



SUPERAMERICA GROUP, INC. Environmental Services Department 3499 Dabney Drive (LB-4) Lexington, Kentucky 40509

Tom Austin, Projects Manager (606) 264-2431

April 28, 1994

Mr. John Feeney Wisconsin Department of Natural Resources Environmental Response and Repair Program PO Box 12436 4041 North Richards Street Milwaukee, Wisconsin 53212

RE:

SA 4048

6512 North Teutonia Avenue Milwaukee, Wisconsin

Dear Mr. Feeney:

SuperAmerica Group (SuperAmerica) has completed its initial subsurface investigation at SA #4048. In general, hydrocarbon impacts were found along the northern and western property lines. A summary of these field activities is presented for your review in the enclosed report entitled, "Results of Geoprobe Investigation, SuperAmerica Station #4048, 6512 North Teutonia Avenue, Milwaukee, Wisconsin."

SuperAmerica will provide the Wisconsin Department of Natural Resources (WDNR) with additional subsurface investigative information as it becomes available.

In the meantime, if you have any questions, please contact me at (606) 264-2431.

Respectfully submitted,

Tom Austin

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Environmental Projects Manager

RTA/mf Enclosure

cc: Tim Wimmer (Sigma)



RESULTS OF GEOPROBE INVESTIGATION **SUPERAMERICA STATION #4048 6512 NORTH TEUTONIA AVENUE** MILWAUKEE, WISCONSIN

PREPARED FOR: MR. TOM AUSTIN, PROJECT MANAGER SUPERAMERICA GROUP, INC. ENVIRONMENTAL SERVICE DEPARTMENT (LB-4) P.O. BOX 14000 LEXINGTON, KENTUCKY 40512

PREPARED BY: SIGMA ENVIRONMENTAL SERVICES, INC. 9555 SOUTH HOWELL AVENUE, SUITE 100 OAK CREEK, WISCONSIN 53154

PROJECT REFERENCE #2102-S3

APRIL 15, 1994

Bradd L. Seegers

Staff Scientist

mothy E. Wimmer oject Scientist

rid G. Jackson Senior Project Manager Sigma Environmental Services, Inc. (Sigma) has completed a geoprobe investigation at SuperAmerica Station #4048 located at 6512 North Teutonia Avenue, Milwaukee, Wisconsin.

<u>Scope of Work</u>. A petroleum release was discovered during piping system upgrade activities at the site, therefore the Wisconsin Department of Natural Resources (WDNR) was notified. In order to meet the WDNR requirements to define the extent of soil and groundwater effects, a subsurface investigation was implemented. The investigation consisted of drilling eight (8) geoprobe soil borings on the property to collect soil and groundwater samples to assess the extent petroleum hydrocarbons that had possibly been released into the environment.

<u>Site Activities</u>. On January 24, 1994, eight two-inch diameter geoprobe soil borings (GP-1 through GP-8) were drilled to a depth of 20 feet below ground surface (bgs) by Briohn Environmental Contractors (Briohn) of Brookfield, Wisconsin. The soil boring locations and the site layout are depicted in Figure 1. Soil encountered during the drilling activities consists of gray-brown clayey silt underlying approximately four feet of sandy silt fill. No auger cuttings generated during drilling activities. The WDNR soil boring logs and borehole abandonment forms are included in Attachment A.

Soil samples were collected during drilling activities and field screened with a photoionization detector (PID) equipped with a 10.6 electron volt lamp and calibrated to 100 parts per million isobutylene. One (1) soil sample exhibiting the highest PID level from each boring was submitted for laboratory analysis of Gasoline Range Organics (GRO), Petroleum Volatile Organic Compounds (PVOC), and total Lead. If no PID readings were detected, the soil sample from the water-table interface was submitted for laboratory analysis.

Laboratory Results for Soil Samples. The laboratory analysis detected GRO and PVOCs in soil samples from borings GP-4 through GP-8. Laboratory analysis did not identify GRO or PVOCs in soil samples from borings GP-1 through GP-3. To define the depth of petroleum impacts, one (1) soil sample with a lower or undetectable PID value from each soil boring was analyzed with a field gas chromatograph (GC) for Benzene, Toluene, Ethylbenzene, Xylene (BTEX), and total BTEX. The field GC analysis identified BTEX compounds in the samples from GP-1 through GP-3 and GP-6 through GP-8. The laboratory results and field GC results are summarized in Table 1. The GRO concentrations are depicted on Figure 1. Laboratory and field GC reports are presented as Attachments B and C, respectively.

Laboratory Results for Groundwater Samples. Groundwater was encountered at depths between approximately 12 and 14 feet below ground surface. To assess general groundwater quality, groundwater samples were collected from soil borings GP-2, GP-6, and GP-8 and analyzed with the field GC for BTEX and total BTEX. Two of the groundwater samples collected from the soil borings exhibited Volatile Organic Compounds (VOCs) above the Wisconsin NR 140 Groundwater Quality Enforcement Standards and Preventive Action Limits. Field GC results for the groundwater samples are summarized in Table 2 and depicted on Figure 2.

TABLE 1 SUMMARY OF FIELD SCREENING, FIELD GAS CHROMATOGRAPH, AND LABORATORY RESULTS GEOPROBE SOIL INVESTIGATION SuperAmerica Station #4048 6512 North Teutonia Avenue

Milwaukee, Wisconsin

Sample ID	Depth Collected (feet)	PID Response (iu)	GRO ppm	Benzene	Toluene	Ethylbenzene	Total Xylene	1,3,5- Trimethylbenzene	1,2,4- Trimethylbenzene	МТВЕ	Total Lead	Sample Odor	Sample Description								
GP1-1	2.0-4.0	4.2										None	Dark Brown Clayey Silt, Fill								
GP1-2	4.0-6.0	3.6										None	Brown Silt, Till								
GP1-3	6.0-8.0	2.2										None	Brown Silt, Till								
GP1-4	8.0-10.0	1.9										None	Brown Silt, Till								
GP1-5	10.0-12.0	1.9	< 5.0	< 0.2	< 0.5	< 0.2	< 0.8	< 0.8	< 0.8	<1.0	7.3	None	Brown Silt, Till								
GP1-6	12.0-14.0	1.5										None	Gray Brown Silty Clay, Till								
GP1-7	14.0-16.0	1.8										None	Gray Brown Clayey Silt, Till								
GP1-8	16.0-18.0	1.9		ND	0.007	0.012	0.114					None	Gray Brown Clayey Silt, Till								
GP1-9	18.0-20.0	1.4										None	Gray Brown Clayey Silt, Till								
GP2-1	2.0-4.0	0.2										None	Dark Brown Clayey Silt, Fill								
GP2-2	4.0-6.0	0.5										None	Brown Sandy Silt, Till								
GP2-3	6.0-8.0	1.1										None	Brown Sandy Silt, Till								
GP2-4	8.0-10.0	1.6		ND	ND	ND ND	0.014					None	Brown Clayey Silt, Till								
GP2-5	10.0-12.0	3.6										None	Brown Silt, Till								
GP2-6	12.0-14.0	0.8										None	Brown Silt, Till								
GP2-7	14.0-16.0	7.0	< 5.0	< 0.2	< 0.5	< 0.2	0.84	<0.8	<0.8	<1.0	12	None	Brown Silt, Till								
GP2-8	16.0-18.0	1.2										None	Gray Brown Sandy Silt, Till								
GP2-9	18.0-20.0	0.2										None	Gray Brown Sandy Silt, Till								
	1							ļ													
GP3-1	2.0-4.0	7.7										None	Brown Sandy Silt, Fill								
GP3-2	4.0-6.0	9.7									_=_	None	Brown Silty Sand, Till								
GP3-3	6.0-8.0	10.1	< 5.0	<0.2	<0.5	< 0.2	<0.8	<0.4	<0.8	<1.0	8.9	None	Brown Silty Sand, Till								
GP3-4	8.0-10.0	4.2										None	Brown Silty Sand and Gravel, Till								
GP3-5	10.0-12.0	3.0		ND	ND	ND	0.006					None	Brown Sandy Silt, Till								
GP3-6	12.0-14.0	2.4										None	Gray Brown Clayey Silt, Till								
GP3-7	14.0-16.0	3.9										None	Gray Brown Clayey Silt, Till								
GP3-8	16.0-18.0	3.4										None	Gray Brown Clayey Silt, Till								
GP3-9	18.0-20.0	2.8					<u> </u>					None	Gray Brown Clayey Silt, Till								
	u = ppm = feet = < =	Labo Feet	ratory res below gro	ts as isobut ults in parts ound surfact above meth	per milli e		MTBE ND 	=	Methyl Tert Butyl E Field Gas Chromato Not detected Not analyzed		alysis Result	s in parts pe	er million								

