Site Suitability Review of the Selfridge Landfill

by
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Prepared by the
North Dakota State Water Commission
and the
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ND Landfill Site Investigation No. 39

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OF THE
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INTRODUCTION

Purpose

The North Dakota State Engineer and the North Dakota State Geologist were instructed by the 52^{nd} State Legislative Assembly to conduct site-suitability reviews of the solid waste landfills in the state of North Dakota. These reviews are to be completed by July 1, 1995 (North Dakota Century Code 23-29-07.7). The purpose of this program is to evaluate site suitability of each landfill for disposal of solid waste based on geologic and hydrologic characteristics. Reports will be provided to the North Dakota State Department of Health and Consolidated Laboratories (NDSDHCL) for use in site improvement, site remediation, or landfill closure. A one-time ground-water sampling event was performed at each site, and additional studies may be necessary to meet the requirements of the NDSDHCL for continued operation of solid waste landfills. The Selfridge solid waste landfill is one of the landfills being evaluated.

Location of the Selfridge Landfill

The Selfridge solid waste landfill is located at the northwest corner of the city of Selfridge in Township 130 North, Range 82 West, SW 1/4 Section 27 (Fig. 1) The landfill area encompasses about 10 acres.

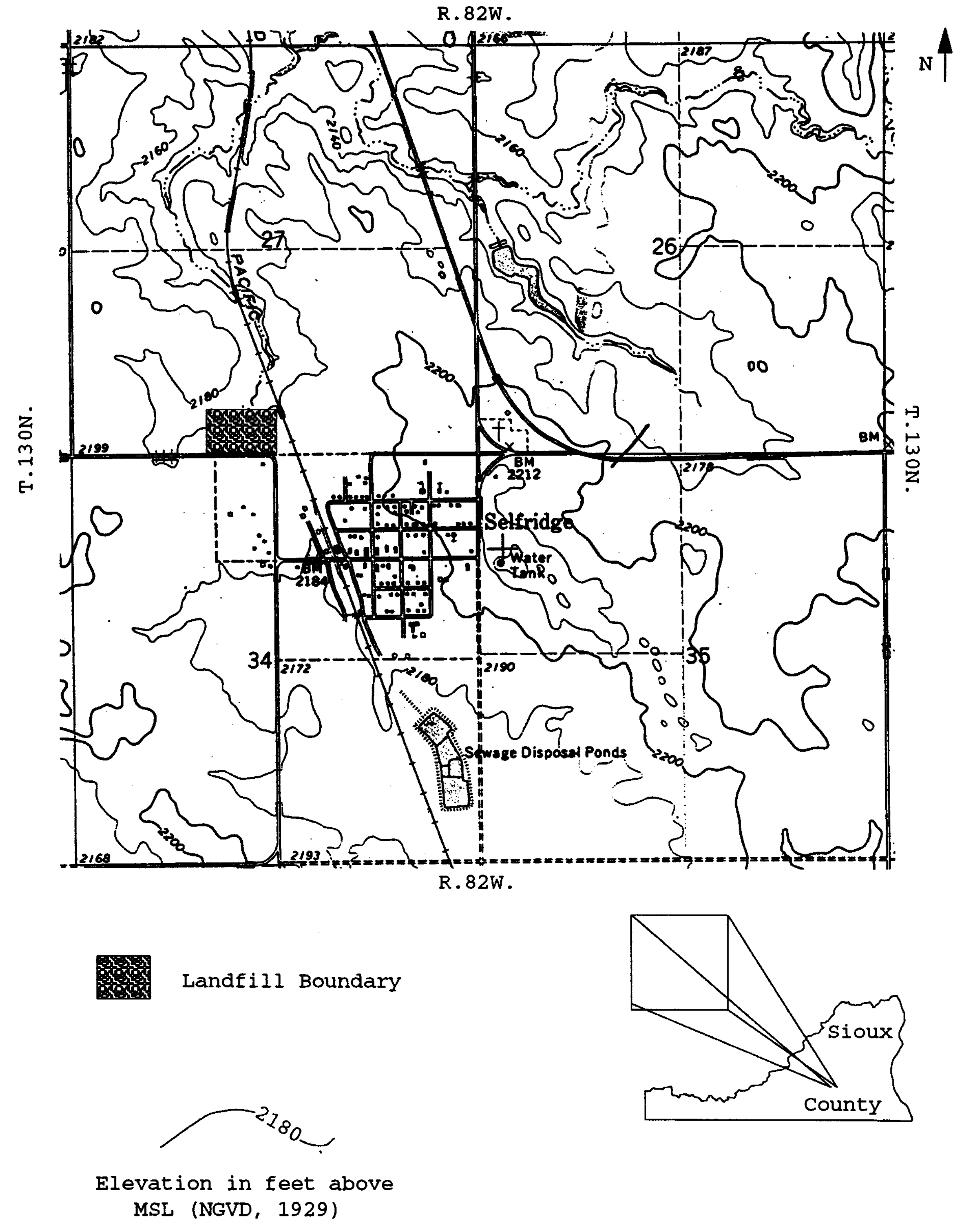

Figure 1. Location of the Selfridge municipal landfill in the SE 1/4, SW 1/4, Section 27, T.130N., R.82W.

Previous Site Investigations

There were no previous hydrogeologic investigations completed at the Selfridge landfill.

Methods of Investigation

The Selfridge study was accomplished by means of: 1) drilling test holes; 2) constructing and developing monitoring wells; 3) collecting and analyzing water samples; and 4) measuring water levels. Well abandonment procedures were followed for non-permanent monitoring wells.

Test-Drilling Procedure

The drilling method at the Selfridge landfill was based on the site's geology and depth to ground water, as determined by the preliminary evaluation. A hollow-stem auger was used at the Selfridge landfill because the sediments were unconsolidated and because the depth to the water table was expected to be less than 70 feet. The lithologic descriptions were determined from the drill cuttings.

