TO: Eric Sandin, GEF II, Geo/8

Groundwater Use Registry Buckslip

Site Name GRANTSBURG RANGER STATION (WDNR)

Address State Hwy 70 W

GRANTSBURG, WI

BRRTS # 03-07-000633

GPS Location: _____ **latitude** _____ **longitude**

Date of Closure Decision 3/20/00

Required

- [x] **Closure Letter**
- [ ] **Deeds for all properties with ES exceedance in Groundwater** (RECORDED GWUR)
- [ ] **GPS location (latitude and longitude)**
- [x] **Location map**
- [x] **Detailed Site Map**
- [x] **Groundwater Flow Direction Diagram including location of monitoring wells and all drinking water wells**
- [ ] **Latest Groundwater Plume Map with Groundwater Flow Direction**
- [x] **Latest Table of Analytical Results for Groundwater**

If Available, include the following:

- [x] **Metes and Bounds Legal Description** (ON GWUR document)
- [x] **Tax Parcel Number** ON DEED # 131-2600-75 600
- [x] **Geologic cross sections showing soil and groundwater contaminant source extent and location, isoconcentrations for all groundwater contaminants that exceed NR 140 enforcement standards, water table and piezometric elevations, and the extent, location and elevation of geologic units, bedrock, and confining unites**

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, Regional Director

Northern Region Headquarters
107 Sutliff Ave.
Rhinelander, Wisconsin 54501-0818
Telephone 715-365-8900
FAX 715-365-8932
TDD 715-365-8957

December 21, 1999

Mr. Chris Rehlinger
Wisconsin Department of Natural Resources
PO Box 7921
Madison, WI 53707-7921

Subject: WDNR – Grantsburg Ranger Station, STH 70W, Grantsburg, WI
BRRTS # 03-07-000633

Dear Mr. Rehlinger:

The Department of Natural Resources provided a notice to you that the degree and extent of leaded gasoline contamination at the above-named site was required to be investigated and remediated. We have since been informed that the required investigation and remediation has been accomplished.

On November 30, 1999, the above-named site was reviewed by the Northern Region Closeout Committee for a determination as to whether or not the case qualified for close out under ch. NR 726, Wis. Adm. Code.

Based on the investigative and remedial documentation provided to the Department, it appears that the leaded gasoline contamination at the above-named site has been remediated to the extent practicable under current site conditions, and that no further action is necessary at this time. Therefore, the Department will consider the case "closed," pursuant to NR 726.05(8)(am), if the responsible party sign and record a Groundwater Use Restriction for the property.

A groundwater use restriction, which was signed by the owner of the property, Burnett County, was submitted along with the Closeout Request forms and documentation. This draft restriction will be forwarded to our program attorneys for their review and approval. The owner of the property should then finalize the document and record it.

The groundwater use restriction is an option that the Department can offer to you in order to close this site. If you choose not to accept this option, you may perform additional investigation and cleanup of the remaining contamination. Note that this additional work may not be eligible for reimbursement through the Petroleum Environmental Cleanup Fund Award (PECFA) Program. You should contact the Department of Commerce to determine eligibility of the additional work for reimbursement.

Please note that this case closure is contingent upon proper documentation of proper abandonment of the monitoring wells on site. If monitoring wells remain at this site, please provide the documentation that this action has been completed, or have your consultant do so. Please complete Form 3300-5B and send it to my attention at the above address.

If you have any additional information which was not formerly provided to the Department, and which you

feel would significantly impact this closure decision, you may submit that information for our re-evaluation of case closure.

If you have any questions, please call me at 715-365-8990.

Sincerely,
NORTHERN REGION

Janet Kazda

Janet Kazda
Case Closeout Committee

cc: File
Lori Huntoon, Dept of Commerce
Steve Karklins, DG/2
Chuck Fitzgerald, Rhinelander
Ron Becker, Rhinelander
Tom Kendzierski, Spooner

Darrell Reed
Short Elliott Hendrickson
421 Frenette Dr
Chippewa Falls, WI 54729-3374

329113

Document Number

GROUNDWATER USE RESTRICTION

VOL 643 PAGE 274

BURNETT COUNTY
WISCONSIN
RECEIVED AND RECORDED

MAR 1 0 2000

AT 9:30 O'CLOCK A.M.
VOL. 643 PAGE 274
Sandra Lee
REGISTER OF DEEDS

Name and Return Address
Darrell R. Reed
Short Elliott Hendrickson Inc.
421 Frenette Drive
Chippewa Falls, WI 54729

131-2600-75 600
Parcel Identification Number (PIN)

Declaration of Restrictions

In Re: A parcel of land described as commencing two rods East of the Northwest corner of the E ½ of the NW¼ of the NW ¼ of Section 23, T38N, R19W, Burnett County, Wisconsin, thence running due South Eighteen (18) rods; thence due East Eight (8) rods; thence due North Eighteen (18) rods; thence due West Eight (8) rods to the place of beginning.

STATE OF WISCONSIN)
) ss
COUNTY OF BURNETT)

WHEREAS, Burnett County is the owner of the above-described property.

WHEREAS, one or more petroleum volatile organic compound (PVOC) discharges have occurred on this property. Benzene contaminated groundwater above ch. NR 140 Wis. Adm. Code enforcement standards exists on the property at the following location shown on attachment 1. The most recent groundwater sampling event (April 19, 1999) demonstrated the benzene concentration at 25 µg/l.

WHEREAS, it is the desire and intention of the property owner to impose on the property restrictions which make it unnecessary to conduct further groundwater or soil remediation activities on the property at the present time.

WHEREAS, natural attenuation has been approved by the Department of Natural Resources to remediate groundwater contamination exceeding ch. NR 140 Wis. Adm. Code groundwater standards within the boundaries of this property.

WHEREAS, construction of wells where the water quality does not comply with drinking water standards in ch. NR 809 Wis. Adm. Code, is restricted by chs. NR 811 and NR 821, Wis. Adm. Code. Special well construction standards or water treatment requirements, or both, or well construction prohibitions may apply.

NOW THEREFORE, the owner hereby declares that all of the property described above is held and shall be held, conveyed or encumbered, leased, rented, used, occupied and improved subject to the following limitation and restrictions:

Anyone who proposes to construct or reconstruct a well on this property is required to contact the Department of Natural Resources' Bureau of Drinking Water and Groundwater, or its successor agency, to determine what specific requirements are applicable, prior to constructing or reconstructing a well on this property. No well may be constructed on this property unless applicable requirements are met.