TABLE 1 (CONT.) SUMMARY OF FIELD SCREENING, FIELD GAS CHROMATOGRAPH, AND LABORATORY RESULTS GEOPROBE SOIL INVESTIGATION SuperAmerica Station #4048 6512 North Teutonia Avenue Milwaukee, Wisconsin

Sample ID	Depth Collected (feet)	PID Response (iu)	GRO ppm	Benzene	Toluene	Ethylbenzene	Total Xylene	1,3,5- Trimethylbenzene	1,2,4- Trimethylbenzene	МТВЕ	Total Lead	Sample Odor	Sample Description								
GP4-1	2.0-4.0	70.0										Slight, Gas-Like	Dark Brown Sandy Silt, Fill								
GP4-2	4.0-6.0	63.8										Slight, Gas-Like	Gray Brown Clayey Silt, Till								
GP4-3	6.0-8.0	75.5	13	< 0.2	< 0.5	< 0.2	<0.8	< 0.8	< 0.8	<1.0	6.0	Slight, Gas-Like	Gray Brown Sandy Silt, Till								
GP4-4	8.0-10.0	33.7										None	Brown Clayey Silt, Till								
GP4-5	10.0-12.0	16.3		ND	ND	ND	ND					None	Brown Clayey Silt, Till								
GP4-6	12.0-14.0	9.4										None	Gray Brown Clayey Silt, Till								
GP4-7	14.0-16.0	8.9	***									None	Gray Brown Clayey Silt, Till								
GP4-8	16.0-18.0	11.4										None	Gray Brown Clayey Silt, Till								
GP4-9	18.0-20.0	8.6										None	Gray Brown Clayey Silt, Till								
GP5-1	2.0-4.0	653										Mod., Gas-Like	Gray Brown Sand and Gravel, Fill								
GP5-2	4.0-6.0	3503										Strong, Gas-Like	Brown Sandy Silt, Till								
GP5-3	6.0-8.0	7163	760	1.9	6.8	20	100	16	46	<1.0	6.7	Strong, Gas-Like	Brown Silty Sand, Till								
GP5-4	8.0-10.0	5304										Strong, Gas-Like	Brown Silty Sand, Till								
GP5-5	10.0-12.0	416										Strong, Gas-Like	Brown Sandy Silt, Till								
GP5-6	12.0-14.0	53.2		ND	ND	ND	ND					Slight, Gas-Like	Gray Brown Silt, Till								
GP5-7	14.0-16.0	23.3										None	Gray Brown Silt, Till								
GP5-8	16.0-18.0	14.5										None	Gray Brown Silt, Till								
GP5-9	18.0-20.0	18.2										None	Gray Brown Clayey Silt, Till								
GP6-1	2.0-4.0	1061										Mod., Gas-Like	Gray Brown Silty Clay, Fill								
GP6-2	4.0-6.0	6041										Strong, Gas-Like	Gray Brown Silty Clay, Fill								
GP6-3	6.0-8.0	5126										Strong, Gas-Like	Brown Silty Sand, Till								
GP6-4	8.0-10.0	1808										Strong, Gas-Like	Brown Sandy Silt, Till								
GP6-5	10.0-12.0	4481										Strong, Gas-Like	Brown Clayey Silt, Till								
GP6-6	12.0-14.0	5185	520	2.3	20	11	60	13	37	2.8	6.8	Strong, Gas-Like	Gray Brown Clayey Silt, Till								
GP6-7	14.0-16.0	1052										Mod., Gas-Like	Gray Brown Clayey Silt, Till								
GP6-8	16.0-18.0	613										Mod., Gas-Like	Gray Brown Silty Clay, Till								
GP6-9	18.0-20.0	259		0.042	0.109	0.009	0.169					Slight, Gas-Like Gray Brown Silty Clay, Till									
	iu = ppm = feet = < =	Labo Feet	oratory res	its as isobu sults in parts ound surfac above meth	s per milli e		MTBE ND 	=	Methyl Tert Butyl E Field Gas Chromato Not detected Not analyzed		alysis Results	s in parts per millio	n								

TABLE 1 (CONT.) SUMMARY OF FIELD SCREENING, FIELD GAS CHROMATOGRAPH, AND LABORATORY RESULTS GEOPROBE SOIL INVESTIGATION SuperAmerica Station #4048 6512 North Teutonia Avenue Milwaukee, Wisconsin

Sample ID	Depth Collected (feet)	PID Response (iu)	GRO ppm	Benzene	Toluene	Ethylbenzene	Total Xylene	1,3,5- Trimethylbenzene	1,2,4- Trimethylbenzene	МТВЕ	Total Lead	Sample Odor	Sample Description								
GP7-1	2.0-4.0	719										Mod., Gas-Like	Dark Brown Clayey Silt, Fill								
GP7-2	4.0-6.0	715										Mod., Gas-Like	Brown Clayey Silt, Till								
GP7-3	6.0-8.0	7674	480	3.4	19	9.8	48	8.6	23	3.5	8.1	Strong, Gas-Like	Brown Clayey Silt, Till								
GP7-4	8.0-10.0	1263										Mod., Gas-Like	Brown Clayey Silt, Till								
GP7-5	10.0-12.0	1059										Mod., Gas-Like	Brown Clayey Silt, Till								
GP7-6	12.0-14.0	31.8										None	Gray Brown Clayey Silt, Till								
GP7-7	14.0-16.0	1456										Mod., Gas-Like	Gray Brown Clayey Silt, Till								
GP7-8	16.0-18.0	125										- Slight, Gas-Like Gray Brown Clayey Silt, Till									
GP7-9	18.0-20.0	321		7.114	2.829	3.413	11.136					Slight, Gas-Like	ke Gray Brown Clayey Silt, Till								
GP8-1	2.0-4.0	31.2				•••						None	Dark Brown Clayey Silt, Fill								
GP8-2	4.0-6.0	10.9										None	Gray Brown Silt, Fill								
GP8-3	6.0-8.0	77. 3										Slight, Gas-Like	Gray Brown Silt, Fill								
GP8-4	8.0-10.0	8805	23	1.8	1.7	0.66	3.3	< 0.8	2.0	<1.0	9.2	Strong, Gas-Like	Gray Brown Sandy Silt, Till								
GP8-5	10.0-12.0	1374				***						Mod., Gas-Like	Gray Brown Clayey Silt, Till								
GP8-6	12.0-14.0	26.1		0.063	0.020	0.016	0.061					None	Gray Brown Clayey Silt, Till								
GP8-7	14.0-16.0	26.7										None	Brown Sandy Silt, Till								
GP8-8	16.0-18.0	27.9										None	Brown Sandy Silt, Till								
GP8-9	18.0-20.0	9.1										None	Brown Silty Sand, Till								
KEY:	iu = ppm = feet = =	Labo	oratory res t below gr	its as isobusults in partsound surfactabove meth	s per milli e		MTBI ND 	=	Methyl Tert Butyl El Field Gas Chromato Not detected Not analyzed		lysis Results	s in parts per millio	n								

TABLE 2 FIELD GAS CHROMATOGRAPH **GROUNDWATER QUALITY RESULTS** SUPERAMERICA STATION #4048 6512 North Teutonia Avenue Milwaukee, Wisconsin

	Units	GP-2	GP-6	GP-8	Enforcement Standard	Preventive Action Limit
Benzene	ppb	<1	os	os	5.0	.067
Toluene	ppb	ND	os	os	343	68.6
Ethylbenzene	ppb	ND	710	os	1360	272
Xylenes, Total	ppb	1	os	os	620	124

