

ENVIRONMENTAL CORRESPONDENCE
REVIEW AND APPROVAL VERIFICATION

--- For Internal VY Use Only!---

Date: 5/6/05

COPY

Subject: Wtr Source Protection Plan

Program: Environmental

Written by: Lin Scott 5/6/05 (sign & date)

Reviewed by: LYNN - EDITORIAL REVIEW 5/9/05 (sign & date)

Approved by: Sheridan 5/11/05 (sign & date)

* Changes as noted.

Make changes/copy before
sending



Entergy Nuclear Northeast
Entergy Nuclear Operations, Inc.
Vermont Yankee
322 Governor Hunt Rd.
P.O. Box 157
Vernon, VT 05354
Tel 802-257-7711

May 11, 2005

Ms. Ashley J. Lucht
Environmental Analyst
Agency of Natural Resources
Department of Environmental Conservation
The Old Pantry Building
103 South Main Street
Waterbury, VT 05671-0403

Dear Ms. Lucht,

Enclosed are the Source Water Protection Plans for Entergy Nuclear Northeast, Vermont Yankee's three systems located in Vernon, VT. These systems are: the Main System WSID #8332, the COB System WSID# 20559 and the NEOB System WSID #20738. In addition to the plans, please find a check in the amount of \$70.00, for each of the three systems, totaling to \$210.00.

These plans were prepared by Entergy Nuclear Northeast, Vermont Yankee utilizing the Protecting the Public Water Source in Vermont, A Guidance Document in Reference to Section 1428 of the Federal Safe Drinking Water Act; 10 VSA, Chapter 56; and Vermont's Water Supply Rule.

If you have any questions concerning the information contained in this submittal, please contact me at jsciuto@entergy.com or (802) 258-5525.

Sincerely,

A handwritten signature in black ink, appearing to read "J.L. Sciuto".

J.L. Sciuto
Environmental Specialist

A handwritten signature in black ink, appearing to read "Sam Wender".

Sam Wender
Chemistry Superintendant

State of Vermont
Agency of Natural Resources
Department of Environmental Conservation
Water Supply Division
INVOICE FOR PERMIT TO OPERATE FEE
April 1, 2005

JULIE HAYWARD
NEOB-VERMONT YANKEE
PO BOX 157
320 GOVERNOR HUNT RD
VERNON VT 05354

WSID : 20738 NEOB-Vermont Yankee
Billing Period : 1/01/05 To 12/31/05

INVOICE # 0020654

Amount Due = Minimum Fee of: \$70.00

Payment Due Within 30 Days.

Please Make Check Payable To Treasurer, State of Vermont, And Remit To :
Water Supply Division
ATTN: Laura LaFleur
The Old Pantry Building
103 South Main Street
Waterbury, VT 05671-0403

Check Date: 04/21/2005

Check No.

4772770

Invoice Number	Invoice Date	Payment Message	Gross Amount	Discount Available	Paid Amount
0020654	04/06/2005	State fee for potable water	70.00	0.00	70.00
Vendor Number 089580			Name TREASURER STATE OF VT		Total Discounts 0.00
Check Number 4772770			Date 04/21/2005	Total Amount 70.00	Discounts Taken 0.00
					Total Paid Amount 70.00

PLEASE DETACH BEFORE DEPOSITING

"VERIFICATION BOX" (TO RIGHT OF ARROW. HOLD BETWEEN THUMB AND FOREFINGER, OR BREATHE ON IT. COLOR WILL DISAPPEAR, THEN REAPPEAR)
THIS CHECK CLEARS USING POSITIVE PAY

**Entergy**

Entergy Services, Inc. Agent For:

Entergy Corporation, Entergy Mississippi Inc., Entergy Services Inc., Systems Pools Inc.
Entergy Gulf States Inc., Entergy Louisiana Inc., Entergy New Orleans Inc.
System Energy Resources Inc., Entergy Operations Inc., Entergy Arkansas Inc.
P.O. Box 61000 New Orleans, LA 70161-1000

JPMORGAN CHASE DELAWARE

NA

Wilmington, DE 19801

62-26/311

4772770

6029-09

Date 04/21/2005

Pay Amount 70.00***

(VOID AFTER 60 DAYS)

Pay *****SEVENTY AND XX/100 DOLLAR*****

To The TREASURER STATE OF VT

Order Of

103 SOUTH MAIN ST
WATER SUPPLY DIVISION
THE OLD PANTRY BUILDING
WATERBURY, VT 05671-0601

Executive Vice President and Chief Financial Officer

Vice President and Treasurer

SECURITY
FEATURES INCLUDED
DETAILS ON BACK

⑈L 772770⑈ ⑈04211000267⑈ 6301460295509⑈

State of Vermont
Agency of Natural Resources
Department of Environmental Conservation
Water Supply Division
INVOICE FOR PERMIT TO OPERATE FEE
April 1, 2005

JULIE HAYWARD
VERMONT YANKEE PLANT - MAIN
PO BOX 157
320 GOVERNOR HUNT RD
VERNON VT 05354

WSID : 8332 Vermont Yankee Plant - Main
Billing Period : 1/01/05 To 12/31/05

INVOICE # 0020582

Amount Due = Minimum Fee of: \$70.00

Payment Due Within 30 Days.

Please Make Check Payable To Treasurer, State of Vermont, And Remit To :
Water Supply Division
ATTN: Laura LaFleur
The Old Pantry Building
103 South Main Street
Waterbury; VT 05671-0403

If you have any questions, please call us at (800) 823-6500.

Check No. 4772772

"VERIFICATION BOX" (TO RIGHT OF ARROW. HOLD BETWEEN THUMB AND FOREFINGER, OR BREATHE ON IT. COLOR WILL DISAPPEAR, THEN REAPPEAR)
THIS CHECK CLEARS USING POSITIVE PAY



Energy Corporation, Entergy Mississippi Inc., Entergy Services Inc., Systems Fuels Inc.,
Entergy Gulf States Inc., Entergy Louisiana Inc., Entergy New Orleans Inc.,
System Energy Resources Inc., Entergy Operations Inc., Entergy Arkansas Inc.,
P.O. Box 61000 New Orleans, LA 70161-1000

4772772

6029-09

Date 04/21/2005

Pay Amount 70.00***
(VOID AFTER 60 DAYS)

Pay to the order of *****SEVENTY AND XX / 100 DOLLAR***

To The **TREASURER STATE OF VT**
Order Of

103 SOUTH MAIN ST
WATER SUPPLY DIVISION
THE OLD PANTRY BUILDING
WATERBURY VT 05671-0601

Executive Vice President and Chief Financial Officer

Vice President and Treasurer

"4772772" 10311002671 6301460295509"

State of Vermont
Agency of Natural Resources
Department of Environmental Conservation
Water Supply Division
INVOICE FOR PERMIT TO OPERATE FEE
April 1, 2005

JULIE HAYWARD
VERMONT YANKEE COB SYSTEM
PO BOX 157
320 GOVERNOR HUNT RD
VERNON VT 05354

WSID : 20559 Vermont Yankee Cob System
Billing Period : 1/01/05 To 12/31/05

INVOICE # 0020636

Amount Due = Minimum Fee of: \$70.00

Payment Due Within 30 Days.

Please Make Check Payable To Treasurer, State of Vermont, And Remit To :
Water Supply Division
ATTN: Laura LaFleur
The Old Pantry Building
103 South Main Street
Waterbury, VT 05671-0403

Check Date: 04/21/2005

Check No. 4772771

Invoice Number	Invoice Date	Payment Message	Gross Amount	Discount Available	Paid Amount
0020582	04/06/2005	State fee for potable water	70.00	0.00	70.00

PLEASE DETACH BEFORE DEPOSITING

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THIS CHECK CLEARS USING POSITIVE PAY

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Entergy Services, Inc. Agent For:

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System Energy Resources Inc., Entergy Operations Inc., Entergy Arkansas Inc.
P.O. Box 61000 New Orleans, LA 70161-1000

JPMORGAN CHASE DELAWARE
NA
Wilmington, DE 19801
62-26/311

4772771

6029-09

Date 04/21/2005

Pay Amount 70.00***

(VOID AFTER 60 DAYS)

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To The
Order Of

TREASURER STATE OF VT

103 SOUTH MAIN ST
WATER SUPPLY DIVISION
THE OLD PANTRY BUILDING
WATERBURY, VT 05671-0601

Executive Vice President and Chief Financial Officer

Vice President and Treasurer

SECURITY
FEATURES INCLUDE
DETAILS ON BACK

⑈4772771⑈ ⑆031100267⑆ 6301460295509⑈

Status Update for Milestones Due for Required Public Water System Improvements

Water System Name: Vermont Yankee Plant - Main WSID #: 8332

The following milestones are listed as past due:

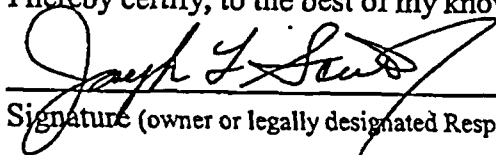
None

Milestones coming due:

05/23/2005 Source protection plan - update and subm Completed?: Yes/No Date: _____

Comments: will be provided NLT 5/23/05

I hereby certify, to the best of my knowledge that the information provided above is true and accurate.



Signature (owner or legally designated Responsible person) ENTERGY

JOSEPH L. SCIUTO

Print Name

VERMONT YANKEE
ENVIRONMENTAL SPECIALIST

Title

5/5/05
Date

Ashley,
Please forward this
to Ellen E. Parr Dearing
per her request,
Thank you

Respectfully,
Len Sciuto

Source Water Protection Plan

Vermont Yankee Nuclear Power Station
320 Governor Hunt Road
Vernon, Vermont
COB Well System WSID #20559

Revision 2

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* Figures 3 & 4 are on the same map.

1.0 Introduction

This Source Water Protection Plan (SPP) was prepared for the COB well system (WSID #20559) at Entergy Nuclear Northeast, Vermont Yankee in Vernon, Vermont. This system consists of one drilled bedrock well. The purpose of this SPP is to protect the water quality of this well by identifying and managing the potential sources of contamination and threatening activities that occur within the source protection area. This document has been prepared in accordance with the Vermont Water Supply Rule, Chapter 21, and follows the outline prepared in the publication entitled "Protecting Public Water Sources in Vermont" dated February 24, 1997.

The COB well is located on the southeast side of Vermont Yankee's property off of Governor Hunt Road in Vernon Vermont. (See Figures 1 & 2). According to the well completion report (WR # 214), the well was drilled in December 1984 by Morrison-Knudson Inc. The well is 362 feet deep and has 80 feet of steel casing. The well yield is 12 gallons per minute. Copies of the well completion reports are in Appendix A.

The source protection area (SPA) for the COB well consists of a circular area within a 500-foot radius of the well (Figure 1). The SPA was determined to be 500-feet based on the maximum average daily demand for the well system, as listed in the Water Supply Division Guidance Document. The SPA consists of two "zones". Zone 1 consists of an isolation zone consisting of a circular area within a 200-foot radius around the well where impacts are likely to be immediate and certain. Zone 2 consists of the remaining areas of the SPA, and is considered the primary area of contribution to the well. In this area there will be probable impacts from potential sources of contamination.

2.0 Potential Sources of Contamination

2.1 Existing Land Uses and Potential Sources of Contamination

The current land uses observed within the SPA consist of air conditioning units, office building, reactor and turbine buildings, chemical storage tanks, site access roads, transformers, a former UST site SMS #99-2617, fuel oil storage tanks, leachfields and industrial water storage tanks. There are railroad tracks within the SPA for this well. These paved railroad tracks are infrequently used and require no herbicide treatment. Vermont Yankee owns all of the land within the zones of the COB system well. See Figure #2.

2.2 Potential Sources of Contamination

An inventory of the potential sources of contamination (PSOC) is presented in Table 1. The locations of these PSOCs are presented on Figure 2. Due to the scale of the map, in cases where more than one PSOC exists on a parcel they will be grouped under one designation.

Table 1 Potential Sources on Contamination- Risk Evaluation

Land Use/PSOC	Contamin -ation ID #	Zone 1		Zone 2		Risk Evaluation		
		Yes	No	Yes	No	High	Med	Low
A/C Units	1	X		X		X		
Office Building	2	X		X		X		
Reactor & Turbine Buildings	3	X		X		X		
Chemical Storage Tanks	4	X		X		X		
Roads & Railroad tracks	5	X		X		X		
Transformers*	6	X		X		X		
SMS Site 99-2617	7		X	X				X
Fuel Oil Tanks	8		X	X				X
Leachfields	9	X		X		X		
Water Storage Tanks	10			X				X

* Refer to Section 3.0 for an Explanation of Contamination Item #6.

3.0 Assessment of Threats

Air Conditioning Units-(Contamination ID #1)

The air conditioning units are well maintained per the plant preventive maintenance program. Due to this and the depth of the well the risk associated with these is considered to be low, but in accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

Office Building, Reactor and Turbine Buildings-(Contamination ID #2,3)

Due to the chemical control and hazardous waste programs which control chemical storage and disposal these structures and the activities occurring

within them are not considered a significant risk to the well, but in accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

Chemical Storage Tanks-(Contamination ID #4):

Chemical tanks at the intake structure are bermed tanks downgradient of the drinking water well and pose a low risk for contamination. There also exists a bermed liquid nitrogen tank, which is on the same gradient as the drinking water well. This tank also poses a low risk for well contamination. However, in accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

Site Access Roads & Railroad Tracks-(Contamination ID #5)

There are plant maintained roads and railroad tracks within the 200-foot radius zone 1 areas of the COB well. The paved railroad tracks are infrequently used and require no herbicide treatment. The roadways are considered a potential source of contamination due to the application of road salt, which could cause elevated levels of sodium and chloride in the well. In addition, there is also a potential for a spill or leaks of petroleum products from vehicles in the parking areas or as they transverse the roadways. Due to an extensive storm drain system the threat to the well is deemed to be low risk. However, the road salt, which is typically mixed with sand prior to application represents a moderate risk to the wells, this again is due to depth of the well being 362 feet deep, but in accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

Transformer-(Contamination ID #6)

There are currently two spare transformers stored on-site. The GE transformer is located on a concrete pad north of the main septic system (see figure #2). The Peebles transformer is located north of the PSB building. All transformers on site have non-PCB dielectric fluid. Neither are staged within the proximity of this well.