If construction is proposed on this property that will require dewatering, or if groundwater is to be otherwise extracted from this property, while this groundwater use restriction is in effect, the groundwater shall be sampled and analyzed for contaminants

that were previously detected on the property and any extracted groundwater shall be managed in compliance with applicable statutes and rules.

This restriction is hereby declared to be a covenant running with the land and shall be fully binding upon all persons acquiring the above-described property whether by descent, devise, purchase or otherwise. This restriction benefits and is enforceable by, the Wisconsin Department of Natural Resources, its successors or assigns. The Department, its successors or assigns, may initiate proceedings at law or in equity against any person or persons who violate or are proposing to violate this covenant, to prevent the proposed violation or to recover damages for such violation.

Any person who is or becomes owner of the property described above may request that the Wisconsin Department of Natural Resources or its successor issue a determination that one or more of the restrictions set forth in this covenant is no longer required. Upon the receipt of such a request, the Wisconsin Department of Natural Resources shall determine whether or not the restrictions contained herein can be extinguished. If the Department determines that the restrictions can be extinguished, an affidavit, attached to a copy of the Department's written determination, may be recorded to give notice that this deed restriction, or portions of this deed restriction, are no longer binding.

By signing this document, Helen Steffen asserts that she is duly authorized to sign this document on behalf of Burnett County.

IN WITNESS WHEREOF, the owner of the property has executed this Declaration of Restrictions, this 29 day of February, 2000.

Signature: Helen Steffen
Printed Name: HELEN STEFFEN

Subscribed and sworn to before me
this 29 day of February, 2000.

Notary Public, State of Wisconsin
My commission expires March 5, 2000

This document was drafted by Darrell R. Reed, Short Elliott Hendrickson Inc., 421 Frenette Drive, Chippewa Falls, WI 54729.

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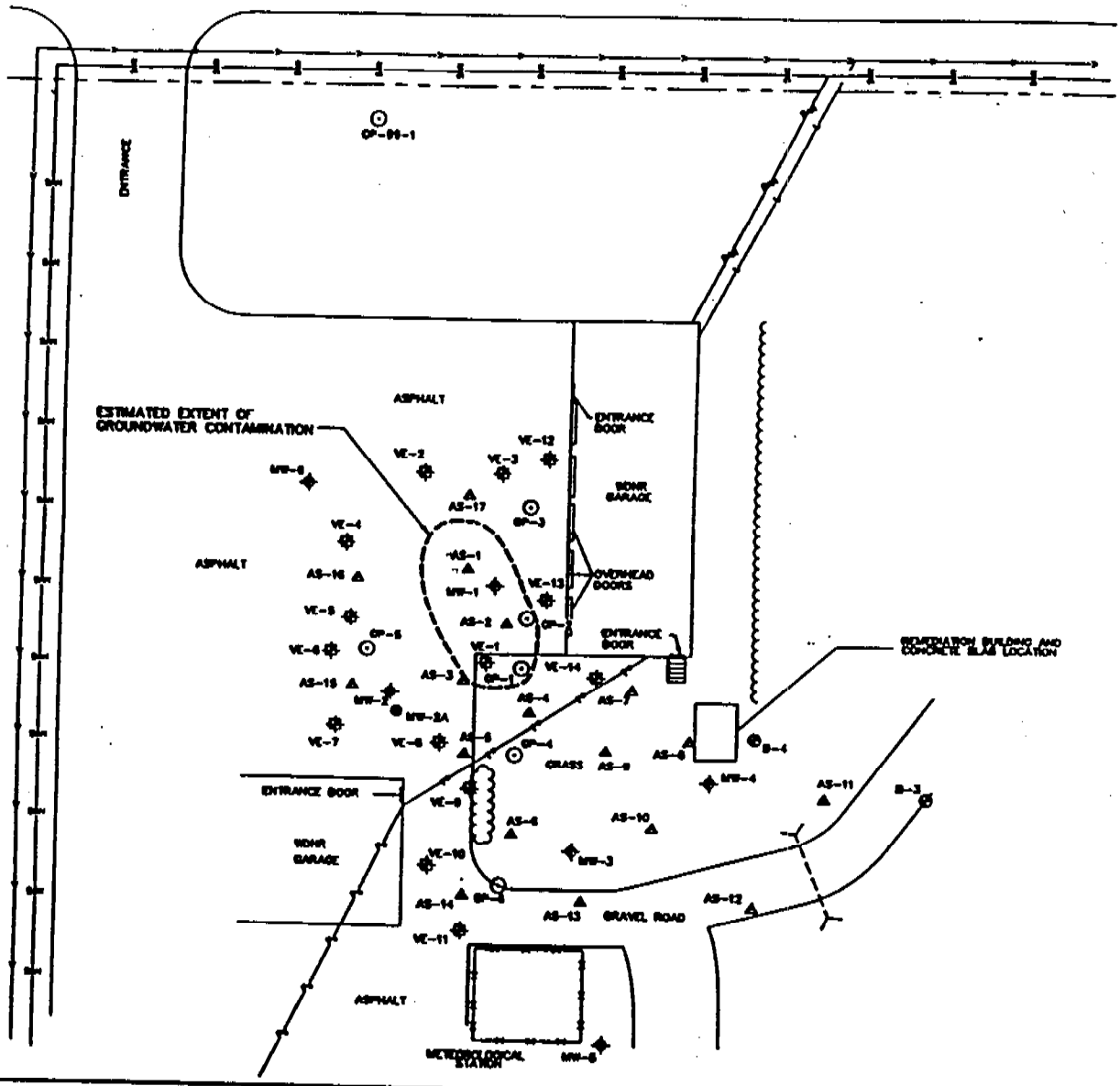


LEGEND

- ESTIMATED EXTENT OF GROUNDWATER CONTAMINATION
- AS-1 — AIR SPARGE WELL LOCATION AND NUMBER
- VE-1 — SVE WELL LOCATION AND NUMBER
- MW-3 — GROUNDWATER MONITORING WELL LOCATION AND NUMBER
- MW-2A — PIEZOMETER LOCATION AND NUMBER
- B-4 — SOIL BORING LOCATION AND NUMBER
- GP-09-1 — GEOPROBE GROUNDWATER SAMPLE LOCATION AND NUMBER
- APPROXIMATE PROPERTY BOUNDARY
- FENCE
- CULVERT
- TREES/SHRUBS
- OVERHEAD POWER LINE
- WATER SUPPLY LINE
- SANITARY LINES

N

SCALE IN FEET
0 10 20 40

NOTES:

