DUNN

SUPPORTING DOCUMENTS FOR ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

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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References

Recra Environmental, Inc. for NYSDEC. February 1986. Phase I Investigation, Bisonite Paint Company.

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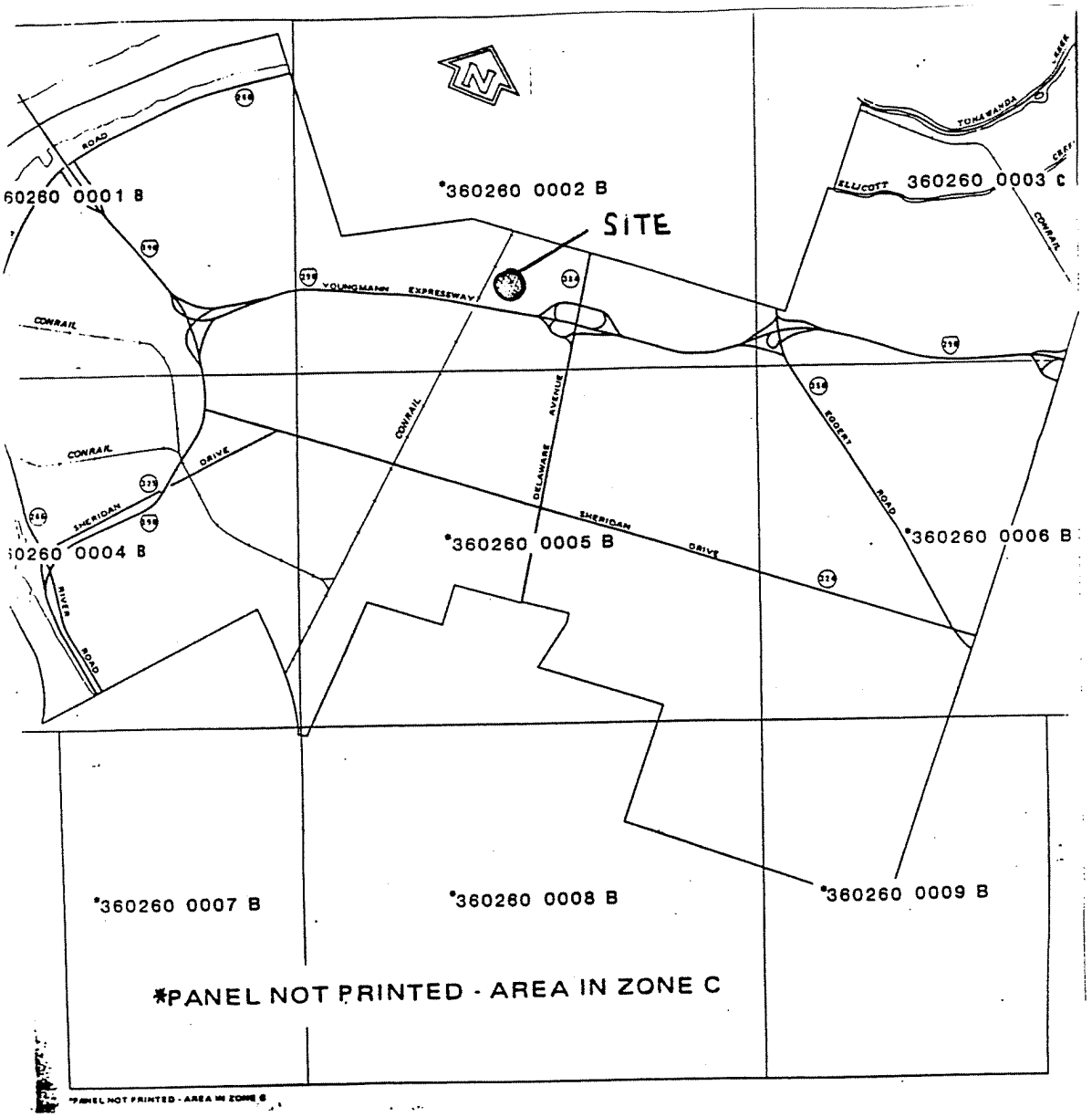
Federal Emergency Management Agency (FEMA). Flood Insurance Rate Map (FIRM), Town of Tonawanda (Panel 360260-0005 B) revised November 12, 1982 and City of Tonawanda (Panel 360259-0002 B), revised February 11, 1983.



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
TONAWANDA,
NEW YORK
ERIE COUNTY

PANELS: 1, 2, 3, 4, 5, 6, 7, 8, 9

MAP INDEX
PANEL PRINTED: 1, 3, 4

COMMUNITY-PANEL NUMBER
360260 0001- 0009

MAP REVISED:
NOVEMBER 12, 1982

Federal Emergency Management Agency

KEY TO MAP

500-Year Flood Boundary	ZONE C
100-Year Flood Boundary	ZONE B
Zone Designations With Date of Identification e.g., 12/2/74	12/2/74
100-Year Flood Boundary	ZONE B
500-Year Flood Boundary	ZONE C
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7 x
River Mile	• M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

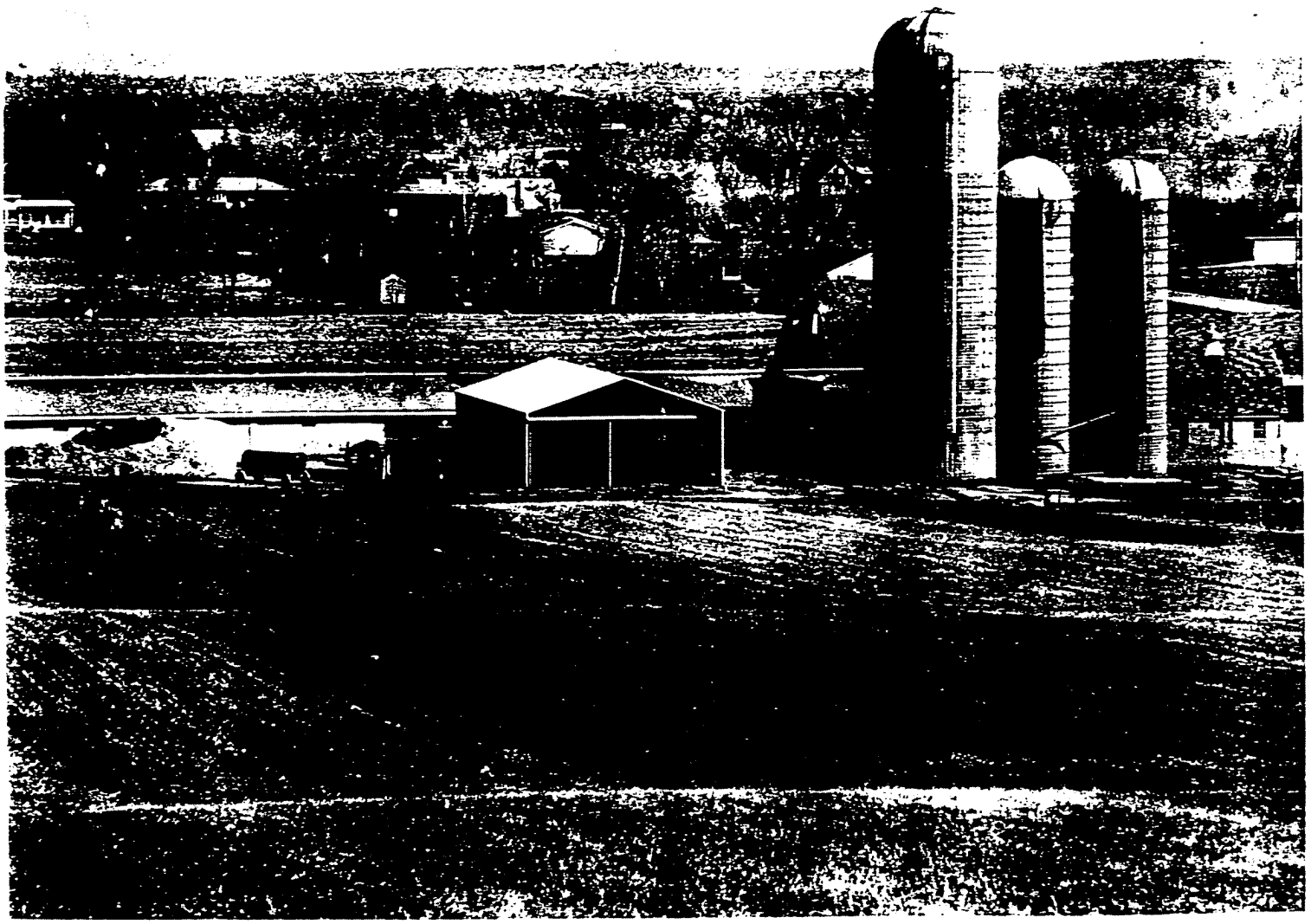
United States Department of Agriculture. 1986. Soil Survey of Erie County, New York.

United States Department of Agriculture

Soil Conservation Service

In Cooperation with the Cornell University Agricultural Experiment Station

Soil Survey of Erie County, New York



YORK – SHEET NUMBER 22

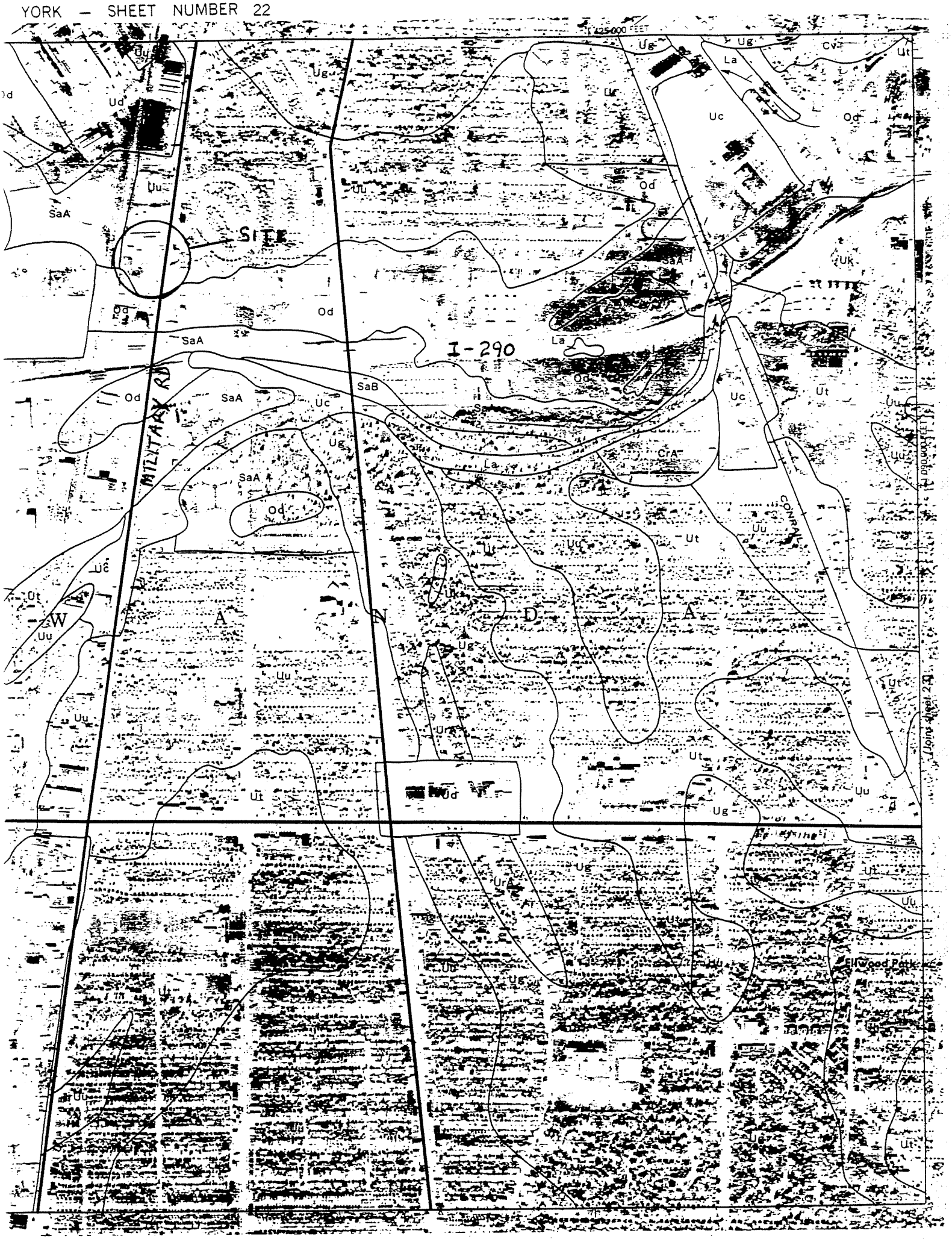


TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
OrC	Orpark silty clay loam, 8 to 15 percent slopes	5,440	0.8
OvA	Ovid silt loam, 0 to 3 percent slopes	8,930	1.4
OvB	Ovid silt loam, 3 to 8 percent slopes	565	0.1
Pa	Palms muck	1,815	0.3
PbA	Palmyra gravelly loam, 0 to 3 percent slopes	1,225	0.2
PbB	Palmyra gravelly loam, 3 to 8 percent slopes	1,770	0.3
Pc	Patchin silt loam	3,880	0.6
PhA	Phelps gravelly loam, 0 to 3 percent slopes	3,010	0.5
PhB	Phelps gravelly loam, 3 to 8 percent slopes	810	0.1
Pt	Pits, borrow	1,285	0.2
Pu	Pits, gravel	1,760	0.3
Qu	Quarries	610	0.1
RaA	Raynham silt loam, 0 to 3 percent slopes	4,295	0.7
RaB	Raynham silt loam, 3 to 8 percent slopes	515	0.1
Re	Red Hook silt loam	5,115	0.8
RfA	Remsen silty clay loam, 0 to 3 percent slopes	6,055	0.9
RfB	Remsen silty clay loam, 3 to 8 percent slopes	4,700	0.7
RfC	Remsen silty clay loam, 8 to 15 percent slopes	840	0.1
RgA	Rhinebeck silt loam, 0 to 3 percent slopes	6,350	1.0
RgB	Rhinebeck silt loam, 3 to 8 percent slopes	3,850	0.6
RhC3	Rhinebeck silty clay loam, 8 to 15 percent slopes, severely eroded	1,940	0.3
RkA	Rhinebeck gravelly loam, 0 to 3 percent slopes	2,925	0.4
RkB	Rhinebeck gravelly loam, 3 to 8 percent slopes	2,000	0.3
RmA	Rhinebeck silty clay loam, stratified substratum, 0 to 3 percent slopes	3,300	0.5
RmB	Rhinebeck silty clay loam, stratified substratum, 3 to 8 percent slopes	1,010	0.2
Ro	Rock outcrop	2,610	0.4
SaA	Schoharie silt loam, 0 to 3 percent slopes	3,740	0.6
SaB	Schoharie silt loam, 3 to 8 percent slopes	2,500	0.4
SbC3	Schoharie silty clay loam, 8 to 15 percent slopes, severely eroded	575	0.1
ScD	Schuyler silt loam, 15 to 25 percent slopes	3,805	0.6
ScE	Schuyler silt loam, 25 to 40 percent slopes	2,145	0.3
Sd	Scio silt loam	590	0.1
Sw	Swormville silt loam	4,405	0.7
Te	Teel silt loam	4,215	0.6
To	Tioga silt loam	945	0.1
Uc	Udorthents, smoothed	2,735	0.4
Ud	Urban land	14,410	2.2
UeB	Urban land-Benson complex, 3 to 6 percent slopes	195	*
Uf	Urban land-Canandaigua complex	2,025	0.3
Ug	Urban land-Cayuga complex	6,260	1.0
Uh	Urban land-Churchville complex	3,530	0.5
Uk	Urban land-Claverack complex	440	0.1
UmA	Urban land-Collamer complex, 1 to 6 percent slopes	2,380	0.4
UnB	Urban land-Colonie complex, 3 to 6 percent slopes	120	*
Uo	Urban land-Cosad complex	715	0.1
Up	Urban land-Galen complex	640	0.1
UrA	Urban land-Lima complex, 1 to 6 percent slopes	3,030	0.5
Us	Urban land-Niagara complex	5,500	0.8
Ut	Urban land-Odessa complex	7,355	1.1
Uu	Urban land-Schoharie complex	5,645	0.9
Uv	Urban land-Swormville complex	690	0.1
Uw	Urban land-Teel complex	345	*
Ux	Urban land-Wassaic complex	1,385	0.2
VaB	Valois gravelly silt loam, 3 to 8 percent slopes	1,800	0.3
VaC	Valois gravelly silt loam, 8 to 15 percent slopes	2,505	0.4
VaD	Valois gravelly silt loam, 15 to 25 percent slopes	2,920	0.4
VbA	Varysburg gravelly loam, 0 to 3 percent slopes	1,095	0.2
VbB	Varysburg gravelly loam, 3 to 8 percent slopes	3,895	0.6
VbC	Varysburg gravelly loam, 8 to 15 percent slopes	1,965	0.3
VbD	Varysburg gravelly loam, 15 to 25 percent slopes	2,360	0.4
VbE	Varysburg gravelly loam, 25 to 40 percent slopes	2,855	0.4
VoA	Volusia silt loam, 0 to 3 percent slopes	2,170	0.3
VoB	Volusia silt loam, 3 to 8 percent slopes	1,880	0.3
VpA	Volusia channery silt loam, 0 to 3 percent slopes	8,405	1.3
VpB	Volusia channery silt loam, 3 to 8 percent slopes	16,050	2.4
WaA	Wassaic silt loam, 0 to 3 percent slopes	3,720	0.6
WaB	Wassaic silt loam, 3 to 8 percent slopes	785	0.1
WbB	Wassaic very stony loam, 3 to 8 percent slopes	385	0.1
WcE	Wassaic-Rock outcrop complex, 25 to 40 percent slopes	165	*
Wd	Wayland silt loam	10,850	1.6

See footnote at end of table.

seasonally wet, have low strength, and generally cover less than 800 square feet. Some older homes and buildings show signs of settling. Most building activity is on sites of demolished buildings.

Some of the undisturbed areas of Odessa soils are subject to heavy foot traffic and are shaded by tall buildings. Because of seasonal wetness and clayey subsoil texture, lawns and gardens are difficult to establish on these soils. The small size of most undisturbed areas limits their suitability for many uses, such as recreational areas and parks. Onsite investigation is necessary to determine the suitability and limitations of this complex for any proposed use.

This Urban land-Odessa complex has not been assigned a capability subclass.

Uu—Urban land-Schoharie complex. This complex is made up of nearly level areas of Urban land and deep, well drained to moderately well drained Schoharie soils. The Schoharie soils formed in reddish, clayey, lake-laid sediments. This complex is on relatively flat landscapes in the city of Buffalo and its metropolitan area. Areas of this complex are generally about 5 to 800 acres or slightly more and are irregular in shape. Slope ranges from 0 to 3 percent.

A typical area of this complex is about 60 percent Urban land that is mostly covered by concrete, asphalt, buildings, or other impervious surfaces; about 35 percent undisturbed Schoharie soils; and 5 percent other soils. Urban land and Schoharie soils occur together in such an intricate pattern that it was not practical to separate them in mapping.

Typically, Schoharie soils have a surface layer of dark brown silt loam about 9 inches thick. The subsoil extends to a depth of 31 inches. It is brown silty clay loam in the upper part; reddish brown silty clay in the middle part; and mottled, reddish brown silty clay in the lower part. The substratum to a depth of 60 inches is reddish brown varved silty clay. In places the surface layer is silty clay loam.

Included with this soil in mapping are small intermingled areas of the somewhat poorly drained Odessa soils and the gently sloping Schoharie soils. Also included are Udorthents, smoothed, which are areas of deep fills or excavations. Areas of included soils range up to 3 acres.

In the spring, the Schoharie soils have a perched seasonal high water table in the lower part of the subsoil. Permeability is slow or very slow, the available water capacity is moderate to high in undisturbed areas, and runoff is medium. Bedrock is at a depth of more than 5 feet. Reaction is medium acid to neutral in the surface layer. Runoff is rapid in the Urban land areas of this complex.