Monitoring Well Construction and Development

Four test holes were drilled at the Selfridge landfill, and monitoring wells were installed in three of the test holes. The number of wells installed at the Selfridge landfill was based on the geologic and topographic characteristics of the site. The depth and intake interval of each well was selected to monitor the water level at the top of the uppermost aquifer. The wells were located within the boundaries of the landfill.

Wells were constructed following a standard design (Fig. 2) intended to comply with the construction regulations of the NDSDHCL and the North Dakota Board of Water Well Contractors (North Dakota Department of Health, 1986). The wells were constructed using a 2-inch diameter, SDR21, polyvinyl chloride (PVC) well casing and a PVC screen, either 5 or 10 feet long, with a slot-opening size of 0.012 or 0.013 inches. The screen was fastened to the casing with stainless steel screws (no solvent weld cement was used). After the casing and screen were installed into the drill hole, the annulus around the screen was filled with No. 10 (grain-size diameter) silica sand to a height of two feet above the top of the screen. High-solids bentonite grout and/or neat cement was placed above the silica sand to seal the annulus to approximately five feet below land surface. The remaining annulus was filled with drill cuttings. The permanent wells were secured with a protective steel casing and a locking cover protected by a two-foot-square concrete pad.

All monitoring wells were developed using a stainless steel bladder pump or a teflon bailer. Any drilling fluid

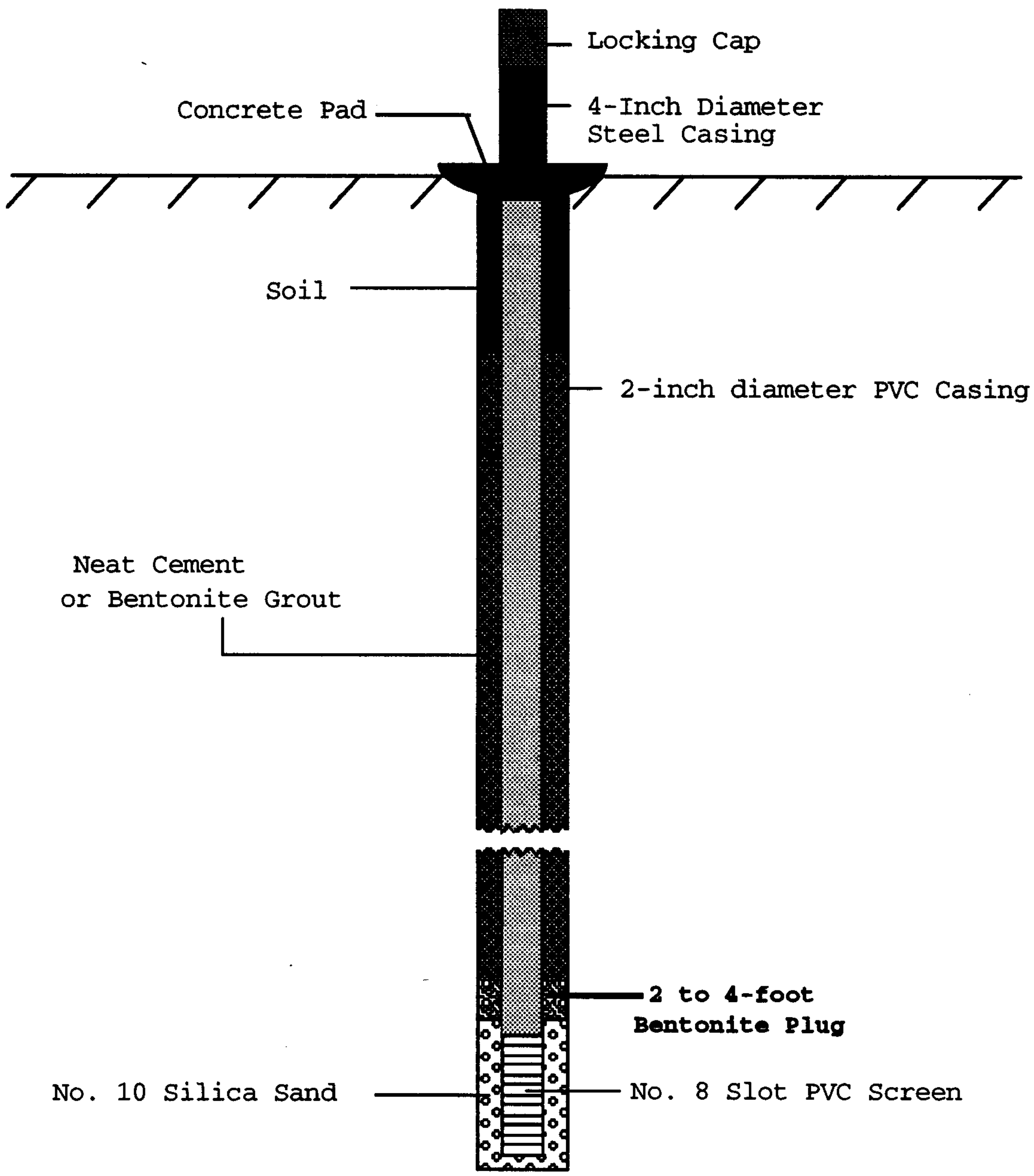

Figure 2. Construction design used for monitoring wells installed at the Selfridge landfill.

and fine materials present near the well were removed to insure movement of formation water through the screen.

The Mean Sea Level (MSL) elevation was established for each well by differential leveling to Third Order accuracy. The surveys established the MSL elevation at the top of the casing and the elevation of the land surface next to each well.

Collecting and Analyzing Water Samples

Water-quality analyses were used to determine if leachate is migrating from the landfill into the underlying ground-water system. Selected field parameters, major ions, and trace elements were measured for each water sample. These field parameters and analytes are listed in Appendix A with their Maximum Contaminant Levels (MCL). MCLs are enforceable drinking water standards that represent the maximum permissible level of a contaminant as stipulated by the U.S. Environmental Protection Agency (EPA).

