Wisconsin
Department of Commerce

P. O. Box 530
Park Falls, Wisconsin 54552
(715) 762-5557
FAX (715) 762-0054

Tommy G. Thompson, Governor
Philip Edw. Albert, Acting Secretary

COPY

December 1, 1998

Mr. Larry Husby
Heartland Aviation
3800 Starr Ave.
Eau Claire, WI 54703

Subject: **Closure of Case #54703-0598-00 / BRRTS # 03-09-174629**
Heartland Aviation

Dear Mr. Husby:

On November 24, 1998 the above site was reviewed for closure by the Site Review staff of the PECFA Bureau. Because the site involved only soil contamination, without a threat to groundwater, all issues relating to this site are administered by the staff within the Department of Commerce's PECFA Bureau. Using the standards established in NR 700, the Department has determined that this site has been remediated to a level protective of the environment and human health. The Department considers this site to meet environmental standards, and no further action is necessary.

This is based upon the information provided to us by your consultant. If, in the future, site conditions indicate that any contamination that might remain poses a threat, the need for further remediation would be determined and required if necessary.

Be sure to include a copy of this letter with your PECFA claim package, if your site is eligible for reimbursement. This letter is to take the place of the Form 4-B.

Thank you for your efforts in the protection of the environment. If you have any additional questions, please call me at 715-762-5557.

Sincerely,

Shanna L. Laube, P.G.
Hydrogeologist
PECFA Program

cc: SEH«Company»

421 FRENETTE DRIVE, CHIPPEWA FALLS, WI 54729 715 720-6200 800 472-5881 FAX 715 720-6300
ARCHITECTURE • ENGINEERING • ENVIRONMENTAL • TRANSPORTATION

November 10, 1998

RE: Heartland Aviation
Closure Information
WDNR No. 03-09-174629
PECFA No. 54703-0598-00
SEH No. HEARL9801.00 14.00

Shanna Laube, P.G.
Hydrogeologist
PECFA Program
P.O. Box 530
Park Falls, WI 54552

Dear Ms. Laube:

In response to your November 2, 1998 letter, SEH, on behalf of Heartland Aviation, is providing the following information.

1. No groundwater monitoring wells were installed at the Heartland Aviation site for the site investigation. The site is supplied by municipal water from the City of Eau Claire.

2. Based on the available data, we estimate that there is a maximum of approximately 900 cubic yards of soil with residual concentrations of petroleum constituents at the Heartland Aviation site. However, these residual soil concentrations fall below existing soil standards that are designed to be protective of contamination migrating to the groundwater. In addition, modeling of soil contamination migration that SEH has performed at similar sites suggest that the existing standards are very conservative (i.e. concentrations can be higher and still not threaten groundwater). Therefore, in our professional opinion, soil contamination at the site will not present a threat to groundwater at the site in the future.

Please do not hesitate to call if you have any additional questions.

Sincerely,

Glenn P. Bruxvoort, P.E.
Sr. Project Manager

GPB/asl/KEA
c: Larry Husby, Heartland Aviation
P:\proj\hearl\9801\ltr\lauben10.wpd

Wisconsin
Department of Commerce

P. O. Box 530
Park Falls, Wisconsin 54552
(715) 762-5557
FAX (715) 762-0054

Tommy G. Thompson, Governor
Philip Edw. Albert, Acting Secretary

November 2, 1998

Mr. Larry Husby
Heartland Aviation
3800 Starr Ave.
Eau Claire, WI 54703

Subject: **Closure Review of Case #54703-0598-00 / BRRTS # 03-09-174629**
Heartland Aviation

Dear Mr. Husby:

On October 28, 1998 the above site was reviewed for closure by the Site Review staff of the PECFA Bureau. Because the site involved only soil contamination, without a threat to groundwater, all issues relating to this site are administered by the staff within the Department of Commerce's PECFA Bureau. Using the standards established in NR 700, the Department has determined that this site has been remediated to a level protective of the environment and human health.

Prior to closure being granted please have your consultant provide the following information, in writing:

1. Is there a well on site? If so please have it sampled for VOC's.
2. Have your consultant estimate how many yards or tons of soil remain on site and give their professional opinion as to whether of not they feel this contamination will be a threat to groundwater in the future.

Once this information is received the site will be reviewed again for closure.

Thank you for your efforts in the protection of the environment. If you have any additional questions, please call me at 715-762-5557.

Sincerely,

Shanna L. Laube, P.G.
Hydrogeologist
PECFA Program

cc: SEE, Glenn Bruxvoort«Company»

COMMERCE
CASE SUMMARY AND CLOSE OUT

Personal information you provide may be used for secondary purposes [Privacy Act, s. 15.04(1)(M)].

SEE INSTRUCTIONS

RECEIVED
OCT 2 0 1998
ERS DIVISION

Date Received (office use only)

A. **COMMERCE NUMBER:** 5 4 7 0 3 - 0 5 9 8 - 0 0

DNR BRRTS NUMBER (optional): 0 3 - 0 9 - 1 7 4 6 2 9

B. Responsible Party or Owner Name	C. Responsible Party or Owner Phone Number
Heartland Aviation	715-835-3181
D. Responsible Party or Owner Address, City, State and Zip Code	**E. Remedial Action Site Name, Address, City and Zip Code**
3800 Starr Avenue Eau Claire, WI 54703	Heartland Aviation 3800 Starr Avenue Eau Claire, WI 54703

Enforcement Actions or Permits Closed Out? N/A Y _____ N Contaminant Type(s): Diesel Fuel/Gasoline

Quantity Released: Unknown Potential Receptors: Soil

Status of water supply wells within 1200 feet of the site? None within 1200 feet of site

SOIL

Soil Type Sand and gravel (SP) Depth to Bedrock 70-100 feet bgs feet

Site Specific Soil Standards (NR 720.19)? ___ Y XX N, Final Confirmation Sampling Method: Soil Sampling from HSA Borings

Remedial Action Taken: None Were Soils Excavated? ___ Y XX N Quantity: N/A Tons

Treatment/Disposal Method: None Treatment/Disposal Location: N/A

GROUNDWATER (if applicable)

Groundwater Encountered? ___ Y X N Monitoring Well(s) Installed? ___ Y X N

Depth to Groundwater & Flow Direction: est. 70' b gs/W-SW Perched Water? ___ Y X N Depth: N/A feet

Preventive Action Limit exceeded? ___ Y X N ___ (If yes, location) _____

Enforcement Standard exceeded? ___ Y X N ___ (If yes, location) _____

Environmental Consultant Name and Phone Number	Environmental Consultant Address, City, State and Zip Code
Glenn P. Bruxvoort Short, Elliott, Hendrickson, Inc. 715-720-6230	421 Frenette Drive Chippewa Falls, WI 54729

, the environmental consultant certify with my signature that the information presented is true and accurate and recommend that no further action be required at this site.

Consultant Signature Glenn P Bruxvoort Date Signed 10-15-98

ERS-10XXX (2/97
I:\work\word\close\close2.doc

CASE SUMMARY AND CLOSE-OUT FORM INSTRUCTIONS

The Close Out Form and attachments should provide sufficient information to determine closure.

Item:

A. - Enter the eleven digit Commerce number. Please use this number on any correspondence with the department. The DNR BRRTS# is optional.

B. - Enter the responsible party or owner name.

C. - Enter the responsible party or owner phone number.

D. - Enter the responsible party or owner mailing address, city, state and zip code.

E. - Enter the remedial action site name, address (PO Box # not accepted), city and zip code.

The following items should be included as attachments to the form

- Justification for Closure
- Background Information
  - Site location map (USGS topographic map, 1:24,000 scale or plat map).
  - Site layout map depicting; buildings, property boundaries, roads, utilities, potential receptors (water supply wells and surface water features), and land uses on adjacent properties.
  - Site layout map depicting; source location(s), pre and post remediation levels, sample locations and extent of excavation.
  - A description of the sequence of activities.
  - Description of remedial action taken.
  - List of previous reports.
- Remedial Results
  - Table(s) depicting analytical soil results (pre and post remediation). Clearly indicate the units of measurement.
  - Table(s) depicting analytical groundwater results (if applicable).
  - Chain of custody forms.
  - Geologic cross section depicting the stratigraphy of the site.
- Site Specific Soil Standards Supporting Documentation

- *Do not* submit the Close Out Form and attachments in a bound report.
- *Do not* submit previously submitted reports as attachments.
- Submit only one copy.
- **Forms that are not completed correctly will be returned.**

Heartland Aviation

Site Investigation/Closure Request

Eau Claire, Wisconsin

SEH No. HEARL9801.00

WDNR BRRTS Case #03-09-174629
PECFA Claim #54703-0598-00

October 1998

+ is there a well on site? If so sample
+ give me an estimate of how much soil cont. remains and give me your opinion that it will or will not impact gw in the future. With these soil types I feel we may have a problem in the future but you know more about the site than I do.

421 FRENETTE DRIVE, CHIPPEWA FALLS, WI 54729 715 720-6200 800 472-5881 FAX 715 720-6300
ARCHITECTURE • ENGINEERING • ENVIRONMENTAL • TRANSPORTATION

October 14, 1998

RE: Heartland Aviation
Site Investigation/Closure Request
Eau Claire, Wisconsin
WDNR BRRTS Case #03-09-174629
PECFA Claim #54703-0598-00
SEH No. HEARL9801.00

Ms. Shanna Laube
Wisconsin Department of Commerce
214 North 4th Avenue, P.O. Box 530
Park Falls, WI 54552-0530

Dear Ms. Laube:

On behalf of Heartland Aviation, Short Elliott Hendrickson Inc. (SEH) is submitting a copy of the enclosed report entitled "Site Investigation/Closure Request – Heartland Aviation," dated October 1998. This report is being submitted to the Wisconsin Department of Commerce (WDCOMM) to document a Site Investigation (SI) at the Heartland Aviation site. The SI was completed to define the degree and extent of petroleum contamination associated with former underground petroleum storage tanks at the site. This report details a subsurface investigation initiated by SEH in May 1998.

SEH respectfully requests that WDCOMM review this report along with the attached case summary and closeout form. If you have any questions regarding the report content, please feel free to contact us.

Sincerely,

Glenn P. Bruxvoort, P.E.
Senior Project Manager

KEA/ls/GPB
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Distribution List

No. of Copies	Sent to
1	Shanna Laube Wisconsin Department of Commerce 214 North 4th Avenue, P.O. Box 530 Park Falls, WI 54552-0530
2	Larry Husby Heartland Aviation 3800 Starr Avenue Eau Claire, WI 54703

Site Investigation/Closure Request

Heartland Aviation
Eau Claire, Wisconsin

Prepared for:
Heartland Aviation
Eau Claire, Wisconsin

Prepared by:
Short Elliott Hendrickson Inc.
421 Frenette Drive
Eau Claire, WI 54729
(715) 720-6200

Site Investigation/Closure Request

Heartland Aviation
Eau Claire, Wisconsin

Prepared for:
Heartland Aviation
Eau Claire, Wisconsin

Prepared by:
Short Elliott Hendrickson Inc.
421 Frenette Drive
Eau Claire, WI 54729
(715) 720-6200

I, Kevin E. Accola, hereby certify that I am a scientist as that term is defined in s. NR 712.03(3), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Kevin E. Accola, CHMM — Date
Environmental Scientist

10-15-98

I, Glenn P. Bruxvoort, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Glenn P. Bruxvoort, P.E. — P.E. Number — Date
Senior Project Manager

27408

10-15-98

Justification for Closure

An underground storage tank (UST) system consisting of three USTs and pump islands was removed from the Heartland Aviation site in October 1997. Soil sampling conducted by Advent Environmental Services (AES) as part of the tank closure site assessment indicated site soils near the northernmost pump island had been impacted by a petroleum release. A soil sample near the northern pump island contained 93 mg/kg of diesel range organics (DRO). AES advanced a hollow stem auger soil boring as part of an expanded site assessment in the area of concern near the northernmost pump island. Soil samples from the 8-10' and 13-15' depth interval of the HSA boring contained 1,800 mg/kg and 3,000 mg/kg DRO and 2,200 mg/kg and 2,300 mg/kg gasoline range organics (GRO), respectively.

On May 14, 1998, Short Elliott Hendrickson Inc. (SEH) provided oversight during the completion of four HSA borings as part of a Site Investigation (SI) near the northern pump island to define the degree and extent of contamination. Two soil samples were collected from each HSA boring for laboratory analysis. A sample collected from a boring approximately 15' south of the northern pump island (B-11) contained concentrations of 900 mg/kg DRO and 170 mg/kg GRO at the 14-16' bgs interval. However, analytical results of a soil sample collected from the same interval for volatile organic compound (VOC) analysis indicated no exceedances of the s. NR 720.09 Residual Contaminant Levels (RCLs) specified in Table 1. A sample from the 24-26' bgs interval in boring B-11 contained 5.1 mg/kg DRO and no detectable concentration of GRO or petroleum volatile organic compounds (PVOCs). Samples collected from the other three borings did not contain any contaminants in excess of established RCLs listed in s. NR 720.09 Table 1.

Based on the sandy nature of site soils, petroleum contamination at this site is expected to migrate vertically. Analytical results indicate the contamination remaining onsite is limited to an area near the northern pump island within 20' bgs and at concentrations below established RCLs. Groundwater in the area of the Chippewa Valley Regional Airport (CVRA) has been measured at a depth of approximately 70' bgs and is not expected to be impacted. The area of contamination is paved with asphalt and within the fenced boundary of the CVRA which restricts public access to the area. Based on the preceding information, SEH recommends that the Heartland Aviation site be considered for case closure.

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Site Investigation/Closure Request

Heartland Aviation

Eau Claire, Wisconsin

1.0 Introduction

Short Elliott Hendrickson Inc. (SEH) has completed a ch. NR 716 Wisconsin Administrative Code Site Investigation (SI) to determine the degree and extent of petroleum contamination at the Heartland Aviation site located in Eau Claire, Wisconsin. Petroleum contamination was the result of releases from former underground storage tanks (USTs) located at the site. The SI was completed in response to the Wisconsin Department of Natural Resources (WDNR) request for an investigation at the site. This report documents the findings of the SI.

1.1 Purpose

The purpose of this SI was to:

- Determine the degree and extent of petroleum contaminated soil identified during tank removal activities.
- Determine the degree and extent of groundwater contamination if groundwater was found to be impacted;
- Identify potential sources and receptors; and,
- Provide sufficient information to recommend further investigation, remedial action options, or case closure.

1.2 Scope of Work

The scope of work for this SI included the following activities:

- Collection of soil samples from four hollow stem auger (HSA) soil borings for field headspace and laboratory analysis;
- Classification of soil samples (color, grain size, and staining);

- Preparation of this report describing the SI and the recommendation for case closure.

2.0 Background Information

The subject site is leased by Heartland Aviation from the Chippewa Valley Regional Airport (CVRA) and is located at 3800 Starr Avenue in the City of Eau Claire. The property is situated in the SE 1/4 of the NW 1/4 of Section 33, T28N, R9W, Chippewa County, Wisconsin as shown on Figure 1, "Site Location."

An underground storage tank (UST) system consisting of three USTs and pump islands was removed from the site in October 1997. The approximate locations of the former USTs and pump islands and the general site layout are shown on Figure 2, "Site Plan." Soil sampling conducted by Advent Environmental Services (AES) as part of the tank removal site assessment indicated site soils near the northernmost pump island had been impacted by a petroleum release. A sample near the northern pump island contained 93 mg/kg of diesel range organics (DRO). AES also advanced a hollow stem auger (HSA) soil boring as part of an expanded site assessment in the area of concern. The approximate location of the HSA boring (B-1) is indicated on Figure 2. Soil samples were collected from the 8-10' and 13-15' depth intervals in B-1 and analytical results indicated 1,800 mg/kg and 3,000 mg/kg DRO and 2,200 mg/kg and 2,300 mg/kg gasoline range organics (GRO), respectively. Soil contamination was shown to increase with depth.

SEH initiated the SI as Heartland Aviation in May 1998. Field work for the SI included drilling four HSA soil borings. The SI was conducted in accordance with the SI work plan prepared by SEH and dated April 1998. Results of the SI are included in this report.

3.0 Geology, Hydrogeology, and Topography

The Hydrogeologic Atlas of the Chippewa River basin (H. L. Young and S. M. Hindall, 1972), the Bedrock Geology Map of Wisconsin (B. A. Brown, 1988) and boring log information from the WDNR were utilized to determine the geologic and hydrogeologic characteristics of the Heartland Aviation site.

Based on information included in the Remedial Investigation/Feasibility Study report of NPI, the CVRA area is underlain by approximately 104 feet of unconsolidated sands and gravels. Depth to bedrock is approximately 70 to 104 feet below ground surface (bgs) and depth to groundwater is approximately 71 feet bgs based on previous investigations at the CVRA. Groundwater appears to flow to the

west/southwest towards the City of Eau Claire municipal well field and the Chippewa River.

Soils encountered in HSA soil borings were described as fine to medium grained sands and gravel. Bedrock and groundwater were not encountered in soil borings that extended to a maximum depth of 28 feet below grade.

4.0 Potential Receptors of Contamination

Two potential receptors of contamination are the aquifer underlying the site and the Chippewa River located west of the contamination source. Based on results of the SI, petroleum contamination is present in site soils to a depth of approximately 28 feet below grade. These results suggest that the aquifer at the site has not been impacted by petroleum contamination associated with the former USTs at Heartland Aviation.

5.0 Site Investigation

5.1 Subsurface Investigation

SEH conducted the field work for the SI in May 1998. The work consisted of installing four HSA soil borings (B-10, B-11, B-12, and B-13). Soil samples were collected at continuous intervals in the HSA borings. Soil samples were screened with a Foxboro Toxic Vapor Analyzer (TVA) 1000 that has simultaneous flame ionization detector (FID) and photoionization detector (PID) capabilities. Standard procedures for meter calibration are included in Appendix A, "Standard Operating Procedures."

5.2 Location of Soil Borings

The HSA soil borings were placed to determine the degree and extent of soil contamination resulting from petroleum releases from the former USTs and associated pumps and piping at the site. Soil boring locations are shown on Figure 3, "Soil Boring Locations." Soil boring logs are included in Appendix B, "Soil Boring Logs and Abandonment Forms." The boreholes were abandoned in accordance with ch. NR 141 and the abandonment forms are included in Appendix B.

5.3 Laboratory Analysis

Soil analysis for the SI was performed according to applicable WDNR standards at the time of sample collection. Maxim Technologies, Inc. (Maxim) of Wausau, Wisconsin completed soil analyses for the SI. Standard chain of custody documentation was maintained during shipping and receiving of samples. Soil analytical reports are included in Appendix C, "Laboratory Analytical Reports."

6.0 Results of Site Investigation

6.1 Field Headspace Results

The FID/PID results of headspace analysis conducted on soil samples were used primarily to determine which soil samples to submit for laboratory confirmation and to correlate results within a boring. The results indicate that detectable concentrations of organic vapors were present in the headspace of samples collected from borings B-10 and B-11. Headspace results are shown on soil boring logs found in Appendix B.

6.2 Soil Analytical Results

Laboratory analytical results from soil sampling were used to define the horizontal and vertical extent of soil contamination. Shallow soil samples collected from HSA borings B-10 and B-11 were analyzed for GRO, DRO, VOCs, Lead, and PAHs. Other selected soil samples were analyzed for GRO, DRO, and PVOCs. As indicated in s. NR 720.09(4)(a), the generic Residual Contaminant Levels (RCLs) for GRO and DRO at the Heartland Aviation site are 100 mg/kg. The RCLs for GRO and DRO were exceeded in the soil sample collected from B-11 at 14-16 feet below grade, but not the B-11 sample from 24-26 feet. In addition, results of the VOC analysis conducted on the soil sample from the 14-16 foot interval in B-11 indicated no exceedances of the s. NR 720.09 Table 1 values. No RCL exceedances were noted in other soil samples submitted for laboratory analysis from borings B-10, B-11, B-12, and B-13. These results are included in Table 1, "Soil Analytical Results" and the corresponding laboratory report is included in Appendix C.

7.0 Discussions

SEH successfully completed a SI at the Heartland Aviation site to define the degree and extent of soil contamination associated with petroleum releases from former USTs and piping/pumping systems. Potential receptors of contamination have been identified, and there is not a significant threat to the public or the environment at this time. No exceedances of the RCLs listed in s. NR 720.09 Table 1 were noted in soil samples analyzed for this SI.

Based on the results of the SI, case closure without restriction is recommended for this site. A case closure form has been completed and included as a separate document.

8.0 Standard of Care

The conclusions and recommendations contained in this report were arrived at in accordance with generally accepted professional engineering practice at this time and location. Other than this, no warranty is implied or intended.

KEA/ls/GPB

9.0 References

Brown, B. A., 1988, "Bedrock Geology of Wisconsin - West Cental Sheet," Wisconsin Geological and Natural History Survey Regional Map 88-7, Scale 1:250,000.

Young, H. L., and S. M. Hindall, 1972, "Water Resources of Wisconsin Chippewa River Basin," University of Wisconsin - Extension, Geologic and Natural History Survey, Hydrologic Investigations Atlas HA-386.

Tables

Table 1 – Soil Analytical Results

Table 1
Soil Analytical Results

Analytical Parameters	ch. NR 720 Soil Cleanup Standards	Laboratory/Sample Name/Depth (ft)							
		B-10-4	B-10-13	B-11-5	B-11-10	B-12-4	B-12-7	B-13-4	B-13-7
		8-10	26-28	14-16	24-26	12-14	18-20	12-14	18-20
GRO (mg/kg)	100	7.6	BDL	**170**	BDL	BDL	BDL	1.0	BDL
DRO (mg/kg)	100	34	2.4	**900**	5.1	2.1	2.7	3.2	2.6
PVOCs (μg/kg)									
Benzene	5.5	--	BDL	--	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	2,900	--	BDL	--	BDL	BDL	BDL	BDL	BDL
Methyl-tert-butyl-ether	NSE	--	BDL	--	BDL	BDL	BDL	BDL	BDL
Toluene	1,500	--	BDL	--	BDL	BDL	BDL	BDL	BDL
1,2,4-Trimethylbenzene	NSE	--	BDL	--	BDL	BDL	BDL	BDL	BDL
1,3,5-Trimethylbenzene	NSE	--	BDL	--	BDL	BDL	BDL	BDL	BDL
Total Xylenes	4,100	--	BDL	--	BDL	BDL	BDL	BDL	BDL
PAHs[1] (mg/kg)									
Anthracene	3,000[3]	BDL	--	0.027	--	--	--	--	--
Phenanthrene	1.8[3]	BDL	--	0.011	--	--	--	--	--
VOCs[2] (μg/kg)									
Benzene	5.5	BDL	--	BDL	--	--	--	--	--
n-Butylbenzene	NSE	120	--	1,400	--	--	--	--	--
sec-Butylbenzene	NSE	41	--	790	--	--	--	--	--
Chloroform	NSE	38	--	BDL	--	--	--	--	--
1,4-Dichlorobenzene	NSE	30	--	31	--	--	--	--	--
Ethylbenzene	2,900	BDL	--	BDL	--	--	--	--	--
p-Isopropyltoluene	NSE	72	--	920	--	--	--	--	--
Naphthalene	NSE	320	--	9,100	--	--	--	--	--
Toluene	1,500	26	--	220	--	--	--	--	--
1,2,4-Trimethylbenzene	NSE	23	--	270	--	--	--	--	--
1,3,5-Trimethylbenzene	NSE	30	--	BDL	--	--	--	--	--
Total Xylenes	4,100	BDL	--	BDL	--	--	--	--	--
Lead (mg/kg)	50	BDL	--	BDL	--	--	--	--	--

BDL = Below laboratory detection limits
-- = Not analyzed for this parameter
NSE = No standard established
[1] = PAH list is not complete; PAHs not listed are BDL
[2] = VOC list is not complete; VOCs not listed are BDL
[3] = PAH cleanup standards are only proposed and not codified
bold = Concentration exceeds ch. NR 720 Wis. Adm. Code Soil Cleanup Standard
Compiled by: KEA Checked by: GPB

