical Data Summary
 Bisontite Paint Company
 Inorganic Data
 (All values are in ppm)

Compound	BIS-SS-1	BIS-SS-2	BIS-SS-3	BIS-SS-4	BIS-SS-5	BIS-SS-6	BIS-SS-7	BIS-SS-8	B1-4'-6'	B2-6'-8'	(Background) MW4-2'-4'	RSCO* Values	Eastern U.S. Background
Inorganics													
Aluminum	8360	12400	13000	20400	6630	1180	13600	10500	11700	10300	10300	30 or SB	33000
Antimony	15.8	12.2 B	ND	ND	12.2 B	ND	22.4	13.6 B	11.5	23.7	13.5	30 or SB	-
Arsenic	373	3.7	6.3	2.5	3.3	3.4	5.2	3.1	3.5	1.9 B	3	7.5 or SB	3-12
Barium	373	190	402	238	362	279	805	287	973	350	95.1	300 or SB	15-600
Beryllium	0.64 B	0.57 B	1.3	0.99 B	0.28 B	0.8 B	1.4	0.6 B	0.62 B	0.32 B	0.5	0.14	0-1.75
Cadmium	ND	ND	ND	ND	1.4	ND	0.91 B	ND	ND	1.4	ND	1 or SB	0-1.1
Calcium	41900	47500	50900	5190	89400	34400	47800	29100	35100	35500	67800	SB 50	130-35000
Chromium	93.1	43.4	241	22.7	98.1	79.4	296	127	19.9	154	13	10 or SB	1.5-40
Cobalt	12.5	14.9	18.1	11.3	39.9	24.6	27.9	17	12.1	28.4	ND	30 or SB	2.5-60
Copper	30.4	23.9	34.7	15.6	35.3	25.5	45.5	31	18.5	39.2	11.2	25 or SB	1-50
Iron	16600	21100	32700	28000	17700	24200	22600	21800	21900	17500	18400	2000 or SB	2000-350000
Lead	1480	323	2070	17.1	693	826	3250	1020	46.7	640	9.9	30 or SB	4-61
Magnesium	11500	16600	14000	6080	20000	10800	10400	9810	11300	10500	17300	SB	100-5000
Manganese	605	556	1950	723	466	907	1370	596	450	371	506	SB	50-5000
Mercury	1.1	1.4	3.9	ND	13.3	17	5.3	10.7	0.69	6.7	ND	0.1	0.01-0.2
Nickel	16.1	20.2	15.7	30.4	11.3	16.5	16.8	18.1	22.5	16.7	14.3	13 or SB	0.5-25
Potassium	1380	2320	1430	1250	ND	993	1370	1020 B	1880	1360	1040	4000 or SB	85200-43000
Silver	1.1 B	1 B	2.2 B	ND	ND	ND	ND	2 B	1.5 B	1.6 B	ND	200	-
Sodium	119 B	133 B	277 B	125 B	216 B	151 B	1900	138 B	157 B	164 B	126	3000 or SB	6000-8000
Vanadium	20.5	27.3	30	31.3	11.8	21.8	22	21.4	27.9	20.8	20.1	150 or SB	1-300
Zinc	929	276	1210	96.8	426	640	1530	837	109	669	69.9	20 or SB	9-50
Cyanide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**	-

* RSCO - Recommended Soil Clean-up Objectives; NVSDEC TAGM, November 1992
 ** An RSCO for cyanide has not been determined by the NVSDEC
 Shaded values indicate detected concentrations above the background range given for eastern U.S. soils, or three times the background concentration in MW-4-2'-4'
 SB indicates site background
 B indicates that this concentration is between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)
 - Background range for Eastern U.S. soils has not been determined by NVSDEC

4.2.2 Subsurface Soil Analytical Results

The analytical results for the subsurface soils included in Table 1 indicate that four VOCs were detected in Boring B-2 (B-2-6'-8') at concentrations exceeding their respective RSCOs. These compounds include benzene (210 ppb), toluene (19,000,000 ppb), ethylbenzene (200,000 ppb) and total xylene (1,000,000 ppb). Methylene chloride and acetone were also detected in this sample at concentrations similar to those found in associated laboratory blanks. As such, methylene chloride and acetone are not considered site related. The concentrations of ethylbenzene (14 ppb) and total xylene (36 ppb) detected in sample B-1-4'-6' were well below their RSCOs (5,500 ppb and 1,200 ppb, respectively). VOCs were not detected in background sample MW-4-2'-4'.

Table 1 indicates that three semi-volatile, one pesticide and two PCB compounds were detected in the three subsurface soil samples. However, the concentrations of these detected compounds were below their respective RSCOs.

Subsurface soil inorganic data summarized in Table 2 indicates that three inorganic constituents in soil sample B-1-4'-6' (barium, mercury and zinc), and five inorganic constituents in B-2-6'-8' (cadmium, chromium, lead, mercury and zinc) exceed the background concentrations for eastern U.S. soils. These constituents, as well as cobalt and copper, were detected at concentrations which exceeded their respective levels in the site background sample MW-4-2'-4'.

The TCLP analytical results of soil samples obtained from the former lagoon indicate that the concentrations of each constituent analyzed via TCLP were non-detectable and below TCLP standards. Therefore, the waste samples collected from the lagoon are considered non-hazardous as defined by the TCLP. However, both the levels detected and the fact that xylene and toluene were identified in the waste drums sampled as part of the 1991 RCRA investigation indicates that these materials may be "listed" hazardous wastes. These include: U220 (toluene); and U249 (xylene). The analytical results appear to indicate that the lagoon was not completely dredged when it was closed in 1978. As such, it is likely that remnant hazardous wastes as defined by 6 NYCRR Part 371 are still present in the lagoon area.

4.3 Groundwater Results

Table 3 which summarizes the groundwater analytical results indicates that two VOCs (methylene chloride and 4-methyl-2-pentanone) and one semi-volatile compound (bis (2-ethylhexyl) phthalate) were detected in the groundwater samples, however, both methylene chloride and bis (2-ethylhexyl) phthalate were also detected in associated laboratory blanks at similar concentrations. Therefore, these compounds are not considered site related. A Class GA groundwater standard for 4-methyl-2-pentanone detected in BIS-MW-2 at an estimated concentration of 9 ppb has not been established by NYSDEC. Pesticide/PCB compounds were not detected in groundwater.

Table 3

Bisonite Paint Company
Ground Water Analytical Data Summary Table

(All values are in ppb)

	Bis-Mw-1	Bis-MW-2	Bis-MW-3	Bis-MW-4	Standards
Volatile Organics					
Methylene Chloride	10 B	11 B	9 BJ	13 B	5.0
4-Methyl-2-Pentanone	ND	9 J	ND	ND	-
Volatile TIC's	ND	8 J	ND	ND	
Semi-Volatile organics					
bis(2-Ethylhexyl)phthalate	ND	2 BJ	ND	ND	50.0
Semi-Volatile TIC's	240 J	90 J	63 J	180 J	
Pesticide's/PCB's*					
	ND	ND	ND	ND	
Inorganics					
Aluminum	4980	4510	2450	7970	-
Antimony	39.4 B	47.2 B	ND	44.5 B	3.0 (gv)
Barium	118 B	97.2 B	105 B	277 B	1000.0
Cadmium	ND	ND	4.3 B	ND	10.0
Calcium	111000	111000	55800	113000	-
Chromium	12.1 B	9.4 B	ND	11.6 B	50.0
Copper	11.8 B	ND	ND	ND	200.0
Iron	7930	5510	3990	12900	300.0
Lead	9.3	5.9	3.6	7.3	25.0
Magnesium	51900	92700	120000	102000	35000 (gv)
Manganese	367	282	168	526	300.0
Potassium	5800	4430	4340	6680	-
Sodium	44400	14300	35500	42400	20000.0
Vanadium	14.9 B	10.8 B	ND	11.5 B	-
Zinc	60	31.6	21.7	50.6	300.0
Cyanide	ND	ND	ND	ND	100.0

Standards are for class GA Groundwater

(gv) indicates guidance value

- indicates that no standard or guidance value has been established for this compound/constituent in Class GA groundwater

* Pesticide/PCB compounds were not detected in groundwater

Shaded values are equal to, or in excess of groundwater standards/guidance values

ND indicates not detected

B (organics) this compound was also detected in a laboratory blank at a similar concentration

B (inorganics) This concentration is between the Instrument Detection Limit (IDL), and the Contract Required detection Limit

J indicates estimated concentration

Iron, magnesium, manganese and sodium were detected in site groundwater at concentrations exceeding class GA groundwater standards or guidelines. However, since these constituents were not detected in the soils of the former lagoon area at concentrations in excess of the background range for eastern U.S. soils, the occurrence of these four constituents in groundwater above applicable groundwater standards does not appear to be site related. Rather, these concentrations likely reflect the general quality of shallow groundwater in this area.

4.4 Site Hydrogeology

Groundwater elevation measurements were obtained on seven different occasions subsequent to the completion of monitoring well installations. The groundwater elevation data summarized in Table 4 indicates that well MW-4 installed as the upgradient monitoring well exhibits anomalously low groundwater elevations. This may be a result of a much slower recovery than observed in the other site monitoring wells. Alternatively, groundwater in the vicinity of MW-4 may be influenced by sewer lines along Military Road that result in a localized diversion of westerly flowing groundwater to the northeast. The assumed groundwater flow direction at the site is west toward MW-1, MW-2, MW-3 and the Niagara River.

Table 4
BISONITE PAINT COMPANY
GROUNDWATER LEVEL SUMMARY TABLE

Well No.	Ground Elev	Pipe Elev	27-Oct-93	4-Nov-93	12-Nov-93	16-Nov-93	19-Nov-93	24-Nov-93	10-Dec-93
MMW-1	614.12	616.39	611.008	612.218	611.078	611.568	611.748	611.438	611.808
MMW-2	616.16	618.08	609.478	610.658	610.258	612.668	610.978	610.878	611.288
MMW-3	614.51	616.76	605.158	612.008	611.938	612.038	612.338	612.208	612.508
MMW-4	612.99	613.74	-	594.318	597.068	599.798	602.838	605.818	604.438

Elevation is relative to NYSDPW Bench Mark 5-653 - elevation 610.448 feet
 10/27/93 -First day of well development
 11/4/93- First day of sampling

5.0 CONCLUSIONS

The analytical results indicate that surface soils at the site contain VOCs (toluene, ethylbenzene and total xylenes), semi-volatiles (benzo (a) anthracene, chrysene, benzo (k) fluoranthene, benzo (a) pyrene and dibenzo (a,h) anthracene) and PCBs (Aroclor-1248 and Aroclor-1254) at concentrations in excess of the RSCOs. Surface soils also contain inorganic constituents (arsenic, barium, cadmium, chromium, lead, mercury and zinc) at concentrations in excess of the background range for eastern U.S. soils.

VOCs provide the most significant contamination of surface soils in BIS-SS-4 and BIS-SS-5 which are located in the main drum storage area. Semi-volatiles in excess of the RSCOs were found in the area of landspreading (BIS-SS-1, BIS-SS-3), the former tank farm and drum storage area (BIS-SS-5) and the drum storage area adjacent to the resin building (BIS-SS-7). PCBs in excess of RSCOs were found in the area of landspreading (BIS-SS-2), adjacent to the resin building (BIS-SS-6) and the drum storage area adjacent to the resin building (BIS-SS-7). Inorganic constituents in excess of the background range for eastern U.S. soils were found in each of the areas sampled.

Subsurface soil samples obtained from the former lagoon (B-2-6'-8') indicate the presence of four VOCs including benzene, toluene, ethylbenzene and total xylene, above their respective RSCOs. These solvents are typical raw materials used in the manufacture of paint. Subsurface soil samples did not fail the TCLP analysis and therefore cannot be considered a characteristic hazardous waste by this criterion. However, both the levels detected and the fact that xylene and toluene were identified in the waste drums sampled as part of the 1991 RCRA investigation indicate that these materials may be "listed" hazardous wastes U220 (toluene) and U249 (xylene). The analytical results appear to indicate that the lagoon was never completely dredged when it was closed in 1978. As such, it is likely that remnant hazardous wastes defined by 6 NYCRR Part 371 are still present in the lagoon area.

Groundwater analytical results obtained during this investigation indicate that groundwater does not appear to have been impacted by disposal practices at the site. However, since a clear direction of groundwater flow has not been determined, the apparent lack of impact to groundwater should be considered tentative at this time.

The results of this PSA suggest that hazardous waste defined by 6 NYCRR Part 371 is present at the site. However, the site does not appear to present a significant threat to public health or the environment as defined in 6 NYCRR Part 375.

6.0 RECOMMENDATIONS

Based on the findings presented herein, DUNN recommends that the Bisonite Paint Company site (NYS Site No. 915010) be added to the Registry of Inactive Hazardous Waste Disposal Sites in New York State with a "Class 3" classification. This classification code indicates that although on-site disposal of hazardous waste is documented, the site does not present a significant threat to the public health or environment and that action may be deferred.

DUNN further recommends that a Remedial Investigation/Feasibility Study (RI/FS) be performed to define the extent of residual contamination in surface soils and the former lagoon area and further define the threat to groundwater. Additionally, the RI/FS should evaluate appropriate methods for site remediation.

Appendix A
List of References

List of References

- A-1 Recra Environmental, Inc. for NYSDEC, Phase I Investigation, Bisonite Paint Company, February 1986.
- A-2 Federal Emergency Management Agency (FEMA). Flood Insurance Rate Map (FIRM), Town of Tonawanda (Panel 360260-0005 B) revised November 12, 1982 and City of Tonawanda (Panel 360259-0002 B), revised February 11, 1983.
- A-3 United States Department of Agriculture, Soil Survey of Erie County, New York, 1986.
- A-4 Buehler, Edward, Jr., and Tesimer, Irving, H. eds., Geology of Erie County New York. Buffalo, New York. Buffalo Society of Natural Sciences Bulletin: Volume 21, No. 3, 1963.
- A-5 U.S. Geological Survey Topographic 7.5 Minute Quadrangle Maps: 1965, Buffalo NY, northwest and Buffalo, N.Y., northeast; 1980 Tonawanda, N.Y. west and Tonawanda, N.Y. east.
- A-6 Lasala, A.M., Groundwater Resources of the Erie-Niagara Basin, New York, 1968.
- A-7 State of New York Official Compilation of Codes, Rules and Regulation, Dept. of State, Title 6C.
- A-8 General Electric Company 1979, 1983. Material Safety Data Sheets: Mineral Spirits, and Titanium Dioxide.
- A-9 Sax, N. Irving, eds., Dangerous Properties of Industrial Materials. New York, New York: Van Nostrand Reinhold Company, 1984.
- A-10 New York State Dept. of Health, New York State Atlas of Community Water System Sources, 1982.

Appendix B

List of Documents Cited

List of Documents Cited

- B-1 Memorandum, Erie County Department of Environment and Planning, Division of Environmental Control, from Donald Tamol to Anthony Voell, August 28, 1978.
- B-2 Letter from John C. Mahan, NYSDEC, to Martin Schleicher, Bisonite Paint Company, September 26, 1978.
- B-3 Memorandum, NYSDEC, from Donald McKenzie to File, November 3, 1982.
- B-4 Letter, NYSDEC, from Robert J. Mitrey to William Russell, General Manager, Bisonite Paint Company, December 16, 1981.
- B-5 Letter from Daniel Urbanczyk, Buffalo Testing Laboratories, to W.E. Schlecker, Bisonite Paint Company, October 12, 1978.
- B-6 Site Profile Report, Bisonite Company, Inc. Prepared by the Erie County Department of Environment and Planning, September, 1982.
- B-7 NYSDEC Division of Solid and Hazardous Waste, Inactive Hazardous Waste Disposal Site Report, John S. Tygert, January 24, 1985.
- B-8 1990 Census figures for Buffalo area Cities and Towns, The Buffalo News, January 25, 1991.
- B-9 Site Interview Form between George Moretti (DUNN) and John Albert (Bisonite), December 12, 1990.
- B-10 Report of Call between George Moretti (DUNN) and Jerome Miller (ECDEP), December 6, 1990.
- B-11 Internal DEC memoranda concerning Region 9 RCRA inspections performed at Bisonite Paint Company.
- B-12 Order On Consent issued to Bisonite Paint Company, December 4, 1991.