SMS Site #99-2617-(Contamination ID #7)

Vermont Yankee SMS Site 99-2617 contains petroleum by-products and chlorinated solvents, (tetrachloroethene [PCE] and its breakdown products). Aggressive groundwater remediation is not being performed on these wells due to the concentrations of contaminants being at a low level. Thus this site poses a low risk to the drinking water wells due to the low

levels of contaminants, being downgradient from the wells and the depth of the drinking water wells.

Fuel Oil Tanks-(Contamination ID #8)

All fuel oil tanks on site have a double walled construction, with leak and overfill protection systems. Therefore these are characterized as low risk to the water supplies.

On-Site Septic Systems-(Contamination ID #9):

Septic systems represent potential sources of nitrates, chlorides, other inorganic compounds, bacteria, viruses and radionuclide contamination. In addition, if improperly used, such as for the disposal of paints, solvents, petroleum products and other hazardous wastes, they could also be a source of organic compounds as well. At Vermont Yankee the chemical control and hazardous waste programs prohibits the disposal of chemical in a manner inconsistent with the manufacturers Material Safety Data Sheet (MSDS).

The wells at Vermont Yankee are topographically upgradient from the septic systems. The well depths are also very deep in the groundwater table. Groundwater flow is in the direction of the river. Therefore this is considered as a low risk to contaminate the water supplies, but in accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

Industrial Water Storage Tanks-(Contamination ID #10):

Plant industrial water storage tanks are bermed tanks that are adequately maintained. These pose a low risk for contamination, but in accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

4.0 Management of Risk

In order to reduce the potential risk of contamination to the drinking water supply wells at Vermont Yankee, Vermont Yankee will perform an annual inspection of the SPA to confirm that the company is following the best management practices and identify any changes in and uses or property owners. Once every three years updates indicating any changes in land

uses/PSOC's will be submitted to the Water Supply Division. The updates may simply consist of a letter, which describes any changes to the original SPP, or a letter stating there have been no changes.

5.0 Contingency Plan

This contingency plan outlines the steps that may be taken by Vermont Yankee in the event a well becomes contaminated, or there is a significant reduction in yield, or if there are mechanical problems.

5.1 Emergency Response

If an emergency exists such as a spill or other contamination event occurs within the SPA, or if a regulated compound is found above the acceptable levels during a routine sampling event, Vermont Yankee may notify the following people/agencies:

Water System Operators

Lynn DeWald	(802) 258-5526
Richard Gerdus	(802) 258-5501

Chemistry Superintendent

Samuel A. Wender IV	(802) 258-5650
---------------------	----------------

Vermont Yankee Shift Supervisor	(802) 258-5270
---------------------------------	----------------

The Shift Supervisor is responsible for 24-hour plant operations and would be able to contact appropriate maintenance personnel.

Vermont Yankee Hazardous Materials

Coordinator

Peter Prince	(802) 258-5476
--------------	----------------

Vermont DEC, Water Supply Division	(800) 823-6500 or (802) 241-3400
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Vermont DEC, Hazardous Materials

Spill Hotline	(800) 641-5005
---------------	----------------

Vermont Department of Health	(800) 439-8550
------------------------------	----------------

Notification of Water System Users

If the Vermont Yankee water supply should become contaminated, one or more of the following methods will notify water system users:

- Bulletin board notice
- E-mail notification
- Memo distributed to all employees
- Posting on faucets

5.2 Short Term Contingency Options

In the event that the water from the system is determined to be unsuitable to drink, or if there is a mechanical problem, the following options are available:

- Determine which well is the source of contamination, if applicable disinfect the supply system and utilize alternate well.
- Utilize water from other existing well on site.
- Issue a boil water notice and/or recommend that bottled water be utilized for drinking purposes. Bottled water is available from Vermont Natural Water, 1566 Putney Rd, Brattleboro, VT 254-6093
- Request that the water system users conserve available water.

5.3 Long Term Contingency Options

If the contamination requires that the existing source be abandoned or permanently modified. Long term contingency options include:

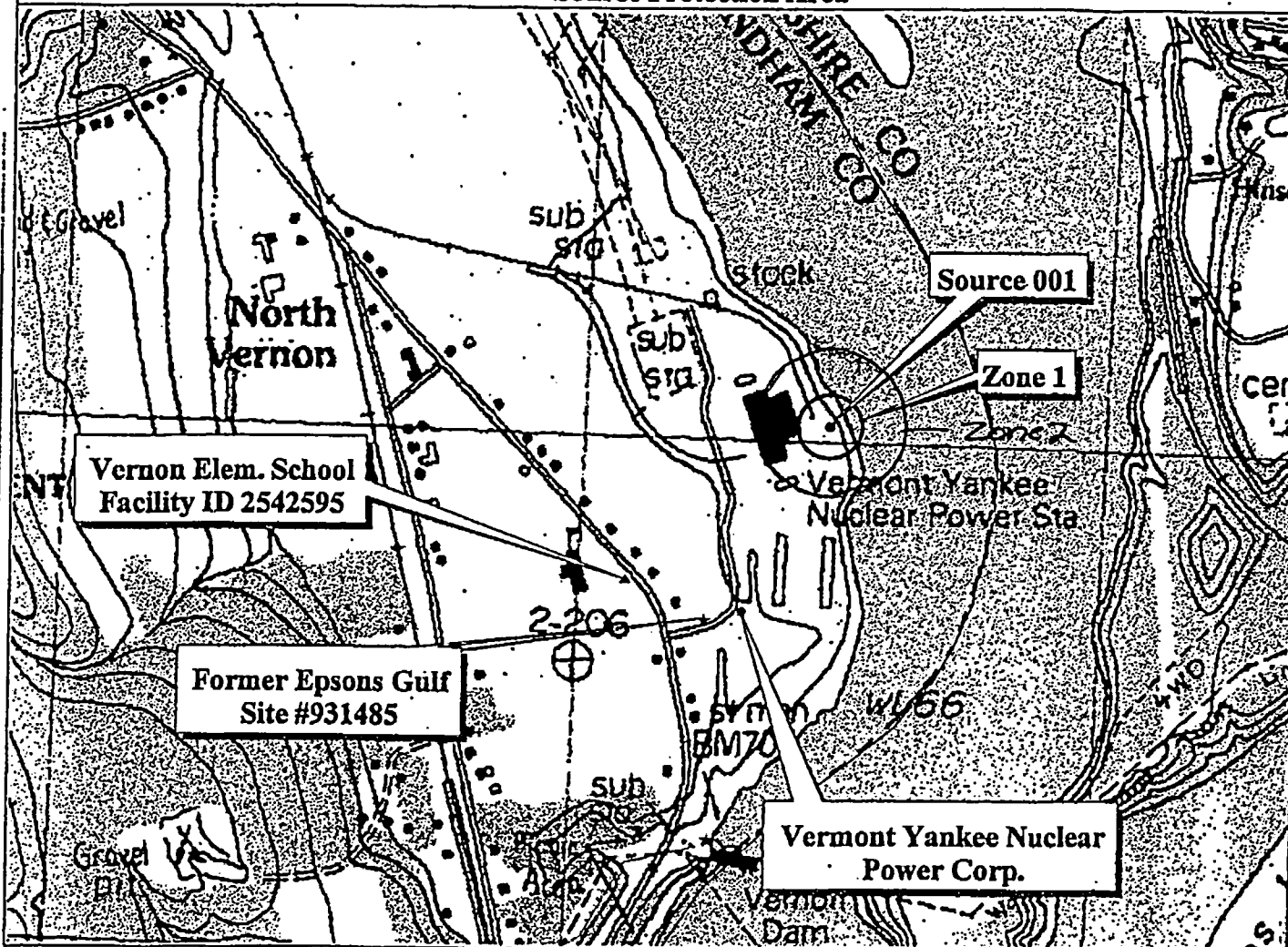
- Drilling one or more new wells.
- Installing suitable water treatment system.

5.4 Water System Shut Down/Start Up Procedures

In the event that the Vermont Yankee wells must be shut down for an emergency situation, personnel should follow the Vermont Yankee Switching and Tagging procedure, AP 0140.

FIGURE 1

Vermont Yankee COB Water System, WSID #20559
Source Protection Area



LEGEND

- ▲ UST Site
- RCRA Facility
- Solid Waste Facility
- * Hazardous Waste Site
- Source
- Source Protection Area
- ⚡ Power Line