Figures

REPRODUCED FROM

USGS EAU CLAIRE EAST QUADRANGLE

WISCONSIN – EAU CLAIRE CO. 7.5 MINUTE SERIES

1972 PHOTOREVISED 1982

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SCALE IN FEET

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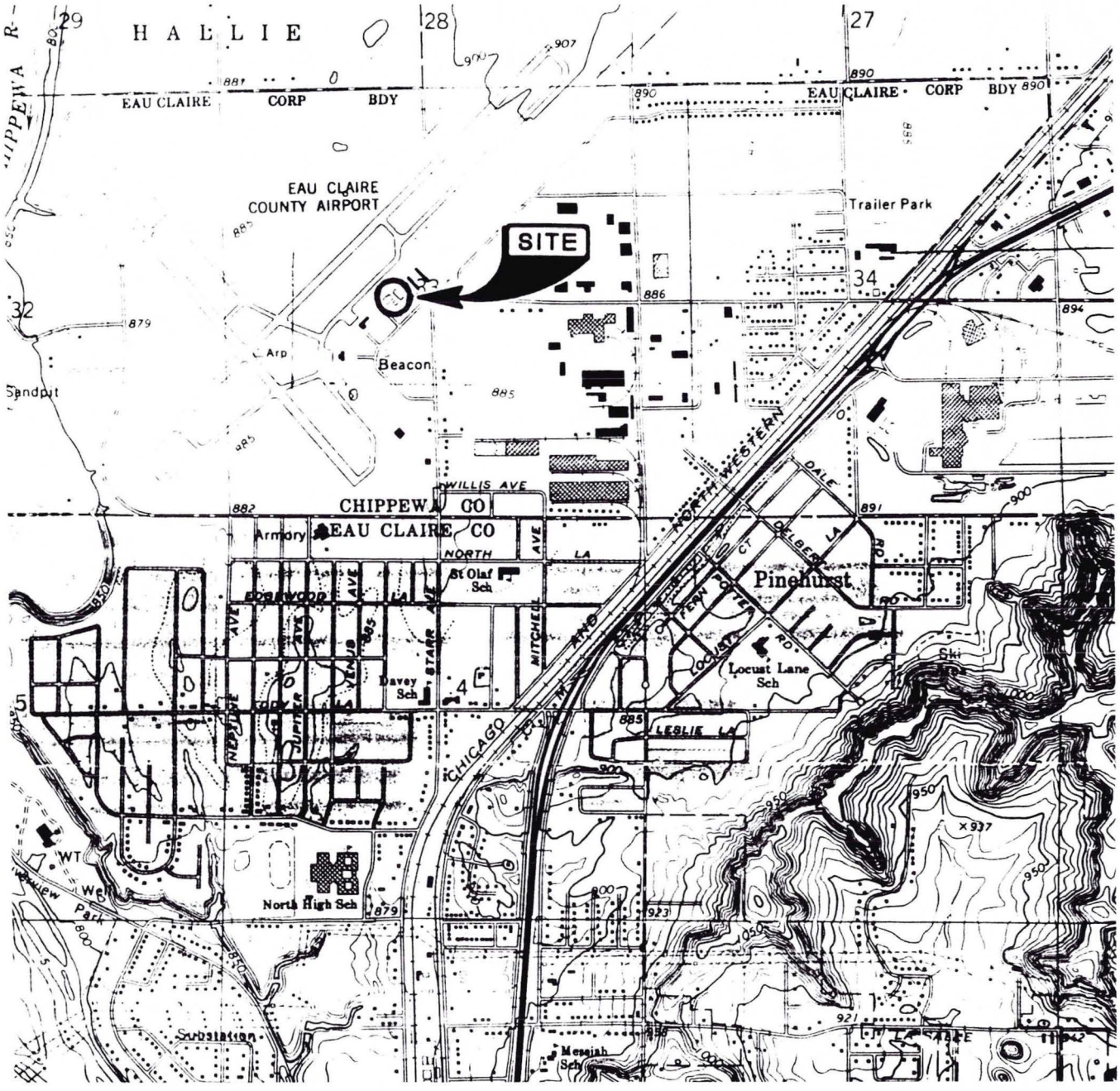


NO.	DATE	ISSUE/REVISIONS	DRAWN BY		DESIGN		FIELD REVIEW		QC CHECK	
1	08/31/98	SITE INVESTIGATION	JLE	08/98	KEA	08/98			GRS	10198

SEH

HEARTLAND AVIATION
SITE INVESTIGATION

FIGURE 1
SITE LOCATION

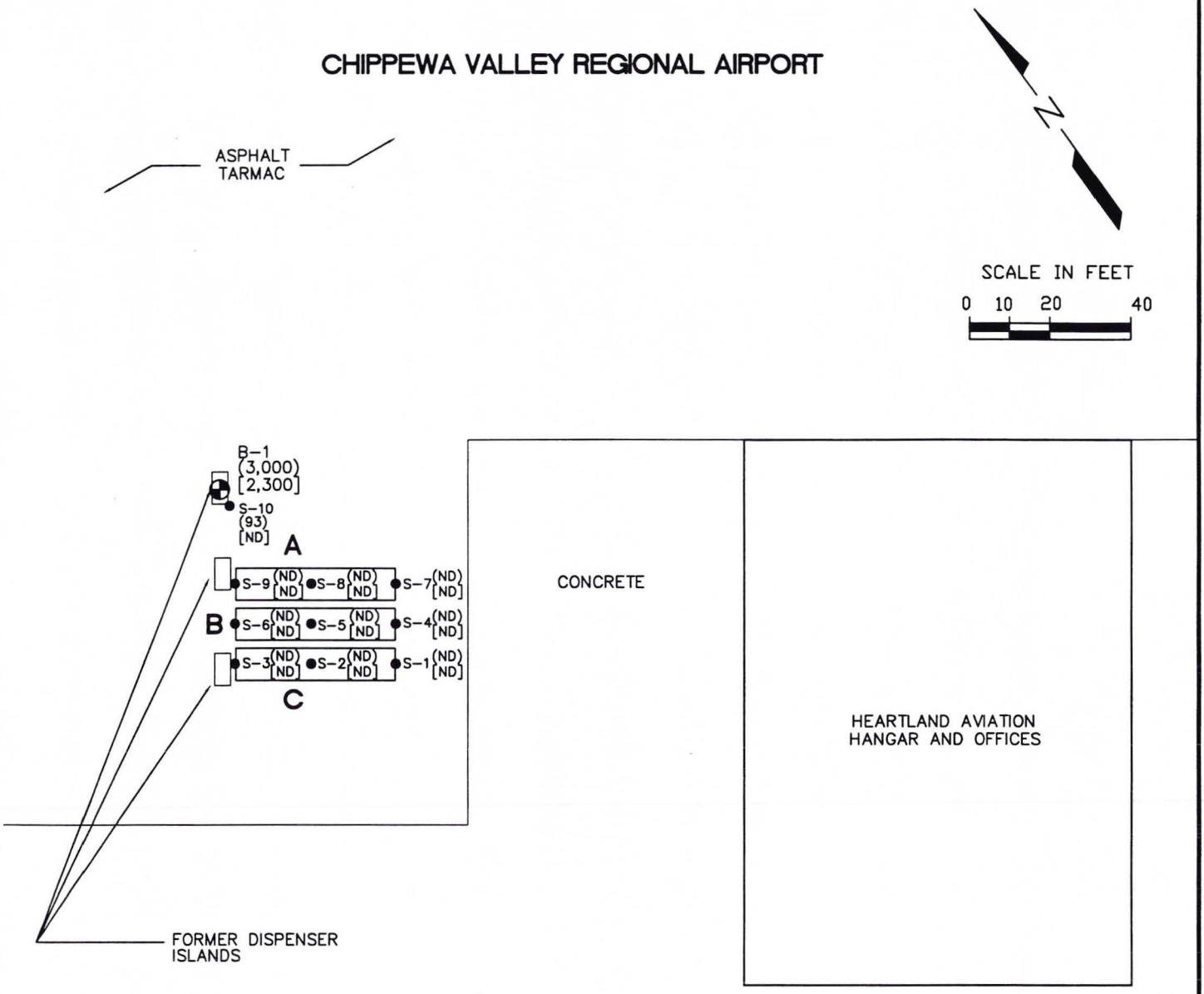
PROJ. NO. HEART9801.00

DATE 08/31/98

1 / 3

E:\WASTE\HEART\9801\9801FZA2

CHIPPEWA VALLEY REGIONAL AIRPORT



LEGEND:

	FORMER UST LOCATION
B-1 ⊕	AES SOIL BORING LOCATION AND NUMBER
S-1 (ND) [ND] ●	AES SITE ASSESSMENT SOIL SAMPLE LOCATION AND NUMBER
(3,000)	MAXIMUM DRO CONCENTRATION ANALYZED (PPM)
[2,300]	MAXIMUM GRO CONCENTRATION ANALYZED (PPM)
ND	NOT DETECTED

NOTE:

SITE PLAN BASED ON INFORMATION PREPARED BY ADVENT ENVIRONMENTAL SERVICES (AES) AND ASSUMED TO BE CORRECT.

UST I.D.	UST SIZE (GALLONS)	FORMER UST CONTENTS
A	12,000	JET FUEL
B	12,000	100-OCTANE LOW LEAD GASOLINE
C	12,000	UNLEADED GASOLINE

NO.	DATE	ISSUE/REVISIONS	DRAWN BY		DESIGN		FIELD REVIEW		QC CHECK	
1	08/31/98	SITE INVESTIGATION	JLE	08/98	KEA	08/98			CRB	10/98

SEH

HEARTLAND AVIATION SITE INVESTIGATION

FIGURE 2 SITE PLAN

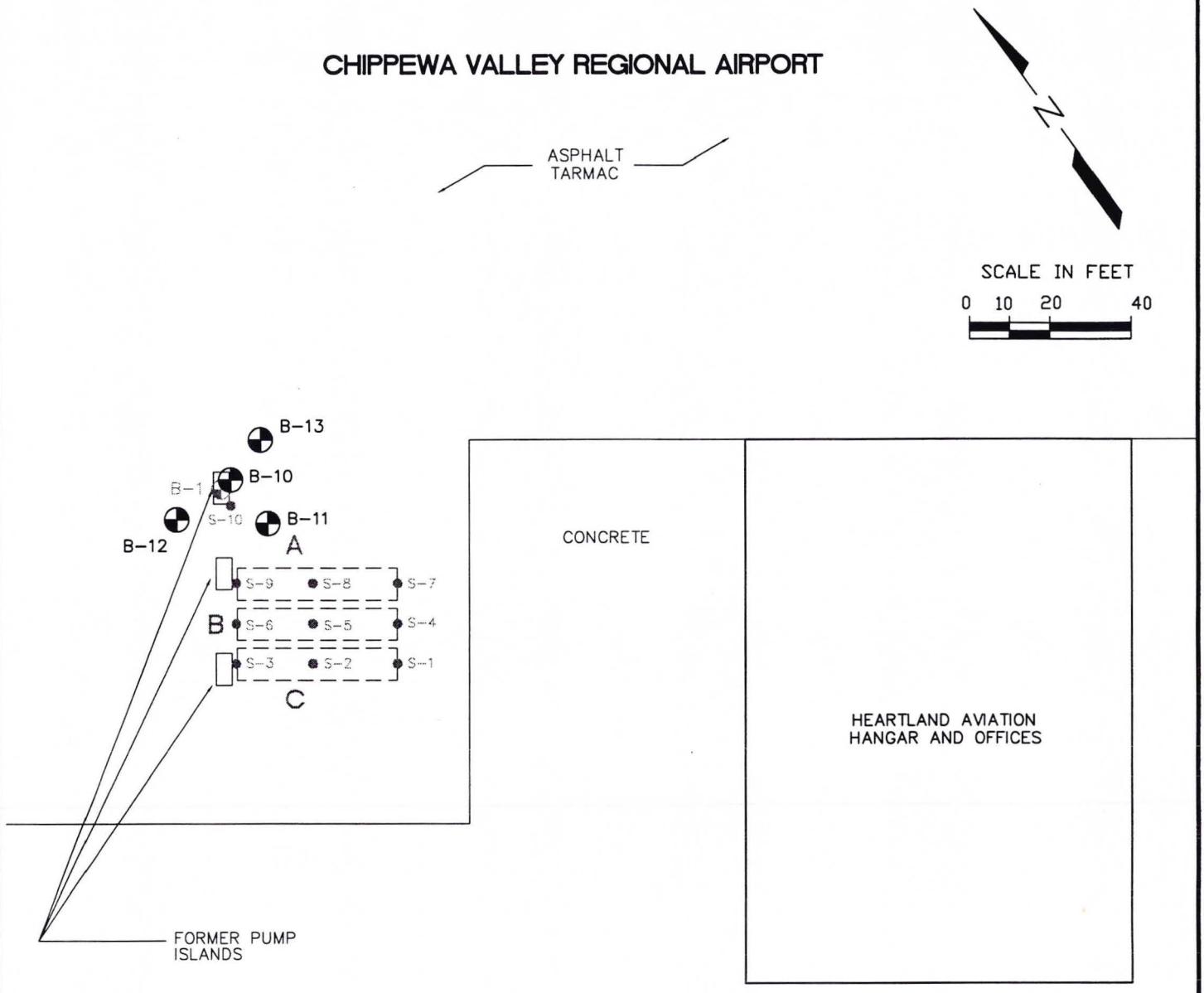
PROJ. NO. HEART9801.00

DATE 08/31/98

2/3

E:\WASTE\HERI9701\HEART\9801\9801FZE2

CHIPPEWA VALLEY REGIONAL AIRPORT



LEGEND:

B-13 ⊕	SEH SOIL BORING LOCATION AND NUMBER
▭	FORMER UST LOCATION
B-1 ⊕	AES SOIL BORING LOCATION AND NUMBER
S-1 •	AES SITE ASSESSMENT SOIL SAMPLE LOCATION AND NUMBER

NOTE:

SITE PLAN BASED ON INFORMATION PREPARED BY ADVENT ENVIRONMENTAL SERVICES (AES) AND ASSUMED TO BE CORRECT.

UST I.D.	UST SIZE (GALLONS)	FORMER UST CONTENTS
A	12,000	JET FUEL
B	12,000	100-OCTANE LOW LEAD GASOLINE
C	12,000	UNLEADED GASOLINE

NO.	DATE	ISSUE/REVISIONS	DRAWN BY		DESIGN		FIELD REVIEW		QC CHECK	
1	08/31/98	SITE INVESTIGATION	JLE	08/98	KEA	08/98			GRS	9/98

SEH

HEARTLAND AVIATION SITE INVESTIGATION

FIGURE 3 SOIL BORING LOCATIONS

PROJ. NO. HEART9801.00

DATE 08/31/98

3 / 3

E:\WASTE\HEART\9801\9801FZS2

Appendix A

Standard Operating Procedures

Soil Vapor Monitoring - Simultaneous FID and PID

Soil vapor (headspace) measurements are made on soil samples collected during soil boring and excavation activities. The field instrument used is a portable Foxboro Toxic Vapor Analyzer (TVA) Model 1000 with simultaneous flame ionization detector (FID) and photoionization detector (PID) capabilities. The TVA-1000 has been laboratory calibrated. The calibration of the FID is verified in the field using 105 ppm methane and the PID is verified in the field with 98 ppm isobutylene prior to conducting soil vapor monitoring. This instrument has the following standard specifications:

Accuracy	*PID Instrument* - ±25% of reading or ±2.5 ppm, whichever is greater, from 0.5 to 500 ppm. Accuracy listed is achieved using isobutylene with a 1-point calibration in the range of 100 to 300 ppm (including drift) at the temperature and humidity of the calibration. *FID Instrument* - ±25% of reading or ±2.5 ppm, whichever is greater, from 1.0 to 10,000 ppm. Accuracy listed is achieved using methane with a 1-point calibration in the range from 100 to 500 ppm (including drift) at the temperature and humidity of the calibration.
Repeatability	*PID Instrument* - ±1% at 100 ppm of isobutylene *FID Instrument* - ±2% at 100 ppm of methane
Dynamic Range	*PID Instrument* - ±0.5 to 2,000 ppm of isobutylene *FID Instrument* - ±1.0 to 50,000 ppm of methane
Linear Range	*PID Instrument* - ±0.5 to 500 ppm of isobutylene *FID Instrument* - ±1.0 to 10,000 ppm of methane
Minimum Detectable Level	The minimum detectable level is defined as two times the peak-to-peak noise. *PID Instrument* - 100 ppb of benzene *FID Instrument* - 300 ppb of hexane
Response Time Using Close Area Sampler	*PID Instrument* - Less than 3.5 seconds for 90% of final value, using 100 ppm of isobutylene *FID Instrument* - Less than 3.5 seconds for 90% of final value, using 10,00 ppm of methane
Response Time Using Charcoal Filter Adapter	*PID Instrument* - Less than 20 seconds for 90% of final value, using 100 ppm of isobutylene *FID Instrument* - Less than 20 seconds for 90% of final value, using 10,000 ppm of methane
Data Storage Rate	From 1 per second to 1 per 999 minutes, user selectable
Sample Flow Rate	1 liter/minute, nominal, at sample probe inlet
PID Lamp Life	Greater than 2,000 hours for 10.6 eV lamp, with normal cleaning
FID Life	Greater than 2,000 hours
Normal Operating Temperature	0 to +40° C (32° F to +104° F)

The following procedure is used in determining headspace gas concentrations in each soil sample:

1. Quart size plastic Ziploc bags are used for soil headspace containers. Soil samples are placed in bags using disposable spatulas or decontaminated stainless steel spatulas. The containers are filled half way with soil from specific sample locations then quickly sealed and labeled to record sample number and depth from which the sample was taken.
2. Headspace is allowed to develop for 10 minutes. The Ziploc bag is vigorously shaken for 15 seconds both at the beginning and end of the headspace development period. Clads of cohesive soil are broken to facilitate development of vapors in the headspace. Where ambient temperatures are below 32° F (0° C), headspace development is conducted within a heated vehicle or building so samples can warm to approximately 70° F.
3. After headspace development, the plastic bag is punctured with the instrument sampling probe to a point about one-half of the headspace depth. Care is exercised to avoid intake of water droplets or soil particles into the sample probe.
4. Following probe insertion through the plastic bag, the highest meter response is recorded as the headspace concentration.

Samples are also examined visually by an environmental professional for staining or other signs of contamination.

Protocol for Split Spoon Sampling of Subsurface Soils

Subsurface soil samples are collected by performing soil borings at selected locations at the site. Soil borings are performed using hollow stem auger (HSA) and split spoon sampling techniques. Soil samples are collected at 2.5 foot intervals from 0 to 10 feet, and at 5 foot intervals thereafter to the borehole bottom, in accordance with American Society of Testing and Materials (ASTM) standards (ASTM D1586-84). A standard 2 inch OD split spoon sampler is used for collection of soil samples. The drilling is directed by SEH's Site Representative, who logs geologic materials encountered during drilling, field screens auger cuttings and soil samples, and observes the drilling activities and supervises sample collection.

As samples are obtained in the field, they are visually classified by SEH's Site Representative. Sample lithology is recorded using the Unified Soil Classification System. Soil boring logs, documenting soil types and subsurface conditions, are completed by SEH's Site Representative. Actual borehole depth and selection of soil samples for analysis is based upon instrument screening, visual observation and odor.

Drill cuttings and liquid generated by boring activities are left onsite. Contaminated soils are either stockpiled on plastic sheeting or when required by site conditions are contained in 55-gallon steel drums. When sampling is completed, borings are backfilled with bentonite mixed with clean soil cuttings. Borehole abandonment procedures follow WDNR guidelines and are documented on standard forms. The split spoon sampler is cleaned between samples to minimize cross contamination. The cleaning procedure consists of a trisodium phosphate (TSP) wash, followed by a rinse with clean tap or distilled water. Split-spoons are typically cleaned by the drilling contractor. To avoid cross-contamination between soil borings, drilling augers are steam-cleaned between borings.

In accordance with SEH's Site Health and Safety Plan, a photoionization detector (PID) or flame ionization detector (FID) and explosimeter are used to monitor ambient air concentrations at the borehole and within the work zone during drilling. The PID and FID are also used for field screening soil samples for the presence of volatile organic compounds. Personal protective equipment is utilized by site personnel during performance of sampling activities, as specified in the Site Health and Safety Plan.

Stainless steel sampling equipment used to collect the soil sample from the bucket is decontaminated between samples using a soap and water wash followed by a distilled water rinse.

The latest WDNR LUST Guidance protocols are followed in collecting and preserving soil samples for laboratory analyses. Soil samples are placed in laboratory cleaned glass jars and labeled, identifying sample number, location, date, time and sampling personnel. Samples submitted for analysis are preserved on ice and shipped in a cooler to the contracted analytical laboratory. SEH standard chain of custody procedures are followed regarding shipment and receipt of samples.

Appendix B

Soil Boring Logs and Abandonment Forms

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☒ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Soil Boring Log Information

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Heartland Aviation		**B-10**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
MES/Eric Schoenberg	**5/14/98**	**5/14/98**	**4 1/4" HSA**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**8"** Inches

Boring Location
State Plane N, E
SE 1/4 of **NW** 1/4 of Section **33** T **28** N,R **9W**
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Chippewa	**09**	**Eau Claire**

Sample Number	Sample Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				ASPHALT	SM									
1		8-7-7-9	2.5	Dark Brown, SILTY SAND and gravel				385/4.5	14					
2		15-10-23-22	5.0					524/6.4	33					
3		8-8-9-10						574/6.9	17					
			7.5	Light Brown, medium grained SAND and gravel	SP									
4		4-5-5-7						315/4.5	10					Lab Sample
5		3-5-5-6	10.0					383/4.1	10					
				Light Brown, fine grained SAND with trace gravel	SP									
6		5-5-6-5	12.5					351/3.7	11					
7		9-6-6-7	15.0					114/0.3	12					
8		7-10-12-13						111/0.3	22					
			17.5											
9		4-5-5-6						137/0.7	10					
10		4-5-4-4	20.0					92/0	9					
11		5-6-5-5	22.5					85/0	11					
				Light Brown, fine to medium grained SAND	SP									
12		5-4-5-5	25.0		SP			72/0	9					
				Light Brown, fine grained SAND										
13		11-10-11-10	27.5					76/0	21					Lab Sample
				End of Boring @ 28'										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm

SEH 421 Frenette Drive
Chippewa Falls, WI. 54729
Tel: 715-720-6200, Fax: 715-720-6300

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☒ Underground Tanks
- ☐ Water Resources
- ☐ Other

Soil Boring Log Information

Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Heartland Aviation		**B-11**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
MES/Eric Schoenberg	**5/14/98**	**5/14/98**	**4 1/4" HSA**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**8"** Inches

Boring Location
State Plane N, E
SE 1/4 of **NW** 1/4 of Section **33** T **28** N,R **9W**
Lat ° ' "
Long ° ' "
Local Grid Location (If applicable)
Feet ☐ N ☐ S Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Chippewa	**09**	**Eau Claire**

Sample Number	Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				ASPHALT										
			2.5	Dark Brown, SILTY SAND and gravel	SM									
			5.0											
1		10-11-12-10						75/0	23					
			7.5	Brown, fine to medium grained SAND and gravel	SP									
2		5-5-6-6						76/0	11					
3		8-6-7-10	10.0	Light Brown, fine grained SAND with trace gravel	SP			72/0	13					
4		5-6-7-7	12.5	Light Brown, fine to medium grained SAND and gravel	SP			70/0.1	13					
5		7-8-8-8	15.0	Light Brown, fine grained SAND	SP			436/3.3	16					Lab Sample
6		7-4-4-8						254/3.3	8					
7		5-6-6-8	17.5					253/3.3	12					
8		5-6-7-7	20.0					181/2	13					
9		6-6-7-6	22.5					26/0.1	13					
10			25.0					17/0						Lab Sample
				End of Boring @ 26'										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature]

Firm SEH

SEH 421 Frenette Drive
Chippewa Falls, WI. 54729
Tel: 715-720-6200, Fax: 715-720-6300

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☒ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Soil Boring Log Information
Form 4400-122 7-91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Heartland Aviation		**B-12**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
MES/Eric Schoenberg	**5/14/98**	**5/14/98**	**4 1/4" HSA**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**8"** Inches

Boring Location
State Plane N, E
SE 1/4 of **NW** 1/4 of Section **33** T **28** N,R **9W**
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
Feet ☐ N ☐ S Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Chippewa	**09**	**Eau Claire**

Sample Number	Sample Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			0	ASPHALT	SM									
			2.5	Dark Brown, SILTY SAND and gravel										
			5.0											
1								49/0						
			7.5	Brown, medium to coarse grained SAND and gravel	SP									
2		9-8-9-6						--	17					
3		6-4-5-8	10.0					75/0	9					
				Light Brown, fine to medium grained SAND and gravel	SP									
4		10-7-6-6	12.5					75/0	13					Lab Sample
				Light Brown, fine grained SAND	SP									
5		9-8-6-6	15.0					69/0	14					
6		8-9-4-4						69/0	13					
			17.5											
7		5-4-6-10						65/0	10					Lab Sample
			20.0	End of Boring @ 20'										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Ken E. Lewis

Firm SEH 421 Frenette Drive
Chippewa Falls, WI. 54729
Tel: 715-720-6200, Fax: 715-720-6300

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 of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☒ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Soil Boring Log Information
Form 4400-122 7-91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Heartland Aviation		**B-13**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
MES/Eric Schoenberg	**5/14/98**	**5/14/98**	**4 1/4" HSA**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**8"** Inches

Boring Location
State Plane N, E
SE 1/4 of **NW** 1/4 of Section **33** T **28** N,R **9W**
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Chippewa	**09**	**Eau Claire**

Sample Number	Sample Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			0.0	ASPHALT										
			2.5	Dark Brown, SILTY SAND and gravel	SM									
			5.0											
1		14-11-12-13						25/0	23					
			7.5	Light Brown, fine to medium grained SAND	SP									
2		3-4-5-4						27/0	9					
3		4-5-5-6	10.0					29/0	10					
4		4-6-9-9	12.5	Light Brown, medium to coarse grained SAND and gravel	SP			30/0	15					Lab Sample
5		12-7-8-9	15.0	Light Brown, fine to medium grained SAND with trace gravel	SP			15/0	15					
6		11-11-14-17	17.5	Light Brown, fine grained SAND	SP			12/0	25					
7		8-7-6-7						8/0	13					Lab Sample
			20.0	End of Boring @ 20'										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Keri E. Lewis

Firm: SEH 421 Frenette Drive
Chippewa Falls, WI. 54729
Tel: 715-720-6200, Fax: 715-720-6300

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.

Appendix C

Laboratory Analytical Reports

MAXIM
TECHNOLOGIES INC

REPORT OF: CHEMICAL ANALYSES

PROJECT: HEARTLAND AVIATION DATE: June 9, 1998

REPORTED TO: Short Elliott Hendrickson, Inc.
Attn: Mr. Kevin Accola
421 Frenette Drive
Chippewa Falls, WI 54729

PROJECT NO: 9871988 REPORT NO: 98C119

INTRODUCTION

This report presents the results of the analyses of eight samples received on May 15, 1998, from Kevin Accola of Short Elliott Hendrickson, Inc., Chippewa Falls, Wisconsin. The scope of our service was limited to the parameters listed in the attached tables.

METHODOLOGY

Analyses are performed according to Maxim Technologies, Inc. (Maxim) Standard Operating Procedures. The procedures are based on the references stated in the analytical results tables.

RESULTS

The results are listed in the attached tables.