Appendix C

Color Photographs

Photo Log Description

Bisonite Paint Company

- 1) The Bisonite Paint Company plant. Direction: Southwest
- 2) On the western side of the filled in lagoon area. Direction: East
- 3) Southern side of the filled in lagoon area. Direction: Northeast
- 4) The southern side of the lagoon and a drum storage area in the background. Direction: East
- 5) Northern side of the old varnish plant with a drum storage area. Direction: West
- 6) Area of landspread waste solvents (Southern side of the plant). Direction: West
- 7) Drum storage area on the loading dock. Direction: Northeast
- 8) Old varnish plant, no longer in use. Several drums are located in and around the building. Direction: Northwest
- 9) Storage area for old processing tanks. Direction: South



Photo No. 1



Photo No. 2



Photo No. 3

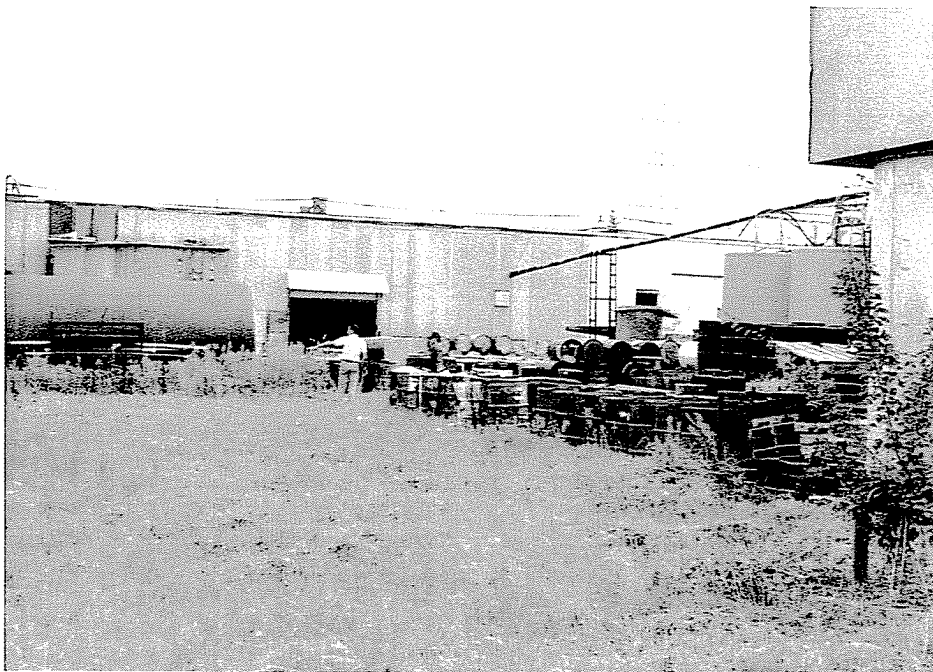


Photo No. 4

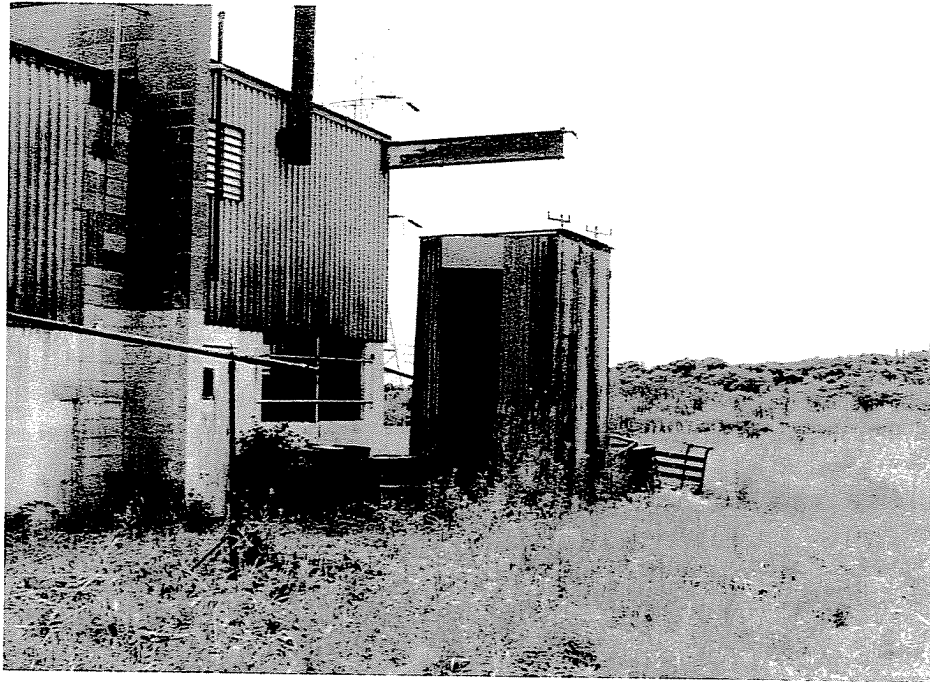


Photo No. 5

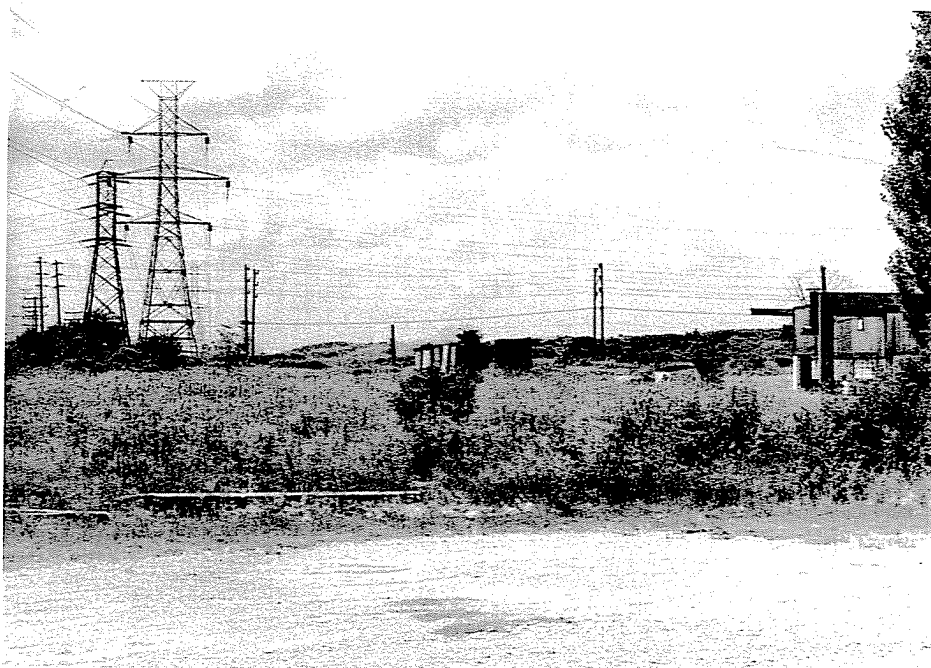


Photo No. 6

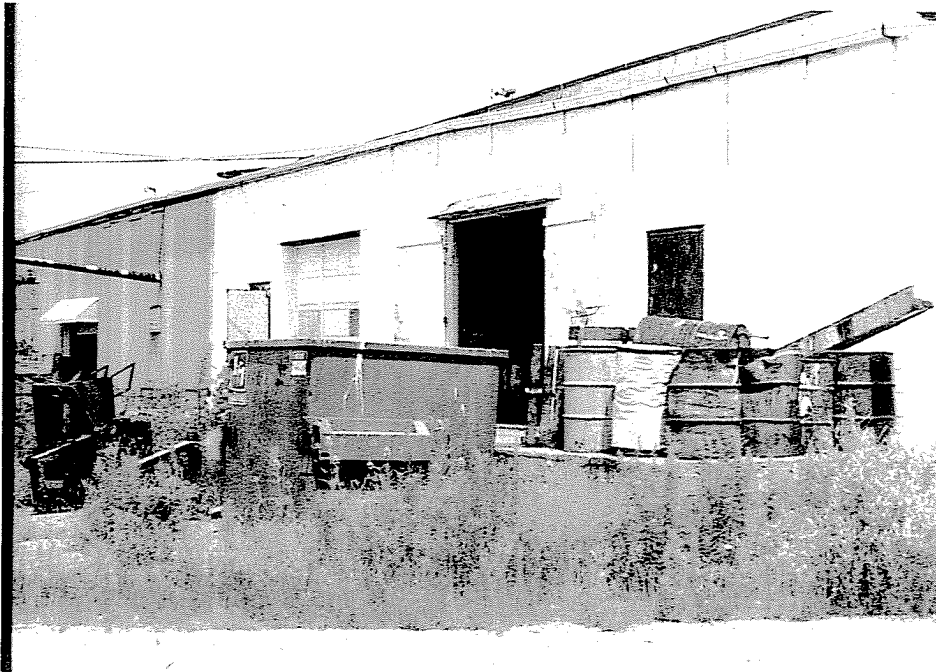


Photo No. 7

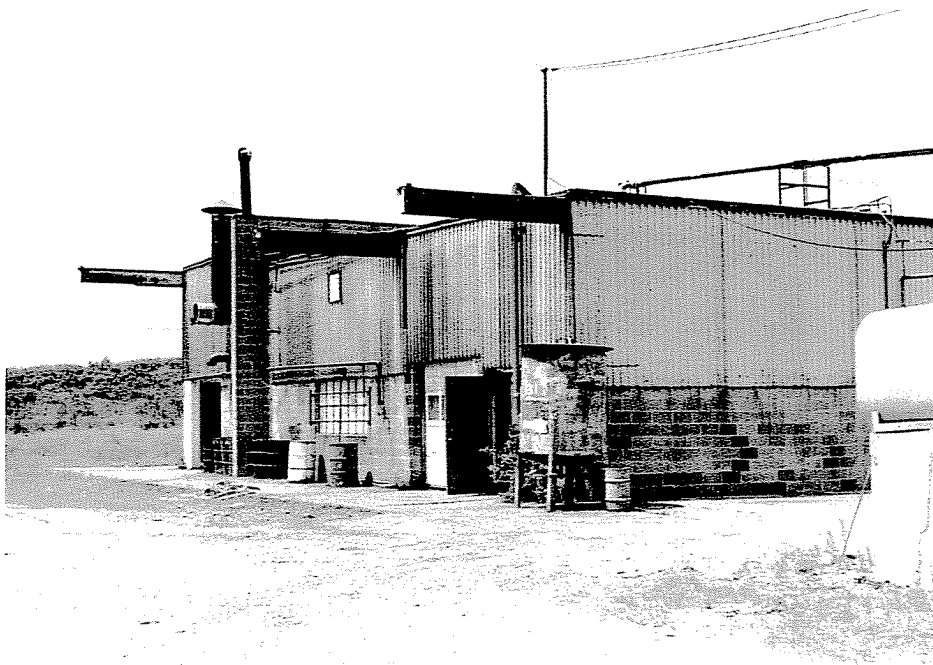


Photo No. 8

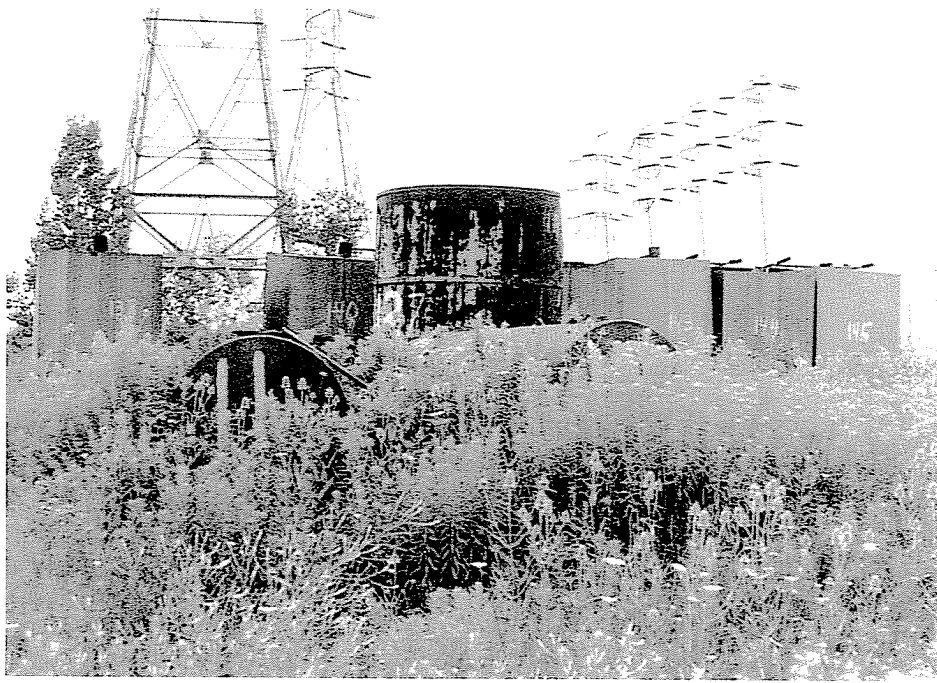


Photo No. 9

Appendix D

US EPA Form 2070-13

EPA
**POTENTIAL HAZARDOUS WASTE SITE
 SITE INSPECTION REPORT
 PART 1-SITE LOCATION AND INSPECTION INFORMATION**
I. IDENTIFICATION

01 STATE NY	02 SITE NUMBER D002114063
----------------	------------------------------

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) Bisonite Paint Company		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 2250 Military Road				
03 CITY Tonawanda		04 STATE NY	05 ZIP CODE 14150	06 COUNTY Erie	07 COUNTY CODE 029	08 CONG DIST
09 COORDINATES LATITUDE 42 59'55.0"N		LONGITUDE 078 52'59.0"W	10 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER <input type="checkbox"/> G. UNKNOWN			

III. INSPECTION INFORMATION

01 DATE OF INSPECTION 07 / 27 / 90 MONTH DAY YEAR		02 SITE STATUS <input type="checkbox"/> ACTIVE <input checked="" type="checkbox"/> INACTIVE	03 YEARS OF OPERATION Unknown _____ 1980 _____ BEGINNING YEAR ENDING YEAR		08 UNKNOWN
04 AGENCY PERFORMING INSPECTION (Check all that apply)					
<input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. MUNICIPAL <input type="checkbox"/> D. MUNICIPAL CONTRACTOR (Name of firm) _____ (Name of firm) _____ <input type="checkbox"/> E. STATE <input checked="" type="checkbox"/> F. STATE CONTRACTOR <input type="checkbox"/> G. OTHER _____ Dunn Geoscience/TAMS Consultants (Specify)					
05 CHIEF INSPECTOR George Moretti		06 TITLE Environmental Scientist		07 ORGANIZATION Dunn Geoscience Engineering Co. (716)691-3868	
09 OTHER INSPECTORS Martin Derby		10 TITLE Hydrogeologist		11 ORGANIZATION TAMS Consultants, Inc. (716)831-8084	
				()	
				()	
				()	
				()	
				()	
				()	
13 SITE REPRESENTATIVES INTERVIEWED		14 TITLE	15 ADDRESS		16 TELEPHONE NO.
John Albert		Vice President	2250 Military Road Tonawanda, NY 14150		(716)693-6130
					()
					()
					()
					()
					()
					()
					()
17 ACCESS GAINED BY (Check one) <input checked="" type="checkbox"/> PERMISSION <input type="checkbox"/> WARRANT		18 TIME OF INSPECTION 1315		19 WEATHER CONDITIONS Sunny, clear, 90 degrees Farenheit	

IV. INFORMATION AVAILABLE FROM

01 CONTACT Mark Mateunas		02 OF (Agency/Organization) NYSDEC		03 TELEPHONE NO. (518)457-0639	
04 PERSON RESPONSIBLE FOR SITE INSPECTION FOR Ted Yen		05 AGENCY	06 ORGANIZATION TAMS Consultants	07 TELEPHONE NO. (201)338-6680	08 DATE 08 / 28 / 90 MO. DAY YR.