1. SITE TOPOGRAPHY IS GENERALLY FLAT WITH A GRASS AND ASPHALT SURFACE.

DATE	ISSUE/REVISIONS	DRAWN BY	DESIGN	FIELD REVIEW	QC CHECK
06/30/99	-	J.E. 06/99	DRR 06/99		

SEH

WDNR GRANTSBURG RANGER STATION

ATTACHMENT 1
ESTIMATED EXTENT OF GROUNDWATER CONTAMINATION

PROJ. NO. WDNR9402
DATE 06/30/99

1 / 1

REPRODUCED FROM

USGS GRANTSBURG QUADRANGLE

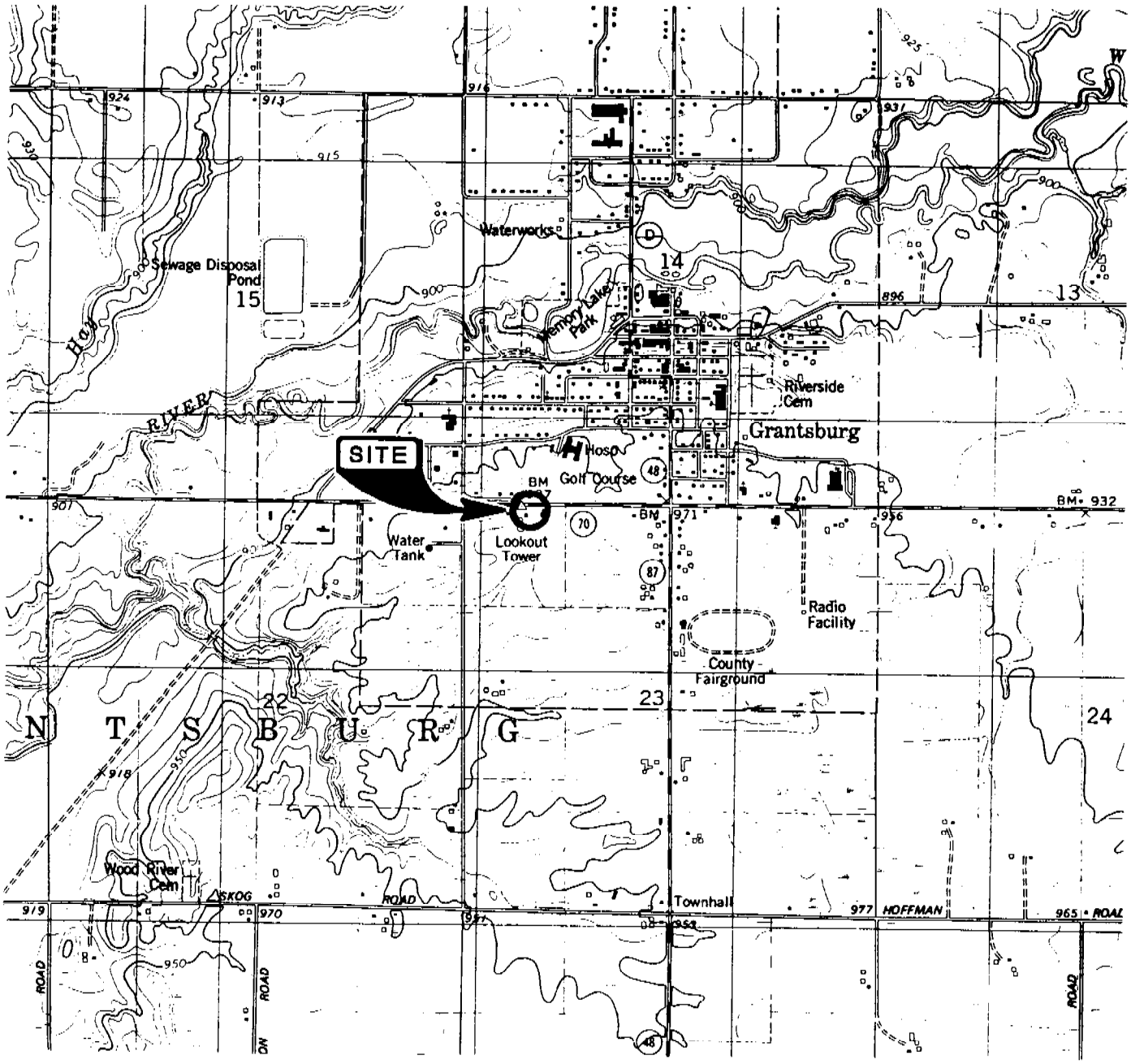
WISCONSIN – BURNETT CO. 7.5 MINUTE SERIES

1982

N

SCALE IN FEET

0 500 1000 2000



NO.	DATE	ISSUE/REVISIONS	DRAWN BY	DESIGN	FIELD REVIEW	QC CHECK
1	08/25/97	WDNR FORM #4400-194 PROGRESS REPORT # 1	JLE 08/97	BLK 08/97		MJB 8/29/97