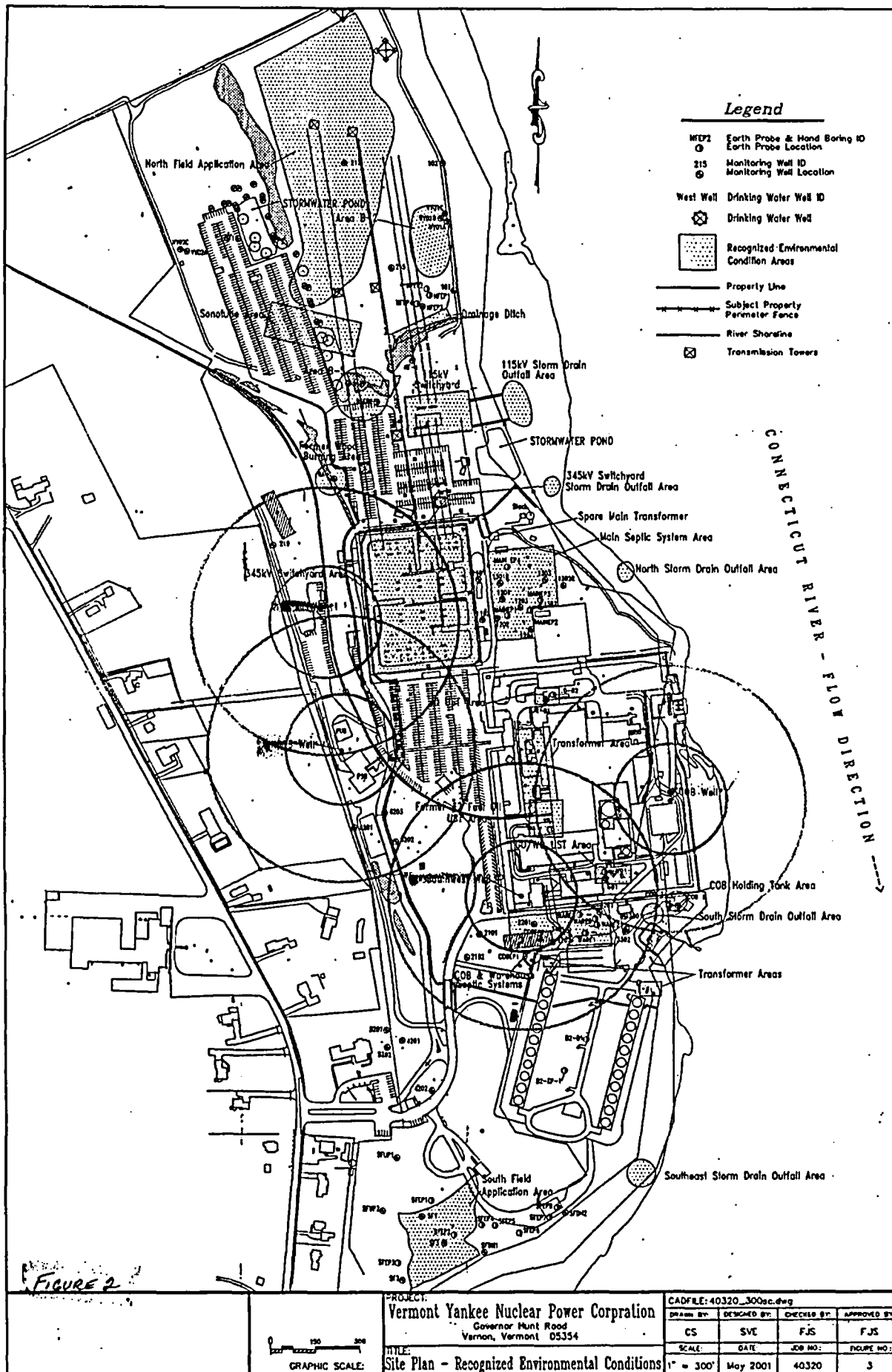
400 0 400 800 Feet

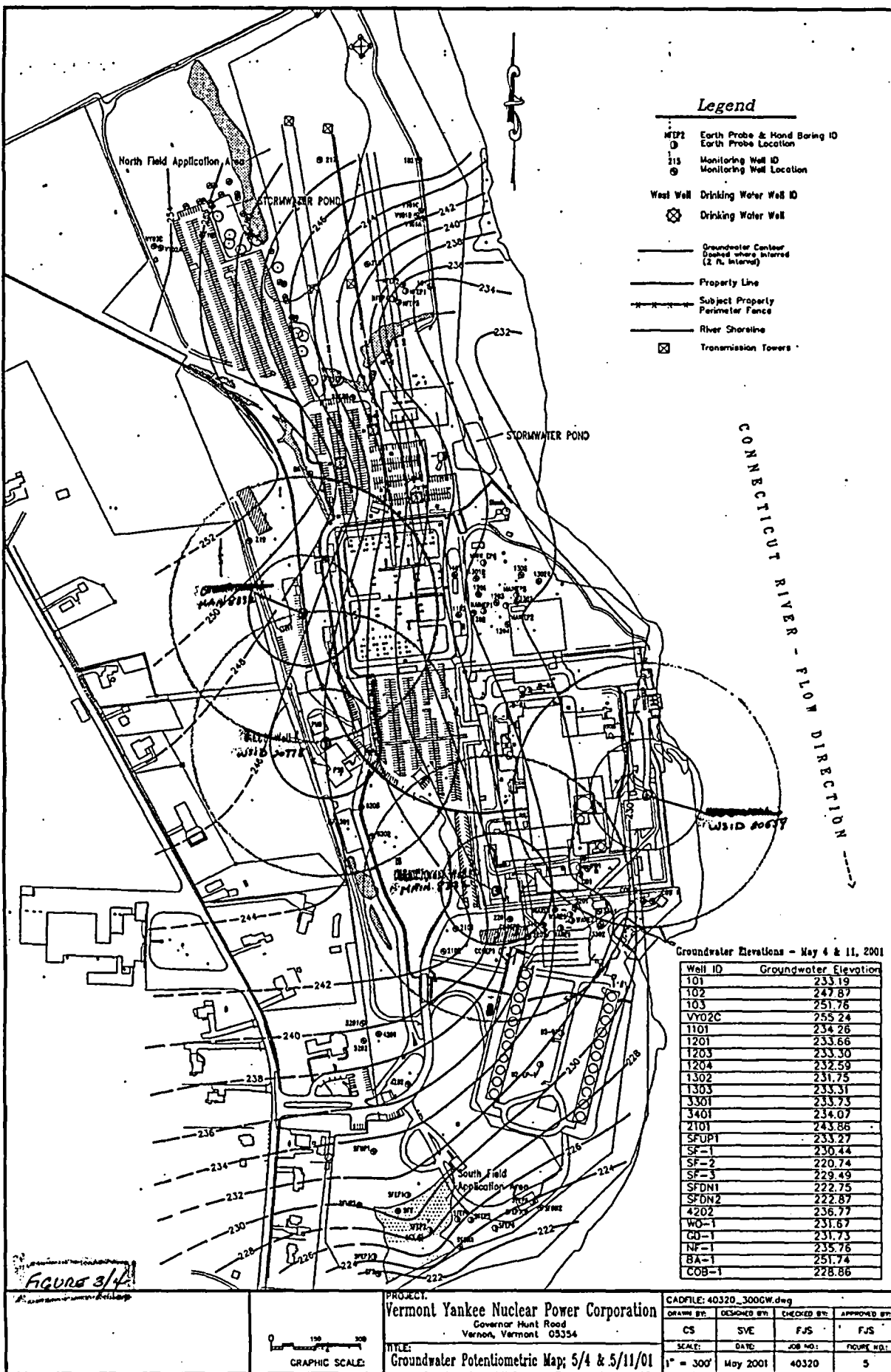
Vermont Water Supply Division
8/23/00

DATA SOURCES: GEOGRAPHIC INFORMATION SYSTEM
WATER SUPPLY DIVISION
EPA REGION 1
STATE PLANS COMMISSION (SPC) (1999)
Vermont Department of Environmental Conservation (DEC)
Vermont Department of Health (VDH)
Vermont Department of Transportation (VTDOT)
Vermont Department of Water Resources (VDWR)
Vermont Department of Wildlife, Fisheries & Forests (VDWFF)
Vermont Department of Agriculture, Food & Forestry (VDAAF)
Vermont Department of Public Safety (VPS)
Vermont Department of Corrections (VDC)
Vermont Department of Mental Health & Substance Abuse Services (VDMHSAS)
Vermont Department of Social Services (VDS)
Vermont Department of Veterans Affairs (VDA)
Vermont Department of Transportation (VTDOT)
Vermont Department of Water Resources (VDWR)
Vermont Department of Wildlife, Fisheries & Forests (VDWFF)
Vermont Department of Agriculture, Food & Forestry (VDAAF)
Vermont Department of Public Safety (VPS)
Vermont Department of Corrections (VDC)
Vermont Department of Mental Health & Substance Abuse Services (VDMHSAS)
Vermont Department of Social Services (VDS)
Vermont Department of Veterans Affairs (VDA)



THIS MAP IS BASED ON THE
AVERAGE POSITIONS OF DATA FROM
VDC. REFERENCE SHOULD BE
MADE TO THE VDC DATA
BASED FOR INFORMATION ON
THE LOCATIONS OF THE MAP
DATA.





APPENDIX A
Well Completion Reports

WELL NUMBER

9

(For Driller's Use)

This report must be completed and submitted to the Department of Water Resources and Environmental Engineering, State Office Building, Montpelier, Vermont 05602, no later than 40 days after completion of the well.

State of Vermont

DEPARTMENT OF WATER RESOURCES AND ENVIRONMENTAL ENGINEERING

WELL COMPLETION REPORT

FEB 28 1985

WATER RESOURCE USE ONLY

W.R. 214 U.S.G.S.

Field Location ☐ Map area 39d9

Latitude _____ Elev. _____

Longitude _____ Topo. _____

Scale: 62,500 ☐ 25,000 ☐ 24,000 ☐

Data in Town Files U _____

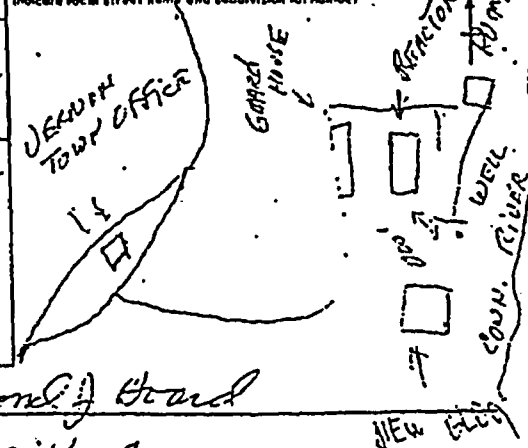
Location map attached to WCR _____

1. WELL OWNER VERMONT Yankee Atomic
OR
WELL PURCHASER MORRISON-KINDSON BRATTLEBORO VT.
2. LOCATION OF WELL: TOWN VERNON SUBDIVISION _____ LOT NO. _____
3. DATE WELL WAS COMPLETED 12-12-84
4. PROPOSED USE OF WELL: ☐ Domestic, ☐ Other OFFICES
5. REASON FOR DRILLING WELL: ☒ New Supply, ☐ Replace Existing Supply, ☐ Deepen Existing Well, ☐ Test or Exploration,
☐ Provide Additional Supply, ☐ Other _____
6. DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary with A-P, ☐ Other _____
7. TYPE OF WELL: ☒ Open Hole in Bedrock, ☐ Open End Casing, ☐ Screened or Slotted, ☐ Other _____
8. TOTAL DEPTH OF WELL: 362 feet below land surface.
9. CASING FINISH: ☒ Above ground, Finished, ☐ Above ground, Unfinished, ☐ Buried, ☐ In Pit, ☐ Removed, ☐ None used, ☐ Other _____
10. CASING DETAILS: Total length 80 ft. Length below L.S. 7F ft. Dia. 6" In. Material STEEL Wt. 17 lb./ft.
11. LINER OR INNER CASING DETAILS: Length used _____ ft. Diameter _____ In. Material _____ Weight _____ lb./ft.
12. METHOD OF SEALING CASING TO BEDROCK: ☒ Drive Shoe, ☐ Grout - type 8 3/4, Orilled _____ in. hole 10 ft. in bedrock
☐ Other _____
13. SCREEN DETAILS: Make and Type _____ Material _____ Length _____ ft. Diameter _____ In.
Slot Size _____, Depth to top of screen in feet below land surface _____ ft. Gravel pack if used: Gravel Size or Type _____
14. YIELD TEST: ☐ Bailed, ☐ Pumped, ☒ Compressed Air, for 30 min Hours at 12 Gallons per minute
Measured by ☒ Bucket, ☐ Orifice pipe, ☐ Wier, ☐ Meter ☐ Permanent Airline installed
15. STATIC WATER LEVEL: 30' feet below land surface, Date or Time measured _____, Overflows at _____ C.P.M.
16. WATER ANALYSIS: Has the water been analyzed? ☐ Yes ☒ No, If Yes, Where _____
17. SPECIAL NOTES: _____
18. WELL LOG

Depth from Land Surface		Water	Formation Description	Sketch
Feet	Feet			
Ground Surface			SAND TO 30'	
			CLAY TO 60'	
			BOULDERS TO 70'	
			HARD SCHIST TO 362'	

19. SITE MAP

Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate local street name and subdivision lot number.



20. TESTED YIELD

If the yield was tested at different depths during drilling, list below.

Feet	Gallons Per Minute

WELL DRILLED BY: Raymond J. BoardDOING BUSINESS AS: CANDRILL CORP

Company or Business Name

REPORT FILED BY: Raymond J. Board

Authorized Signature

DATE OF REPORT: 1-29-85WELL DRILLERS LIC. NO. 301

TABLE I
PLANT WELL INFORMATION

VERMONT YANKEE POTABLE WATER WELLS				
Well Designation	COB	Southwest	West	New Engineering Office Building
Date of Installation	August, 1986	June, 1986	July, 1987	July, 1998
Well Depth	352 feet	500 feet	555 feet	500 feet
Amount of Casing	80 feet	67 feet	51 feet	38 feet
Diameter of Casing	6 inches	6 inches	6 inches	6 inches
Static Water Level	31.4 feet	24.5 feet	*	4 feet
Pump Size	1 HP	1.5 HP	15 HP	1.5 HP
Pump Depth	350 feet	497 feet	400 feet	480 feet
Well Rating	9 gpm	10.5 gpm	73.7 gpm	30 gpm
WSID	20559 (1/96)	8332 (9/96)		20738 (4/99)

* Data is currently not available.

NOTES:

- The COB and Southwest wells were approved by the State on 12/10/86.
- The West well was approved by the State on 11/19/87.
- The New Engineering Office Building well was approved by the State on 4/22/98.

Change Approval _____ / _____
Chemistry Manager or Designee Date

Source Water Protection Plan

Vermont Yankee Nuclear Power Station
320 Governor Hunt Road
Vernon, Vermont
Main Well System WSID #8332

Revision 2
Prepared April 2005

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* Figures 3 & 4 are on the same Map.

1.0 Introduction

This updated Source Water Protection Plan (SPP) was prepared for the Main well system (WSID #8332) at Entergy Nuclear Northeast, Vermont Yankee in Vernon, Vermont. This system consists of two drilled bedrock wells the West well and the Southwest well. The purpose of this SPP is to protect the water quality of these wells by identifying and managing the potential sources of contamination and threatening activities that may occur within the source protection area. This document has been prepared in accordance with the Vermont Water Supply Rule, Chapter 21, and follows the outline prepared in the publication entitled "Protecting Public Water Sources in Vermont" dated February 24, 1997.

The Main southwest well is located on the southwest side of Vermont Yankee's property off of Governor Hunt Road in Vernon Vermont. (See Figures 1 & 2). According to the well completion report (WR # 253), the well was drilled in June 1986 by Green Mountain Well Company Inc. The well is 500 feet deep and has 67 feet of steel casing. The well yield is 10.5 gallons per minute. The Main west well is located on the west side of Vermont Yankee's property off of Governor Hunt Road in Vernon, Vermont. (See Figures 1 & 2). According to the well completion report (WR # 283), the well was drilled in July 1987 by Green Mountain Well Company Inc. The well is 555 feet deep and has 50.1 feet of steel casing. The well yield is 73.7 gallons per minute. Copies of the well completion reports are included in Appendix A.

The source protection area (SPA) for the southwest and west wells consists of a circular area within a 500-foot radius of each well (Figure 1). The SPA was determined to be 500-feet based on the maximum average daily demand for the well system, as listed in the Water Supply Division Guidance Document. The SPA consists of two "zones". Zone 1 is consists of an isolation zone consisting of a circular area within a 200-foot radius around the well where impacts are likely to be immediate and certain. Zone 2 consists of the remaining areas of the SPA, and is considered the primary area of contribution to the well. In this area there will be probable impacts from potential sources of contamination.

2.0 Potential Sources of Contamination

2.1 Existing Land Uses and Potential Sources of Contamination

The current land uses observed within the SPA consist of fields, office buildings, warehouse, parking lots, fences, roads, railroad tracks, switchyards, a former UST site SMS #99-2617, fuel oil storage tanks and leachfields. Vermont Yankee owns all of the land within the zones of the Main system wells. See Figure #2.

2.2 Potential Sources of Contamination

An inventory of the potential sources of contamination (PSOC) is presented in Table 1. The locations of these PSOCs are presented on Figure 2. Due to the scale of the map, in cases where more than one PSOC exists on a parcel they will be grouped under one designation.