POTENTIAL HAZARDOUS WASTE SITE

SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

IDENTIFICATION

01 STATE
NY

02 SITE NUMBER
D002114163

II. WASTE STATE, QUANTITIES, AND CHARACTERISTICS

<p>01 PHYSICAL STATES (Check all that apply)</p> <p>X_ A. SOLID __ E. SLURRY</p> <p>__ B. POWDER, FINES X_ F. LIQUID</p> <p>X_ C. SLUDGE __ G. GAS</p> <p>__ D. OTHER _____ (Specify)</p>	<p>02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)</p> <p>TONS _____</p> <p>CUBIC YARDS __Unknown__</p> <p>NO. OF DRUMS _____</p>	<p>03 WASTE CHARACTERISTICS(Check all that apply)</p> <p>X_ A. TOXIC __ H. IGNITABLE</p> <p>__ B. CORROSIVE __ I. HIGHLY VOLATILE</p> <p>__ C. RADIOACTIVE __ J. EXPLOSIVE</p> <p>X_ D. PERSISTENT __ K. REACTIVE</p> <p>__ E. SOLUBLE __ L. INCOMPATIBLE</p> <p>__ F. INFECTIOUS __ M. NOT APPLICABLE</p> <p>__ G. FLAMMABLE</p>
--	--	---

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	Unknown		Paint by-products, pigments
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	Unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONC.
OCC	Phenols	108-95-2	Landspreading	8.5	ppm
MES	Copper	7440-50-8	Landspreading	0.7	ppm
MES	Hexavalent Chromium	7738-94-5	Landspreading	0.1	ppm
MES	Total Chromium	7440-47-3	Landspreading	0.2	ppm
MES	Manganese	7439-96-5	Landspreading	3.8	ppm
MES	Mercury	7439-97-8	Landspreading	0.36	ppm
MES	Zinc	Not Applicable	Landspreading	5.0	ppm
MES	Barium	513-77-9	Landspreading	30.0	ppm
SLU	Paint pigments	Unknown	Landspreading	Unknown	

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Not Applicable		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Buffalo Testing Lab Analytical Results, 10/12/78
 NYSDEC Phase I Report on the Bisonite Paint site prepared by RECRA Research, Inc - 1986

EPA

POTENTIAL HAZARDOUS WASTE SITE

I. IDENTIFICATION

SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

01 STATE
NY

02 SITE NUMBER
D002114163

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 X_A. GROUNDWATER CONTAMINATION

02 __ OBSERVED (DATE: _____)

X_POTENTIAL __ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: __0__

04 NARRATIVE DESCRIPTION

The potential for groundwater contamination exist due to the landspreading of mineral spirits, paint pigments, and paint by-products onto the property.

01 X_B. SURFACE WATER CONTAMINATION

02 __ OBSERVED (DATE: _____)

X_POTENTIAL __ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: __107000__

04 NARRATIVE DESCRIPTION

Niagara River drinking water intakes are 1.5 miles from the site. The potential for surface water exists if wastes migrate into the Niagara River either through groundwater discharge or through storm sewer effluent.

01 __ C. CONTAMINATION OF AIR

02 __ OBSERVED (DATE: _____)

__ POTENTIAL __ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

The potential for air contamination exists. The HNu-PID readings were not above background during the site reconnaissance; however, contaminants can adsorb onto soil particles and have the potential for airborne contamination.

01 __ D. FIRE/EXPLOSIVE CONDITIONS

02 __ OBSERVED (DATE: _____)

__ POTENTIAL __ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

No potential for fire/explosive conditions to occur. No fire hazards were observed during the site reconnaissance.

01 X_E. DIRECT CONTACT

02 __ OBSERVED (DATE: _____)

X_POTENTIAL __ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: __15,000__

04 NARRATIVE DESCRIPTION

The potential for direct contact would exist if the Niagara River is contaminated. The drinking water intakes are 1.5 miles downstream from the site. Also, contaminants could adsorb onto soil particles and have the potential for airborne contamination or direct contact with the soil.

01 X_F. CONTAMINATION OF SOIL

02 __ OBSERVED (DATE: _____)

X_POTENTIAL __ ALLEGED

03 AREA POTENTIALLY AFFECTED: __1__(acres)

04 NARRATIVE DESCRIPTION

The potential for soil contamination exist due to the landspreading of mineral spirits, paint pigments, and paint by-products onto the property.

01 X_G. DRINKING WATER CONTAMINATION

02 __ OBSERVED (DATE: _____)

X_POTENTIAL __ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: __107000__

04 NARRATIVE DESCRIPTION

The potential for drinking water contamination would exist if the Niagara River is contaminated. The drinking water intakes are 1.5 miles downstream from the site.

01 __ H. WORKER EXPOSURE/INJURY

02 __ OBSERVED (DATE: _____)

__ POTENTIAL __ ALLEGED

03 WORKERS POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

Although the lagoons have been excavated and backfilled, the potential for worker exposure exists due to the landspreading of wastes on other areas of the site.

01 X_I. POPULATION EXPOSURE/INJURY

02 __ OBSERVED (DATE: _____)

X_POTENTIAL __ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: __107000__

04 NARRATIVE DESCRIPTION

The potential for population exposure would be derived from the contamination of the drinking water and soils and airborne particles.

EPA

POTENTIAL HAZARDOUS WASTE SITE

I. IDENTIFICATION

SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

01 STATE NY	02 SITE NUMBER D002114163
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II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 X_ J. DAMAGE TO FLORA 02 __ OBSERVED (DATE: _____) X_ POTENTIAL __ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

No signs of distressed vegetation was observed during the site reconnaissance.
However, potential for damaging flora exists from bioaccumulation of contaminants.
Cypripedium candidum located 1.1 miles from the site.

01 X_ K. DAMAGE TO FAUNA 02 __ OBSERVED (DATE: _____) X_ POTENTIAL __ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

No signs of injured fauna was observed during the site reconnaissance.
However, potential for damaging fauna exists from possible bioaccumulation of the contaminants.
There is a nesting area for *Sterna hirundo* near the Niagara intakes. The *Sterna hirundo* are NYS endangered species only.

01 X_ L. CONTAMINATION OF FOOD CHAIN 02 __ OBSERVED (DATE: _____) X_ POTENTIAL __ ALLEGED

04 NARRATIVE DESCRIPTION

Potential for food chain contamination exists due to bioaccumulation of contaminants in aquatic life in the Niagara River.

01 X_ M. UNSTABLE CONTAINMENT OF WASTES 02 X OBSERVED (DATE: 1985____) __ POTENTIAL __ ALLEGED

(Spills/Runoff/Standing liquids, Leaking drums)

03 POPULATION POTENTIALLY AFFECTED: _15,000_ 04 NARRATIVE DESCRIPTION

Ponded water on the waste lagoon and mixed with leachate was observed during RECRA Research's site inspection in 1985.

01 X_ N. DAMAGE TO OFFSITE PROPERTY 02 __ OBSERVED (DATE: _____) X_ POTENTIAL __ ALLEGED

04 NARRATIVE DESCRIPTION

The potential for damaging off-site property is possible if the contaminants migrate from the site.
The migrating contaminants may damage flora or fauna and seep into the basements of the surrounding residential area, and become airborne particulates.

01 X_ O. CONTAMINATION OF SEWERS, STORM DRAINS, OR WWTPs 02 __ OBSERVED (DATE: _____) X_ POTENTIAL __ ALLEGED

04 NARRATIVE DESCRIPTION

The potential for contaminating storm sewers exist. Runoff from the site flows to the storm drains and discharges into the Niagara River.

01 X_ P. ILLEGAL/UNAUTHORIZED DUMPING 02 __ OBSERVED (DATE: _____) X_ POTENTIAL __ ALLEGED

04 NARRATIVE DESCRIPTION

No evidence of illegal dumping was observed during the site inspection. However, there is no access restriction at the site, and the potential for illegal dumping exists.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED

HAZARDS

None known

III. TOTAL POPULATION POTENTIALLY AFFECTED: _107,000_

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Site reconnaissance conducted by Dunn Geoscience Engineering Co./TAMS Consultants, Inc. on 7/27/90

Site inspection performed by RECRA Research in 1985

EPA

POTENTIAL HAZARDOUS WASTE SITE

SITE INSPECTION
PART 4-PERMIT AND DESCRIPTIVE
INFORMATION

I. IDENTIFICATION

01 STATE
NY

02 SITE NUMBER
D002114183

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
<input type="checkbox"/> A. NPDES				
<input type="checkbox"/> B. UIC				
<input type="checkbox"/> C. AIR				
<input type="checkbox"/> D. RCRA				
<input type="checkbox"/> E. RCRA INTERIM STATUS				
<input type="checkbox"/> F. SPOC PLAN				
X G. STATE(Specify) SPDES	NY0003123	Unknown		Discharge of non-contact
<input type="checkbox"/> H. LOCAL(Specify)				cooling water
<input type="checkbox"/> I. OTHER(Specify)				
<input type="checkbox"/> J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 OTHER
<input type="checkbox"/> A. SURFACE IMPOUNDMENT			<input type="checkbox"/> A. INCINERATION	X_A. BUILDINGS ON SITE
<input type="checkbox"/> B. PILES			<input type="checkbox"/> B. UNDERGROUND INJECTION	
X_C. DRUMS, ABOVE GROUND	50+	Drums - 55 gallons	<input type="checkbox"/> C. CHEMICAL/PHYSICAL	
<input type="checkbox"/> D. TANK, ABOVE GROUND			<input type="checkbox"/> D. BIOLOGICAL	06 AREA OF SITE
<input type="checkbox"/> E. TANK, BELOW GROUND			<input type="checkbox"/> E. WASTE OIL PROCESSING	
<input type="checkbox"/> F. LANDFILL			<input type="checkbox"/> F. SOLVENT RECOVERY	_____ 1 _____ (Acres)
X_G. LANDFARM	1800	Gallons/year	<input type="checkbox"/> G. OTHER RECYCLING/RECOVERY	
<input type="checkbox"/> H. OPEN DUMP			<input type="checkbox"/> H. OTHER _____	
X_OTHER Lagoons _____ (Specify)	Unknown		(Specify)	

07 COMMENTS

The lagoons were filled and covered on February 17, 1983.
1800 gal/yr of solvents and an unknown quantity of paint pigments were landsread on the site.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

A. ADEQUATE, SECURE B. MODERATE X_C. INADEQUATE, POOR D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINER, BARRIERS, ETC.

Over fifty drums were observed on the site in various stages of decay.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: X_ YES _ NO

02 COMMENTS

There are no site access restrictions at Bisonite Paint.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Dunn Geoscience Engineering Co./TAMS Consultants, Inc. site reconnaissance - 7/27/90
Erie County Department of Environment and Planning Lagoon closure report by Ron Entringer - February 1983.

EPA

POTENTIAL HAZARDOUS WASTE SITE

SITE INSPECTION REPORT
PART 5-WATER, DEMOGRAPHIC, AND ENVIRONMENTAL
DATA

I. IDENTIFICATION

01 STATE NY	02 SITE NUMBER D002114163
----------------	------------------------------

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY
(Check as applicable)

SURFACE	WELL
COMMUNITY A. <input checked="" type="checkbox"/>	B. <input type="checkbox"/>
NON-COMMUNITY C. <input type="checkbox"/>	D. <input type="checkbox"/>

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. <input type="checkbox"/>	B. <input type="checkbox"/>	C. <input checked="" type="checkbox"/>
D. <input type="checkbox"/>	E. <input type="checkbox"/>	F. <input type="checkbox"/>

03 DISTANCE TO SITE

A. <0.01(mi)
B. (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

<input type="checkbox"/> A. ONLY SOURCE FOR DRINKING	<input type="checkbox"/> B. DRINKING (Other sources available)	<input type="checkbox"/> C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)	<input checked="" type="checkbox"/> D. NOT USED, UNUSEABLE
(No other water sources available)			

02 POPULATION SERVED BY GROUNDWATER 0 03 DISTANCE TO NEAREST DRINKING WATER WELL >3 (mi)

04 DEPTH TO GROUNDWATER

0.5-2.0 (ft)

05 DIRECTION OF GROUNDWATER
FLOW

South

06 DEPTH TO
AQUIFER
OF CONCERN

8-12 (ft)

07 POTENTIAL
YIELD OF
AQUIFER

Unknown (gpd)

08 SOLE SOURCE AQUIFER

YES NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)

There are no drinking wells in the vicinity of the site. Four groundwater monitoring wells are located on-site and are sampled periodically.

10 RECHARGE AREA

<input type="checkbox"/> YES	COMMENTS
<input type="checkbox"/> NO	

Unknown

11 DISCHARGE AREA

<input checked="" type="checkbox"/> YES	COMMENTS
<input type="checkbox"/> NO	

Groundwater discharges to the Niagara River

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

<input checked="" type="checkbox"/> A. RESERVOIR, RECREATION DRINKING WATER SOURCE	<input type="checkbox"/> B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES	<input type="checkbox"/> C. COMMERCIAL, INDUSTRIAL	<input type="checkbox"/> D. NOT CURRENTLY USED
---	---	--	---

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:

Niagara River

AFFECTED:
(Y/N)

N

DISTANCE TO SITE

1.5 (mi)

 (mi)

 (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE

A. 15,000
NO. OF PERSONS

TWO (2) MILES OF SITE

B. 47,000
NO. OF PERSONS

THREE (3) MILES OF SITE

C. 107,000
NO. OF PERSONS

02 DISTANCE TO NEAREST
POPULATION

0.1 (mi)

03 NUMBER OF BUILDING WITHIN TWO(2)MILES OF SITE

>8,000

04 DISTANCE TO NEAREST OFF-SITE BUILDING

0.1 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The site is bounded by a residential area to the east, and industrial facilities to the north and south. Railroad tracks and a landfill are west of the site. It is located in a densely populated area of Tonawanda.



POTENTIAL HAZARDOUS WASTE SITE

SITE INSPECTION REPORT
PART 5-WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE
NY

02 SITE NUMBER
D002114163

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

A. 10⁻⁸ to 10⁻⁹ cm/sec B. 10⁻⁴ to 10⁻⁶ cm/sec C. 10⁻⁴ to 10⁻³ cm/sec D. GREATER THAN 10⁻³ cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

A. IMPERMEABLE (Less than 10⁻⁸ cm/sec) B. RELATIVELY IMPERMEABLE (10⁻⁴ to 10⁻⁸ cm/sec) C. RELATIVELY PERMEABLE (10⁻² to 10⁻⁴ cm/sec) D. VERY PERMEABLE (Greater than 10⁻² cm/sec)

03 DEPTH TO BEDROCK

04 DEPTH OF CONTAMINATED SOIL ZONE

05 SOIL pH

06 NET PRECIPITATION

07 ONE YEAR 24 HOUR RAINFALL

08 SLOPE
SITE SLOPE

DIRECTION OF SITE SLOPE TERRAIN AVERAGE SLOPE

~85 (ft)

Unknown (ft)

Unknown

5.0 (in)

2.1 (in)

0-3 %

West

0-3 %

09 FLOOD POTENTIAL

10

SITE IS IN >100 YEAR FLOODPLAIN

SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)*
ESTUARINE OTHER

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

A. >3 (mi)

B. 1.5 (mi)

1.1 (mi)

ENDANGERED SPECIES: See Site Description Section

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL RESIDENTIAL AREAS; NATIONAL/STATE PARKS,
FOREST, OR WILDLIFE RESERVES

AGRICULTURAL LANDS
PRIME AG LAND

AG LAND

A. Onsite (mi)

B. 1.4 (mi)

C. >3 (mi)

D. >3 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site is a relatively flat area. The former lagoon was located on the western edge of the site near the railroad tracks.