SEH

WDNR GRANTSBURG RANGER STATION PROGRESS REPORT #1

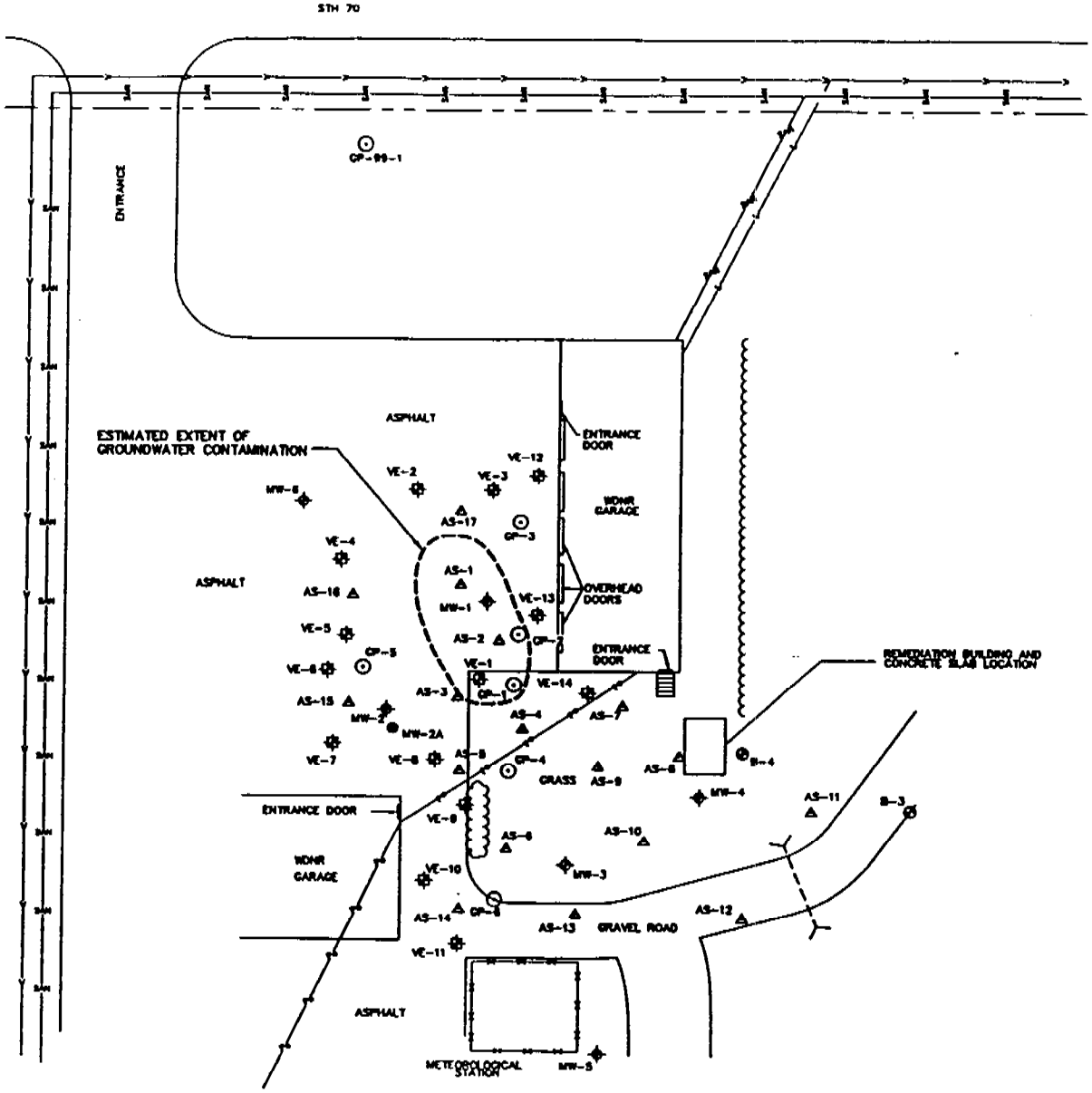
FIGURE 1
SITE LOCATION

PROJ. NO. WDNR9402

DATE 08/25/97

1 / 4

ATTACHMENT 1



LEGEND

ESTIMATED EXTENT OF GROUNDWATER CONTAMINATION

AS-1 — AIR SPARGE WELL LOCATION AND NUMBER

VE-1 — SVE WELL LOCATION AND NUMBER

MW-3 — GROUNDWATER MONITORING WELL LOCATION AND NUMBER

MW-2A — PIEZOMETER LOCATION AND NUMBER

B-4 — SOIL BORING LOCATION AND NUMBER

CP-99-1 — GEOPROBE GROUNDWATER SAMPLE LOCATION AND NUMBER

APPROXIMATE PROPERTY BOUNDARY

FENCE

CULVERT

TREES/SHRUBS

OVERHEAD POWER LINE

WATER SUPPLY LINE

SANITARY LINES

N

SCALE IN FEET

0 10 20 40

NOTES:

