DEQ

Michigan Department of Environmental Quality
Waste and Hazardous Materials Division

SOLID WASTE DISPOSAL AREA CONSTRUCTION PERMIT

This construction permit is issued under the provisions of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, MCL 324.11501 et seq., to permit the construction of a solid waste disposal area (Facility) in the state of Michigan. This permit does not obviate the necessity of obtaining other authorization as may be required by state law.

FACILITY NAME: Escanaba Paper Company Type III Landfill

PERMITTEE/FACILITY OWNER: Escanaba Paper Company

PROPERTY OWNER: Escanaba Paper Company

TYPE OF FACILITY: Type III Industrial Waste Landfill

FACILITY ID: 395326

COUNTY: Delta

PERMIT NUMBER: 4068

ISSUE DATE: January 24, 2005

EXPIRATION DATE: One year from date of issuance unless development of the Facility begins within the year.

FACILITY DESCRIPTION: The Escanaba Paper Company Type III Landfill, an existing Type III landfill, consists of 132.40 acres located in the N 1/2 of Section 36 and the S 1/2 of Section 25, T40N, R23W, Wells Township, Delta County, Michigan. The Facility is identified in Attachment A and is fully described in this permit.

RESPONSIBLE PARTY: Ms. Kathy Jacobi-Collins
Escanaba Paper Company
County Road 426
Escanaba, Michigan 49829
906-233-2776

This permit is subject to revocation by the Director of the Michigan Department of Environmental Quality (Director) if the Director finds that the disposal area is not being constructed or operated in accordance with the approved plans, the conditions of a permit or license, Part 115, or the rules promulgated under Part 115. This permit shall be available through the applicant during its term and remains the property of the Director. Failure to comply with the terms and provisions of this permit may result in legal action leading to civil and/or criminal penalties as stipulated in Part 115.

THIS PERMIT IS NOT TRANSFERABLE UNLESS PRIOR AUTHORIZATION HAS BEEN OBTAINED FROM THE DIRECTOR.

Steven E. Chester
Director
Michigan Department of Environmental Quality

Permittee/Facility Owner: Escanaba Paper Company
Facility Name: Escanaba Paper Company Type III Landfill
Construction Permit Number: 4068
Issue Date: January 24, 2005

The permittee shall comply with all terms of this permit and the provisions of Part 115 and its rules. This permit includes the permit application and any attachments to this permit.

1. The permittee shall construct the Facility in a manner that will not violate any state or federal law.

2. This permit authorizes the construction of the disposal area as defined in the Application for Permit to Construct a Solid Waste Disposal Area (Application) documents dated September 24, 2004, and received by the Michigan Department of Environmental Quality (Department) on September 27, 2004. The new disposal area authorized by this permit shall not be utilized for the disposal of solid waste until an operating license for the disposal area is issued by the Department.

3. The attached map (Attachment A) shows the Facility, the area permitted for construction, area(s) authorized for the placement and/or acceptance of solid waste, monitoring points, leachate storage units, site roads, and related appurtenances.

4. Issuance of this permit is based on the assumption that the information submitted by the Applicant in the Application dated September 24, 2004, received by the Department on September 27, 2004, and any subsequent amendments is accurate. Any inaccuracies or deviations found in this information may be grounds for the revocation or modification of this permit and/or other enforcement action. The permittee shall inform the Department's Waste and Hazardous Materials Division, Upper Peninsula District Supervisor, of any known inaccuracies and/or any deviation in the information of the Application that would affect the permittee's ability to comply with the applicable rules or permit conditions. This permit is issued based on Department review of the Application, EQP 5506. The Application includes the following documents or their approved revisions that are incorporated by reference and become enforceable portions of this permit:

   a. Application Form EQP 5506.

   b. Fee in the amount of $250.

   c. Landfill Construction and Closure Quality Assurance Plan, Escanaba Paper Company, prepared by STS Consultants, Ltd., and dated December 9, 2004.

   d. Phase 3-11 Landfill Modified Closure Plan, Escanaba Paper Company, Engineering Plans, Sheets 1-5, prepared by STS Consultants, Ltd., and dated August 2004.