Water samples were collected using a bladder pump constructed of stainless steel with a teflon bladder. A teflon bailer was used in monitoring wells with limited transmitting capacity. Before sample collection, three to four well volumes were extracted to insure that unadulterated formation water was sampled. Four samples from each well were collected in high-density polyethylene plastic bottles as follows:

1) Raw (500 ml)

2) Filtered (500 ml)

3) Filtered and acidified (500 ml)

4) Filtered and double acidified (500 ml)

The following parameters were determined for each sample: specific conductance, pH, bicarbonate, and carbonate were analyzed using the raw sample. Sulfate, chloride, nitrate*, and dissolved solids were analyzed using the filtered sample. Calcium, magnesium, sodium, potassium, iron, and manganese were analyzed from the filtered, acidified sample. Cadmium, lead, arsenic, and mercury were analyzed using the filtered double-acidified samples.

One well was sampled for Volatile Organic Compounds (VOC) analysis. This sample was collected at a different time than the standard water-quality sample. The procedure used for collecting the VOC sample is described in Appendix B. Each sample was collected with a plastic throw-away bailer and kept chilled. These samples were analyzed within the permitted 14-day holding period. The standard water-quality analyses were performed at the North Dakota State Water Commission (NDSWC) Laboratory and VOC analyses were performed by the NDSDHCL.

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* No special preservative techniques were applied to nitrate samples and as a result reported nitrate concentrations may be lower than actual.

Water-Level Measurements

Water-level measurements were taken at least three times at about two-week intervals. The measurements were taken using a chalked-steel tape or an electronic (Solnist 10078) water-level indicator. These measurements were used to determine the shape and configuration of the water table.

Well-Abandonment Procedure

The test holes and monitoring wells that were not permanent were abandoned according to NDSDHCL and Board of Water Well Contractors regulations (North Dakota Department of Health, 1986). The soil around the well was dug to a depth of approximately three to four feet below land surface (Fig. 3) to prevent disturbance of the sealed wells. The screened interval of the well was plugged with bentonite chips to a height of approximately one foot above the top of the screen and the remaining well casing was filled with neat cement. The upper three to four feet was then filled with cuttings and the disturbed area was blended into the surrounding land surface. Test holes were plugged with high-solids bentonite grout and/or neat cement to a depth of approximately five feet below land surface. The upper five feet of the test holes were filled with soil cuttings.

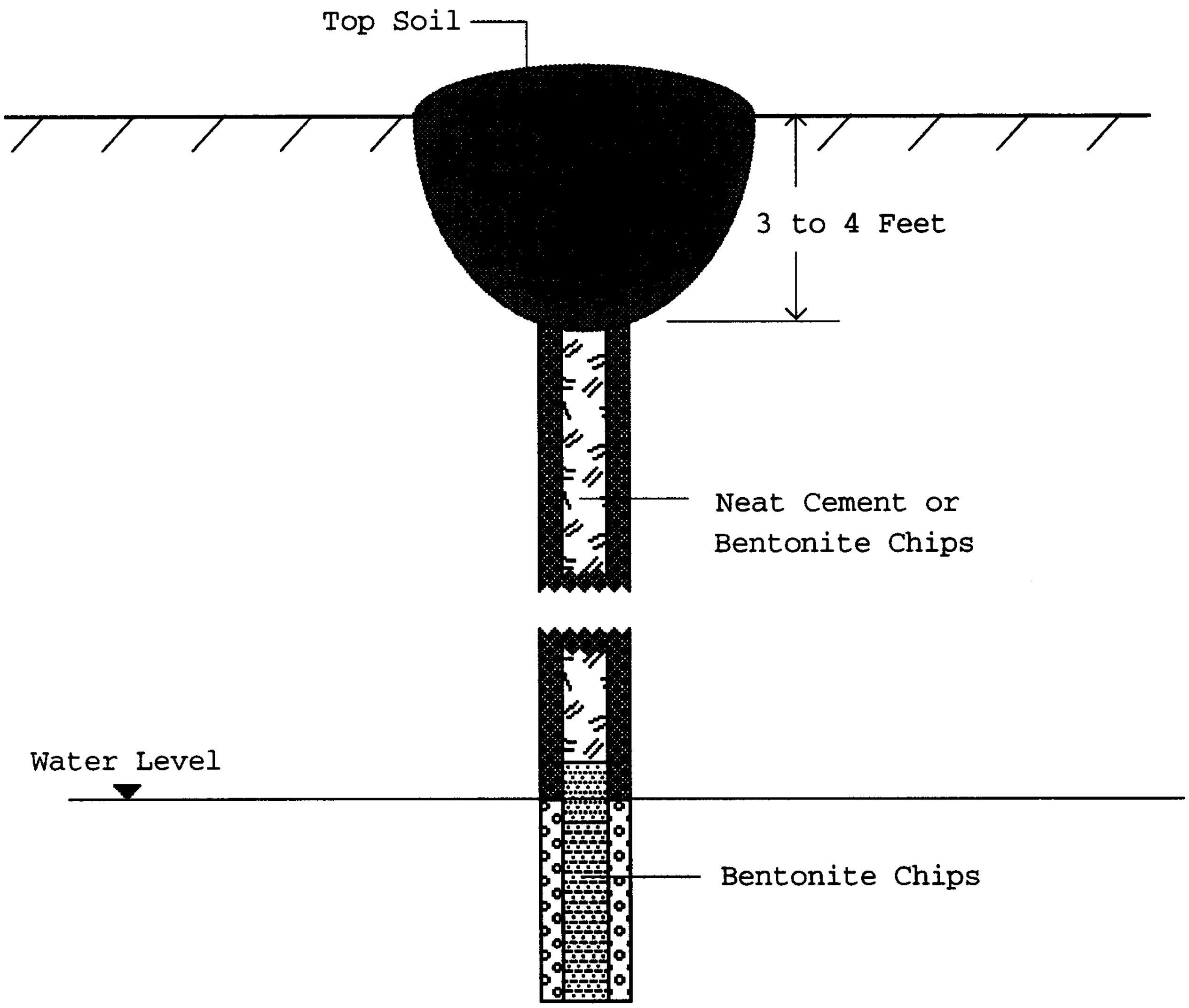

Figure 3. Monitoring well abandonment procedures.