REMARKS

The samples were collected on May 14, 1998. If samples are not consumed in the analysis, they will be held until their designated expiration date, and then disposed, unless written instructions to the contrary are received. Samples requesting lead analysis were subcontracted to Northern Lake Service, Inc. (NLS). Please refer to the attached NLS report for these results

MAXIM TECHNOLOGIES, INC.
Wisconsin Laboratory Certification #737105930

Yvonne Frey for

JUN 29 1998

Richard A. Abreu
Chemist

RAA/tlp

555 South 72nd Avenue • Wausau, WI 54401 • Telephone: 715/845-4100 • Fax: 715/842-0381

DIESEL RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED DRO
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	B10-4	B10-3 1/3		
LAB SAMPLE ID:	7624	7625		
Parameter:			LOD	LOQ
Diesel Range Organics	34	2.4	1.1	3.6
Surrogate Recovery:				
Triacontane:	98%	97%		
Percent Solids:	95.0%	96.8%		
Date Collected:	5/14/98	5/14/98		
Date Received:	5/15/98	5/15/98		
Date Preserved:	5/15/98	5/15/98		
Date Extracted:	5/19/98	5/19/98		
Date Analyzed:	5/21/98	5/21/98		

ND = Not Detected
N/A = Not Applicable
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-141, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

DIESEL RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED DRO
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	B11-5		
LAB SAMPLE ID:	7626		
Parameter:		LOD	LOQ
Diesel Range Organics	900	8.8	29
Surrogate Recovery:			
Triacontane:	90%		
Percent Solids:	96.3%		
Date Collected:	5/14/98		
Date Received:	5/15/98		
Date Preserved:	5/15/98		
Date Extracted:	5/19/98		
Date Analyzed:	5/21/98		

ND = Not Detected
N/A = Not Applicable
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-141, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

DIESEL RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED DRO
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	B11-10	B12-4		
LAB SAMPLE ID:	7627	7628		
Parameter:			LOD	LOQ
Diesel Range Organics	5.1	2.1	1.1	3.6
Surrogate Recovery:				
Triacontane:	96%	91%		
Percent Solids:	96.8%	96.3%		
Date Collected:	5/14/98	5/14/98		
Date Received:	5/15/98	5/15/98		
Date Preserved:	5/15/98	5/15/98		
Date Extracted:	5/19/98	5/19/98		
Date Analyzed:	5/21/98	5/21/98		

ND = Not Detected
N/A = Not Applicable
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-141, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

DIESEL RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED DRO
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	B12-7	B13-4		
LAB SAMPLE ID:	7629	7630		
Parameter:			LOD	LOQ
Diesel Range Organics	2.7	3.2	1.1	3.6
Surrogate Recovery:				
Triacontane:	92%	97%		
Percent Solids:	96.2%	96.1%		
Date Collected:	5/14/98	5/14/98		
Date Received:	5/15/98	5/15/98		
Date Preserved:	5/15/98	5/15/98		
Date Extracted:	5/19/98	5/19/98		
Date Analyzed:	5/21/98	5/21/98		

ND = Not Detected
N/A = Not Applicable
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-141, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

DIESEL RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED DRO
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	B13-7		
LAB SAMPLE ID:	7631		
Parameter:		LOD	LOQ
Diesel Range Organics	2.6	1.1	3.6
Surrogate Recovery:			
Triacontane:	96%		
Percent Solids:	95.7%		
Date Collected:	5/14/98		
Date Received:	5/15/98		
Date Preserved:	5/15/98		
Date Extracted:	5/19/98		
Date Analyzed:	5/21/98		

ND = Not Detected
N/A = Not Applicable
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-141, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

DIESEL RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED DRO
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	---		
LAB SAMPLE ID:	Method Blank		
Parameter:		LOD	LOQ
Diesel Range Organics	ND	1.1	3.6
Surrogate Recovery:			
Triacontane:	102%		
Percent Solids:	N/A		
Date Collected:	N/A		
Date Received:	N/A		
Date Preserved:	N/A		
Date Extracted:	5/19/98		
Date Analyzed:	5/20/98		

ND = Not Detected
N/A = Not Applicable
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-141, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

QUALITY CONTROL
DIESEL RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED DRO
(All values are in percent recovery)

LAB SAMPLE ID:	Spike	Replicate Spike	
Parameter Recovery:			WDNR Acceptance Criteria
Diesel Range Organics	91%	92%	70-120%
Surrogate Recovery:			
Triacontane:	97%	100%	
Date Extracted:	5/19/98	5/19/98	
Date Analyzed:	5/20/98	5/21/98	

N/A = Not Applicable

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-141, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

GASOLINE RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED GRO
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	B10-4	B11-5		
LAB SAMPLE ID:	7624	7626		
Parameter:			LOD	LOQ
Gasoline Range Organics	7.6	170[1]	1.0 (2.0)[1]	3.3 (6.6)[1]
Surrogate Recovery:				
∝∝∝-Trifluorotoluene (PID):	97%	98%		
Percent Solids:	95.0%	96.3%		
Date Collected:	5/14/98	5/14/98		
Date Received:	5/15/98	5/15/98		
Date Analyzed:	6/1/98	6/2/98		

ND = Not Detected
N/A = Not Applicable
LOD = Limit of Detection
LOQ = Limit of Quantitation
[1] Sample analyzed at a 1:2 dilution.

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-141, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

PETROLEUM VOLATILE, AND GASOLINE RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED GRO/EPA METHOD 8020
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	B10-13	B11-10		
LAB SAMPLE ID:	7625	7627		
Parameter:			LOD	LOQ
Methyl-tert-butyl ether	ND	ND	0.008	0.026
Benzene	ND	ND	0.005	0.017
Toluene	ND	ND	0.005	0.017
Ethylbenzene	ND	ND	0.006	0.020
Total Xylenes	ND	ND	0.008	0.027
1,3,5-Trimethylbenzene	ND	ND	0.005	0.018
1,2,4-Trimethylbenzene	ND	ND	0.006	0.019
Gasoline Range Organics	ND	ND	1.0	3.3
Surrogate Recovery:				
$\alpha\alpha\alpha$-Trifluorotoluene (PID)	98%	97%		
Percent Solids:	96.8%	96.8%		
Date Collected:	5/14/98	5/14/98		
Date Received:	5/15/98	5/15/98		
Date Analyzed:	6/1/98	6/1/98		

N/A = Not Applicable
ND = Not Detected
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-140, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

PETROLEUM VOLATILE, AND GASOLINE RANGE ORGANICS ANALYSIS RESULTS

WISCONSIN MODIFIED GRO/EPA METHOD 8020
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	B12-4	B12-7		
LAB SAMPLE ID:	7628	7629		
Parameter:			LOD	LOQ
Methyl-tert-butyl ether	ND	ND	0.008	0.026
Benzene	ND	ND	0.005	0.017
Toluene	ND	ND	0.005	0.017
Ethylbenzene	ND	ND	0.006	0.020
Total Xylenes	ND	ND	0.008	0.027
1,3,5-Trimethylbenzene	ND	ND	0.005	0.018
1,2,4-Trimethylbenzene	ND	ND	0.006	0.019
Gasoline Range Organics	ND	ND	1.0	3.3
Surrogate Recovery:				
$\alpha\alpha\alpha$-Trifluorotoluene (PID)	92%	90%		
Percent Solids:	96.3%	96.2%		
Date Collected:	5/14/98	5/14/98		
Date Received:	5/15/98	5/15/98		
Date Analyzed:	6/1/98	6/2/98		

N/A = Not Applicable
ND = Not Detected
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-140, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

PETROLEUM VOLATILE, AND GASOLINE RANGE ORGANICS ANALYSIS RESULTS

WISCONSIN MODIFIED GRO/EPA METHOD 8020
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	B13-4	B13-7		
LAB SAMPLE ID:	7630	7631		
Parameter:			LOD	LOQ
Methyl-tert-butyl ether	ND	ND	0.008	0.026
Benzene	ND	ND	0.005	0.017
Toluene	ND	ND	0.005	0.017
Ethylbenzene	ND	ND	0.006	0.020
Total Xylenes	ND	ND	0.008	0.027
1,3,5-Trimethylbenzene	ND	ND	0.005	0.018
1,2,4-Trimethylbenzene	ND	ND	0.006	0.019
Gasoline Range Organics	1.0	ND	1.0	3.3
Surrogate Recovery:				
$\alpha\alpha\alpha$-Trifluorotoluene (PID)	92%	90%		
Percent Solids:	96.1%	95.7%		
Date Collected:	5/14/98	5/14/98		
Date Received:	5/15/98	5/15/98		
Date Analyzed:	6/2/98	6/2/98		

N/A = Not Applicable
ND = Not Detected
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-140, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

PETROLEUM VOLATILE, AND GASOLINE RANGE ORGANICS ANALYSIS RESULTS

WISCONSIN MODIFIED GRO/EPA METHOD 8020
(Units are in mg/Kg)
(Results reported on a dry weight basis.)

Client Sample ID:	---		
LAB SAMPLE ID:	Method Blank		
Parameter:		LOD	LOQ
Methyl-tert-butyl ether	ND	0.008	0.026
Benzene	ND	0.005	0.017
Toluene	ND	0.005	0.017
Ethylbenzene	ND	0.006	0.020
Total Xylenes	ND	0.008	0.027
1,3,5-Trimethylbenzene	ND	0.005	0.018
1,2,4-Trimethylbenzene	ND	0.006	0.019
Gasoline Range Organics	ND	1.0	3.3
Surrogate Recovery:			
$\alpha\alpha\alpha$-Trifluorotoluene (PID)	99%		
Percent Solids:	N/A		
Date Collected:	N/A		
Date Received:	N/A		
Date Analyzed:	6/1/98		

N/A = Not Applicable
ND = Not Detected
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.
Wisconsin Department of Natural Resources, PUBL-SW-140, September 1995.
Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

QUALITY CONTROL
PETROLEUM VOLATILE, AND
GASOLINE RANGE ORGANICS ANALYSIS RESULTS
WISCONSIN MODIFIED GRO/EPA METHOD 8020
(All values are in percent recovery)

LAB SAMPLE ID:	Spike	Replicate Spike	
Parameter Recovery:			WDNR Acceptance Criteria
Methyl-tert-butyl ether	105%	105%	80-120%
Benzene	103%	98%	80-120%
Toluene	102%	97%	80-120%
Ethylbenzene	102%	97%	80-120%
Total Xylenes	103%	97%	80-120%
1,3,5-Trimethylbenzene	103%	97%	80-120%
1,2,4-Trimethylbenzene	102%	97%	80-120%
Gasoline Range Organics	111%	105%	80-120%
Surrogate Recovery:			
$\alpha\alpha\alpha$-Trifluorotoluene (PID)	100%	96%	
Date Analyzed:	6/1/98	6/2/98	

N/A = Not Applicable

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.

Wisconsin Department of Natural Resources, PUBL-SW-140, September 1995.

Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

POLYNUCLEAR AROMATIC HYDROCARBON RESULTS
EPA METHOD 8310

(Units are in µg/Kg)
(Results reported on a dry weight basis)

Client Sample ID:	B10-4		
LAB SAMPLE ID:	7624		
Parameter:		LOD	LOQ
Naphthalene	ND	20	68
Acenaphthylene	ND	35	120
1-Methyl Naphthalene	ND	24	79
2-Methyl Naphthalene	ND	21	71
Acenapthene	ND	17	57
Fluorene	ND	2.5	8.4
Phenanthrene	ND	1.8	6.1
Anthracene	ND	1.6	5.2
Fluoranthene	ND	4.7	16
Pyrene	ND	2.6	8.6
Benzo (a) Anthracene	ND	1.7	5.8
Chrysene	ND	1.7	5.6
Benzo (b) Fluoranthene	ND	2.1	6.8
Benzo (k) Fluoranthene	ND	1.1	3.6
Benzo (a) Pyrene	ND	2.5	8.2
Dibenzo (a,h) Anthracene	ND	2.3	7.7
Benzo (g,h,i) Perylene	ND	3.6	12
Indeno (1,2,3-cd) Pyrene	ND	1.9	6.3
SURROGATE			
p-Terphenyl % Recovery:	103%		
Percent Solids:	95.0%		
Date Sampled:	14-May-98		
Date Received:	15-May-98		
Date Extracted:	20-May-98		
Date Analyzed:	27-May-98		

ND = Not Detected
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition. Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

POLYNUCLEAR AROMATIC HYDROCARBON RESULTS
EPA METHOD 8310

(Units are in µg/Kg)
(Results reported on a dry weight basis)

Client Sample ID:	B11-5		
LAB SAMPLE ID:	7626		
Parameter:		LOD	LOQ
Naphthalene	ND	20	68
Acenaphthylene	ND	35	120
1-Methyl Naphthalene	ND	24	79
2-Methyl Naphthalene	ND	21	71
Acenapthene	ND	17	57
Fluorene	ND	2.5	8.4
Phenanthrene	11	1.8	6.1
Anthracene	27	1.6	5.2
Fluoranthene	ND	4.7	16
Pyrene	ND	2.6	8.6
Benzo (a) Anthracene	ND	1.7	5.8
Chrysene	ND	1.7	5.6
Benzo (b) Fluoranthene	ND	2.1	6.8
Benzo (k) Fluoranthene	ND	1.1	3.6
Benzo (a) Pyrene	ND	2.5	8.2
Dibenzo (a,h) Anthracene	ND	2.3	7.7
Benzo (g,h,i) Perylene	ND	3.6	12
Indeno (1,2,3-cd) Pyrene	ND	1.9	6.3
SURROGATE			
p-Terphenyl % Recovery:	105%		
Percent Solids:	96.3%		
Date Sampled:	14-May-98		
Date Received:	15-May-98		
Date Extracted:	20-May-98		
Date Analyzed:	27-May-98		

ND = Not Detected
LOD = Limit of Detection
LOQ = Limit of Quantitation

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition. Wisconsin Department of Natural Resources, PUBL-SW-130, July 1993.

VOLATILE ORGANIC COMPOUND RESULTS
EPA METHOD 8021
(Values are in mg/Kg)
(Values are reported on a dry weight basis)

Client Sample ID:	B10-4		
LAB SAMPLE ID:	7624		
Compounds:		LOD	LOQ
Benzene	ND	0.013	0.043
Bromobenzene	ND	0.009	0.029
Bromoform	ND	0.008	0.026
Bromochloromethane	ND	0.008	0.025
Bromodichloromethane	ND	0.007	0.024
Bromomethane	ND	0.022	0.074
n-Butylbenzene	0.12	0.011	0.035
sec-Butylbenzene	0.041	0.006	0.020
tert-Butylbenzene	ND	0.010	0.031
Carbon Tetrachloride	ND	0.007	0.024
Chlorobenzene	ND	0.009	0.028
Chloroethane	ND	0.005	0.017
Chloroform	0.038	0.009	0.030
Chloromethane	ND	0.022	0.073
2-Chlorotoluene	ND	0.028	0.094
4-Chlorotoluene	ND	0.010	0.032
dibromochloromethane	ND	0.009	0.029
1,2-Dibromo-3-Chloropropane	ND	0.005	0.016
1,2-Dibromoethane	ND	0.007	0.024
Dibromomethane	ND	0.006	0.020
1,2-Dichlorobenzene	ND	0.008	0.027
1,3-Dichlorobenzene	ND	0.013	0.044
1,4-Dichlorobenzene	0.030[1]	0.007	0.022
Dichlorodifluoromethane	ND	0.009	0.029
1,1,-Dichloroethane	ND	0.007	0.022
1,2-Dichloroethane	ND	0.006	0.018
1,1-Dichloroethene	ND	0.010	0.032
cis-1,2-Dichloroethene/Isopropyl Ether*	ND	0.079	0.26
trans-1,2-Dichloroethene	ND	0.024	0.080
1,2-Dichloropropane	ND	0.008	0.026
1,3-Dichloropropane	ND	0.010	0.033

(Continued)

ND = Not Detected

* Not separated by this method

Data associated with this sample is continued on the next page.

[1] QC batch sample for this parameter was above established limits. Sample quantitation may exhibit a high bias.

VOLATILE ORGANIC COMPOUND RESULTS
EPA METHOD 8021

(Values are in mg/Kg)
(Values are reported on a dry weight basis)

Client Sample ID:	B10-4		
LAB SAMPLE ID:	7624		
Compounds:	ND	LOD	LOQ
2,2-Dichloropropane	ND	0.007	0.022
1,1-Dichloropropene	ND	0.013	0.042
cis-1,3-Dichloropropene	ND	0.013	0.044
trans-1,3-Dichloropropene	ND	0.013	0.041
Ethylbenzene	ND	0.008	0.026
Hexachlorobutadiene	ND	0.010	0.031
Isopropylbenzene	ND	0.006	0.042
P-Isopropyltoluene	0.072	0.008	0.028
Methyl-tert-butyl-ether	ND	0.018	0.059
Methylene Chloride	ND	0.006	0.020
Naphthalene	0.32	0.012	0.052
n-Propylbenzene	ND	0.006	0.020
Styrene	ND	0.008	0.025
Tetrachloroethene	ND	0.011	0.036
1,1,1,2-Tetrachloroethane	ND	0.010	0.034
1,1,2,2-Tetrachloroethane	ND	0.007	0.023
Toluene	0.026	0.009	0.031
1,2,3-Trichlorobenzene	ND	0.013	0.041
1,2,4-Trichlorobenzene	ND	0.013	0.042
1,1,1-Trichloroethane	ND	0.016	0.052
1,1,2-Trichloroethane	ND	0.011	0.035
Trichloroethene	ND	0.011	0.036
Trichlorofluoromethane	ND	0.005	0.017
1,2,3-Trichloropropane	ND	0.009	0.028
1,2,4-Trimethylbenzene	0.023	0.009	0.029
1,3,5-Trimethylbenzene	0.030	0.010	0.032
Vinyl Chloride	ND	0.006	0.020
m,p-Xylenes	ND	0.017	0.056
o-Xylene	ND	0.007	0.024
Percent Solids:			
Date Collected:	14-May-98		
Date Received:	15-May-98		
Date Analyzed:	1-Jun-98		

ND = Not Detected

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.

VOLATILE ORGANIC COMPOUND RESULTS
EPA METHOD 8021

(Values are in mg/Kg)
(Values are reported on a dry weight basis)

Client Sample ID:	B11-5		
LAB SAMPLE ID:	7626		
Compounds:		LOD	LOQ
Benzene	ND	0.013	0.43
Bromobenzene	ND	0.090	0.29
Bromoform	ND	0.080	0.26
Bromochloromethane	ND	0.080	0.25
Bromodichloromethane	ND	0.070	0.24
Bromomethane	ND	0.22	0.74
n-Butylbenzene	1.4	0.11	0.35
sec-Butylbenzene	0.79	0.060	0.20
tert-Butylbenzene	ND	0.10	0.31
Carbon Tetrachloride	ND	0.070	0.24
Chlorobenzene	ND	0.090	0.28
Chloroethane	ND	0.050	0.17
Chloroform	ND	0.090	0.30
Chloromethane	ND	0.22	0.73
2-Chlorotoluene	ND	0.28	0.94
4-Chlorotoluene	ND	0.10	0.32
dibromochloromethane	ND	0.090	0.29
1,2-Dibromo-3-Chloropropane	ND	0.050	0.16
1,2-Dibromoethane	ND	0.070	0.24
Dibromomethane	ND	0.060	0.20
1,2-Dichlorobenzene	ND	0.080	0.27
1,3-Dichlorobenzene	ND	0.13	0.44
1,4-Dichlorobenzene	0.31[1]	0.070	0.22
Dichlorodifluoromethane	ND	0.090	0.29
1,1,-Dichloroethane	ND	0.070	0.22
1,2-Dichloroethane	ND	0.060	0.18
1,1-Dichloroethene	ND	0.10	0.32
cis-1,2-Dichloroethene/Isopropyl Ether*	ND	0.79	2.6
trans-1,2-Dichloroethene	ND	0.24	0.80
1,2-Dichloropropane	ND	0.080	0.26
1,3-Dichloropropane	ND	0.10	0.33

(Continued)

ND = Not Detected

* Not separated by this method

Data associated with this sample is continued on the next page.

[1] QC Batch sample for this parameter was above established limits. Sample quantitation may exhibit a high bias.

VOLATILE ORGANIC COMPOUND RESULTS
EPA METHOD 8021

(Values are in mg/Kg)
(Values are reported on a dry weight basis)

Client Sample ID:	B11-5		
LAB SAMPLE ID:	7626		
Compounds:		LOD	LOQ
2,2-Dichloropropane	ND	0.070	0.22
1,1-Dichloropropene	ND	0.13	0.42
cis-1,3-Dichloropropene	ND	0.13	0.44
trans-1,3-Dichloropropene	ND	0.13	0.41
Ethylbenzene	ND	0.080	0.26
Hexachlorobutadiene	ND	0.10	0.31
Isopropylbenzene	ND	0.060	0.42
P-Isopropyltoluene	0.92	0.080	0.28
Methyl-tert-butyl-ether	ND	0.18	0.59
Methylene Chloride	ND	0.060	0.20
Naphthalene	9.1	0.12	0.52
n-Propylbenzene	ND	0.060	0.20
Styrene	ND	0.080	0.25
Tetrachloroethene	ND	0.11	0.36
1,1,1,2-Tetrachloroethane	ND	0.10	0.34
1,1,2,2-Tetrachloroethane	ND	0.070	0.23
Toluene	0.22	0.090	0.31
1,2,3-Trichlorobenzene	ND	0.13	0.41
1,2,4-Trichlorobenzene	ND	0.13	0.42
1,1,1-Trichloroethane	ND	0.16	0.52
1,1,2-Trichloroethane	ND	0.11	0.35
Trichloroethene	ND	0.11	0.36
Trichlorofluoromethane	ND	0.050	0.17
1,2,3-Trichloropropane	ND	0.090	0.28
1,2,4-Trimethylbenzene	0.27	0.090	0.29
1,3,5-Trimethylbenzene	ND	0.10	0.32
Vinyl Chloride	ND	0.060	0.20
m,p-Xylenes	ND	0.17	0.56
o-Xylene	ND	0.070	0.24
Percent Solids:			
Date Collected:	14-May-98		
Date Received:	15-May-98		
Date Analyzed:	1-Jun-98		

ND = Not Detected

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Tel:(715)478-2777 Fax:(715)478-3060

WIS. LAB CERT. NO. 721026460

ANALYTICAL REPORT

NLS PROJECT# 41096

NLS CUST# 20109

Client: Maxim Technologies (W)
Attn: Rick Abreu
555 S. 72nd Ave.
Wausau, WI 54401

Project Description: Heartland Aviation - 9801
Project Title: 98C119

Sample ID: 7624 Soil, B10-4 **NLS#: 168239**
Ref. Line 1 of COC Description: 7624 Soil, B10-4
Collected: 05/14/98 Received: 05/18/98 Reported: 06/02/98

Parameter	Result	Units	LOD	LOQ	Method	Analyzed	Lab
Lead, tot. as Pb	ND	mg/Kg DWB	1.6	5.8	SW846 6010	05/29/98	721026460
Solids, total on solids	95.3	%	0.10		ASTM D2216	05/21/98	721026460
Metals digestion - total (soil/sludge) ICP	yes				SW846 3050	05/26/98	721026460

Sample ID: 7626 Soil, B11-5 **NLS#: 168240**
Ref. Line 3 of COC Description: 7626 Soil, B11-5
Collected: 05/14/98 Received: 05/18/98 Reported: 06/02/98

Parameter	Result	Units	LOD	LOQ	Method	Analyzed	Lab
Lead, tot. as Pb	ND	mg/Kg DWB	1.7	6.2	SW846 6010	05/29/98	721026460
Solids, total on solids	96.9	%	0.10		ASTM D2216	05/21/98	721026460
Metals digestion - total (soil/sludge) ICP	yes				SW846 3050	05/26/98	721026460

Values in brackets represent results greater than the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than the LOQ are considered to be in the region of "Certain Quantitation".

LOD = Limit of Detection
DWB = Dry Weight Basis
LOQ = Limit of Quantitation
NA = Not Applicable
ND = Not Detected
%DWB = (mg/kg DWB)/10000

Thomas R Krueger

Reviewed by:

Authorized by:

R. T. Krueger
Laboratory Manager

MAXIM
TECHNOLOGIES INC

555 S. 72ND AVENUE • WAUSAU, WI 54401
715 / 845-4100 • FAX 715 / 842-0381

CHAIN-OF-CUSTODY RECORD

John Guhl
MAXIM CONTACT

Heartland Aviation
PROJECT NAME

HEARL 9801
CLIENT P.O. # / PROJECT #

Heartland Aviation c/o SEH
BILL TO (COMPANY, NAME, ADDRESS)

John Guhl
REPORT TO

MAXIM USE ONLY

PROJ. MGR.