Table 1 Potential Sources on Contamination- Risk Evaluation

Land Use/PSOC	Contamin- ation ID #	Zone 1		Zone 2		Risk Evaluation		
		Yes	No	Yes	No	High	Med	Low
Fields/Fence	1	X		X		X		
Office Building	2	X		X		X		
Warehouse	3	X		X		X		
Parking Lots	4	X		X		X		
Roads & Railroad Tracks	5	X		X		X		
Switchyards	6	X		X		X		
SMS Site 99-2617	7		X	X				X
Fuel Oil Tanks	8		X	X				X
Leachfields	9	X		X		X		
Transformers*	10	#2		#1			#2	#1
Water Storage Tanks	11		X	X				X

* Refer to Section 3.0 for an Explanation of Contamination item #10.

3.0 Assessment of Threats

Fields/Fence-(Contamination ID #1)

The fields, which are closest to the West well, are on Vermont Yankee property. Along the field edge is a security fence. Roundup, a systemic

weed killer, was historically applied to the fence line area. This activity has been replaced by weed whacking inside the SPA. The activities occurring in the field and along the fence around the west well are considered low risk activities, but in accordance with the Vermont Water Supply Rule, Section 16, these are considered a high risk due to their importance and potential.

Office Building and Warehouse-(Contamination ID #2,3)

Due to the chemical control and hazardous waste programs which control chemical storage and disposal these structures and the activities occurring within them are not considered a significant risk to the well, but in accordance with the Vermont Water Supply Rule, Section 16, these are considered a high risk due to their importance and potential.

Parking Lots, Site Access Roads and Railroad Tracks-(Contamination ID #4,5)

There are plant maintained roads and parking areas within the 200-foot radius zone 1 areas of both the West well and the Southwest well. The road and parking areas are considered a potential source of contamination due to the application of road salt, which could cause elevated levels of sodium and chloride in the well. In addition, there is also a potential for a spill or leaks of petroleum products from vehicles in the parking areas or as the vehicles transverse the roadways. Due to an extensive storm drain system the threat to the wells is believed to be low risk. However, the road salt which is typically mixed with sand prior to application represents a moderate risk to the wells. This is due to a result of the depth of the well being 400 to 500 feet deep. There are railroad tracks in this area and they are rarely used. Maintenance of vegetation within these tracks, in the SPA's, is via weed whacking. In accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

345 kV Switchyard-(Contamination ID #6)

The switchyard has a separate storm drain system and outfall area therefore activities in this area would not cause contamination into the plant wells. In accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential. Additionally, the switchyard is downgradient from the well. See Figure 4.

SMS Site #99-2617-(Contamination ID #7)

Vermont Yankee SMS Site 99-2617 contains petroleum by-products and chlorinated solvents, (tetrachloroethene [PCE] and its breakdown products). Aggressive groundwater remediation is not being performed on

these wells due to the concentrations of contaminants being at a low level. Thus this site poses a low risk to the drinking water wells due to the low levels of contaminants, being downgradient from the wells, and the depth of the drinking water wells.

Fuel Oil Tanks-(Contamination ID #8)

All fuel oil tanks on site have either a double walled construction, with leak and overfill protection systems or are surrounded by secondary containment structures. Therefore these are characterized as low risk to the water supplies.

On-Site Septic Systems-(Contamination ID #9):

Septic systems represent potential sources of nitrates, chlorides, other inorganic compounds, bacteria, viruses and radionuclide contamination. In addition, if improperly used, such as for the disposal of paints, solvents, petroleum products and other hazardous wastes, they could also be a source of organic compounds as well. At Vermont Yankee the chemical control and hazardous waste programs prohibits the disposal of chemical in a manner inconsistent with the manufacturers Material Safety Data Sheet (MSDS).

The wells at Vermont Yankee are topographically upgradient from the septic systems. The well depths are also very deep in the groundwater table. Groundwater flow is in the direction of the river. Therefore this is considered as a low risk toward contaminate contamination of the water supplies, but in accordance with the Vermont Water Supply Rule, Section 16 these units are considered a high risk due to the importance and potential.

Transformers-(Contamination ID #10):

There are currently two spare transformers stored on site. One (identified as #1 in Table 1), manufactured by General Electric, is located north of the Main septic system (see figure 2). The second (identified as #2 in Table 1), manufactured by Peebles of the United Kingdom, is located north of the NEOB building, near the west well. Two additional transformers were recently replaced during the Station's required cooling tower upgrades. These two transformers will be stored temporarily in a full containment berm near the cooling towers and down gradient of all drinking water wells. The oil contained in the transformers is all PCB free transformers is all pcb-free. Each transformer either contains a vault where any oils released would be captured or are stored within a containment structure capable of holding the entire contents of the transformers. Thus, these are considered to be a medium to low risk relative to contaminating the

Main water supply. Plans are being developed to remove the Peebles transformer (#2) from on-site in the near future. Spill prevention control and countermeasure plans are currently being updated for both transformers so they will continue to comply with updates to the federal regulations (40CFR112.7).

Industrial Water Storage Tanks-(Contamination ID #11):

Plant industrial water storage tanks are bermed tanks downgradient of the drinking water well and pose a low risk for contamination.

4.0 Management of Risk

In order to reduce the potential risk of contamination to the drinking water supply wells at Vermont Yankee, Vermont Yankee will perform an annual inspection of the SPA to confirm that the company is following the best management practices and to identify any changes in and use or property owners. Once every three years updates indicating any changes in land use/PSOC's will be submitted to the Water Supply Division. The updates may simply consist of a letter, which describes any changes to the original SPP, or a letter stating that there have been no changes.

5.0 Contingency Plan

This contingency plan outlines the steps that may be taken by Vermont Yankee in the event a well becomes contaminated, or there is a significant reduction in yield, or if there are mechanical problems.

5.1 Emergency Response

If an emergency exists such as a spill or other contamination event occurs within the SPA, or if a regulated compound is found above the acceptable levels during a routine sampling event, Vermont Yankee may notify the following people/agencies:

Water System Operators

Lynn DeWald

(802) 258-5526

Richard Gerdus

(802) 258-5501

Chemistry Superintendent

Samuel A. Wender IV

(802) 258-5650

Vermont Yankee Shift Supervisor (802) 258-5270
The Shift Supervisor is responsible for 24-hour plant operations and would be able to contact appropriate maintenance personnel.

Vermont Yankee Hazardous Materials
Coordinator
Peter Prince (802) 258-5476

Vermont DEC, Water Supply Division (800) 823-6500 or (802) 241-3400

Vermont DEC, Hazardous Materials
Spill Hotline (800) 641-5005

Vermont Department of Health (800) 439-8550

Notification of Water System Users

If the Vermont Yankee water supply should become contaminated, one or more of the following methods will notify water system users:

- Bulletin board notice
- E-mail notification
- Memo distributed to all employees
- Posting on faucets

5.2 Short Term Contingency Options

In the event that the water from the system is determined to be unsuitable to drink, or if there is a mechanical problem, the following options are available:

- Determine which well is contains the source of contamination, if applicable disinfect the supply system and utilize alternate well.
- Utilize water from other existing well on site.
- Issue a boil water notice and/or recommend that bottled water be utilized for drinking purposes. Bottled water is available from Vermont Natural Water, 1566 Putney Rd, Brattleboro, VT 254-6093
- Request that the water system users conserve available water.

5.3 Long Term Contingency Options

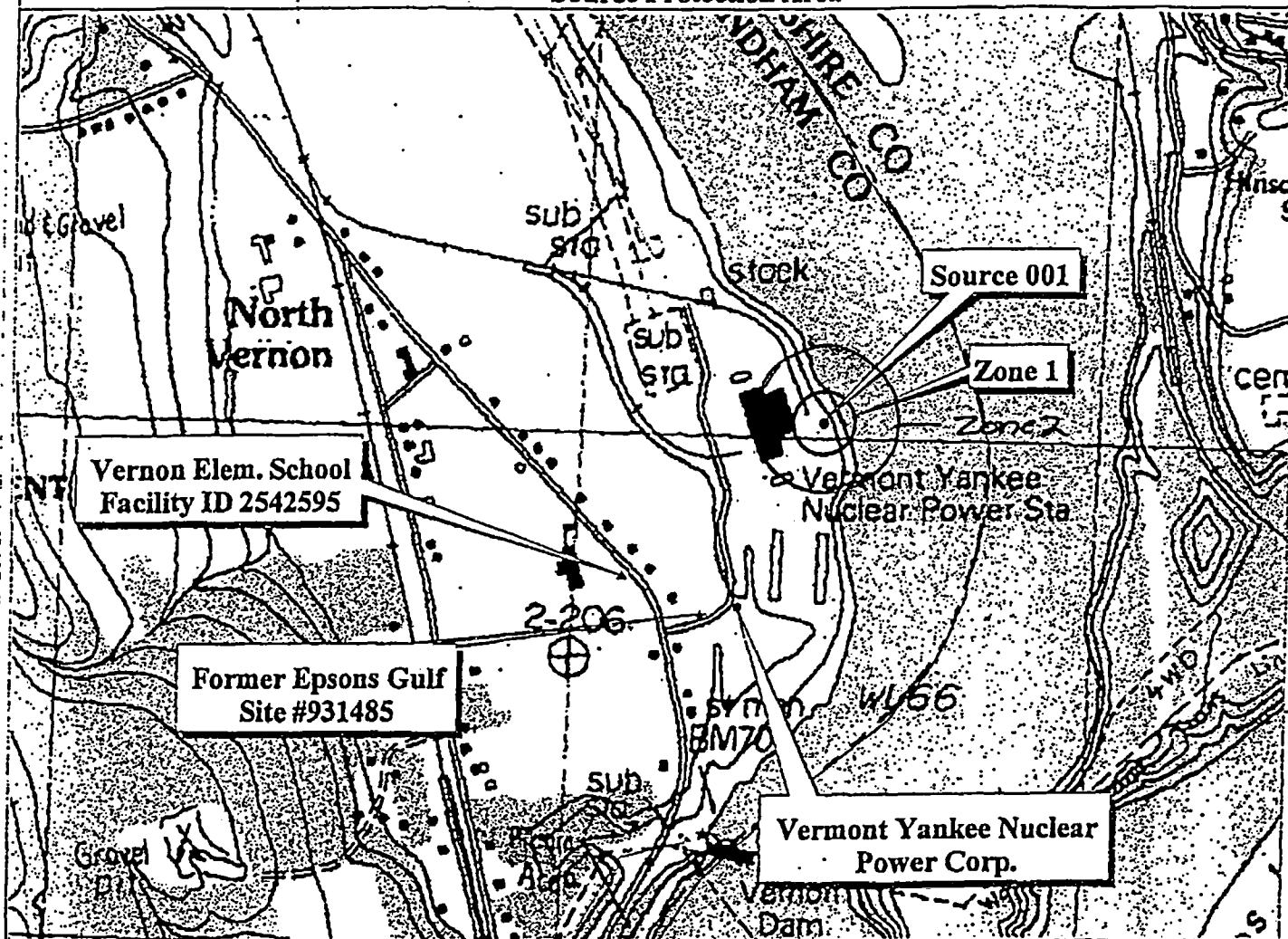
If the contamination requires that the existing source be abandoned or permanently modified. Long term contingency options include:

- Drilling one or more new wells.
- Installing suitable water treatment system.

5.4 Water System Shut Down/Start Up Procedures

In the event that the Vermont Yankee wells must be shut down for an emergency situation, personnel should follow the Vermont Yankee Switching and Tagging procedure, AP 0140.

Vermont Yankee COB Water System, WSID #20559
Source Protection Area



LEGEND

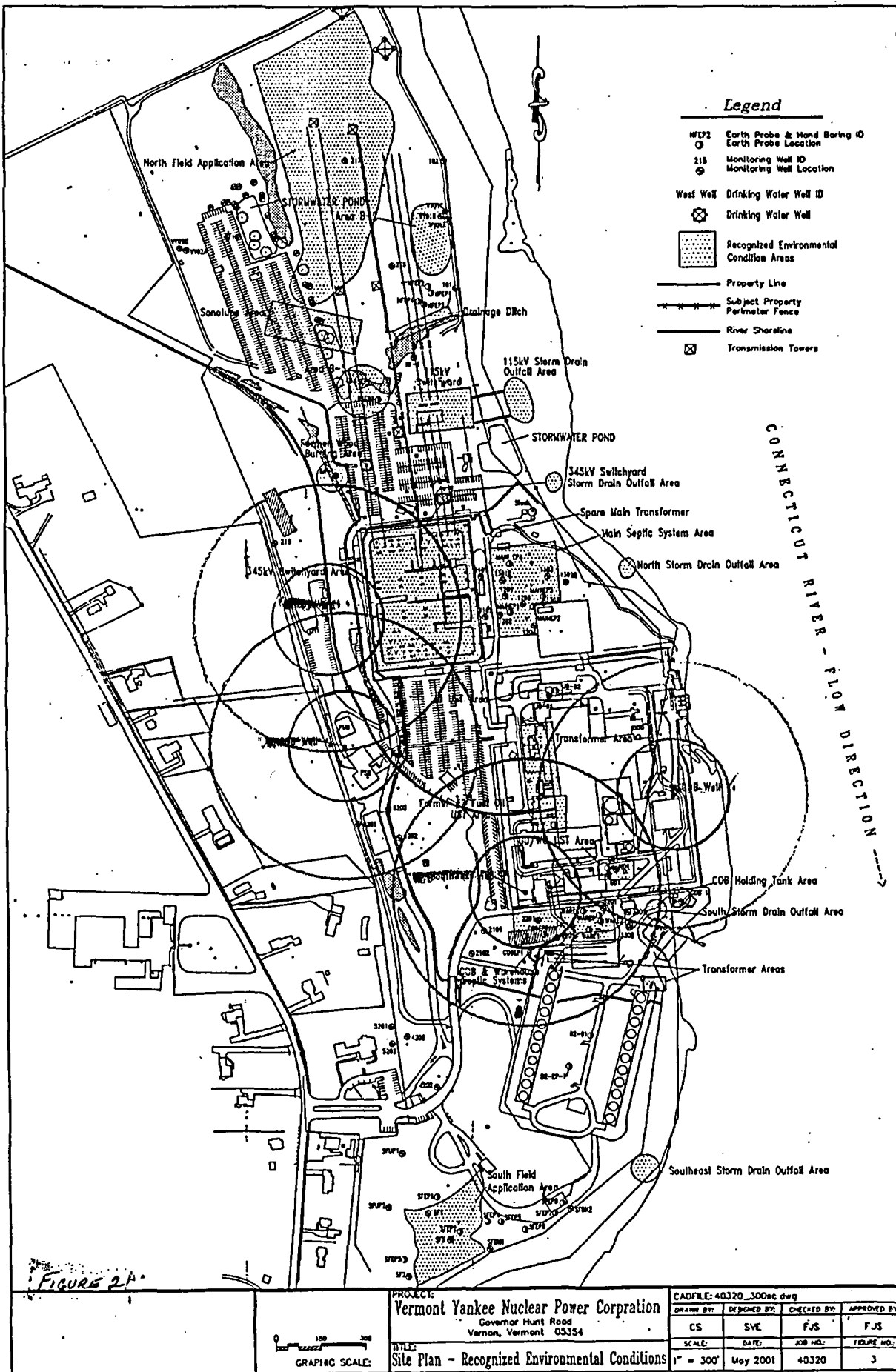
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- RCRA Facility
- Solid Waste Facility
- ★ Hazardous Waste Site
- Source
- Source Protection Area
- Power Line