Location-Numbering System

The system for denoting the location of a test hole or observation well is based on the federal system of rectangular surveys of public land. The first and second numbers indicate Township north and Range west of the 5th Principle Meridian and baseline (Fig. 4). The third number indicates the section. The letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quarter section (160-acre tract), quarter-quarter section (40-acre tract), and quarter-quarter-quarter section (10-acre tract). Therefore, a well denoted by 130-082-27CDD would be located in the SE1/4, SE1/4, SW1/4, Section 27, Township 130 North, Range 82 West. Consecutive numbers are added following the three letters if more than one well is located in a 10-acre tract, e.g. 130-082-27CDD1 and 130-082-27CDD2.

GEOLOGY

Regional Geology

The Selfridge landfill is situated in a region of eroded bedrock of the Cannonball, Ludlow, and Hell Creek Formations. The Cannonball Formation was deposited in a marine environment and is composed of clay, silt, sand, and

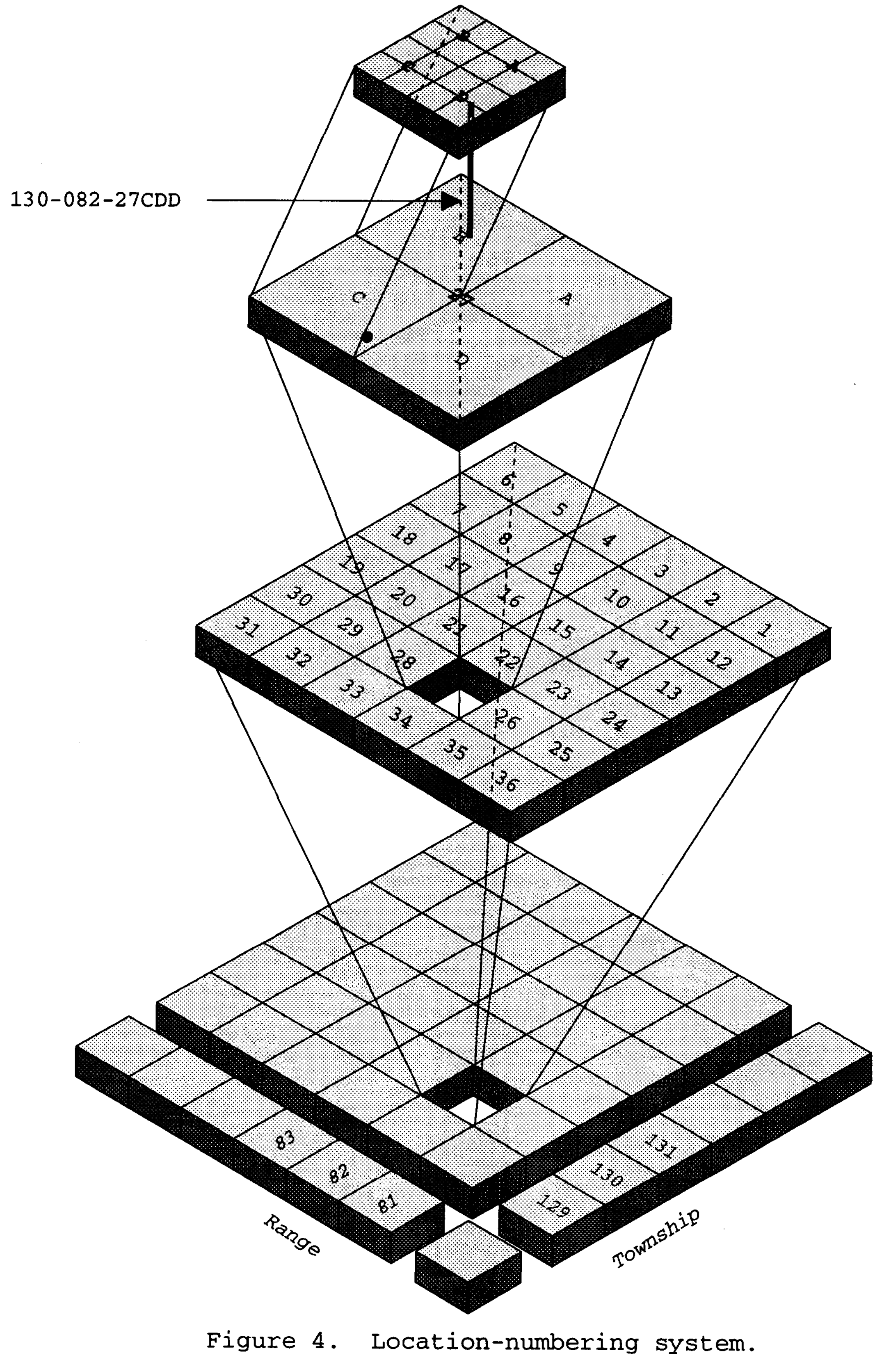

Figure 4. Location-numbering system.

sandstone. It is exposed on hilltops and ridges in the Selfridge area.

The Ludlow Formation was deposited in a terrestrial environment and is composed of silt, clay, sand, lignite, and carbonaceous shale. It is approximately 80 to 150 feet thick in the region (Carlson, 1982). The Ludlow Formation is exposed at the surface at the landfill.

The Hell Creek Formation was deposited in fluvial and nearshore environments. It is composed of sand, silt, clay, carbonaceous shale, and bentonitic shale. The Hell Creek Formation is exposed at the surface north of the landfill where Porcupine Creek has eroded through the Ludlow Formation.

The Hell Creek Formation is underlain by the Fox Hills Formation. This formation was deposited in a marine coastal environment and is composed of sand, sandstone, silt, clay, and shale.