1. SITE TOPOGRAPHY IS GENERALLY FLAT WITH A GRASS AND ASPHALT SURFACE.

NO.	DATE	ISSUE/REVISIONS	DRAWN BY	DESIGN	FIELD REVIEW	QC CHECK
1	06/30/99	-	J.E 06/99	DRR 06/99		

SEH

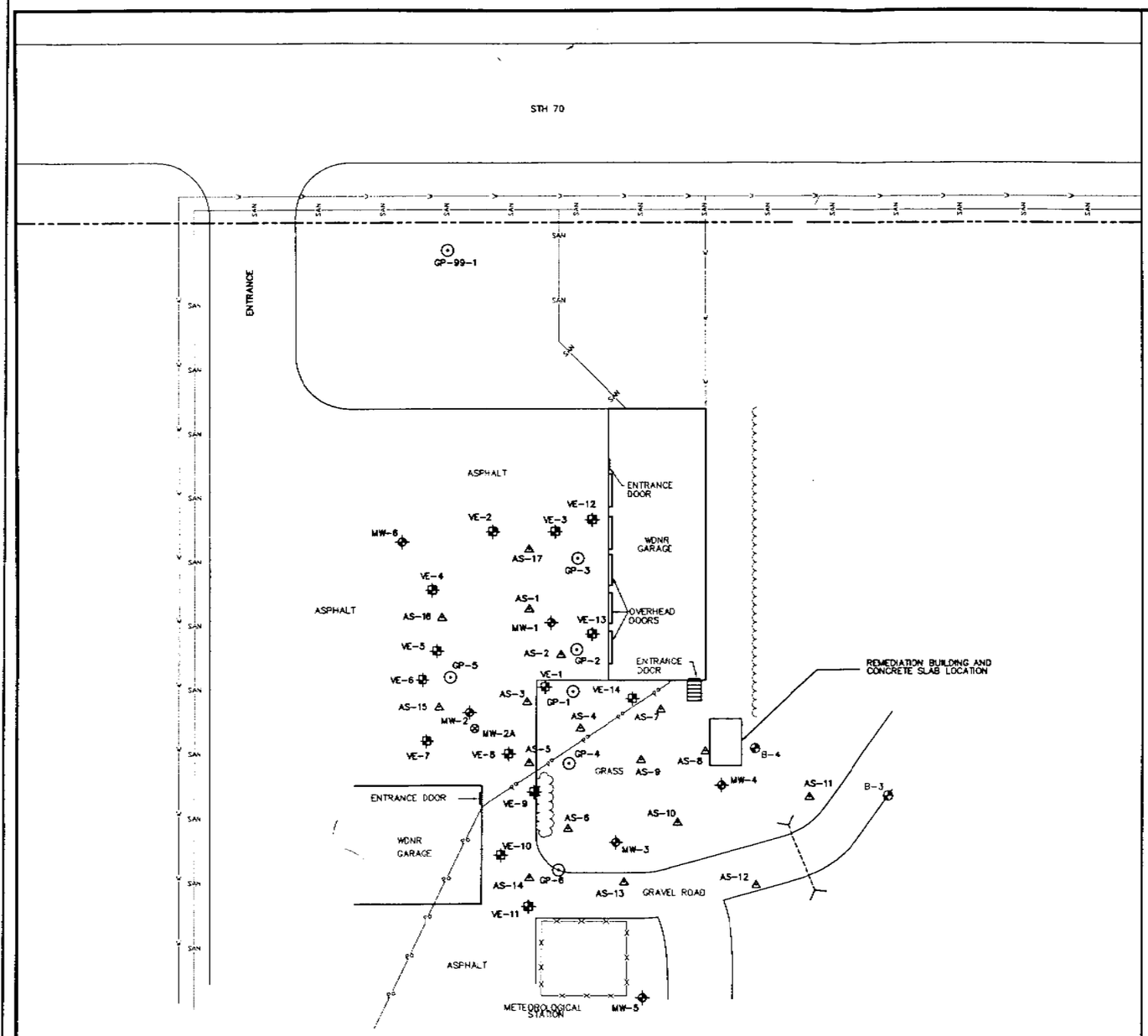
WDNR GRANTSBURG RANGER STATION

ATTACHMENT 1
ESTIMATED EXTENT OF GROUNDWATER CONTAMINATION

PROJ. NO. WDNR9402

DATE 06/30/99

1 / 1



N

SCALE IN FEET

0 7.5 15 30

LEGEND

- AS-1 — AIR SPARGE WELL LOCATION AND NUMBER
- VE-1 — SVE WELL LOCATION AND NUMBER
- MW-3 — GROUNDWATER MONITORING WELL LOCATION AND NUMBER
- MW-2A — PIEZOMETER LOCATION AND NUMBER
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- APPROXIMATE PROPERTY BOUNDARY
- FENCE
- CULVERT
- TREES/SHRUBS
- Po — OVERHEAD POWER LINE
- V — WATER SUPPLY LINE
- SAN — SANITARY LINES

NOTES:

1. SITE TOPOGRAPHY IS GENERALLY FLAT WITH A GRASS AND ASPHALT SURFACE.

NO.	DATE	ISSUE/REVISIONS	DRAWN BY	DESIGN	FIELD REVIEW	QC CHECK
1	07/06/99	CASE CLOSURE	JLE 07/99	DRR 07/99		

SEH

WDNR GRANTSBURG RANGER STATION CLOSURE REPORT

FIGURE 2
SITE PLAN-
EXISTING CONDITIONS

PROJ. NO. WDNR9402
DATE 07/06/99

2/5

Table 2
Groundwater Analytical Results

Analytical Parameters	ch. NR 140 Standards		Sample/Date																											
			GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	MW-1											MW-2										
	ES	PAL	11/17/93						8/9/94	11/21/95	12/5/96	3/20/97	6/19/97	10/1/97	1/15/98	4/7/98	7/20/98	10/14/98	1/4/99	4/19/99	11/21/95	12/5/96	3/20/97	6/19/97	1/15/98	4/7/98	7/20/98	1/14/98	1/14/99	4/19/99
Field Data																														
Dissolved Oxygen (mg/l)	NSE	NSE	--	--	--	--	--	--	--	--	--	1.31	5.7	3.12	0.18	9.1	0.86	0.41	0.74	--	--	--	0.48	0.55	5.59	9.0	0.69	0.51	2.21	--
Temperature (°C)	NSE	NSE	--	--	--	--	--	--	--	--	--	4.8	10.1	16.3	--	6.0	17	16	8.0	--	--	--	3.8	9.2	--	4.0	18	17	8.0	--
ORP (mV)	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	206	-211	145	95	--	--	--	--	--	--	197	-211	113	108	--
Conductivity (µ℧)	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	410	530	650	450	--	--	--	--	--	--	390	310	480	380	--
pH	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	7.6	7.2	7.5	7.8	--	--	--	--	--	--	7.5	7.3	7.2	8.0	--
Fe^{+2} (mg/l)	0.3	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0	0.01	0.0	0.0	--	--	--	--	--	--	0.09	0.05	0.0	0.0	--
SO_4^{-2} (mg/l)	250	125	--	--	--	--	--	--	--	--	--	--	--	--	--	18	30.5	0.5	2.9	--	--	--	--	--	--	78.27	81.38	21.8	28.1	--
Mn^{-2} (mg/l)	0.05	0.025	--	--	--	--	--	--	--	--	--	--	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]	--
CO_2 (mg/l)	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	130	120	140	--	--	--	--	--	--	--	54	152	204	--	--
NO_3^- (as N) (mg/l)	10	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	1.5	0.0	5.7	--	--	--	--	--	--	[illegible]	9.2	0.6	1.0	--
TPH (Gasoline) (µg/l)	NSE	NSE	120,000	8,100	BDL	110,000	BDL	180																						
GRO (µg/l)	NSE	NSE	--	--	--	--	--	--	3,830	5,810	548	4,990	1,270	2,000	9,390	262	260	240	450	340	BDL	BDL	BDL	BDL	--	<50	<18	<18	<18	<18
PVOCs[1] (µg/l)																														
Benzene	5.0	0.5	[illegible]	[illegible]	4.1	[illegible]	2.9	1.4	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	BDL	BDL	BDL	BDL	--	<0.5	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	700	140	[illegible]	75	BDL	[illegible]	BDL	3.2	--	202	39.9	634	110	96.1	918	21.9	0.66	9.2	14	11	BDL	BDL	BDL	BDL	--	<1.0	<0.12	<0.12	<0.12	<0.12
Methyl tert butyl Ether	60	12	[illegible]	[illegible]	BDL	BDL	BDL	BDL	--	BDL	BDL	BDL	BDL	<5.0	<10	<1.0	<0.17	4.0	3.4	24	BDL	BDL	BDL	BDL	--	<1.0	<0.17	<0.17	<0.17	<0.17
1,2,4-Trimethylbenzene	NSE	NSE	290	110	BDL	2,100	BDL	4.9	--	BDL	BDL	63.1	10.3	6.59	98.6	6.01	<0.15	<0.15	1.6	0.81	BDL	BDL	BDL	BDL	--	<1.0	<0.15	<0.15	<0.15	<0.15
1,3,5-Trimethylbenzene	NSE	NSE	1,400	150	BDL	1,300	BDL	3.7	--	BDL	BDL	93.8	35.6	13.4	176	11.9	<0.11	<0.11	1.8	4.6	BDL	BDL	BDL	BDL	--	<1.0	<0.11	<0.11	<0.11	<0.11
Total Xylenes	620	124	1,700	31	BDL	BDL	BDL	1.7	--	BDL	25.4	574	136.15	55.4	[illegible]	46.31	<0.16	1.3	14	13	BDL	BDL	BDL	BDL	--	<1.0	<0.16	<0.16	<0.16	<0.16
Trimethylbenzenes	480	96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.4	5.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.26	<0.26
Toluene	343	68.6	6,900	2,200	3.2	[illegible]	1.1	4.8	--	[illegible]	22.4	[illegible]	63.6	38.1	[illegible]	16.9	0.34	0.72	25	5.2	BDL	BDL	BDL	BDL	--	<1.0	<0.17	<0.17	<0.17	<0.17
VOCs[1] (µg/l)																														
Benzene	5.0	0.5	--	--	--	--	--	--	[illegible]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	NSE	NSE	--	--	--	--	--	--	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	NSE	NSE	--	--	--	--	--	--	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	5.0	0.5	--	--	--	--	--	--	[illegible]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	140	--	--	--	--	--	--	106	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	NSE	NSE	--	--	--	--	--	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	40	8.0	--	--	--	--	--	--	[illegible]	--	--	--	--	--	--	--	--	--	--	6.1	--	--	--	--	--	--	--	--	--	<2.2
n-Propylbenzene	NSE	NSE	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	343	68.6	--	--	--	--	--	--	195	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	NSE	NSE	--	--	--	--	--	--	7.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	NSE	NSE	--	--	--	--	--	--	9.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m- & p-Xylene	620	124	--	--	--	--	--	--	49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene & Styrene†	100	10	--	--	--	--	--	--	3.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead (EPA 6010) (µg/l)	15	1.5	--	--	--	--	--	--	7.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2 (Continued)
Groundwater Analytical Results