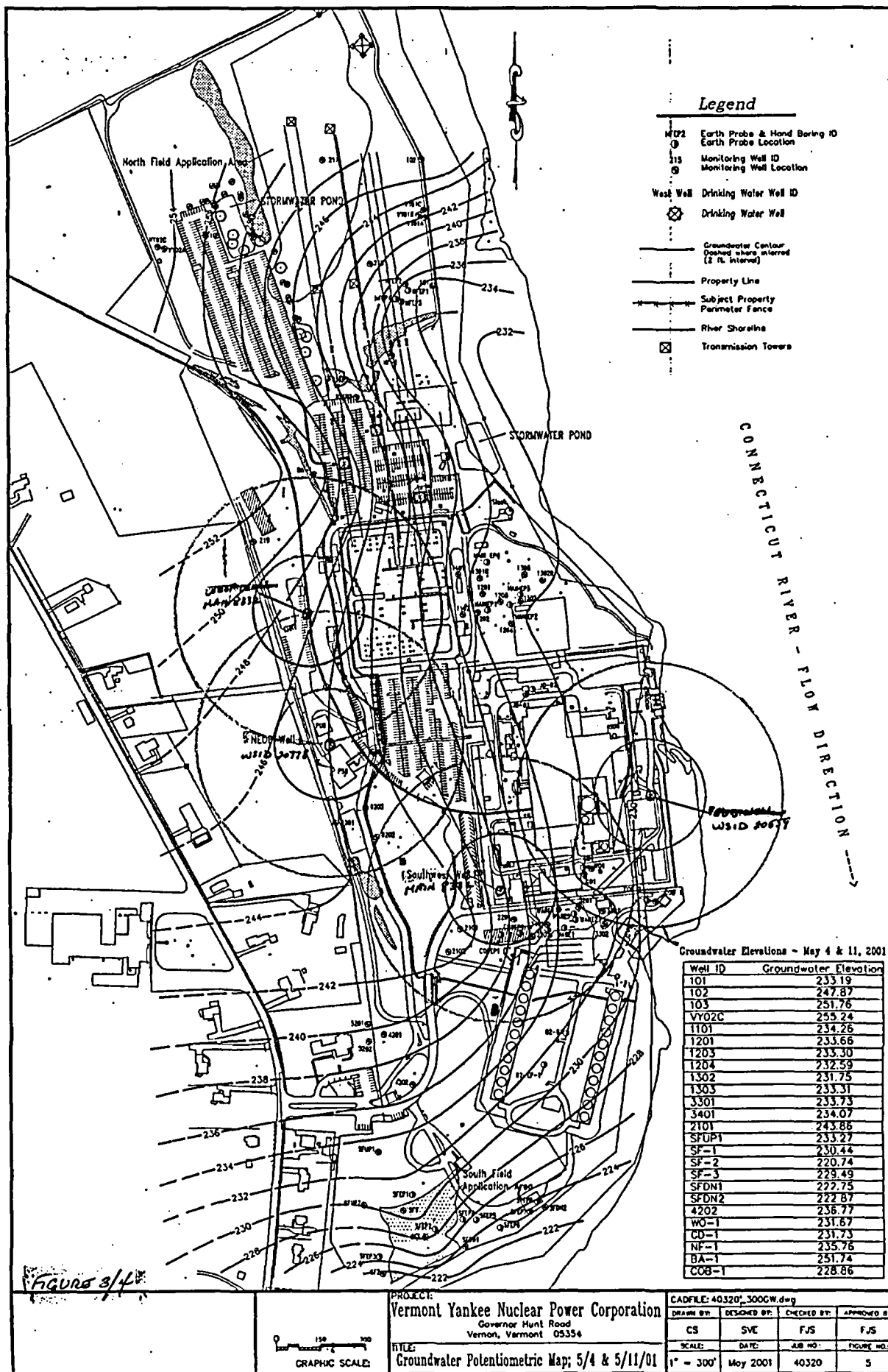
400 0 400 800 Feet

Vermont Water Supply Division
8/23/00

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THIS WAS 2 DAYS ON 4
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FECI. DIFFERENCE SUGGESTS
WAS TO THE FECI DATA
230:00 FOR INTERSECTION
THE 230:00:00 OF THE
DATA.





APPENDIX A
Well Completion Reports

WELL NO. / TAG NO.

109 / 53 / 87

(For Driller's Use)

This report must be completed and submitted to the Department of Environmental Conservation, 103 South Main Street (10M), Waterbury, VT 05676 no later than 60 days after completion of the well.

State of Vermont
Dept. of Environmental Conservation
103 South Main Street (10M)
Waterbury, Vt. 05676
WELL COMPLETION REPORT

FEB 11 1989
Location map attached to WCR

DEPARTMENT USE ONLY

E.C. 283 U.S.G.S.
Field Location ☐ Map area 39d9
Latitude _____ Elev. _____
Longitude _____ Topo. _____
Scale: 62,500 ☐ 25,000 ☐ 24,000 ☐
Data in Town Files ☐

WELL OWNER VT Yankee, Governor of Hunt Rd Vernon VT 05345
OR _____
Name _____ Permanent Mailing Address _____

WELL PURCHASER _____
Name _____ Permanent Mailing Address _____

1. LOCATION OF WELL: TOWN Vernon SUBDIVISION Governor Hunt Rd no. 2

2. DATE WELL WAS COMPLETED 7/23/87

3. PROPOSED USE OF WELL: ☒ Domestic, ☐ Other _____

4. REASON FOR DRILLING WELL: ☒ New Supply, ☐ Replace Existing Supply, ☐ Deepen Existing Well, ☐ Test or Exploration,
☐ Provide Additional Supply, ☐ Other _____

5. DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary with A-P, ☐ Other _____

6. TYPE OF WELL: ☒ Open Hole in Bedrock, ☐ Open End Casing, ☐ Screened or Slotted; ☐ Other _____

7. TOTAL DEPTH OF WELL: 555 feet below land surface.

8. CASING FINISH: ☐ Above ground, finished, ☒ Above ground, unfinished, ☐ Buried, ☐ In Pit, ☐ Removed, ☐ None used, ☐ Other _____

9. CASING DETAILS: Total length 5011 ft. Length below L.S. 48 ft. Dia. 6 in. Material steel wt. 19 lb./ft.

10. LINER OR INNER CASING DETAILS: Length used _____ ft. Diameter _____ in. Material _____ Weight _____ lb./ft.

11. METHOD OF SEALING CASING TO BEDROCK: ☒ Drive Shoe, ☒ Grout - type Cement Grout in hole 10 ft. in bedrock
☐ Other _____

12. SCREEN DETAILS: Hole and Type _____ Material _____ Length _____ ft. Diameter _____ in.
Slot Size _____, Depth to top of screen in feet below land surface _____ ft., Gravel pack if used: Gravel Size or Type _____

13. YIELD TEST: ☐ Sealed, ☐ Pumped, ☒ Compressed Air, for 1/2 hours at 50 gallons per minute
Measured by ☒ Suction, ☐ Orifice pipe, ☐ Water, ☐ Meter ☐ Permanent Airline Injection

14. STATIC WATER LEVEL: _____ feet below land surface, Date or Time measured _____, Overflows at _____ G.P.M.

15. WATER ANALYSIS: Has the water been analyzed? ☐ Yes ☒ No, if Yes, Where _____

16. SPECIAL NOTES: _____

17. WELL LOG

Depth from Land Surface	Water Bearing	Formation Description	Notes
Feet	Feet		
Ground Surface	20	Red sand	
20	39	Brown sand	
39	155	Gray some pink Bers	
155	190	Pink	
190	340	Gray	
340	351	Tan	
351	458	Gray	
458	555	green	

19. SITE MAP

Show permanent structures such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate road street name and subdivision lot number.

Fence
* well
old RR
Rd

20. TESTED YIELD

If the yield was tested at different depths during drilling, list below.

Feet	Gallons Per Minute
230-231	8
350	25
468-410	42

WELL DRILLED BY: Edward Stromberg

DOING BUSINESS AS: Green Mtn. Well Co
Company or Business Name

REPORT FILED BY: Nancy Roberts
Authorized Signature

DATE OF REPORT: 11/20/87 WELL DRILLERS LIC. NO. 13

COPY
"West Well"

16/105

R.R.

VT Yankee

Outside F

old R.R. *

Guard House

Parking lot

Plant
COPY

WELL NUMBER

46-53-86

(For Driller's Use)

This report must be completed and submitted to the Department of Water Resources and Environmental Engineering, State Office Building, Montpelier, Vermont 05602, no later than 60 days after completion of the well.

State of Vermont

DEPARTMENT OF WATER RESOURCES
AND ENVIRONMENTAL ENGINEERING
WELL COMPLETION REPORT

JAN 27 1987

Location map attached to WCR

WATER RESOURCE USE ONLY

W.R. 253 U.S.G.S. 10/105
Field Location Map area 39d9
Latitude _____ Elev. _____
Longitude _____ Topo. _____
Scale: 62,500 □, 25,000 □, 24,000 □
Data in Town Files 11

WELL OWNER VT. Yankee Nuclear Power Corp. RD 5 Box 169 Barre VT.
OR _____ Permanent Mailing Address

WELL PURCHASER _____ Permanent Mailing Address

LOCATION OF WELL: TOWN Vernon SUBDIVISION Ferry Rd. LOT NO. _____

DATE WELL WAS COMPLETED 6-16-86

PROPOSED USE OF WELL: ☐ Domestic, ☒ Commercial (May be Potable water use Just)

REASON FOR DRILLING WELL: ☒ New Supply, ☐ Replace Existing Supply, ☐ Deepen Existing Well, ☐ Test or Exploration,

☐ Provide Additional Supply, ☐ Other _____

DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary with A-B, ☐ Other _____

TYPE OF WELL: ☒ Open Hole in Bedrock, ☒ Open End Casing, ☐ Screened or Slotted, ☐ Other _____

TOTAL DEPTH OF WELL: 500 Feet below land surface

CASING FINISH: ☐ Above ground, finished, ☒ Above ground, unfinished, ☐ Buried, ☐ In Pit, ☐ Removed, ☐ None used, ☐ Other _____

CASING DETAILS: Total length 67 ft Length below LS 66 ft Dia 6 in Material Steel WT 19 lb./ft.

LINER OR INNER CASING DETAILS: Length used _____ ft Diameter _____ in Material _____ Weight _____ lb./ft.

METHOD OF SEALING CASING TO BEDROCK: ☒ Grout Seal, ☐ Grout - type _____, Drilled _____ in hole _____ ft in Bedrock

☐ Seal _____

SCREEN DETAILS: Make and Type _____, Material _____, Length _____ ft, Diameter _____ in.

Slot Size _____, Open to top of screen in feet below land surface _____ ft, Gravel pack used Gravel Size or Type _____

YIELD TEST: ☐ Boiled, ☐ Pumped, ☒ Compressed Air, for 10 min at 6 psi, Seals per minute

Measured by ☒ Bucket, ☐ 2 1/2" Pipe, ☐ Meter, ☐ Meter

☐ Permanent Airline Installed

STATIC WATER LEVEL: _____ feet below land surface, Date or Time measured _____, Coordinates of _____ G.P. #

WATER ANALYSIS: Has the water been analyzed? ☐ Yes ☐ No, if Yes, Where _____

SPECIAL NOTES: grouted

WELL LOG

Depth from Land Surface - Feet	Water Elev.	Formation Description	Notes
Ground Surface	35	Sand - brown	
35	56	" gray	
56	75	Bedrock - lt. gray	
75	85	" SFT (pure)	
85	90	" lt. gray	
90	95	" SFT - tan	
95	145	" lt. gray Bedrock	
145	144	" pink	

19. SITE MAP

Show permanent structure such as buildings, roads, parks, and/or other landmarks and indicate not less than two spot checks to the well indicate local street name and subdivision lot number

N

see over

COPY

20. TESTED YIELD

If the yield was tested at different depths during drilling, list below

Feet	Gallons Per Minute
500	6

WELL DRILLED BY: Edward Thompson

DOING BUSINESS AS: Green Mt. Well Co. Inc.