PRIORITY

INVOICE # 98C119

TEMPERATURE OF CONTAINER Rcvd in Lab MAM

SAMPLE CONDITION INTACT

SEH/Heartland Aviation
CLIENT NAME

421 Frenette Drive
CLIENT ADDRESS (STREET NUMBER, SUITE, ETC.)

Chippewa Falls, WI 54729
CLIENT ADDRESS (CITY, STATE, ZIP)

Kevin Accola 715-720-6224
CLIENT CONTACT / ADDRESS IF DIFFERENT FROM ABOVE PHONE

Kevin Accola/Kevin E. Lueck
SAMPLED BY (PRINT NAME / SIGNATURE)

POSSIBLE HAZARD: ☐ YES ☒ UNKNOWN (COMMENT BELOW)

SAMPLE DISPOSAL: ☐ RETURN TO CLIENT ☒ DISPOSAL BY LAB
(ADDITIONAL CHARGES MAY BE ASSESSED)

ANALYSES REQUEST

FILTERED (YES / NO)
PRESERVED (CODE)
REFRIGERATED (YES / NO)

CODE A - NONE
B - HNO_3
C - H_2SO_4
D - NaOH
E - HCl
F - MeOH

MAXIM NO.	ITEM NO.	CLIENT SAMPLE I.D.	MATRIX	DATE SAMPLED	TIME SAMPLED	GRO	PVOC	VOC	DRO	Lead	PAH	T.S.		NO. OF CONTAINERS	CONTAINER TYPE
7624	1	B10-4 168239	Soil	5/14/98	10:20	X		X	X	X	X	X		5	2oz, 4oz glass
7625	2	B10-13	Soil	"	10:30	X	X		X			X		3	2oz glass
7626	3	B11-5 168240	Soil	"	11:40	X		X	X	X	X	X		5	2oz, 4oz glass
7627	4	B11-10	Soil	"	11:55	X	X		X			X	MAM MS/MSD	3	2oz glass
7628	5	B12-4	Soil	"	1:15	X	X		X			↓		3	"
7629	6	B12-7	Soil	"	1:30	X	X		X					3	"
7630	7	B13-4	Soil	"	2:30	X	X		X					3	"
7631	8	B13-7	Soil	"	2:45	X	X		X					3	"

Additional Comments:

Pb sub to NLS 5.15.98 MAM

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Kevin E. Lueck/Scientist	5/14/98	4:30pm	Marsha Menuette	5.15.98	10^45
Marsha Menuette	5.15.98	16^00			
			Karen Okerman	5/16	12:30

C813 Rev. 10/95

*SEE REVERSE SIDE FOR INSTRUCTIONS

MAXIM
TECHNOLOGIES INC

555 S. 72ND AVENUE • WAUSAU, WI 54401
715 / 845-4100 • FAX 715 / 842-0381

CHAIN-OF-CUSTODY RECORD

SEH/Heartland Aviation
CLIENT NAME
421 Frenette Drive
CLIENT ADDRESS (STREET NUMBER, SUITE, ETC.)
Chippewa Falls, WI 54729
CLIENT ADDRESS (CITY, STATE, ZIP)
Kevin Accola 715-720-6224
CLIENT CONTACT / ADDRESS IF DIFFERENT FROM ABOVE PHONE
Kevin Accola/ Kevin E. Lunde
SAMPLED BY (PRINT NAME / SIGNATURE)

John Guhl
MAXIM CONTACT
Heartland Aviation
PROJECT NAME
HEARL 9801
CLIENT P.O. # / PROJECT #
Heartland Aviation c/o SEH
BILL TO (COMPANY, NAME, ADDRESS)
John Guhl
REPORT TO

MAXIM USE ONLY

PROJ. MGR.	
PRIORITY	
INVOICE #	98C119
TEMPERATURE OF CONTAINER	Rcvd on ice MAM
SAMPLE CONDITION	INTACT

POSSIBLE HAZARD: ☐ YES ☑ UNKNOWN (COMMENT BELOW)

SAMPLE DISPOSAL: ☐ RETURN TO CLIENT ☒ DISPOSAL BY LAB
(ADDITIONAL CHARGES MAY BE ASSESSED)

ANALYSES REQUEST

CODE A - NONE
B - HNO_3
C - H_2SO_4
D - NaOH
E - HCl
F - MeOH

MAXIM NO.	ITEM NO.	CLIENT SAMPLE I.D.	MATRIX	DATE SAMPLED	TIME SAMPLED	FILTERED (YES / NO)	PRESERVED (CODE)	REFRIGERATED (YES / NO)	GRO	PVOC	VOC	DRO	Lead	PAH	T.S.		NO. OF CONTAINERS	CONTAINER TYPE
7624	1	B10-4	Soil	5/14/98	10:20				X		X	X	X	X	X		5	2oz, 4oz glass
7625	2	B10-13	Soil	"	10:30				X	X		X			X		3	2oz glass
7626	3	B11-5	Soil	"	11:40				X		X	X	X	X	X	MAM MS/MSD	5	2oz, 4oz glass
7627	4	B11-10	Soil	"	11:55				X	X		X			X		3	2oz glass
7628	5	B12-4	Soil	"	1:15				X	X		X			↓		3	"
7629	6	B12-7	Soil	"	1:30				X	X		X					3	"
7630	7	B13-4	Soil	"	2:30				X	X		X					3	"
7631	8	B13-7	Soil	"	2:45				X	X		X			↓		3	"

Additional Comments:

Pr Sub to NLS 5.15.98 MAM

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Kevin E. Lunde/Scientist	5/14/98	4:30 pm	Marsha Menuette	5.15.98	1045

C813 Rev. 10/95

*SEE REVERSE SIDE FOR INSTRUCTIONS

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
Scott A. Humrickhouse, Regional Director

West Central Region Headquarters
1300 W. Clairemont Avenue
PO Box 4001
Eau Claire, Wisconsin 54702-4001
Telephone 715-839-3700
FAX 715-839-6076
TDD 715-839-2786

September 10, 1998

Site ID#: 03-09-174629
Chippewa County

Mr. Larry Husby
Heartland Aviation, Inc.
3800 Starr Avenue
Eau Claire, WI 54703

Subject: Transfer of Your File for Heartland Aviation to the Department of Commerce

Dear Mr. Husby:

This letter is to notify you that the Department of Natural Resources (DNR) has an open file regarding contamination at the above site, and this file is being transferred to the Department of Commerce.

The 1995-97 state budget bill made significant changes in the way state government manages discharges to the environment from petroleum storage tank systems. As of July 1, 1996, the Department of Commerce is responsible for governmental oversight of environmental cleanup activities at properties contaminated by petroleum storage systems when contamination has not impacted groundwater above state preventative action levels.

Information presented to the DNR to date shows that this site falls into the group of sites identified for transfer. Therefore, we are transferring your file to the Department of Commerce effective immediately. Commerce will provide all future oversight of your cleanup at this property including determination of file closure. We thank you for the efforts you have made to date to address the contamination.

All future contacts and correspondence regarding this site should be directed to:

Ms. Shanna Laube
Department of Commerce
P.O. Box 530
214 North 4th Avenue
Park Falls, WI 54552-0530
(715) 762-5557

Please include both your PECFA claim number, if you have one, and your DNR site identification number in your correspondence. The PECFA program reimbursement staff have also been transferred to Commerce from the Department of Industry, Labor and Human Relations (DILHR), effective July 1, 1996.

We advise you to notify your consultant that you are aware of your file transfer and that future cleanup efforts will be regulated by the Department of Commerce.

Sincerely,

John R. Grump
Hydrogeologist

JRG/ah

c: Bill Evans
Shanna Laube, Commerce
Glenn Bruxvoort, SEH

421 FRENETTE DRIVE, CHIPPEWA FALLS, WI 54729 715 720-6200 800 472-5881 FAX 715 720-6300
ARCHITECTURE • ENGINEERING • ENVIRONMENTAL • TRANSPORTATION

September 3, 1998

RE: Heartland Aviation
File Transfer/COMM 47.339 (2) Notification
WDNR No. 03-09-174629
PECFA No. 54703-0598-00
SEH No. HEARL9801.00 14.00

Shanna Laube
Department of Commerce
P.O. Box 530
Park Falls, WI 54452

Dear Ms. Laube:

On behalf of Heartland Aviation, Short Elliott Hendrickson, Inc. (SEH) has requested the referenced file be transferred to the Department of Commerce as noted in the attached letter. In addition, this letter is to provide notification that a closed remedial action for this site will be obtained beneath the $80,000 cap of COMM 47.31 (2). As we understand, this notification will allow priority claim review for Heartland Aviation. In addition, SEH will submit only one summary report for this project with the request for closure.

Please do not hesitate to contact me at (715) 720-6230 if you have additional questions.

Sincerely,

Glenn P. Bruxvoort, P.E.
Sr. Project Manager

GPB/dj/JEG
Enclosure
c: Larry Husby, Heartland Aviation
P:\proj\hearl\9801\ltr\laube.s3

421 FRENETTE DRIVE, CHIPPEWA FALLS, WI 54729 715 720-6200 800 472-5881 FAX 715 720-6300
ARCHITECTURE • ENGINEERING • ENVIRONMENTAL • TRANSPORTATION

September 3, 1998

RE: Heartland Aviation
File Transfer
WDNR No. 03-09-174629
PECFA No. 54703-0598-00
SEH No. HEARL9801.00 14.00

John Grump
Wisconsin Department of Natural Resources
1300 West Clairemont Avenue
P.O. Box 4001
Eau Claire, WI 54702-4001

Dear Mr. Grump:

SEH has nearly completed a Site Investigation for the referenced petroleum release site. The data collected to date clearly indicates that groundwater has not been impacted, nor will groundwater likely be impacted in the future. Therefore, on behalf of Heartland Aviation, we are requesting that this file be transferred to the Department of Commerce.

Please do not hesitate to call if you have additional questions.

Sincerely,

Glenn P. Bruxvoort, P.E.
Sr. Project Manager

GPB/dj/JEG
c: Larry Husby, Heartland Aviation
Shanna Laube, Department of Commerce
P:\proj\hearl\9801\ltr\grump.s3

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
Scott A. Humrickhouse, Regional Director

West Central Region Headquarters
1300 W. Clairemont Avenue
PO Box 4001
Eau Claire, Wisconsin 54702-4001
TELEPHONE 715-839-3700
FAX 715-839-6076
TDD 715-839-2786

June 15, 1998

Site Ref: #03-09-174629
Chippewa County

Mr. Larry Husby
Heartland Aviation, Inc.
3800 Starr Avenue
Eau Claire, WI 54703

SUBJECT: Review of the Site Investigation Work Plan for Heartland Aviation

Dear Mr. Husby:

I have reviewed the above-captioned work plan which was submitted by Glenn Bruxvoort; Short, Elliott, Hendrickson, Inc. The work plan outlines a subsurface investigation to determine the degree and extent of petroleum contamination. A total of four (4) soil borings is proposed. Selected soil samples from these borings will be submitted to a laboratory for analysis.

The analyte selection for these soil analyses is appropriate. I am approving this work plan. Please direct your consultant to complete this investigation.

If you have any questions concerning this letter, please contact me at (715) 839-3775.

Sincerely,

John R. Grump
Hydrogeologist

JRG/ah

c: Bill Evans
Glenn Bruxvoort, SEH

Heartland Aviation

Site Investigation Work Plan

Eau Claire, Wisconsin

SEH No. HEARL9801.00

April 1998

421 FRENETTE DRIVE, CHIPPEWA FALLS, WI 54729 715 720-6200 800 472-5881 FAX 715 720-6300
ARCHITECTURE • ENGINEERING • ENVIRONMENTAL • TRANSPORTATION

April 21, 1998

RE: Heartland Aviation
Site Investigation Work Plan
Eau Claire, Wisconsin
PECFA ID #: 54703-0598-00
SEH No. HEARL9801.00

Mr. John Grump, Hydrogeologist
Wisconsin Department of Natural Resources
1300 W. Clairemont Avenue
P.O. Box 4001
Eau Claire, WI 54702

Dear Mr. Grump:

On behalf of the Heartland Aviation, Short Elliott Hendrickson Inc. (SEH) is submitting a copy of the enclosed work plan entitled "Heartland Aviation – Site Investigation Work Plan." This work plan is being submitted to the Wisconsin Department of Natural Resources (WDNR) in response to apparent petroleum releases identified during tank closure assessments performed by Advent Environmental Services, Inc. (AES) of Eau Claire, Wisconsin. The Heartland Aviation property is located at 3800 Starr Avenue in the City of Eau Claire, Chippewa County, Wisconsin.

We have tentatively scheduled field activities to begin in early May 1998. We trust this will allow you adequate time to review this work plan. If no response is received, we will proceed with this work. Please do not hesitate to call us if you have any questions or comments.

Sincerely,

Glenn P. Bruxvoort, P.E.
Senior Project Manager

JJT/ls/JEG/GPB
c: Larry Husby, Heartland Aviation, Inc.
P:\proj\hearl\9801\rep\siwp.rep

Distribution List

No. of Copies	Sent to
1	John Grump, Hydrogeologist Wisconsin Department of Natural Resources 1300 W. Clairemont Avenue P.O. Box 4001 Eau Claire, WI 54702
1	Larry Husby Heartland Aviation, Inc. 3800 Starr Avenue Eau Claire, WI 54703

Site Investigation Work Plan

Heartland Aviation

Prepared for:
Heartland Aviation
Eau Claire, Wisconsin

Prepared by:
Short Elliott Hendrickson Inc.
421 Frenette Drive
Chippewa Falls, WI 54729
(715) 720-6200

I, James J. Thornton, hereby certify that I am a scientist as that term is defined in s. NR 712.03(3), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

James J. Thornton — 4/13/98

James J. Thornton
Environmental Scientist

Date

I, John E. Guhl, hereby certify that I am a Hydrogeologist as that term is defined in s. NR 712.03(1) Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

John E. Guhl #120 — 4-13-98

John E. Guhl — P.G. Number — Date
Hydrogeologist

I, Glenn P. Bruxvoort, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Glenn P. Bruxvoort 27408 — 4-13-98

Glenn P. Bruxvoort, P.E. — P.E. Number — Date
Project Manager

Table of Contents

List of Figures

List of Appendices

Site Investigation Work Plan

Heartland Aviation

Eau Claire, Wisconsin

1.0 Introduction

This Site Investigation (SI) Work Plan was prepared by Short Elliott Hendrickson Inc. (SEH) on behalf of Heartland Aviation. This work plan was written in general accordance with s. NR 716.07 and 716.09 Wisconsin Administrative Code. This Work Plan was prepared to address petroleum soil contamination discovered during tank closure assessments performed by Advent Environmental Services, Inc. (AES) in October 1997. The tasks outlined in this Work Plan have been selected to identify degree and extent of contamination at the subject site, and to identify the potential contaminant source(s).

1.1 Project Contacts

1. Larry Husby
   Heartland Aviation, Inc.
   3800 Starr Avenue
   Eau Claire, WI 54703
   (715) 835-3181

2. John Grump, Hydrogeologist
   Wisconsin Department of Natural Resources
   1300 W. Clairemont Avenue
   P.O. Box 4001
   Eau Claire, WI 54702
   (715) 839-3775

3. Glenn P. Bruxvoort, P.E., Project Manager
   Short Elliott Hendrickson Inc.
   421 Frenette Drive
   Chippewa Falls, WI 54729
   (715) 720-6230

2.0 Background Information

The subject site is leased by Heartland Aviation from the Chippewa Valley Regional Airport (CVRA) and is located at 3800 Starr Avenue in the City of Eau Claire. The property is situated in the SE 1/4 of the NW 1/4 of Section 33, T28N, R9W, Chippewa County, Wisconsin as shown on Figure 1, "Site Location."

An underground storage tank (UST) system consisting of three USTs and pump islands was removed from the site in October 1997. The approximate former locations of the USTs and dispensers and the general site layout are shown on Figure 2, "Site Plan – Existing Conditions." Soil sampling conducted by AES as part of the tank closure sampling indicated site soils near the northernmost pump island had been impacted by a petroleum release. A sample near the northern pump island, indicated as S-10 on Figure 2, contained 93 mg/kg of diesel range organics (DRO). AES also advanced a hollow stem auger (HSA) soil boring as part of an expanded site assessment in the area of concern. The approximate location of the HSA boring (B-1) is indicated on Figure 2. Soil samples from the 8-10' and 13-15' depth interval of B-1 contained 1,800 mg/kg and 3,000 mg/kg DRO and 2,200 mg/kg and 2,300 mg/kg gasoline range organics (GRO), respectively. Analytical results indicate soil contamination increases with depth and may extend beyond 15 feet below ground surface (bgs).

Water is supplied to City residents by the City of Eau Claire municipal water supply. SEH is not aware of any currently producing municipal or private wells located within 1,200 feet of the subject site. The City of Eau Claire municipal well field is located down gradient (southwest) of the subject site. However, the municipal water supply wells are located outside of the 1,200 foot radius of concern for the Heartland Aviation site.

3.0 Site Scoping

Heartland Aviation is located at the CVRA as shown on Figure 1. SEH is involved in an ongoing soil and groundwater investigation of the CVRA's deicing area focusing on the deicing agents ethylene glycol and propylene glycol. The investigation is currently concentrating on defining the degree and extent of contamination in underlying soils and groundwater. The CVRA deicing investigation should have no impact on the Heartland Aviation site investigation based on the deicing area's down gradient location relative to Heartland's area of concern.

In addition, Heartland Aviation is located approximately one mile west of National Presto Industries, Inc. (NPI). NPI is an industrial site with past manufacturing processes including munitions manufacturing. NPI has been named as the responsible party for groundwater contamination plumes located in the vicinity of the CVRA. Volatile organic compounds (VOCs) have been detected in NPI groundwater monitoring wells located at the CVRA near Heartland Aviation.

SEH is unaware of any potential impacts to items listed in s. NR 716.07(8).

4.0 Geology, Hydrogeology, and Topography

The Hydrogeologic Atlas of the Chippewa River basin (H. L. Young and S. M. Hindall, 1972), the Bedrock Geology Map of Wisconsin (B. A. Brown, 1988) and boring log information from the WDNR were utilized to determine the geologic and hydrogeologic characteristics of the Heartland Aviation site.

Based on information included in the Remedial Investigation/Feasibility Study report of NPI, the CVRA area is underlain by approximately 104 feet of unconsolidated sands and gravels. Depth to bedrock is approximately 70 to 104 feet below ground surface (bgs) and depth to groundwater is approximately 71 feet bgs based on previous investigations at the CVRA. Groundwater appears to flow to the west/southwest towards the City of Eau Claire municipal well field and the Chippewa River.

Storm drains in the CVRA's tarmac and parking lot are the most likely preferential pathway for most surface water runoff at Heartland Aviation. In addition, surface water may also drain into the vegetated areas along the airport tarmac and parking lots or through cracks in the concrete or asphalt where it percolates to the subsurface. The surface elevation of the site is 885±2 feet above Mean Sea Level (MSL) according to the 1972 United States Geologic Survey (USGS) topographic map of the vicinity. The area topography is shown on Figure 1.

Petroleum contamination at the site could potentially migrate downward through the soil to the water table where it would then be transported down gradient. The coarse nature of the soils suggest that any migration would be relatively uniform. Utility trench backfill is not expected to be a preferential route for contaminant migration at the site.

5.0 Proposed Field Investigation

In order to identify the potential source(s) of contamination and to identify the degree and extent of contamination at the subject site, SEH will perform the activities described below. The activities performed will be conducted in accordance with SEH's Standard Operating Procedures (SOPs) and Quality Assurance/Quality Control (QA/QC) Program which are found in Appendix A, "Standard Operating Procedures" and Appendix B, "Documentation and Quality Assurance/Quality Control."

5.1 Soil Borings

Soil samples will be collected from a minimum of four HSA soil borings at the Heartland Aviation site. One soil boring will be advanced to a depth of approximately 25 feet bgs in the vicinity of the documented soil contamination near the northern pump island. Three additional borings will be performed up gradient, side gradient, and down gradient from the vicinity of soil contamination to a depth of approximately 15 feet bgs. The approximate locations of the soil borings hydraulic probes are shown on Figure 3, "Proposed Soil Boring Locations." Additional soil borings may be performed as necessary to define the extent of soil contamination.

Soil samples will be collected in soil core samplers at continuous intervals from the surface to the apparent maximum depth of contamination. SEH will use a flame ionization detector (FID) to determine headspace gas concentrations in soil core samples in accordance with SEH SOPs found in Appendix A. FID field screening results along with field observations will be used to select samples for offsite laboratory analysis and to determine the apparent maximum depth of contamination. Unless conditions warrant a change, the soil samples submitted for laboratory analysis will be from the soil sample interval with the highest FID headspace reading at each probe location. Soil descriptions as well as field observations will be recorded by SEH and transferred to soil boring logs (WDNR Form 4400-122).

Upon completion of soil boring activities, boreholes will be abandoned in accordance with ch. NR 141. Borehole abandonment forms (WDNR Form 3300-5B) will be completed for each abandoned boring and submitted by the drilling subcontractor.

5.2 Soil Analysis

Soil samples collected during the subsurface investigation at Heartland Aviation will be analyzed for DRO, GRO, and petroleum volatile organic compounds (PVOC). Selected samples from each boring, based on headspace screening results and field screening observations, will be

analyzed for VOCs, lead, and/or polynuclear aromatic hydrocarbons (PAH).

The selected soil samples will be submitted for analysis at an offsite, WDNR certified analytical laboratory. The GRO, PVOC, and VOC samples will be field preserved with methanol. Samples transported to an offsite laboratory will be preserved on ice during sample storage and shipment. Standard chain of custody documentation will be maintained during shipment and receipt of samples.

5.3 Investigative Waste Storage and Disposal

Soils generated during SI activities will be managed and disposed as necessary. Small quantities of contaminated soil are anticipated to be generated during soil boring installations. Soil cuttings will be drummed and stored at the subject site for future disposal as necessary. Disposable equipment (i.e., personal protective equipment) will be placed in plastic waste bags and disposed as solid waste.

6.0 Laboratory Methods

Laboratory methodologies for sample analysis will follow the latest accepted WDNR protocol. At this time, the following methodologies apply to parameters anticipated at the subject site.

Method Name	Method Reference	Method Detection Limit (MDL)	Bottle Preservation
Soil Gasoline Range Organics (GRO)	WI DNR Modified GRO Method	10 mg/kg	MeOH
Soil Diesel Range Organics (DRO)	WI DNR Modified DRO Method	10 mg/kg	None
Soil Petroleum Volatile Organic Compounds (PVOC) or Volatile Organic Compounds (VOC)	EPA Method 5030/8021 or 8260	Varies - Dependent on Compound	MeOH
Polynuclear Aromatic Hydrocarbons (PAH)	EPA Method 8310	Varies - Dependent on Compound	None
Soil Total Lead	Method 3050-7420 or 3050/7021 or 3050/6010	1 mg/kg	None
Soil Percent Solids	EPA Method 160.3	0.10%	None

7.0 Report

SEH will prepare an SI report for the subject sites and submit the report to the WDNR and Heartland Aviation following completion of field activities and laboratory analyses. The report will describe the estimated extent of petroleum contamination, site geology and hydrogeology and potential receptors of contamination. The degree and extent of petroleum

contamination at the subject site will be determined by correlating soil analytical results from within soil borings. The results of the SI as well as recommendations for additional investigation and/or potential site remediation will be included in the narrative section of the report. Three potential remedial alternatives will be compared and the selected site remediation options will be included in the SI report.

8.0 Site Health and Safety Plan

See Appendix C.

9.0 Project Schedule

A proposed schedule of activities at the subject site is as follows:

Task	Estimated Date for Task Completion
1. Site Investigation	May 1998
2. Site Investigation Report	June 1998

JJT/ls/JEG/GPB

Figures

REPRODUCED FROM

USGS EAU CLAIRE EAST QUADRANGLE

WISCONSIN – EAU CLAIRE CO. 7.5 MINUTE SERIES

1972 PHOTOREVISED 1982

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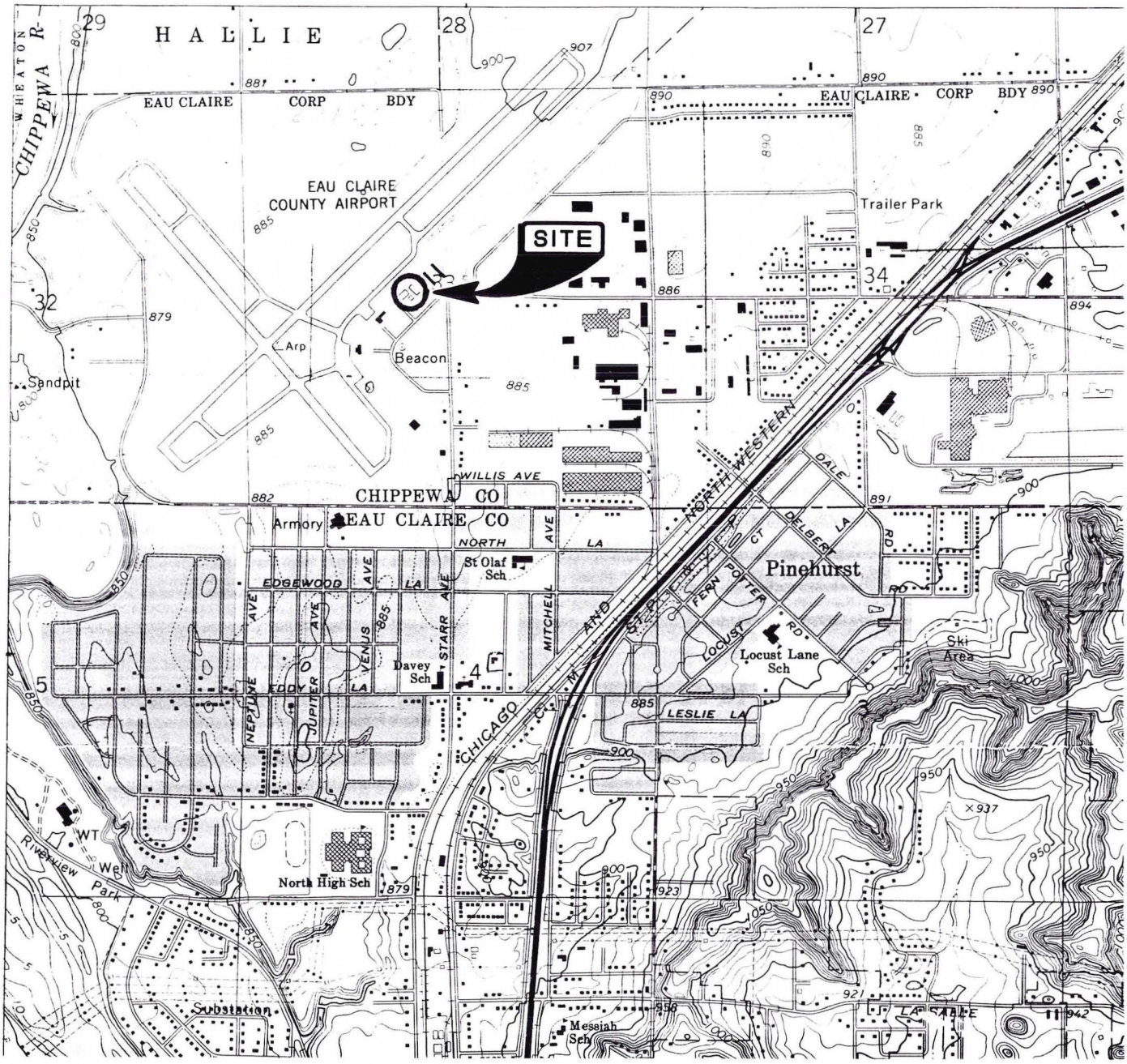
SCALE IN FEET