Local Geology

The landfill is located in an area of moderate relief with surface elevations ranging from about 2,160 to 2,190 feet. The ground surface slopes northward toward an intermittent stream which is a tributary of Porcupine Creek (Fig. 5).

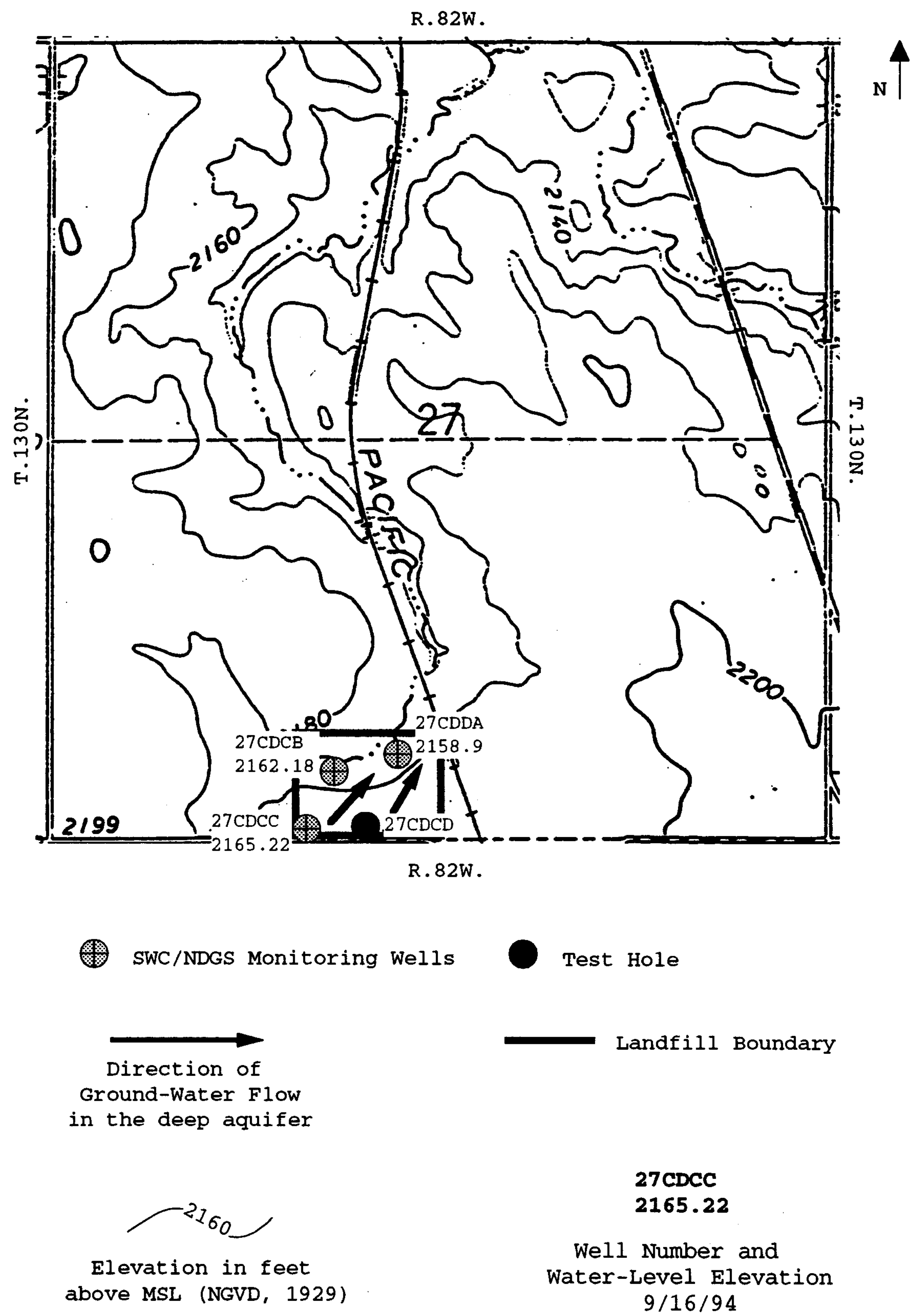

Figure 5. Location of monitoring wells and the direction of ground-water flow.

Four test holes drilled at the landfill encountered alternating layers of clay, silt, siltstone, and fine-grained sand. (Fig. 6, lithologic logs in Appendix C). A layer of silty clay ranging from 8 to 13 feet thick is present in all four test holes. The clay is underlain by a 4- to 6-foot-thick layer of silt with fine sand. A thin lignite bed was observed near the base of the silt layer in three of the four test holes.

HYDROLOGY

Surface-Water Hydrology

An intermittent stream forms the western and northern boundaries of the landfill. A stock pond is formed by a dam in the stream about one-tenth mile north of the landfill. The stream discharges into Porcupine Creek about five miles north of the landfill. The intermittent stream may be susceptible to contaminant migration from the landfill because it is close to the western and northern boundaries of the landfill and the direction of ground-water flow beneath the landfill is north-northeast toward the stream.