REPORT FILED BY: Edward Thompson

DATE OF REPORT: 9/17/86 WELL DRILLERS LIC. NO. 53

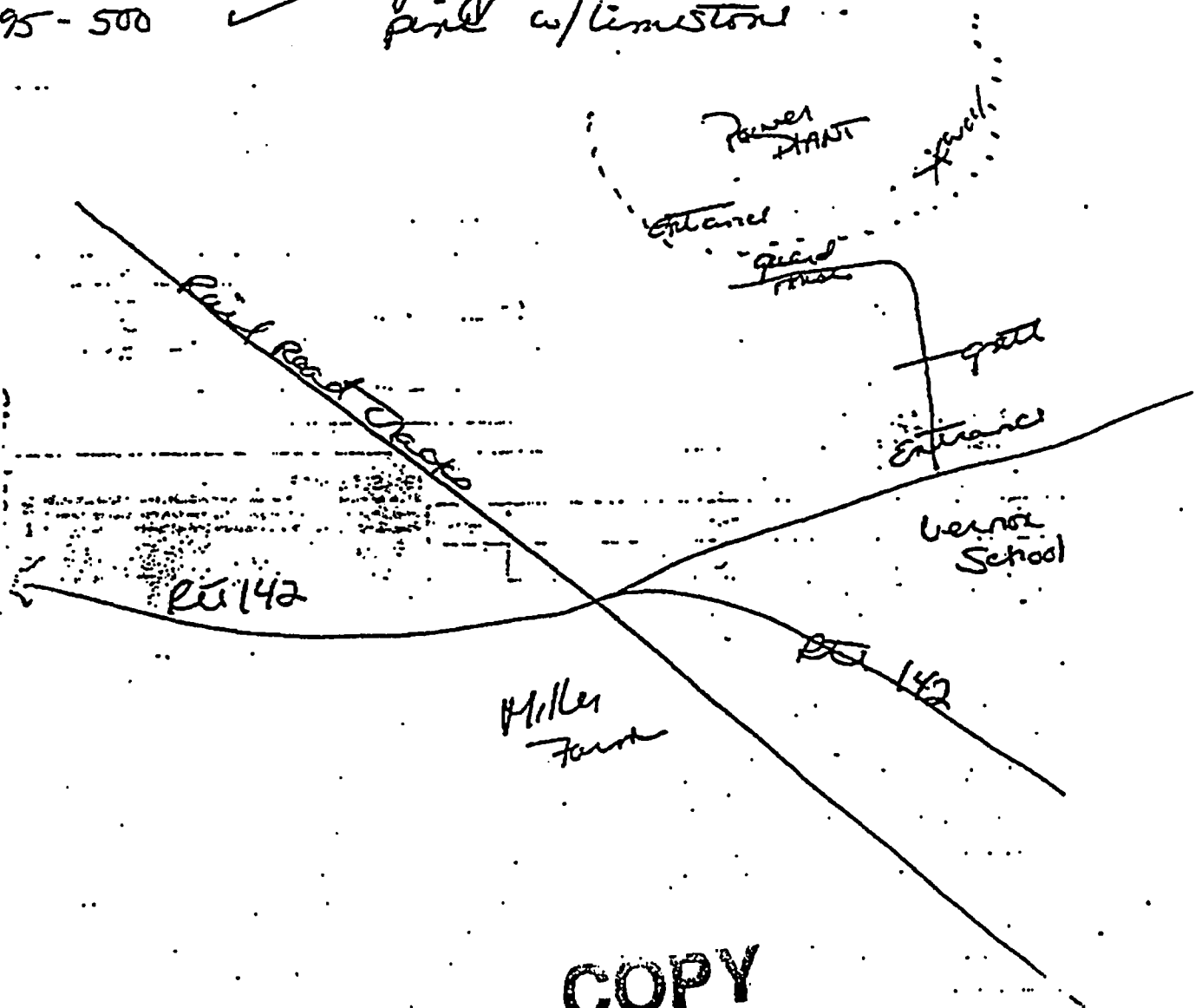
11

APTN
 44-195
 95-196
 96-225
 25-253
 53-355
 55-360
 60-370
 70-405
 25-450
 50-472
 72-473
 73-480
 2 495
 95-500

WATER

Belrock or gray
 ✓ SGT Spot
 SGT Little water
 SGT Overts
 Granite-gray
 Pink rock
 gray
 Pink
 gray
 pink
 SGT gray w/ limestone
 gray w/ limestone
 gray/tan
 ✓ pink w/ limestone

11/105



COPY

9

12

Source Water Protection Plan

Vermont Yankee Nuclear Power Station
320 Governor Hunt Road
Vernon, Vermont
NEOB Well System WSID #20778

Revision 2
Prepared April 2005

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*** Figures 3 & 4 are on the same map.**

1.0 Introduction

This Source Water Protection Plan (SPP) was prepared for the NEOB well system (WSID #20738) at Entergy Nuclear Northeast, Vermont Yankee in Vernon, Vermont. This system consists of one drilled bedrock well. The purpose of this SPP is to protect the water quality of this well by identifying and managing the potential sources of contamination and threatening activities that occur within the source protection area. This document has been prepared in accordance with the Vermont Water Supply Rule, Chapter 21, and follows the outline prepared in the publication entitled "Protecting Public Water Sources in Vermont" dated February 24, 1997.

The NEOB well is located on the west side of Vermont Yankee's property off of Governor Hunt Road in Vernon Vermont. (See Figures 1 & 2). According to the well completion report (WR # 6642), the well was drilled in July 1998 by Green Mountain Well Company Inc. The well is 500 feet deep and has 38 feet of steel casing. The well yield is 30 gallons per minute. Copies of the well completion reports are in Appendix A.

The source protection area (SPA) for the COB well consists of a circular area within a 500-foot radius of the well (Figure 1). The SPA was determined to be 500-feet based on the maximum average daily demand for the well system, as listed in the Water Supply Division Guidance Document. The SPA consists of two "zones". Zone 1 consists of an isolation zone consisting of a circular area within a 200-foot radius around the well where impacts are likely to be immediate and certain. Zone 2 consists of the remaining areas of the SPA, and is considered the primary area of contribution to the well. In this area there will be probable impacts from potential sources of contamination.

2.0 Potential Sources of Contamination

2.1 Existing Land Uses and Potential Sources of Contamination (SPOC)

The current land uses observed within the SPA consist of fields, office buildings, parking lots, roads, railroad tracks, switchyards, fuel oil storage tank and leachfields. Vermont Yankee owns all of the land within the zones of the NEOB system well.

2.2 Potential Sources of Contamination

An inventory of the potential sources of contamination (PSOC) is presented in Table 1. The locations of these PSOCs are presented on Figure 2. Due to the scale of the map, in cases where more than one PSOC exists on a parcel they will be grouped under one designation.

Table 1 Potential Sources on Contamination- Risk Evaluation

Land Use/PSOC	Contamin- -ation ID #	Zone 1		Zone 2		Risk Evaluation		
		Yes	No	Yes	No	High	Med	Low
Fields/Fence	1	X		X		X		
Office Building	2	X		X		X		
Parking Lots	3	X		X		X		
Roads and Railroad Tracks	4	X		X		X		
Switchyards	5		X	X				X
Fuel Oil Tank	6		X	X				X
Septic System & Leachfields	7	X		X		X		
Transformers*	8	X		X		X		
Residential Land Formally Owned by Ms. Thomas	9		X	X				X

* Refer to Section 3.0 for an Explanation of Contamination item #8.

3.0 Assessment of Threats

Fields/Fence-(Contamination ID #1)

The fields, closest to the West well, are on Vermont Yankee property. Along the field edge is a security fence. Roundup, a systemic weed killer, was historically applied to the fence line area. It has been replaced by weed whacking within the SPA. The activities regarding field and fence around the well is considered a low risk activity, but in accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

Office Building -(Contamination ID #2)

Due to the chemical control and hazardous waste programs which control chemical storage and disposal these structures and the activities occurring within them are not considered a significant risk to the well, but in accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

Parking Lots, Site Access Roads and Railroad Tracks - (Contamination ID #3,4)

There are plant maintained roads and parking areas within the 200-foot radius zone 1 areas of both the NEOB well. The road and parking areas are considered a potential source of contamination due to the application of road salt, which could cause elevated levels of sodium and chloride in the well. In addition, there is also a potential for a spill or leaks of petroleum products from vehicles in the parking areas or as they transverse the roadways. Due to an extensive storm drain system the threat to the wells is believed to be low risk. However, the road salt which is typically mixed with sand prior to application represents a moderate risk to the wells. There are railroad tracks in the vicinity of this well but they are rarely used. Maintenance of vegetation along the tracks within the SPA's is via weed whacking. In accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

345 kV Switchyard- (Contamination ID #5)

The switchyard has a separate storm drain system and outfall area therefore activities in this area would not cause contamination into the plant wells. Additionally, the switchyard is downgradient from the well. See Figure 4.

Fuel Oil Tanks- (Contamination ID #6)

All fuel oil tanks on site have a either double walled construction, with leak and overfill protection systems or are surrounded by a full containment structure. Therefore these are characterized as low risk to the water supplies.

On-Site Septic Systems- (Contamination ID #7):

Septic systems represent potential sources of nitrates, chlorides, other inorganic compounds, bacteria, viruses and radionuclide contamination. In addition, if improperly used, such as for the disposal of paints, solvents, petroleum products and other hazardous wastes, they could also be a

source of organic compounds as well. At Vermont Yankee the chemical control and hazardous waste programs prohibits the disposal of chemical in a manner inconsistent with the manufacturers Material Safety Data Sheet (MSDS).

The wells at Vermont Yankee are topographically upgradient from the septic systems. The well depths are also very deep in the groundwater table. Groundwater flow is in the direction of the river. Therefore this is considered as a low risk to contaminate the water supplies, but in accordance with the Vermont Water Supply Rule, Section 16 these are considered a high risk due to the importance and potential.

Transformers- (Contamination ID #8):

There are currently two spare transformers stored on-site. The Peebles transformer is currently stored north of the PSB building. The GE transformer is located north of the Main septic system (see figure #2). The oil contained in the transformer is all pcb-free. The Peebles transformer has approved spill prevention control and countermeasures in place in fulfillment of the 40CFR112 requirement. It is considered to be a low risk to contaminate the water supply, but in accordance with the Vermont Water Supply Rule, Section 16 it is considered a high risk due to the importance and potential.

Residential Land Formally Owned by Ms. Thomas (Contamination ID #9):

The Thomas house was purchased, by Entergy Nuclear Northeast, from Ms. Thomas in 2002. It has a #2 fuel oil tank and is equipped with an on-site septic system. Septic systems can serve as potential subsurface pathways of contaminant migration. Contaminant migration via groundwater in the area is not considered to pose a risk to the NEOB well based on the residential land usage and the presence of septic systems well above the groundwater table combined with the depth of the well being 500 feet. This is considered low risk to contaminate the water supply.

4.0 Management of Risk

In order to reduce the potential risk of contamination to the drinking water supply wells at Vermont Yankee, Vermont Yankee will perform an annual inspection of the SPA to confirm that the company is following the best management practices and to identify any changes in use or property owners. Once every three years updates indicating any changes in land use/PSOC's will be submitted to the Water Supply Division. The updates

may simply consist of a letter, which describes any changes to the original SPP, or a letter stating that there have been no changes.

5.0 Contingency Plan

This contingency plan outlines the steps that may be taken by Vermont Yankee in the event a well becomes contaminated, or there is a significant reduction in yield, or if there are mechanical problems.

5.1 Emergency Response

If an emergency exists such as a spill or other contamination event occurs within the SPA, or if a regulated compound is found above the acceptable levels during a routine sampling event, Vermont Yankee may notify the following people agencies.

Water System Operators

Lynn DeWald	(802) 258-5526
Richard Gerdus	(802) 258-5501

Chemistry Superintendent

Samuel A. Wender IV	(802) 258-5650
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Vermont Yankee Shift Supervisor	(802) 258-5270
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The Shift Supervisor is responsible for 24-hour plant operations and would be able to contact appropriate maintenance personnel.

Vermont Yankee Hazardous Materials

Coordinator

Peter Prince	(802) 258-5476
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Vermont DEC, Water Supply Division	(800) 823-6500 or (802) 241-3400
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Vermont DEC, Hazardous Materials

Spill Hotline	(800) 641-5005
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Vermont Department of Health	(800) 439-8550
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Notification of Water System Users

If the Vermont Yankee water supply should become contaminated, one or more of the following methods will notify water system users:

- Bulletin board notice
- E-mail notification

- Memo distributed to all employees
- Posting on faucets

5.2 Short Term Contingency Options

In the event that the water from the system is determined to be unsuitable to drink, or if there is a mechanical problem, the following options are available:

- Determine which well is the source of contamination, if applicable disinfect the supply system and utilize alternate well.
- Utilize water from other existing well on site.
- Issue a boil water notice and/or recommend that bottled water be utilized for drinking purposes. Bottled water is available from Vermont Natural Water, 1566 Putney Rd, Brattleboro, VT 254-6093
- Request that the water system users conserve available water.