5. The following documents approved with the issuance of Construction Permit Numbers 0158 and 0277 issued to Mead Publishing Paper Division and Mead Paper Corporation on September 24, 1985, and July 31, 1992, respectively, and modified by this Construction Permit as cited by Item 4 are incorporated into this construction permit by reference and become enforceable portions of this permit:

   a. Environmental Assessment, dated April 6, 1992.

   b. Engineering Report, dated April 6, 1992, and revised June 1992.

   c. Engineering Plans, dated April 6, 1992, and revised June 1992.

   d. Hydrogeological Investigation and Monitoring Program, dated April 6, 1992, and revised July 1992.

   e. Phase 3 Landfill Operations and Maintenance Plan, dated March 1995.

   f. Revised Hydrogeological Monitoring Plan, Phases 2-11, Revision 7, dated October 31, 2000, and revised January 2001 and September 2002.

g. Revised Engineering Plans and Construction Quality Assurance Plan, Phase 5, dated January 6, 2000.

h. Phase 1 Hydrogeological Monitoring Plan, revised November 2002, approved January 1, 2003.

i. Phase 1 Engineering Reports and Plans, Construction Quality Assurance Plan, Leachate Manhole Replacement Plan, and Modified Operational Plan, dated July 3, 2002, and approved August 26, 2002. The operational plan was modified on September 3, 2002.

6. The sampling parameters and monitoring frequencies are outlined in the Hydrogeological Monitoring Plan. The sampling results shall be submitted to the Department's Waste and Hazardous Materials Division, Upper Peninsula District Office.

7. **VARIANCES:** None.

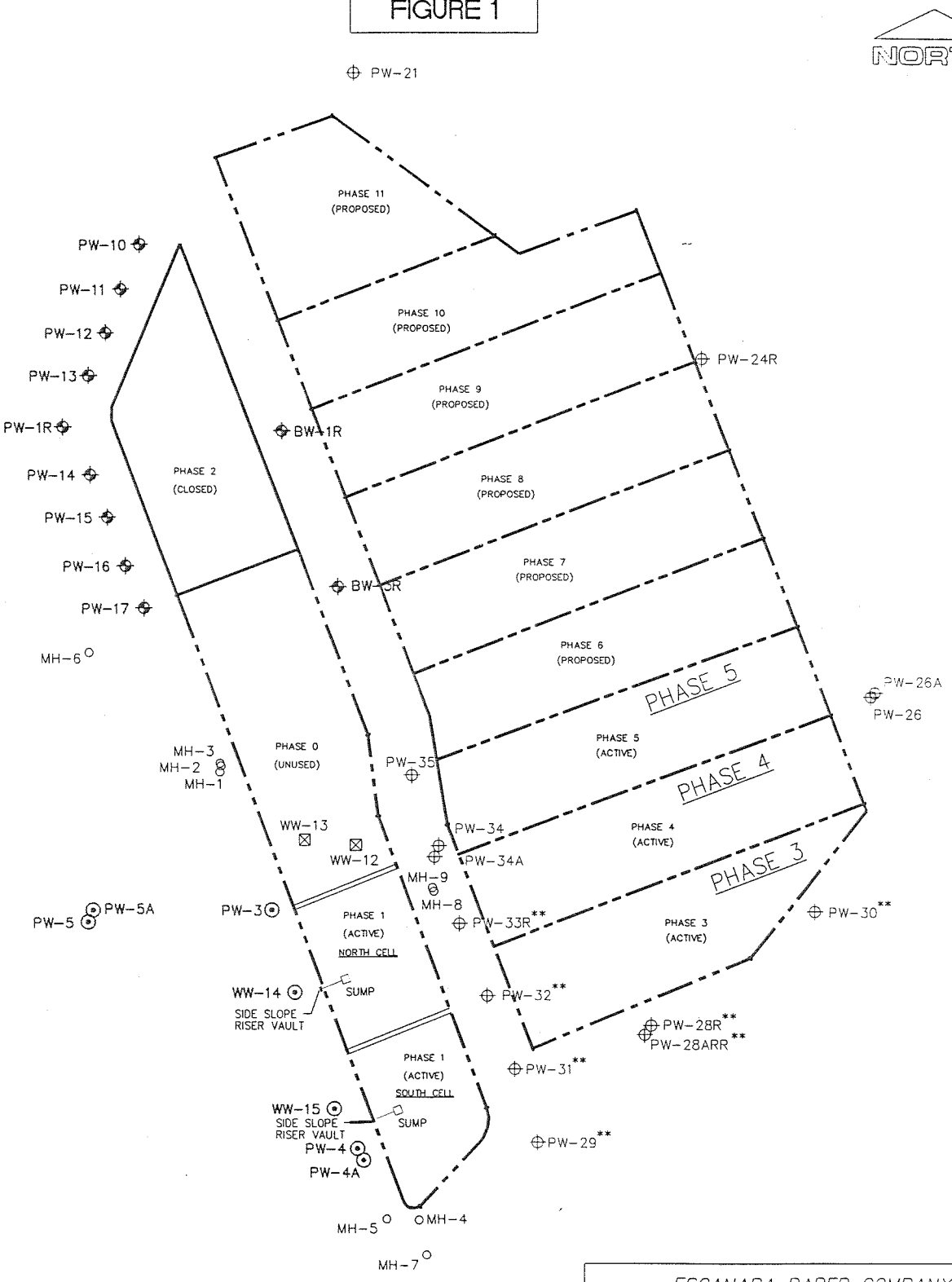
8. **SPECIAL CONDITIONS:** None

9. **TERM**: This construction permit shall expire one year after the date of issuance, unless development under the construction permit is initiated within that year.