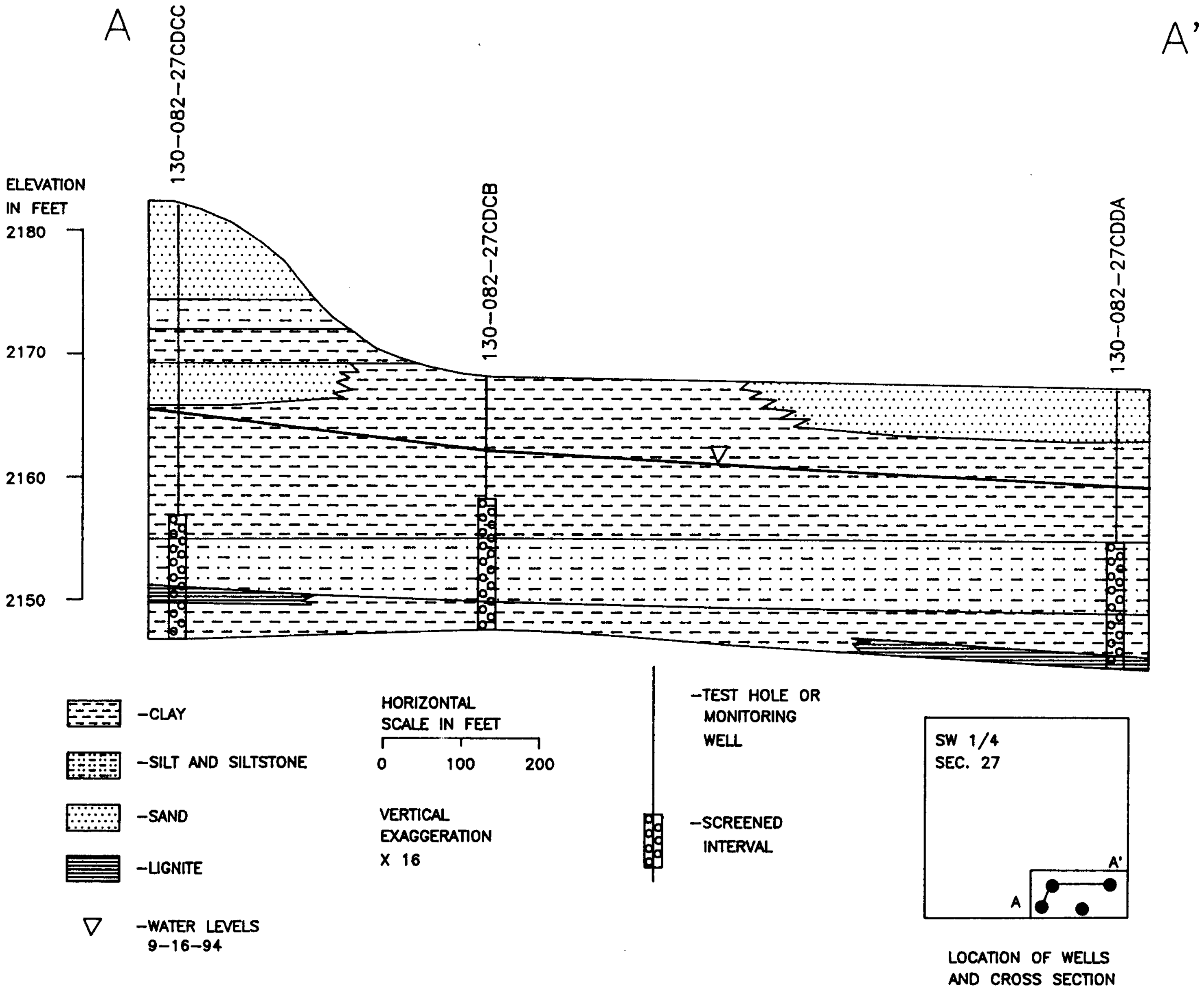

Figure 6. Geohydrologic section A–A' in the Selfridge landfill.

Regional Ground-Water Hydrology

Regional aquifers in the area of the Selfridge landfill consist of bedrock aquifers. These aquifers are located in the Cannonball/Ludlow, Hell Creek, and Fox Hills Formations. The Cannonball/Ludlow aquifer is the uppermost bedrock aquifer and is located within 50 feet of land surface near Selfridge (Randich, 1979). The Cannonball/Ludlow aquifer is recharged by precipitation and is characterized by a calcium-bicarbonate type water (Randich, 1979). This aquifer may be susceptible to contaminant migration from the landfill because it directly underlies the landfill.

The Hell Creek aquifer underlies the Cannonball/Ludlow Formation and consists of unconsolidated sandstone. The Hell Creek aquifer is characterized by sodium-bicarbonate type water. The City of Selfridge obtains its water supply from the Hell Creek aquifer. This aquifer should not be susceptible to contaminant migration from the landfill due to its depth and the occurrence of intervening clays.

The Fox Hills aquifer underlies the Hell Creek Formation and consists of unconsolidated sandstone. The Fox Hills aquifer is characterized by a sodium-bicarbonate type water. The Fox Hills aquifer also should not be susceptible to contaminant migration due to its depth and the occurrence of intervening clays.

Local Ground-Water Hydrology

Four test holes were drilled at the Selfridge landfill with monitoring wells installed in three of them (Fig. 5). The three monitoring wells were screened across a thin layer of fine-grained silty sand. Wells 130-082-27CDDA and 27CDCB are located along the northern boundary between the buried refuse and the intermittent stream (Fig. 5). Well 27CDCC is located at the northwest corner of the landfill adjacent to the buried refuse. Four water-level measurements were taken over an eight-week period (Appendix D). The direction of ground-water flow is to the north-northeast toward the intermittent stream.

Water Quality

Chemical analyses of water samples are shown in Appendix E. The major ion analyses indicated anomalously high concentrations of sulfate (4,400 mg/L, 2,400 mg/L) and nitrate (120 mg/L, 66 mg/L) in well 27CDCC and 27CDCB, respectively. Well 27CDCC also detected a sodium concentration of 1700 mg/L which is higher than was detected in the other monitoring wells. The sulfate and sodium concentrations may indicate contaminant migration from the buried refuse as these concentrations are higher than typical concentrations for ground water in this region. The source of the nitrate was not determined, but may be the result of local agronomic practices or contaminant migration from the landfill.

Trace element analyses detected elevated selenium concentrations (8 µg/L, 7 µg/L) in wells 27CDCC and 27CDCB respectively. These concentrations are below the MCL of 10 µg/L but higher than typical for this region. The source of the selenium may also indicate contaminant migration from the landfill.

The results of the VOC analyses, from well 27CDDA, are shown in Appendix F. The VOC analyses detected concentrations of dichloromethane (1.74 µg/L) and toluene (0.90 µg/L). It is inconclusive whether the source of the VOC compounds are the result of laboratory contamination† or migration from the landfill.