Endangered Species:

- 1. *Cyrtopodium candidum* - Small White Ladyslipper, NYS Endangered Species List, it is found 2.6 miles from the site.
- There is also a common tern nesting area near the Niagara River Intakes. Common terns are a threatened species in NYS.
A NYS significant Coastal Fish and Wildlife habitat is 1.9 miles from the site.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- NYSDEC Phase I report on the Bisonite Paint site prepared by Recra Research, Inc.
- Interview with Dave Denk of NYSDEC Regulations, 7/18/90.
- Interview with Mark Kandel of NYSDEC Fish and Wildlife, 7/20/90.
- Heritage Maps, Coastal Fish and Wildlife Maps, and DEC Wetlands Maps supplied by the Region 9 Office.

EPA	POTENTIAL HAZARDOUS WASTE SITE		I. IDENTIFICATION	
	SITE INSPECTION REPORT PART 6-SAMPLE AND FIELD INFORMATION		01 STATE NY	02 SITE NUMBER D002114163
II. SAMPLES TAKEN				
SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE	
GROUNDWATER	None			
SURFACE WATER	None			
WASTE	None			
AIR	None			
RUNOFF	None			
SPILL	None			
SOIL	None			
VEGETATION	None			
OTHER	None			
III. FIELD MEASUREMENTS TAKEN				
01 TYPE	02 COMMENTS			
Air Monitoring	HNU-PID readings not above background.			
Radiation Monitoring	Monitor 4 mini-rad readings not above background.			
IV. PHOTOGRAPHS AND MAPS				
01 TYPE <input type="checkbox"/> GROUND <input type="checkbox"/> AERIAL		02 IN CUSTODY OF: Dunn Geoscienc Engineering Co./ The SUNY Buffalo at Amherst Undergraduate Library (Name of organization or individual)		
03 MAPS X YES <input type="checkbox"/> NO	04 LOCATION OF MAPS Dunn Geoscience Engineering Co./TAMS Consultants, Inc.			
V. OTHER FIELD DATA COLLECTED (provide narrative description)				
Field notes in custody of Dunn Geoscience Engineering Co.				
VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)				
1966 aerial photographs from the SUNY Buffalo US Dept. of the Interior Geological Survey Topographic Maps, 7.5 minute series - "Buffalo NW, NY" - photorevised 1980. Site reconnaissance conducted by Dunn Geoscience Engineering Co./TAMS Consultants, Inc. on 7/27/90				

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7-OWNER INFORMATION

I. IDENTIFICATION

01 STATE NY	02 SITE NUMBER D002114163
----------------	------------------------------

II. CURRENT OWNER(S)

01 NAME			02 D+B NUMBER		08 NAME			09 D+B NUMBER	
Bisonite Paint Company									
03 STREET ADDRESS(P.O.Box,RFD#,etc.) 2250 Military Road			04 SIC CODE 2851		10 STREET ADDRESS(P.O.Box, RFD#,etc.)			11 SIC CODE	
05 CITY Tonawanda		06 STATE NY	07 ZIP CODE 14150		12 CITY		13 STATE	14 ZIP CODE	
01 NAME			02 D+B NUMBER		08 NAME			09 D+B NUMBER	
03 STREET ADDRESS(P.O.Box,RFD#,etc.)			04 SIC CODE		10 STREET ADDRESS(P.O.Box, RFD#,etc.)			11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE	14 ZIP CODE	
01 NAME			02 D+B NUMBER		08 NAME			09 D+B NUMBER	
03 STREET ADDRESS(P.O.Box,RFD#,etc.)			04 SIC CODE		10 STREET ADDRESS(P.O.Box, RFD#,etc.)			11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE	14 ZIP CODE	
01 NAME			02 D+B NUMBER		08 NAME			09 D+B NUMBER	
03 STREET ADDRESS(P.O.Box,RFD#,etc.)			04 SIC CODE		10 STREET ADDRESS(P.O.Box, RFD#,etc.)			11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE	14 ZIP CODE	

III. PREVIOUS OWNER(S)(List most recent first)

01 NAME			02 D+B NUMBER		08 NAME			09 D+B NUMBER	
03 STREET ADDRESS(P.O.Box,RFD#,etc.)			04 SIC CODE		10 STREET ADDRESS(P.O.Box, RFD#,etc.)			11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE	14 ZIP CODE	
01 NAME			02 D+B NUMBER		08 NAME			09 D+B NUMBER	
03 STREET ADDRESS(P.O.Box,RFD#,etc.)			04 SIC CODE		10 STREET ADDRESS(P.O.Box, RFD#,etc.)			11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE	14 ZIP CODE	
01 NAME			02 D+B NUMBER		08 NAME			09 D+B NUMBER	
03 STREET ADDRESS(P.O.Box,RFD#,etc.)			04 SIC CODE		10 STREET ADDRESS(P.O.Box, RFD#,etc.)			11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE	14 ZIP CODE	

IV. REALTY OWNER(S)(if applicable;list most recent first)

01 NAME			02 D+B NUMBER		08 NAME			09 D+B NUMBER	
03 STREET ADDRESS(P.O.Box,RFD#,etc.)			04 SIC CODE		10 STREET ADDRESS(P.O.Box, RFD#,etc.)			11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE	14 ZIP CODE	
01 NAME			02 D+B NUMBER		08 NAME			09 D+B NUMBER	
03 STREET ADDRESS(P.O.Box,RFD#,etc.)			04 SIC CODE		10 STREET ADDRESS(P.O.Box, RFD#,etc.)			11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE		12 CITY		13 STATE	14 ZIP CODE	

V. SOURCES OF INFORMATION(Cite specific references, e.g., state files, sample analysis, reports)

NYSDEC Region 9, Division of Hazardous Waste Remediation, Inactive Hazardous Waste Disposal Report.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8-OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE NY	02 SITE NUMBER D002114163

II. CURRENT OPERATOR(Provide if different from owner)		OPERATOR'S PARENT COMPANY(If applicable)	
---	--	--	--

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER		
03 STREET ADDRESS(P.O.Box,RFD#,etc.)	04 SIC CODE	10 STREET ADDRESS(P.O.Box, RFD#,etc.)	11 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

III. PREVIOUS OPERATOR(S)(List most recent first; provide only if different from owner)		PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)	
---	--	--	--

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER		
03 STREET ADDRESS(P.O.Box,RFD#,etc.)	04 SIC CODE	10 STREET ADDRESS(P.O.Box, RFD#,etc.)	11 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER		
03 STREET ADDRESS(P.O.Box,RFD#,etc.)	04 SIC CODE	10 STREET ADDRESS(P.O.Box, RFD#,etc.)	11 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER		
03 STREET ADDRESS(P.O.Box,RFD#,etc.)	04 SIC CODE	10 STREET ADDRESS(P.O.Box, RFD#,etc.)	11 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

V. SOURCES OF INFORMATION(Cite specific references, e.g., state files, sample analysis, reports)
--

NYSDEC Region 9, Division of Hazardous Waste Remediation, Inactive Hazardous Waste Disposal Report

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9-GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D002114163

II. ON-SITE GENERATOR

01 NAME Bisonite Paint Company	02 D+B NUMBER	
03 STREET ADDRESS(P.O.Box,RFD#,etc.) 2250 Military Road	04 SIC CODE 2851	
05 CITY Tonawanda	06 STATE NY	07 ZIP CODE 14150

III. OFF-SITE GENERATOR(S)

01 NAME None	02 D+B NUMBER	08 NAME	09 D+B NUMBER		
03 STREET ADDRESS(P.O.Box,RFD#,etc.)	04 SIC CODE	10 STREET ADDRESS(P.O.Box, RFD#,etc.)	11 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER		
03 STREET ADDRESS(P.O.Box,RFD#,etc.)	04 SIC CODE	10 STREET ADDRESS(P.O.Box, RFD#,etc.)	11 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

IV. TRANSPORTER(S)

01 NAME None	02 D+B NUMBER	08 NAME	09 D+B NUMBER		
03 STREET ADDRESS(P.O.Box,RFD#,etc.)	04 SIC CODE	10 STREET ADDRESS(P.O.Box, RFD#,etc.)	11 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER		
03 STREET ADDRESS(P.O.Box,RFD#,etc.)	04 SIC CODE	03 STREET ADDRESS(P.O.Box,RFD#,etc.)	04 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION(Cite specific references, e.g., state files, sample analysis, reports)

NYSDEC Division of Hazardous Waste Remediation, Inactive Hazardous Waste Disposal Report.

EPA

POTENTIAL HAZARDOUS WASTE SITE

I. IDENTIFICATION

SITE INSPECTION REPORT

01 STATE

02 SITE NUMBER

PART 10 - PAST RESPONSE ACTIVITIES

NY

D002114163

II. PAST RESPONSE ACTIVITIES

01 __ A. WATER SUPPLY CLOSED

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ B. TEMPORARY WATER SUPPLY PROVIDED

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ C. PERMANENT WATER SUPPLY PROVIDED

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ D. SPILLED MATERIAL REMOVED

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ E. CONTAMINATED SOIL REMOVED

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ F. WASTE REPACKAGED

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ G. WASTE DISPOSED ELSEWHERE

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ H. ON SITE BURIAL

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ I. IN SITU CHEMICAL TREATMENT

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ J. IN SITU BIOLOGICAL TREATMENT

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ K. IN SITU PHYSICAL TREATMENT

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ L. ENCAPSULATION

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ M. EMERGENCY WASTE TREATMENT

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ N. CUTOFF WALLS

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ O. EMERGENCY DIKING/SURFACE WATER DIVERSION

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ P. CUTOFF TRENCHES/SUMP

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

01 __ Q. SUBSURFACE CUTOFF WALL

02 DATE: _____

03 AGENCY _____

04 DESCRIPTION

No previous history

Appendix E
NYS Department of Environmental Conservation -
Inactive Hazardous Waste Disposal Report

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT**

CLASSIFICATION CODE:	3	REGION:	9	SITE CODE:	915010
NAME OF SITE:	Bisonite Paint Company			EPA ID:	NYD002114163
STREET ADDRESS:	2250 Military Road				
TOWN/CITY:	Tonawanda (T)	COUNTY:	Erie	ZIP:	14150
SITE TYPE:	Open Dump	Structure	Lagoon	Landfill	Treatment Pond
	X		X		
				ESTIMATED SIZE:	1 Acre

SITE OWNER/OPERATOR INFORMATION:

Current Owner Name: Bisonite Paint Company

Current Owner Address: 2250 Military Road, Tonawanda, New York 14150

Owner(s) During Use: Bisonite Paint Company

Operator During Use: Bisonite Paint Company

Operator Address: 2250 Military Road, Tonawanda, New York 14150

Period Associated with Hazardous Waste: ? to 1978

SITE DESCRIPTION:

Spent solvents in the amount of 1,800 gallons per year were landspread over a one-acre parcel of the site for weed control. A lagoon 50 feet long, 30 feet wide and 10 feet deep was used for the disposal of metal pigments and paint manufacturing by-products. Both the landspreading and use of the lagoon ceased in 1978. It is unclear whether the lagoon was dredged prior to its closure and capping in 1982. Two underground storage tanks used for vinyl acetate were removed in the early 1980s.

From 1978 until 1991, disposed solvents and sludges were stored on-site prior to being disposed at an approved hazardous waste disposal facility. Numerous spills and leaks were reported until site operations ceased in May 1991.

A RCRA investigation commencing in September 1991 resulted in issuance of a consent order to clean the drums, drum storage area, transformers with PCB oil and tanks. It did not include the lagoon, the landspreading, contamination related to leaking drums or the tank storage area.

A Phase I investigation was completed in 1987. A preliminary site assessment was completed in 1993.

HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY USED
Toluene (U220)	Unknown
Xylene (U249)	Unknown

ANALYTICAL DATA AVAILABLE:

Surface Water:	<input checked="" type="checkbox"/>	Groundwater:	<input checked="" type="checkbox"/>
Soil:	<input checked="" type="checkbox"/>	Sediment:	<input type="checkbox"/>
None:	<input type="checkbox"/>		

CONTRAVENTION OF STANDARDS:

Groundwater:	<input type="checkbox"/>	Drinking Water:	<input type="checkbox"/>
Surface Water:	<input type="checkbox"/>	Air:	<input type="checkbox"/>

LEGAL ACTION:

TYPE			STATUS	
None	State	Federal	Negotiation in Progress	Order Signed
	Consent Order			X

REMEDIAL ACTION:

None	Proposed	Under Design	In Progress	Completed
	X			

NATURE OF ACTION:

Clean-up of surficial waste materials, full site assessment

GEOTECHNICAL INFORMATION:

Soil Type: Silt and lacustrine clays

Groundwater Depth: Approximately 4 feet

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

The analytical results for the subsurface soils indicate that several volatile organic compounds (VOCs), including toluene and xylene, were detected at concentrations that exceeded their respective Recommended Soil Clean-up Objectives (RSCOs); however, no soil or groundwater standards were exceeded. The site does not present a significant threat to public health or the environment.

ASSESSMENT OF HEALTH PROBLEMS:

Text to be generated by the New York State Department of Health.

Appendix F
Field Sampling Records

FIELD SAMPLING RECORD

PROJECT: NYSDEC-Bisonite DATE: 10/26/93
 PROJECT NO.: 35100.400 TIME: 1:00pm
 CLIENT: NYSDEC SITE ID: D002520-3.2
 SAMPLERS: Scott Lawrence of Rust Environment & Infrastructure
George Moretti Rust Environment & Infrastructure

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment (Soil) Waste / Other

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum /
 Excavation / Boring / Embankment (Surface)

Surface: Residential (Industrial) Commercial / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can /
 Peristaltic Pump / Bailer / Core Sampler / Standard Split Spoon/ Hand Auger /
 Stainless Spoon (Trowel)

Sample Type: Point (Grab) Composite /

Atmospheric Trip Blank ID _____ Field(wash) Blank ID _____
 Containers Filled(primary) VOA and TCL List ID #'s BIS-SS-1
 Containers Filled(replicates) _____ List ID #'s _____

Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, Metals, Cyanide
 Physical Appearance and Odor Looked and smelled like native soil

Refrigerated: _____ Time: _____

Field Tests:	<u>Meter ID #</u>	<u>Test Value</u>	
Temperature (C / F)	_____	_____	
pH	_____	_____	
Spec. Conductivity (umhos/cm)	_____	_____	
Dissolved Oxygen (mg/l)	_____	_____	
Other:	_____	_____	Units

Weather: Cloudy, mid 50's
 Comments: Sample taken near MW-2

FIELD SAMPLING RECORD

PROJECT: NYSDEC-Bisonite DATE: 10/26/93
 PROJECT NO.: 35100.400 TIME: 2:20pm
 CLIENT: NYSDEC SITE ID: D002520-3.2
 SAMPLERS: Scott Lawrence of Rust Environment & Infrastructure
George Moretti Rust Environment & Infrastructure

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment Soil Waste / Other

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum /
 Excavation / Boring / Embankment Surface

Surface: Residential Industrial Commercial / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can /
 Peristaltic Pump / Bailer / Core Sampler / Standard Split Spoon/ Hand Auger /
 Stainless Spoon Trowel

Sample Type: Point Grab Composite /

Atmospheric Trip Blank ID _____ Field(wash) Blank ID _____
 Containers Filled(primary) VOA and TCL List ID #'s BIS-SS-2
 Containers Filled(replicates) _____ List ID #'s _____
 Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, Metals, Cyanide
 Physical Appearance and Odor Native soil odor and appearance with white flakes(possible fertilizer)

Refrigerated: _____

Time: _____

Field Tests:	<u>Meter ID #</u>	<u>Test Value</u>	
Temperature (C / F)	_____	_____	
pH	_____	_____	
Spec. Conductivity (umhos/cm)	_____	_____	
Dissolved Oxygen (mg/l)	_____	_____	
Other:	_____	_____	Units

Weather: Cloudy, mid 50's

Comments: Sample taken in area where old transformers were stored.