This Urban land-Schoharie complex is not suited to farming because of the high degree of urbanization. The few areas that are not built up include narrow plots between streets and sidewalks, small yards, courtyards, and small traffic islands and circles. These undisturbed areas are limited for building because they have a clayey subsoil and low strength and generally cover less than 800 square feet. Most building activity is on sites of demolished buildings.

Some of the undisturbed areas are subject to heavy foot traffic or are shaded by tall buildings. These areas are moderately suited to lawns, shrubs, and vegetable gardens. Because of slow or very slow permeability and small size, these areas only have limited suitability for recreational uses and for small parks. Onsite investigation is necessary to determine the suitability and limitations of this complex for any proposed use.

This Urban land-Schoharie complex has not been assigned a capability subclass.

Uv—Urban land-Swormville complex. This complex is made up of nearly level areas of Urban land and somewhat poorly drained Swormville soils. The Swormville soils formed in silty and clayey lake-laid sediments underlain by sandy deposits. This complex is on relatively flat landscapes in the city of Buffalo and its metropolitan area. Areas of this complex are generally about 5 to 100 acres and are irregular in shape. Slope ranges from 0 to 3 percent.

A typical area of this complex is about 70 percent Urban land that is mostly covered by concrete, asphalt, buildings, or other impervious surfaces; about 25 percent undisturbed Swormville soils; and 5 percent other soils. Urban land and Swormville soils occur together in such an intricate pattern that it was not practical to separate them in mapping.

Typically, these Swormville soils have a surface layer of dark brown silt loam about 8 inches thick. The subsoil extends to a depth of 26 inches. It is mottled, yellowish brown silty clay loam in the upper part; mottled, yellowish brown silt loam in the middle part; and mottled, light yellowish brown loamy fine sand in the lower part. The substratum to a depth of 60 inches is mottled, gray fine sand. In places the surface layer is loam or silty clay loam.

Included with this soil in mapping are Udorthents, smoothed, which are areas of deep fill deposits or excavations that are not paved or built upon. Some areas are gently sloping. Areas of included soils range from 1/4 acre to 3 acres.

From November through May, the Swormville soils have a seasonal high water table in the upper part of the subsoil. Permeability is moderately slow to slow in the surface layer and upper part of the subsoil and moderately rapid in the substratum in the undisturbed Swormville soils, the available water capacity is moderate, and runoff is slow. Bedrock is at a depth of more than 5 feet. The surface layer is strongly acid to neutral. Runoff is rapid from the relatively impermeable Urban land areas of this complex.

Buehler, Edward, Jr., and Tesmer, Irving, H. eds. 1963. Geology of Erie County New York. Buffalo, New York. Buffalo Society of Natural Sciences Bulletin: Volume 21, No. 3.

GEOLOGY

OF

ERIE COUNTY

New York

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BULLETIN

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Surficial Geology

PHYSIOGRAPHY

Both the altitude and relief of the land surface tend to increase from north to south. The lowest elevation is 565 feet above sea level at the northern tip of Grand Island and the highest, 1,945 feet above sea level, is in Sardinia township, southeastern Erie County. On the basis of physiography the county may be divided into three parts: the flat Lake Tonawanda plain in the north, followed by the Lake Erie plain, and the Allegheny plateau in the south.

The Onondaga escarpment is a conspicuous topographic feature. This north-facing cliff, formed by the outcropping northern edge of the resistant Onondaga Limestone and Upper Silurian dolostone, can be traced from Buffalo eastward through Akron. In Erie County it seldom exceeds 40 feet in height. Some of the streams which cross the escarpment form waterfalls, but many of the smaller streams disappear in fissures and caves and reappear on the plain to the north.

Between the Onondaga escarpment and the parallel Niagara escarpment to the north is the Lake Tonawanda plain, so named because in late Pleistocene time it was occupied by now extinct Lake Tonawanda. This plain actually is a shallow east-west trending trough, 10 to 15 miles in width, which is drained along its axis by Tonawanda Creek.

The Lake Erie plain, so called because it was covered by glacial lakes ancestral to the present Lake Erie, is an area 6 to 12 miles in width between the Onondaga escarpment and the hilly region to the south. This plain is smooth or gently rolling and rises in elevation toward its southern border where much of it is 900 to 1,000 feet above sea level.

The southern third of the county lies within the maturely dissected Allegheny plateau, the northern border of which is sometimes referred to as the Lake Erie or Portage escarpment. The hilly topography of this region appears to be largely the result of stream erosion for there are no appreciable folds or faults. Glacial erosion has modified the shape of some of the larger valleys and has produced a general rounding of the topography. The amount of glacial drift is commonly so great as to obscure the topography of the underlying bedrock.

which continue eastward. Prominent Warren beaches are displayed at Buffalo Creek near Bullis Road. Blackmon (1956) provides an excellent account of strand lines on the East Aurora quadrangle.

Lake Grassmere which stood at an elevation of 640 feet and Lake Lundy which stood at 620 feet extended into Erie County. The beaches of these lakes, however, are scattered and difficult to correlate. Lake Lundy existed approximately 10,000 years ago.

Lake Tonawanda

As glacial ice retreats it inevitably leaves a train of small lakes. These become extinct as their outlets cut low enough to drain them. One of the largest of these in western New York was Lake Tonawanda, described by Kindle and Taylor (1913, p. 19). This lake occupied much of the area in Niagara and Erie counties which lies between the Niagara and Onondaga escarpments. It was formed as the level of Lake Lundy dropped and it drained northward over the Niagara escarpment at Lewiston, Lockport, Gasport, Medina, and Holley. The lake extended eastward from the Niagara River for a distance of about 50 miles to Holley. It was about 8 miles wide in a north-south direction and the maximum depth is estimated as approximately 35 feet. The present Oak Orchard Swamp is regarded as a remnant.

The shore line of Lake Tonawanda was traced by D'Agostino (1958). In Erie County the southern shore extended from Tonawanda through Brighton Village to Ellicott Creek just north of the junction of Forest Road and Millersport Highway. It continued eastward 1 mile north of Clarence Center and approximately 2.5 miles north of Akron.

In southern Erie County, Cuthbert (1937) by studies of topography and sedimentation outlined Lake Zoar which occupied part of the valley of Cattaraugus Creek.

Glacial Pavement and Striae

Glacial pavement and glacial striations are preserved on several outcrops of the Onondaga Limestone. The best displays are in the Federal Crushed Stone Company quarry, Cheektowaga. No systematic study of the orientation of striae has been made in this area.

Detailed Stratigraphy and Paleontology

Silurian System

UPPER SILURIAN (CAYUGAN) SERIES

SALINA GROUP

TYPE REFERENCE: Dana (1863, pp. 246-251).

TYPE LOCALITY: Vicinity of Syracuse, New York, formerly known as Salina.

TERMINOLOGY: Approximately the same as the "Onondaga salt group" of early writers. The Salina Group included three formations: the Vernon Shale (oldest), Syracuse Formation, and Camillus Shale. Only the Camillus is seen in western New York. See Fisher (1960).

AGE: Late Silurian (Cayugan).

THICKNESS: In western New York, the Salina Group is about 400 feet thick, but this unit increases considerably in thickness to the east.

LITHOLOGY: The Salina Group in Erie County is largely shale but considerable amounts of gypsum and anhydrite are also present.

PROMINENT OUTCROPS: Outcrops are rare in Erie County. The uppermost portion can be seen at the base of Akron Falls.

CONTACTS: The lower contact is not exposed near Erie County and the contact with the overlying Bertie Formation is difficult to define precisely.

ECONOMIC GEOLOGY: The Camillus Shale of the Salina Group is a source of gypsum and anhydrite in Erie County. To the east, the Salina Group also includes salt beds.

PALEONTOLOGY: No fossils have been reported from the Salina Group of Erie County.

CAMILLUS SHALE

TYPE REFERENCE: Clarke (1903, pp. 18-19).

TYPE LOCALITY: Village of Camillus, Onondaga County, New York; Baldwinsville quadrangle.

TERMINOLOGY: See Alling (1928) and Leutze (1954).

AGE AND CORRELATION: Late Silurian (Cayugan). Equivalent to lower part of Brayman Shale in eastern New York.

THICKNESS: Approximately 400 feet.

LITHOLOGY: The Camillus varies from thin-bedded shale to massive mudstone. The color is gray or brownish gray but some beds show a tinge of red or green. According to Alling (1928, pp. 24-26), the Camillus at the type locality is a massive gray magnesian-lime mudrock. Gypsum and anhydrite are present in Erie County.

It is probable that during much of Late Silurian time the northeastern United States was a desert basin. Salt and gypsum were precipitated by evaporation of the shrinking inland Salina Sea.

PROMINENT OUTCROPS: The Camillus Shale extends across Erie County in an east-west trending belt approximately six to eight miles wide. This belt is largely lowland in which outcrops are rare. The top of the formation is exposed at Akron Falls (pl. 6, upper). A small section can be seen in the valley of Murder Creek north of Akron. Houghton (1914, pp. 7-8), Luther (1906, p. 8) and others report outcrops on Grand Island but these could not be located.

CONTACTS: The lower contact of the Camillus Shale is not exposed near Erie County. The contact with the overlying Bertie Formation is difficult to define.

ECONOMIC GEOLOGY: The Camillus Shale is an important source of gypsum. National Gypsum Company has a mine at Clarence Center, Certain-Teed Company at Akron, and United States Gypsum Company at Oakfield in neighboring Genesee County.

PALEONTOLOGY: No fossils have been reported from the Camillus Shale of Erie County. Apparently animal life could not survive in the "dead sea" environment of the time.

BERTIE FORMATION

TYPE REFERENCE: Chapman (1864, p. 190).

TYPE LOCALITY: Bertie township, Welland County, Ontario, Canada.

TERMINOLOGY: This unit is commonly called the Bertie Waterlime. Chadwick (1917) divided the Bertie into four units: the Oatka (oldest), Falkirk, Scajaquada, and Williamsville. The Williamsville Member was formerly called the "Buffalo cement bed" (see fig. 4).

AGE AND CORRELATION: Late Silurian (Cayugan). Equivalent to upper part of Brayman Shale in eastern New York.

THICKNESS: 50 - 60 feet total. Approximate figures for the members are Oatka 20 feet, Falkirk 20 feet, Scajaquada 8 feet, and Williamsville 6 feet.

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.

Reference A-6
Lasala, A.M., Groundwater Resources of the Erie-Niagara Basin, New York, 1968.

GROUND-WATER RESOURCES OF THE ERIE-NIAGARA BASIN, NEW YORK

Prepared for the
Erie-Niagara Basin Regional Water Resources
Planning Board

by

A. M. La Sala, Jr.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

in cooperation with

THE NEW YORK STATE CONSERVATION DEPARTMENT
DIVISION OF WATER RESOURCES

STATE OF NEW YORK
CONSERVATION DEPARTMENT
WATER RESOURCES COMMISSION

Basin Planning Report ENB-3

1968

Many domestic-supply wells penetrate from 1 foot to a few feet into the soluble rocks and produce small but adequate yields. On the other hand, industrial wells that were intended to produce large supplies of water give a truer picture of the water-supply potential of the rocks. Data on industrial wells show that the Camillus Shale will yield as much as 1,200 gpm and the limestone unit as much as 300 gpm and probably more. But the data also show that the rocks produce low yields at places. This is shown by such wells as 301-848-1 which was drilled to obtain a large supply for an industry but which yielded only 30 gpm. The water-bearing zones obviously are unevenly distributed through the rocks. Factors that control the occurrence of the water-bearing zones cannot be evaluated at the present time to the extent necessary to predict exactly where the zones occur.

The Lockport Dolomite is the least productive unit of the soluble rocks. Within the Erie-Niagara basin yields of wells in the Lockport range from about 4 to 90 gpm. Depth of the wells range from 20 to 70 feet. Most of the deeper wells were drilled where the depth to bedrock is greatest. Domestic-supply wells generally are finished in the fracture zone at the rock surface or in a bedding joint within the uppermost 30 feet of the rock. It is usually not necessary to drill deeper into the Lockport if only a small supply is needed.

Drilling deeper in an attempt to intersect additional bedding-plane openings at depth would provide higher yields but, generally, at the expense of lower water levels and therefore higher pump lifts. Johnston (1964) collected data on a much larger number of wells along the outcrop belt of the Lockport Dolomite than were inventoried in the Erie-Niagara basin. He found that wells drawing water from the lower 40 feet of the Lockport (the northern part of the outcrop area) yield from 1/2 to 20 gpm and have an average yield of 7 gpm. Wells finished in the upper part of the Lockport (the southern part of the outcrop area) yield from 2 to 110 gpm and have an average yield of 31 gpm. Yields of as much as 50 or 100 gpm are possible from the Lockport in the Erie-Niagara basin but would be exceptional.

CAMILLUS SHALE

Bedding and lithology

The Camillus Shale lies above the Lockport Dolomite and crops out to the south of where the dolomite is exposed. Exposures of the Camillus Shale are rare in the Erie-Niagara basin because of the low relief of the outcrop area and the cover of glacial deposits. Geologists who have studied the Camillus in the study basin agree that it consists mostly of gray shale. (For example, see Buehler and Tesmer, 1963, p. 29-30.) Subsurface data, on the other hand, indicate that a considerable amount of gray limestone and dolomite is interbedded with the shale. Along with these carbonates, gypsum comprises a significant part of the Camillus Shale. Some of the gypsum beds are as much as 5 feet thick. Gypsum also occurs in the Camillus as thin lenses and veins. Table 1,

which is a log compiled during construction of a mine slope, illustrates the occurrence of gypsum and the predominance of carbonate rocks in some parts of the Camillus.

Though the Camillus dips southward at approximately 40 feet to the mile, the dip is not uniform. Gypsum miners say the formation "rolls," to describe the gentle folding of its beds. The formation is marked by broad, low folds with amplitudes of a few feet and spacings of a few hundred feet between crests. The fold axes generally are east-west.

Water-bearing openings

The extensive beds of gypsum make the Camillus Shale unique among the shale formations of the basin. The importance of the gypsum lies in its solubility; gypsum is far more soluble than the enclosing rocks, whether shale, dolomite, or limestone. Where gypsum has been dissolved, openings exist for the passage and storage of water.

The effect of the solution of gypsum on the water-bearing properties of the Camillus Shale (and other rocks) can be readily appreciated. Where the topmost beds of the Camillus crop out at the base of the falls of Murder Creek at Akron, the Camillus seems to be an impermeable shale. If one judged the water-bearing properties of the Camillus on the basis of this outcrop alone, he would be wrong. Yields of water wells and drainage into gypsum mines prove that large volumes of water do move through the Camillus.

Clues to the nature of the water-bearing openings in the Camillus can be obtained by considering some of the circumstances where large volumes of water were obtained. About 1885, the Buffalo Cement Company located a 4-foot thick bed of gypsum only 43 feet below land surface by test drilling in Buffalo on Main Street near Williamsville. A shaft was sunk with the intention of beginning a subsurface mining operation, but when the gypsum was struck the shaft was flooded with ground water. The report is that "..... a pump with a capacity of 2,000 gallons per minute failed to make any impression upon it [the water] and the attempt was abandoned" (Newland and Leighton, 1920, 209-210).

In 1964, a gypsum mine near Clarence Center received an unexpected inflow of ground water. Several hundred gallons of water per minute continuously enters the mine at a place about midway down the entry slope. This water is pumped out by a drainage system diagrammatically shown in figure 6. Ordinarily, only small seeps occur in the remainder of the mine from roof bolts and small cracks in the roof. At a distance of more than a mile from the entry slope, the working face intersected an unplugged drill hole. Water poured into the mine at an alarming rate until the hole was plugged with much effort.

Large-yield wells, such as those at Tonawanda and North Tonawanda, obtain water from thin intervals of gypsum-bearing rock. The gypsum in the Camillus Shale obviously is related to the occurrence of large quantities of water. Gypsum is a highly soluble mineral and is

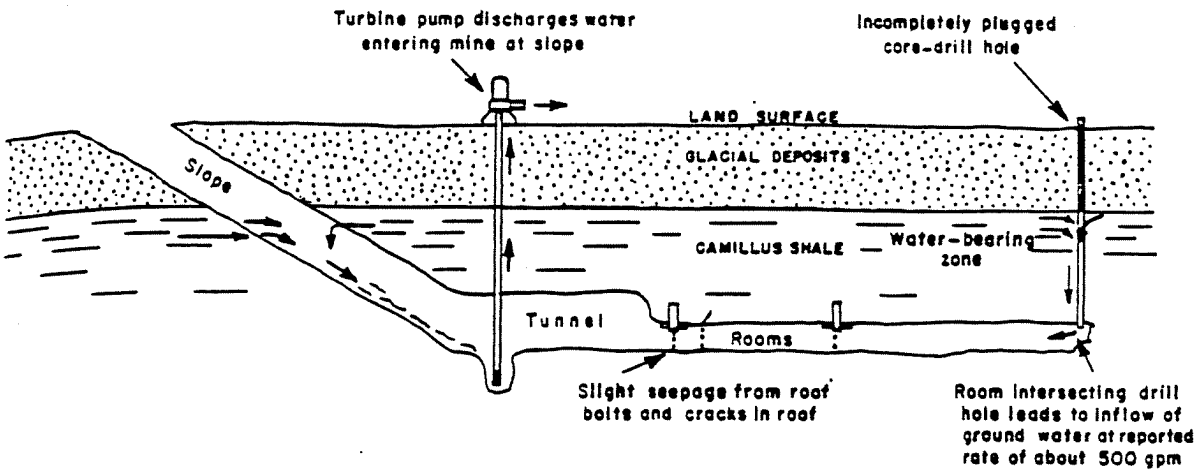


Figure 6.--Occurrence of ground water in the Camillus Shale at a gypsum mine near Clarence Center.

dissolved by circulating ground water faster than are the enclosing rocks. Very likely the openings in the Camillus that yield copious amounts of water were formed by the solution of gypsum by ground water. The water-bearing zones are mainly horizontal because most of the gypsum occurs in horizontal beds and thin zones of gypsiferous shale and dolomite. Only those gypsum zones actually exposed to circulating ground water can be widened by solution. The gypsum must be in contact with an open fracture through which the water can move. If no open fracture exists, the gypsum cannot be dissolved. The occurrence of ground water at the gypsum mine shown in figure 6 is a further illustration. The 4 1/2-foot thick bed that is mined at a depth of 66.9 feet (table 1) is dry because of the lack of vertical fractures to transmit water to it.

The solution-widened water-bearing zones occur at various depths and stratigraphic horizons in the Camillus. The existence of such zones is borne out by well data. For instance, wells 303-850-1 and -2 are 90 feet apart and obtain water from the same 2- to 3-foot thick zone at a depth of 67 to 68 feet. Such zones may be continuous for as much as 1 or 2 miles but information is not available on the extent of individual zones. The gypsum occurs principally in lenticular beds. The thicker beds may be 3 or 4 miles in lateral extent. The thinner beds can be expected to be much smaller in extent.

A zone of fracturing and solution extending several feet below the rock surface yields relatively small but sufficient water supplies for domestic use. This zone appears to be present throughout the area and is unrelated to stratigraphic position.

Hydrologic and hydraulic characteristics

The Camillus Shale forms a low topographic trough split down the axis by Tonawanda Creek. Ground water that enters the formation discharges mainly to the creek. Little water is discharged to the small, barely incised streams on the Camillus. These streams are dry much of the year.

Coefficients of transmissibility given in table 2 were computed for the Camillus Shale on the basis of specific capacities of wells penetrating a considerable thickness of the aquifer, by the method described by Walton (1962, p. 12-13).

Table 2.--Specific-capacity tests of wells finished in the Camillus Shale

Well number	Pumping rate (gpm)	Duration of pumping (hours) e: estimated	Drawdown (feet)	Specific capacity (gpm/ft)	Coefficient of transmissibility (gpd/ft)
a/ 258-853-1	1,090	e8	53	21	40,000
-2	90	--	22	4	7,000
258-855-1	500	e8	17	29	55,000
-2	1,000	e8	26	38	70,000
-3	1,500	e8	38	39	70,000
303-850-1	700	24	10	70	--
-2	660	e8	8	83	--

a/ Well also penetrates water-bearing zone in Lockport Dolomite.