CONCLUSIONS

The Selfridge landfill is located in a region of eroded bedrock with moderate surficial relief. Land surface elevations range from 2,160 to 2,190 feet. The ground surface slopes to the north toward an intermittent stream that borders the western and northern boundaries of the landfill. This intermittent stream is a tributary of Porcupine Creek located five miles north of the landfill and

† Beginning in September, 1994 the NDSDHCL changed their analytical procedures that lowered detection limits for VOC concentrations by one to two orders of magnitude.

may be susceptible to contaminant migration from the landfill.

Test holes drilled at the landfill encountered alternating layers of clay, silt, siltstone, and fine-grained sand. A layer of silty sand, with a thickness ranging from 4 to 6 feet thick, was encountered at each site. This silty-sand layer was determined to be the upper most aquifer in this study. Water-level measurements from these wells completed in the silty sand indicated a direction of ground-water flow to the north-northeast toward the intermittent stream.

Water quality analyses detected anomalously high sulfate and nitrate concentrations from wells 27CDCC and 27CDCB. Well 27CDCC also detected an elevated sodium concentration. These major ions may indicate contaminant migration from the landfill.

Trace element analyses detected elevated selenium concentrations in wells 27CDCC and 27CDCB. The source of the elevated selenium may indicate contaminant migration.

The VOC analyses detected concentrations of dichloromethane and toluene. It is inconclusive whether the source of the VOC compounds are the result of laboratory contamination or migration from the landfill.

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APPENDIX A

WATER QUALITY STANDARDS
AND
CONTAMINANT LEVELS

Water Quality Standards
and
Contaminant Levels

Field Parameters	
appearance	color/odor
pH	6-9 (optimum)
specific conductance	-----
temperature	-----

Constituent	**MCL (µg/L)**
Arsenic	50
Cadmium	10
Lead	50
Molybdenum	100
Mercury	2
Selenium	10
Strontium	*

*EPA has not set an MCL for strontium. The median concentration for most U.S. water supplies is 100 µg/L (Hem, 1989).

	SMCL (mg/L)
Chloride	250
Iron	>0.3
Nitrate	50
Sodium	20-170
Sulfate	300-1000
Total Dissolved Solids	>1000

	Recommended Concentration Limits (mg/L)
Bicarbonate	150-200
Calcium	25-50
Carbonate	150-200
Magnesium	25-50
Hardness	>121 (hard to very hard)

APPENDIX B

SAMPLING PROCEDURE FOR
VOLATILE ORGANIC COMPOUNDS

SAMPLING PROCEDURE FOR 40ML AMBER BOTTLES

Sample Collection for Volatile Organic Compounds

by
North Dakota Department of Health
and Consolidated Laboratories

1. Three samples must be collected in the 40ml bottles that are provided by the lab. One is the sample and the others are duplicates.

2. A blank will be sent along. Do Not open this blank and turn it in with the other three samples.

3. Adjust the flow so that no air bubbles pass through the sample as the bottle is being filled. No air should be trapped in the sample when the bottle is sealed. Make sure that you do not wash the ascorbic acid out of the bottle when taking the sample.

4. The meniscus of the water is the curved upper surface of the liquid. The meniscus should be convex (as shown) so that when the cover to the bottle is put on, no air bubbles will be allowed in the sample.

convex meniscus

5. Add the small vial of concentrated HCL to the bottle.

6. Screw the cover on with the white Teflon side down. Shake vigorously, turn the bottle upside down, and tap gently to check if air bubbles are in the sample.

7. If air bubbles are present, take the cover off the bottle and add more water. Continue this process until there are no air bubbles in the sample.

8. The sample must be iced after collection and delivered to the laboratory as soon as possible.

9. The 40 ml bottles contain ascorbic acid as a preservative and care must be taken not to wash it out of the bottles. The concentrated acid must be added after collection as an additional preservative.

APPENDIX C

LITHOLOGIC LOGS
OF WELLS AND TEST HOLES

130-082-27CDCB

NDSWC

Date Completed:	7/21/94	Purpose:	Observation Well
L.S. Elevation (ft):		Well Type:	2" PVC
Depth Drilled (ft):	20	Aquifer:	Undefined
Screened Interval (ft):	10-20	Source:	
		Owner:	Selfridge

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
CLAY	Silty, yellowish-brown.	2-13
SILT	With fine sand, yellowish-brown, damp.	13-18
CLAY	Silty, dark brown.	18-20

130-082-27CDCC
NDSWC

Date Completed:	7/21/94	Purpose:	Observation Well
L.S. Elevation (ft):		Well Type:	2" PVC
Depth Drilled (ft):	35	Aquifer:	Undefined
Screened Interval (ft):	25-35	Source:	
		Owner:	Selfridge

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	Fine grained, silty, yellowish-brown.	1-8
SILTSTONE	Dark brown.	8-10
CLAY	Silty, dark brown.	10-13
SAND	Silty, clayey, yellowish-brown.	13-16
CLAY	Silty, brown.	16-27
SILT	With fine sand, yellowish-brown, damp.	27-31
LIGNITE		31-32
CLAY	Silty, dark brown.	32-35

130-082-27CDCD
NDSWC

Date Completed:	7/21/94	Purpose:	Test Hole
L.S. Elevation (ft):		Well Type:	
Depth Drilled (ft):	50		
		Source:	
		Owner:	Selfridge

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, sandy.	0-3
CLAY	Medium gray, stiff.	3-6
CLAY	Sandy, brown.	6-8
SAND	Fine grained, silty, yellowish-brown.	8-12
CLAY	Silty, brown.	12-17
SILTSTONE	Dark orangish-brown.	17-18
CLAY	Silty, brown.	18-22
SILTSTONE	Dark orangish-brown.	22-23
CLAY	Silty, brown.	23-25
SILT	With fine grained sand, yellowish-brown, damp.	25-28
CLAY	Silty, brown.	28-30
LIGNITE		30-31
CLAY	Silty, brown.	31-33

CLAY	**Silty, brown, interbedded with bluish-gray sandy silt, recovered a few pieces of sandstone with hemotite concretions.**	**33-50**