FIELD SAMPLING RECORD

PROJECT: NYSDEC-Bisonite DATE: 10/26/93
 PROJECT NO.: 35100.400 TIME: 2:30pm
 CLIENT: NYSDEC SITE ID: D002520-3.2
 SAMPLERS: Scott Lawrence of Rust Environment & Infrastructure
George Moretti Rust Environment & Infrastructure

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment / Soil / Waste / Other

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum /
 Excavation / Boring / Embankment Surface

Surface: Residential Industrial / Commerical / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can /
 Peristaltic Pump / Bailer / Core Sampler / Standard Split Spoon/ Hand Auger/
 Stainless Spoon Trowel

Sample Type: Point Grab Composite /

Atmospheric Trip Blank ID _____ Field(wash) Blank ID _____

Containers Filled(primary) VOA and TCL List ID #'s BIS-SS-3

Containers Filled(replicates) _____ List ID #'s _____

Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, Metals, Cyanide

Physical Appearance and Odor 1 inch of normal soil then rubbery resin-like substance with paint-like odor.

Refrigerated: _____

Time: _____

Field Tests: Meter ID # Test Value

Temperature (C / F) _____

pH _____

Spec. Conductivity (umhos/cm) _____

Dissolved Oxygen (mg/l) _____

Other: _____ Units

Weather: Cloudy, mid 50's

Comments: Sample taken in old drum storage area

FIELD SAMPLING RECORD

PROJECT: NYSDEC-Bisonite DATE: 10/26/93
PROJECT NO.: 35100.400 TIME: 2:20pm
CLIENT: NYSDEC SITE ID: D002520-3.2
SAMPLERS: Scott Lawrence of Rust Environment & Infrastructure
George Moretti Rust Environment & Infrastructure

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment (Soil) Waste / Other

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum / Excavation / Boring / Embankment / (Surface)

Surface: Residential (Industrial) Commerical / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can / Peristaltic Pump / Bailer / Core Sampler / Standard Split Spoon/ Hand Auger / Stainless Spoon (Trowel)

Sample Type: Point (Grab) Composite /

Atmospheric Trip Blank ID Field(wash) Blank ID
Containers Filled(primary) VOA and TCL List ID #'s BIS-SS-4
Containers Filled(replicates) List ID #'s

Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, Metals, Cyanide
Physical Appearance and Odor Gravelly soil and petroleum odors

Refrigerated: Time:

Table with 3 columns: Field Tests, Meter ID #, Test Value. Rows include Temperature (C / F), pH, Spec. Conductivity (umhos/cm), Dissolved Oxygen (mg/1), Other. Units column on the right.

Weather: Cloudy, mid 50's
Comments: sample taken near old tank fram.

FIELD SAMPLING RECORD

PROJECT: NYSDEC-Bisonite DATE: 10/26/93
 PROJECT NO.: 35100.400 TIME: 2:20pm
 CLIENT: NYSDEC SITE ID: D002520-3.2
 SAMPLERS: Scott Lawrence of Rust Environment & Infrastructure
 George Moretti Rust Environment & Infrastructure

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment Soil Waste / Other

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum /
Excavation / Boring / Embankment / Surface

Surface: Residential Industrial Commerical / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can /
Peristaltic Pump / Bailer / Core Sampler / Standard Split Spoon/ Hand Auger /
Stainless Spoon Trowel

Sample Type: Point Grab Composite /

Atmospheric Trip Blank ID _____	Field(wash) Blank ID _____
Containers Filled(primary) <u>VOA and TCL</u>	List ID #'s <u>BIS-SS-5</u>
Containers Filled(replicates) _____	List ID #'s _____

Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, Metals, Cyanide

Physical Appearance and Odor Rocky, gravelly soil with paint/petroleum odors.

Refrigerated: _____

Time: _____

Field Tests:

	<u>Meter ID #</u>	<u>Test Value</u>
Temperature (C / F)	_____	_____
pH	_____	_____
Spec. Conductivity (umhos/cm)	_____	_____
Dissolved Oxygen (mg/l)	_____	_____
Other:	_____	_____

Units

Weather: Cloudy, mid 50's

Comments: Sample taken from parking lot near existing auto shop as per NYSDEC request.

FIELD SAMPLING RECORD

PROJECT: NYSDEC-Bisonite DATE: 10/26/93
PROJECT NO.: 35100.400 TIME: 3:10pm
CLIENT: NYSDEC SITE ID: D002520-3.2
SAMPLERS: Scott Lawrence of Rust Environment & Infrastructure
George Moretti Rust Environment & Infrastructure

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment (Soil) Waste /Other

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum /
Excavation / Boring / Embankment (Surface)

Surface: Residential (Industrial) Commerical / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can /
Peristaltic Pump / Bailer / Core Sampler / Standard Split Spoon/ Hand Auger /
Stainless Spoon (Trowel)

Sample Type: Point (Grab) Composite /

Atmospheric Trip Blank ID Field(wash) Blank ID
Containers Filled(primary) VOA and TCL List ID #'s BIS-SS-6
Containers Filled(replicates) VOA and TCL List ID #'s BIS-SS-8

Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, Metals, Cyanide
Physical Appearance and Odor Soil looked and smelled like native soil

Refrigerated: Time:

Table with 3 columns: Field Tests, Meter ID #, Test Value. Rows include Temperature (C / F), pH, Spec. Conductivity (umhos/cm), Dissolved Oxygen (mg/1), Other. Units are listed at the end of the table.

Weather: Cloudy, mid 50's
Comments: Sample taken in area around pipe discharge.

FIELD SAMPLING RECORD

PROJECT: NYSDEC-Bisonite **DATE:** 10/26/93
PROJECT NO.: 35100.400 **TIME:** 3:30pm
CLIENT: NYSDEC **SITE ID:** D002520-3.2
SAMPLERS: Scott Lawrence of Rust Environment & Infrastructure
George Moretti Rust Environment & Infrastructure

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment / Soil Waste / Other

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum /
Excavation / Boring / Embankment Surface

Surface: Residential Industrial Commerical / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can /
Peristaltic Pump / Bailer / Core Sampler / Standard Split Spoon/ Hand Auger /
Stainless Spoon Trowel

Sample Type: Point Grab Composite /

Atmospheric Trip Blank ID _____ **Field(wash) Blank ID** _____
Containers Filled(primary) VOA and TCL **List ID #'s** BIS-SS-7
Containers Filled(replicates) _____ **List ID #'s** _____
Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, Metals, Cyanide
Physical Appearance and Odor 1 inch of native soil, then rubbery colored paint smelling resins.

Refrigerated: _____

Time: _____

Field Tests:

	<u>Meter ID #</u>	<u>Test Value</u>	
Temperature (C / F)	_____	_____	
pH	_____	_____	
Spec. Conductivity (umhos/cm)	_____	_____	
Dissolved Oxygen (mg/l)	_____	_____	
Other:	_____	_____	Units

Weather: Cloudy, mid 50's
Comments: Sample taken near drum storage area.

FIELD SAMPLING RECORD

PROJECT: NYSDEC-Bisonite DATE: 10/26/93
 PROJECT NO.: 35100.400 TIME: 10:20 AM
 CLIENT: NYSDEC SITE ID: D002520-3.2
 SAMPLERS: Scott Lawrence of Rust Environment & Infrastructure
David Rowlinson Rust Environment & Infrastructure

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment / Soil / Waste / Other
Subsurface Soils

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum /
 Excavation Boring Embankment /
 Surface: Residential Industrial Commercial / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can /
 Peristaltic Pump / Bailer / Core Sampler Standard Split Spoon Hand Auger /
 Stainless Spoon/Trowel /

Sample Type: Point Grab / Composite /

Atmospheric Trip Blank ID	<u>-</u>	Field(wash) Blank ID	<u>-</u>
Containers Filled(primary)	<u>3</u>	List ID #'s	<u>BIS-B1-4-6</u>
Containers Filled(replicates)	<u>-</u>	List ID #'s	<u>-</u>

Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, TAL Metals, Cyanide, TCLP(all fractions)

Physical Appearance and Odor _____

Refrigerated: 10/26/93

Time: 10:20am

Field Tests:	<u>Meter ID #</u>	<u>Test Value</u>	
Temperature (C / F)	_____	_____	
pH	_____	_____	
Spec. Conductivity (umhos/cm)	_____	_____	
Dissolved Oxygen (mg/l)	_____	_____	
Other:	_____	_____	Units

Weather: Cloudy, mid 50's

Comments: _____

FIELD SAMPLING RECORD

PROJECT: NYSDEC-Bisonite DATE: 10/26/93
 PROJECT NO.: 35100.400 TIME: 11:10 AM
 CLIENT: NYSDEC SITE ID: D002520-3.2
 SAMPLERS: Scott Lawrence of Rust Environment & Infrastructure
David Rowlinson Rust Environment & Infrastructure

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment / Soil / Waste / Other
Subsurface Soils

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum /
 Excavation Boring Embankment /
 Surface: Residential Industrial Commerical / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can /
 Peristaltic Pump / Bailer / Core Sampler Standard Split Spoon Hand Auger /
 Stainless Spoon/Trowel /

Sample Type: Point Grab Composite /

Atmospheric Trip Blank ID	-	Field(wash) Blank ID	-
Containers Filled(primary)	3	List ID #'s	<u>BIS-B2-6-8</u>
Containers Filled(replicates)	-	List ID #'s	-

Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, TAL Metals, Cyanide, TCLP(all fractions)

Physical Appearance and Odor _____

Refrigerated: 10/26/93

Time: 11:10am

Field Tests:	Meter ID #	Test Value	
Temperature (C / F)	_____	_____	
pH	_____	_____	
Spec. Conductivity (umhos/cm)	_____	_____	
Dissolved Oxygen (mg/l)	_____	_____	
Other:	_____	_____	Units

Weather: Cloudy, mid 50's

Comments: _____

FIELD SAMPLING RECORD

PROJECT:	<u>NYSDEC-Bisonite</u>	DATE:	<u>10/25/93</u>
PROJECT NO.:	<u>35100.400</u>	TIME:	<u>1:00 PM</u>
CLIENT:	<u>NYSDEC</u>	SITE ID:	<u>D002520-3.2</u>
SAMPLERS:	<u>Scott Lawrence</u>	of	<u>Rust Environment & Infrastructure</u>
	<u>David Rowlinson</u>		<u>Rust Environment & Infrastructure</u>

Sample classification: Surface Water / Infiltration Water / Leachate / Sediment / Soil / Waste / Other
Subsurface Soils

Sample From: Stream / River / Lake / Pond / Seep / Lagoon / Tank / Pipe Outfall / Drum /
 Excavation Boring Embankment /

Surface: Residential Industrial Commerical / Other

Sampling Methods: Sampling Bottle: Direct Fill Container / Remote Fill / Dipper Jar/Can /
 Peristaltic Pump / Bailer / Core Sampler Standard Split Spoon Hand Auger /
 Stainless Spoon/Trowel /

Sample Type: Point Grab Composite /

Atmospheric Trip Blank ID	<u>-</u>	Field(wash) Blank ID	<u>-</u>
Containers Filled(primary)	<u>3</u>	List ID #'s	<u>BIS-MW4-2-4</u>
Containers Filled(replicates)	<u>-</u>	List ID #'s	<u>-</u>

Test for: Full TCL, VOA, Semi-VOA, Pest/PCB's, TAL Metals, Cyanide

Physical Appearance and Odor _____

Refrigerated: 10/25/93 **Time:** 1:00 PM

Field Tests:	<u>Meter ID #</u>	<u>Test Value</u>	
Temperature (C / F)	_____	_____	
pH	_____	_____	
Spec. Conductivity (umhos/cm)	_____	_____	
Dissolved Oxygen (mg/l)	_____	_____	
Other:	_____	_____	Units

Weather: Cloudy, mid 50's

Comments: _____

Appendix G
Test Boring Logs



PROJECT BISONITE PAINT PLANT PSA PHASE II					SHEET 1 OF 2	
CLIENT NYSDEC					Project No. D002520-3.2	
DRILLING CONTRACTOR SJB Services, Inc.					MEAS. PT. ELEV.	
PURPOSE Subsurface Investigation					GROUND ELEV.	
DRILLING METHOD Hollow Stem Auger		SAMPLE	CORE	CASING	DATUM MSL	
DRILL RIG TYPE CME-45		TYPE SplitSpoon	NA	HSA	DATE STARTED 10/26/93	
GROUNDWATER ELEV.		DIA. 2.0"	NA	2.5" ID	DATE FINISHED 10/26/93	
MEASURING POINT		WEIGHT 140 #			DRILLER Art Koske	
DATE OF MEASUREMENT		FALL 30"			GEOLOGIST Dave Rowlinson	

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
1	S-1	1			Brown SILT & CLAY, gravelly -Mixed, layered -Brick fragments		HNu=2 ppm REC=1.2 feet Moist
		1					
		3					
2	S-2	7			Brown Silty CLAY -Roots -Light brown white powder		HNu=5 ppm REC=.5 feet Moist
		6					
		4					
3	S-3	4			Brown to red brown SILT & CLAY -Layered, white fragments -Fibrous 1/8" thick dried resin in spoon shoe=700 ppm		HNu=3 ppm REC=1.4 feet Moist
		4					
		4					
4	S-4	2			Black, grey, white, Silver RESIN -Odor (FILL)		HNu=300 ppm REC=1.7 feet Moist to Wet
		3					
		3					
5	S-5	2	ML		Brown red Silty CLAY, gravelly -Decreasing HNu readings with depth -HNu=100 ppm in shoe (TILL)	8.0	HNu=300 ppm REC=2.0 feet Moist
		9					
		14					
6	S-5	16					
		18					
		21					
7		23					



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TEST BORING LOG

BORING No. B-1

PROJECT **BISONITE PAINT PLANT PSA PHASE II**

SHEET **2 OF 2**

CLIENT **NYSDEC**

Project No. **D002520-3.2**

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
12	S-6		ML		Brown red Silty CLAY, gravelly (TILL)		HNu=1 ppm REC=2.0 feet Moist
					End of boring Total depth=12.0 feet Boring backfilled with grout	12.0	