5.3 Long Term Contingency Options

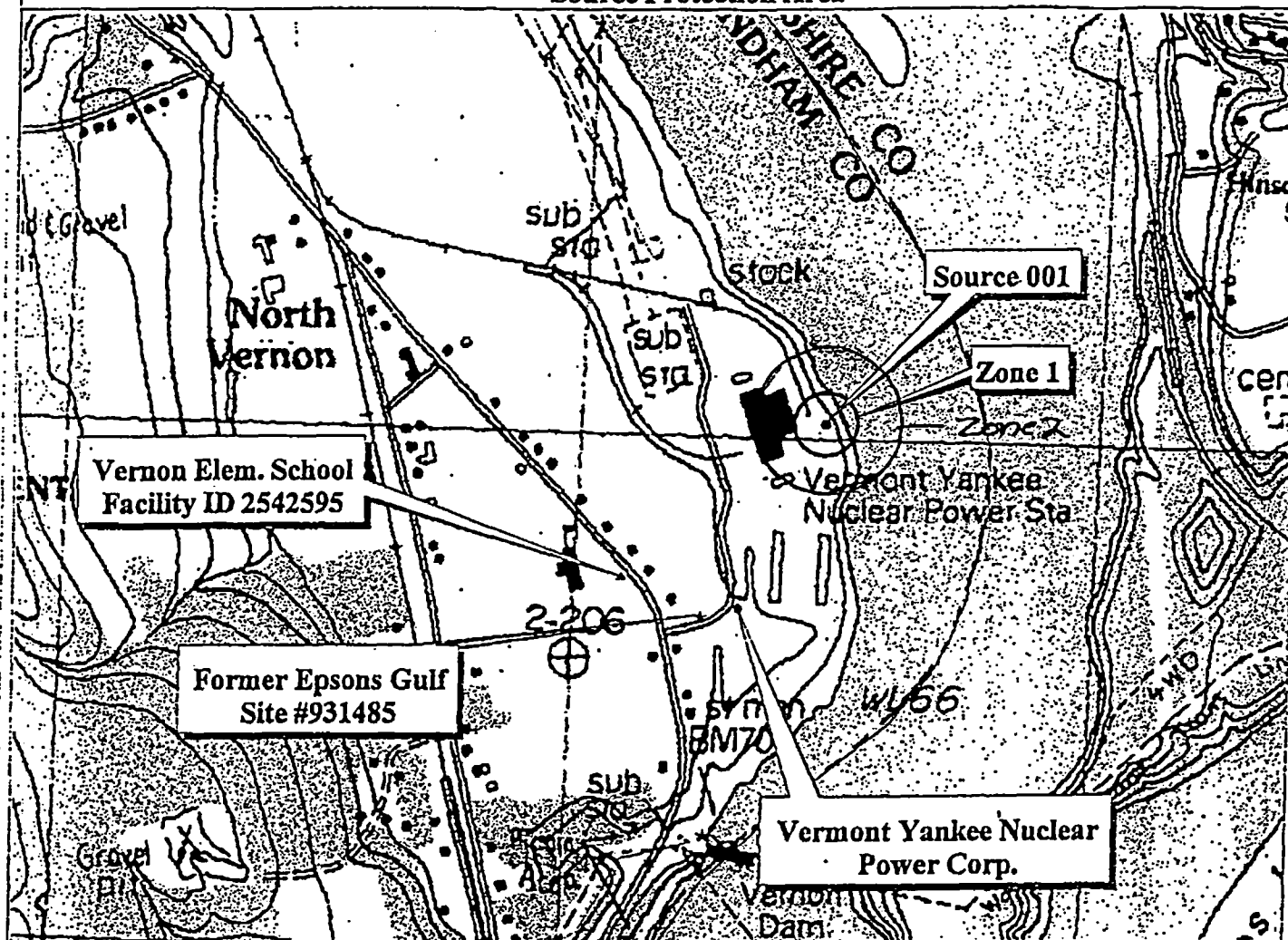
If the contamination requires that the existing source be abandoned or permanently modified. Long term contingency options include:

- Drilling one or more new wells.
- Installing suitable water treatment system.



5.4 Water System Shut Down/Start Up Procedures

In the event that the Vermont Yankee wells must be shut down for an emergency situation, personnel should follow the Vermont Yankee Switching and Tagging procedure, AP 0140.

Vermont Yankee COB Water System, WSID #20559
Source Protection Area



LEGEND

- ▲ UST Site
- RCRA Facility
- Solid Waste Facility
- ★ Hazardous Waste Site
- Source
-  Source Protection Area
-  Power Line

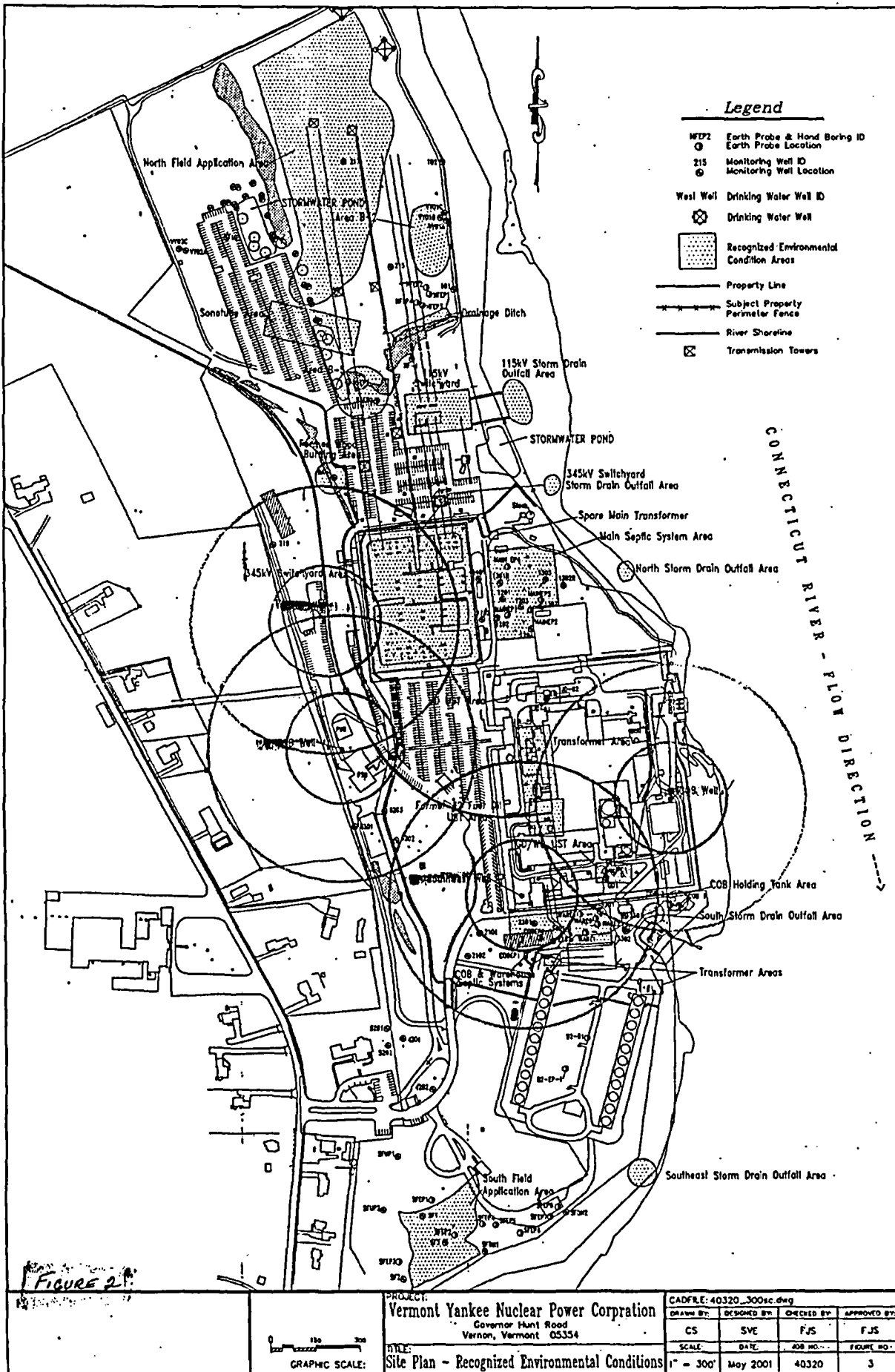
400 0 400 800 Feet

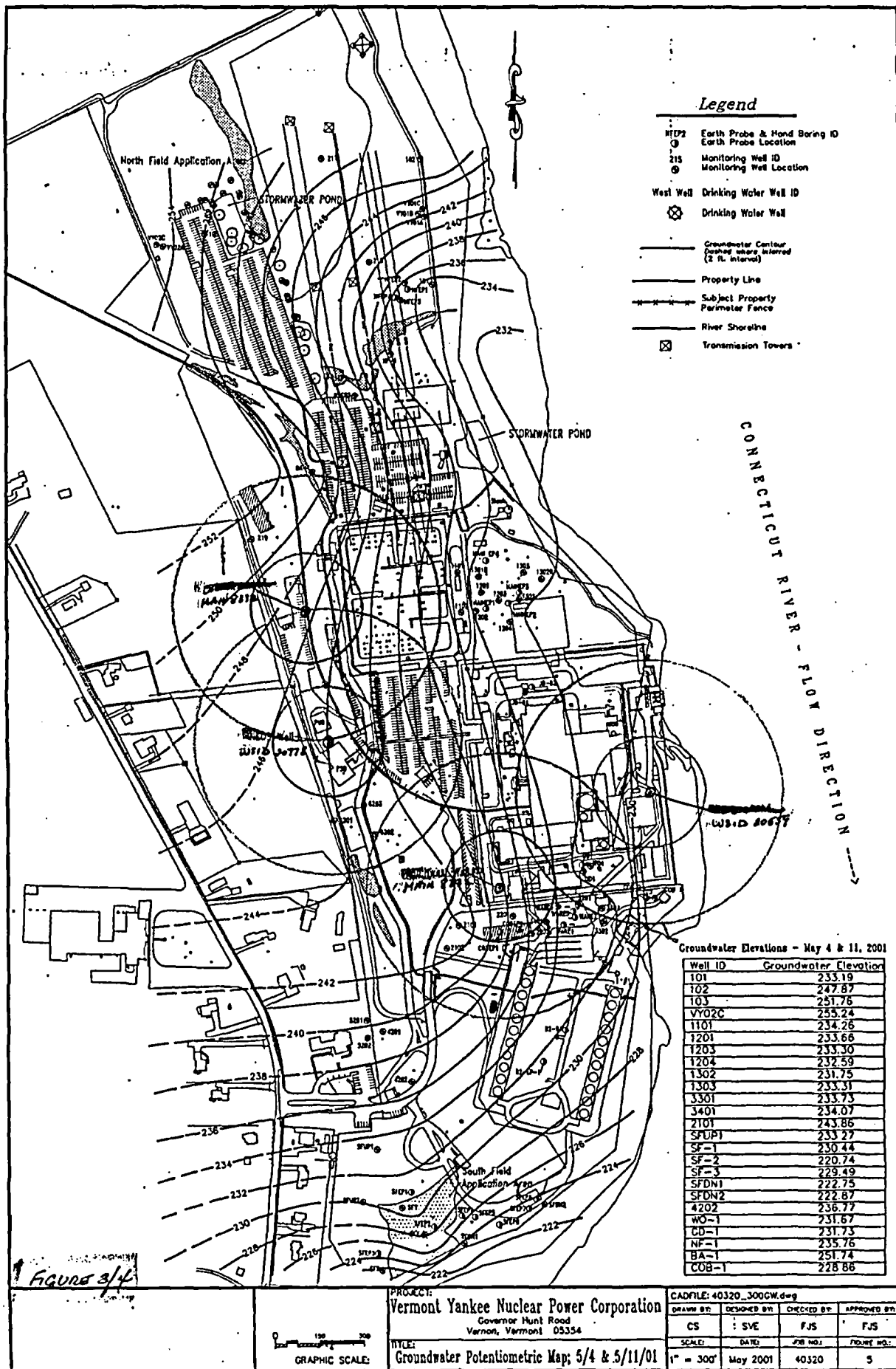
Vermont Water Supply Division
8/23/00

WATER SUPPLY CHARACTERISTICS INFORMATION ON SYSTEMS
PUBLISHED; DEVELOPMENT OF INFORMATIONAL COOPERATION

[illegible]

THIS MAP IS BASED ON "41
GEOLOGICAL SURVEY OF DATA FOR
RECEIVED. REFERENCES INDICATE THE
DATE TO THE DATE THIS
MAP WAS MADE BY THE GEOLOGICAL
SURVEY OF THE UNITED STATES
AND THE NATIONAL ACADEMY OF SCIENCES.