Analytical Parameters	ch. NR 140 Standards		Sample/Date																									
			MW-2A						MW-3									MW-4										
	ES	PAL	11/21/95	12/5/96	3/20/97	6/19/97	1/15/98	4/9/99	11/21/95	12/5/96	6/19/97	10/1/97	1/15/98	7/20/98	10/14/98	1/4/99	4/9/99	11/21/95	12/5/96	3/20/97	6/19/97	10/1/97	1/15/98	4/7/98	7/20/98	10/14/98	1/4/99	4/9/99
Field Data																												
Dissolved Oxygen (mg/l)	NSE	NSE	--	--	7.86	9.85	6.04	--	--	--	0.41	1.68	0.24	0.53	0.33	0.80	--	--	--	7.25	5.82	0.97	2.57	2.65	0.93	0.46	0.48	--
Temperature (°C)	NSE	NSE	--	--	7.2	7.3	--	--	--	--	10.6	14.7	--	16	15	8.0	--	--	--	5.1	13	14.8	--	7.0	15	15	8.0	--
ORP (mV)	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	-194	139	75	--	--	--	--	--	--	--	174	-203	127	78	--
Conductivity (µU)	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	350	400	360	--	--	--	--	--	--	--	570	590	570	460	--
pH	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	7.1	7.5	8.1	--	--	--	--	--	--	--	7.1	6.9	7.0	8.0	--
Fe^{+2} (mg/l)	0.3	0.15	--	--	--	--	--	--	--	--	--	--	--	0.2	0.05	0.0	--	--	--	--	--	--	--	0.11	0.12	0.15	**0.47**	--
SO_4^{-2} (mg/l)	250	125	--	--	--	--	--	--	--	--	--	--	--	32.9	0.5	1.2	--	--	--	--	--	--	--	21.2	0.8	0.8	19.8	--
Mn^{-2} (mg/l)	0.05	0.025	--	--	--	--	--	--	--	--	--	--	--	0.0	**0.4**	0.0	--	--	--	--	--	--	--	**0.5**	**1.1**	**1.6**	**2.7**	--
CO_2 (mg/l)	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	196	256	--	--	--	--	--	--	--	--	99.6	210	276	--	--
NO_3^- (as N) (mg/l)	10	2.0	--	--	--	--	--	--	--	--	--	--	--	0.0	0.8	1.9	--	--	--	--	--	--	--	3.1	0.4	0.3	0.0	--
GRO (µg/l)	NSE	NSE	BDL	BDL	BDL	BDL	--	<18	22,700	2,560	599	544	1,920	31	670	210	<18	7,390	434	BDL	1,780	1,520	255	1,250	2,400	360	960	<18
PVOCs[1] (µg/l)																												
Benzene	5.0	0.5	BDL	BDL	BDL	BDL	--	<0.10	**214**	**25.6**	3.92	1.06	2.48	<0.10	**9.9**	0.47	<0.10	**15.7**	3	BDL	**11.5**	**13.4**	2.09	**6.3**	**5.7**	**6.0**	**11.**	<0.10
Ethylbenzene	700	140	BDL	BDL	BDL	BDL	--	<0.12	**1,200**	162	18.8	30.7	110	0.35	30	8.7	0.41	219	9.3	BDL	21.4	42.7	6.57	39	67	7.7	19	<0.12
Methyl tert butyl Ether	60	12	BDL	BDL	BDL	BDL	--	<0.17	BDL	BDL	BDL	<1.0	<1.0	<0.17	7.4	5.8	<0.17	BDL	BDL	BDL	BDL	<5.0	14.7	<1.0	<0.17	7.5	46	<0.17
1,2,4-Trimethylbenzene	NSE	NSE	BDL	BDL	BDL	BDL	--	<0.15	1,780	85	21.9	32.3	130	0.66	40	13	0.52	559	4.5	BDL	81.3	<5.0	<1.0	93	140	8.8	39	<0.15
1,3,5-Trimethylbenzene	NSE	NSE	BDL	BDL	BDL	BDL	--	<0.11	510	91	14.4	17.7	63	<0.11	17	2.3	<0.11	229	12.5	BDL	43.1	11.9	<1.0	38.5	72	6.1	20	<0.11
Total Xylenes	620	124	BDL	BDL	BDL	BDL	--	<0.16	**7,340**	256	70	68.27	124.8	0.86	95	19	0.43	**1,240**	7.2	BDL	129.2	11.2	3.52	120.21	320	16	51	<0.16
Trimethylbenzenes	480	96	N/A	N/A	N/A	N/A	N/A	<0.26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15.3	0.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	59	<0.26
Toluene	343	68.6	BDL	BDL	BDL	BDL	--	<0.17	**4,330**	69.1	16.1	8.98	18.5	<0.17	25	3.5	0.23	156	BDL	BDL	10.4	6.29	<1.0	3.08	17	0.72	1.7	<0.17
VOCs[1] (µg/l)																												
Benzene	5.0	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	5.0	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	40	8.0	--	--	--	--	--	<2.2	--	--	--	--	--	--	--	--	<2.2	--	--	--	--	--	--	--	--	--	--	<2.2
n-Propylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	343	68.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m- & p-Xylene	620	124	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene & Styrene†	100	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead (EPA 6010) (µg/l)	15	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2 (Continued)
Groundwater Analytical Results