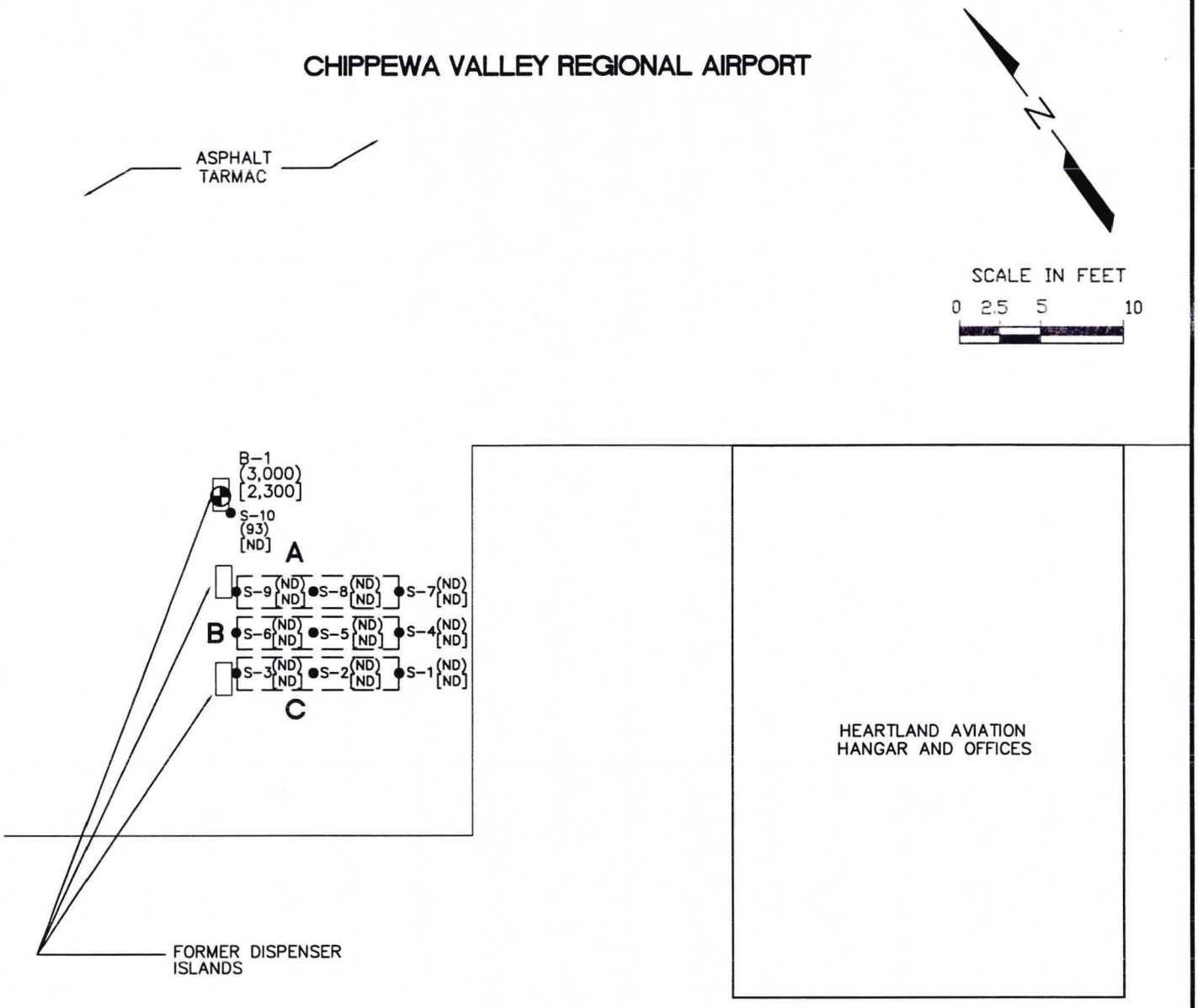
0 500 1000 2000



NO.	DATE	ISSUE/REVISIONS	DRAWN BY		DESIGN		FIELD REVIEW	QC CHECK
1	04/08/98	–	JLE	04/98	JJT	04/98		

SEH	HEARTLAND AVIATION EAU CLAIRE, WISCONSIN	FIGURE 1 SITE LOCATION	PROJ. NO. HEART9801.00 DATE 04/08/98	1 3

CHIPPEWA VALLEY REGIONAL AIRPORT



LEGEND:

- FORMER UST LOCATION
- B-1 — AES SOIL BORING LOCATION AND NUMBER
- S-1 (ND) [ND] — AES SOIL CLOSURE SAMPLE LOCATION AND NUMBER
- (3,000) — MAXIMUM DRO CONCENTRATION ANALYZED (IN PPM ND= NOT DETECTED)
- [2,300] — MAXIMUM GRO CONCENTRATION ANALYZED (IN PPM)

NOTE:

SITE PLAN BASED ON INFORMATION PREPARED BY ADVENT ENVIRONMENTAL SERVICES (AES) AND ASSUMED TO BE CORRECT.

UST I.D.	UST SIZE (GALLONS)	FORMER UST CONTENTS
A	12,000	JET FUEL
B	12,000	100-OCTANE LOW LEAD GASOLINE
C	12,000	UNLEADED GASOLINE

NO.	DATE	ISSUE/REVISIONS	DRAWN BY		DESIGN		FIELD REVIEW	QC CHECK
1	04/08/98	-	JLE	04/98	JJT	04/98		

ESEH

HEARTLAND AVIATION
EAU CLAIRE, WISCONSIN

FIGURE 2
SITE PLAN-
EXISTING CONDITIONS

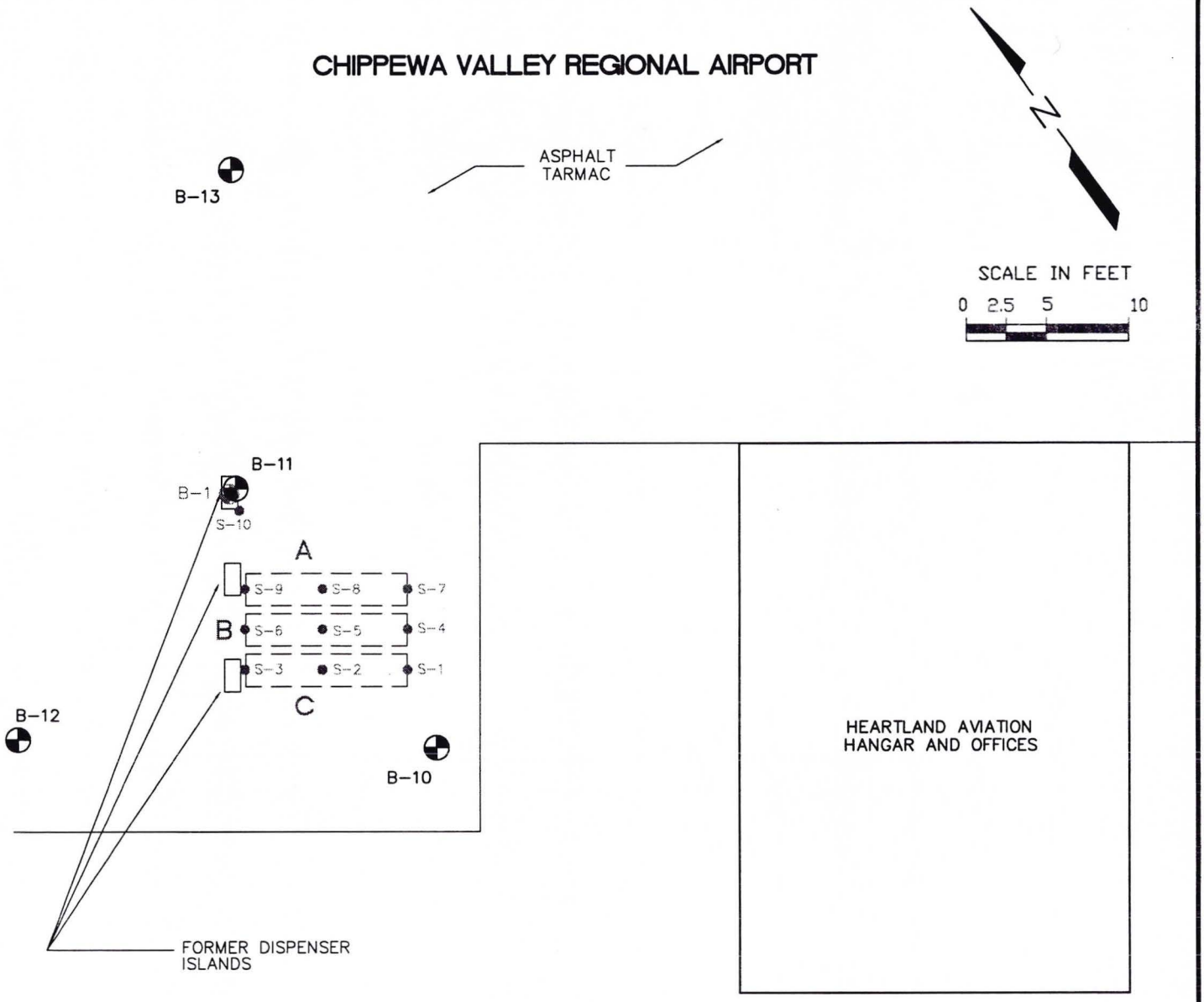
PROJ. NO. HEART9801.00

DATE 04/08/98

2/3

ASTE 9801 2E1

CHIPPEWA VALLEY REGIONAL AIRPORT



LEGEND:

B-13 ⊕	PROPOSED SEH SOIL BORING LOCATION AND NUMBER
▭	FORMER UST LOCATION
B-1 ⊕	EXISTING AES SOIL BORING LOCATION AND NUMBER
S-1 ●	EXISTING AES SOIL CLOSURE SAMPLE LOCATION AND NUMBER

NOTE:

SITE PLAN BASED ON INFORMATION PREPARED BY ADVENT ENVIRONMENTAL SERVICES (AES) AND ASSUMED TO BE CORRECT.

UST I.D.	UST SIZE (GALLONS)	FORMER UST CONTENTS
A	12,000	JET FUEL
B	12,000	100-OCTANE LOW LEAD GASOLINE
C	12,000	UNLEADED GASOLINE

NO.	DATE	ISSUE/REVISIONS	DRAWN BY		DESIGN		FIELD REVIEW	QC CHECK
1	04/08/98	-	JLE	04/98	JJT	04/98		

SEH

HEARTLAND AVIATION
EAU CLAIRE, WISCONSIN

FIGURE 3
PROPOSED SOIL
BORING LOCATIONS

PROJ. NO. HEART9801.00

DATE 04/08/98

3 / 3

ZS1 980 ASTE

Appendix A

Standard Operating Procedures

Soil Vapor Monitoring - Simultaneous FID and PID

Soil vapor (headspace) measurements are made on soil samples collected during soil boring and excavation activities. The field instrument used is a portable Foxboro Toxic Vapor Analyzer (TVA) Model 1000 with simultaneous flame ionization detector (FID) and photoionization detector (PID) capabilities. The TVA-1000 has been laboratory calibrated. The calibration of the FID is verified in the field using 105 ppm methane and the PID is verified in the field with 98 ppm isobutylene prior to conducting soil vapor monitoring. This instrument has the following standard specifications:

Accuracy	*PID Instrument* - ±25% of reading or ±2.5 ppm, whichever is greater, from 0.5 to 500 ppm. Accuracy listed is achieved using isobutylene with a 1-point calibration in the range of 100 to 300 ppm (including drift) at the temperature and humidity of the calibration. *FID Instrument* - ±25% of reading or ±2.5 ppm, whichever is greater, from 1.0 to 10,000 ppm. Accuracy listed is achieved using methane with a 1-point calibration in the range from 100 to 500 ppm (including drift) at the temperature and humidity of the calibration.
Repeatability	*PID Instrument* - ±1% at 100 ppm of isobutylene *FID Instrument* - ±2% at 100 ppm of methane
Dynamic Range	*PID Instrument* - ±0.5 to 2,000 ppm of isobutylene *FID Instrument* - ±1.0 to 50,000 ppm of methane
Linear Range	*PID Instrument* - ±0.5 to 500 ppm of isobutylene *FID Instrument* - ±1.0 to 10,000 ppm of methane
Minimum Detectable Level	The minimum detectable level is defined as two times the peak-to-peak noise. *PID Instrument* - 100 ppb of benzene *FID Instrument* - 300 ppb of hexane
Response Time Using Close Area Sampler	*PID Instrument* - Less than 3.5 seconds for 90% of final value, using 100 ppm of isobutylene *FID Instrument* - Less than 3.5 seconds for 90% of final value, using 10,00 ppm of methane
Response Time Using Charcoal Filter Adapter	*PID Instrument* - Less than 20 seconds for 90% of final value, using 100 ppm of isobutylene *FID Instrument* - Less than 20 seconds for 90% of final value, using 10,000 ppm of methane
Data Storage Rate	From 1 per second to 1 per 999 minutes, user selectable
Sample Flow Rate	1 liter/minute, nominal, at sample probe inlet
PID Lamp Life	Greater than 2,000 hours for 10.6 eV lamp, with normal cleaning
FID Life	Greater than 2,000 hours
Normal Operating Temperature	0 to +40° C (32° F to +104° F)

The following procedure is used in determining headspace gas concentrations in each soil sample:

1. Quart size plastic Ziploc bags are used for soil headspace containers. Soil samples are placed in bags using disposable spatulas or decontaminated stainless steel spatulas. The containers are filled half way with soil from specific sample locations then quickly sealed and labeled to record sample number and depth from which the sample was taken.

2. Headspace is allowed to develop for 10 minutes. The Ziploc bag is vigorously shaken for 15 seconds both at the beginning and end of the headspace development period. Clads of cohesive soil are broken to facilitate development of vapors in the headspace. Where ambient temperatures are below 32° F (0° C), headspace development is conducted within a heated vehicle or building so samples can warm to approximately 70° F.

3. After headspace development, the plastic bag is punctured with the instrument sampling probe to a point about one-half of the headspace depth. Care is exercised to avoid intake of water droplets or soil particles into the sample probe.

4. Following probe insertion through the plastic bag, the highest meter response is recorded as the headspace concentration.

Samples are also examined visually by an environmental professional for staining or other signs of contamination.

Appendix B

Documentation and Quality Assurance/Quality Control

Documentation and Quality Assurance/Quality Control (QA/QC)

Specific documentation and QA/QC procedures will be followed during the investigative activities at the Johnson Property to ensure that accurate and representative data is collected. This section describes the procedures to be followed during field activities only. Additional information regarding site activities is contained in Appendix A, "Standard Operating Procedures." The laboratory QA/QC procedures will be performed in accordance with specific method requirements and laboratory standard operating procedures.

A written log will be used to document field procedures and conditions. The written log will be kept in a bound field book with pre-numbered pages. Field notes will be entered with an indelible ink pen at the timeinformation is obtained. Field notes will be entered daily when activities occur. The field notes will include at least the following information:

- Date
- Field personnel (including owner, consultants, subcontractors, regulatory agency)
- Weather (temperature, cloud cover, wind, precipitation)
- Equipment (including screening, sampling, subcontractor equipment)
- Calibrations performed, calibration curves or standards
- Results and techniques used for field screening
- Sampling locations (this requires an accurate map)
- Methods and/or devices used in sampling
- Decontamination procedures used
- Time and date of sample collection
- Type of sample (soil, groundwater, surface water, etc.)
- Field preservation performed
- Field QC data associated with the sample
- Sample ID (must clearly correlate to sample locations shown on a map)
- Any deviations from work plan, SOP or special conditions

In addition to the written log, a photographic log may also be prepared documenting pertinent field conditions and sampling procedures. The photographs will be labeled to indicate the subject, date, time, direction and other relevant information. Upon completion of the field activities, the photographs will be assembled and placed in the project file.

For this project, quality assurance is the overall program for assuring reliability of field and analytical data. Quality control is the routine application of procedures for obtaining prescribed standards of performance during the field activities.

All sampling equipment will be stainless steel and decontaminated prior to use in the field, or disposable and dedicated to a single sample. When field equipment will be reused in the field (i.e., collect samples at different depths or locations), the non-disposable equipment will be decontaminated prior to reuse. The decontamination method involves a detergent or trisodium phosphate (TSP) wash, and a triple rinse with deionized water. The sampling equipment for the project will include a stainlesssteel split spoon, stainless steel or disposable bailers, and stainless steel spatulas. Sample collection will begin at the point of assumed least contamination and continue toward the areas of potential higher contamination. Samples will be transferred directly into laboratory clean glass bottles with Teflon caps.

Individual labels describing the sample, number, location, sampler's name, date,preservatives, and other relevant information will be attached to the bottles upon collection. All samples will be tracked using strict chain of custody procedures. Sample bottles will be tracked from the laboratory, to the field and back to the analytical laboratory. The chain of custody will also document relevant sampling and preservation.

Field QA samples will include the following:

- Duplicate samples are discrete samples obtained from the same location and time. These samples are generally formed by splitting a larger sample into two subsamples.
- Temperature blanks are additional water samples collected in the same manneras samples, used to determine the temperature of samples on receipt by the lab.
- Field blanks are water samples processed through the same sampling and filtering equipment, usedas a check on decontamination procedures (not collected when sampling with disposable bailers).
- Trip blanks are reagent water samples analyzed before leaving the lab and on their return as a check on contamination from sources outside samples (unless otherwise specified).

Field QA samples will be handled and stored in an identical manner as actualsamples. Results of the analysis of duplicates, temperature, field, and trip blanks will be included in the SI report.

Appendix C

Site Health and Safety

SITE HEALTH AND SAFETY PLAN

Site Name:	Heartland Aviation	Site Contact:	Larry Husby
Address:	3800 Starr Avenue	Phone:	(715) 835-3181
	Eau Claire, WI 54703		

I. Site Coordination

Site Supervisor/Safety Officer	Trevor Bauer, CHMM, or alternate as designated by Project Manager	Phone # (work) (715) 720-6237 (home) (715) 838-9343
Project Manager	Glenn P. Bruxvoort, P.E.	Phone # (work) (715) 720-6230 (home) (715) 568-5202
Health & Safety Administrator	Kevin E. Accola, CHMM	Phone # (work) (715) 720-6224 (home) (715) 926-3389

II. Emergency Information

A. Emergency Contacts

Fire Department	911	Poison Control Center	(608) 262-3702
Police Department	911	24 LUST Hotline	(608) 266-3232
Sheriff Department	(715) 726-7700	Chemtrec	(800) 424-9300
Ambulance	911	AT&F (Explosives Info)	(800) 424-9555
Hospital	(715) 838-3311, Luther Hospital		

*Directions to Hospital: From the site, proceed south on Starr Avenue approximately 1 mile. Turn east onto Eddy Lane and proceed to U.S. Highway 53. Turn south on U.S. 53 and proceed approximately 2.5 miles. Turn west onto Birch Street and proceed until Birch Street ends and Madison Street begins. Proceed west on Madison Street, go over the bridge, and turn south onto Bellinger Street. Proceed three blocks to Luther Hospital, 1221 Whipple Street. Follow signs indicating emergency entrance.

*See map on next page for detailed instructions.

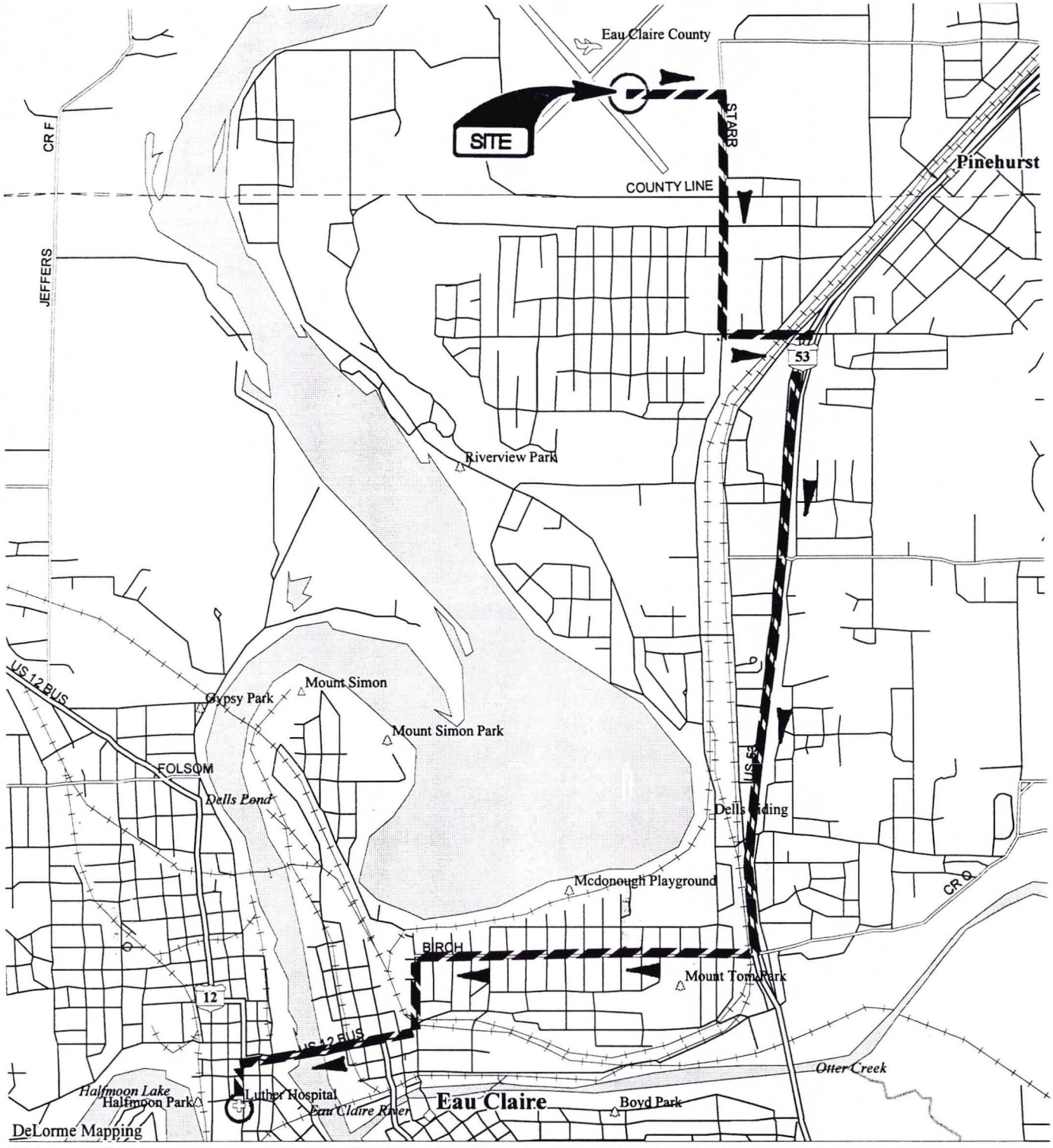
B. Emergency Response

Refer to the SOP for Emergency Response Procedures which can be found in Attachment A.

C. Site Evacuation

The evacuation signal for the site is three short blasts of a horn, either on a motor vehicle or an air horn.

Evacuation routes and assembly points to be determined at the site. Preferably the meeting place should be upwind of the work activities and at a safe distance. In the event of an evacuation, the following must be observed:



NO.	DATE	ISSUE/REVISIONS	DRAWN BY		DESIGN		FIELD REVIEW	QC CHECK
1	04/08/98	-	JLE	04/98	JJT	04/98		

SEH

HEARTLAND AVIATION
EAU CLAIRE, WISCONSIN

HOSPITAL ROUTE MAP

PROJ. NO. HEART9801.00

DATE 04/08/98

1 / 1

- Employees in the immediate vicinity should shut down all operating equipment and disconnect electrical and gasoline or diesel combustion power sources to machinery unless their well-being is in imminent danger.
- Immediately after personnel are alerted, they will evacuate the facility via the nearest escape route.
- All evacuated personnel will assemble at the predetermined meeting place.
- The Site Safety Officer will ensure all employees have evacuated before departing.
- Employees should move quickly and calmly without panic.
- Employees should not smoke.
- Once assembled, employees should remain calm and quiet until the Site Safety Officer assesses the situation. Each employee must report to the Site Safety Officer until everyone is accounted for and evacuation is complete.

D. First Aid

Refer to the SOP for First Aid found in Attachment B.

III. Applicability

The purpose of this Site Health and Safety Plan (SHSP) is to assign responsibilities, establish personal protection standards and safety practices and procedures, and provide for contingencies that may arise during site operations.

The provisions of the plan are required for all onsite SEH personnel who are engaged in hazardous material management activities including, but not limited to, initial site reconnaissance, preliminary field investigations, mobilization, project operations, and demobilization. This plan complies with Occupational Safety and Health Administration (OSHA) standards 29 Code of Federal Regulations (CFR) 1910.120.

SEH personnel working at this site meet the training requirements of 29 CFR 1910.120: Hazardous Waste Operations and Emergency Response (HAZWOPER). Documentation of this training can be obtained upon written request to the SEH COWM Health and Safety Administrator, 421 Frenette Drive, Chippewa Falls, Wisconsin 54729.

The health and safety procedures set forth in this SHSP are based on the site conditions and chemical hazards known or expected to be present using site data available at the time this SHSP was written. This SHSP is intended solely for SEH personnel to use for the activities described herein. This SHSP is subject to revision by the Site Safety Officer when deemed necessary by actual site conditions encountered during field activities.

This SHSP does not supersede or in any way relieve subcontractors of their obligations under any applicable OSHA regulations including: 29 CFR 1910, Occupational Safety and Health Standards; and 29 CFR 1926, Health and Safety Regulations for Construction. Before field activities begin, all contractors and subcontractors must develop their own SHSP. A copy of this SHSP will be provided upon request, but this is not a substitute for an independent plan by the contractor or subcontractor.