APPENDIX A
Well Completion Reports

APPENDIX A
Well Completion Reports

Water Supply Division Well Report
Well Statistics

Printed: 10/30/2001

Well Tag Number: 8/98
Well Report Number: 6,642
Owner's Name: Vt Yankee
Purchaser's Name:
Town Name: Vernon
Date Report Received: 8/24/98
Map Cell: 39D9
Date Well Was Completed: 7/14/98
Purposed Use of Well: Industrial
Reason for Drilling Well: New Supply
Drilling Equipment: Rotary (AP)
: Well Has Scre
Total Depth of Well (in feet): 500.00
Casing Finish: Above ground, unfinished
Total Casing Length (in feet): 38.00
Casing Diameter: 6.00
: Not Steel Casing
Method of Sealing Casing: Grout bottom only
Yield Test Method: Compressed air
Yield Tested At (Gallons per Minute): 30.00
Static Water Level (in feet): 4.00
: Well is OverFlow
Has Water been Analyz
Comments: water at 260,330,380,410
Reason for Well Development:
Well Driller: Richard Stromberg
Tax Map:
Overburden Thickness (in feet): 27

Water Supply Division Well Report
Well Statistics

Printed: 10/30/2001

Well Tag Number: 8/98
Well Report Number: 6,642
Owner's Name: Vt Yankee
Purchaser's Name:
Town Name: Vernon
Date Report Received: 8/24/98
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Purposed Use of Well: Industrial
Reason for Drilling Well: New Supply
Drilling Equipment: Rotary (AP)
Total Depth of Well (in feet): 500.00
Casing Finish: Above ground, unfinished
Total Casing Length (in feet): 38.00
Casing Diameter: 6.00
Not Steel Cast
Method of Sealing Casing: Grout bottom only
Yield Test Method: Compressed air
Yield Tested At (Gallons per Minute): 30.00
Static Water Level (in feet): 4.00
Well is Overflow
Has Water been Analyz
Comments: water at 260,330,380,410

Reason for Well Development:

Well Driller: Richard Stromberg
Tax Map:

Overburden Thickness (in feet): 27

Water Supply Division Well Report

Printed: 10/30/2001

Town: Vernon
Well Report Number: 6,642
Starting Depth Ending Depth Lithology
0.00 27.00 Dirt, soil, topsoil, loam
Driller's Description: topsoil/clay/gravel
27.00 240.00 Rock, bedrock, ledge, etc.
Driller's Description: redish gray
240.00 320.00 Rock, bedrock, ledge, etc.
Driller's Description: gray
320.00 358.00 Rock, bedrock, ledge, etc.
Driller's Description: pinkish gray
358.00 500.00 Rock, bedrock, ledge, etc.
Driller's Description: gray

Water Supply Division Well Report

Printed: 10/30/2001

Well Lithology

Town: Vernon	Well Report Number: 6,642	
Starting Depth	Ending Depth	Lithology
0.00	27.00	Dirt, soil, topsoil, loam
Driller's Description:		topsoil/clay/gravel
27.00	240.00	Rock, bedrock, ledge, etc.
Driller's Description:		redish gray
240.00	320.00	Rock, bedrock, ledge, etc.
Driller's Description:		gray
320.00	358.00	Rock, bedrock, ledge, etc.
Driller's Description:		pinkish gray
358.00	500.00	Rock, bedrock, ledge, etc.
Driller's Description:		gray

WELL NO. TAG NO. 81 98

State of Vermont
Dept. of Environmental Conservation
103 South Main Street (UOI)
Waterbury, VT 05676
WELL COMPLETION REPORT

DEPARTMENT USE ONLY
E.C. U.S.G.S.
Field Location Map area
Latitude
Longitude
Scale: 42,000 ft, 25,000 ft, 24,000 ft
Datum: NAD 83

WELL OWNER: VT YANKEE, GALEWAT HUNT RD, VERNON, VT 05354

WELL PURCHASER: [blank]

LOCATION OF WELL TOWN: VERNON SUBDIVISION: GOV. JAMES RD LOT NO. [blank]

DATE WELL WAS COMPLETED: 7/16/98

PROPOSED USE OF WELL: [blank]

REASON FOR DRILLING WELL: [blank]

DRILLING EQUIPMENT: [blank]

TYPE OF WELL: [blank]

TOTAL DEPTH OF WELL: 500

CASING FINISH: [blank]

CASING DETAILS: 38" in length, 36" in diameter, 19" in length, 19" in diameter

LINER OR INNER CASING DETAILS: [blank]

METHOD OF SEALING CASING TO BEDROCK: [blank]

SCREEN DETAILS: [blank]

YIELD TEST: [blank]

STATIC WATER LEVEL: 4'

WATER ANALYSIS: [blank]

SPECIAL NOTES: [blank]

WELL LOG

Depth	Interval	Description
27	27	Topsoil, clay, gravel
27	240	redish gray
240	320	GRAY
320	358	pinkish gray
358	500	GRAY

19. SITE MAP

20. TESTED YIELD

WELL DRILLED BY: Michael Jensen

DOING BUSINESS AS: Green Mt Well Co Inc

REPORT FILED BY: P.D. Stromberg

DATE OF REPORT: 7/16/98

WELL NO. / TAG NO. 81 98

State of Vermont
Dept. of Environmental Conservation
103 South Main Street (WOM)
Waterbury, Vt. 05676

DEPARTMENT USE ONLY
E.G. U.S.G.S.
Field Location ☐ Improved
Latitude ☐ Elev.
Longitude ☐ Topo.
Scale: 12,500 ☐ 25,000 ☐ 24,000 ☐
Date in Use ☐ 1990

WELL COMPLETION REPORT

WELL OWNER VT YANKEE, Gateway Hunt Rd, Vernon, VT 05354

OR

WELL PURCHASER VERNON

LOCATION OF WELL: TOWN VERNON SUBDIVISION Gov. Hunt Rd LOT NO. 19

DATE WELL WAS COMPLETED 7/15/98

PROPOSED USE OF WELL: CONCRETE

REASON FOR DRILLING WELL: ☒ New Supply, ☐ Replace Existing Supply, ☐ Replace Existing Well, ☐ Fill or Abandonment, ☐ Private Additional Supply, ☐ Other

DRILLING EQUIPMENT: ☐ Rotary Drill, ☒ Auger, ☐ Hand Drill, ☐ Other

TYPE OF WELL: ☒ Open Hole, ☐ Cased Hole, ☐ Drilled or Method, ☐ Other

TOTAL DEPTH OF WELL: 500 feet below land surface

CASING FINISH: ☐ Smooth, ☒ Galvanized, ☐ Steel, ☐ In P.C., ☐ Concrete, ☐ Other

CASING DETAILS: 38 in. 6 ft. 19 in. 19 in.

INNER OR INNER CASING DETAILS: 19 in. 19 in.

METHOD OF SEALING CASING TO BEDROCK: ☒ Grout, ☐ Cement, ☐ Other

SCREEN DETAILS: 1/2" 40 mesh 30 gal/min.

YIELD TEST: ☐ Pump, ☐ Bucket, ☒ Other

STATIC WATER LEVEL: 4 feet below land surface 7/15/98

WATER ANALYSIS: ☐ Yes, ☐ No, ☐ If Yes, When

SPECIAL NOTES:

WELL LOG

Depth	Interval	Description
0-27	27	Topsoil, clay, gravel
27-240	213	reddish gray
240-320	80	GRAY
320-358	38	reddish gray
358-500	142	GRAY
		340, 350, 380, 410

15. SITE MAP

Fence

TESTED FIELD

WELL DRILLED BY: Michael Jensen

DOING BUSINESS AS: Green Mt Well Co Inc

REPORT FILED BY: P.L. Stronberg

DATE OF REPORT: 7/16/98 WELL NO. 81 98 PAGE 53

TABLE 1
PLANT WELL INFORMATION

VERMONT YANKEE POTABLE WATER WELLS				
Well Designation	COB	Southwest	West	New Engineering Office Building
Date of Installation	August, 1986	June, 1986	July, 1987	July, 1998
Well Depth	362 feet	500 feet	555 feet	500 feet
Amount of Casing	80 feet	67 feet	51 feet	38 feet
Diameter of Casing	6 inches	6 inches	6 inches	6 inches
Static Water Level	31.4 feet	24.5 feet	*	4 feet
Pump Size	1 HP	1.5 HP	15 HP	1.5 HP
Pump Depth	350 feet	497 feet	400 feet	480 feet
Well Rating	9 gpm	10.5 gpm	73.7 gpm	30 gpm
NSID	20539 (1/96)	8332 (9/96)		20738 (4/99)

* Data is currently not available.

NOTES:

- The COB and Southwest wells were approved by the State on 12/10/86.
- The West well was approved by the State on 11/19/87.
- The New Engineering Office Building well was approved by the State on 4/22/98.

Change Approval _____
Chemistry Manager or Designee Date

APPENDIX A
Well Completion Reports

Water Supply Division Well Report
Well Statistics

Printed: 10/30/2001

Well Tag Number: 8/98 Date Report Received: 8/24/98
Well Report Number: 6,642 Map Cell: 39D9
Owner's Name: Vt Yankee
Purchaser's Name:
Town Name: Vernon Date Well Was Completed: 7/14/98
Purposed Use of Well: Industrial
Reason for Drilling Well: New Supply
Drilling Equipment: Rotary (AP)
Well Has Scre
Total Depth of Well (in feet): 500.00
Casing Finish: Above ground, unfinished
Total Casing Length (in feet): 38.00
Casing Diameter: 6.00
Not Steel Casing
Method of Sealing Casing: Grout bottom only
Yield Test Method: Compressed air
Yield Tested At (Gallons per Minute): 30.00
Static Water Level (in feet): 4.00
Well is OverFlow
Has Water been Analyzed
Comments: water at 260,330,380,410

Reason for Well Development:

Well Driller: Richard Stromberg
Tax Map:

Overburden Thickness (in feet): 27

Water Supply Division Well Report

Printed: 10/30/2001

Well Lithology

Town: Vernon

Well Report Number:

6,642

Starting Depth	Ending Depth	Lithology
0.00	27.00	Dirt, soil, topsoil, loam
Driller's Description: topsoil/clay/gravel		
27.00	240.00	Rock, bedrock, ledge, etc.
Driller's Description: redish gray		
240.00	320.00	Rock, bedrock, ledge, etc.
Driller's Description: gray		
320.00	358.00	Rock, bedrock, ledge, etc.
Driller's Description: pinkish gray		
358.00	500.00	Rock, bedrock, ledge, etc.
Driller's Description: gray		

WELL NO. / TAG NO.

8 / 98

(If no owner or user)

This report must be submitted to the Department of Environmental Conservation, 105 South Main Street (10N) Waterbury, VT 05676, by the owner or user of the well. It is the responsibility of the owner or user to provide accurate information.

State of Vermont
Dept. of Environmental Conservation
105 South Main Street (10N)
Waterbury, VT 05676
WELL COMPLETION REPORT

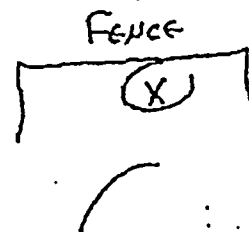
DEPARTMENT USE ONLY

E.C. _____ U.S.G.S. _____
Field Location ☐ Map area _____
Latitude _____ Elev. _____
Longitude _____ Topo. _____
Scale: 62,500 ☐ 25,000 ☐ 24,000 ☐
Design Town Page ☐

1. WELL OWNER VT YANKEE, GALLERDOR HUNT RD, VERNON, VT 05357
OR
WELL PURCHASER _____
2. LOCATION OF WELL TOWN VERNON SUBDIVISION GOV. HUNT RD LOT NO. _____
3. DATE WELL WAS COMPLETED 7/15/98
4. PROPOSED USE OF WELL: ☐ Domestic, ☒ Commercial
5. REASON FOR DRILLING WELL: ☒ New Supply, ☐ Replace Existing Supply, ☐ Seasonal Existing Well, ☐ Test or Exploration
☐ Replace Additional Supply, ☐ Other _____
6. DRILLING EQUIPMENT: ☐ Cable Tool, ☒ Rotary Mud Pump, ☐ Other _____
7. TYPE OF WELL: ☒ Bedrock, ☐ Open End Casing, ☐ Sealed or Stilled, ☐ Other _____
8. TOTAL DEPTH OF WELL: 500 feet below land surface
9. CASING FINISH: ☐ Steel, ☒ Aluminum, ☐ Plastic, ☐ PVC, ☐ Concrete, ☐ Other _____
10. CASING DETAILS: 38 inch diameter, 36 inch depth, 6 inch wall, Steel material, 19 lb./ft.
11. LINER OR INNER CASING DETAILS: 19 inch diameter, 19 inch depth, 19 inch wall, 19 lb./ft.
12. METHOD OF SEALING CASING TO BEDROCK: ☒ Grout Seal, ☐ Cement Seal, ☐ Other _____
13. SCREEN DETAILS: 1/2 inch slot, 30 gal/min. flow rate, 30 gal/min. capacity
14. YIELD TEST: ☐ Pump, ☒ Bucket, 30 gal/min. flow rate, 30 gal/min. capacity
15. STATIC WATER LEVEL: 4 feet below land surface, 7/15/98 date of test
16. WATER ANALYSIS: ☐ Test, ☒ No Test, 7/15/98 date of test
17. SPECIAL NOTES: _____
18. WELL LOG

Depth from land surface (feet)	Depth (feet)	Formation Description	Notes
0	27	Topsoil, clay, GRAVEL	
27	240	reddish grey	
240	320	GRAY	
320	358	Pinkish grey	
358	500	GRAY -	
		260, 320, 320, 410	

19. SITE MAP



20. TESTED YIELD

Test	Surface water flow

WELL DRILLED BY: Michael Jenna
OWNING BUSINESS AS: Green Mt Well Co Inc
REPORT FILED BY: Pd. Stromberg
DATE OF REPORT: 7/16/98 WELL DRILLING NO. 53

TABLE I
PLANT WELL INFORMATION

VERMONT YANKEE POTABLE WATER WELLS				
Well Designation	COB	Southwest	West	New Engineering Office Building
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Pump Size	1 HP	1.5 HP	15 HP	1.5 HP
Pump Depth	350 feet	497 feet	400 feet	480 feet
Well Rating	9 gpm	10.5 gpm	73.7 gpm	30 gpm
WSID	20559 (1/96)	8332 (9/96)		20738 (4/99)

* Data is currently not available.

NOTES:

- The COB and Southwest wells were approved by the State on 12/10/86.
- The West well was approved by the State on 11/19/87.
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Change Approval _____ / _____
Chemistry Manager or Designee Date