PROJECT	BISONITE PAINT PLANT PSA PHASE II				SHEET 1 OF 2	
CLIENT	NYSDEC				Project No. D002520-3.2	
DRILLING CONTRACTOR	SJB Services, Inc.				MEAS. PT. ELEV.	
PURPOSE	Subsurface Investigation				GROUND ELEV.	
DRILLING METHOD	Hollow Stem Auger	SAMPLE	CORE	CASING	DATUM MSL	
DRILL RIG TYPE	CME-45	TYPE	SplitSpoon	NA	HSA	DATE STARTED 10/26/93
GROUNDWATER ELEV.		DIA.	2.0"	NA	2.5" ID	DATE FINISHED 10/26/93
MEASURING POINT		WEIGHT	140 #			DRILLER Art Koske
DATE OF MEASUREMENT		FALL	30"			GEOLOGIST Dave Rowlinson

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6'	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
1	S-1	1	ML		Brown grey white red SILT, gravelly -White fragments and powder -Roots		HNu=Background REC=1.1 feet Moist
		2					
2	S-2	2			Brown red SILT, gravelly -Blue powdery dry resin chunk		HNu=Background REC=.8 feet Moist
		3					
		8					
4	S-3	9			Brown red SILT & CLAY -Layered -Spoon shoe: Black wood, red brick, maximum of 90 ppm (FILL)		HNu=90 ppm REC=.6 feet Moist to Wet
		2					
		3					
6	S-4	2			Grey brown red RESIN -Paint sheen -Resin is rubbery grey yellow waste		HNu=400 ppm REC=.7 feet Moist to Wet
		3					
		5					
8	S-5	10			Brown red Silty CLAY, gravelly -Fine Gravel (TILL)		HNu=5 ppm REC=2.0 feet Moist to Wet
		50					
		50					
8.3	S-5	6			End of boring, boring backfilled with grout		Total depth=10.0 feet
		14					
		17					
10		17					



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TEST BORING LOG

BORING No. MW-1

PROJECT	BISONITE PAINT PLANT PSA PHASE II				SHEET 1 OF 2
CLIENT	NYSDEC				Project No. D002520-3.2
DRILLING CONTRACTOR	SJB Services, Inc.				MEAS. PT. ELEV. 616.12
PURPOSE	Groundwater Monitoring				GROUND ELEV. 614.1'
DRILLING METHOD	Hollow Stem Auger	SAMPLE	CORE	CASING	DATUM MSL
DRILL RIG TYPE	CME-45	TYPE	SplitSpoon	NA	HSA
GROUNDWATER ELEV.	608.79'	DIA.	2.0"	NA	4" ID
MEASURING POINT	Top of Casing	WEIGHT	140 #		DRILLER Art Koske
DATE OF MEASUREMENT	12/10/93	FALL	30"		GEOLOGIST Dave Rowlinson

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6'	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
2	S-1	2	ML		Dark brown organic SILT	613.8	HNu=Background REC=1.5 feet Dry
		10			Brown red Silty CLAY, gravelly -Subangular gravel	0.3	
2	S-2	10	ML		Brown red grey Silty CLAY, gravelly -Medium to fine subangular gravel (TILL)		HNu=Background REC=1.0 feet Moist
		9					
		8					
		12					
4	S-3	16	CL		Brown red Sandy SILT -Fine Sand Brown red CLAY	609.6	HNu=Background REC=1.6 feet Wet
		4				4.5	
		7				609.1	
6	S-4	10	MH		Brown red Sandy SILT -Fine Sand	5.0	HNu=Background REC=2.0 feet Wet
		15				5.4	
		21					
		18					
		20					
8	S-5	27	SM		Brown Silty Sand		HNu=Background REC=1.5 feet Wet
		8					
		14					
		16					
		20					



PROJECT **BISONITE PAINT PLANT PSA PHASE II**

SHEET **2 OF 2**

CLIENT **NYSDEC**

Project No. **D002520-3.2**

DEPTH FT.	INTERVAL RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
12	S-6	3	SM		Brown Silty Sand -Fine Sand		HNu=Background REC=1.7 feet Wet
		14					
		19					
		22					
14	S-7	35	SM		Brown Silty Sand -Fine Sand (TILL)		HNu=Background REC=2.0 feet Wet
		45					
		47					
		68					
16	S-8	4	CL		Brown Silty Sand -Fine Sand	599.6 14.5	HNu=Background REC=1.7 feet Wet
		6					
		10					
		18					
18	S-9	27	MH		Brown Sandy SILT	598.1 16.0	HNu=Background REC=2.0 feet Wet
		37					
		55					
		85					
20	S-10	19	MH		Brown Sandy SILT		HNu=Background REC=2.0 feet Wet
		31					
		20					
		12					
20					End of boring Total depth=20 feet Monitoring well MW-1 was installed at completion of boring.	594.1 20.0	



PROJECT	BISONITE PAINT PLANT PSA PHASE II				SHEET 1 OF 3
CLIENT	NYSDEC				Project No. D002520-3.2
DRILLING CONTRACTOR	SJB Services, Inc.				MEAS. PT. ELEV. 618.08
PURPOSE	Groundwater Monitoring				GROUND ELEV. 616.2'
DRILLING METHOD	Hollow Stem Auger	SAMPLE	CORE	CASING	DATUM MSL
DRILL RIG TYPE	CME-45	TYPE	SplitSpoon	NA	HSA
GROUNDWATER ELEV.	607.45'	DIA.	2.0"	NA	4" ID
MEASURING POINT	Top of Casing	WEIGHT	140 #		DRILLER Art Koske
DATE OF MEASUREMENT	12/10/93	FALL	30"		GEOLOGIST Dave Rowlinson

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS			
1	S-1	1	ML		Dark brown organic SILT	615.9	HNu=Background REC=1.3 feet Moist			
		2			Brown grey white yellow SILT -Glass, metal fragments -Red streaking(possible paint) (FILL)	0.3				
2	S-2	1				Brown red SILT, gravelly -Subangular to subrounded medium fine gravel -Misplaced TILL(soft)	612.2	HNu=Background REC=2.0 feet Moist		
		3								
		5								
4	S-3	10					Brown red Silty CLAY, gravelly -Harder	4.0	HNu=Background REC=2.0 feet Moist	
		9								
		11								
		12								
6	S-4	17						Brown red Silty CLAY, gravelly -Subangular gravel, medium to fine (TILL)		HNu=Background REC=2.0 feet Moist
		16								
		20								
		22								
8		17		Brown Silty CLAY, gravelly -Subangular gravel, medium to fine					HNu=Background REC=2.0 feet Moist	
		22								
		17								
		22								



PROJECT **BISONITE PAINT PLANT PSA PHASE II**

SHEET 2 OF 3

CLIENT **NYSDEC**

Project No. **D002520-3.2**

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
12	S-6	5	ML		Brown Silty CLAY, gravelly -Medium-fine subangular		HNu=Background REC=2.0 feet Moist to Wet
		10					
		10					
14	S-7	15	ML		Brown Silty CLAY, gravelly (TILL)		HNu=Background REC=2.0 feet Moist to Wet
		10					
		16					
16	S-8	20	SM		Brown Silty CLAY, gravelly		HNu=Background REC=1.7 feet Wet
		3					
		4					
18	S-9	10	SM		Brown Silty SAND -Fine Sand(wet)	601.2 15.0	
		10					
		10					
20	S-10	10	SM		Brown Silty SAND -Fine Sand		HNu=Background REC=2.0 feet Wet
		13					
		18					
22	S-11	17	CL		Brown Silty SAND -Fine Sand		HNu=Background REC=1.3 feet Wet
		17					
		19					
22		17	CL		Brown Silty SAND		HNu=Background REC=1.7 feet Wet
		6					
		6					
22		6	CL		Brown Silty CLAY	595.5 20.7 595.0 21.2	
		12					
		18					
22		10			Brown Silty SAND -Fine Sand		



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TEST BORING LOG


BORING No. MW-2

PROJECT **BISONITE PAINT PLANT PSA PHASE II**

SHEET **3** OF **3**

CLIENT **NYSDEC**

Project No. **D002520-3.2**

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
24	S-12	10	SM			592.2	HNu=Background REC=2.0 feet Wet
		15					
		15					
					End of boring Total depth=24.0 feet Monitoring well MW-2 was installed at completion of boring.	24.0	



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TEST BORING LOG

BORING No. MW-3

PROJECT	BISONITE PAINT PLANT PSA PHASE II				SHEET 1 OF 2
CLIENT	NYSDEC				Project No. D002520-3.2
DRILLING CONTRACTOR	SJB Services, Inc.				MEAS. PT. ELEV. 616.76
PURPOSE	Groundwater Monitoring				GROUND ELEV. 614.5'
DRILLING METHOD	Hollow Stem Auger	SAMPLE	CORE	CASING	DATUM MSL
DRILL RIG TYPE	CME-45	TYPE	SplitSpoon	NA	HSA
GROUNDWATER ELEV.	608.01'	DIA.	2.0"	NA	4" ID
MEASURING POINT	Top of Casing	WEIGHT	140 #		DRILLER Art Koske
DATE OF MEASUREMENT	12/10/93	FALL	30"		GEOLOGIST Dave Rowlinson

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
		1			Dark brown organic SILT	614.2	HNu=Background REC=.9 feet Dry
	S-1	5	ML		Brown Silty CLAY, gravelly -Subangular gravel	0.3	
		5					
2		5					
	S-2	5	ML		Brown Silty CLAY, gravelly -Fine, subangular gravel		HNu=Background REC=1.2 feet Dry
		4					
		10					
4		11					
	S-3	2	ML		Red brown grey Silty CLAY, gravelly -Subangular Gravel		HNu=Background REC=1.6 feet Moist
		10			(TILL)		
		11					
6		10					
	S-4	19	ML		Brown red grey Silty CLAY, gravelly		HNu=Background REC=2.0 feet Moist
		18					
		28					
8		35					
	S-5	6	ML		Brown red grey Silty CLAY, gravelly -Fine Gravel		HNu=Background REC=2.0 feet Moist
		10					
		14					
		19					



PROJECT **BISONITE PAINT PLANT PSA PHASE II**

SHEET **2 OF 2**

CLIENT **NYSDEC**

Project No. **D002520-3.2**

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
12	S-6	5	ML		Brown red grey Silty CLAY, gravelly -Subangular Gravel		HNu=Background REC=2.0 feet Moist
		12					
		17					
14	S-7	20	ML		Brown Silty CLAY, gravelly -Medium fine subangular Gravel		HNu=Background REC=2.0 feet Moist
		16					
		20					
16	S-8	15	ML		Brown Silty CLAY, gravelly -Cobbles, subangular Gravel		HNu=Background REC=1.9 feet Moist
		5					
		13					
18	S-9	17	ML		Brown Silty CLAY, gravelly -Subangular fine Gravel (TILL)		HNu=Background REC=2.0 feet Moist
		16					
		11					
20	S-10	12	ML		Brown Silty CLAY, gravelly -Fine Gravel, soft		HNu=Background REC=1.8 feet Moist to Wet
		2					
		3					
22	S-11	2	ML		Brown Silty CLAY, gravelly -Fine Gravel, soft		HNu=Background REC=2.0 feet Moist to Wet
		3					
		3					
		WOH					
		1					
		3					
		3			End of boring, MW-3 was installed	592.5	
					Total depth=22.0 feet	22.0	



DUNN Geoscience Engineering Co.
Amherst, NY 14228 (716)691-3868

TEST BORING LOG

BORING No. MW-4

PROJECT BISONITE PAINT PLANT PSA PHASE II					SHEET 1 OF 2	
CLIENT NYSDEC					Project No. D002520-3.2	
DRILLING CONTRACTOR SJB Services, Inc.					MEAS. PT. ELEV. 613.74	
PURPOSE Groundwater Monitoring					GROUND ELEV. 613.0'	
DRILLING METHOD Hollow Stem Auger		SAMPLE	CORE	CASING	DATUM MSL	
DRILL RIG TYPE CME-45		TYPE SplitSpoon	NA	HSA	DATE STARTED 10/25/93	
GROUNDWATER ELEV. 602.94'		DIA. 2.0"	NA	4" ID	DATE FINISHED 10/25/93	
MEASURING POINT Top of Casing		WEIGHT 140 #			DRILLER Art Koske	
DATE OF MEASUREMENT 12/10/93		FALL 30"			GEOLOGIST Dave Rowlinson	

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS		
2	S-1	2	ML		Dark brown organic SILT	612.7	HNu=Background REC=1.1 feet Dry		
		5			Dark brown SILT, gravelly -Cinders, charcoal	0.3			
2	S-2	4			(FILL)	611.4	HNu=Background REC=1.4 feet Dry		
		6			Red brown Silty CLAY, gravelly -Medium fine subangular Gravel	1.6			
		8							
		7							
4	S-3	10			ML		Red brown grey Silty CLAY, gravelly -Medium fine subangular Gravel		HNu=Background REC=1.8 feet Dry
		12							
		14					(TILL)		
		18							
6	S-4	16	ML		Red brown grey Silty CLAY, gravelly -Medium fine subangular Gravel		HNu=Background REC=2.0 feet Dry		
		15							
		16							
		18							
8	S-5	17	ML		Red brown Silty Clay, gravelly -Fine Gravel		HNu=Background REC=2.0 feet Dry		
		6							
		10							
		16							
		19							



PROJECT **BISONITE PAINT PLANT PSA PHASE II**

SHEET **2** OF **2**

CLIENT **NYSDEC**

Project No. **D002520-3.2**

DEPTH FT.	INTERVAL, RECOVERY, SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	GEOLOGIC DESCRIPTION	ELEV. DEPTH	REMARKS
12	S-6	3	ML		Brown Silty CLAY, gravelly -Fine Gravel		HNu=Background REC=2.0 feet Moist
		8					
		14					
		14					
14	S-7	18	ML		Brown Silty CLAY, gravelly -Subangular to subrounded Gravel		HNu=Background REC=2.0 feet Moist to Wet
		17					
		18					
		19					
16	S-8	1	ML		Brown Silty CLAY, gravelly -Fine Gravel (TILL)		HNu=Background REC=.9 feet Wet
		2					
		6					
		6					
18	S-9	6	ML		Brown Silty CLAY, gravelly -Medium fine subrounded Gravel		HNu=Background REC=2.0 feet Wet
		14					
		6					
		6					
20	S-10	6	ML		Brown Silty CLAY, gravelly		HNu=Background REC=1.4 feet Wet
		3					
		4					
		3					
22	S-11	2	ML		Brown Silty CLAY, gravelly -Medium fine to subangular Gravel		HNu=Background REC=1.5 feet Wet
		1					
		2					
		2					
22					End of boring, MW-4 was installed	591.0	
					Total depth=22 feet	22.0	