The large specific capacities of wells 303-850-1 and -2 probably result in part from recharge induced from Sawyer Creek. Measurements of recovery of water levels in well 303-850-1 were made when well 303-850-2 was shut down after a year of continuous pumping. From these data, a coefficient of transmissibility of about 80,000 per foot and a coefficient of storage of 0.025 were computed. The computed transmissibility is about half the transmissibility that would have been indicated from specific capacity if recharge were not induced from Sawyer Creek.

Yields of wells

The Camillus Shale is by far the most productive bedrock aquifer in the area. Except in the vicinity of Buffalo and Tonawanda, where industrial wells produce from 300 to 1,200 gpm, no attempt has been made to obtain large supplies from the formation. However, the inflow of water to gypsum mines near Clarence Center and Akron indicate that large supplies are not necessarily restricted to the Buffalo and the Tonawanda area. Two examples of large flows of water encountered in gypsum mining have already been mentioned. Pumpage from gypsum mines near Clarence Center (including the mine mentioned previously) is substantial. The water pumped is discharged to Got Creek. On July 2, 1963, the creek had a flow of 2.1 mgd (million gallons per day) about half a mile downstream from the mines, that was due almost entirely to the pumpage. Water for industrial use is pumped from a flooded, abandoned gypsum mine at Akron. This pumpage, at a rate of 500 to 700 gpm, has had no appreciable effect on the water level in the mine.

Probably the larger solution openings are most common in discharge areas near Tonawanda Creek and its tributaries and near the Niagara River; the flow of ground water becomes concentrated as it approaches the streams to which it discharges. Other discharge areas, such as low-lying swampy areas and headwaters of small streams that have perennial flow, are likely places to drill wells.

LIMESTONE UNIT

Bedding and lithology

The term "limestone unit" in this report is applied to a sequence of limestone and dolomite overlying the Camillus Shale. The limestone unit includes the Bertie Limestone at the base, the Akron Dolomite, and the Onondaga Limestone at the top. The lithology and thickness of these units are shown in figure 7. The Bertie Limestone and the Akron Dolomite are Silurian in age and are separated from the overlying Onondaga Limestone of Devonian age by an unconformity or erosional contact.

The Bertie Limestone is mainly dolomite and dolomitic limestone but contains interbedded shale particularly in the thin-bedded lower part of the formation. The middle part is brown, massive dolomite, and the upper part is gray dolomite and shale whose beds are of variable thickness. The total thickness of the formation is about 55 feet (Buehler and Tesmer, 1963, p. 30-31).

The Akron Dolomite is composed of greenish-gray and buff dolomite beds varying from a few inches to about a foot in thickness. The upper contact of the Akron is erosional and is often marked by remnants of shallow stream channels. Thin lenses of sandy sediments lie in the bottoms of some channels. The thickness of the formation is generally between 7 and 9 feet (Buehler and Tesmer, 1963, p. 33-34).

Table 6.--Records of selected wells in the Erie-Niagara basin (Continued)

Well number	County	Owner	Year completed	Type of well	Depth of well (feet)	Diameter (inches)	Depth to bedrock (feet)	Water-bearing material	Altitude above sea level (feet)	Water level: Below land surface (feet)	Water level: Date	Method of lift	Estimated pumpage or flow (gallons per day)	Use	Remarks
258-815-1	Genesee	F. Pack	--	Drl	31	6	--	Shale	920	8.1	6-26-63	Sw	50	D	Anal; iron; temp 49.0; yield 12 gpm (r).
258-822-1	do.	E. Lewis	1964	Drl	41.6	6	41.6	Sand	870	9.1	8-19-64	Sw	400	Ag	Anal; H_2S; yield 11 gpm (r).
258-827-1	do.	E. Powonski	1952	Drl	36.5	6	a34	Limestone	835	31.3	8-19-64	Jet	250	D	H_2S; yield 7 gpm (r).
258-833-1	Erie	B. Fields	1960	Drl	62.6	6	a13	do.	775	p22.7	8-18-64	Sub	300	D	Anal.
258-837-1	do.	R. Bowman	1956	Drl	76.2	6	a22	do.	740	19.4	8-18-64	Jet	300	D	Do.
258-843-1	do.	W. Voss	--	Drl	62	8	--	Camillus Shale	615	Flow	--	--	5,000	A	Anal; H_2S; temp 50.8, 8-14-64; flows about 5 gpm at LS.
258-853-1	do.	Linde Div., Union Carbide Corp.	1944	Drl	r375	8	87	Camillus Shale and Lockport Dolomite	600	r,p115	1944	Tur	--	U	H_2S; drilled to 130-ft depth in 1943 and deepened in 1944; "black" water entering from Lockport Dolomite after deepening made well unusable; yield 3,000 gpm (r); pumping test, 1,090 gpm, dd 53 ft.
-2	do.	do.	1944	Drl	r375	8	86	do.	600	r,p82	1944	Tur	--	U	H_2S; drilled to 157-ft depth in 1943 and deepened in 1944; water obtained at 90 ft from a gypsiferous zone in Camillus Shale and "black" water at 312 ft from the Lockport Dolomite which was first penetrated at 288 ft; yield from upper water-bearing zone 90 gpm, dd 22 ft; lower zone was not tested.
258-855-1	do.	Dunlop Tire & Rubber Co.	1943	Drl	r137	12	69	Camillus Shale	590	p36	10-27-52	Tur	--	I	H_2S; pumping rate 1,000 gpm (r); pumping test 500 gpm, swl 36 ft, dd 17 ft; this well and well 258-855-2 yield a combined total of 600,000 gpd.
-2	do.	do.	1943	Drl	r139.7	--	71	do.	590	p54.3	7-16-64	Tur	--	I	H_2S; pumping rate about 1,000 gpm (r); pumping test 1,000 gpm, swl 36 ft, dd 26 ft; this well and well 258-855-1 yield a combined total of 600,000 gpd.
-3	do.	do.	1952	Drl	r120	--	--	do.	592	p39	10-27-52	Tur	--	I	H_2S; pumping test 1,500 gpm, swl 39 ft, dd 38 ft.
259-809-1	Genesee	O-AT-KA Milk Products Cooperative, Inc.	1963	Drl	r60	20, 16	--	Sand and gravel	890	r15	4-27-62	Tur	1,000,000	I	Anal; screen, 13 1/8-inch diameter, 10 ft of 60-slot, 10 ft of 125-slot, from 40-60 ft; pumping rate about 1,200 gpm (r); pumping test 600 gpm, swl 15 ft, dd 1.5 ft (r).
-2	do.	City of Batavia	1963	Drl	r69	16	--	do.	890	14.0	5- 8-63	Tur	--	PS	Anal; H_2S; screen, 16-inch telescope, 125-slot, 52.9-69 ft; pumping rate 1,000 gpm.
-3	do.	do.	1962	Drl	54.1	8	--	do.	890	11.7	5- 6-63	--	--	T	Depth 61 ft (r); screen, 6-inch diameter, 100-slot, from 51-61 ft; pumping test 235 gpm, swl 18.3 ft, dd 0.5 ft (r); OW.
-4	do.	O-AT-KA Milk Products Cooperative, Inc.	1963	Drl	52.2	8	--	do.	890	p13.0	5- 7-63	--	--	T	
-5	do.	City of Batavia	1962	Drl	60.2	8	--	do.	890	13.7	5- 8-63	--	400,000	T	Depth 70 ft (r); screen, 6-inch diameter, 100-slot, from 60-70 ft; pumping test (r), 235-259 gpm, swl 18.5 ft, dd 0.5 ft after 24 hours discharge.
-6	do.	do.	1963	Drl	r75	16	--	do.	895	r14.2	5-27-63	Tur	--	PS	Screen, 16-inch diameter; test pumped at 1,000 gpm.
-7	do.	do.	1963	Drl	r60	8	--	do.	890	r13.7	2-15-62	--	400,000	X, T	H_2S (r); pumping test 200 gpm, swl 13.7 ft, dd 4.4 ft after 24 hours discharge.
259-817-1	do.	D. Beals	1960	Drl	r33	--	--	do.	865	r3	1960	Sw	100	D	Anal; H_2S; yield 4 gpm (r).
259-818-1	do.	Bitterman Bros., Inc.	--	Drl	18.3	12, 6	--	do.	--	6.6	9-17-63	Sw	--	C, D	
259-820-1	do.	A. Winters	1960	Drl	22.6	6	--	Limestone	880	7.4	9-17-63	Sw	500	C, D	
259-822-1	do.	J. Daley	1956	Drl	70	6	--	Sand	900	27.1	8-19-64	Jet	200	D	Anal; H_2S.

A-7

State of New York Official Compilation of Codes, Rules and Regulation, Dept. of State, Title 6C.

STATE OF NEW YORK

OFFICIAL COMPILATION

OF

CODES, RULES AND REGULATIONS

MARIO M. CUOMO
Governor

GAIL S. SHAFFER
Secretary of State

Published by
DEPARTMENT OF STATE
162 Washington Avenue
Albany, New York 12231

1/83

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
111	0-158-12-77-3 and trib. and 4 as shown on reference map	Tribs. of East Fork	Enter East Fork between Engine Creek, item no. 110, and source.	12	A	A(T)
112	0-158-12-78	Perry Brook	Enters Tonawanda Creek from south approximately 2.8 miles southwest of Johnsonburg.	12	A	A
113	0-185-12-79 and trib. and 80	Tribs. of Tonawanda Creek	Enter Tonawanda Creek between Perry Brook, item no. 112, and source.	12	A	A
114	0-158-13 and tribs. including P 22 as shown on reference map	Two Mile Creek	Enters Niagara River (East Channel) at Two Mile Creek Road in City of Tonawanda.	2,6	B	B
115	0-158-14 and tribs. as shown on reference map	Trib. of Niagara River	Enters Niagara River approximately opposite intersection of Ontario Street and Niagara Street, City of Buffalo.	6	D	D
116	0-158-15 portion as described including P 24 and P 25	Scajaquada Creek	Enters Niagara River approximately opposite intersection of Niagara Street and Tonawanda Street, City of Buffalo. Mouth to crossing of Main Street, City of Buffalo.	6	B	B

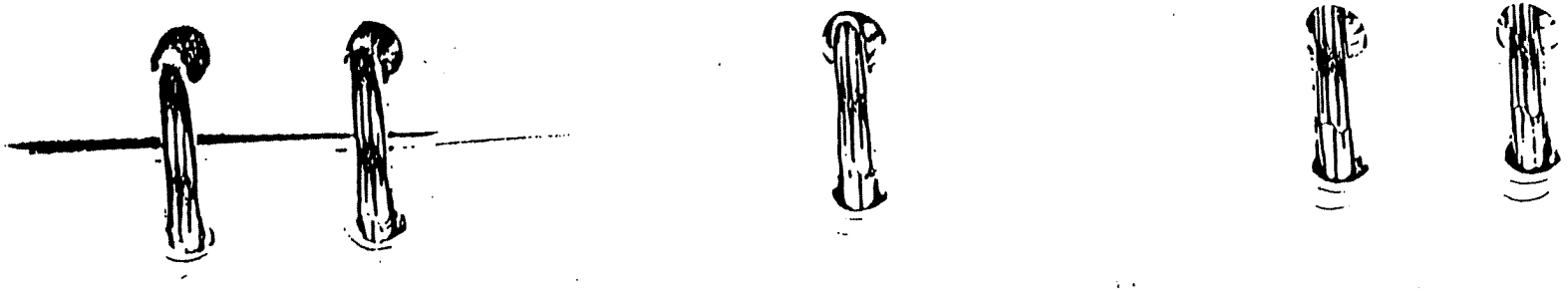


TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
			From crossing of Main Street	6	D	D

General Electric Company 1979, 1983. Material Safety Data Sheets: Mineral Spirits, and Titanium Dioxide.

MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y.

MATERIALS INFORMATION SERVICES

No. 334B

STODDARD SOLVENT
Type III
Revision A
Date November 1977

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: STODDARD SOLVENT, Type III
OTHER DESIGNATIONS: Odorless Mineral Spirits, Odorless Petroleum Spirits, Odorless Solvent, ASTM D484 Type III, GE Material D5B8C
DESCRIPTION: Highly aliphatic hydrocarbon mixture with a controlled distillation range and flash point and low odor.
MANUFACTURER: Available from many suppliers.

SECTION II. INGREDIENTS AND HAZARDS	%	HAZARD DATA
Stoddard Solvent, Type III Typical Composition: A highly aliphatic hydrocarbon mixture, often isoparaffins with some naphthenes. *This is the current OSHA TLV level for Stoddard Solvent and Petroleum Distillates. ACGIH has indicated that future TLV levels should depend on the actual composition of the hydrocarbon mixture. (Suppliers' estimates are usually 100-300 ppm for TLV for this solvent.)		TLV 500 ppm * (or 2950 mg/m^3)

SECTION III. PHYSICAL DATA

Boiling point, 1 atm, deg F ---- 300-412
Vapor pressure @ 25 C, mm Hg -- ca 5
Vapor density (Air = 1) -------- ca 4.8 av
Solubility in water ---------- Insoluble

Specific gravity (H_2O = 1) ------- ca 0.76
Volatiles, % ---------- ca 100
Evaporation rate (BuAc = 1) ------ ca 0.08

Appearance & odor: Clear, colorless liquid with a slight odor.

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air	LOWER	UPPER
(TCC) 100 F minimum	450-500 F	% by volume	0.9	6

Extinguishing media: Foam, dry chemical, carbon dioxide, and water spray or fog. Combustion in a limited amount of air can generate toxic carbon monoxide. Use self-contained breathing apparatus for respiratory protection in fighting fires in enclosures. Note that this liquid is near its lower flammability limit (saturated air at 25 C contains about 0.5 volume % of Stoddard Solvent). In a fire situation or when it is heated, it becomes a highly flammable material.

SECTION V. REACTIVITY DATA

This material is considered to be stable under its normal handling and storage conditions. As a combustible hydrocarbon, it can react violently with strong oxidizing agents such as chlorine, oxygen, or such strong oxidizing acis as nitric and sulfuric. Store away from these and other strong oxidizing agents.

SECTION VI. HEALTH HAZARD INFORMATION

TLV 500 ppm/100 ppm (see Sect. II)

Stoddard Solvent, like all petroleum distillates, is a central nervous system depressant. Symptoms of overexposure include dizziness, headache, intoxication with euphoria leading to unconsciousness. Nose and throat irritation may occur from inhalation. Prolonged or repeated skin contact will cause defatting and dermatitis. Eye contact with the liquid causes conjunctivitis. Eye irritation can occur after 15 minutes at 470 ppm. A fatal ingestion dosage for humans is 3-4 ounces if no aspiration into the lungs occurs; aspiration of one ounce or less can be fatal.

FIRST AID:

Inhalation: Remove to fresh air. Give artificial respiration if required. Get medical assistance.

Eye contact: Wash eyes immediately with large amounts of water.

Skin contact: Wash contact area promptly with soap and water. Remove solvent wet clothing immediately.

Ingestion: Do not induce vomiting. Contact a physician immediately!

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

For massive spills, evacuate the area. Eliminate ingnition sources. Recover as much of the free liquid as possible for disposal, and use an absorbent to pick up the residue. Avoid discharging Stoddard Solvent directly into a sewer or surface waters. Dispose of the absorbed material or the free waste liquid by incineration or via a licensed solvent disposal company.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Work place areas require exhaust ventilation to maintain vapor levels below the TLV. In emergencies respiratory protection can be provided for a limited time by an approved organic vapor cartridge below 3500 mg/m^3; above this level a full facepiece canister-type, air-supplied-type, or self-contained-type respirator is required.

Rubber of polyvinyl gloves should be used to prevent prolonged or repeated skin contact. Safety goggles or face shields should be used where splashing of solvent into the eyes is possible. An eye wash fountain should also be available in areas where splashing is probable.

Ventilation equipment should be explosion-proof, and any tools used in the area should be of the non-sparking type.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

This combustible liquid should be stored in a cool, clean, well-ventilated, fire resistant storage room or in a solvent storage carbinet that meets OSHA requirements. Store in closed metal drums or safety cans with identifying labels that indicate the flammability of the material.

Electrically interconnect and ground containers for transfers of liquid to avoid fires from static sparks.

Areas of use and storage for this material should have good ventilation and all sources of open flame and high heat should be excluded. Prohibit smoking in these areas.

APPROVALS: MIS, CRD J. M. Nielsen

Industrial Hygiene and Safety

MEDICAL REVIEW:

MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT
120 ERIE BOULEVARD
SCHENECTADY, N.Y. 12305

MATERIALS INFORMATION SERVICES

NO. 118

TITANIUM DIOXIDE

DATE October 1983

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: TITANIUM DIOXIDE
OTHER DESIGNAIONS: TiO_2, CAS #013 463 677, Titanium Oxide, Titanic Anhydride, Titania
GE Material D4C9, ASTM D476, TIPURE (DuPont), TRONOX (Kerr-McGee)
MANUFACTURER: Available from several suppliers, including:

E.I. Du Pont de Nemours
1007 Market Street
Wilmington, DE 19898
Tel: (302) 774-1000

Kerr-McGee Chemical Co.
Kerr-McGee Center
Oklahoma City, OK 73125
Tel: (405) 270-1313

SECTION II. INGREDIENTS AND HAZARDS	%	HAZARD DATA
Titanium Dioxide Moisture	>94 < 1	8-hr TWA 15 mg/m^3* (total dust)
*Current OSHA PEL. ACGIH (1983) TLV_3 for nuisance particulates is 30 mppcf or 10 mg/m^3 of total dust, or 5 mg/m^3 of respirable dust; STEL 20 mg/m^3 (15 minute period). NCI carcinogenesis bioassay completed; results negative: Final report (National Cancer Institute carcinogenesis technical report series, NCI-CC-TR-97,79).		Human, Skin 300 µg/3D-I Mild Effects

SECTION III. PHYSICAL DATA

	Anatase	Rutile
Boiling point, 1 atm, deg C	- 2,500-3,000 -	
Solubility in water	- Insoluble -	
Specific gravity	~3.8	~4.3
Melting point, deg C	~1560	~1840
pH	~6-7	~6-7
Molecular weight	79.90	79.90

Appearance & Odor: Crystals or white powder; no odor. (Natural materials may be colored by impurities.)

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits in Air	Lower	Upper
Noncombustible				

Extinguishing Media: Use that which is suitable for surrounding fire. Does not burn or support combustion. No fire or explosion hazard with material itself.
Firefighters should wear self-contained breathing apparatus where TiO_2 dust can be released.

SECTION V. REACTIVITY DATA

This is a stable material in closed containers at room temperature under normal storage and handling conditions. It does not polymerize.
Violent reaction with lithium around 200 C.
Reduction of oxide by heating with aluminum, calcium, magnesium, potassium, sodium, or zinc is accompanied by incandescence.

GENERAL ELECTRIC

NO. 118

SECTION VI. HEALTH HAZARD INFORMATION

TLV 5 to 15 mg/m^3 (See Sect II)

Hazard with TiO_2 is that of a nuisance dust. It is inert, practically non-toxic and chemically nonirritating.

Skin contact with TiO_2 has shown no adverse effects (other than drying and possible particulate abrasion). Eye contact with pure material has shown no specific effects other than general particulate irritation in the eye.

Not absorbed by the body. Ingestion of 16 oz has caused no apparent harm or distress. (Readily eliminated within 24 hours.) Excessive exposure above the TLV can give mild pulmonary irritation.

FIRST AID:

Eye Contact: Flush thoroughly with running water to remove dust, including under eyelids. Get medical help if irritation persists.

Skin Contact: Wash with soap and water. (Use of lotions and barrier creams may be desirable.)

Inhalation: Remove to fresh air. Get medical help for any breathing difficulty.

Ingestion: Contact physician if large amount ingested.