130-082-27CDDA
NDSWC

Date Completed:	7/21/94	Purpose:	Observation Well
L.S. Elevation (ft):		Well Type:	2" PVC
Depth Drilled (ft):	22	Aquifer:	Undefined
Screened Interval (ft):	12-22	Source:	
		Owner:	Selfridge

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
SAND	Fine grained, clayey, yellowish-brown.	2-4
CLAY	Sandy, orangish-brown.	4-6
CLAY	Silty, medium brown.	6-10
CLAY	Dark brown, lignite chips.	10-12
SILT	With fine sand, medium brown, damp.	12-18
CLAY	Dark brown.	18-21
Lignite		21-22

APPENDIX D

WATER-LEVEL TABLES

Selfridge Water Levels
8/18/94 to 9/27/94

130-082-27CDCB MP Elev (msl,ft)=2171.52

Undefined Aquifer SI (ft.)=10-20

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/18/94	8.83	2162.69	09/16/94	9.34	2162.18
08/30/94	9.24	2162.28	09/27/94	9.30	2162.22

130-082-27CDCC MP Elev (msl,ft)=2185.37

Undefined Aquifer SI (ft.)=25-35

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/18/94	20.01	2165.36	09/16/94	20.15	2165.22
08/30/94	20.34	2165.03	09/27/94	19.92	2165.45

130-082-27CDDA MP Elev (msl,ft)=2169.44

Undefined Aquifer SI (ft.)=12-22

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/18/94	9.48	2159.96	09/16/94	10.54	2158.90
08/30/94	9.75	2159.69	09/27/94	9.72	2159.72

APPENDIX E

MAJOR ION AND TRACE-ELEMENT CONCENTRATIONS

Selfridge Landfill Water Quality
Major Ion Analyses

Location	Screened Interval (ft)	Date Sampled	SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness $CaCO_3$	as NCH	% Na	SAR	Spec Cond (µmho)	Temp (°C)	pH
			(milligrams per liter)																					
130-082-27CDCB	10-20	08/02/94	16	0.11	0.15	380	130	670	16	534	0	2400	46	0.3	66	0.11	3990	1500	1000	49	7.5	6160	12	7.7
130-082-27CDCC	25-35	08/02/94	14	0.24	0.53	440	190	1700	27	1420	0	4400	19	0.1	120	0.67	7610	1900	720	66	17	10670	12	7.21
130-082-27CDDA	12-22	08/02/94	14	0.04	1.3	67	27	260	8.1	663	0	410	10	0.2	8.3	0.22	1170	280	0	66	6.8	1910	14	7.26

Trace Element Analyses

Location	Date Sampled	Selenium	Lead	Cadmium	Mercury	Arsenic	Molybdenum	Strontium
		(micrograms per liter)						
130-082-27CDCB	08/02/94	7	0	0	0	2	9	1100
130-082-27CDCC	08/02/94	8	0	1	0	0	15	1200
130-082-27CDDA	08/02/94	1	0	0	0	1	2	280

APPENDIX F

VOLATILE ORGANIC COMPOUNDS
FOR WELL 130-082-27CDDA

Volatile Organic Compounds
and
Minimum Concentrations

Concentrations are based only on detection limits. Anything over the detection limit indicates possible contamination.

Constituent	Chemical Analysis µg/L
Benzene	<0.5
Vinyl Chloride	<0.5
Carbon Tetrachloride	<0.5
1,2-Dichlorethane	<0.5
Trichloroethylene	<0.5
1,1-Dichloroethylene	<0.5
1,1,1-Trichloroethane	<0.5
para-Dichlorobenzene	<0.5
Acetone	<50
2-Butanone (MEK)	<50
2-Hexanone	<50
4-Methyl-2-pentanone	<50
Chloroform	<0.5
Bromodichloromethane	<0.5
Chlorodibromomethane	<0.5
Bromoform	<0.5
trans1,2-Dichloroethylene	<0.5
Chlorobenzene	<0.5
m-Dichlorobenzene	<0.5
Dichloromethane	1.74*
cis-1,2-Dichloroethylene	<0.5
o-Dichlorobenzene	<0.5
Dibromomethane	<0.5
1,1-Dichloropropene	<0.5
Tetrachlorethylene	<0.5
Toluene	0.90*
Xylene(s)	<0.5
1,1-Dichloroethane	<0.5
1,2-Dichloropropane	<0.5
1,1,2,2-Tetrachloroethane	<0.5
Ethyl Benzene	<0.5
1,3-Dichloropropane	<0.5
Styrene	<0.5
Chloromethane	<0.5
Bromomethane	<0.5
1,2,3-Trichloropropane	<0.5
1,1,1,2-Tetrachloroethane	<0.5
Chloroethane	<0.5
1,1,2-Trichloroethane	<0.5

* Constituent Detection

VOC Constituents cont.

2,2-Dichloropropane	<0.5
o-Chloroluene	<0.5
p-Chlorotoluene	<0.5
Bromobenzene	<0.5
1,3-Dichloropropene	<0.5
1,2,4-Trimethylbenzene	<0.5
1,2,4-Trichlorobenzene	<0.5
1,2,3-Trichlorobenzene	<0.5
n-Propylbenzene	<0.5
n-Butylbenzene	<0.5
Naphthalene	<0.5
Hexachlorobutadiene	<0.5
1,3,5-Trimethylbenzene	<0.5
p-Isopropyltoluene	<0.5
Isopropylbenzene	<0.5
Tert-butylbenzene	<0.5
Sec-butylbenzene	<0.5
Fluorotrichloromethane	<0.5
Dichlorodifluoromethane	<5
Bromochloromethane	<0.5
Allylchloride	<5
2,3-Dichloro-1-propane	<5
Tetrahydrofuran	<50
Pentachloroethane	<5
Trichlorotrifluoroethane	<5
Carbondisufide	<5
Ether	<5
trans-1,3-Dichloropropene	<0.5

* Constituent Detection