Appendix H
Monitoring Well Diagrams

MONITORING WELL LOG

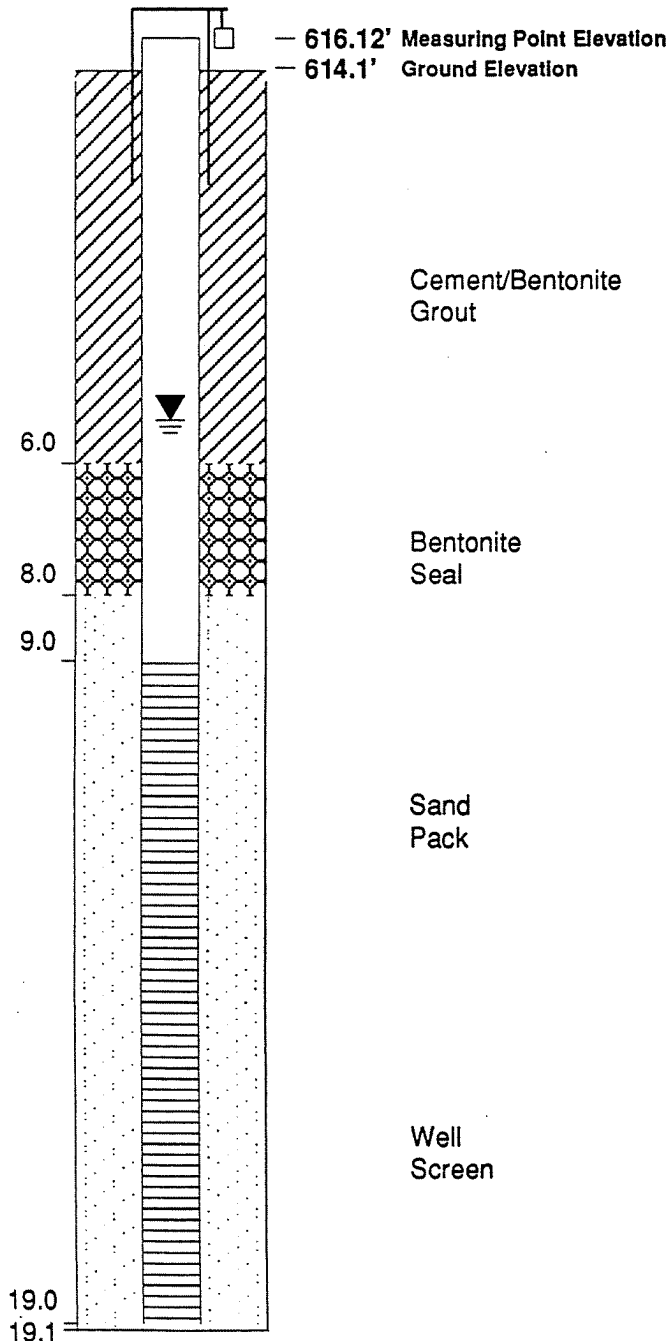


DUNN GEOSCIENCE ENGINEERING CO.
 Amherst, NY 14228
 (716) 691-3866

WELL NO. MW-1

Project BISONITE PAINT PLANT PSA PHASE II
 Client NYSDEC
 Location 2250 Military Road
 Wk. Assign. No. D002520-3.2
 Date Drilled 10/21/93 to 10/21/93
 Date Developed 10/27/93 - 11/1/93

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Geologist Dave Rowlinson
 Drilling Contractor SJB Services, Inc.
 Type of Well Monitoring Well
 Static Water Level Elev. 608.79' Date 12/10/93
 Measuring Point (M.P.) Top of Casing
 Total Depth of Well 19.1'
 Total Depth of Boring 20.0'
 Drilling Method
 Type Hollow Stem Auger Diameter 4" ID
 Casing HSA
 Sampling Method
 Type Split Spoon Diameter 2.0"
 Weight 140 # Fall 30"
 Interval Continuous
 Riser Pipe Left in Place
 Material Sch 40 PVC Diameter 2.0"
 Joint Type Flush Length 12.5'
 Screen
 Material Sch 40 PVC Diameter 2.0"
 Slot Size .010" Length 10.0'
 Strat. Unit Screened Till
 Filter Pack
 Sand X Gravel ____ Natural ____
 Grade Morle O
 Amount 300 pounds Interval 19.1'-8.0'
 Seal(s)
 Type Bentonite pellets Interval 8.0'-6.0'
 Type Cement/Benton grout Interval 6.0'-0.0'
 Type ____ Interval ____
 Locking Casing Yes

Notes:

MONITORING WELL LOG

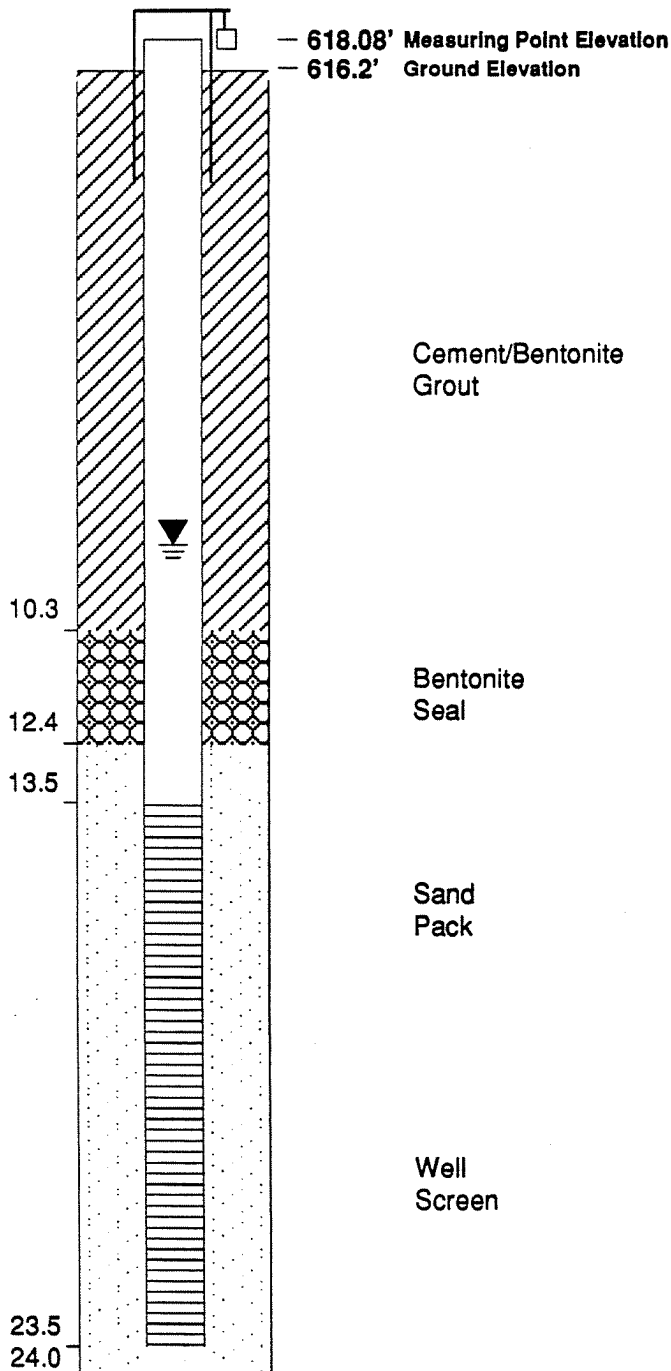


DUNN GEOSCIENCE ENGINEERING CO.
 Amherst, NY 14228
 (716) 891-3868

WELL NO. MW-2

Project BISONITE PAINT PLANT PSA PHASE II
 Client NYSDEC
 Location 2250 Military Road
 Wk.Assign.No. D002520-3.2
 Date Drilled 10/22/93 to 10/22/93
 Date Developed 10/27/93 - 10/28/93

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Geologist Dave Rowlinson
 Drilling Contractor SJB Services, Inc.
 Type of Well Monitoring Well
 Static Water Level Elev. 607.45' Date 12/10/93
 Measuring Point (M.P.) Top of Casing
 Total Depth of Well 24.0'
 Total Depth of Boring 24.0'
 Drilling Method
 Type Hollow Stem Auger Diameter 4" ID
 Casing HSA
 Sampling Method
 Type Split Spoon Diameter 2.0"
 Weight 140 # Fall 30"
 Interval Continuous
 Riser Pipe Left in Place
 Material Sch 40 PVC Diameter 2.0"
 Joint Type Flush Length 15.5'
 Screen
 Material Sch 40 PVC Diameter 2.0"
 Slot Size .010" Length 10.0'
 Strat. Unit Screened Till
 Filter Pack
 Sand X Gravel Natural
 Grade Morie O
 Amount 275 pounds Interval 24.0'-12.4'
 Seal(s)
 Type Bentonite pellets Interval 12.4'-10.3'
 Type Cement/Benton grout Interval 10.3'-0.0'
 Type Interval
 Locking Casing Yes

Notes:

MONITORING WELL LOG



DUNN GEOSCIENCE ENGINEERING CO.

Amherst, NY 14228

(716) 691-3866

WELL NO. MW-3

Project BISONITE PAINT PLANT PSA PHASE II

Client NYSDEC

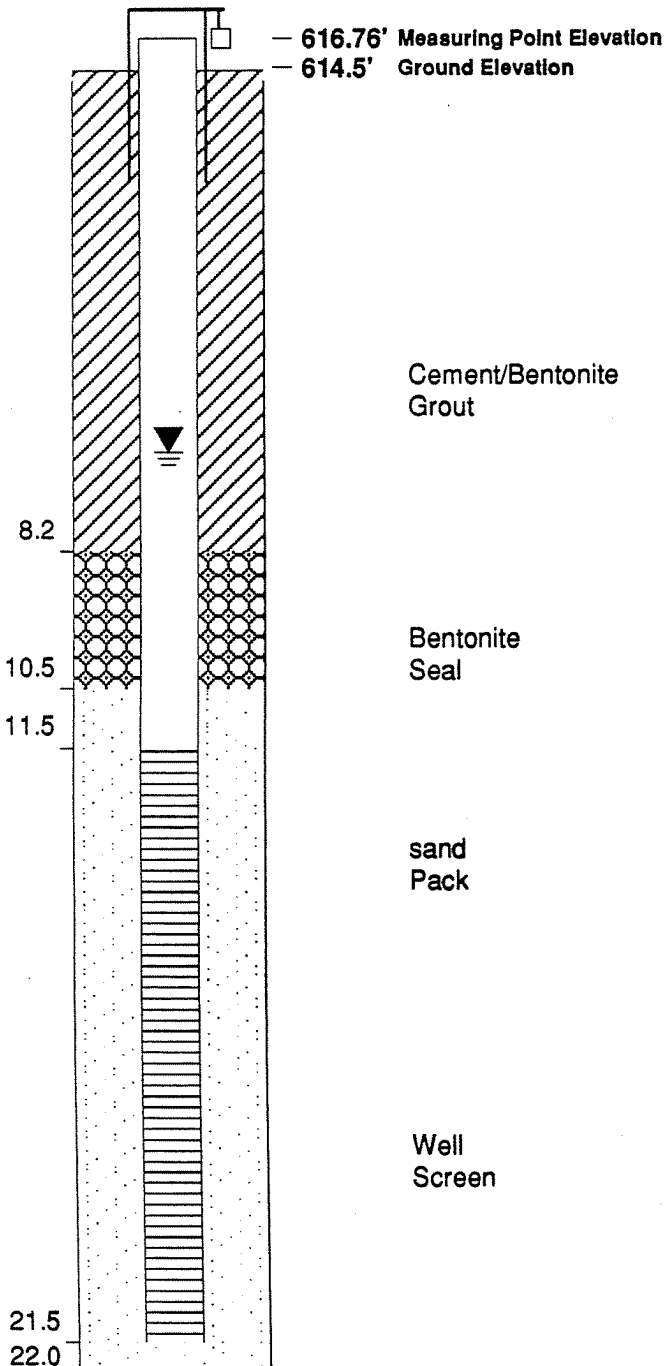
Location 2250 Military Road

Wk.Assign.No. D002520-3.2

Date Drilled 10/22/93 to 10/25/93

Date Developed 10/27/93 - 10/29/93

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Geologist Dave Rowlinson

Drilling Contractor SJB Services, Inc.

Type of Well Monitoring Well

Static Water Level Elev. 608.01' Date 12/10/93

Measuring Point (M.P.) Top of Casing

Total Depth of Well 22.0'

Total Depth of Boring 22.0'

Drilling Method

Type Hollow Stem Auger Diameter 4" ID

Casing HSA

Sampling Method

Type Split Spoon Diameter 2.0"

Weight 140 # Fall 30"

Interval Continuous

Riser Pipe Left in Place

Material Sch 40 PVC Diameter 2.0"

Joint Type Flush Length 14.0'

Screen

Material Sch 40 PVC Diameter 2.0"

Slot Size .010" Length 10.0'

Strat. Unit Screened Till

Filter Pack

Sand X Gravel Natural

Grade Morie O

Amount 300 pounds Interval 22.0'-10.5'

Seal(s)

Type Bentonite pellets Interval 10.5'-8.2'

Type Cement/Benton grout Interval 8.2'-0.0'

Type Interval

Locking Casing Yes

Notes:

MONITORING WELL LOG



DUNN GEOSCIENCE ENGINEERING CO.

Amherst, NY 14228

(716) 691-3866

WELL NO. MW-4

Project BISONITE PAINT PLANT PSA PHASE II

Client NYSDEC

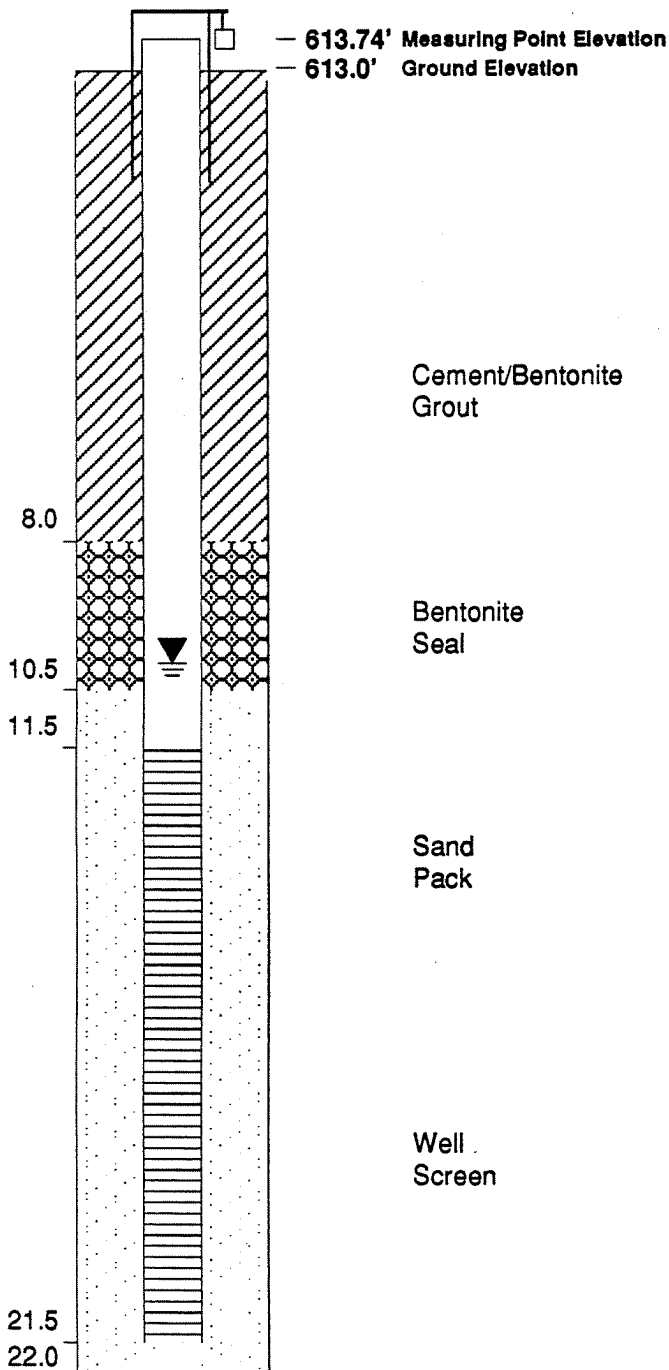
Location 2250 Military Road

Wk. Assign. No. D002520-3.2

Date Drilled 10/25/93 to 10/25/93

Date Developed _____

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Geologist Dave Rowlinson

Drilling Contractor SJB Services, Inc.