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Clean-up personnel to wear NIOSH approved respiratory protection. Spills can be removed by vacuuming up or wet sweeping, keeping airborne dust at a minimum. Pick up and place in a closed container for disposal or reclamation.

DISPOSAL: Unsalvageable waste may be buried as inert solid in an approved landfill. Follow Federal, State, and Local regulations.

AQUATIC TOXICITY TLm 96: Over 1000 ppm.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide adequate exhaust ventilation to meet TLV requirements in the workplace. (Exhaust filter system may be required to avoid environmental contamination.)

Under dusty conditions above the TLV but below 150 mg/m^3 use an approved dust respirator;* above 150 mg/m^3 use an air supplied or self-contained breathing apparatus. A full facepeice is needed above 150 mg/m^3, and a positive pressure air-supplied system is needed above 750 mg/m^3.

Avoid eye contact by use of goggles where dusty conditions occur. Protective gloves may be desirable for repeated contact in handling.

An eyewash fountain should be available to areas of use.

Consider preplacement screening with emphasis on chronic respiratory problems. (Afflicted workers are at an increased risk from severe, prolonged exposure.)

*MSA #66 CM 73053 type filter has been recommended.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store in closed containers in a cool, dry, well-ventilated area. Use good housekeeping practices to prevent accumulation of dust, and follow sound cleaning techniques that will keep airborne particulate at a minimum.

Avoid breathing dust. Prevent eye contact with dust.

DATA SOURCE(S) CODE: 1-12,14,16,20,25,26,31,34,38,42-44

APPROVALS: MIS/CRC J.M. Nielsen

INDUST. HYGIENE/SAFETY [illegible] 9-8-83

MEDICAL REVIEW: 17 September 1983

Sax, N. Irving, eds. 1984. Dangerous Properties of Industrial Materials. New York, New York: Van Nostrand Reinhold Company.

Dangerous Properties of Industrial Materials

Seventh Edition

Volume I

N. IRVING SAX

and

RICHARD J. LEWIS, SR.

VAN NOSTRAND REINHOLD
NEW YORK

New York State Dept. of Health, 1982, New York State Atlas of Community Water System Sources.

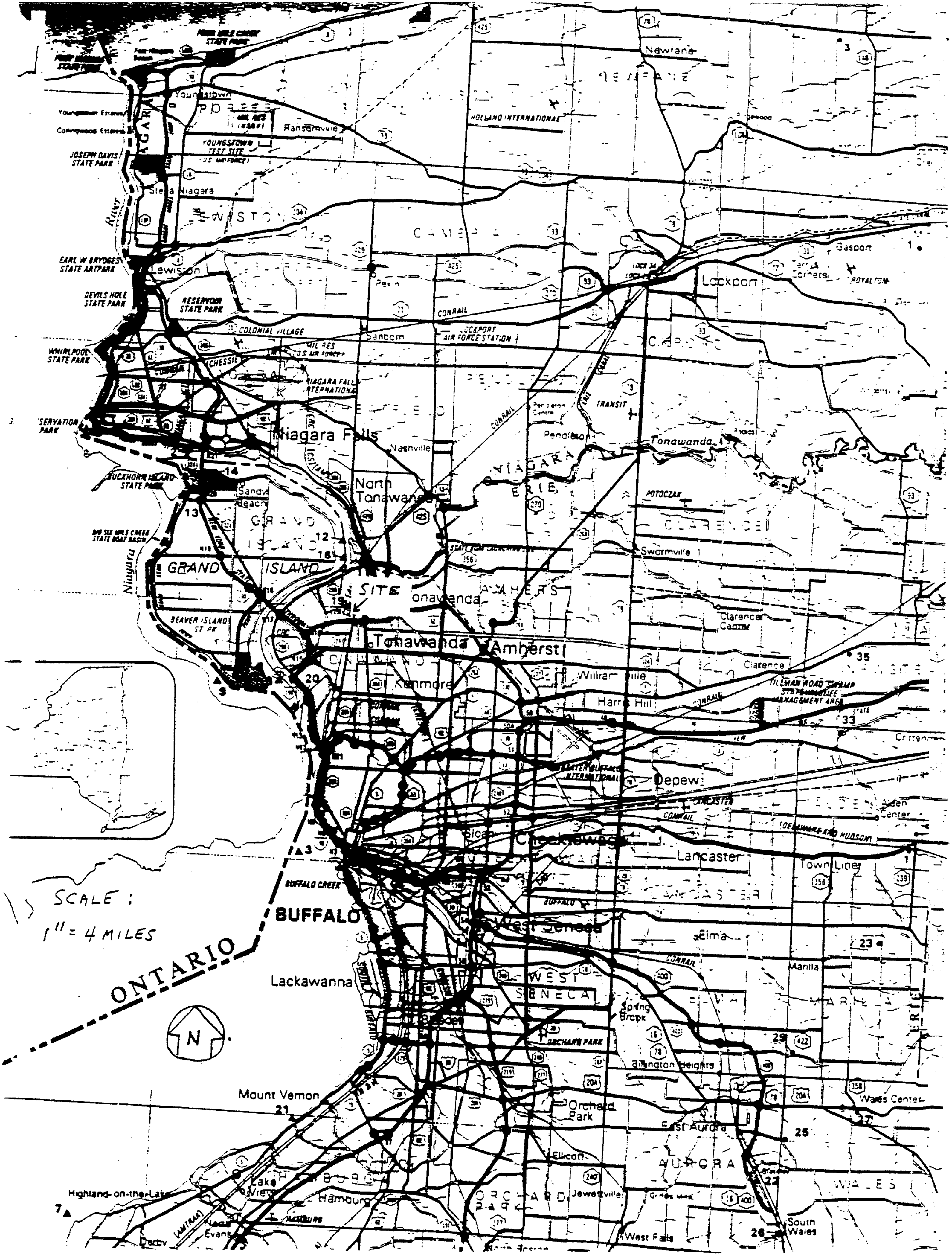
X = AFFECTED INTAKE

ERIE COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
	Akron Village (See No 1 Wyoming Co, Page 10).	3640	
1	Alden Village.	3460. .	.Wells
2	Angola Village.	8500. .	.Lake Erie
3	Buffalo City Division of Water. . .	357870. .	.Lake Erie
4	Caffee Water Company.	210. .	.Wells
5	Collins Water District #3.	704. .	.Wells
6	Collins Water Districts #1 and #2. .	1384. .	.Wells
7	Erie County Water Authority (Sturgeon Point Intake).	375000. .	.Lake Erie
8	Erie County Water Authority (Van DeWater Intake).	NA. .	.Niagara River - East Branch
9	Grand Island Water District #2. . .	9390. .	.Niagara River
10	Holland Water District.	1670. .	.Wells
11	Lawtons Water Company.	138. .	.Wells
X 12	Lockport City (Niagara Co).		Niagara River - East Branch
13	Niagara County Water District (Niagara Co). .		Niagara River - West Branch
14	Niagara Falls City (Niagara Co).		.Niagara River - West Branch
15	North Collins Village.	1500. .	.Wells
X 16	North Tonawanda City (Niagara Co).		.Niagara River - West Branch
17	Orchard Park Village.	3671. .	.Pipe Creek Reservoir
18	Springville Village.	4169. .	.Wells
X 19	Tonawanda City.	18538. .	.Niagara River - East Branch
20	Tonawanda Water District #1. . . .	91269. .	.Niagara River
21	Wanakah Water Company.	10750. .	.Lake Erie
	Non Municipal Community		
22	Aurora Mobile Park.	125. .	.Wells
23	Bush Gardens Mobile Home Park. . . .	270. .	.Wells
24	Circle B Trailer Court.	50. .	.Wells
25	Circle Court Mobile Park.	125. .	.Wells
26	Creekside Mobile Home Park.	120. .	.Wells
27	Donnelly's Mobile Home Court.	99. .	.Wells
28	Gowanda State Hospital.	NA. .	.Clear Lake
29	Hillside Estates.	160. .	.Wells
30	Hunters Creek Mobile Home Park. . . .	150. .	.Wells
31	Knox Apartments.	NA. .	.Wells
32	Maple Grove Trailer Court.	72. .	.Wells
33	Millgrove Mobile Park.	100. .	.Wells
34	Perkins Trailer Park.	75. .	.Wells
35	Quarry Hill Estates.	400. .	.Wells
36	Springville Mobile Park.	114. .	.Wells
37	Springwood Mobile Village.	132. .	.Wells
38	Taylors Grove Trailer Park.	39. .	.Wells
39	Valley View Mobile Court.	42. .	.Wells
40	Villager Apartments.	NA. .	.Wells

NIAGARA COUNTY

ID NO	COMMUNITY WATER SYSTEM
	Municipal Community
	Lockport City (See No 12
1	Middleport Village. . .
	Niagara County Water Dis (See No 13, Erie Co).
2	Niagara Falls City (See Erie Co). . . . .
	North Tonawanda City (Se Erie Co). . . . .
	Non-Municipal Community
3	Country Estates Mobile V



FOUR MILE CREEK STATE PARK
Newfane
Youngstown
Youngstown Estates
Ransomville
HOLLAND INTERNATIONAL
YOUNGSTOWN TEST SITE
JOSEPH DAVIS STATE PARK
Stella Niagara
EARL W BRYDGES STATE ARTPARK
Lewiston
DEVILS HOLE STATE PARK
RESERVOIR STATE PARK
Pekin
Lockport
Gasport
ROYALTON
CONRAIL
COLONIAL VILLAGE
Sanborn
LOCKPORT AIR FORCE STATION
WHIRLPOOL STATE PARK
CHESSIE
NIAGARA FALLS INTERNATIONAL
Niagara Falls
Nashville
Pendleton
TRANSIT
Tonawanda
BUCKHORN ISLAND STATE PARK
North Tonawanda
Sandy Beach
POTOCZAK
CLARENCE
BIG SIX MILE CREEK STATE BOAT BASIN
GRAND ISLAND
Swormville
SITE
BEAVER ISLAND ST PK
Clarence Center
Tonawanda
Amherst
Clarence
Kenmore
Williamsville
Harris Hill
TILLMAN ROAD SWAMP STATE WILDLIFE MANAGEMENT AREA
GREATER BUFFALO INTERNATIONAL
Depew
Alden Center
LANCASTER
DELAWARE AND HUDSON
Sloan
Cheektowaga
Lancaster
Town Line
BUFFALO CREEK
SCALE :
1" = 4 MILES
BUFFALO
West Seneca
Elma
Lackawanna
Marilla
ONTARIO
WEST SENECA
Spring Brook
ORCHARD PARK
Billington Heights
Mount Vernon
Orchard Park
Wales Center
East Aurora
Ellicott
AURORA
Highland-on-the-Lake
Lake View
Hamburg
Jewettville
WALES
AMTRAK
West Falls
South Wales

Section 2

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.

B-1

Memorandum, Erie County Department of Environment and Planning, Division of Environmental Control, from Donald Tamol to Anthony Voell, August 28, 1978.

COUNTY OF ERIE
DEPARTMENT OF ENVIRONMENT & PLANNING
DIVISION OF ENVIRONMENTAL CONTROL

MEMORANDUM

FROM Donald Tamol DATE August 31, 1978

TO Robert Mitrey, NYSDEC

SUBJECT Industrial Waste Inspection - Bisonite - 2250 Military Road #9

Attached is the following material relative to the above subject:

1. Inspection memo dated August 28, 1978
2. S.W. Inspection form 47-15-1
3. Inactive waste area inspection form
4. Supplemental landfill inspection form
5. USGS location map

As mentioned in the August 28th memo the company should be requested to find alternatives to land spreading of waste stream #2 and paint pigments.

COUNTY OF ERIE
DEPARTMENT OF ENVIRONMENT & PLANNING
DIVISION OF ENVIRONMENTAL CONTROL

MEMORANDUM

FROM Donald Tamol DATE August 28, 1978

TO Anthony T. Voell

SUBJECT Industrial Waste Inspection - Bisonite

On August 25, 1978, an inspection was conducted to determine status of the on-site disposal areas.

The plant property consists of two disposal-treatment areas.

1. A lagoon approximately 30 x 50 feet. The material dumped there consists of unusable spent by-products and washings from the manufacture of water based paints and consists mainly of titanium dioxide, Calcium Carbonate, Water, Clay, Lime and Calcium Hypochlorite. The lagoon dredgings are taken off site by Niagara Sanitation. No leachate was observed leaving the lagoon.

2. General spreading of waste stream #2 and paint pigments. Evidence of this material was observed in various areas of the plant property. Pigment material is dumped from small (5-10 gallon) containers. This material was not covered with soil. Mr. Schleicher was informed that it is very unlikely he will be able to continue disposal in this manner. His argument was that the mineral spirits used for weed control is basically the same material that would be used if he purchased a commercial weed killer.

My recommendation is that a letter be sent to Bisonite requesting an acceptable alternative.

DT:jk
Attachments

15-1 (5/78)

Trans. Type
1 ☐ Delete
2 ☐ Add
3 ☐ Change

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
FACILITY INSPECTION

2 Facility No. 7

Facility Name: BISONITE PAINT CO.

Location (Town, etc.): 2250 MILITARY RD. TONAWANDA, N.Y.

Persons Interviewed & Titles: Mr. Schleicher

10 Date 15	16 Time 21	22 Inspector 36	37	38 Remarks 72
08 25 78	08 30 AM	TAMP	4	9 ALTERNATIVE DISPOSAL METHOD SUGGESTED FOR SOLVENT BASED

Instructions: At each question, use a soft pencil to blacken either the YES or NO box.

		(BAD) YES	(GOOD) NO	
I. LEACHATE				
1.	Is leachate visible on, or near the site?	22		X
2.	Is leachate entering surface water?	23		X
*3.	Is leachate known to be contravening groundwater standards?	24		X
4.	Is refuse being placed into water?	25		X
II. BURNING				22
*5.	Is refuse burning without permit, or not under permit conditions?	26	N/A	24
6.	Is there evidence of unapproved previous burning?	27		
III. COVER				
7.	Is previous day's refuse not covered?	28	X	
8.	Is refuse protruding through daily, intermediate or final cover?	29		
9.	Is intermediate or final cover not in place, or improperly applied?	30	N/A	26
10.	Is wrong cover material used?	31		
IV. GRADING				
11.	Are there depressions, ponding, cracked cover, too steep slopes?	32		X
12.	On completed areas, is the vegetative cover missing or inadequate?	33		X
13.	Are there soil erosion or other drainage problems?	34		X
V. SEPARATION DISTANCES				28
14.	Is refuse closer than 50 feet to site boundaries?	35		
*15.	Is refuse known to be less than 5 feet above groundwater?	36		X
*16.	Is refuse known to be less than __ feet from surface water?	37		X
VI. NUISANCE CONDITIONS				30
17.	Are odors detectable off-site?	38		X
18.	Is blowing dust or dirt excessive or a nuisance?	39		X
19.	Are papers uncontrolled, or blowing off-site?	40		X
*20.	Is methane gas known to be leaving the site?	41		X
21.	Is noise excessive off-site?	42		X
VII. OPERATION CONTROL				32
*22.	Are Operation Permit conditions being violated?	43		
23.	Is refuse being deposited in a too large area?	44		
24.	Is refuse spread in layers thicker than 2 feet?	45		
25.	Is refuse being compacted poorly?	46		
26.	Is the working face height greater than 10 feet?	47	N/A	
27.	Is the working face steeper than a 3 to 1 slope?	48		
28.	Is the equipment on site not adequate for proper operation?	49		34
VIII. SAFETY AND HEALTH				
29.	Are scavengers present?	50		
30.	Is salvaging uncontrolled or creating a nuisance?	51		
31.	Are rodents and insects not controlled?	52	N/A	
32.	Do unsafe conditions or equipment exist?	53		36
IX. ACCESS CONTROL				
33.	Is access to the site improperly or inadequately controlled?	54		
34.	Is the site open without an attendant?	55		
35.	Is information about the site not posted? (hours of operation, etc.).	56	N/A	
36.	Is access to the operating area poor or unsafe?	57		38

*NOTE: For these questions, see the "Background Information Sheet" for this facility.

Site Sketch/Comments

See Plot Plan.

BISONITE PAINT CO AUG. 27, 1978

INACTIVE INDUSTRIAL WASTE DISPOSAL OR STORAGE SITE

Site: Bisonite Co.

Location: 2250 Military Rd.
(Include a location on a topo map or copy thereof)

When Site Was Used: 10+ years of prior usage (waste stream #1) used at present time (waste stream #2)

Size of Site (acres): Lagoon 30X50 and general plant property

Distance to Nearest Dwelling (feet): 20 FEET 84 Lumpen property

Distance to Nearest Watercourse (feet): Niagara River 1½ MILE

Type of Soil: CLAY

Proximity to wetlands: UNKNOWN

Depth to Groundwater: UNKNOWN

Any Identified or Potential Problems: SPREADING OF SOLVENT & PAINT RESIDUE ON PLANT PROPERTY.

Materials On Site

Material	Quantity	Container Type, if any	Generator (Name & Address)
Paint Residue	UNKNOWN	NONE (SPREAD ON CO. PROPERTY)	
WASTE STREAM #1	SEE SURVEY		
WASTE STREAM #2	SEE SURVEY		

Any Other Pertinent Information: The paint residue is spread in various areas throughout plant property. The company should discontinue this practice as well as the spreading of material from waste stream #2.

Name of Person Providing Information: MR Schleicher Phone: 693-6130

8/9/78

INSPECTOR

B-2

Letter from John C. Mahan, NYSDEC, to Martin Schleicher, Bisonite Paint Company, September 26,1978.

(48)

September 26, 1978

Mr. Martin Schleicher
Bisonite Paint Company
2250 Military Road
Tonawanda, NY 14150

Dear Mr. Schleicher:

This office is currently conducting an industrial waste survey for the entire Region 9. The purpose of the survey is to determine what wastes are being generated by industry, and how it is disposed of.

Your firm has been identified as one industry that is disposing of its industrial waste on its own property. A check of our files indicates that you do not possess a permit to landspread paint pigment and cleaning solvents on your own property. Therefore, you are hereby directed to immediately cease landspreading these materials. All waste shall be taken to an approved disposal site. Please note that the haulers of these wastes must be registered with this department.

You shall notify this office of your anticipated course of action within 10 days of receipt of this letter. In addition, you shall detail the means of disposal for the paint pigment and cleaning solvents.

Again, all landspreading of these materials shall cease immediately and all waste shall be taken to an approved landfill. If you have any questions, please contact this office at (716) 842-3837.

Very truly yours,

John C. McMahon
Regional Engineer,
Solid and Hazardous Waste Program

RJM:lb
cc: Erie County Dept. of Environment and Planning

B-3

Memorandum, NYSDEC, from Donald McKenzie to File, November 3, 1982.

15 (12/75)

New York State Department of Environmental Conservation

MEMORANDUM

TO: File
FROM: Donald McKenzie
SUBJECT: Bisonite Company - 10/28/82 Inspection

DATE: November 3, 1982

An inspection of Bisonite was made to confirm the filling of a former on-site landfill. The writer was accompanied by Mr. John Albert, Product Supervisor.

The landfill has now been filled with broken concrete and soil to the existing grade. This final step completes all DEC corrective action requests. As a result, this site is now considered inactive.

The file will be retained in the active landfill status however, until further notice. This site was last used September 26, 1978 and was subsequently dredged. Niagara Sanitation removed the dredged material. At no time since my first inspection(11/5/81) has debris or oily wastes been in evidence in this water filled depression.

No further action will presently be required of Bisonite, but no approval of the site restoration will be given either since no enforcement agency observed the dredging procedure or had other verification of its having been done properly. If present off-site sampling studies implicates contaminants in this area, then further specific studies may be conducted at Bisonite.

DM:vs

cc: Robert Mitrey

B-4

Letter, NYSDEC, from Robert J. Mitrey to William Russell, General Manager, Bisonite Paint Company, December 16, 1981.

re Avenue, Buffalo, New York 14202

File: 15146

December 16, 1981

Mr. William Russell
General Manager
Bisonite Paint Company
2250 Military Road
Tonawanda, New York 14150

Re: Compliance With NYSDEC Rules on
Proper Waste Disposal

Dear Mr. Russell:

On November 5, 1981 Mr. McKenzie of this Department visited your facility to observe disposal practices.