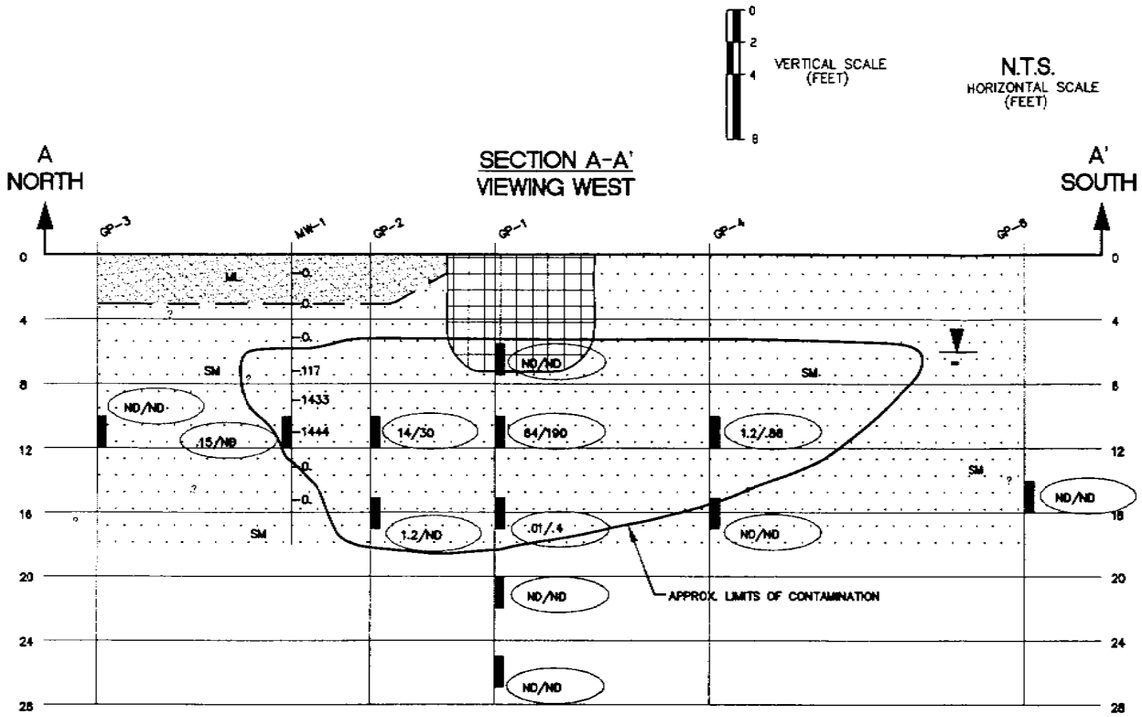
Analytical Parameters	ch. NR 140 Standards		MW-5									MW-6									GP-99-1
	ES	PAL	11/21/95	3/20/97	6/19/97	1/15/98	4/7/98	7/20/98	10/14/98	1/4/99	4/19/99	12/27/96	4/7/98	6/19/97	1/15/98	4/7/98	7/20/98	10/14/98	1/4/99	4/19/99	6/14/99
Field Data																					
Dissolved Oxygen (mg/l)	NSE	NSE	--	4.6	4.38	1.95	5.83	2.01	1.23	2.89	--	--	1.8	0.49	2.10	3.20	0.77	0.92	0.40	--	--
Temperature (°C)	NSE	NSE	--	3.8	9.7	--	6.0	15	15	8.0	--	--	4.5	10.3	--	6.0	17	17	8.0	--	--
ORP (mV)	NSE	NSE	--	--	--	--	197	-186	144	84	--	--	--	--	--	193	-211	187	101	--	--
Conductivity (µ℧)	NSE	NSE	--	--	--	--	490	380	430	390	--	--	--	--	--	640	590	780	510	--	--
pH	NSE	NSE	--	--	--	--	7.6	6.5	7.1	7.6	--	--	--	--	--	7.3	7.2	7.2	7.8	--	--
Fe^{+2} (mg/l)	0.3	0.15	--	--	--	--	0.03	0.0	0.0	0.0	--	--	--	--	--	0.0	0.1	0.0	0.0	--	--
SO_4^{-2} (mg/l)	250	125	--	--	--	--	17.89	23.4	19.5	29.5	--	--	--	--	--	14.92	21.9	32.6	1.6	--	--
Mn^{-2} (mg/l)	0.05	0.025	--	--	--	--	**0.3**	0.0	0.1	0.0	--	--	--	--	--	**0.6**	**0.3**	**2.8**	**1.7**	--	--
CO_2 (mg/l)	NSE	NSE	--	--	--	--	101.4	140	178	--	--	--	--	--	--	159	138	234	--	--	--
NO_3^- (as N) (mg/l)	10	2.0	--	--	--	--	1.7	1.0	1.0	0.8	--	--	--	--	--	1.2	4.5	0.1	0.0	--	--
GRO (µg/l)	NSE	NSE	BDL	BDL	BDL	--	<50	<18	<18	<18	<18	BDL	BDL	BDL	--	<50	<18	<18	<18	<18	--
PVOCs[1] (µg/l)																					
Benzene	5.0	0.5	BDL	BDL	BDL	--	<0.5	<0.10	2.1	<0.10	<0.10	BDL	BDL	BDL	--	<0.5	<0.10	<0.10	<0.10	<0.10	0.26
Ethylbenzene	700	140	BDL	BDL	BDL	--	<1.0	<0.12	<0.12	<0.12	<0.12	BDL	BDL	BDL	--	<1.0	<0.12	<0.12	<0.12	<0.12	0.45
Methyl tert butyl Ether	60	12	BDL	BDL	BDL	--	<1.0	<0.17	<0.17	<0.17	<0.17	BDL	BDL	BDL	--	<1.0	<0.17	<0.17	<0.17	<0.17	<0.23
1,2,4-Trimethylbenzene	NSE	NSE	BDL	BDL	BDL	--	<1.0	<0.15	<0.15	<0.15	<0.15	BDL	BDL	BDL	--	<1.0	<0.15	<0.15	<0.15	<0.15	0.30
1,3,5-Trimethylbenzene	NSE	NSE	BDL	BDL	BDL	--	<1.0	<0.11	<0.11	<0.11	<0.11	BDL	BDL	BDL	--	<1.0	<0.11	<0.11	<0.11	<0.11	<0.18
Total Xylenes	620	124	BDL	BDL	BDL	--	<1.0	<0.16	<0.16	<0.16	<0.16	BDL	BDL	BDL	--	<1.0	<0.16	<0.16	<0.16	<0.16	<0.51
Trimethylbenzenes	480	96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.26	<0.26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.26	<0.26	0.30
Toluene	343	68.6	BDL	BDL	BDL	--	<1.0	<0.17	<0.17	<0.17	<0.17	BDL	BDL	BDL	--	<1.0	<0.17	<0.17	<0.17	<0.17	0.41
VOCs[1] (µg/l)																					
Benzene	5.0	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	5.0	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	40	8.0	--	--	--	--	--	--	--	--	<2.2	--	--	--	--	--	--	--	--	<2.2	--
n-Propylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	343	68.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	NSE	NSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m- & p-Xylene	620	124	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene & Styrene†	100	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead (EPA 6010) (µg/l)	15	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