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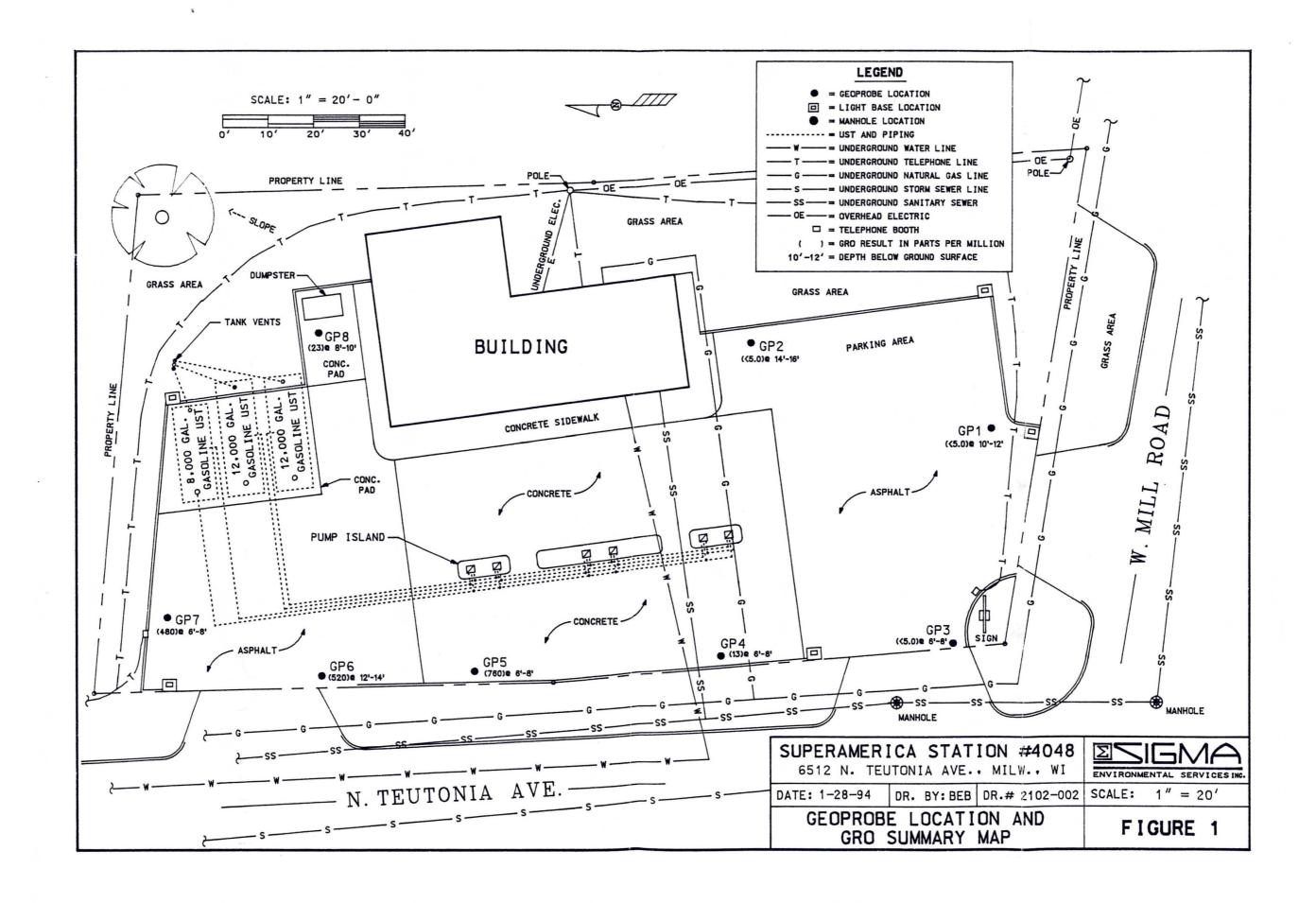
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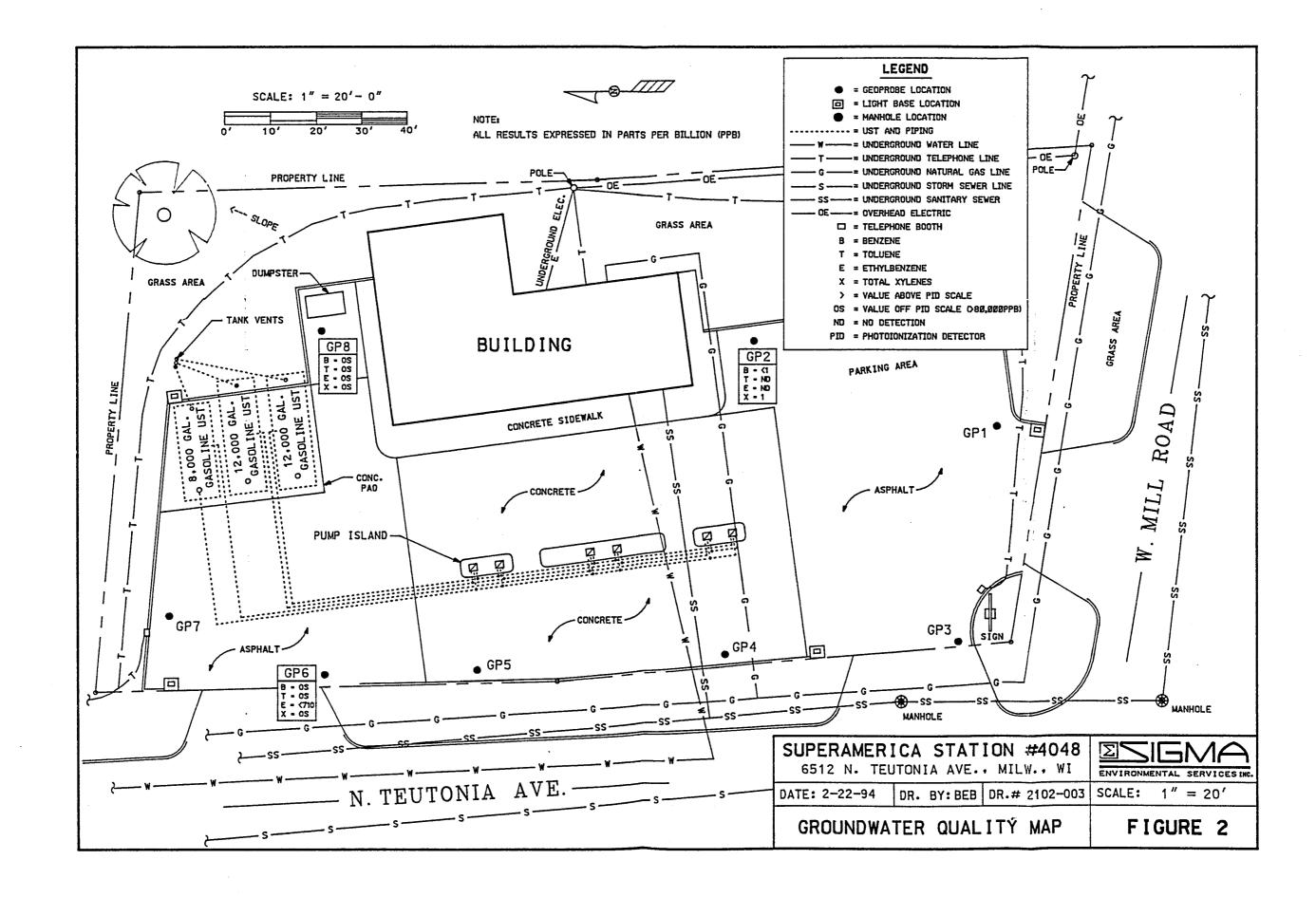
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ATTACHMENT A

WDNR SOIL BORING LOGS AND BOREHOLE ABANDONMENT FORMS

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This form is authorized by Chapters 144.147 and 162. Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