It was observed that on-site disposal of wastes has ceased. Therefore, no solid waste disposal permit will be required from this Department.

However, several conditions or practices will have to be corrected:

1. The 45' x 115' excavated landfill (now a rainwater lagoon) at the northwestern corner of the property must be properly closed. Proper closure must be made following plans developed by a qualified engineer and approved by this Department. The acceptability of leaving the wastes must be established and if so allowed proper closure (cover) will be required.

2. The present practice of paint sludge separation from the paint machinery wash water in the split oil tank must be revised so that separated contaminated water does not run onto and soak into the ground.

3. There are approximately 35 barrels of paint sludge near the western edge of the property. Such storage requires a permit if stored longer than 90 days under the Federal RCRA regulations if the waste is hazardous. DEC regulations to be implemented in the near future will be the same. As this waste has been stored on site for over three years, it is advisable to properly dispose of this waste immediately.

Please respond to each of the above concerns with a plan of corrective action by January 30, 1982.

Should you have any questions/comments, please do not hesitate to contact this office at 716/847-4585.

Very truly yours,

Robert J. Mitrey, P.E.
Associate Sanitary Engineer

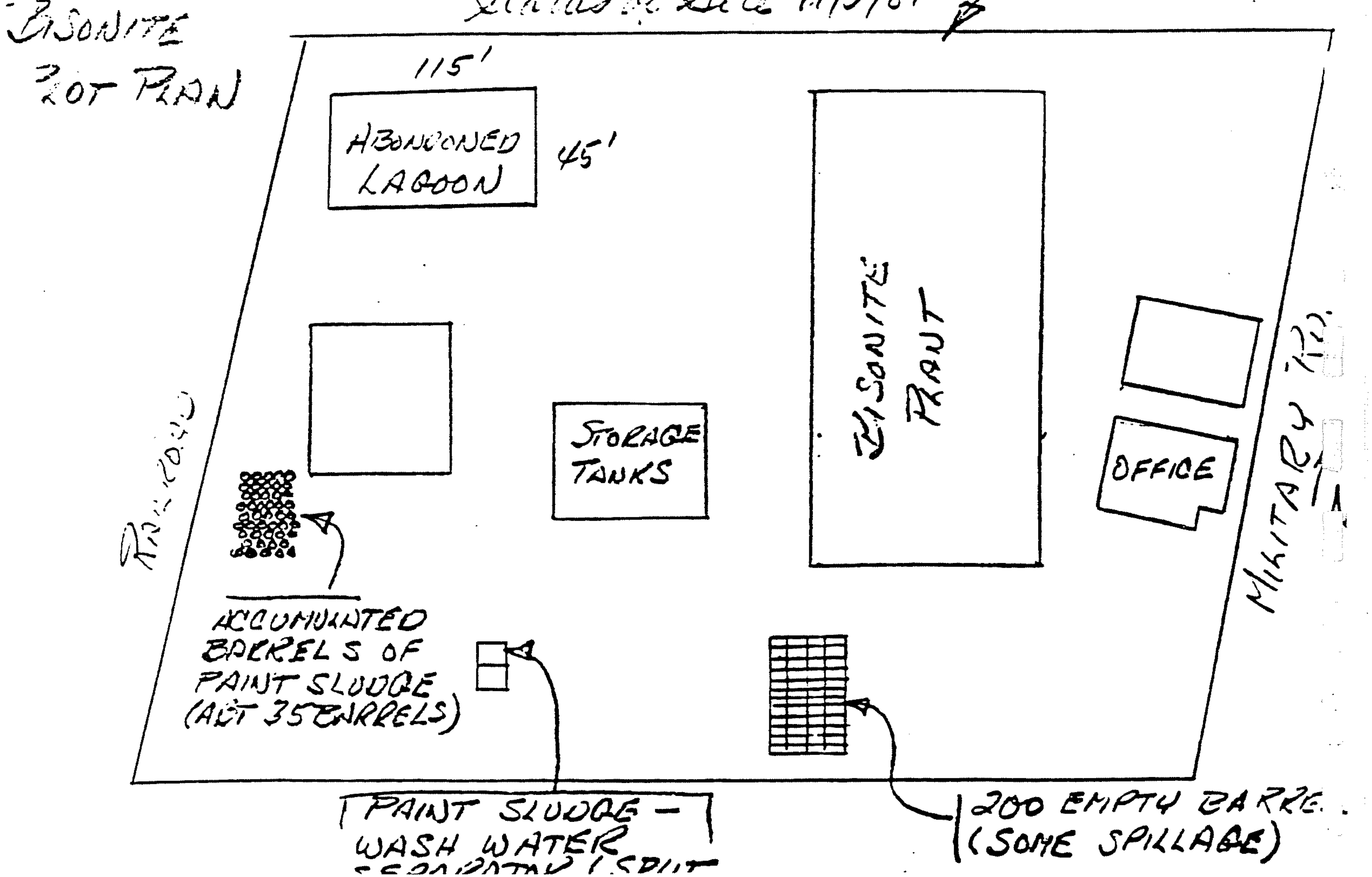
RJM:ADM:lak

cc: Mr. D. Campbell, Erie County Department of Environment and Planning

An improper practice observed is the separation of paint residues from the equipment wash water (drips on the ground) & the continued storage of these residues (since 9/78). Mr. Russell admitted that the split oil drum separator was primitive & that the separated paint residues were not being disposed of because of high landfill charges. DEC involvement will be necessary on these two points.

Note: (from Don Campbell) - Mr. George [illegible] (877-8800) Commissioner of Conservation of Environment is familiar with Bisonite's yearly report to [illegible]

Status of Site 11/5/81



B-5

Letter from Daniel Urbanczyk, Buffalo Testing Laboratories, to W.E. Schlecker, Bisonite Paint Company, October 12, 1978.

BUFFALO TESTING LABORATORIES
INCORPORATED

CHEMISTS — METALLURGISTS — BIOLOGISTS — ENGINEERS

902 Kenmore Ave. Buffalo, N. Y. - 14216

Phone: AC 716—873-2302

Report No.: 71,198
P. O. No.:

October 12, 1978

Attn: Mr. W. E. Schlecker
Bisonite Co. Inc.
P.O. Box 84
Kenmore Station
Buffalo, New York

Gentlemen:

Following are the results of tests performed on the sample which you submitted to us for analysis on September 22, 1978.

Sample Submitted: One (1) water sample.

Object: Chemical Analysis

Method: All tests were performed in accordance with the Standard Methods for the Examination of Water and Wastewater, 14th Ed.

Results: The results can be found on the following page.

Very truly yours,
BUFFALO TESTING LABORATORIES

Daniel Urbanczyk | ecw
DANIEL URBANCZYK

DU/ecw

BUFFALO TESTING LABORATORIES
INCORPORATED

Results:

Settleable Solids	0.2 ml/l
Total Suspended Solids	10,900 ppm
Volatile Suspended Solids	5,600 ppm
Biochemical Oxygen Demand	39,900 ppm
Chemical Oxygen Demand	85,200 ppm
Total Organic Carbon	31,000 ppm
Chlorine Demand	33.4 ppm
pH ✓	9.0
Grease and Oil	128 ppm
Total Kiehdahl Nitrogen	< 1.0 ppm
Ammonia (N)	< 1.0 ppm
Chloride	35 ppm
Phenol ✓	8.5 ppm
Cyanide	< 0.5 ppm
Sulfate	< 0.1 ppm
Alkalinity	650 ppm
Phosphorus	0.1 ppm
Cadmium	< 0.1 ppm
Copper ✓	0.7 ppm
Iron	130 ppm
Hex. Chromium ✓	0.1 ppm
Total Chromium	0.2 ppm
Manganese ✓	3.8 ppm
Mercury ✓	0.36 ppm
Nickel	< 0.5 ppm
Selenium	0.012 ppm
Zinc	5.0 ppm

BUFFALO TESTING LABORATORIES
INCORPORATED

CHEMISTS — METALLURGISTS — BIOLOGISTS — ENGINEERS

902 Kenmore Ave. Buffalo, N. Y. - 14216

Phone: AC 716—873-2302

Report No.: 71,395
P. O. No.: 5757

November 7, 1978

Attn: Mr. Martin Schleicher
Bisonite Company
2250 Military Road
Tonawanda, New York 14150

Gentlemen:

Following are the results of tests performed on the sample which you submitted to us for analysis on November 2, 1978.

Sample Submitted: One water sample.

Object: Chemical analysis.

Method: All tests were performed in accordance with the Standard Methods for the Examination of Water and Wastewater, 14th Ed.

Results:

Fluoride	1.0 ppm
Sulphide	< 0.5 ppm
Arsenic	< 0.5 ppm
Barium	30 ppm
Silver	< 0.5 ppm
Lead	< 0.5 ppm

Very truly yours,
BUFFALO TESTING LABORATORIES

DANIEL URBANCZYK

DU/ecw

BUFFALO TESTING LABORATORIES
INCORPORATED

B-6

Site Profile Report, Bisonite Company, Inc. Prepared by the Erie County Department of Environment and Planning, September, 1982.

COUNTY OF ERIE
DEPARTMENT OF ENVIRONMENT & PLANNING
DIVISION OF ENVIRONMENTAL CONTROL

MEMORANDUM

TO Peter Buechi, NYSDEC DATE Sept. 22, 1982

FROM Donald Campbell

SUBJECT BISONITE SITE # 915010.

Attached is a copy of our Profile Report for the subject company.

DONALD CAMPBELL, P.E.
Sr. Env. Quality Engineer

DC:rb

Attachment

BISONITE CO. INC.

2250 MILITARY RD

TONAWANDA, NEW YORK

SITE # 915010

Prepared by:
Erie County
Dept. of Env. & Planning
September 1982

solvent spread - weed control
+ lagoon

Bisonite Co, Inc.
22 Military Road
Tonawanda, New York
DEC Site # 915010

BACKGROUND

The Interagency Task Force, in Volume III of Hazardous Waste Disposal Sites in New York State, reported that on-site disposal of waste was performed by the Bisonite Company. Bisonite Co., Inc. manufactures paints. Land spreading of waste solvent and the lagooning of water based paint by-products was reported in Volume III. A "B" coding, indicating that detailed chemical analysis and/or a hydrogeologic survey is needed if warranted by the sites potential for health and/or environmental impact, was assigned to the site by the Task Force.

GENERAL INFORMATION

Bisonite Co. Inc. is located at 2250 Military Road in the Town of Tonawanda. The firm manufactures paints.

Spent solvents were spread on the ground as a means of weed control for a number of years. This practice was terminated in 1978. Solvents disposed of in this manner amounted to approximately 1800 gal/year.

A lagoon approximately 30 feet by 50 feet in area and 8 to 10 feet deep, received the by-product waste from the manufacture of water based paints. This lagoon is in the process of being filled in. The lagoon has not been activately used for the past 1-1/2 years. At the present time approximately half the lagoon has been filled in. The remaining half will be filled in during the spring of 1983. When necessary Niagara Sanitation

poly vinyl acetate (latex binder)

removed accumulated sediment, consisting of titanium dioxide, calcium carbonate, clay, lime, and calcium hypoclorite, for disposal off-site.

H2O,

The manner by which Bisonite is closing the lagoon is acceptable to the DEC.

INSPECTION FINDINGS

The site was inspected on August 28, 1978 by the DEP to determine the status of the on-site disposal areas.

Ground stains were evident from the land spreading of waste solvent. There was no evidence of any leaching observed near the lagoon.

SOILS, BEDROCK, GROUNDWATER

According to the Quaternary Geology Report of E.H.Mueller 1977, soil in this area is located in an end moraine. The General Soil Map and Interpretation for Erie County by USDA SCS 1979 reports that the soils in this area are classified as urban soils. This indicates that the area has received extensive disturbance to the original soil. No specific conclusion can be reached as to surficial soils.

The site is underlain by Camillus shale bedrock.

Drinking water is supplied by the Town of Tonawanda which receives its water supply from the Niagara River. No private drinking water supply wells are known to exist within a one (1) mile radius of the site.

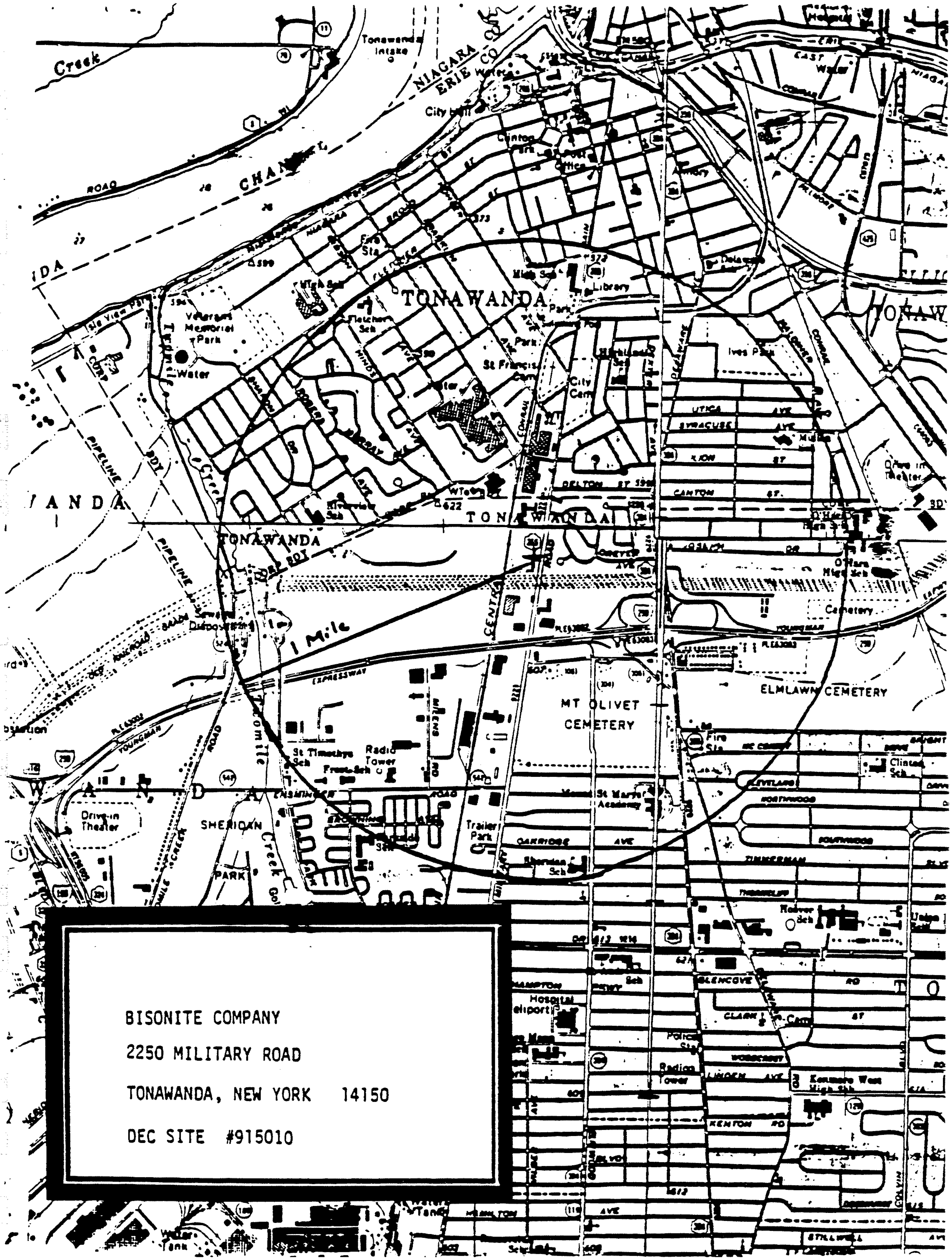
The site is not within a 100 year flood plain.

CONCLUSION

Review of data and inspection reports supports our department's conclusion that toxic or hazardous wastes disposed of at this site do not pose a problem. Land spreading of waste solvent has ceased and the use of the lagoon terminated. The lagoon is being filled in by an acceptable method.

RECOMMENDATIONS

The site status should be changed to an "F". The closure of the lagoon should be followed to insure that it is accomplished satisfactorily.



BISONITE COMPANY

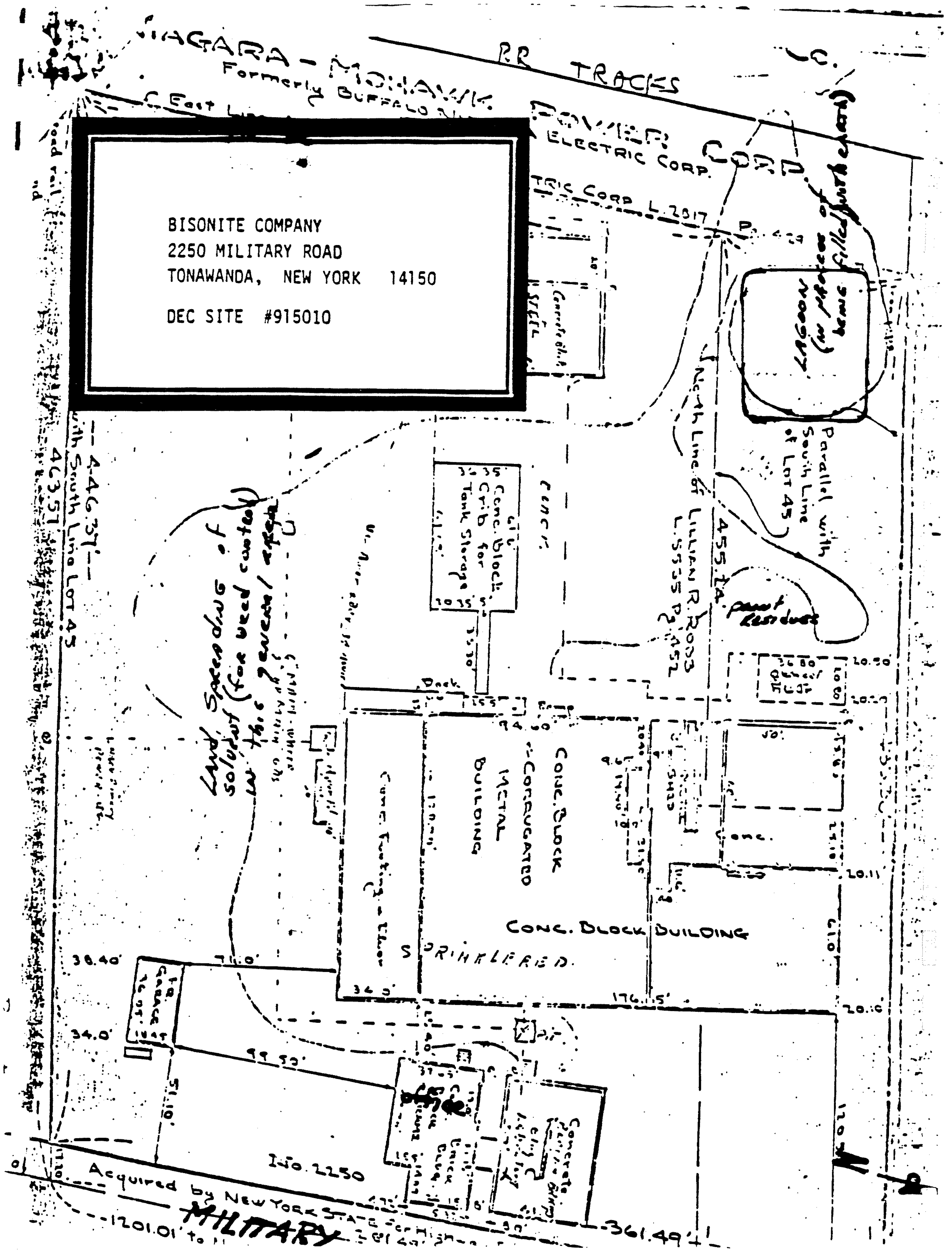
2250 MILITARY ROAD

TONAWANDA, NEW YORK 14150

DEC SITE #915010

BISONITE COMPANY
2250 MILITARY ROAD
TONAWANDA, NEW YORK 14150

DEC SITE #915010


NIAGARA-MOHAWK POWER CORP.
Formerly BUFFALO NIAGARA ELECTRIC CORP.
RR TRACKS
Lagoon (in process of being filled/covered)
Parallel with South Line of Lot 45
North Line of Lillian R. Rodd L.5535 P.152
455.14
paint residues
Conc. Block Crib for Tank Storage
Land spreading of solvent (for weed control) in this general area
Conc. Block & Corrugated Metal Building
Conc. Block Building
Sprinklered
Garage
Concrete
No. 2250
Acquired by New York State for Highway
MILITARY
446.37
463.57 with South Line Lot 45
1201.01
361.49

B-7

NYSDEC Division of Solid and Hazardous Waste, Inactive Hazardous Waste Disposal Site Report, John S. Tygert, January 24, 1985.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

CLASSIFICATION CODE: 2a **REGION: 9** **SITE CODE: 915010**

NAME OF SITE : Bisonite Paint Co.
STREET ADDRESS: 2250 Military Road
TOWN/CITY: Tonawanda
COUNTY: Erie
ZIP:

SITE TYPE: Open Dump- Structure- Lagoon-X Landfill- Treatment Pond-
ESTIMATED SIZE: 1 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Bisonite Paint Co.
CURRENT OWNER ADDRESS.: 2250 Military Rd., Tonwanda NY
OWNER(S) DURING USE...: Bisonite, Inc.
OPERATOR DURING USE...: Bisonite
OPERATOR ADDRESS.....: 2250 Military Rd., Tonawanda NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From Unknown To Present

SITE DESCRIPTION:
Lagoon for water based paint solids. Solvents and pigments to offsite hazardous waste disposal facility.