IV. Project Objectives

1) Determine the presence or absence of contamination in the areas of concern where petroleum fuels were stored or handled.
2) Determine the degree and extent of petroleum contamination in areas of concern.
3) Design and implement corrective action.
4) Close out areas of concern as remedial objectives are met.

V. Hazard Evaluation

A. Scope of Work

Soil Sampling
Groundwater Sampling

B. Potential Hazards

The following waste types may be encountered at the site:

Gasoline
Diesel

C. Chemical/Physical Hazard Summary

List information for each contaminant or class of contaminants which could potentially be present at each location.

Location	Matrix	Compound*	Max. Concentrations (if known)	Route of Exposure	Symptoms
Borings/ Monitoring Wells	Soil/ Groundwater	Gasoline	Unknown	Inhalation, Absorption, Ingestion	CNS depression, dizziness, headache, incoordination, anesthesia, coughing, gagging, pneumonia
		Diesel	Unknown	Inhalation, Absorption, Ingestion	Headache, giddiness, nausea, vomiting, cramping, skin/eye irritation
*Material Safety Data Sheets (MSDSs) or similar compound information for each substance can be found in Attachment C.					

D. Exposure Limits and Recognition Qualities

Compound	Compound Class*	Exposure Standards			Recognition Qualities	
		PEL/TLV (ppm)	STEL (ppm)**	IDLH (ppm)	Odor Threshold (ppm)	LEL/UEL (%)
Gasoline	VOCs	300	500/30 min.	--	0.25	1.4/7.4
Diesel	VOCs/PAHs	--	--	--	0.7	1.3/6.0
*Compound classes include: VOCs, explosive gas, dusts, etc. **Maximum 15 minute exposure unless specified.						

E. Additional Concerns

Fire Protection/Fire Prevention: Operations involving the potential for fire hazards shall be conducted in a manner that minimizes the risk of a fire. Non-sparking tools and fire extinguishers shall be used or available as appropriate. Sources of ignition shall be removed. When necessary, explosion-proof instruments and/or bonding and grounding will be used to prevent fire or explosion. Work tasks requiring spark or explosion-proof tools and equipment shall be specified in the project work plan.

Utilities: Overhead and underground utility hazards shall be identified and/or inspected prior to conducting operations involving potential contact. Diggers Hotline will be notified at least 3 working days prior to beginning field activities when applicable.

Weather Condition Restrictions: The Site Safety Officer has the authority, should severe weather threaten, to place site activities on standby, cease operations and/or evacuate the site as deemed necessary.

Weather conditions onsite cannot be controlled. Site personnel are to be aware of the warnings of impending severe weather and the precautions to take when severe weather threatens. Refer to the SOP for Severe Weather found in Attachment D.

Temperature Stress: Hot or cold weather is a concern at all sites and cannot be controlled. Site workers need to be aware of engineering controls which can reduce temperature stress, the signs and symptoms of temperature stress and first aid measures for victims of temperature stress. Refer to the SOP for First Aid found in Attachment B.

General Site Health and Safety Rules: Some general safe work practices apply to all sites. Refer to the SOP for General Site Health and Safety Rules found in Attachment E.

VI. Site Control

A. Present Site Security

None.

B. Site Security Upgrades Needed

None.

C. Zone of Contamination

Zone boundaries do not need to be marked. Generally, the area within 20 feet of field operations is considered the Exclusion Zone and requires the use of applicable personal protection equipment (PPE).

D. Entry Restrictions

Only authorized personnel are permitted within the Exclusion Zone. The Site Safety Officer will ensure that employees entering the zone of contamination have donned applicable PPE.

VII. Ambient Air Monitoring

A. General

Monitoring will be performed for the hazards presented in Section V, D, "Exposure Limits and Recognition Qualities," to ensure proper selection of engineering controls, work practices, and personal protective equipment. Periodic monitoring will be conducted when there is potential for the presence of additional or increased concentrations of hazardous substances or a flammable atmosphere. Additional monitoring will be conducted as indicated:

- when work begins on a different portion of the site;
- when contaminants other than those previously identified are being handled;
- when a different type of operation is initiated;
- when employees are handling leaking drums or containers or working in areas with obvious liquid contamination.

B. Monitoring Requirements

Location	Compound	Equipment	Action Level*	Protective Level
Borings/ Monitoring Wells	Gasoline	FID	0-150 ppm	D
			150-500 ppm	C
			500 ppm	Cease Operation, Re-evaluate Work Plan
	Diesel	FID	≤Background	D
			≤5 units above background	C
			>5 units above background	Cease Operation, Re-evaluate Work Plan
*All ambient measurements taken to evaluate employee exposures must be taken in the individuals breathing zone and must be fairly constant for at least 30 seconds.				

Before any field activities commence, the background levels of the site must be measured and noted. Daily background readings must be conducted away from areas of potential contamination to obtain accurate results.

Monitoring during invasive field activities (i.e., HSA boring, excavation, etc.) will be done at a minimum every 15 minutes.

All site readings along with the date, time, background level, weather conditions, wind direction and speed, and the location where the background level was recorded must be noted in the field book or on a Air Monitoring Form.

C. Instrument Calibration and Maintenance

Field instruments will be calibrated according to the manufacturers recommendations. Photoionization detectors (PIDs) and flame ionization detectors (FIDs) will be calibrated with the appropriate calibration gas (i.e., isobutylene for PIDs and methane for FIDs). The instruments will be calibrated with the following frequency:

1. At the beginning of each day.
2. After any significant changes in humidity or temperature (more than 15 degrees F).
3. After any repairs to the instrument are performed.

Maintenance on field instruments will be done according to the manufacturer's recommendations.

VIII. Personal Protective Equipment (PPE)

All field activities will be performed at the appropriate level of protection for the action levels specified in Section VII, B. The following table describes the equipment required for various levels of protection.

		Protection Level			
Equipment Need	**Type/Material**	**A[1]**	**B[1]**	**C**	**D**
Protective Coveralls or Work Clothes and Gloves					X
Boots with Steel Toe and Shank				X	X
Hard Hat				X	X
Safety Glasses				X	X
Disposable Gloves/Boot Covers	Nitrile				X
Hearing Protection				X	X
Chemical-Resistant Coveralls	Polyethylene Coated Tyvek			X	
Chemical-Resistant Inner/Outer Gloves	Nitrile/Nitrile			X	
Chemical-Resistant Boot Covers	Polyethylene, Latex			X	
Two-way Radio Communication					
Air-Purifying Respirator with Cartridges[2]	Full-Face, Organic Vapor			X	
Escape Respirator					
Positive Pressure SCBA					
Fully-Encapsulating, Chemical-Resistant Suit					

[1] = The COWM Health and Safety Administrator will select appropriate equipment for jobs requiring level A or B.
[2] = The COWM Health and Safety Administrator will select appropriate cartridges for specific jobs.

IX. Decontamination

Use the SOP for Personal and Equipment Decontamination at the highest protection level used onsite each day. See Attachment F for Decontamination SOP.

X. Confined Space Entry

Confined space entry is not allowed in the scope of this SHSP. Should a confined space entry situation be encountered, the Project Manager and Health and Safety Administrator must be notified and provisions for confined space entry must be added to this SHSP.

XI. Spill Containment

It is not anticipated that any drum or container handling will be encountered in this project. Should a container handling situation be encountered where a major spill could occur, the Project Manager and Health and Safety Administrator must be notified and provisions for container handling and spill control must be added to this SHSP.

JJT/ls/KEA

XII. Site Safety Plan Review

This document shall be signed by each employee who visits the site.

I have read and understand the contents of this SHSP, have been given opportunity to discuss contents with the Project Manager and Site Safety Officer, and will comply with its provisions, requirements and restrictions.

Site: Heartland Aviation, Inc.

Location: 3800 Starr Avenue, Eau Claire, WI 54703

Pre-Entry Briefing Date: _____

Name (print)	Signature	Date	Attended Briefing? Y/N
Trevor Bauer			
Glenn Bruxvoort			
James Thornton			
John Guhl			

ATTACHMENT A

Field Emergency Response Procedures

Based on the type of potential hazards that may be present, the Project Manager and Health and Safety Administrator are to determine if a site specific emergency response plan is necessary prior to the beginning of work. If a site specific plan is necessary, it is to be attached to the Site Health and Safety Plan (SHSP).

General

In the event of an emergency situation, SEH employees will provide useful information regarding the incident to emergency response personnel. Stick to helpful facts and avoid placing blame or judgement.

At a safe distance and at the appropriate time, write down all that is remembered regarding the incident. This information may be important later when facts are sorted out.

- How did it happen?
- Who was doing what?
- What did you see?
- What did you hear?

Small Fires

Even a minor fire can become a serious problem, particularly when adjacent to flammable or combustible materials. The first few minutes after discovery of a fire are the most critical in preventing a larger emergency. Take the following actions immediately.

1. In case of a fire or explosion, immediately shut down possible ignition sources and stop any work in progress. Give priority to assisting injured persons.
2. Alert other personnel in the vicinity and send someone for assistance.
3. If it is a small fire - one that can be extinguished within 30 seconds or with one fire extinguisher - attempt to extinguish the blaze if:
   - Conditions are safe
   - You are not alone
   - You have the proper class of fire extinguisher
   - You have been properly trained to use a fire extinguisher
4. A combination (ABC) extinguisher can be used against the following classes of fires:
   - Class A fires - ordinary combustible solids such as paper, wood, coal, rubber and textiles
   - Class B fires - petroleum hydrocarbons (diesel fuel, motor oil and grease) and volatile flammable solvents
   - Class C fires - electrical equipment

   Note: ABC extinguishers are not effective against Class D fires which include combustible or reactive metals (such as sodium and potassium), metal hydrides or organometallics. Special Class D extinguishers are required.
5. Avoid entrapment by a fire; always fight from a position accessible to an exit.
6. If there is any chance that the fire cannot be controlled by locally available personnel and equipment, the following action should then be taken:
   - Activate the emergency alarm system (if available) and notify the local fire department.
   - Confine the emergency to prevent further spread of the fire.

- Assist injured personnel and provide first aid or transportation to medical assistance, if necessary.

7. Next, notify the client if the client is in close proximity to the fire.
8. If the fire department is contacted, be prepared to tell them:
   - Who you are
   - Your location (reference site hospital route map)
   - Type of fire (i.e., electrical, chemical, combustible solids, vapor)
   - If the fire is extinguished
   - The need for medical assistance
   - Other potential hazards in the area (i.e., proximity to bulk tanks, downed electrical lines, poor access)
   - What you will be doing after you hang up the phone and where they can find or reach you

9. Upon arrival of the local fire department, turn over command to them and explain the situation. Contact the Project Manager and Health and Safety Administrator.

Large Fire or Explosion

1. If the fire is too large to extinguish within 30 seconds, immediately notify people in the area and then call the local fire department. Be prepared to tell them:
   - Who you are
   - Your location
   - Type of fire (i.e., electrical, chemical, combustible solids, vapor)
   - If the fire is extinguished
   - The need for medical assistance
   - Other potential hazards in the area (i.e., proximity to bulk tanks, downed electrical lines, poor access)
   - What you will be doing after you hang up the phone and where they can find you or reach you

2. Upon arrival of the fire department, turn over command to them and explain the situation. Contact the Project Manager and Health and Safety Administrator.

Flammable/Combustible Liquid Spills

1. If a spill of a flammable or combustible liquid occurs, all possible sources of ignition should be extinguished or removed immediately.
2. Use Material Safety Data Sheets (MSDSs), analytical information from laboratory personnel, and any other available sources of information, together with your own expertise to determine if spill control and cleanup can be safely accomplished with the personnel and materials available onsite.
3. The following general spill cleanup procedures can be utilized, but more specific techniques might be required for certain chemicals and, if necessary, will be included in Section XI of this SHSP.
   - Vermiculite or suitable absorbent may be used to solidify free liquids.
   - Both spilled liquids and solid residues must be contained in drums.
   - If a spill occurs on soil, it must be scraped and contained.
   - The appropriate state agency must also be notified immediately when a spill occurs to the environment.

ATTACHMENT B

First Aid

ATTACHMENT B
First Aid

A. Bites

Animal Bites: Thoroughly wash the wound with soap and water. Flush the area with running water and apply a sterile dressing. Control bleeding and immobilize the affected part until the victim has been attended by a physician. See that the animal is kept alive and in quarantine. Obtain name and address of the owner of the animal.

Insect Bites: Remove "stinger" if present. Keep affected part down below the level of the heart. Apply ice bag. For minor bites and stings apply soothing lotions, such as calamine. Watch for sign of an allergic reaction.

Spider/Tick Bites: Wash the wound with soap and water. If the spider is suspected to be poisonous (i.e. Brown Recluse or Black Widow), call the Poison Control Center for instruction on immediate care and seek medical attention immediately.

B. Burns and Scalds

Care for burns and scalds using the following three basic steps.

1. Stop the Burning
   - Put flames out.
   - Remove the victim from the source of the burn.
2. Cool the Burn
   - Use large amounts of cool water to cool the burned area.
   - Do not use ice or ice water other than on superficial burns.
   - Use tub, shower, or garden hose to immerse burned areas.
   - Used soaked towels or other wet cloths to cool a burned face or other areas that cannot be immersed.
   - Keep cloths cool by adding more water.
3. Cover the Burn
   - Use dry, sterile dressings or a clean cloth and loosely bandage them in place.
   - Covering the burn helps keep air out and prevents infection.

Note: Do not apply vaseline or grease to any burn. Follow the guidelines listed below for the different types of burns.

Minor Burns: Do not break blisters or remove tissue. Seek medical attention.

Severe Burns: Do not remove adhered particles of clothing. Keep burned feet or legs elevated. Seek medical attention immediately.

Chemical Burns: Wash away the chemical with large amounts of water. Remove the victim's chemical-soaked clothing. If dry lime, brush away before flushing. Seek medical attention.

C. Cramps

Symptoms: Cramps in muscles of abdomen and extremities. Heat exhaustion may also be present.

Treatment: Same as for heat exhaustion in Subpart I of this attachment.

D. Cuts

Apply pressure with sterile gauze dressing, and elevate the area until bleeding stops. If bleeding persists, apply pressure to a pressure point. Apply a bandage and seek medical attention.

E. Eyes

Foreign Objects: Keep the victim from rubbing their eye. Flush the eye with water. If flushing fails to remove the object, apply a dry, protective dressing to both eyes to limit movement of the affected eye. Seek medical attention immediately.

Chemicals: Flood the eye thoroughly with water for 15 minutes. Cover both eyes with a dry pad and seek medical attention.

F. Fainting

Keep the victim lying down. Loosen tight clothing. If vomiting occurs, roll victim onto their side and turn head to the side. If necessary wipe out their mouth. Maintain an open airway. Bathe their face gently with cool water. Unless recovery is prompt, seek medical attention.

G. Fractures

Deformity of an injured part usually means a fracture. If fracture is suspected, splint the body part. **DO NOT ATTEMPT TO MOVE THE FRACTURED BODY PART.** Seek medical attention immediately.

H. Frostbite

Symptoms: Just before frostbite occurs, skin may be flushed, then change to white or grayish-yellow. Pain may be felt early, then subside. Blisters may appear. Affected part feels very cold and numb.

Treatment: Bring victim indoors, cover the frozen area using extra clothing and blankets. Warm frozen area quickly by immersion in warm water (100-105 degrees F) – **NOT HOT WATER. DO NOT RUB THE PART.** Seek medical attention immediately.

I. Heat Exhaustion

Caused by overexposure to heat, either sun or indoors.

Symptoms: Near normal body temperature, skin is pale and clammy. Profuse sweating, tiredness, weakness, headache, perhaps cramps, nausea, dizziness, and possible fainting.

Treatment: Keep victim lying down and raise victim's feet. Loosen clothing, apply cool wet cloths. If conscious, give sips of cool water or liquids with electrolytes like diluted Gatorade over a period of one hour. If vomiting occurs, discontinue liquids. Seek medical attention immediately.

J. Sunstroke

Symptoms: Body temperature is high (106 F or higher). Skin is hot, red and dry. Pulse is rapid and strong. Victim may be unconscious.

Treatment: Keep victim lying down with head elevated. Remove clothing and repeatedly sponge the bare skin with cool water or rubbing alcohol. Seek medical attention immediately.

K. Poisoning

Call the Poison Control Center for instruction on immediate care. If victim becomes unconscious, keep the airway open. If breathing stops, give rescue breathing and monitor pulse. If pulse stops, begin cardiopulmonary resuscitation (CPR). Seek medical attention immediately.

L. Poison Ivy or Poison Oak

Remove contaminated clothing; wash all exposed areas thoroughly with soap and water, followed by rubbing alcohol. If rash is mild, apply calamine or other soothing skin lotion. If a severe reaction occurs, seek medical attention immediately.

M. **Puncture Wounds**

If puncture wound is deeper than skin surface, seek medical attention. Serious infection can arise unless proper treatment is received.

N. **Sprains**

Elevate injured part and apply ice bag or cold packs. **DO NOT SOAK IN HOT WATER.** If pain and swelling persist, seek medical attention.

O. **Unconsciousness**

Seek medical attention immediately. Never attempt to give food or drink. Keep victim lying flat, maintain open airway. If victim is not breathing, begin rescue breathing and monitor pulse. If pulse stops, begin CPR.

P. **General Sequence for Treatment of Exposures to Unknown Chemicals**

1. Check the victim's condition.
2. Immediately notify the appropriate emergency contacts listed on page 1 of this SHSP.
3. Quickly protect yourself from exposure before attempting to rescue the victim.
4. Decontaminate the victim.
5. Treat cessation of breathing first.
6. If the victim has no pulse, perform CPR.
7. Treat eye injuries next.
8. Treat skin contact.
9. Treat shock.

Preliminary Assessment

Make a quick assessment of the likely routes of exposure by examining the eyes, mouth, nose and skin of the victim for signs of the chemical itself or damage it has caused such as swelling, redness, bleeding, burns, discharge of fluid or mucous or pallor.

- Drooling, difficult swallowing, or distended and painful or hard, rigid abdomen all indicate possible ingestion of a corrosive or caustic substance.
- If respirations are rapid, shallow, noisy or labored, suspect inhalation.
- If the face has been splashed with chemical, eye contact is likely.

Poisoning by Inhalation

1. Immediately notify the appropriate emergency contacts listed on page 1 of this SHSP.
2. Remove the victim from the contaminated area while protecting yourself from exposure using a self-contained breathing apparatus (SCBA).
3. Remove contaminated clothing and equipment from the victim while wearing protective equipment.
4. If breathing has stopped, open airway, begin rescue breathing using a disposable resuscitator. **DO NOT** use direct mouth-to-mouth resuscitation.
   - Check the victim's condition.
   - Call for medical assistance.
   - Maintain an open airway.
   - Monitor breathing.
   - Monitor the pulse.
   - Continue your efforts until help arrives or the victim begins breathing on their own.
   - Keep the victim warm and quiet.

5. If the victim is unconscious but breathing:
   - Lay the victim on their back. If the victim is vomiting, turn them on their side.
   - Clear the airway and loosen tight clothing.
   - Keep victim warm and quiet.
   - Do not leave the victim unattended.
   - Never give an unconscious person anything to drink.

6. If the victim is conscious:
   - Lay the victim down, cover the victim with a blanket and keep them quiet.
   - Loosen tight clothing.

Poisoning by Ingestion

1. Remove the victim from exposure while protecting yourself from exposure.
2. Call the Poison Control Center phone number listed on page 1 of this SHSP.
3. Notify an emergency medical service of the nature of the exposure and arrange for transport to a medical facility.
4. Consult the MSDS to determine whether to offer victim water to drink or to induce vomiting and by what means. (The Poison Control Center may be able to provide this information.)
5. If the victim is conscious:
   - Have the victim rinse out his mouth with water.
   - If there are no signs of burns, swallowing difficulty or abdominal problems and victim is conscious and if so advised by a physician or Poison Control Center:
     - Induce vomiting by giving two teaspoons of Syrup of Ipecac. Follow with at least one cup of water. **DO NOT** use milk. If you do not have Syrup of Ipecac, induce vomiting by asking the victim to touch the back of the throat with a finger, spoon handle or blunt instrument.
     - Have the victim sit up or lean forward while vomiting.
     - Give the victim one to two cups of water after vomiting has ceased.

6. If the victim is unconscious:
   - Lay the victim on their left side, bending her right hip. Loosen their collar and belt.
   - Maintain an open airway.
   - **DO NOT** give an unconscious person anything to drink.
   - Arrange for transport to the nearest medical facility.
   - Stand by to administer rescue breathing and CPR if needed. Be sure to wipe or rinse all traces of chemical from in and around the victim's mouth before starting rescue breathing. Always use disposable resuscitators. **DO NOT** use direct mouth-to-mouth resuscitation.
   - If breathing has stopped, begin rescue breathing using a disposable resuscitator and avoid mouth-to-mouth contact.

7. If the victim vomits, save the vomitus and send it to the medical facility for analysis.
8. If the victim shows signs of shock (a weak, rapid pulse; pale clammy skin; cold hands and feet), elevate the victim's feet eight to twelve inches and cover the victim with a blanket.
9. **DO NOT** give someone who is convulsing anything to drink.
10. **DO NOT** leave the victim alone except to call for emergency assistance.

Poisoning by Skin Contact

1. Remove the victim from the contaminated area, being careful to protect your lungs, skin and eyes.
2. Notify a physician, emergency room, or poison control center of the accident and obtain advice.
3. Remove the victim's clothing, shoes and jewelry from the affected areas, cutting them off if necessary. Do this under a shower or while flushing with water.
4. Continue to flush with water until all traces of the chemical are gone and any slippery feeling has disappeared. Rinse for at least 15 minutes.
5. Cover the victim with a blanket or dry clothing.
6. In case of inflammation, burns, blisters or pain, loosely apply a dry, sterile dressing or a clean, dry cloth.
7. If the victim is in shock:
   - Lay the victim down on his side and cover him with a blanket.
   - Elevate the victim's feet eight to twelve inches.
   - Notify an emergency medical service of the nature of the exposure.

DO NOT break open blisters or remove skin. If clothing is stuck to the skin after flushing with water, do not remove it.

DO NOT rub or apply pressure to the affected area.

DO NOT apply any oily substance to the affected skin.

DO NOT use hot water.

DO NOT leave the victim alone.

Poisoning by Eye Contact

Remove the victim from the contaminated area, being careful to protect your lungs, skin and eyes. Immediately:

1. Flush the victim's eye(s) with clean tepid water for at least 15 minutes.
2. Have the victim lie or sit down and tilt head back.
3. Hold eyelid(s) open and pour water slowly over the eyeball(s) starting at the inner corners by the nose allowing the water to flow to the outer corners of the eye.
4. The victim may be in great pain and want to keep eyes closed or rub them but you must rinse the chemical out of the eye(s) in order to prevent possible permanent damage.
5. Ask the victim to look up, down and side to side as you rinse.
6. Call an emergency medical service and arrange for transport to the nearest facility for examination and treatment as soon as possible. Even if there is no pain and vision is good, a physician should examine the eye(s) since delayed damage may occur.
7. If the eye(s) is(are) painful:
   - Cover loosely with gauze or a clean, dry cloth
   - Maintain verbal and physical contact with the victim

ATTACHMENT C

Potential Contaminants/Compounds

OILS, FUEL: NO. 1

OON

Common Synonyms	Watery liquid	Colorless	Kerosene odor
Kerosene Kerosine Range oil JP-1	Floats on water.		