State o Depart			al Reso		aste C	Un	z. Wasi dergrou ater Res	md Tar		S	OIL form 4	BORT 400-12	NG L 2	og I	NFOR		ION 7-91
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State o Departi			al Reso	ources	Route To: Solid Was Emergence Wastewate	y Response	☐ Ur				S	OIL form 4	BORT 400-12	NG L 2	og I	NFOR	MAT	ION 7-91
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both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

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State o Depart			ral Reso		Route To: Solid Waste Emergency Res	sponse [Un				S	OIL form 4	BORI 400-12	NG L	og I	NFOR	MAT	ION 7-91
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State of Wisconsin Department of Natural	Resources	Route To: Solid Waste Emergency Wastewater		☐ Hazz ☐ Und	lergrou	md Tar		S	OIL form 4	BORT 400-12	NG L		NFOR	MAT	ION 7-91
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WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 7-89

(I) GENERAL INFORMATION	(2) FACILITY NAME
Well/Drillhole/Borehole County	Original Well Owner (If Known)
Location GP-1 Milwarkee	SuperAmerica, Inc.
. \(\forall \) E	Present\Well Owner
5W 1/4 of SE 1/4 of Sec. 24; T. 7 N; R. 2 1	same
(If applicable)	Street or Route
Gov't Lot Grid Number	6572 N. Teutonia Ave.
Grid Location	City, State, Zip Code
ft. N. S., ft. E. W.	Milwarkee, WI
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No.
	— (2 represent) in onique went to:
Milwaykee.	Reason For Abandonment
Street Address of Well	
A: Un	Investigative Baring
City, Village	
	1-24-94
WELL/DRILLHOLE/BOREHOLE INFORMATION	(iii D. 1. W. (6.) 1. (iii)
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 10-12
(Date) $\sqrt{-94}$	Pump & Piping Removed? Yes No Not Applicable
	Liner(s) Removed? Yes No Not Applicable
Monitoring Well Construction Report Available?	Screen Removed? Yes No Not Applicable
☐ Water Well ☐ Yes ☐ No	Casing Left in Place? Yes No
☐ Drillhole	If No, Explain
Borehole	
7 Dorentole	Was Casing Cut Off Below Surface? Yes No
Construction Type:	Did Sealing Material Rise to Surface? Yes No 11
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes No
	If Yes, Was Hole Retopped? Yes No
Other (Specify)	
F	(5) Required Method of Placing Sealing Material
Formation Type:	Conductor Pipe-Gravity Conductor Pipe-Pumped
Unconsolidated Formation Bedrock	Dump Bailer Other (Explain)
Total Well Depth (ft.) 20 Casing Diameter (ins.) \. 25	(6) Sealing Materials For monitoring wells and
(From groundsurface)	Neat Cement Grout monitoring well boreholes only
(Cross gradients)	Sand-Cement (Concrete) Grout
Casing Depth (ft.)	Concrete Bentonite Pellets
Cashing Deput (It.)	Clay-Sand Slurry Granular Bentonite
Was Well Annular Space Grouted?	
If Yes, To What Depth? Feet	Chipped Bentonite
(7)	No. Yards,
Sealing Material Used	From (Ft.) To (Ft.) Sacks Sealant Mix Ratio or Mud Weight or Volume
	2.6
Concrete	Surface \ O.OOQ
Concrete Chipped Bentonite	, , , , ,
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(8) Comments:	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
Signature of Person Doing Work Date Signed	Date Received/Inspected District/County
	D
Bradd Seegen 2-23-94 Street or Route Telephone Number	Reviewer/Inspector
9555 5. Howell Are (414) 768-7144	Follow-up Necessary

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 7-89

(I) GENERAL INFORMATION	(2) FACILITY NAME
Well/Drillhole/Borehole County	Original Well Owner (If Known)
Location GP-2 Milwaukee	SuperAmerica, Inc.
√7 E	Present\Well Owner
<u>SW</u> 1/4 of <u>SE</u> 1/4 of Sec. <u>24</u> ; T. <u>R</u> N; R. <u>21</u> 1 w	same
(If applicable)	Street or Route
Gov't Lot Grid Number	6512 N. Teutonia Ave.
Grid Location	City, State, Zip Code
ft. N. S., ft. E. W.	Milwarkee, WI
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No.
Milwarker.	
Street Address of Well	Reason For Abandonment
_	Investigative Barina
City, Village	Date of Abandonment
_	1-24-94
WELL/DRILLHOLE/BOREHOLE INFORMATION	
	(4) Depth to Water (Feet)
1 711 011	Pump & Piping Removed? Yes No Not Applicable
(Date)	The state of the s
Monitoring Well Construction Report Available?	The Line of the Applicable
	Screen Removed? Yes No Not Applicable Casing Left in Place? Yes No
☐ Water Well Yes ☐ No	If No, Explain
Drillhole	II 110, Explain
Borehole	Was Casing Cut Off Below Surface? Yes No
Construction Type: Drilled Driven (Sandpoint) Dug	Did Sealing Material Rise to Surface? Yes No Did Material Settle After 24 Hours? Yes No
Other (Specify)	If Yes, Was Hole Retopped?
	(5) Required Method of Placing Sealing Material
Formation Type:	Conductor Pipe-Gravity Conductor Pipe-Pumped
Unconsolidated Formation Bedrock	Dump Bailer Other (Explain)
Total Well Depth (ft.) Casing Diameter (ins.)	(6) Sealing Materials For monitoring wells and
(From groundsurface)	Neat Cement Grout monitoring well boreholes only
(Sand-Cement (Concrete) Grout
Casing Depth (ft.)	Concrete Bentonite Pellets
	Clay-Sand Slurry Granular Bentonite
Was Well Annular Space Grouted? Yes No Unknown	
If Yes, To What Depth? Feet	Chipped Bentonite
	1 Azembles semente
(7) Sealing Material Used	From (Ft.) To (Ft.) Sacks Sealant Mix Ratio or Mud Weight
	From (Ft.) To (Ft.) Sacks Sealant or Wix Ratio or Mud Weight or Volume
	Surface \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
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Chipped Bentonite	1.0 20.00.17
	*
(8) Comments:	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
_	Date Received/Inspected District/County
Signature of Person Doing Work Date Signed Person France Doing	WORK AND ADDRESS.
Ban11 50000 2-23-94	Reviewer/Inspector
Street or Route Telephone Number	1
9555 5. Howell Are (414) 768-7144	Follow-up Necessary
City, State, Zip Code	