END OF PERMIT

ATTACHMENT A

FIGURE 1



LEGEND

- ⊙ PHASE 1 MONITORING WELLS
- ⊕ PHASE 2 MONITORING WELLS
- ⊕ PHASE 3-5 MONITORING WELLS
- ⊠ REMEDIAL INVESTIGATION WELLS
- ** INCLUDED IN PHASE 1 MONITORING
- ○ MANHOLE

ESCANABA PAPER COMPANY
ESCANABA, MICHIGAN
PHASE 3-11 LANDFILL
CONSTRUCTION PERMIT DRAWING

Wilcox
3500 Ludington, Suite 310
Escanaba, Michigan
(906) 789-7800
FAX (906) 789-0100

SCALE:	1"=500'
DATE:	09-22-04
REV No. 1	
REV No. 2	
DWG:	PHASE1-REV-3
FILE No.	

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

January 24, 2005

TO: Escanaba Paper Company, File

FROM: Lonnie Lee, Chief, Storage Tank and Solid Waste Section, Waste and Hazardous Materials Division

SUBJECT: Decision Memo; Escanaba Paper Company Type III Landfill; Waste Data System Number 395326

An application for a permit modification for a Type III industrial landfill was received in the Upper Peninsula District (District) on September 27, 2004. A decision by the Department of Environmental Quality on this application is required by January 24, 2005. The District has reviewed the application and determined that it is in compliance with the provisions of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 115). Existing landfill operations at the site were determined to be in compliance with Part 115, as outlined in the Part 115 Checklist and Compliance Update Form dated October 4, 2004. Therefore, the District recommends issuance of this permit.

The application is for a permit modification to allow for a change in the cap design for this Type III industrial landfill. The proposed design modification proposes a less protective cover system, but is consistent with the requirements for a type III industrial landfill.

Notice of receipt of this permit modification was published in the Escanaba Daily Press on October 11, 2004. No comments were received.

The Waste and Hazardous Materials Division, Storage Tank and Solid Waste Section, has reviewed the application form, the District's recommendation, and any other pertinent facts, and a determination has been made to issue the permit.

cc: Upper Peninsula

ESCANABA PAPER COMPANY TYPE III LANDFILL
Waste Data Systems Number 395326
FACT SHEET
December 20, 2004

I. FACILITY INFORMATION:

1. Name: Escanaba Paper Company

2. Owner: Escanaba Paper Company
County Road 426
Escanaba, Michigan 49829
Attention: Ms. Kathy Jacobi, Environmental Manager
Telephone: 906-233-2776

3. Location: County Road 426, Sections 25 and 36, T40N, R23W, Wells Township, Delta County

4. Total Acreage of the Facility: 132.4 acres

5. This facility accepts industrial waste from a paper mill.

II. DESIGN:

The landfill has a double composite design consisting of bentonite mat and high-density polyethylene (HDPE) liners. For Phases 3, 4 and 5, the primary liner is a 60-mil HDPE liner underlain by bentomat. The secondary liner is a 40-mil HDPE liner also underlain by bentomat. Phase 1 is constructed with a 60-mil HDPE primary liner underlain by bentomat, and a secondary liner of 60-mil HDPE.

Phase 2 is in post-closure. It has a double-composite liner system, with 60-mil HDPE overlying bentomat in the primary liner system, and 60-mil HDPE overlying a sand-bentonite mixture for the secondary composite liner. The cap is constructed of paper mill sludge.

The final cover system design for Phase 1 and Phases 3-11 consists of a 12-inch gas venting layer incorporating a network of gas vent piping installed above the final waste surface; a 40-mil textured, very flexible polyethylene (VFPE) geomembrane; a geocomposite drainage layer; a 12-inch granular drainage layer incorporating a network of drain piping; a 12-inch vegetative growth layer; and a 6-inch layer of topsoil.