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Combustible.
Extinguish with dry chemical, foam or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

LIQUID
Irritating to skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

Dangerous to aquatic life in high concentrations.
Fouling to shoreline.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. RESPONSE TO DISCHARGE

(See Response Methods Handbook)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABEL

2.1 Category: None
2.2 Class: Not pertinent

3. CHEMICAL DESIGNATIONS

3.1 CG Compatibility Class: Miscellaneous Hydrocarbon Mixtures
3.2 Formula: Not applicable
3.3 IMO/UN Designation: 3.3/1223
3.4 DOT ID No.: 1223
3.5 CAS Registry No.: Data not available

4. OBSERVABLE CHARACTERISTICS

4.1 Physical State (as shipped): Liquid
4.2 Color: Colorless to light brown
4.3 Odor: Characteristic

5. HEALTH HAZARDS

5.1 Personal Protective Equipment: Protective gloves; goggles or face shield.
5.2 Symptoms Following Exposure: INGESTION causes irritation of gastrointestinal tract; pulmonary tract irritation secondary to exhalation of vapors. ASPIRATION causes severe lung irritation with coughing, gagging, dyspnea, substernal distress, and rapidly developing pulmonary edema, signs of bronchopneumonia and pneumonitis appear later; minimal central nervous system depression.
5.3 Treatment of Exposure: INGESTION: do NOT lavage or induce vomiting; call physician. ASPIRATION: enforce bed rest; administer oxygen; call physician. EYES: wash with plenty of water. SKIN: wipe off and wash with soap and water.
5.4 Threshold Limit Value: Data not available
5.5 Short Term Inhalation Limits: Data not available
5.6 Toxicity by Ingestion: Grade 1; LD_{50} = 5-15 g/kg
5.7 Late Toxicity: Data not available
5.8 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
5.10 Odor Threshold: 1 ppm
5.11 IDLH Value: Data not available

6. FIRE HAZARDS

6.1 Flash Point: 100°F C.C.
6.2 Flammable Limits in Air: 0.7%-5%
6.3 Fire Extinguishing Agents: Dry chemical, foam, carbon dioxide
6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective
6.5 Special Hazards of Combustion Products: Not pertinent
6.6 Behavior in Fire: Not pertinent
6.7 Ignition Temperature: 444°F
6.8 Electrical Hazard: Not pertinent
6.9 Burning Rate: 4 mm/min.
6.10 Adiabatic Flame Temperature: Data not available
6.11 Stoichiometric Air to Fuel Ratio: Data not available
6.12 Flame Temperature: Data not available

7. CHEMICAL REACTIVITY

7.1 Reactivity With Water: No reaction
7.2 Reactivity with Common Materials: No reaction
7.3 Stability During Transport: Stable
7.4 Neutralizing Agents for Acids and Caustics: Not pertinent
7.5 Polymerization: Not pertinent
7.6 Inhibitor of Polymerization: Not pertinent
7.7 Molar Ratio (Reactant to Product): Data not available
7.8 Reactivity Group: 33

8. WATER POLLUTION

8.1 Aquatic Toxicity: 2990 ppm/24 hr/bluegill/TL_m/fresh water
8.2 Waterfowl Toxicity: Data not available
8.3 Biological Oxygen Demand (BOD): 53%, 5 days
8.4 Food Chain Concentration Potential: None

9. SHIPPING INFORMATION

9.1 Grades of Purity: Light hydrocarbon distillate: 100%
9.2 Storage Temperature: Ambient
9.3 Inert Atmosphere: No requirement
9.4 Venting: Open (flame arrester)

10. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook)

A-T-U

11. HAZARD CLASSIFICATIONS

11.1 Code of Federal Regulations: Combustible liquid

11.2 NAS Hazard Rating for Bulk Water Transportation:

Category	Rating
Fire	2
Health	
Vapor Irritant	1
Liquid or Solid Irritant	1
Poisons	1
Water Pollution	
Human Toxicity	1
Aquatic Toxicity	1
Aesthetic Effect	3
Reactivity	
Other Chemicals	0
Water	0
Self Reaction	0

11.3 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

12. PHYSICAL AND CHEMICAL PROPERTIES

12.1 Physical State at 15°C and 1 atm: Liquid
12.2 Molecular Weight: Not pertinent
12.3 Boiling Point at 1 atm: 380 560°F = 193—293°C = 466—566°K
12.4 Freezing Point: —45 to —55°F = —43 to —48°C = 230 to 225°K
12.5 Critical Temperature: Not pertinent
12.6 Critical Pressure: Not pertinent
12.7 Specific Gravity: (liquid) 0.81 0.85 at 15°C
12.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023—0.032 N/m at 20°C
12.9 Liquid Water Interfacial Tension: 47—49 dynes/cm = 0.047 0.049 N/m at 20°C
12.10 Vapor (Gas) Specific Gravity: Not pertinent
12.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
12.12 Latent Heat of Vaporization: 110 Btu/lb = 60 cal/g = 2.5 X 10^5 J/kg
12.13 Heat of Combustion: —18,540 Btu/lb = —10,300 cal/g = —431.24 X 10^5 J/kg
12.14 Heat of Decomposition: Not pertinent
12.15 Heat of Solution: Not pertinent
12.16 Heat of Polymerization: Not pertinent
12.25 Heat of Fusion: Data not available
12.26 Limiting Value: Data not available
12.27 Reid Vapor Pressure: Data not available

NOTES

OILS, FUEL: NO. 1

12.17 SATURATED LIQUID DENSITY

Temperature (degrees F)	Pounds per cubic foot
34	51.430
36	51.360
38	51.290
40	51.220
42	51.150
44	51.080
46	51.010
48	50.940
50	50.870
52	50.800
54	50.740
56	50.670
58	50.600
60	50.530
62	50.460
64	50.390
66	50.320
68	50.250
70	50.180
72	50.110
74	50.040
76	49.970
78	49.900
80	49.830
82	49.760
84	49.690

12.18 LIQUID HEAT CAPACITY

Temperature (degrees F)	British thermal unit per pound-F
70	.469
75	.471
80	.474
85	.476
90	.479
95	.481
100	.484
105	.486
110	.489
115	.491
120	.494
125	.496
130	.499
135	.501
140	.504
145	.506
150	.509
155	.511
160	.514
165	.516
170	.519
175	.521
180	.524
185	.526
190	.529
195	.531

12.19 LIQUID THERMAL CONDUCTIVITY

Temperature (degrees F)	British thermal unit-inch per hour-square foot-F
0	.926
10	.924
20	.921
30	.919
40	.917
50	.915
60	.913
70	.911
80	.909
90	.907
100	.905
110	.903
120	.901
130	.899
140	.897
150	.895
160	.893
170	.891
180	.889
190	.887
200	.885
210	.883

12.20 LIQUID VISCOSITY

Temperature (degrees F)	Centipoise
—35	6.727
—30	6.065
—25	5.482
—20	4.965
—15	4.508
—10	4.101
—5	3.739
0	3.416
5	3.127
10	2.867
15	2.634
20	2.424
25	2.235
30	2.064
35	1.909
40	1.768
45	1.641
50	1.525
55	1.419
60	1.322
65	1.233
70	1.152
75	1.078

12.21 SOLUBILITY IN WATER

Temperature (degrees F)	Pounds per 100 pounds of water
	I
	N
	S
	O
	L
	U
	B
	L
	E

12.22 SATURATED VAPOR PRESSURE

Temperature (degrees F)	Pounds per square inch
70	.041
80	.056
90	.075
100	.099
110	.130
120	.168
130	.217
140	.277
150	.350
160	.440
170	.548
180	.679
190	.835
200	1.021
210	1.241
220	1.500
230	1.802
240	2.154
250	2.562
260	3.033
270	3.573
280	4.192
290	4.896
300	5.695

12.23 SATURATED VAPOR DENSITY

Temperature (degrees F)	Pounds per cubic foot
	N
	O
	T
	P
	E
	R
	T
	I
	N
	E
	N
	T

12.24 IDEAL GAS HEAT CAPACITY

Temperature (degrees F)	British thermal unit per pound-F
	N
	O
	T
	P
	E
	R
	T
	I
	N
	E
	N
	T

GASOLINES: AUTOMOTIVE (<4.23g lead/gal)

GAT

Common Synonyms	Watery liquid	Colorless to pale brown or pink	Gasoline odor
Motor spirit Petrol	Floats on water. Flammable, irritating vapor is produced.		

Stop discharge if possible. Keep people away.
Shut off ignition sources and call fire department.
Stay upwind and use water spray to "knock down" vapor.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

FLAMMABLE
Flashback along vapor trail may occur.
Vapor may explode if ignited in an enclosed area.
Extinguish with dry chemical, foam, or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
If inhaled, will cause dizziness, headache, difficult breathing or loss of consciousness.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Irritating to skin and eyes.
If swallowed, will cause nausea or vomiting.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.
Fouling to shoreline.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. RESPONSE TO DISCHARGE

(See Response Methods Handbook)

Issue warning-high flammability
Evacuate area
Disperse and flush

2. LABEL

2.1 **Category:** Flammable liquid
2.2 **Class:** 3

3. CHEMICAL DESIGNATIONS

3.1 **CG Compatibility Class:** Miscellaneous Hydrocarbon Mixtures
3.2 **Formula:** (Mixture of hydrocarbons)
3.3 **IMO/UN Designation:** 3.1/1203
3.4 **DOT ID No.:** 1203
3.5 **CAS Registry No.:** Data not available

4. OBSERVABLE CHARACTERISTICS

4.1 **Physical State (as shipped):** Liquid
4.2 **Color:** Colorless to brown
4.3 **Odor:** Gasoline

5. HEALTH HAZARDS

5.1 **Personal Protective Equipment:** Protective goggles, gloves.
5.2 **Symptoms Following Exposure:** Irritation of mucous membranes and stimulation followed by depression of central nervous system. Breathing of vapor may also cause dizziness, headache, and incoordination or, in more severe cases, anesthesia, coma, and respiratory arrest. If liquid enters lungs, it will cause severe irritation, coughing, gagging, pulmonary edema, and, later, signs of bronchopneumonia and pneumonitis. Swallowing may cause irregular heartbeat.
5.3 **Treatment of Exposure:** INHALATION: maintain respiration and administer oxygen; enforce bed rest if liquid is in lungs. INGESTION: do NOT induce vomiting; stomach should be lavaged (by doctor) if appreciable quantity is swallowed. EYES: wash with copious quantity of water. SKIN: wipe off and wash with soap and water.
5.4 **Threshold Limit Value:** 300 ppm
5.5 **Short Term Inhalation Limits:** 500 ppm for 30 min.
5.6 **Toxicity by Ingestion:** Grade 2; LD_{50} = 0.5 to 5 g/kg.
5.7 **Late Toxicity:** None
5.8 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
5.9 **Liquid or Solid Irritant Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
5.10 **Odor Threshold:** 0.25 ppm
5.11 **IDLH Value:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** —36°F C.C.
6.2 **Flammable Limits in Air:** 1.4%-7.4%
6.3 **Fire Extinguishing Agents:** Foam, carbon dioxide, dry chemical
6.4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective
6.5 **Special Hazards of Combustion Products:** None
6.6 **Behavior in Fire:** Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back.
6.7 **Ignition Temperature:** 853°F
6.8 **Electrical Hazard:** Class I, Group D
6.9 **Burning Rate:** 4 mm/min.
6.10 **Adiabatic Flame Temperature:** Data not available
6.11 **Stoichiometric Air to Fuel Ratio:** Data not available
6.12 **Flame Temperature:** Data not available

7. CHEMICAL REACTIVITY

7.1 **Reactivity With Water:** No reaction
7.2 **Reactivity with Common Materials:** No reaction
7.3 **Stability During Transport:** Stable
7.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
7.5 **Polymerization:** Not pertinent
7.6 **Inhibitor of Polymerization:** Not pertinent
7.7 **Molar Ratio (Reactant to Product):** Data not available
7.8 **Reactivity Group:** 33

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** 90 ppm/24 hr/juvenile American shad/TL_m/fresh water
91 mg/1/24 hr/juvenile American shad/TL_m/salt water
8.2 **Waterfowl Toxicity:** Data not available
8.3 **Biological Oxygen Demand (BOD):** 8%, 5 days
8.4 **Food Chain Concentration Potential:** None

9. SHIPPING INFORMATION

9.1 **Grades of Purity:** Various octane ratings; military specifications
9.2 **Storage Temperature:** Ambient
9.3 **Inert Atmosphere:** No requirement
9.4 **Venting:** Open (flame arrester) or pressure-vacuum

10. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook)

A-T-U-V-W

11. HAZARD CLASSIFICATIONS

11.1 **Code of Federal Regulations:** Flammable liquid
11.2 **NAS Hazard Rating for Bulk Water Transportation:**

Category	Rating
Fire	3
Health	
Vapor Irritant	1
Liquid or Solid Irritant	1
Poisons	2
Water Pollution	
Human Toxicity	1
Aquatic Toxicity	2
Aesthetic Effect	2
Reactivity	
Other Chemicals	0
Water	0
Self Reaction	0

11.3 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue)	1
Flammability (Red)	3
Reactivity (Yellow)	0

12. PHYSICAL AND CHEMICAL PROPERTIES

12.1 **Physical State at 15°C and 1 atm:** Liquid
12.2 **Molecular Weight:** Not pertinent
12.3 **Boiling Point at 1 atm:** 140—390°F
= 60—199°C = 333—472°K
12.4 **Freezing Point:** Not pertinent
12.5 **Critical Temperature:** Not pertinent
12.6 **Critical Pressure:** Not pertinent
12.7 **Specific Gravity:** 0.7321 at 20°C (liquid)
12.8 **Liquid Surface Tension:** 19-23 dynes/cm
= 0.019—0.023 N/m at 20°C
12.9 **Liquid Water Interfacial Tension:** 49-51 dynes/cm
= 0.049—0.051 N/m at 20°C
12.10 **Vapor (Gas) Specific Gravity:** 3.4
12.11 **Ratio of Specific Heats of Vapor (Gas):** (est.) 1.054
12.12 **Latent Heat of Vaporization:** 130—150 Btu/lb = 71—81 cal/g
= 3.0 — 3.4 X 10^5 J/kg
12.13 **Heat of Combustion:** —18,720 Btu/lb
= —10,400 cal/g = 435.1 X 10^5 J/kg
12.14 **Heat of Decomposition:** Not pertinent
12.15 **Heat of Solution:** Not pertinent
12.16 **Heat of Polymerization:** Not pertinent
12.25 **Heat of Fusion:** Data not available
12.26 **Limiting Value:** Data not available
12.27 **Reid Vapor Pressure:** 7.4 psia

NOTES

GAT	GASOLINES: AUTOMOTIVE (<4.23g lead/gal)

12.17 SATURATED LIQUID DENSITY

Temperature (degrees F)	Pounds per cubic foot
45	46.270
50	46.130
55	46.000
60	45.850
65	45.710
70	45.560
75	45.400
80	45.240
85	45.080
90	44.910
95	44.750
100	44.570
105	44.390
110	44.210
115	44.030

12.18 LIQUID HEAT CAPACITY

Temperature (degrees F)	British thermal unit per pound-F
10	.459
15	.462
20	.464
25	.467
30	.470
35	.472
40	.475
45	.478
50	.480
55	.483
60	.486
65	.488
70	.491
75	.494
80	.496
85	.499
90	.502
95	.504
100	.507
105	.510

12.19 LIQUID THERMAL CONDUCTIVITY

Temperature (degrees F)	British thermal unit-inch per hour-square foot-F (estimate)
40	.909
50	.900
60	.891
70	.883
80	.874
90	.865
100	.856
110	.847
120	.838
130	.829
140	.821
150	.812
160	.803
170	.794
180	.785
190	.776

12.20 LIQUID VISCOSITY

Temperature (degrees F)	Centipoise
46	.521
48	.514
50	.507
52	.500
54	.494
56	.487
58	.481
60	.475
62	.469
64	.463
66	.457
68	.451
70	.446
72	.440
74	.435
76	.430
78	.424
80	.419
82	.414
84	.410
86	.405
88	.400
90	.396
92	.391
94	.387
96	.382

12.21 SOLUBILITY IN WATER

Temperature (degrees F)	Pounds per 100 pounds of water
	INSOLUBLE

12.22 SATURATED VAPOR PRESSURE

Temperature (degrees F)	Pounds per square inch
	DATA NOT AVAILABLE

12.23 SATURATED VAPOR DENSITY

Temperature (degrees F)	Pounds per cubic foot
	NOT PERTINENT

12.24 IDEAL GAS HEAT CAPACITY

Temperature (degrees F)	British thermal unit per pound-F
	DATA NOT AVAILABLE

GASOLINES: AVIATION (< 4.86g lead/gal)

GAV

Common Synonyms	Watery liquid	Red, blue, green, brown or purple	Gasoline odor

Floats on water. Flammable, irritating vapor is produced.

Stop discharge if possible. Keep people away.
Shut off ignition sources and call fire department.
Stay upwind and use water spray to "knock down" vapor.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

FLAMMABLE.
Flashback along vapor trail may occur.
Vapor may explode if ignited in an enclosed area.
Extinguish with dry chemical, foam or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
If inhaled will cause dizziness, headache, difficult breathing or loss of consciousness.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Irritating to skin and eyes.
If swallowed, will cause nausea or vomiting.
Remove contaminated clothing and shoes.
Flush affected areas with plenty of water.
IF IN EYES, hold eyelids open and flush with plenty of water.
IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
DO NOT INDUCE VOMITING.

Water Pollution

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.
Fouling to shoreline.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. RESPONSE TO DISCHARGE

(See Response Methods Handbook)
Issue warning-high flammability
Evacuate area
Disperse and flush

2. LABEL

2.1 Category: Flammable liquid
2.2 Class: 3

3. CHEMICAL DESIGNATIONS

3.1 CG Compatibility Class: Not listed
3.2 Formula: Not pertinent
3.3 IMO/UN Designation: 3.1/1203
3.4 DOT ID No.: 1203
3.5 CAS Registry No.: Data not available

4. OBSERVABLE CHARACTERISTICS

4.1 Physical State (as shipped): Liquid
4.2 Color: Red, blue, green, brown, purple
4.3 Odor: Gasoline

5. HEALTH HAZARDS

5.1 Personal Protective Equipment: Protective goggles, gloves.
5.2 Symptoms Following Exposure: INHALATION causes irritation of upper respiratory tract; central nervous system stimulation followed by depression of varying degrees ranging from dizziness, headache, and incoordination to anesthesia, coma, and respiratory arrest; irregular heartbeat is dangerous complication. ASPIRATION causes severe lung irritation with coughing, gagging, dyspnea, substernal distress, and rapidly developing pulmonary edema; later, signs of bronchopneumonia and pneumonitis; acute onset of central nervous system excitement followed by depression. INGESTION causes irritation of mucous membranes of throat, esophagus, and stomach; stimulation followed by depression of central nervous system; irregular heartbeat.
5.3 Treatment of Exposure: Seek medical attention. INHALATION: maintain respiration; give oxygen if needed. ASPIRATION: enforce bed rest; administer oxygen. INGESTION: do NOT induce vomiting; lavage carefully if appreciable quantity was ingested; guard against aspiration into lungs. EYES: wash with copious quantity of water. SKIN: wipe off and wash with soap and water.
5.4 Threshold Limit Value: 300 ppm
5.5 Short Term Inhalation Limits: 500 ppm for 30 min.
5.6 Toxicity by Ingestion: Grade 2; LD_{50} = 0.5 to 5 g/kg
5.7 Late Toxicity: None
5.8 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
5.10 Odor Threshold: 0.25 ppm
5.11 IDLH Value: Data not available

6. FIRE HAZARDS

6.1 Flash Point: -50°F C.C.
6.2 Flammable Limits in Air: 1.2%-7.1%
6.3 Fire Extinguishing Agents: Foam, carbon dioxide, dry chemical
6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective
6.5 Special Hazards of Combustion Products: None
6.6 Behavior in Fire: Vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back.
6.7 Ignition Temperature: 824°F
6.8 Electrical Hazard: Class I, group D
6.9 Burning Rate: 4 mm/min.
6.10 Adiabatic Flame Temperature: Data not available
6.11 Stoichiometric Air to Fuel Ratio: Data not available
6.12 Flame Temperature: Data not available

7. CHEMICAL REACTIVITY

7.1 Reactivity With Water: No reaction
7.2 Reactivity with Common Materials: No reaction
7.3 Stability During Transport: Stable
7.4 Neutralizing Agents for Acids and Caustics: Not pertinent
7.5 Polymerization: Not pertinent
7.6 Inhibitor of Polymerization: Not pertinent
7.7 Molar Ratio (Reactant to Product): Data not available
7.8 Reactivity Group: Data not available

8. WATER POLLUTION

8.1 Aquatic Toxicity: 90 ppm/24 hr/juvenile American shad/TL_m/fresh water
91 ppm/24 hr/juvenile American shad/TL_m/salt water
8.2 Waterfowl Toxicity: Data not available
8.3 Biological Oxygen Demand (BOD): 8%, 5 days
8.4 Food Chain Concentration Potential: None

9. SHIPPING INFORMATION

9.1 Grades of Purity: Grades 80/87, 100/130, and 115/145; Specification MIL-G-5572e
9.2 Storage Temperature: Ambient
9.3 Inert Atmosphere: No requirement
9.4 Venting: Open (flame arrester) or pressure-vacuum

10. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook)

A-T-U-V-W

11. HAZARD CLASSIFICATIONS

11.1 Code of Federal Regulations: Flammable liquid
11.2 NAS Hazard Rating for Bulk Water Transportation:

Category	Rating
Fire	3
Health	
Vapor Irritant	1
Liquid or Solid Irritant	1
Poisons	2
Water Pollution	
Human Toxicity	1
Aquatic Toxicity	2
Aesthetic Effect	2
Reactivity	
Other Chemicals	0
Water	0
Self Reaction	0

11.3 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue)	1
Flammability (Red)	3
Reactivity (Yellow)	0

12. PHYSICAL AND CHEMICAL PROPERTIES

12.1 Physical State at 15°C and 1 atm: Liquid
12.2 Molecular Weight: Not pertinent
12.3 Boiling Point at 1 atm: 160—340°F = 71—171°C = 344—444°K
12.4 Freezing Point: <76°F = <24.4°C = <297.6°K
12.5 Critical Temperature: Not pertinent
12.6 Critical Pressure: Not pertinent
12.7 Specific Gravity: 0.711 at 15°C (liquid)
12.8 Liquid Surface Tension: 19—23 dynes/cm = 0.019—0.023 N/m at 20°C
12.9 Liquid Water Interfacial Tension: 49—51 dynes/cm = 0.049—0.051 N/m at 20°C
12.10 Vapor (Gas) Specific Gravity: 3.4
12.11 Ratio of Specific Heats of Vapor (Gas): (est.) 1.054
12.12 Latent Heat of Vaporization: 130—150 Btu/lb = 71—81 cal/g = 3.0—3.4 X 10^5 J/kg
12.13 Heat of Combustion: —18,720 Btu/lb = —10,400 cal/g = —435.4 X 10^5 J/kg
12.14 Heat of Decomposition: Not pertinent
12.15 Heat of Solution: Not pertinent
12.16 Heat of Polymerization: Not pertinent
12.25 Heat of Fusion: Data not available
12.26 Limiting Value: Data not available
12.27 Reid Vapor Pressure: Data not available

NOTES

GAV	GASOLINES: AVIATION (< 4.86g lead/gal)

12.17 SATURATED LIQUID DENSITY		12.18 LIQUID HEAT CAPACITY		12.19 LIQUID THERMAL CONDUCTIVITY		12.20 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot (estimate)	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit-inch per hour-square foot-F (estimate)	Temperature (degrees F)	Centipoise (estimate)
35	45.040	10	.466	40	.909	35	.519
40	44.880	15	.468	50	.900	40	.501
45	44.730	20	.471	60	.891	45	.485
50	44.570	25	.474	70	.883	50	.469
55	44.410	30	.476	80	.874	55	.454
60	44.260	35	.479	90	.865	60	.440
65	44.100	40	.482	100	.856	65	.426
70	43.950	45	.484	110	.847	70	.414
75	43.790	50	.487	120	.838	75	.401
80	43.630	55	.490	130	.829	80	.390
85	43.480	60	.492	140	.821	85	.379
90	43.320	65	.495	150	.812	90	.368
95	43.160	70	.498	160	.803	95	.358
100	43.010	75	.500	170	.794	100	.348
105	42.850	80	.503	180	.785	105	.339
110	42.700	85	.506	190	.776	110	.330
115	42.540	90	.508			115	.322
120	42.380	95	.511			120	.314
125	42.230	100	.514			125	.306
130	42.070	105	.516			130	.299
135	41.920					135	.291
140	41.760					140	.285
145	41.600					145	.278
150	41.450					150	.272
155	41.290					155	.266
160	41.140					160	.260

12.21 SOLUBILITY IN WATER		12.22 SATURATED VAPOR PRESSURE		12.23 SATURATED VAPOR DENSITY		12.24 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	INSOLUBLE		DATA NOT AVAILABLE		NOT PERTINENT		DATA NOT AVAILABLE

ATTACHMENT D

Severe Weather

ATTACHMENT D
Severe Weather

When projects are conducted outside, the potential for severe weather must be considered. Thunderstorms, tornados and winter storms can develop quickly, jeopardizing your safety. The following emergency procedures are to be followed in the event of severe weather.

Thunderstorms and Lightning

Monitor weather conditions at all times while working. At a sign of an impending storm - increased cloudiness, darkened skies, increased wind - listen to a radio for the latest weather information.

When a thunderstorm accompanied by lightning is in the project area:

- Cease work immediately and shut down all powered equipment, such as drill rigs.
- Seek shelter inside nearby buildings or trailers. If there are no buildings nearby, seek shelter inside your vehicle.
- If you are caught outside, do not stand beneath tall, isolated trees or telephone poles. Avoid areas projecting above the landscape, such as hill tops. In open areas, go to a low place such as a ravine or valley. Stay away from open water, metal equipment, wire fences and metal pipes. If you are in a group of people in the open, spread out, staying several yards apart.
- If you are caught in a level field or open area far from shelter and you feel your hair stand on end, lightning may be about to strike you. Drop to your knees and bend forward, putting your hands on your knees. You should minimize the body area in direct contact with the ground; **DO NOT LIE FLAT ON THE GROUND**.
- If someone has been struck by lightning, monitor life signs and begin administering rescue breathing or CPR as needed. Seek medical attention.
- Check conscious victims for burns, especially at the fingers and toes and next to buckles and jewelry. Keep the victim calm and still. Administer first aid for shock.

Tornados

Tornados usually develop from thunderstorms and normally occur at the trailing edge of the storm. Most tornados occur in the months of April, May, June, and July in the late afternoon and early evening hours.

When storms are predicted for the project area, monitor weather conditions by radio. A tornado watch is issued when favorable conditions exist for the development of a tornado. A tornado warning is issued by the local weather service office when a tornado has actually been sighted or is strongly indicated by radar.

- If a tornado warning is issued, seek shelter immediately. If there are permanent buildings located onsite, go there immediately, moving toward interior hallways or small rooms on the lowest floor.
- If a tornado warning is issued and you are in a vehicle or a site trailer, leave and go to the nearest building, ditch, ravine, or culvert and lie flat. Shield your head from flying debris using your hands.
- Once a tornado has passed the site, site personnel are to assemble at the designated assembly area to determine if anyone is missing. Administer first aid and seek medical attention as needed.

Winter Storms

When snow or ice storms are predicted for the project area, site personnel should monitor weather conditions by radio. A winter storm watch is issued when a storm has formed and is approaching the area. A winter storm warning is issued when a storm is imminent and immediate action is to be taken.

- When a storm watch is issued, monitor weather conditions and prepare to terminate site activities. Notify the Project Manager of the situation. Seek shelter at site buildings or leave the site and seek warm shelter.
- If you are caught in a severe winter storm while traveling, seek warm shelter if road conditions prevent safe travel.

- If you are stranded in a vehicle during a winter storm:
  - Stay in the vehicle. Disorientation comes quickly in blowing and drifting snow.
  - Wait for help.
  - Keep a window open an inch or so to avoid carbon monoxide poisoning.
  - Run the engine and heater sparingly.
  - Keep watch - do not let everyone sleep at the same time.
  - Exercise occasionally.