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 7-89

(I) GENERAL INFORMATION		(2) FACILITY NAME					
Well/Drillhole/Borehole County		0	riginal	Well Owner	(If Known)	_	
Location GP – 3 M	ilwaukee	J	gue	exAn	nerica	Inc.	
<u>SW</u> 1/4 of <u>SE</u> 1/4 of Sec. <u>24</u> ; T	N;R. DIE	Pr	eseni	well Owner			
(If applicable)		St		Route			
Gov't Lot	Grid Number	10000			Tarton	via Ave.	
Grid Location		C	ty, St	ate, Zip Code	:	1,00	
ft. N. S.,	ft E W.	1	15/	wark	ee. W	\sum_{i}	
Civil Town Name		Fa	cility	Well No. and	or Name (II Ap	oplicable) WI Unique Well No	
Milwaukee			_				
Street Address of Well				For Abandon			
- O: V:n		7	NY.	Abandonmen	ative ?	Daring	
City, Village				アイ - Or			
WELL/DRILLHOLE/BOREHOLE INFO	RMATION			2-1-01-	1		
(3) Original Well/Drillhole/Borehole Constru		(4) D	epth to	Water (Feet	9-10		
(Date) \ - \ \ \ - \ \ \ \ \ \ \ \ \ \ \ \ \	•			Piping Reme		es No Not Applica	
(Date)				Removed?	_	es No Not Applica	
Monitoring Well Constru	uction Report Available?	Sc	reen R	Removed?		es No Not Applica	
	Yes No			eft in Place?	' 📑 Y	es No	
☐ Drillhole		If	No, E	xplain			
Borehole '	X	-					
					Below Surface?	Yes No	
Construction Type:	Dug Dug				Rise to Surface? fter 24 Hours?	Yes No No	
☐ Drilled ☐ Driven (Sandp ☐ Other (Specify)	pent) \square 2.6			Was Hole R		Yes No	
Under (Specify)							
Formation Type:			_		Placing Sealing		
Unconsolidated Formation	Bedrock	_		luctor Pipe-C p Bailer		onductor Pipe-Pumped Other (Explain)	
Total Wall Doub (6) 3 Casing	Diameter (ins.)\.35			Materials		For monitoring wells and	
Total Well Depth (ft.) Casing (From groundsurface)	Diameter (115.) 12.05	1		Cement Gro	ut	monitoring well boreholes	
(Trom groundsurface)					ncrete) Grout		
Casing Depth (ft.)			Cond		!	☐ Bentonite Pellets	
		Clay-Sand Slurry Granular Bentonite					
Was Well Annular Space Grouted?	Yes No Unknown			onite-Sand S			
If Yes, To What Depth?	Feet	⊅≥	Chip	ped Bentoni	te		
(7)		Ī.			No. Yards,	M. D M. IW	
Sealing Material Use	xa .	From	(Ft.)	To (Ft.)	Sacks Sealant or Volume	Mix Ratio or Mud Weight	
C +		Sur	face	١.٥	0.009		
Concrete Chipped Bento				1.0	Ft3		
Clark IR +	+	1.0	\supset	20.0	-LT1.0		
- wibber Dewlar	116	-	_	<i>a</i> 0.0	Pr		
• •						14	
(8) Comments:							
					7-7-5-W		
(9) Name of Person or Firm Doing Sealing W			(10)			UNTY USE ONLY	
Signa Environment	al Services Inc	Land Bridge	Date	Received/Ins	spected	District/County	
Signature of Person Doing Work	2-23-94	(ACC)	Pav:	ewer/Inspect	or		
Street or Route Tele	ephone Number	1	100,1	- a cithistect	G1		
	114 ⁾ 768-7144		Follo	w-up Necess	ary		
City, State, Zip Code		1		-ps	-3		

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 7-89

(I) GENERAL INFORMATION	(2) FACILITY NAME
Well/Drillhole/Borehole County	Original Well Owner (If Known)
Location GP-4 Milwaukee	SuperAmerica, Inc.
. NE	Present/Well Owner
<u>SW</u> 1/4 of <u>SE</u> 1/4 of Sec. <u>24</u> ; T. <u>R</u> N; R. <u>21</u> M	same
(If applicable)	Street or Route
Gov't Lot Grid Number	6572 N. Teutonia Ave.
Grid Location	City, State, Zip Code
ft. N. S., ft. E. W.	Milwarkee, WI
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No.
	- Totalque Well No.
Milwaukee Street Address of Well	Reason For Abandonment
Sileet Address of Well	
6' V:11	Investigative Baring Date of Abandonment
City, Village	1-24-94
- Indiana was a managara a supan was a sup	1-27-47
WELL/DRILLHOLE/BOREHOLE INFORMATION	(1) D + (1) W + (5) A G + (2)
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) $8 - 10$
(Date) \ - \ \ \ - \ \ \ \ \ \ \ \ \ \ \ \ \	Pump & Piping Removed? Yes No Not Applicable
	Liner(s) Removed? Yes No Not Applicable
Monitoring Well Construction Report Available?	Screen Removed? Yes No Not Applicable
☐ Water Well ☐ Yes ☐ No	Casing Left in Place? Yes No
☐ Drillhole	If No, Explain
Da-Borehole	
Applications	Was Casing Cut Off Below Surface? Yes No
Construction Type:	Did Sealing Material Rise to Surface? Yes No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes No
	If Yes, Was Hole Retopped? Yes No
Other (Specify)	
	(5) Required Method of Placing Sealing Material
Formation Type:	Conductor Pipe-Gravity Conductor Pipe-Pumped
Unconsolidated Formation Bedrock	Dump Bailer Other (Explain)
Total Well Depth (ft.) Casing Diameter (ins.) \. 25	(6) Sealing Materials For monitoring wells and
(From groundsurface)	Neat Cement Grout monitoring well boreholes only
(From groundsurface)	Sand-Cement (Concrete) Grout
Coring Donth (ft.)	Concrete Bentonite Pellets
Casing Depth (ft.)	
	Clay-Sand Slurry Granular Bentonite
Was Well Annular Space Grouted? Yes No Unknown	
If Yes, To What Depth? Feet	Chipped Bentonite
(7)	No. Yards,
Sealing Material Used	From (Ft.) To (Ft.) Sacks Sealant Mix Ratio or Mud Weight
	or Volume
Comments	Surface \. O O.OOQ
Concrete Chipped Bentonite	110
CI IR + +	1.0 20 00.171/2
Chipped Denlovile	1.0 20.00.1 43
1 \	
793.0	
(8) Comments:	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
Sigma Environmental Services Inc	Date Received/Inspected District/County
Signature of Person Doing Work Date Signed of Person Doing Work	F - 1
	Reviewer/Inspector
Street or Route Telephone Number	
9555 5. Howell Are (414) 768-7144	Follow-up Necessary
City Cost 7 Code	

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 7-89

(1) GENERAL INFORMATION	(2) FACILITY NAME
Well/Drillhole/Borehole County	Original Well Owner (If Known)
Location GP-5 Milwarkee	SuperAmerica, Inc.
N E	Present\Well Owner
SW 1/4 of SE 1/4 of Sec. 24; T. 8 N; R. 21 M	Same
(If applicable)	Street or Route
Grid Location	City, State, Zip Code
ft. N. S., ft. E. W.	Milwarkee, WI
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No.
Milwaukee.	
Milwaukee	Reason For Abandonment
_	Investigative Baring
City, Village	Date of Abandonment
—	1-24-94
WELL INDIVITUAL E/DODELLOLE INCODMATION	1 201
WELL/DRILLHOLE/BOREHOLE INFORMATION	Las Death to Water (Con)
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) $5-10$
(Date) $\sqrt{-24-94}$	Pump & Piping Removed? Yes No No Not Applicable
	Liner(s) Removed? Yes No Not Applicable
Monitoring Well Construction Report Available?	Screen Removed? Yes No Not Applicable
☐ Water Well ☐ Yes ☐ No	Casing Left in Place? Yes No
Drillhole	If No, Explain
Borehole	Was Casing Cut Off Palaus Surface? Vas Na
	Was Casing Cut Off Below Surface? Yes No
Construction Type:	Did Sealing Material Rise to Surface? Yes No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes No
Other (Specify)	If Yes, Was Hole Retopped? Yes No
	(5) Required Method of Placing Sealing Material
Formation Type:	
Unconsolidated Formation Bedrock	Conductor Pipe-Gravity Conductor Pipe-Pumped
De Officonsoftdated Tormation	Dump Bailer Other (Explain)
Total Well Depth (ft.) Casing Diameter (ins.)	(6) Sealing Materials For monitoring wells and
(From groundsurface)	Neat Cement Grout monitoring well boreholes only
(,	Sand-Cement (Concrete) Grout
Casing Depth (ft.)	Concrete Bentonite Pellets
Casing Deput (it.)	
Was Well Annular Space Grouted? Yes No Unknown	1 = ' '
If Yes, To What Depth? Feet	Chipped Bentonite
(7)	No. Yards,
Sealing Material Used	From (Ft.) To (Ft.) Sacks Sealant Mix Ratio or Mud Weight
	or Volume
	Surface \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Concrele	Surface \.O O.W.9
Concrete Chipped Bentonite	1 0 0 0 171
Chined Boutonites	1.0 20.0 0.1 //3
1/	
(8) Comments:	
(*) Comments.	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
Sigma Environmental Services Tro	Date Received/Inspected District/County
Signature of Person Doing Work Date Signed	
	Reviewer/Inspector
Street or Route Telephone Number	1
	Follow to Nagarrant
9555 5. Howell Are (414) 768-7144 City, State, Zip Code	Follow-up Necessary
City, State, Lip Code	