HAZARDOUS WASTE DISPOSED: **Confirmed-** **Suspected -X**

TYPE	QUANTITY (units)
Solvent (prior to 1980)	1800 gal/yr.
Metal paint pigments (prior to 1980)	Unknown
Water based paint by-products (prior to 1980)	Unknown

SITE CODE: 915010

ANALYTICAL DATA AVAILABLE:

Air- Surface Water- Groundwater- Soil- Sediment- None-X

CONTRAVENTION OF STANDARDS:

Groundwater- Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: State- Federal-
STATUS: In Progress- Completed-

REMEDIAL ACTION:

Proposed- Under Design- In Progress- Completed-
NATURE OF ACTION:

GEOTECHNICAL INFORMATION:
SOIL TYPE: Unknown
GROUNDWATER DEPTH: Unknown

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

No known environmental problems associated with this site.

ASSESSMENT OF HEALTH PROBLEMS:

Insufficient Information

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NAME.: John S. Tygert, PE
TITLE: Assoc. San. Engineer

NAME.: R. Olazagasti
TITLE: Solid Waste Management Spec.

DATE.: 01/24/85

NEW YORK STATE DEPARTMENT OF HEALTH

NAME.: R. Tramontano
TITLE: Bur. Tox. Sub. Assess.

NAME.:
TITLE:

DATE.: 01/24/85

B-8

1990 Census figures for Buffalo area Cities and Towns, The Buffalo News, January 25, 1991.

Area lost 4.3% of residents since '80, census shows

Erie County's decline of 4.62% ranks as the largest in the state

By DOUGLAS TURNER
News Washington Bureau Chief

WASHINGTON — Driven by the continuing flight of residents from Buffalo and Niagara Falls, the Buffalo metropolitan area lost 53,358, or 4.3 percent, of its residents in the last 10 years, according to the final 1990 census figures released Thursday.

The metropolitan area is made up of Erie County, which suffered the largest percentage decrease of any county in the state (4.62 percent), and Niagara County, which lost 2.9 percent of its population.

Combined, those two counties have dropped from 1,232,826 residents in 1980 to 1,189,288 in 1990.

Separately, Niagara County's population has gone from 227,354 to 220,756.

And Erie County's population has fallen from 1,015,472 to 968,532, the first time it has gone below the 1 million mark since 1950. It hit a high in 1970, with a count of 1,113,491.

County Executive Gorski could not be reached to comment. He is on his way to Tampa. Deputy County Executive David R. Smith said the population loss is not unexpected.

"I think the numbers verify something we've known for quite a while," he said. "Obviously, we lost people in the early part of the decade when plants were closing and jobs were evaporating."

While the county stands to lose some amount of federal and state aid, which is based on the local head count, the reduction should be modest, Smith said. State and local revenue sharing, which is tied directly to population tallies, already has been scaled back.

"We've already lost the big categories of aid that are populaton-driven, so I don't expect any major negative impact from the census numbers," he said.

The Census Bureau said 328,123 people now live in Buffalo, down 8.3 percent from the 357,870 recorded in 1980 — the largest decrease among the state's five major upstate cities, which include Albany, Rochester, Syracuse and Yonkers.

POPULATION DROPPING

Census figures down

	1980	1990
Erie, Niagara	1,232,826	1,189,288
Erie County	1,015,472	968,532
Niagara County	227,354	220,756
Niagara Falls	71,384	61,840
Buffalo	357,870	328,123

Niagara Falls declined 13.4 percent to 61,840.

The only significant gains in the Buffalo metropolitan area were in towns close to the University at Buffalo North Campus — Amherst, up 2.8 percent to 111,711; Clarence, up 10.4 percent to 20,041, and the Niagara County Town of Lockport, up 28.2 percent to 16,5[illegible].

However, nearly every large community in the eight Western New York counties that once had a major industry — or was home for employees of those industries — experienced radical losses.

The four counties in the industrial grid stretching from the Niagara Frontier to the Pennsylvania line — Erie, Niagara, Chautauqua and Cattaraugus — had 60,031 fewer residents than in 1980. All the cities in Western New York experienced declines, ranging from 2 percent in Batavia to 9.2 percent in Dunkirk.

Al Price, acting dean of planning and design at UB, said the losses paralleled the decline of heavy industry in the region, which he said was mainly caused by dramatic changes in the global economy and poor investment decisions by those who controlled these American-owned exporting companies.

This shrinkage has clearly had an impact on the region's retail industry, Price said.

Niagara Falls Mayor Michael Michael C. O'Laughlin said he was surprised to see his city's population had dropped from 71,384 to 61,840.

The only large city in the state

See **Census** *Page* **C4**

THE BUFFALO NEWS
Local News
Friday, January 25, 1991

Census: State population is 17.9 million

Continued from Page C1

that gained was New York City, with 250,925 more residents than it had in 1980. The census reported 7,322,564 people lived in New York City in 1990.

Statewide, New York's population increased from 17,558,165 in 1980 to 17,990,455 in 1990, according to the bureau. But as a result of population shifts to the South and West, New York is expected to lose three House seats after redistricting.

The figures, released Thursday are, for the most part, final. The Census Bureau has until July 15 to announce whether it will make any adjustment.

New York State is involved in a federal lawsuit to force the Commerce Department to make a statistical adjustment.

The 1990 census totals for Western New York cities and the percentage of change follow:

Batavia — 16,310, down 2 percent.

Dunkirk — 13,898, down 9.2 percent.

Jamestown — 34,681, down 3 percent.

Lackawanna — 20,585, down 9.3 percent.

Lockport — 24,426, down 1.8 percent.

North Tonawanda — 34,989, down 2 percent.

*City of Tonawanda — 17,284, down 7.5 percent.

Olean — 16,946, down 6.9 percent.

Salamanca — 6,556, down 4.8 percent.

The totals for Erie County towns and their percentage of change follow:

Alden — 10,372, up 2.8 percent.

Aurora — 13,433, down 3.2 percent.

Boston — 7,445, down 3.1 percent.

Brant — 2,119, down 13 percent.

Cheektowaga — 99,314, down 9.3 percent.

Colden — 2,899, down 7.3 percent.

Collins — 6,020, up 19.5 percent.

Concord — 8,387, up 2.6 percent.

Eden — 7,416, up 1.2 percent.

Elma— 10,355, down 2.1 percent.

Evans — 17,478, down 2.7 percent.

Hamburg — 53,735, up 0.9 percent.

Holland — 3,572, up 3.7 percent.

Lancaster — 32,181, up 6.8 percent.

Marilla — 5,250, up 8 percent.

Newstead — 7,440, up 2.9 percent.

North Collins — 3,502, down 7.6 percent.

Orchard Park — 24,632, up 1.1 percent.

Sardinia — 2,667, down 4.5 percent.

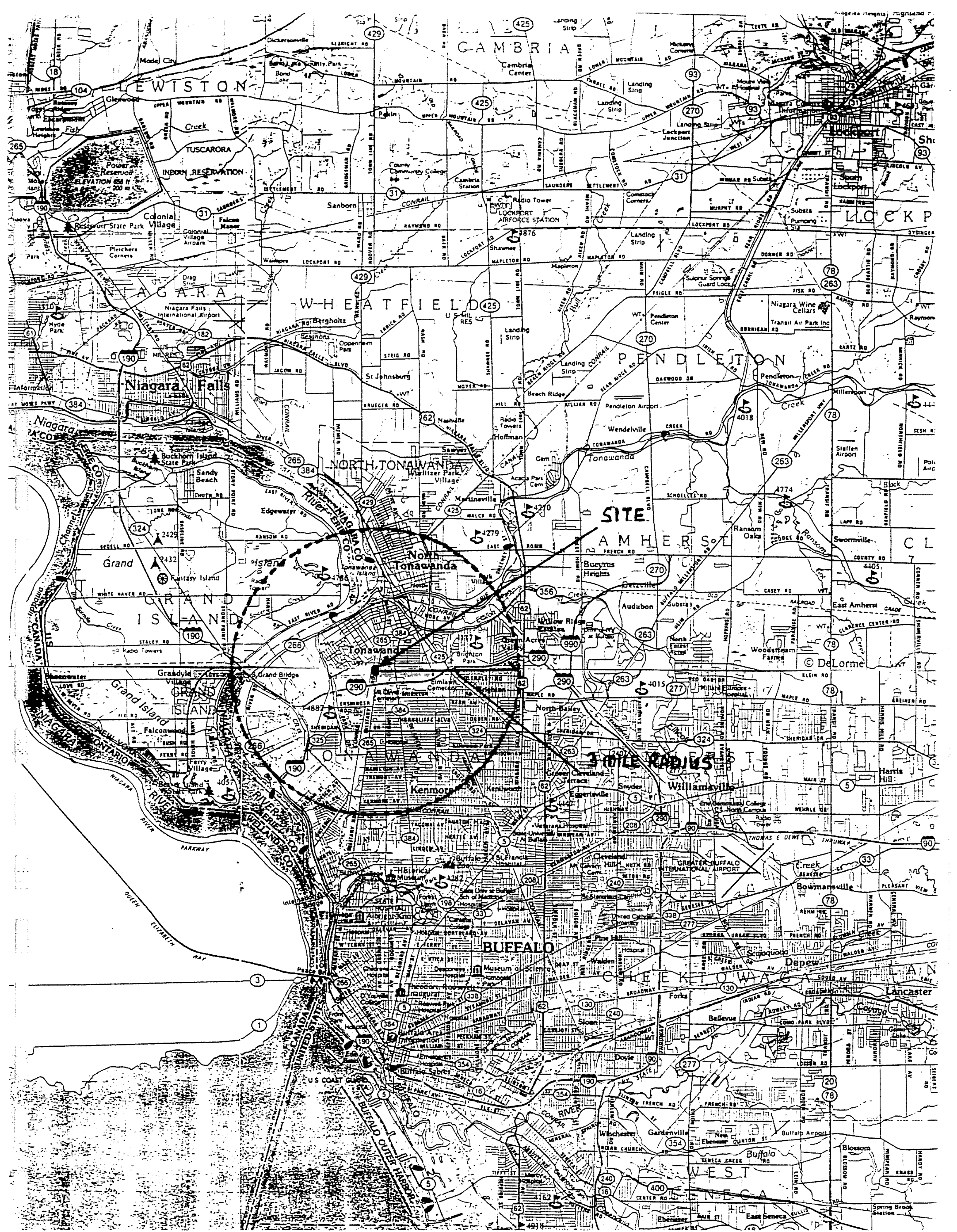
* Town of Tonawanda — 82,464, down 9.6 percent.

Wales — 2,917, up 2.6 percent.

West Seneca — 47,830, down 6.6 percent.

POPULATION 3 MILES FROM BISONITE PAINT COMPANY

CITY OF TONAWANDA	100%	17284
TOWN OF TONAWANDA	70%	57725
CITY OF NORTH TONAWANDA	60%	20993
TOWN OF GRAND ISLAND	20%	4000 (EST)
CITY OF BUFFALO	2%	6563
APPROXIMATE TOTAL		106,565



SITE
3 MILE RADIUS
CAMBRIA
LEWISTON
Model City
TUSCARORA
INDIAN RESERVATION
Cambria Center
Sanborn
Colonial Village
Reservoir State Park
LOCKPORT AIRFORCE STATION
Lockport
South Lockport
NIAGARA
WHEATFIELD
PENDLETON
Niagara Falls International Airport
Niagara Falls
Bergholtz
St Johnsburg
Nashville
Pendleton Center
Pendleton Airport
Wendelville
Beach Ridge
Millersport
Transit Air Park Inc
NORTH TONAWANDA
Martinsville
North Tonawanda
Tonawanda
Sandy Beach
Buckhorn Island State Park
Edgewater
Grand Island
GRAND ISLAND
Fantasy Island
Beaver Island State Park
AMHERST
Bucyrus Heights
Getzville
Audubon
Ransom Oaks
Swormville
East Amherst
Woodstream Farms
© DeLorme
TONAWANDA
Kenmore
North Bailey
Snyder
Williamsville
Harris Hill
Eggertsville
GREATER BUFFALO INTERNATIONAL AIRPORT
Bowmansville
BUFFALO
CHEEKTOWAGA
Depew
Lancaster
Sloan
Bellevue
Forks
Doyle
Winchester
Gardenville
Buffalo Airport
Blossom
WEST SENECA
East Seneca
Ebenezer
Peace Bridge
QUEEN ELIZABETH WAY
NIAGARA PARKWAY
CANADA
UNITED STATES
NEW YORK
ONTARIO
NIAGARA RIVER
BUFFALO OUTER HARBOR
US COAST GUARD STA
Buffalo Sabres
Museum of Science
Historical Museum

B-9

Site Interview Form between George Moretti (DUNN) and John Albert (Bisonite), December 12, 1990.

SITE INTERVIEW FORM

SITE: BISONITE PAINT COMPANY PROJECT NUMBER: _____

DATE: 12-12-90 TIME: 10:00 - 11:20 AM

INTERVIEWER (DUNN/TAMS): GEORGE MORETTI (GLENNMAY - NYSDEC)

INTERVIEWEE (OF SITE): JOHN ALBERT

NO. OF YEARS WORKING AT THE SITE: 28

DATES FROM: 1962 TO: PRESENT

JOB RESPONSIBILITIES AT SITE: INITIALLY - LABORER PRESENTLY - VP of OPERATIONS

INTERVIEW: THE FOLLOWING ITEMS WERE DISCUSSED

- MR EDWARD ROBB IS THE PRESENT OWNER OF BISONITE
- MR ALBERT WAS UNSURE IF THE LAGOON WAS DREDGED PRIOR TO ITS CLOSING (A SUBSEQUENT PHONE CALL TO MR. ROBB DID NOT RESOLVE THE UNCERTAINTY OF WHETHER OR NOT THE LAGOON WAS EVER DREDGED OR CLEANED PRIOR TO CLOSURE)
- MR ALBERT WAS UNSURE OF WHEN THE LAGOON WAS PLACED INTO OPERATION BUT THOUGHT IT WAS IN THE EARLY 1970's AND COULD HAVE BEEN AS EARLY AS 1968 WHEN A NEW MANAGER, W.E. SCHLECKER TOOK OVER THE MILITARY ROAD OPERATION
- THE UNDERGROUND STORAGE TANKS (2) FORMERLY LOCATED NORTH OF THE RESIN BUILDING WERE REMOVED IN THE EARLY 1980S. THEY PREVIOUSLY CONTAINED VINYL ACETATE. NO INFORMATION EXISTS ON THEIR REMOVAL EXCEPT THAT THEY WERE CUT UP AND REMOVED OFFSITE.
- THERE ARE NO GROUNDWATER MONITORING WELLS ONSITE BUT THERE IS AN OLD "FAIRIN WELL" LOCATED JUST OUTSIDE THE OFFICE. NO INFORMATION EXISTS ON CONSTRUCTION OR DEPTH BUT APPEARS TO BE ≈ 2' IN DIAMETER, NOW COVERED BY GRANITE BOULDER. WELL IS LOCATED THROUGH A SANDSTONE SLAB APPROXIMATELY 6 FEET SQUARE
- THE OFFICE (AN OLD FARMHOUSE) IS APPROXIMATELY 150 YEARS OLD AND IS BEING

SIGNATURES:

INTERVIEWEE: John T. Albert DATE: 12-12-90

INTERVIEWER: George C Moretti DATE: 12-12-90

SITE INTERVIEW FORM

(CONTINUE FROM PG 1)

SITE: BISONITE PAINT COMPANY PROJECT NUMBER: _____

DATE: 12-12-90 TIME: 10:00 - 11:20

INTERVIEWER (~~DUNN~~/TAMS): GEORGE C MORETTI (GLEN MAY - DEC)

INTERVIEWEE (OF SITE): JOHN ALBERT

NO. OF YEARS WORKING AT THE SITE: 28

DATES FROM: 1962 TO: PRESENT

JOB RESPONSIBILITIES AT SITE: INITIALLY - LABORER PRESENTLY - VP OF OPERATION

INTERVIEW:

CONSIDERED FOR HISTORICAL SITE STATUS BY THE TONAWANDA HISTORICAL SOCIETY

- SITE WAS PURCHASE BY PRATT & LAMBERT IN 1986. P&L ~~WERE~~ WAS TO TAKE OVER ASSETS (PAINT & SOLVENT STOCK) SEPT. 15 1986. P&L WANTED ONLY THE ASSETS AND NOT THE PROPERTY BECAUSE OF THE SITE HISTORY INCLUDING BEING A NYSDEC LISTED SITE AS WELL AS THE LAGOON OPERATION ONSITE. THE OPERATION CLOSED DOWN FOR SEVERAL MONTHS AS PRATT & LAMBERT BACKED OUT OF THE DEAL BECAUSE THE SITE OWNERSHIP ISSUE COULD NOT BE RESOLVED. MR. ALBERT TOOK OVER THE OPERATION AND RESTARTED THE FACILITY IN NOVEMBER 1986. THE CASE BETWEEN BISONITE AND P&L IS STILL PENDING LEGAL ACTION.

SIGNATURES:

INTERVIEWEE: John F. Albert DATE: 12-12-90

INTERVIEWER: George C. Moretti DATE: 12-12-90

B-10

Report of Call between George Moretti (DUNN) and Jerome Miller (ECDEP), December 6, 1990.

GEOSCIENCE CORP

REPORT OF CALL

TO: Project File FROM: George Moretto

DATE: 12-6-90 TIME: 0915

RE: Bisonite Lagoon Closure

PERSON CONTACTED: Jerome Miller, Erie County Dept of Environment & Planning

PHONE #: (716) 858 7583 PROJECT #:

DESCRIPTION OF CONVERSATION: ACTION/ REMARKS:

J. Miller checked the ECDEP file for Bisonite and found a memo dated 1983 by Ron Entringer (of DEP) stating that the lagoon was closed out and filled in. There were no details of the closure except that the NYSDEC was the lead agency.

The memos indicated that the lagoon was periodically scraped of the sludge which was disposed of at HEWCO (subsequently became CECOS/BFI) in Niagara Falls.

The lagoon use was discontinued as early as 1979 however it was not filled in until late 1982 and seeded in early 1983

COPIES TO: ____ CIRCULATE TO: File

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____ ____

project\callrpt

B-11

Internal DEC memoranda concerning Region 9 RCRA inspections performed at Bisonite Paint Company.