The leachate collection system consists of six-inch schedule 90 perforated PVC pipe placed on 100-foot spacing. The slope perpendicular to the collection pipe is two percent and the slope parallel to the piping is one percent. All pipes have cleanouts. The leachate collection piping is placed in a 24-inch thick layer of clean sand. The leachate collection system in the Phase 1 cell is augmented by a three-foot diameter stilling well encased in gravel placed in an enlarged collection sump. The stilling well has additional pumps in order to accommodate the increased leachate flow anticipated when geotubes to be placed in the landfill are filled with sludge removed from the treatment lagoons at the on-site waste water treatment plant.

The secondary collection system is composed of geonet with slopes similar to those in the primary system. Both the primary and secondary leachate collection

systems drain to sumps and leachate is carried to the lift station through double-walled schedule 80 PVC piping. Leachate from the landfill is pumped to the licensee's on-site wastewater treatment plant for treatment and disposal.

An underdrain was installed on the western side of the Phases 3, 4 and 5 to ensure the isolation distance required for a Type II landfill in the Part 115 rules was met. The outlet drains to the west of the Phase 1 cell area, but is currently diverted to the on-site wastewater treatment plant due to the groundwater contamination at the site. Since the facility is currently classified as a Type III landfill, the underdrain is no longer needed for the facility to meet the vertical isolation distance requirement.

An underdrain/groundwater collection system is also in-place under the Phase 1 cell. This underdrain was initially installed to provide for seven feet of isolation distance needed for a type II landfill, as described above. The underdrain is currently used as a groundwater collection system to collect the contaminated groundwater resulting from a leak/spill at the upgradient Phases 3-5. The collected groundwater is pumped to the on-site waste water treatment plant for treatment and disposal.

III. HYDROGEOLOGY:

The Escanaba Paper Company Landfill is located adjacent to the Escanaba River immediately NNW of the city of Escanaba in an area with site surficial geology consisting of three basic units, with the upper unit occasionally being divided into three separate subunits. The shallowest unit is generally characterized by a loose to dense, very fine to medium sand with occasional traces of silt and gravel. Beneath this unit is extremely dense silty sand to sandy silt containing trace amounts of gravel and clay referred to as glacial till. Massive gray limestone underlies the entire site.

The near surface outwash sands are generally characterized as very fine to medium sands with trace amounts of silt and are generally classified as uniformly graded sands (SP) or silty sands (SM) under the USCS system. These soils generally become finer textured with depth and the silt content also generally increases with depth, occasionally causing the soils to be classified as silty sands (SM). Beneath the landfill the thickness of these soils ranges from approximately 25 to 83 feet below ground surface. Below the outwash sand lays a glacial till. The till is variable in thickness and is generally classified as a very silty, gravely fine to coarse sand (SM) or a sandy, gravely silt (ML), both of which generally contain trace amounts of clay and are very dense to extremely dense as measured by standard penetration tests. The thickness of the till layer ranges from 6 to 17 feet.

Bedrock underlying the site consists of limestone of the Trenton/Black River Group. The limestone is generally fractured in at least the upper 10 to 30 feet. The bedrock surface ranges from approximately 35 feet below ground surface (bgs) to 100 feet bgs across the site. The Escanaba River forms a hydraulic discharge boundary to the west and northwest of the site for the unconsolidated portion of the aquifer and Lake Michigan forms a hydraulic boundary for the lower bedrock aquifer.

This facility is an unmonitorable unit, due to a leachate release that occurred in 2000. A hydrogeological investigation has been completed and a Remedial Action Plan was approved for this landfill on April 8, 2002.

IV. MONITORING:

Groundwater monitoring at the site is accomplished with four upgradient wells, PW-24R, PW-26, PW-26A and PW-30, and eight wells downgradient of Phases 3-11: PW-28R, PW-28AR, PW-29, PW-31, PW-32, PW-33, PW-34, and PW-34A. Additionally, there are seven wells downgradient of Phase 1: PW-3, PW-4, PW-4A, PW-5, PW-5A, WW-14, and WW -15, and eleven wells around Phase 2: BW -1R, BW-3R (upgradient) and PW-1R, PW-10, PW-11, PW-12, PW-13, PW-14, PW-15, PW-16, PW-17 (downgradient). Additionally, wells WW-13 and WW-12 are monitored as part of the Remedial Action Plan for Phases 3-5.

All Phases have independent secondary collection systems that will be monitored for flow volumes. The secondary collection systems for Phases 1, 3, 4, and 5 function as leak detection systems, as these units are designated unmonitorable.

The hydrogeologic monitoring plan was approved as amended March 26, 1998, with parameter reductions, and has since been revised numerous times. The current approved hydrogeological monitoring plan (HMP) for this facility is Version 7, approved on October 31, 2000, revised in January 2001, and September 2002. The Phase 1 HMP was updated in November, 2002.

V. VARIANCES:

There are no approved variances for this facility.