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 7-89

(I) GENERAL INFORMATION	(2) FACILITY NAME
Well/Drillhole/Borehole County	Original Well Owner (If Known)
Location GP-6 Milwaukee	SuperAmerica, Inc.
. NE	Present/Well Owner
5W 1/4 of SE 1/4 of Sec. 24; T. 8 N; R. 21 1 W	Same
(If applicable)	Street or Route
Gov't Lot Grid Number	6512 N. Teutonia Ave.
Grid Location	City, State, Zip Code
ft. N. S., ft. E. W.	Milwarker, WI
Civil Town Name	Faculity Well No. and/or Name (If Applicable) WI Unique Well No.
	— Williams (2 ripplication) Wi Single Well No.
Milwaykee	Reason For Abandonment
Street Address of Well	
At Un	Date of Abandonment
City, Village	1 - 24 - 94
- Windhid myon	1-24-44
WELL/DRILLHOLE/BOREHOLE INFORMATION	In Death War (C.)
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 10-12
(Date) \ - \ \ - \ \ \ - \ \ \ \ \ \ \ \ \ \	Pump & Piping Removed? Yes No Not Applicable
	Liner(s) Removed? Yes No Not Applicable
Monitoring Well Construction Report Available?	Screen Removed? Yes No Not Applicable
☐ Water Well ☐ Yes ☐ No	Casing Left in Place? Yes No
Drillhole	If No, Explain
Borehole	
LA Borenote	Was Casing Cut Off Below Surface? Yes No
G	Did Sealing Material Rise to Surface? Yes No
Construction Type: Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes No
Other (Specify)	If Yes, Was Hole Retopped?
	(5) Required Method of Placing Sealing Material
Formation Type:	Conductor Pipe-Gravity Conductor Pipe-Pumped
Unconsolidated Formation Bedrock	Dump Bailer Other (Explain)
To a Wall Donal (6) O Cooling Diameter (ins.)	(6) Sealing Materials For monitoring wells and
Total Well Depth (ft.) Casing Diameter (ins.) \. 25	
(From groundsurface)	
	Sand-Cement (Concrete) Grout
Casing Depth (ft.)	Concrete Bentonite Pellets
	Clay-Sand Slurry Granular Bentonite
Was Well Annular Space Grouted? Yes No Unknown	, ,
If Yes, To What Depth? Feet	Chipped Bentonite
(7)	No. Yards,
(7) Sealing Material Used	From (Ft.) To (Ft.) Sacks Sealant Mix Ratio or Mud Weight
	or Volume
	Surface \. O.OO.
Concrete Chipped Bentonite	1.0 C+3
	110000000000000000000000000000000000000
Chipped Bentonite	1.0 20.0 0.1 //3
(8) Comments:	
	-
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
140 No.	Date Received/Inspected District/County
Signature of Person Doing Work Date: Signed of Person Doing Work	
	Reviewer/Inspector
Street or Route Telephone Number	(Ceste wei/Hispecial
9555 5. Howell Are (414) 768-7144 City, State, Zip Code	Follow-up Necessary
City, State, Zip Code	

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 7-89

(I) GENERAL INFORMATION	(2) FACILITY NAME
Well/Drillhole/Borehole County	Original Well Owner (If Known)
Location GP-7 Milwarkee	SuperAmerica, Inc.
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Present/Well Owner
SW 1/4 of SE 1/4 of Sec. 24; T. 8 N; R. 21 M	same
(If applicable)	Street or Route
	6512 N. Teutonia Ave.
Grid Location	City, State, Zip Code
ft. N. S., ft. E. W.	Milwarkee, WI
Civil Town Name	Faculity Well No. and/or Name (If Applicable) WI Unique Well No.
Milwaukee	
Street Address of Well	Reason For Abandonment
-	Investigative Barina
City, Village	Date of Abandonment
—	1-24-94
WELL/DRILLHOLE/BOREHOLE INFORMATION	1 2 1
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) \O -\Z
(3) Original Well/Drillhole/Borenole Colladuction Completed On	10
(Date) $\sqrt{-34-94}$	Pump & Piping Removed? Yes No Not Applicable
	Liner(s) Removed? Yes No Not Applicable
Monitoring Well Construction Report Available?	Screen Removed? Yes No Not Applicable
☐ Water Well ☐ Yes ☐ No	Casing Left in Place? Yes No
Drillhole	If No, Explain
Borehole	Was Casing Cut Off Below Surface? Yes No
Construction Type: Geoprober Dur	Did Sealing Material Rise to Surface? Yes No
Drilled Driven (Sandpoint) Dug	Did Material Settle After 24 Hours? Yes No
Other (Specify)	If Yes, Was Hole Retopped?
	(5) Required Method of Placing Sealing Material
Formation Type:	
Unconsolidated Formation Bedrock	Conductor Pipe-Gravity Conductor Pipe-Pumped
	Dump Bailer Other (Explain)
Total Well Depth (ft.) Casing Diameter (ins.) Casing Diameter (ins.)	(6) Sealing Materials For monitoring wells and
(From groundsurface)	☐ Neat Cement Grout monitoring well boreholes onl
	Sand-Cement (Concrete) Grout
Casing Depth (ft.)	Concrete Bentonite Pellets
	Clay-Sand Slurry Granular Bentonite
Was Well Annular Space Grouted? Yes No Unknown	
	Chipped Bentonite
If Yes, To What Depth? Feet	M. Curbben Bentourie
(7)	No. Yards,
Sealing Material Used	From (FL) To (FL) Sacks Sealant Mix Ratio or Mud Weight or Volume
Constants	Surface \ O.OOQ
CONCRETE	HT3
Concrete Chipped Bentonite	1.0 2000.1713
Chipped Denjonile	1.0 30.00.1 43
1/	
(8) Comments:	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
Signature of Person Doing Work Date Signed Doing WORK Date	Date Received/Inspected District/County
Street or Route Telephone Number	Reviewer/Inspector
And the control of th	
9555 5. Howell Are (414) 768-7144	Follow-up Necessary
City, State, Zip Code	· · · · · · · · · · · · · · · · · · ·

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 7-89

(I) GENERAL INFORMATION	(2) FACILITY NAME
Well/Drillhole/Borehole County	Original Well Owner (If Known)
Location GP-9 Milwarker	SuperAmerica, Inc.
. 	Present\Well Owner
5W 1/4 of 5E 1/4 of Sec. 24; T. 7 N; R. 2 N	Same
(If applicable)	Street or Route
Gov't Lot Grid Number	6512 N. Teutonia Ave.
Grid Location	City, State, Zip Code
ft. N. S., ft. E. W.	Milwarkee, WI
Civil Town Name	Faculty Well No. and/or Name (If Applicable) WI Unique Well No.
Milwaukee.	
Street Address of Well	Reason For Abandonment
	Investigative Baring
City, Village	Date of Abandonment
	1-24-94
WELL/DRILLHOLE/BOREHOLE INFORMATION	In Death to Ware (Feet)
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) 10-12
(Date) $\sqrt{-34-94}$	Pump & Piping Removed? Yes No Not Applicable
	Liner(s) Removed? Yes No Not Applicable
Monitoring Well Construction Report Available?	Screen Removed? Yes No Not Applicable
☐ Water Well Yes ☐ No	Casing Left in Place? Yes No
Drillhole	If No, Explain
Borehole	Was Carine Con Off D. L. Cartan D. Von D. V.
	Was Casing Cut Off Below Surface? Yes No
Construction Type:	Did Sealing Material Rise to Surface? Yes No
Diver (Salisposas)	Did Material Settle After 24 Hours? Yes No
Other (Specify)	If Yes, Was Hole Retopped?
	(5) Required Method of Placing Sealing Material
Formation Type:	Conductor Pipe-Gravity Conductor Pipe-Pumped
Unconsolidated Formation Bedrock	Dump Bailer Other (Explain)
Total Well Depth (ft.) Casing Diameter (ins.)	(6) Sealing Materials For monitoring wells and
(From groundsurface)	☐ Neat Cement Grout monitoring well boreholes only
	Sand-Cement (Concrete) Grout
Casing Depth (ft.)	Concrete Bentonite Pellets
	Clay-Sand Slurry Granular Bentonite
Was Well Annular Space Grouted? Yes No Unknown	
If Yes, To What Depth? Feet	Chipped Bentonite
(7)	No. Yards,
Sealing Material Used	From (Ft.) To (Ft.) Sacks Sealant Mix Ratio or Mud Weight
	or Volume
Concrete	Surface \. O O.OOQ
Concrete Chipped Bentonite	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Channel Bartonita	1.0 20.00.17
- CAMPON DEMICANTE	33.3
(8) Comments:	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
Signature of Person Doing Work Date Signed	Lea aggree
Bradd Seeger 2-23-94	Reviewer/Inspector
Street or Route 7 Telephone Number	
9555 5. Howell Are (414) 768-7144	Follow-up: Necessary
City, State, Zip Code	1