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202

Thomas C. Jorling
Commissioner

MEMORANDUM

TO: Mark Mateunas, DHWR, Albany

FROM: Glenn M. May, DHWR, Region 9

SUBJECT: Bisonite Paint Company, Site No. 915010, RCRA ID #NYD002114163

DATE: April 12, 1991

On Wednesday, April 10, 1991, Mr. Ray Henning at this office conducted a RCRA inspection at the subject facility. Numerous violations were noted including, but not limited to, leaking drums and improper disposal of waste material. A RCRA inspection had not previously been conducted at this facility.

Contrary to the information contained in DHWR program files, Bisonite manufactures, and has manufactured in the past, both water and solvent based paints. On site during the RCRA inspection were drums of xylene, toluene, methyl ethyl ketone and methyl isobutyl ketone. It is likely that these solvents were used in the landspreading practices formerly conducted by the facility. These chemicals were also observed leaking into open floor drains and have the potential of contaminating both soil and groundwater.

In addition, the resin building identified on Figure 5-1 of the PSA Task 1 report was formerly utilized in the processing and manufacturing of varnish. This process has been discontinued and the building is used for the storage of drums.

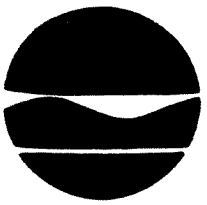
This information suggests that the extent of contamination could be more severe than previously believed.

ad

cc: Mr. E. Joseph Sciascia
Mr. Ray Henning

File

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202



Thomas C. Jorling
Commissioner

MEMORANDUM

TO: Mr. Glenn May
FROM: Mr. Raymond Henning RHH
SUBJECT: Bisonite

DATE: April 29, 1991

Further discussion with Mr. James Groebe has resulted in agreement that this facility should be handled by the RCRA program. I will return to the facility to complete my RCRA inspection during early May and will schedule that date with you.

With regard to sampling, there are several areas with which I have concern. The facility has a trench drain which extends from inside to outside of the facility. That drain was full during the 3/10/91 inspection. Mr. Albert claimed that the liquids are occasionally pumped into the waste solvent storage tank for disposal.

Numerous spills are evident inside and outside of the facility. These solid residues may contain toxic metals (Pb, Cd, Cr, Hg) as these types of pigments are still used during current operations.

There are many (>100 drums) located outside of the building at least 2 of which had obviously leaked (Area #1).

The tank farm is deteriorating extensively, and it appeared that spills had occurred within that area (Area ~~#12~~ 2).

To the South of the facility, I observed red and yellow paint residues in the field. The sample I gave you was from this area (Area #3).

Once I complete my inspection, I will forward a copy of my report and any notes regarding my conclusions to you for your consideration.

RH:sz

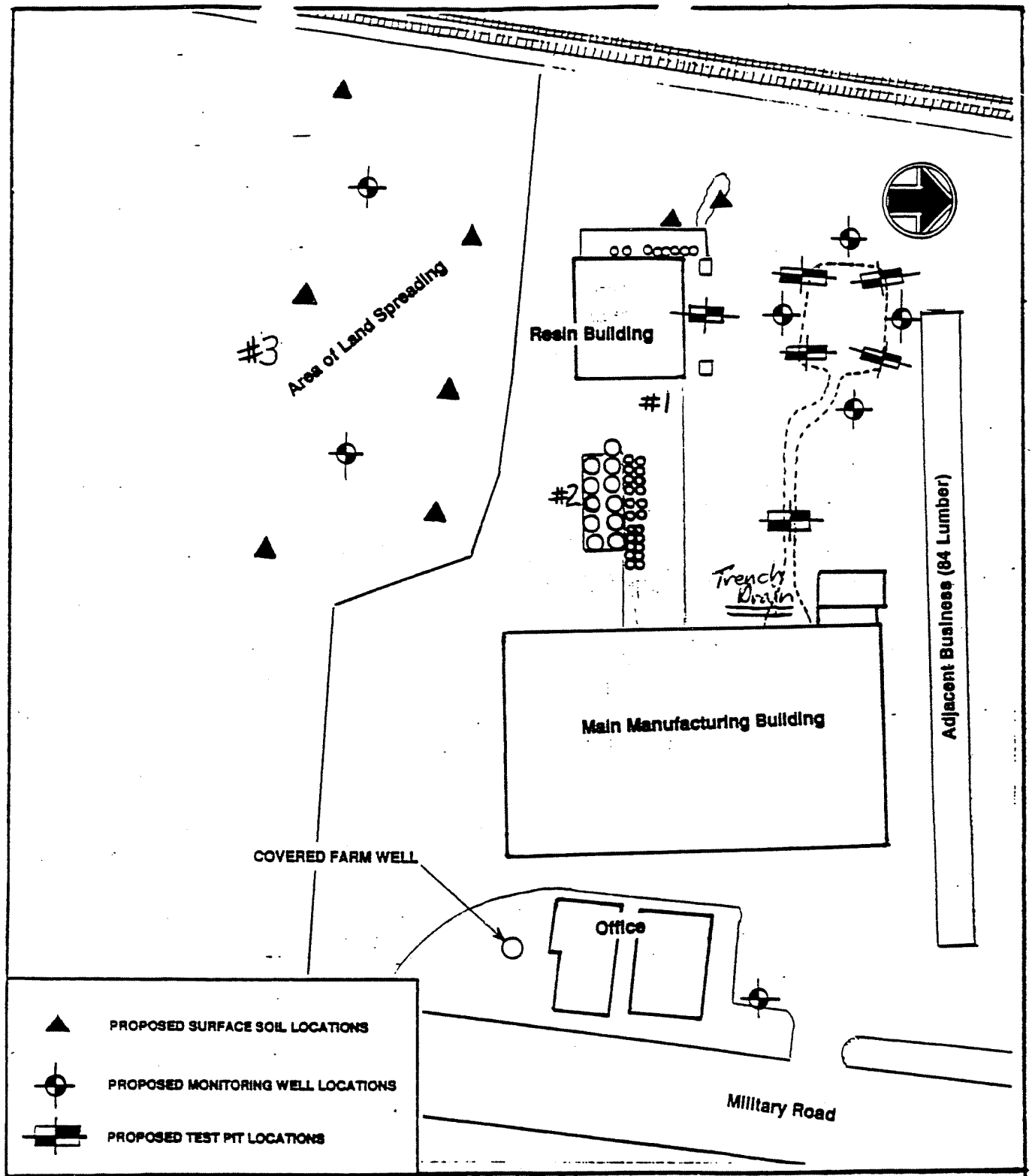


FIGURE 5-1
PROPOSED SAMPLING LOCATIONS
BISONITE PAINT COMPANY

Inspection Summary for Bisonite Company, Inc.
Generator ID# NYD002114163

On April 10, 1991, Mr. Henning of DHSR inspected Bisonite located at 2250 Military Road in the City of Tonawanda with Investigator Groebe of DEE. Investigator Groebe had been asked to explore allegations of on-site disposal of paint wastes and requested Mr. Henning's assistance in conducting an inspection of the facility. Prior to the inspection, Mr. Henning checked the computer to determine if Bisonite had an EPA ID number. There was no record of Bisonite within that system. He also checked the computer printout lists and the RCRA files and found no records pertaining to the facility.

Mr. John Albert (Bisonite Manager) accompanied Henning and Grobe on their inspection and responded to their inquiries. Mr. Albert explained the processes employed to manufacture various paints. He explained that Xylene, Toluene, MEK, and MIBK are used in some of the paint blends. He also stated that Lead and Chrome pigments are still used within certain products.

Overall, the operation was very messy with large accumulations of dried paint spills on and around process equipment. There were open containers everywhere, some containing what Mr. Albert claimed to be raw materials, and others contained sludge and liquid waste products. There was also a trench drain which contained a pink-colored liquid. Mr. Albert claimed that the trench was pumped into the waste solvent tank and that solids were put into the dumpster; however, he did not know when it had last been emptied.

Mr. Albert explained that the waste solvent tank was emptied approximately once each year generating 3,500 - 4,000 gallons. Later, Mr. Henning examined two manifests which showed that the waste was classified as D001.

Mr. Albert also explained that paints are occasionally returned from their distributors. Those paints are re-blended into subsequent batches of paints. Mr. Henning questioned whether that was occurring because he observed nearly five hundred (500) five-gallon pails both inside and outside of the main process building. Many of those containers showed signs of spillage. Some were open, others were dented. A pallet of five-gallon pails stored outside were extremely corroded, and evidence of spillage was obvious outside as well as inside.

It also appeared that the trench drain continued outside of the main process building. It appears that there used to be an attached building which no longer exists. That trench was covered with steel plates.

The inspectors continued walking from the back of the main process plant alongside the tank farm to the resin building. There were many drums stacked up through that area, at least two of which had leaked. The tank farm did have a secondary containment dike; however, the floor within that structure was broken and it appeared that the tanks were sinking. Mr. Henning also observed what appeared to be stains from past spillage inside the diked area. There was no standing water within that structure. He did not inquire if it had been pumped out or if it leaked into the underlying soils.

The inspectors then entered the resin building. That building contained at least two multi-compartment rectangular tanks and many other drums and five-gallon pails. Some of the drums were labeled Xylene, Toluene and/or MEK. There was a distillation unit which Mr. Albert claimed was still in use but not running during our inspection. There were several open five-gallon pails containing dried out paint solids nearby. Mr. Albert explained that the varnish process had not been operated for about five years.

After leaving the resin building, Mr. Henning examined four or five rectangular tanks stored on the ground in the field adjacent to the resin building. Those tanks appeared to contain some type of material which Mr. Albert claimed to be old product (verify). Mr. Henning also observed paint solids on the ground in that area which amounted to an inch in thickness, red and yellow in appearance.

The inspectors returned to Mr. Albert's office where they examined two manifests. Mr. Albert presented a copy of a Phase I report which had been prepared to address an on-site lagoon and land spreading of solvents area. Mr. Henning learned through looking at the report that Mr. Glenn May of Region 9 DHWR was involved with that investigation and decided to end the inspection and talk to Mr. May to determine the extent of his operations on site.

Mr. Henning learned that the remedial program was only addressing the issues associated with the old lagoon and solvent spreading areas. He also learned that the Department computer had a record of only one waste shipment December 4, 1989.

Mr. Henning concluded that a more detailed inspection was needed and referred the case to Mr. Baker for scheduling as a formal RCRA inspection.

Attempts at scheduling the inspection were delayed until September 91. Then, on September 18, 1991 DEE investigated the presence of two box trailers containing nearly 300 drums of waste paint from Bisonite stored outside of a Buffalo warehouse. A fire started in a car parked near the trailers caused some damage and spillage of material from the trailers and this incident prompted the DEE investigation.

Through DEE investigative work it was learned that Bisonite had sold the waste paint to second party who planned on using the material for blending into a driveway sealer product. However, when it was learned that the second party did not have the means to accomplish the task, DEE persuaded Bisonite to take custody of the material and properly dispose of it.

A subsequent inspection of the Bisonite facility was conducted by Mr. Henning and Mr. Corbett of DHSR on September 25, 1991. Mr. Johnson and Mr. Moskal of DEE were also present to sample the trailer drums which were returned to the facility from the Buffalo warehouse location.

It was learned through an interview with Mr. James Cornell, a representative of the owner Mr. Edward Robb, that Bisonite Company Inc. was a manufacturer and distributor of paint products from 1947 through May 1, 1991. The company has been out of business since May 1, 1991 and has sold most of its assets to satisfy creditors. All of the existing products stored in the warehouse section of the facility were claimed to be owned by Mr. Cornell and he also stated that he was handling the affairs relating to cleanup of the trailer drums for Mr. Robb who is said to be 78 years old.

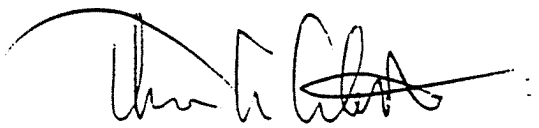
In the walk through of the facility, an estimated 50,000 gallons of waste materials were found in tankage and drums by the inspection team. Many of the waste tanks were in poor condition and sitting on soils in unconfined areas of the site. These same tanks were open to the environment and a release from one was observed. Paint wastes were also noted on soil surfaces in remote areas of the facility. Four transformers, presumed to contain regulated amounts of PCBs because GE contacts confirmed that the serial numbers taken from the units indicate they are very old, were stored in an unconfined outdoor storage area. Mr. Cornell stated that the transformers had formerly been housed in a shed which was dismantled in August 91. Mr. Cornell also stated that Bisonite was working with a consultant to properly dispose of the transformers.

Split samples were obtained from three outdoor storage tanks containing paint wastes and from the trailer drums staged on a loading dock near the production area. Photographs were taken of the known waste storage areas and of spill areas. A list of the photographs with descriptions and a plot plan is included as attachment 1.

The samples were sent to a contract lab for volatiles analysis and a portion of the tank and tank spill sample was analyzed in-house by Dr. Frances Yang. Those samples confirmed the presence of xylene and toluene in the ppm to 1% range.

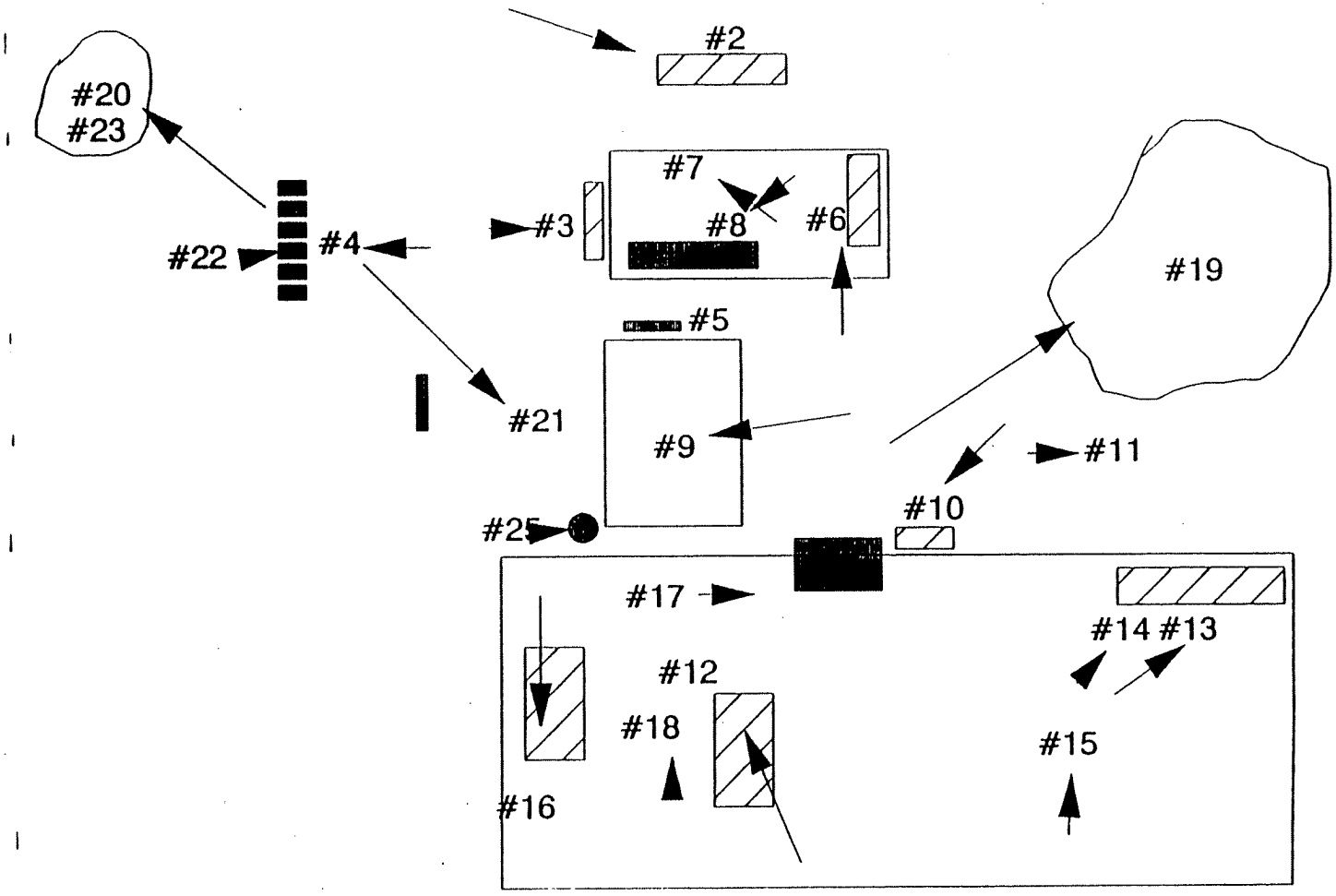
DHSR staff have worked on a draft Consent Order with DEE. The Order requires the owner to remove and dispose of all the waste identified in the DHSR inspection. A copy of the Abatement schedule for the Order is provide as Attachment 2. The Order charges the Respondent with operating a Solid Waste facility without a permit. This was used as the basis for the Order for several reasons; to expedite processing because such an Order requires only Regional Director sign-off and because a hazardous waste identification is hard to establish for paint related products and wastes.

The Order will be ready by October 4, 1991 and will be hand delivered to the Respondent before October 9,1991. A meeting to discuss the Order and to interview Mr. Robb is schedule for October 10, 1991. DHSR have alerted the DHWR staff of the possible need to use State or Federal Superfund authority to clean up the site in the event that Bisonite files for bankruptcy or fails to sign the DEE Order. DHWR has indicated that mobilization to clean up the site under Superfund could occur within two weeks of a failed attempt to get the owner to proceed under the Order from DEE.



10-4-91

Bisonite - 2250 Military Road Inc.



Attachment 1 (3 pages)

DRAFT

Roll #1

#2	Trailer in back of varnish plant, per JC, brought back by Mr. Steele
#3	Five-gallon pails outside of varnish plant, per JC, "not sure if useable or waste"
#4	Seven rectangular tanks; 1 small, 1 large, vert round tanks; per JC, always have been there, all rect tanks full
#5	One of two horizontal round moved to tank farm area, per JC, TK 135 solvent odors and tank farm in background
#6	Approx. 50 unknowns in varnish plant Approx. 15 filled with concrete Approx. 54 in back
#7	Two tanks inside varnish plant, per JC, linseed oil, pine oil, alkyd resin (short and medium and long)
#8	One tank (6 comp. 1200 gal/comp)
#9	Tank farm from N side
#10	"PCB" transformers, MEK drums etc., tank of alkyd resin solids
#11	Old shed where transformers were stored
#12	Inside main plant mix tanks raw material tanks and drum
#13 & #14	Drums in paint warehouse raw materials per JC one leaker several open bungs
#15	Raw material pigments (lead, chrome)
#16	97 drums from Jefferson Street picked up by Bisonite per JC
#17	Raw material tank from mix platform
#18	Spillage into floor drain
#19	Old lagoon area
#20	Spill area from on top of rect tanks (#4)
#21	Tank farm and building from on top of rect tanks

DRAFT

#22	What's inside of rect tanks 138 and 140
#23	Spill area close up
#24	Old mix tank, half full, open
#25	Into open hatch

Roll #2

#1	New sampling truck
#2	Johnson sampling BI 96
#3	Open drum solvent odor/spill on floor
#4	Leaking tank #133 solvent odors
#5 & #6	Leaking tank further away
#7	Tom Corbett sampling TK 135, strong solvent
#8	Sheen on water above U6 tank?
#9	Tom Corbett checking TK 1292, same as oozing tank #133, but grey-brown in color
#10	Drums stored outside in driveway of graphics business across the street from Bisonite

Attachment 2 (3 pages)

Abatement Schedule

1. Remove the spilled waste material and contaminated soil from the area under and beside tank #133 and properly dispose of such waste.

2. Close all top hatches, valves, and pipe openings on the mix tank and tanks 133, 135, 137, 138, 139, 140, 141, 142, 143, and 144 located at their relative positions on Attachment 1.