Type of Well Monitoring Well

Static Water Level Elev. 602.94' Date 12/10/93

Measuring Point (M.P.) Top of Casing

Total Depth of Well 22.0'

Total Depth of Boring 22.0'

Drilling Method

Type Hollow Stem Auger Diameter 4" ID

Casing HSA

Sampling Method

Type Split Spoon Diameter 2.0"

Weight 140 # Fall 30"

Interval Continuous

Riser Pipe Left in Place

Material Sch 40 PVC Diameter 2.0"

Joint Type Flush Length 12.5'

Screen

Material Sch 40 PVC Diameter 2.0"

Slot Size .010" Length 10.0'

Strat. Unit Screened Till

Filter Pack

Sand X Gravel _____ Natural _____

Grade Morie O

Amount 275 pounds Interval 22.0'-10.5'

Seal(s)

Type Bentonite pellets Interval 10.5'-8.0'

Type Cement/Benton grout Interval 8.0'-0.0'

Type _____ Interval _____

Locking Casing Yes

Notes:

Appendix I
Well Development/Sampling Logs

WELL DEVELOPMENT LOG

DUNN GEOSCIENCE ENGINEERING CO. P.C.
 12 Metro Park Rd.
 Albany, N.Y. 12205 (518)458-1313

Well I.D.: MW-1
 Project Name: NYSDEC-Bissonite
 Project No.: 35100.400
 Personnel: SRL
 Date: 10/27/93 10/28/93
 Time Start: 10:40am 10:50am
 Time Finish: 12:00pm 11:30am

WELL INFORMATION

Wellscreen Diameter: 2"
 Borehole Diameter: 4"
 Depth to Water: 5.38'
 Total Well Depth: 20.50'
 Well Volume: 2.06gal

Riser Diameter: 2"
 Stratigraphic Unit Screened: Till
 Development Method: Suction lift pump
 Decon. Procedures: Dedicated equipment
 Total Volume Removed: 20 gal
 Flow Rate: -

DEVELOPMENT INFORMATION

Gallons Evacuated

Parameters	Gallons Evacuated						
	0	5	8	8	13	18	20
pH	7.42	7.72	7.80	7.55	7.52	7.50	7.51
Conductivity (mhos/cm)	478	572	636	736	831	949	903
Temperature (C)	13.1	13	12.9	12.7	12.9	12.7	13.2
Turbidity (NTU)	>200	>200	>200	>200	>200	>200	>200
Color	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Odor	None	None	None	None	None	None	None

Comments: 10/27- Pump was primed for the first 5 gallons and then got clogged, 8 gal. were pumped out, water was very dark and dirty.

10/28- Water level @ 5.40 feet before pumping, 12 gallons were pumped out, water was very dirty and cloudy.

WELL DEVELOPMENT LOG

DUNN GEOSCIENCE ENGINEERING CO. P.C.
 12 Metro Park Rd.
 Albany, N.Y. 12205 (518)458-1313

Well I.D.: MW-2
 Project Name: NYSDEC-Bissonite
 Project No.: 35100.400
 Personnel: SRL
 Date: 10/27/93 10/28/93
 Time Start: 1:00pm 10:30am
 Time Finish: 2:30pm 10:45am

WELL INFORMATION

Wellscreen Diameter: 2"
 Borehole Diameter: 4"
 Depth to Water: 8.60'
 Total Well Depth: 26.0'
 Well Volume: 2.37gal

Riser Diameter: 2"
 Stratigraphic Unit Screened: Till
 Development Method: Suction lift pump
 Decon. Procedures: Dedicated equipment
 Total Volume Removed: 24 gal
 Flow Rate: -

DEVELOPMENT INFORMATION

Parameters	Gallons Evacuated						
	0	5	10	15	19	19	24
pH	8.38	7.49	7.32	7.39	7.49	7.54	7.44
Conductivity (mhos/cm)	592	824	1062	1141	1150	1167	1088
Temperature (C)	13.7	13.4	12.5	11.8	11.9	12	11.9
Turbidity (NTU)	>200	>200	>200	>200	>200	139.0	>200
Color	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy
Odor	None	None	None	None	None	None	None

Comments: 10/27- Pump out 19 gallons, water was a cloudy grey color, will pump out 5 more gallons tommorrow.

10/28- Water level before pumping @ 8.90 feet, pumped 5 gallons in 10 minutes, water was clearer, but it was still cloudy.

WELL DEVELOPMENT LOG

DUNN GEOSCIENCE ENGINEERING CO. P.C.
 12 Metro Park Rd.
 Albany, N.Y. 12205 (518)458-1313

Well I.D.: MW-3
 Project Name: NYSDEC-Bissonite
 Project No.: 35100.400
 Personnel: SRL
 Date: 10/27/93 10/28/93
 Time Start: 2:45pm 12:15pm
 Time Finish: 4:00pm 1:00pm

WELL INFORMATION

Wellscreen Diameter: 2"
 Borehole Diameter: 4"
 Depth to Water: 11.6'
 Total Well Depth: 24.1'
 Well Volume: 1.7 gal

Riser Diameter: 2"
 Stratigraphic Unit Screened: Till
 Development Method: Suction lift pump
 Decon. Procedures: Dedicated equipment
 Total Volume Removed: 17 gal
 Flow Rate: -

DEVELOPMENT INFORMATION

Parameters	Gallons Evacuated						
	0	5	8	8	12	12	17
pH	7.35	7.44	7.47	7.59	7.40	7.85	7.79
Conductivity (mhos/cm)	987	1236	1208	1189	1209	1256	1269
Temperature (C)	12.6	12.6	12.5	11.7	11	12.5	12.3
Turbidity (NTU)	81.6	136.3	>200	92.6	74.8	73.8	>200
Color	Clear	Cloudier	Cloudy	Clear	Clear	Clear	Cloudy
Odor	None	None	None	None	None	None	None

Comments: 10/27-Well did not recharge very fast, will let sit overnight and will try to pump out 9 gallons
10/28- Water level @17.0' before pumping, pumped well to 23.00 feet pumped about
4 gallons out
10/29- Water level @16.4' before pumping, pumped out 5 gallons

WELL DEVELOPMENT LOG

DUNN GEOSCIENCE ENGINEERING CO. P.C.
 12 Metro Park Rd.
 Albany, N.Y. 12205 (518)458-1313

Well I.D.: MW-4
 Project Name: NYSDEC-Bissonite
 Project No.: 35100.400
 Personnel: SRL
 Date: 10/27/93-11/4/93
 Time Start: _____
 Time Finish: _____

WELL INFORMATION

Wellscreen Diameter: 2"
 Borehole Diameter: 4"
 Depth to Water: _____
 Total Well Depth: 22.75'
 Well Volume: _____

Riser Diameter: 2"
 Stratigraphic Unit Screened: Till
 Development Method: Suction lift pump
 Decon. Procedures: Dedicated equipment
 Total Volume Removed: _____
 Flow Rate: -

DEVELOPMENT INFORMATION

Parameters	Gallons Evacuated					
	0	4				
pH	7.58	7.57				
Conductivity (mhos/cm)	794	816				
Temperature (C)	11.3	10.9				
Turbidity (NTU)	>200	>200				
Color	Cloudy	Cloudy				
Odor	None	None				

Comments: 10/28- Only 1.25 feet of water in well, pumped well dry, about 1/2 gallon

11/1- No water in well, not able to pumped any water

11/2- Dumped 4 gallons of Deionized water into well in effort to recharge it, water level about 16 feet.

11/3- Baled well dry, about 4 gallons

DUNN GEOSCIENCE CORPORATION
Well Sampling Record

Sample ID	<u>BIS-MW-1</u>	Date	<u>11/4/93</u>
Location	<u>BISONITE</u>	Project	<u>Bisonite</u>
Samplers	<u>Scott Lawrence</u>	Project #	<u>35100.400</u>
	<u>George Moretti</u>	Well Size/Type	<u>2" PVC</u>
Client	<u>NYSDEC</u>		

I. WATER LEVEL MEASUREMENTS (from top of casing) IN FEET:

Total Well Depth	<u>20.50'</u>	Gals to Purge	<u>6.66 gal</u>
Depth to Water	<u>4.17'</u>	Gals Actually Purged	<u>7.0 gal</u>
Height of Water Column	<u>16.35'</u>	Gals/ft: 2"ID=0.16	4"ID=0.65 6"ID=1.47
Gals of Standing Water	<u>2.22 gal</u>		

II. WELL PURGING: Start 10:45 AM Stop 11:00am Discharge Rate (GPM) _____
 Equipment: Pump _____ Bailer 3' by 1.25" PVC
 Well behavior during purging: Good recharge

III. SAMPLE COLLECTION: Time 1:30pm ID# BIS-MW-1
 Method Bailer 3' by 1.25" PVC Other _____
 Containers 6 VOA, 3 .5 gallon, 3 1 liter, 1 500 ml
 Sample Appearance and Odor Brown cloudy sample with no odors noticed

IV. FIELD MEASUREMENTS:

	<u>5 gal</u>	<u>Sample</u>	_____	_____
Temp	<u>12.2</u>	<u>12.1</u>	_____	_____
pH	<u>7.44</u>	<u>7.6</u>	_____	_____
Conductivity	<u>982</u>	<u>944</u>	_____	_____
Turbidity	<u>>200</u>	<u>>200</u>	_____	_____
	<u>Brown</u>	<u>Brown</u>	_____	_____
	<u>Cloudy</u>	<u>Cloudy</u>	_____	_____

Weather Windy, cloudy, low 50's
 Comments Pumped water level to 10.25', sample taken when well was at 4.21 feet

DUNN GEOSCIENCE CORPORATION
Well Sampling Record

Sample ID	<u>BIS-MW-2</u>	Date	<u>11/4/93</u>
Location	<u>BISONITE</u>	Project	<u>Bisonite</u>
Samplers	<u>Scott Lawrence</u>	Project #	<u>35100.400</u>
	<u>George Moretti</u>	Well Size/Type	<u>2" PVC</u>
Client	<u>NYSDEC</u>		

I. WATER LEVEL MEASUREMENTS (from top of casing) IN FEET:

Total Well Depth	<u>22.75'</u>	Gals to Purge	<u>7.5 gal</u>
Depth to Water	<u>7.42'</u>	Gals Actually Purged	<u>7.5 gal</u>
Height of Water Column	<u>18.33'</u>	Gals/ft: 2"ID=0.16	4"ID=0.65 6"ID=1.47
Gals of Standing Water	<u>2.49 gal</u>		

II. WELL PURGING: Start 10:10am Stop 10:30am Discharge Rate (GPM) _____
 Equipment: Pump _____ Bailer 3' by 1.25" PVC
 Well behavior during purging: Well is recharging very well, no pumping problems encountered

III. SAMPLE COLLECTION: Time 2:30pm ID# BIS-MW-2
 Method Bailer 3' by 1.25" PVC Other _____
 Containers 2 VOA, 1 .5 gallon, 1 1 liter, 1 500 ml
 Sample Appearance and Odor Moderately cloudy brown, no odor

IV. FIELD MEASUREMENTS:

	<u>0 gal</u>	<u>5 gal</u>	<u>7.5 gal</u>	<u>Sample</u>
Temp	<u>11.2</u>	<u>11.7</u>	<u>11.0</u>	<u>12.0</u>
pH	<u>7.53</u>	<u>7.48</u>	<u>7.46</u>	<u>7.58</u>
Conductivity	<u>1081</u>	<u>1100</u>	<u>1092</u>	<u>1175</u>
Turbidity	<u>124.4</u>	<u>>200</u>	<u>>200</u>	<u>>200</u>
	<u>Brown</u>	<u>Brown</u>	<u>Brown</u>	<u>Brown</u>
	<u>Partly cloudy</u>	<u>Cloudy</u>	<u>Cloudy</u>	<u>Cloudy</u>

Weather Windy, cloudy, low 50's
 Comments Purged well down to 17.21 feet, sampled well at 8.80 feet

DUNN GEOSCIENCE CORPORATION
Well Sampling Record

Sample ID	<u>BIS-MW-3</u>	Date	<u>11/4/93</u>
Location	<u>BISONITE</u>	Project	<u>Bisonite</u>
Samplers	<u>Scott Lawrence</u>	Project #	<u>35100.400</u>
	<u>George Moretti</u>	Well Size/Type	<u>2" PVC</u>
Client	<u>NYSDEC</u>		

I. WATER LEVEL MEASUREMENTS (from top of casing) IN FEET:

Total Well Depth	<u>24.92'</u>	Gals to Purge	<u>8.22gal</u>
Depth to Water	<u>4.75'</u>	Gals Actually Purged	<u>8.0gal</u>
Height of Water Column	<u>20.17'</u>	Gals/ft: 2"ID=0.16	4"ID=0.65 6"ID=1.47
Gals of Standing Water	<u>2.74gal</u>		

II. WELL PURGING: Start 11:15am Stop 12:00pm Discharge Rate (GPM) _____
 Equipment: Pump _____ Bailer 3' by 1.25" PVC
 Well behavior during purging: Slow recharge, pumped well to virtual dryness

III. SAMPLE COLLECTION: Time 2:00pm ID# BIS-MW-3
 Method Bailer 3' by 1.25" PVC Other _____
 Containers 2 VOA, 1 .5 gallon, 1 1 liter, 1 500 ml
 Sample Appearance and Odor Slightly turbid brown

IV. FIELD MEASUREMENTS:

	<u>5 gal</u>	<u>Sample</u>		
Temp	<u>11.5</u>	<u>11.6</u>		
pH	<u>7.40</u>	<u>7.55</u>		
Conductivity	<u>1294</u>	<u>1303</u>		
Turbidity	<u>100.4</u>	<u>-</u>		
	<u>Brown</u>	<u>Brown</u>		
	<u>Partly cloudy</u>	<u>Partly cloudy</u>		

Weather Windy, cloudy, low 50's
 Comments Pumped well to almost dryness, sampled well at 19.38 feet

DUNN GEOSCIENCE CORPORATION
Well Sampling Record

Sample ID	<u>BIS-MW-4</u>	Date	<u>11/4,8/1993</u>
Location	<u>BISONITE</u>	Project	<u>Bisonite</u>
Samplers	<u>Scott Lawrence</u>	Project #	<u>35100.400</u>
	<u>George Moretti</u>	Well Size/Type	<u>2" PVC</u>
Client	<u>NYSDEC</u>		

I. WATER LEVEL MEASUREMENTS (from top of casing) IN FEET:

Total Well Depth	<u>22.0'</u>	Gals to Purge	<u>1.05 gal</u>
Depth to Water	<u>19.42'</u>	Gals Actually Purged	<u>1.0 gal</u>
Height of Water Column	<u>2.58'</u>	Gals/ft: 2"ID=0.16	4"ID=0.65 6"ID=1.47
Gals of Standing Water	<u>0.35gal</u>		

II. WELL PURGING: Start 2:40pm Stop 2:50pm Discharge Rate (GPM) _____
 Equipment: Pump _____ Bailer 3' by 1.25" PVC
 Well behavior during purging: Bailed well dry

III. SAMPLE COLLECTION: Time 3:45pm ID# BIS-MW-4
 Method Bailer 3' by 1.25" PVC Other _____
 Containers 2 VOA, 1 500 ml, 1 .5 gallon, 1 1 liter
 Sample Appearance and Odor Brown, turbid

IV. FIELD MEASUREMENTS:

	<u>11/4/93</u>	<u>11/8/93</u>	_____	_____
Temp	<u>-</u>	<u>11.5</u>	_____	_____
pH	<u>-</u>	<u>7.24</u>	_____	_____
Conductivity	<u>-</u>	<u>1209</u>	_____	_____
Turbidity	<u>-</u>	<u>>200</u>	_____	_____
	<u>Cloudy</u>	<u>Cloudy</u>	_____	_____
	<u>Brown</u>	<u>Brown</u>	_____	_____

Weather Windy, cloudy, low 50's
 Comments 11/4-Only 2 samples were taken due to lack of water(VOA, & Cyanide)
11/8- TAL metals, Semi-VOA's, Pesticides/PCB's were sampled
11/8- No problems were encountered during sampling