ATTACHMENT B

CHAIN OF CUSTODY FORMS AND SOIL LABORATORY ANALYSIS REPORTS



Horizon

CHAIN-OF-CUSTODY RECORD

	LOTIZOII															
	ories, Inc.		Road Business Center Bla	dg. IV 515	55 East /	River Rad, !	Suite #41	16 Fr	idley, N	MN. 55	421 T	el. (612)!	572-0	1425		
Client Sigma Environmental Services, In 9585 S. Howell Ave. Oak Creek, WI 53154								Analysis Requested							Horizon Labora	
955	55 S. How	rell Ave.	Oak Creek	IWI_	531	,54							_	,)		
I TOJECT IVALLIC							1 '				(, ,	Client Project No.	Page \ of \
SUF	perAmer	-ica 5+	ration #1	40HE	1	3 /	1	1 /						,)		Page Oi
Project Address	E512 N.	Teuton	ia Ave		-		1 '	1	1 1	1				,)		
	Wilvar	KeryV	<u>~</u>				ا≩ؿٰ۔ٰ	$\Lambda = I$	1 1	13				N	Chain-of-	-Custody
	or's Signature) Date	7#21	102				Sample Matrix: Soil(S), Sludge(SL), Aqueous(A)		1	الرا				of Containers	RECORD 1	Number
				· ·			1 2 4	10	10	13	1	1		S	1	
	add See		1- 34ECI	.4			c Mar	12	14	18	()				1	
Lab Sample	Field		ampling Site Identification	-		Collection	ndgr	1	5	10	1			Number	- Carriage	
Number	Sample ID		The state of the s			ate / Time		-	1	K			-	Ź	Container /	/ Comments
7173	4	GP-1/10.	-12, LID 4	B	الهوار	M Sins	15	X	X	X			_	2	1	
7174		GP-2/14.	1-16'/PID 7.	.0		13	13	ľ×!	区	X				2		
7175		GP-3/6.	-4'/PID 10	1-1		10	15	X	X	X				2		
7176		GP-4/6	-R'/PID]	5.5		1	151	X	X	X			1	2		
7177		GR-5/6-	-41/PID71	163		13:35	5	又	X	X				2		
7/78	<u> </u>	1,	2-14/PID 5	5185	1	1,145	15	X	区	X			1	7		-
7/79	1	GP-7/6-	-81/PD76			13,40		X	X	X			1	2	+	
7180	1	1	8-10, bid &		1/24/2		,5	文	文	文	\Box		7	2		
7181			whol Blan		-	1 Axx		X			1		1	1	İ	
- (()		1,,,,,,	W(10) - 10.	. 11				1					+		1	
1) Relinguished	ll d by: (Signature)		Date,	2.) Receive	ved by: (Signature)	ــِـــ		<u></u>		Date		+			
Brad	by Seeger		1/25/94	In	mix	2	2				1/2	5/94			Total Number of Co	ontainers \
Company:	Ó	<u> </u>	Time	Compan		>>					Pime	1		7	Laboratory Receivin	no Notes:
Signie	i Env.			1/10	अ धा	tua					L			1	-	ice,
3.) Relinquished	d by: (Signature)		Date/			aboratory: (S	Signatur	e)			Date	, .			opping Container:	, ce, °C
South	32.W		1/25/94	al	Mille	1 He	110					27/94				
Company:			7/ime / /	Compan			1				Time	220				yes / no
		***************************************			Orize	on Lan			The state of		10	120		If yes	es, Custody Seal No.:	
Disposed by: ((Signature)		Date	Time		Comme	ets:							Samı	nple(s) Condition:	



5155 East River Road, Suite #416

Minneapolis, MN. 55421

Tel. (612) 572-0425

Fax (612) 572-0441

LABORATORY REPORT

Client:

Sigma Environmental Services, Inc.

9555 South Howell Ave., Suite 100

Oak Creek, WI 53154

Date Sampled:

01/24/94

Date Received:

01/27/94

Date Analyzed:

01/28/94 - 02/01/94

Physical State:

Soil

Project:

Super America Station #4048

6512 N. Teutonia Ave.

Milwaukee, WI

Report Date:

02/02/94

Lab P.N.:

1045-5

Client P.N.:

2102

Quality Assurance / Quality Control Summary

Parameter (Method)	QC Type	Percent Recovery	Acceptable Range	Percent Reproducibility	Acceptable Range
MtBE (EPA 8020)	М	105	125 - 76	94	125 - 76
Benzene (EPA 8020)	М	108	127 - 76	97	127 - 76
Toluene (EPA 8020)	М	110	125 - 76	97	125 - 76
Ethylbenzene (EPA 8020)	М	110	125 - 76	97	125 - 76
m.p-Xylenes (EPA 8020)	М	114	125 - 76	97	125 - 76
o-Xylenes (EPA 8020)	М	109	125 - 76	97	125 - 76
1,3,5-Trimethylbenzene (EPA 8020)	M	112	125 - 76	97	125 - 76
1,2,4-Trimethylbenzene (EPA 8020)	M	110	125 - 76	97	125 - 76
GRO (Wis. DNR)	М	105	117 - 85	97	115 - 84

M = Matrix Spike / Matrix Spike Duplicate

CHAIN HUW

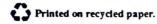
L = Laboratory Control Sample

Reviewed

Approved G. Morotre

Compounds were identified by column retention time and quantified by peak area of known standards using a Hewlett Packard ChemStation Data System. The samples were received by HORIZON LABORATORIES, INC. and accompanied by the Chain-of-Custody record. The Laboratory Report is the sole property of the client the whom it is addressed.

The Laboratory Results are only a part of the Laboratory Report.







5155 East River Road, Suite #416

Minneapolis, MN. 55421

Tel. (612) 572-0425

Fax (612) 572-0441

LABORATORY RESULTS

Client:

Sigma Environmental Services, Inc.

9555 South Howell Ave., Suite 100

Oak Creek, WI 53154

Date Sampled:

01/24/94

Date Analyzed: 01/28/94 - 02/01/94

Physical State:

Soil

Project:

Super America Station #4048

6512 N. Teutonia Ave.

Milwaukee, WI

Report Date:

02/02/94

Lab P.N.: Client P.N.: 1045-5 2102

Sample I.D.	MtBE mg/kg EPA 8020	Benzene mg/kg EPA 8020	Toluene mg/kg EPA 8020	Ethyl- benzene mg/kg EPA 8020	Total, Xylenes mg/kg EPA 8020	1,3,5-Tri- methylbenzene mg/kg EPA 8020	1,2,4-Tri- methylbenzene mg/kg EPA 8020	GRO mg/kg Wis. DNR	% Moisture
GP-1/10-12'	<1.0	<0.2	<0.5	<0.2	<0.8	<0.8	<0.8	<5.0	8.4
GP-2/14-16'	<1.0	<0.2	<0.5	<0.2	0.84	<0.8	<0.8	<5.0	9.6
GP-3/6-8'	<1.0	<0.2	<0.5	<0.2	<0.8	<0.8	<0.8	<5.0	16
GP-4/6-8'	<1.0	<0.2	<0.5	<0.2	<0.8	<0.8	<0.8	13	9.5
GP-5/6-8'	<1.0	1.9	6.8	20	100	16	46	760	12
GP-6/12-14'	2.8	2.3	20	11	60	13	37	520	11
GP-7/6-8'	3.5	3.4	19	9.8	48	8.6	23	480	11
GP-8/8-10'	<1.0	1.8	1.7	0.66	3.3	<0.8	2.0	23	22
Methanol Blank	<1.0	<0.2	<0.5	<0.2	<0.8	<0.8	<0.8	<5.0	
MDL, mg/kg	1.0	0.2	0.5	0.2	0.8	0.8	0.8	5.0	

MDL; Method Detection Limit

GRO; Gasoline Range Organics

MtBE; Methyl tert-Butyl Ether

All results are in mg/kg which is equal to parts-per-million (ppm) and are based on a "dry weight" basis.