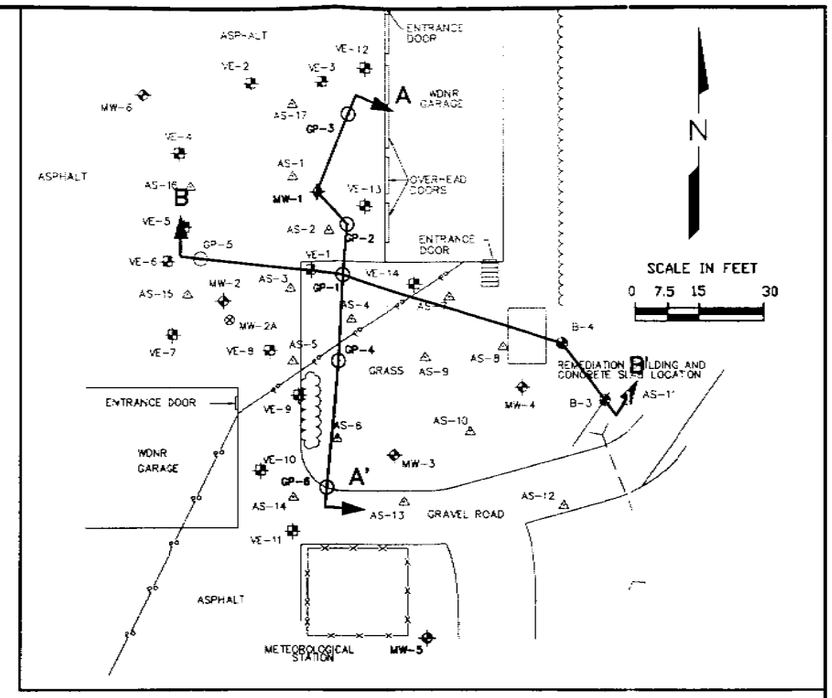
Note: Only those compounds detected on EPA Method SW846-8021 VOC scan are shown on this table
ES = ch. NR 140 Wis. Adm. Code Enforcement Standard
g/l = micrograms per liter
ORP = Oxidation/reduction potential
[1] = PVOC and VOC samples collected were analyzed utilizing Method 8021
-- = not analyzed for
3.92 = ch. NR 140 PAL exceedance
† = Styrene ES and PAL shown
CO_2 measured with HACH digital Titractor (Phenolphthalien method)
Compiled by: BLK Checked by: JJT

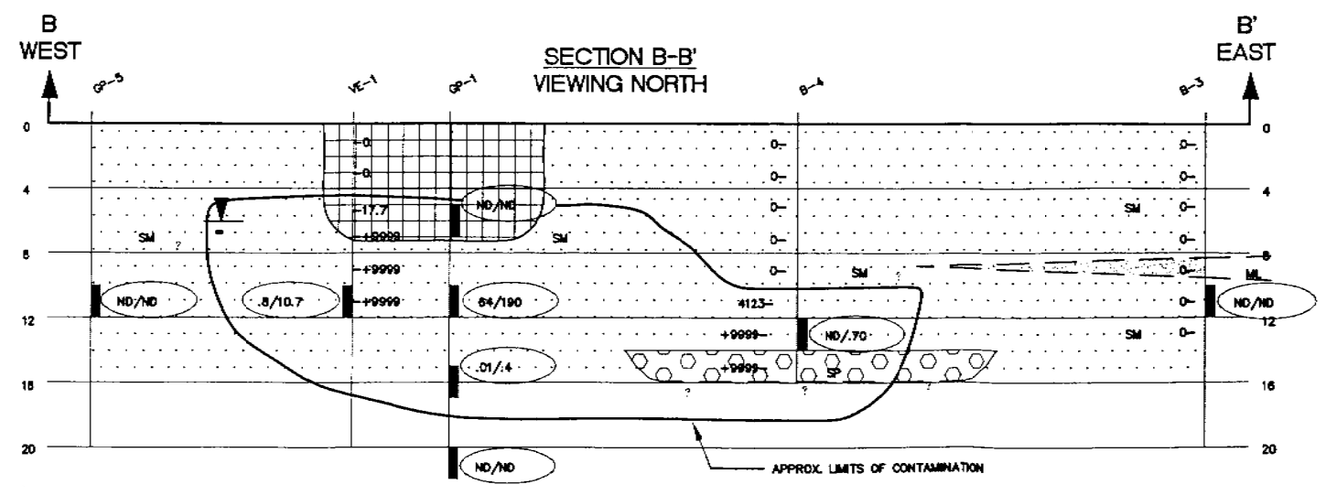
PAL = ch. NR 140 Wis. Adm. Code Preventive Action Limit
NSE = no standard established
< = less than
BDL = below laboratory detection limit
0.5 = ch. NR 140 ES exceedance
N/A = not applicable
Geochemical indicators (i.e. Fe^{+2}, SO_4^{-2}, NO_3^-, Mn^{+2}) were measured using HACH's DR700 colorimeter with appropriate reagents

4/98 - 1/99 Data Compiled by: BLK Checked by: MJB

4/99 Data Compiled by: DRR Checked by: BLK







LEGEND:

-0. / -17.7	= HEADSPACE READING AS PID INSTRUMENT UNITS
64/190	PRE-REMEDIATION BENZENE/TOLUENE SOIL CONCENTRATIONS (ug/g OR mg/kg)
ND	NON DETECTABLE CONCENTRATION
	FILL (EXCAVATION)
SM	SILTY SAND
ML	SANDY SILT
SP	POORLY GRADED SAND

NO.	DATE	ISSUE/REVISIONS	DRAWN BY	DESIGN	FIELD REVIEW	QC CHECK
1	07/08/99	CASE CLOSURE	JLE 07/99	DRR 07/99		

SEH

WDNR GRANTSBURG RANGER STATION CLOSURE REPORT

FIGURE 3
GEOLOGIC CROSS SECTION

PROJ. NO. WDNR9402
DATE 07/08/99

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