3. Secure a contract for the removal, transportation, and disposal of the four (4) transformers located on Attachment 1.

4. Remove the waste materials from the tanks listed in item 2 and properly dispose of such waste.

5. Dispose of or recycle the materials contained in the raw materials storage tanks designated as #3 and #4 on Attachment 1 in a manner approved by the Department.

6. Dispose of the material in all drums formerly contained in the two (2) trailers returned to the facility (A and B on Attachment 1), or provide a written proposal subject to Department approval for the recycling of such material. Dispose of all remaining drums in Attachment 1 areas C,D,E,F, and G in a manner approved by the Department.

7. Remove and dispose of waste in floor trenches located in the production area of the main bulding. In the presence of Department personnel, inspect the cleaned trenches for cracks, or conduits where the discharge of contaminants may have occurred.

8. Dispose of latex tailing waste contained in the tank located on the west wall of the production area; #1 on Attachment 1.

9. Remove surface contamination from defoliated area SW of the rectangular tanks located south of the varnish building. This area is indicated as #2 on Attachment 1.

10. All movement of paint related raw materials and wastes into or out of the facility shall be subject to approval by the Department.

11. Dispose of all waste materials identified in items 1 through 9 at facilities approved by the Department.

12. Maintain a log detailing the movement of paint related materials and wastes into or out of the facility. The log shall include the date of transfer, a detailed description of the material, quantity of material in gallons, work order or manifest number of shipment, hazardous waste manifest number if applicable, shipping or receiving facility, facility personnel authorizing transfer, and Department approval number.

13. Investigate and remove all underground tanks on the facility. Respondent must provide the Department with written notification at least twenty four hours in advance of excavation of tanks. Respondent must allow the Department to inspect the excavation before backfilling. Respondent will sample and analyze the bottom of the excavation as required by the Department.

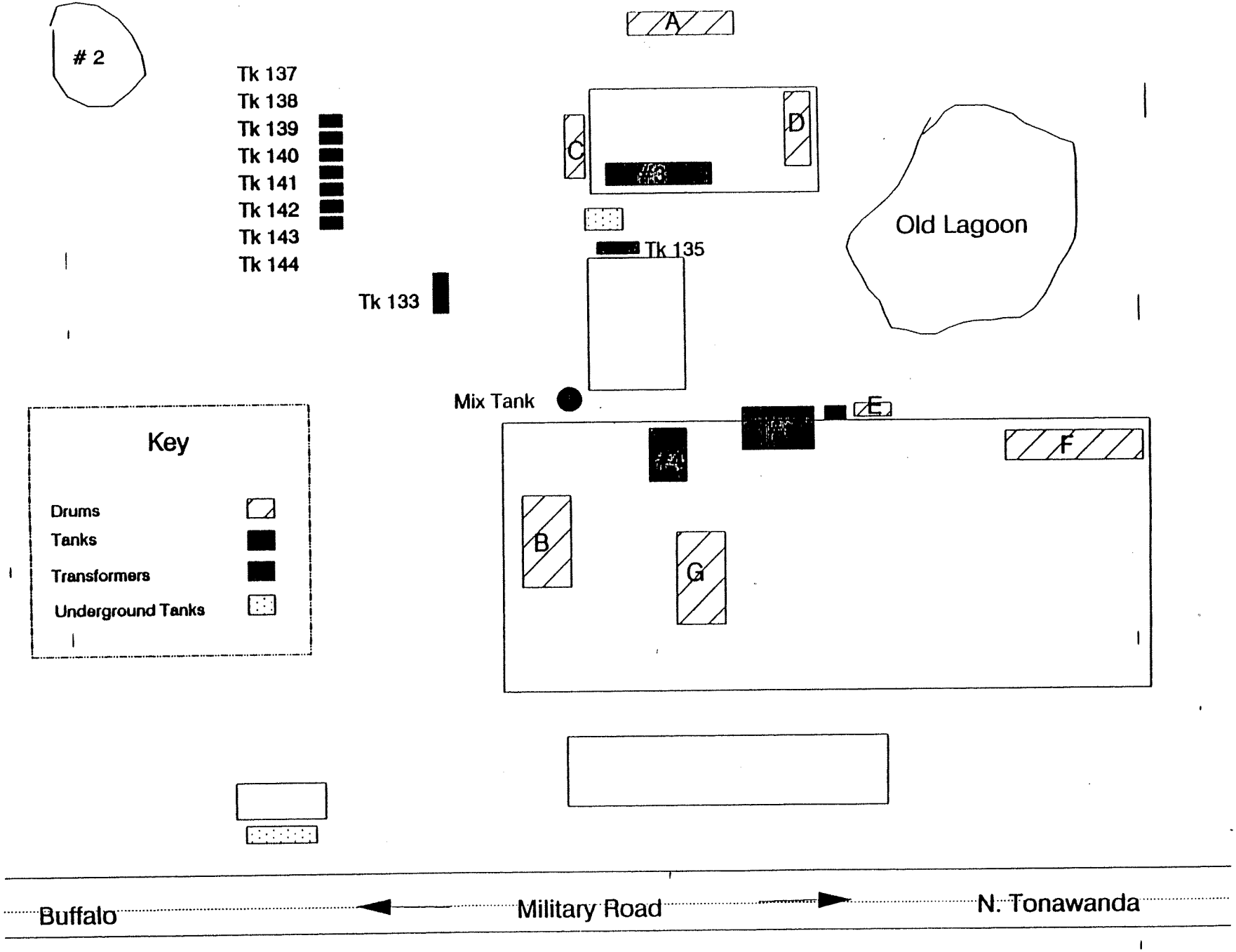
14. Sample and analyze soils where Department personnel have visually observed surface contamination. The samples are to be analyzed for hazardous constituents known to have been used in the facility manufacturing operations.

Dates for compliance with Items 1 through 14

1. Within 48 hours of the signing of the order for the removal December 1, 1991 for the disposal of waste
2. Within 72 hours of the signing of the order
3. October 15, 1991
4. December 1, 1991
5. January 1, 1991
6. November 1, 1991 for drums in area A and B on Attachment 1 January 1, 1992 for drums in areas C through G
7. December 1, 1991
8. January 1, 1992
9. December 1, 1991
10. Immediately
11. Immediately
12. Immediately
13. May 1, 1992
14. Decemeber 1, 1991

Attachment 1

Bisonite - 2250 Military Road Inc.



New York State Department of Environmental Conservation
600 Delaware Ave., Buffalo, NY 14202-1073

Thomas C. Jorling
Commissioner

M E M O R A N D U M

TO: Mr. Thomas Corbett

FROM: Dr. Frances Yang F.Y.

SUBJECT: Chemical Analysis of Paint Waste Samples from Bisonite

DATE: October 4, 1991

On October 1, 1991, one surface water sample and three paint waste sludge samples taken from Bisonite, were submitted for analysis of Methylethyl Ketone (MEK) and Xylenes. The three sludge samples were split samples, prepared by Mr. Thomas Johnson.

Sample Designations:

DEC-39 - Surface water sample
DEC-40 - Tank 133 sludge
DEC-41 - Tank 135 sludge
DEC-42 - Tank 141 sludge

USEPA Methods 3510, 8015 and 8020 and a modified 3550 were used for the analyses. The analyses were performed for screen purposes only, therefore, the quantitative results were estimated values.

Results:

Sample Designation	MEK	Toluene	Xylene
DEC-39	N.D.	N.D.	N.D.
DEC-40	N.D.	3.2%	4.8%
DEC-41	N.D.	1.5%	1.2%
DEC-42	N.D.	0.2%	0.8%

vam
cc: Mr. Peter Buechi

B-12

Order On Consent issued to Bisonite Paint Company, December 4, 1991.

File Copy

to T. C

270 Michigan Avenue, Buffalo, New York 14203-2999

December 4, 1991

Richard A. Moore, Esq.
Magavern & Magavern
1100 Rand Building
Buffalo, New York 14203

Re: Bisonite Company, Inc.
Order on Consent

Dear Mr. Moore:

Pursuant to our December 4, 1991 telephone conversation, enclosed are duplicate originals of the above Order revised as we discussed. Please forward the signed Orders to my attention by no later than December 11, 1991.

I have also enclosed Tom Corbett's December 4, 1991 memo to me indicating the status of the Order's Schedule A remedial work.

If you have any questions, please telephone me at (716) 851-7050.

Very truly yours,

James Charles
Senior Attorney
Division of Environmental Enforcement

JDC:jab
C178BISN

Attachment

cc: (w/encl.)

T. Corbett - Region 9 H/SW

COPY

DEC 05 1991

STATE OF NEW YORK : DEPARTMENT OF ENVIRONMENTAL CONSERVATION
----------X

In the Matter of the Violation of Part 360 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York ("6 NYCRR") by

BISONITE COMPANY, INC.

Respondent

ORDER ON CONSENT

Index B9-0389-91-10

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RECITALS

WHEREAS:

1. Article 27, Title 7 of the ECL, authorizes the New York State Department of Environmental Conservation (the "Department") to regulate the operation of landfills in the State of New York.

2. Pursuant to that authority, the Department has promulgated the regulations contained in 6 NYCRR Part 360, entitled "Solid Waste Management Facilities" ("Part 360").

3. Respondent owns a paint manufacturing and warehousing facility located on 2250 Military Road in the Town of Tonawanda, Erie County, State of New York and is a subsidiary of DELRAC, Inc.

4. An inspection of the facility conducted by Department personnel on September 25, 1991 and a review of Department records indicates that the Respondent is operating a solid waste management facility without a permit in contravention of 6 NYCRR Part 360-1.7.

5. Respondent waives its right to a hearing as provided by law, consents to the issuance and entry of this Order and agrees to be bound by the provisions, terms and conditions herein. Respondent has acted cooperatively and expeditiously in addressing violations at the facility.

NOW, THEREFORE, having considered the matter and being duly advised, it is ordered that:

SPECIAL PROVISIONS

I. Respondent shall comply with Schedule A attached to and made a part of this Order.

II. Suspended Penalty. Relative to the violation described in Paragraph 4 above, and to aid in insuring Respondent's compliance with the terms and conditions of this Order, Respondent is hereby assessed a civil penalty in the amount of Fifty Thousand Dollars ($50,000.00). This Fifty Thousand Dollar ($50,000.00) penalty is in addition to the penalties otherwise assessed pursuant to the terms of this Order, and shall be suspended and not payable provided that Respondent complies with all the requirements of this Order. If Respondent fails to comply with this Order, then the full amount of the suspended penalty shall become due and payable within thirty (30) days following receipt by Respondent of a written notice of non-compliance and demand by the Department.

III. Continuing Violations. The violation alleged in this Order is considered a continuing violation. The Department will

not institute any proceeding for administrative or civil, sanctions or remedies of any kind for the violation alleged herein, however, for so long as Respondent is complying with this Order.

IV. Split Samples. The Department may, at its option, obtain "split samples" or "duplicate samples" of all substances and materials sampled by Respondent pursuant to this Order. As used herein, "split samples" shall mean whole samples divided into aliquot, and "duplicate samples" shall mean multiple samples, collected at the same time from exactly the same location, using the same sampling apparatus, collected into identical containers prepared identically, filled to the same volume, and thereafter identically handled and preserved.

V. Stipulated Penalty. Within fifteen (15) days following receipt of a written notice of violation and demand for payment of a stipulated penalty from the Department, Respondent shall pay to the Department a stipulated penalty in the amount of Five Hundred Dollars ($500.00) for each violation of this Order or any provision thereof, plus an additional Five Hundred dollars ($500.00) for each day such violation continues or recurs. Said stipulated penalty may be waived if within five days of receipt of said written notice, the condition(s) causing such violation is corrected. If, after investigation, the Department determines that Respondent's failure to comply is the result of willful or negligent conduct on the part of the Respondent, the Department shall not be precluded by this Consent Order from

taking any action authorized by law, and the Department may seek the sanctions provided in the Environmental Conservation Law in lieu of assessing stipulated penalties as set forth in this Order. In the latter event, however, (1) Respondent shall be provided with written notice and opportunity for a hearing therein; and (2) no additional penalty shall be assessed for any failure to comply for which a stipulated penalty has been assessed by the Department and paid by Respondent.

VI. Communications. (a) Communications to the Department shall be addressed as follows:

James Charles, Senior Attorney
NYS Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Regional Hazardous Substance Engineer, Region 9
NYS Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

(b) Communications from the Department to the Respondent shall be addressed as follows:

Richard A. Moore
Magavern & Magavern
1100 Rand Building
Buffalo, New York 14203

(c) The Department and the Respondent, respectively, reserve the right to designate other or different addresses on notice to the other party.

VII. Expiration Date. This Order shall expire upon completion of the requirements in Schedule A in an approvable manner.

STANDARD PROVISIONS

VIII. Payment. Any penalty assessed pursuant to the terms and conditions of this Order shall be paid by submitting a certified or cashier's check or money order, payable to the New York State Department of Environmental Conservation, to James Charles, Senior Attorney, New York State Department of Environmental Conservation, Division of Environmental Enforcement, 600 Delaware Avenue, Buffalo, New York 14202-1073 and shall be credited to the Division of Environmental Enforcement account. Unpaid penalties imposed by this Order shall bear interest at the rate of 9 percent per annum for each day the penalty, or any portion thereof, remains unpaid. Payments received shall first be applied to accrued interest charges and then to the unpaid balance of the penalty.

IX. Duration. This order shall take effect when it is signed by the Regional Director, as the authorized representative of the Commissioner of Environmental Conservation, and shall expire as provided in paragraph VII.

X. Force Majeure. If because of an act of God, war, strike, riot, catastrophe, or other condition as to which negligence or willful misconduct on the part of Respondent was not the proximate cause, Respondent cannot comply with a deadline or requirement of this Order, Respondent shall apply in writing to the Department within a reasonable time after

obtaining knowledge of such fact and request an extension or modification of any deadline or requirement.

XI. Indemnity. Respondent shall indemnify and hold the Department, the State of New York, and their representatives and employees harmless for all claims, suits, actions, damages and costs resulting from the acts and/or omissions of Respondent, intentional, negligent, or otherwise, of every nature and description, arising out of or resulting from the compliance or attempted compliance with the provisions of this Order by Respondent or its employees, servants, agents. successors or assigns.

XII. Modifications. No change in this Order shall be made or become effective except as specifically set forth by written order of the Commissioner, being made either upon written application of Respondent, or upon the Commissioner's own findings after notice and opportunity to be heard have been given to Respondent.

XIII. Other Rights. Nothing contained in this order shall be construed as barring, diminishing, adjudicating or in any way affecting (1) any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against anyone other than Respondent, its directors, officers, employees, servants, agents, successors and assigns; (2) the Department's right to enforce administratively or at law or in equity, the terms, provisions and conditions of this Order against Respondent, its

directors, officers, employees, servants, agents, successors, and assigns in the event that Respondent shall fail to fulfill any of the provisions hereof; (3) the right of the Department to bring any future action, either administrative or judicial for any violations, past, present, future, or unknown, of the ECL, the rules and regulations promulgated thereunder, or conditions contained in permits, if any, issued to Respondent, except as otherwise provided in this Order; (4) the Department's right to bring any action or proceeding against any responsible party to compel the development and implementation of an inactive hazardous waste disposal site remedial program for the Site (including, but not limited to, a Remedial Investigation/ Feasibility Study) and to obtain recovery of any of its costs in connection with the Site.

The Department releases Respondent and its employees, officers or agents from such criminal liability as may have arisen out of the facts observed by the Department's inspection conducted on the site on September 25, 1991 and with respect to the prior transactions with Charles Stegura.

This Order shall not be construed to prohibit the Commissioner or his duly authorized representative from exercising any summary abatement powers, either at common law or as granted pursuant to statute or regulation.

XIV. Entire Agreement. This Order shall constitute the entire agreement of the Department and Respondent with respect

to settlement of those violations specifically referenced herein.

XV. Binding Effect. The provisions, terms, and conditions of this Order shall be deemed to bind Respondent, its successors and assigns and all persons, firms, and corporations acting under or for it.

Dated:
Buffalo, New York

THOMAS C. JORLING, COMMISSIONER
New York State Department of
Environmental Conservation

By: _____
JOHN J. SPAGNOLI
Regional Director

CONSENT BY RESPONDENT

Respondent hereby consents to the issuance of the foregoing Order, waives its right to a hearing herein, and agrees to be bound by the terms, provisions, and conditions contained herein.

BISONITE COMPANY, INC.

BY _____

_____
(Type Name of Signer)

TITLE _____

DATE _____

STATE OF NEW YORK)
) ss.:
COUNTY OF ERIE)

On this _____ day of _____, 19____, before me personally came _____, to me known, who being duly sworn, did depose and say that he resides in _____; that he is the _____ of the _____ corporation described in and which executed the foregoing instrument; that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation and that he signed his name thereto by like order.

_____
NOTARY PUBLIC

SCHEDULE A

Respondent shall on or before the dates indicated:

1. Within 48 hours of the effective date of the order for the removal; December 1, 1991 for the disposal of waste: Remove the spilled waste material and contaminated soil from the area under and beside tank #133 and properly dispose of such waste.

2. Within 72 hours of the effective date of the order: Close all top hatches, valves, and pipe openings on the mix tank and tanks 133, 135, 137, 138, 139, 140, 141, 142, 143,and 144 located as indicated on Attachment 1.

3. December 15, 1991: Properly dispose of the four (4) transformers located as indicated on Attachment 1.

4. December 1, 1991: Remove the waste materials from the tanks listed in item 2 and properly dispose of such waste.

5. January 1, 1991: Dispose of or recycle the materials contained in the raw materials storage tanks designated as #3 and #4 on Attachment 1 in a manner approved by the Department.

6. November 1, 1991 for drums in area A and B on Attachment I, January 1, 1992 for drums in areas C through G: Dispose of the material in all drums formerly contained in the two (2) trailers returned to the facility (A and B on Attachment 1), and/or provide a written proposal subject to Department approval for the recycling of such material. Dispose of all remaining drums in Attachment 1, areas C,D,E,F, and G, in a manner approved by the Department.

7. December 1, 1991: Remove and properly dispose of waste in floor trenches located in the production area of the main building. In the presence of Department personnel, inspect the cleaned trenches for cracks, or conduits where the discharge of contaminants may have occurred and seal such, if required by Department.

8. January 1, 1992: Dispose of latex tailing waste contained in the tank located on the west wall of the production area; #1 on Attachment 1.

9. December 1, 1991: Remove surface contamination from defoliated area SW of the rectangular tanks located south

of the varnish building. This area is indicated as #2 on Attachment 1.

10. Immediately: All movement of paint related raw materials and wastes into or out of the facility shall be subject to approval by the Department.

11. Immediately: Disposal of all waste materials identified in items 1 through 9 shall be at facilities approved by the Department.

12. Immediately: Maintain a log detailing the movement of paint related materials and wastes into or out of the facility. The log shall include the date of transfer, a detailed description of the material, quantity of material in gallons, work order or manifest number of shipment, hazardous waste manifest number if applicable, shipping or receiving facility, facility personnel authorizing transfer, and Department approval number.

13. May 1, 1992: Investigate and remove all underground tanks at the facility. Respondent must provide the Department with oral notification at least twenty four hours in advance of excavation of tanks. Respondent must allow the Department to inspect the excavation before backfilling. Respondent will sample and analyze the bottom of the excavation as required by the Department.

14. Sample other surface contamination as directed by the Department and analyze such samples, if any, in compliance with Department specifications.

15. Maintain indoors at the Bisonite facility the 5,000 gallon Frank's vacuum Truck Service, Inc. truck, New York license #86032D, which contains hazardous waste fuel until the truck's contents are disposed in a manner approved by the Department. Such disposal shall occur no later than March 15, 1992.

    Respondent is authorized to store the truck's contents provided it complies with the terms of 6 NYCRR Part 372.2 and this Order on Consent.

    Any transfer of the truck's contents to another storage container must be approved by the Department in advance of such transfer.

16. The compliance dates contained in the schedule may be altered for reasonable cause upon the Respondent's application and the Department's approval of such change.