The Laboratory Results are only a part of the Laboratory Report.





LABORATORY ANALYSIS REPORT

DATE:	February 17, 1994	PAGE:	1 Of 1
CLIENT:	Horizon Labs, Inc. 5155 E. River Rd., Suite 416 Fridley, MN 55421	PROJECT NO.: COLLECTION DATE: COLLECTED BY: RECEIVED DATE:	013194-200262 1/24/94 Client 1/31/94
CONTACT:	Gerard Herro	PROJECT DESCP:	1045.5

	<i>LEAD</i> (<i>EPA 6010</i>)	
	Units=mg/L	<i>ANALYSIS</i>
SAMPLE #, DESCP.	MDL = 5.0	<u>DATE</u>
9401003098,GP 1/10-12'/PID 1.9	7.3	2/11/94
9401003099, GP 2/14-16'/PID 7.0	12	
9401003100, GP 3/6-8'/PID 10.1	8.9	
9401003101, GP 4/6-8'/PID 75.5	6.0	
9401003102, GP 5/6-8'/PID 7163	6.7	
9401003103, GP 6/12-14'/PID 5185	6.8	
9401003104, GP 7/6-8'/PID 7674	8.1	
9401003105, GP 8/8-10'/PID 8805	9.2	

ND means Not Detected
MDL means Method Detection Limit
mg/L means Milligrams Per Liter which is equivalent to Parts Per Million (ppm)

This report has been reviewed by me for technical accuracy and completeness. The analyses were performed using EPA or other approved methodologies and the results were reported on an "as received" basis unless otherwise noted. Please contact me if you have any questions or comments regarding this report. Spectrum Labs, Inc. appreciates the opportunity to provide this analytical service for you.

Report Submitted By,

Thomas L. Halverson Laboratory Manager

TLH:lje hl048-01

ATTACHMENT C

FIELD GAS CHROMATOGRAPH ANALYSIS REPORT



Geoprobe
Drilling
Tank Removal
Site Remediation

February 7, 1993

Mr. Tim Wimmer SIGMA ENVIRONMENTAL SERVICES, INC. 9555 South Howell Avenue Oak Creek. WI 53154

Dear Tim.

I have enclosed the lab results from the site investigations conducted at seven of the Super America sites done to date. The objective of the investigations was to determine possible contamination from underground storage tanks on the property. The primary contaminants screened for during the investigation were benzene, toluene, ethylbenzene, and the isomers of xylene (BTEX). The investigation was carried out using Briohn Environmental Contractors Geoprobe van equipped with a Geoprobe soil probing unit. All samples were analyzed using the van's on board gas chromatograph (GC) laboratory.

Sampling Methods

Eight soil samples were collected for in field analysis from eight different borings on each site using Briohn Environmental's Geoprobe. Soil samples were obtained for in field analysis using a two foot thin wall soil sampler. The soil sampler was driven to the desired sampling depth using the hydraulic ram and hammer on the Geoprobe. Once the sampler reached the

desired depth, the sampler was opened by removing the stop pin in the sampler. The drive point piston was then free to move up the sampler. The sampler was then driven an additional two feet to push a sample into the sampler. The soil sample was preserved in a 1 inch by two foot acetate liner inside the sampler. The sampler was decontaminated with an Alconox solution and a new liner was installed before each sample was taken.

analysis. The samples were collected by lowering a three foot slotted steel well point down the probe hole. Three eighths inch polyethylene tubing was the lowered down the interior of the probe rods and water was pumped from the ground using an AccuWell 150 peristaltic pump. The pump was decontaminated using an Alconox solution in between each boring and new tubing was used prior to each sample.

Analytical Methods

The samples were field screened for BTEX using the GC laboratory in the Geoprobe van. The GC is an HP 5890 and is equipped with a J & W Scientific DB-624 Megabore capillary column specifically designed for analyzing volatile organic compounds (VCC's). The GC is also equipped with an H-Nu photoionization detector (PID), an HP flame ionization detector (FID), and an HP electron capture detector (ECD). Samples were analyzed using a wet headspace method. First 5 g (+/-0.1g) of soil were added to 5 ml of methanoi in a 20 ml volatile organic analysis (VOA) sample vial. The contents of the vial were then shaken vigorously for several minutes so that all clumps of soil were broken up, and the volatiles in the soil were completely dissolved

in the methanol entract. The mixture was allowed to settle for several minutes and then a portion of the methanol entract was drawn off with a syringe and added to a sterilized 40 ml VOA vial containing 10 ml of deionized distilled water. The water and methanol extract mixture was then placed in a block heater and heated to 90°C for a minimum of 15 minutes to drive off the volatiles. A 500 ul sample was then drawn out of the headspace in the vial through the teflon septum in the vial using a 1 ml gastight syringe. The sample was immediately injected directly into the GC through the GC's direct injection packed inlet system, and sampling was started. Groundwater samples were also analyzed using a wet headspace technique. Twenty milliliters of sample were added to a sterilized 40 ml VOA vial. The samples were then heated and analyzed the same manner as the soil samples. Each soil and groundwater sample were analyzed using the PID detector in the GC.

Results

The results from each of the seven stations done to date can be seen in the attached tables 1-7. Each table is labeled with the station number and address for reference. It should be noted that at a couple different stations extremely high concentrations of BTEX were encountered in the groundwater. This resulted in concentrations which caused the PID detector to go off-scale. In some cases the peaks could be identified so the concentrations were reported as greater than the value stated in the table. The groundwater samples from borings 6 and 8 at the station on 6512 N. Teutonia in Milwaukee were so hot that peaks could not even be estimated. The analysts field notes. Indicated the sample smelled like free product.

If you have any questions or would like the raw chromatographs please feel free to call me at $(\pm 1\pm)653-8265$.

Regards -

BRIOHN ENVIRONMENTAL CONTRACTORS

Eric S. Mueller

Euc & Muelly



BTEX ANALYSIS RESULTS FROM SUPER AMERICA #4048 AT 6512 N. TEUTONIA, MILWAUKEE, WI

RESULTS FROM THE PID DETECTOR

BORING#	DEPTH	B (PPB)	T (PPB)	EB (PPB)	MPX (PPB)	OX (PPB)	BTEX(PPB)
1	16-18'	ND	7	12	100	14	133
2	8-10'	ND	ND	ND	14	ND	14
2	GW	<1	ND	ND	11	ND	1
3	10885	ND	ND	ND	6	ND	6
4	10-12'	ND	ND	ND	ND	ND	ND
5	12-14'	ND	ND	ND	ND	ND	ND
6	18-20'	42	109	9	164	5	329
6	GW	OS	os	>710	os	os	>>HOT
7	18-20'	7114	2829	3413	5786	5350	24492
8	12-14'	63	20	16	48	13	160
8	GW	OS	os	OS	OS	OS	>>>>HOT

B-BENZENE

ND - NOT DETECTED

T-TOLUENE

OS - OFF SCALE

EB - ETHYLBENZENE

GW - GROUNDWATER

MPX - META, PARAXYLENE

PPB - PARTS PER BILLION

OX - ORTHOXYLENE

NOTE: THE GW SAMPLES FROM BORINGS 6 AND 8 HAD CONCENTRATIONS WHICH CAUSED THE PID DETECTOR TO GO OFF SCALE. THE CONCENTRATIONS WERE SO HIGH THEY CAN'T EVEN BE ESTIMATED.