ATTACHMENT E

General Health and Safety Rules

ATTACHMENT E
General Health and Safety Rules

General Health and Safety Rules

- Use proper lifting techniques when handling heavy articles. Keep the load close to the body, bend your knees, never twist or turn with a load. When in doubt, get help or divide the load.
- Immediately report to your supervisor any condition or practice you think might cause injury to employees or others or damage to property, equipment or environment.
- Do not participate in horseplay.
- Do not distract others from their work.
- Always wear a safety belt, whether passenger or driver, when in a motor vehicle on company business.

Safety Rules for Field Work

- Read the SHSP before field mobilization. Comply with its requirements at all times.
- Wear personal protective equipment in all operations where there is possible exposure to hazardous conditions or where the need for using such equipment to reduce the hazards is designated in the Site Health and Safety Plan (SHSP).
    - Hard hats are required in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns.
    - Hearing protection is required when exposure to noise is above OSHA allowable levels (>85 dBA).
    - Eye and/or face protection is required when machines or operations present potential physical or health hazards to the eyes or face.
    - Respiratory protection is required when controls fail or are inadequate to prevent harmful exposure.
    - Foot protection is required as necessary to prevent injury from dropped or falling objects.
- Personal flotation devices are required when working over or near water.
- Observe all safety signs and do not remove any "lock-out" tags.
- Wear radiation badge when working with nuclear testing equipment.
- Follow procedures outlined in Troxler Manual when using, transporting or storing nuclear density meter.
- Use proper lifting techniques when transporting nuclear meters or other heavy articles.
- Secure all loose equipment in the motor vehicles to inhibit equipment movement during sudden stops.
- Stay away from the swing of the backhoe bucket and all moving parts on drill rigs. Approach only when operator is aware of your presence.
- Always use ground-fault interrupters in all circuits that might be exposed to moisture or are used outside.
- Use only grounded or double insulated power tools.
- Notify the Health and Safety Administrator or Site Safety Officer of any unsafe acts or conditions.
- Site personnel are to notify Site Safety Officer at the first indication that they are experiencing temperature stress or any signs or symptoms which may be due to exposure of chemicals.
- Site personnel are expected to comply with applicable OSHA, EPA or other regulatory agency standards and regulations at all times.

Safety Rules for Work in or Near Manholes, Trenches and Excavations

DO NOT enter confined spaces such as pits, trenches, tanks or manholes unless confined space entry procedures are specifically included in the SHSP and are fully implemented.

Most work can be performed without entering trenches or excavation. Make the necessary engineering changes to accomplish the task without entering the trench or excavation. For example, soil samples can be taken from the backhoe bucket eliminating the need for anyone to enter the excavation.

If such changes cannot be implemented, the **SHSP MUST BE AMENDED** to include confined space entry procedures. Enter only if the excavation is constructed according to OSHA standards and the SHSP specifically addressed entry into excavations.

Excavations are to be filled in or barricaded at the end of the workday.

Safety Rules When Working Near Highways, Construction Site Traffic or Heavy Equipment

The following precautions should be taken when working near highways and on construction sites.

- Set out traffic cones, warning signs, and flashers when performing field work in traffic areas.
- In traffic areas and on construction sites where heavy equipment is operating, wear luminous traffic vests.
- Use safety signs when performing bridge and highway surveys and use warning lights on vehicles, as appropriate.
- Let the construction equipment operators know you are around. Use "eye to eye" contact and hand gestures prior to setting up for a test.
- Check the traffic pattern on construction projects before entering with a vehicle.
- If practical, use the motor vehicle on a large site to divert construction traffic around the test area.
- Park the motor vehicle between your work area and the operating equipment. Always work a significant distance behind your vehicle in case it is struck.

Safety Rules for Hazardous Waste Sites

- All employees handling hazardous waste samples or who may be exposed to hazardous waste must be active participants in SEH's medical surveillance program.
- A respirator cannot be worn when beards or any other facial hair interferes with the face-to-respirator seal. Individuals with such facial hair are not to be allowed to work in Levels B or C.
- Personnel onsite must use the buddy system when wearing respiratory protective equipment. Visual contact must be maintained between pairs onsite. Entry team members are to remain close together to assist each other during emergencies.
- Smoking is not permitted at the site.
- Eating and drinking are only permitted in the support or clean zone.
- No "souvenirs" or samples not required for the project are to be collected.
- Samples are to be placed in approved containers before they can be removed from the site. Only approved or designated vehicles can be used to transport samples.
- Samples are to be left in the designated sample preparation area.
- Contaminated field apparel that has not been decontaminated cannot be worn in the office.
- Field samples are to be disposed of properly.
- Contact with contaminated or suspected contaminated surfaces is to be avoided.
- Do not walk through puddles, discolored surface, kneel on the ground, or lean, sit, or place equipment on visibly stained surfaces.
- Drums or tanks found onsite cannot to be opened or moved unless specific drum/tank remediation tasks are specifically included in the SHSP and are fully implemented.

- Use work schedules that minimize time spent in hazardous areas.
- Use work assignments that place employees upwind of sources of air contaminants.
- Have a copy of the SHSP readily available, for review by employees. The Site Safety Officer will verify that all SEH personnel entering the site have read and signed the SHSP.

Basics of Good Lifting Techniques

Sometimes it is necessary to load and unload moderate to heavy sampling equipment by hand. Site workers should not try to lift too much weight at one time (i.e., loads should be broken down if possible). When lifting heavy equipment is necessary, knowing the proper ways to lift can save you a great deal of pain and misery from a sprained back.

1. **Size up the load before trying to lift it.** Test the weight by lifting at one of the corners. If the load is too heavy or of an awkward shape, the best thing to do is get help from another site worker, if available. If you have to lift it alone, make sure you can handle the weight.

2. **BEND THE KNEES.** This is the single most important rule when lifting moderate to heavy objects. When lifting a crate or box, your feet should be placed close to the object. Center yourself over the load, then bend your knees and get a good hand hold. Lift straight up, smoothly. Allow your legs, not your back, to do the work.

3. **Do not twist or burn you body once you have made the lift.** Keep the load close to your body, and keep it steady. Any sudden twisting or turning could result in injury to your back.

4. **Make sure you can carry the load where you need to go before attempting to move it.** Also, make sure your path is clear of obstacles and that there are no hazards, such as fallen logs or other trip hazards. Turn your body by changing foot positions, and be sure of your footing before setting out.

5. **Set the load down properly.** It is just as important setting it down as lifting it. Lower the body slowly by bending your knees, letting your legs do most of the work. Don't let go of the load until it is secure on the floor.

6. Always push, not pull, the object when possible. Pushing puts less strain on the back and is safer, should the object tip.

If a back injury occurs as a result of site work, an injury report must be filled out in accordance with corporate policy.

ATTACHMENT F

Decontamination

ATTACHMENT F
Decontamination

Standard Procedures

- A decontamination area (Contamination Reduction Zone) should be located between the Hot Line (upwind boundary of the Exclusion Zone) and the Support Zone boundary.
- A personnel decontamination station (PDS) should be established.
- All personnel should proceed through the appropriate contamination reduction sequence upon leaving the contamination area.
- All protective gear should be left onsite during any lunch break following decontamination procedures.
- Material Safety Data Sheets (MSDSs) for chemicals used during decontamination procedures should be made available to those who are potentially exposed to these chemicals.

Decontamination of Equipment

To the extent possible, measures should be taken to prevent contamination of sampling and monitoring equipment. (Sampling devices may become contaminated.) Once contaminated, it is difficult to clean instruments without damaging them. Any delicate instrument that cannot be decontaminated easily should have a bag taped and secured around it before use. Openings should be made in the bag for sample intake.

A. Sampling Devices

Sampling devices require cleaning with a detergent or other chemically compatible solvent and must be triple rinsed with clean solutions or deionized water.

B. Tools

Wooden tools are difficult to decontaminate because they absorb chemicals. They should be kept onsite and handled only by protected workers. After use in a contaminated area, wooden tools should be discarded. For decontamination of other tools, follow the same procedure as for sampling devices (above).

C. Respirators

Certain parts of contaminated respirators, such as the harness assembly and cloth components, are difficult to decontaminate. If grossly contaminated, they may have to be discarded. Rubber components can be soaked in soap and water and scrubbed with a brush.

D. Sanitizing of Personal Protective Equipment

Respirators, reusable protective clothing, and other personal articles must be decontaminated and sanitized before being reused. The inside of masks and clothing becomes soiled because of exhalation, body oils, and perspiration. The manufacturer's instructions should be followed to sanitize the respirator mask. If practical, protective clothing should be machine washed after a thorough decontamination; otherwise, it must be cleaned by hand.

E. Disposal of Contaminated Materials

All materials and equipment used for decontamination must be disposed of properly. Clothing, tools, buckets, brushes, and all other equipment that is contaminated must be secured in drums or other containers and labeled. Clothing not completely decontaminated onsite should be secured in plastic bags before being removed from the site.

Contaminated wash and rinse solutions should be contained by using step-in-containers (e.g., child's wading pool) to hold spent solutions. Another containment method is to dig a trench about 4 inches deep and line it with plastic. In both cases, the spent solutions should be transferred to drums, which should be labeled and disposed of with other contaminated materials onsite.

F. **Minimal Decontamination**

Less extensive procedures for decontamination can be subsequently established when disposable clothing and equipment are used, the type and degree of contamination are known, or the potential for transfer is judged to be minimal by the Site Safety Officer in consultation with the Project Manager or Health and Safety Administrator

G. **Closure of the Personnel Decontamination Station**

All disposable clothing and plastic sheeting used during the operation should be double bagged, labeled, and either contained onsite or removed to a disposal facility. Grossly contaminated protective clothing should be disposed of onsite with the permission of the property owner or removed to a disposal facility. Cloth items should be bagged and removed from the site for final cleaning. All wash tubs, pails, or other containers should be thoroughly washed, rinsed, and dried prior to removal from the site.

Level D

Equipment Drop

Deposit equipment used onsite (tools, sampling devices, monitoring equipment, radios, etc.) on plastic drop cloths. Decontaminate or contain items for disposal before removal from exclusion zone.

Outer Boot/Glove Wash and Rinse

(Optional, include if necessary for gross decontamination)

Scrub outer boots/gloves and/or splash suit with decontamination solution then rinse with water.

Outer Boot/Glove Removal

Remove outer boots/gloves:

- If outer boots/gloves are disposable, deposit them in the appropriate plastic-lined container.
- If outer boots/gloves are not disposable, store them in a clean, dry place.

Outer Garment Removal

Remove chemical protective outer garments and deposit them in an appropriate container. Remove hard hat and safety glasses. Decontaminate them as necessary and deposit on a clean surface.

Inner Glove Removal

Remove inner gloves and deposit them in the appropriate container for disposal.

Field Wash

Thoroughly wash hands and face with soap and water. Shower as soon as possible.

Level C

The maximum and minimum decontamination layout for Level C is shown conceptually in Figures E-1 and E-2.

Equipment Drop

Deposit equipment used onsite (tools, sampling devices, monitoring equipment, radios, etc.) on plastic drop cloths. Decontaminate or dispose of items before removal from exclusion zone.

Outer Boot/Glove Wash and Rinse

Scrub outer boots/gloves and/or splash suit with decontamination solution then rinse with water.

Outer Boot/Glove Removal

Remove outer boots/gloves:

- If outer boots/gloves are disposable, deposit them in the appropriate plastic-lined container.
- If outer boots/gloves are not disposable, store them in a clean, dry place.

Outer Garment Removal

Remove chemical-protective outer garments and deposit them in the appropriate container.

Respiratory Protection Removal

Remove hard hat and respirator and deposit them on a clean surface. Discard respirator cartridges in the appropriate container. Wash and rinse hard hat and respirator. Wipe off and store respirator in a clean, dry location.

Inner Glove Removal

Remove inner gloves and deposit them in the appropriate container for disposal.

Field Wash

Thoroughly wash hands and face with soap and water. Shower as soon as possible.

Level C Decontamination for Respirator-Cartridge Exchange

Equipment Drop

Deposit equipment used onsite (tools, sampling devices, monitoring equipment, radios, etc.) on plastic drop cloths. Decontaminate or dispose of items before removal from exclusion zone.

Outer Boot/Glove Wash and Rinse

Scrub outer boots/gloves and/or splash suit with decontamination solution then rinse with water.

Outer Boot/Glove Removal

Remove outer boots/gloves:

- If outer boots/gloves are disposable, deposit them in the appropriate plastic-lined container.
- If outer boots/gloves are not disposable, store them in a clean, dry place.

Respirator Cartridge Change

Exchange respirator cartridges. Don new outer boots/gloves. Tape joints and return to exclusion zone.

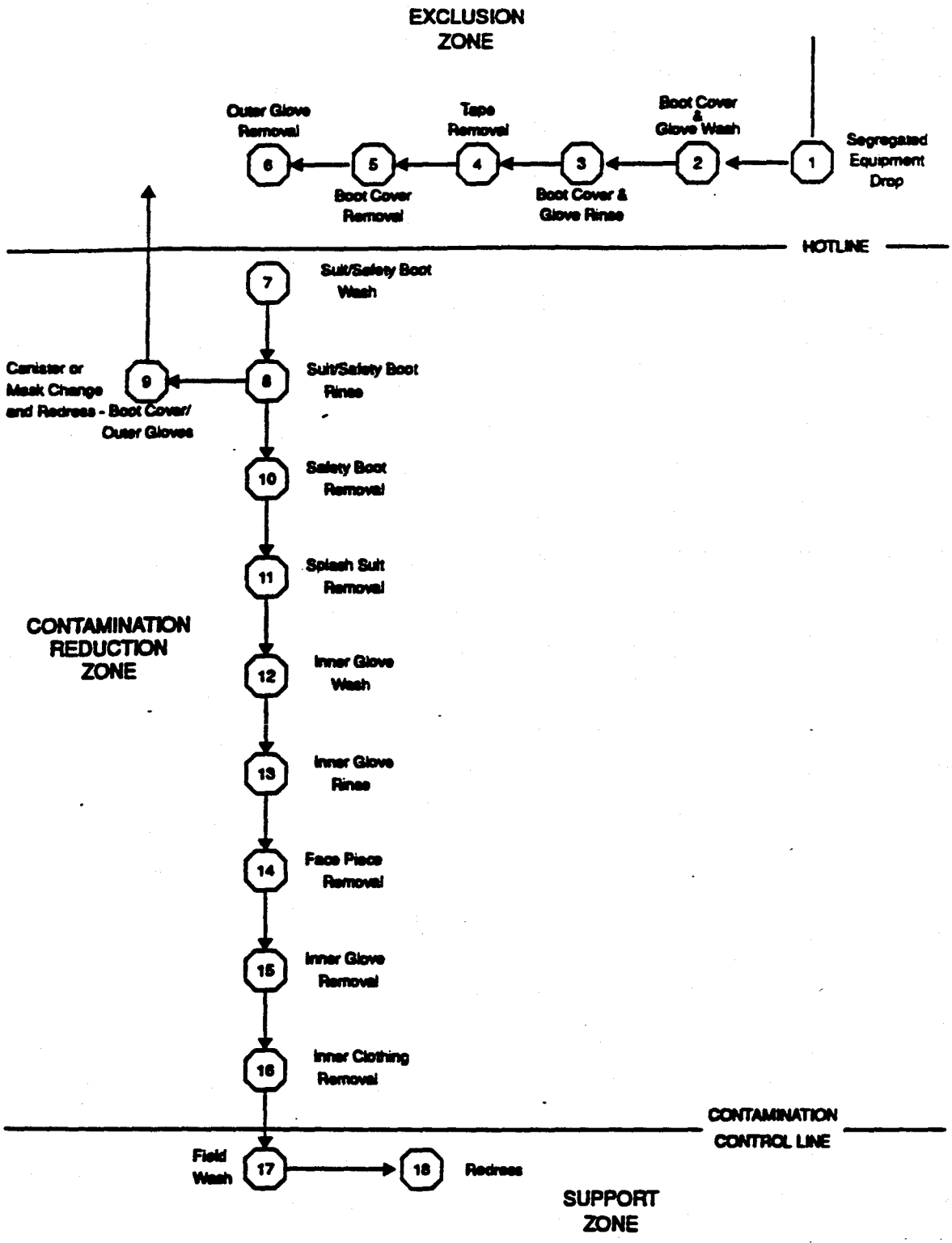


Figure E-1 – Maximum Decontamination Layout Level C Protection

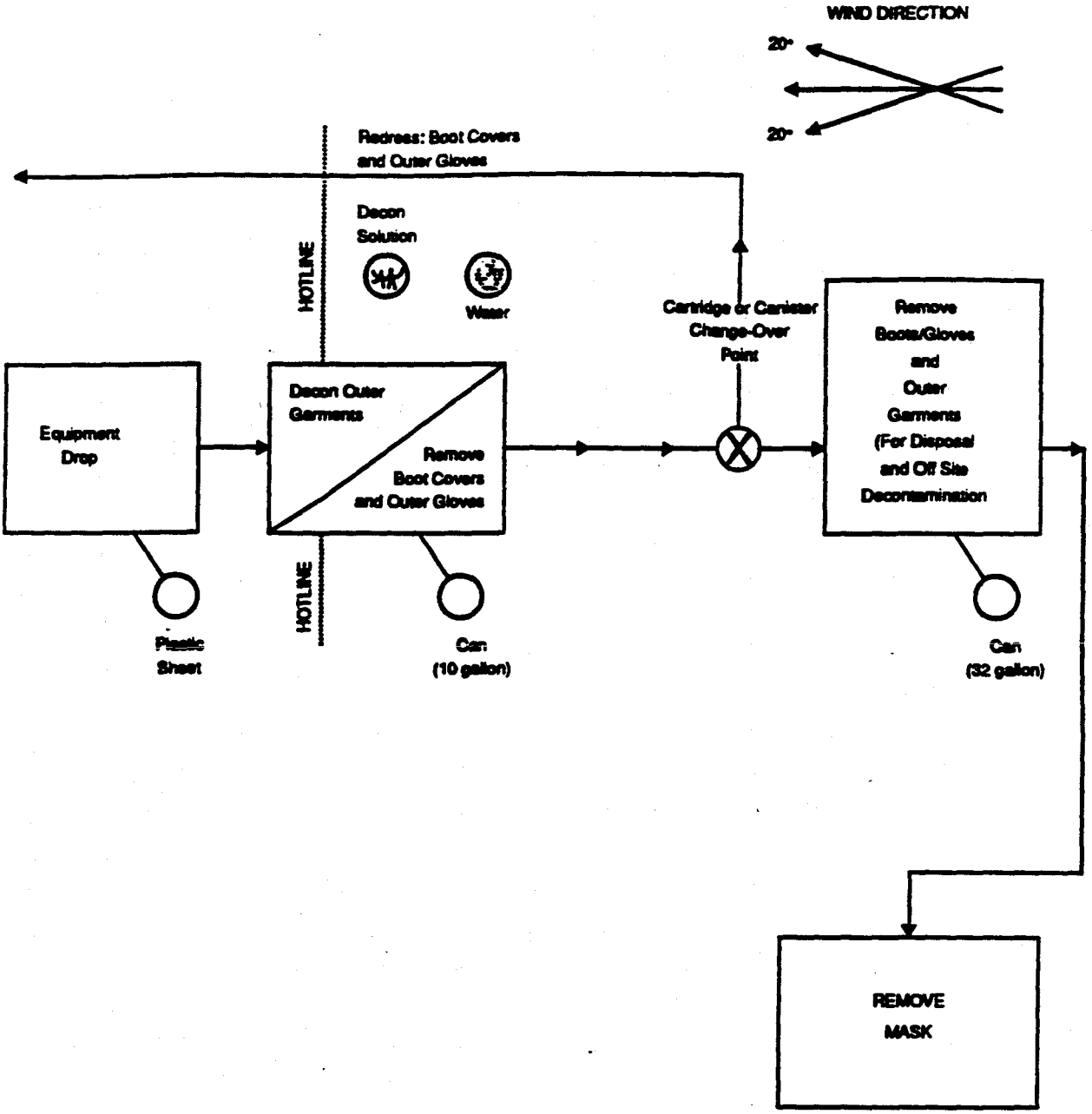


Figure E-2 – Minimum Decontamination Layout Level C Protection

A D V E N T

Advent
Environmental
Services, Inc.

Site Assessment for Underground Storage Tank Closure

Heartland Aviation, Inc.

3800 Starr Avenue, Eau Claire, Chippewa County, Wisconsin
Advent Project No. 970144.00 and 970144.01

November 1997

Prepared for
Heartland Aviation, Inc.

ADVENT

Advent Environmental Services, Inc.

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November 6, 1997

Mr. Larry Husby, President
Heartland Aviation, Inc.
3800 Starr Avenue
Eau Claire, WI 54703

Re: Site Assessment for an Underground Storage Tank (UST) Closure at the Heartland Aviation, Inc., site, 3800 Starr Avenue, Eau Claire, Chippewa County, Wisconsin. Advent Project #970144.00 and 970144.01. WDNR Case # not yet assigned

Dear Mr. Husby:

Advent Environmental Services, Inc., has prepared an Underground Storage Tank Closure Report for the Heartland Aviation, Inc., site.

Based on the results of laboratory analyses, we recommend that additional investigation be conducted at the site to determine the extent of contamination in the area of the northern dispensing island.

This report has been submitted to the Wisconsin Department of Natural Resources (WDNR) at the following address:

Mr. John Grump
Wisconsin Department of Natural Resources
P.O. Box 4001
Eau Claire, WI 54702-4001

If you have any questions or concerns, please call me at (715) 831-1530.

Sincerely,
ADVENT ENVIRONMENTAL SERVICES, INC.

James J. Mertes/jeh

James J. Mertes
Project Manager

Site Background Information

The underground storage tank (UST) system, owned by Heartland Aviation, Inc. (715-835-3181), was located at 3800 Starr Avenue, Eau Claire, Chippewa County, Wisconsin (SE¼ NW¼ Section 33 T.28N. R.9W.). (See Figure 1.) The USTs were located on the aviation tarmac between the Heartland Aviation hangar and the runways at the Chippewa Valley Regional Airport. The UST system was used for retail sales of fuel for aviation equipment.

The USTs, which were installed in 1988, are registered with the Wisconsin Department of Commerce (WDCOM). No information is available concerning leaks, tightness tests, or repairs to the UST system, although no problems were suspected, according to representatives from Heartland Aviation.

Groundwater was not encountered during the tank closure or during a subsequent expanded closure assessment boring. According to a 1994 Ayres Associates Municipal Well Field Recharge Area Study conducted for the City of Eau Claire, groundwater in the area is about 70 feet below ground surface. Groundwater flow is to the southwest toward the Chippewa River, which is approximately 1.3 miles southwest of the site. We identified no private potable wells within one-quarter mile of the site. The City of Eau Claire municipal well field is approximately one mile southwest of the site.

Tank Activities and Excavation

One 12,000-gallon jet fuel UST (I.D. #180101357), one 12,000-gallon 100-octane low lead aviation fuel UST (I.D. #180101359), and one 12,000-gallon unleaded gasoline UST (I.D. #180101358) were removed on October 2, 1997. Copies of the Checklist for Underground Tank Closure Form (SBD-8951), the Underground Petroleum Product Inventory Form (SBD-7437), and tank disposal documentation for the USTs are included in Appendix A. The original forms were submitted to the WDCOM by the Fire Inspector, Mr. Jim Onarheim (#305). The certified assessor was Mr. James J. Mertes (#00424) of Advent. The certified remover/cleaner was Mr. Chad Bartlett (#05897) of Advanced Tank Service, Eau Claire, Wisconsin.

Tank Cleaning and Disposal

After each UST was vented with carbon dioxide and the tank atmospheres were monitored for flammable or combustible vapor levels, the USTs were cleaned on-site above the ground. A side portion of each UST was removed and the interiors were cleaned and scraped. All tank sludge material was barreled in 55-gallon drums. After cleaning, the USTs were transported to Alter Scrap Processing, Eau Claire, Wisconsin.

Surplus Product Management

No surplus product was present in the tanks when they were removed.

Tank Sludge Management

Five 55-gallon drums of tank sludge were left on-site awaiting proper disposal by Waste Research and Reclamation, Eau Claire, Wisconsin.

Site Location Map

See Figure 1.

Site Layout Plan

See Figure 2.

Visual Inspection

The ambient air temperature was 80°F with sunny skies and no precipitation occurring during the UST closure.

The UST system was located on the northwest side of the hangar building. The USTs were present in the same location since they were installed in 1988. Another UST system was present in approximately the same location prior to 1988 according to Heartland Aviation and Chippewa Valley Regional Airport representatives. Asphalt covered the UST system, and no surface staining was observed. No unanticipated USTs were encountered in the UST excavation.

The depth of the tank bottoms was approximately 10 feet. Two feet of sand overburden was present above the USTs. A slight petroleum odor was observed within some of the tank bed backfill, particularly near the northernmost petroleum dispensing island. The native soil type encountered was fine- to medium-grained tan sand.

The USTs, which each measured 8 feet by 32 feet, had little corrosion and no holes.

Soil Sampling Results

Ten soil samples were collected to confirm the presence or absence of contamination from the UST system and were analyzed for diesel range organics (DROs) or gasoline range organics (GROs). Results of the sampling indicated that DRO contamination was present at 93 parts per million (ppm) in sample 10, which was collected beneath the northernmost former dispensing island. The 93 ppm DRO is below the Wisconsin Department of Natural Resources (WDNR) 100 ppm remedial action guidance level but above the 10 ppm investigation guidance level.

We collected two additional soil samples with a drilling rig beneath soil sample 10 during an expanded closure assessment. The soil boring samples indicated that petroleum concentrations were increasing with depth beneath the northern dispensing island. Soil boring log and boring abandonment documentation is included in Appendix B. The sample locations are indicated in Figure 2. A description of standard sampling techniques is included in Appendix C. The results of laboratory analyses are summarized in Table 1.

Lab Reports

Laboratory reports and chain of custody are included in Appendix D.

Conclusion and Recommendations

We identified petroleum-contaminated soil in the area of the northern dispensing island (B-1A, and B-1B) at the Heartland Aviation, Inc., UST site at concentrations exceeding the WDNR 100 ppm GRO and DRO remedial action guideline.

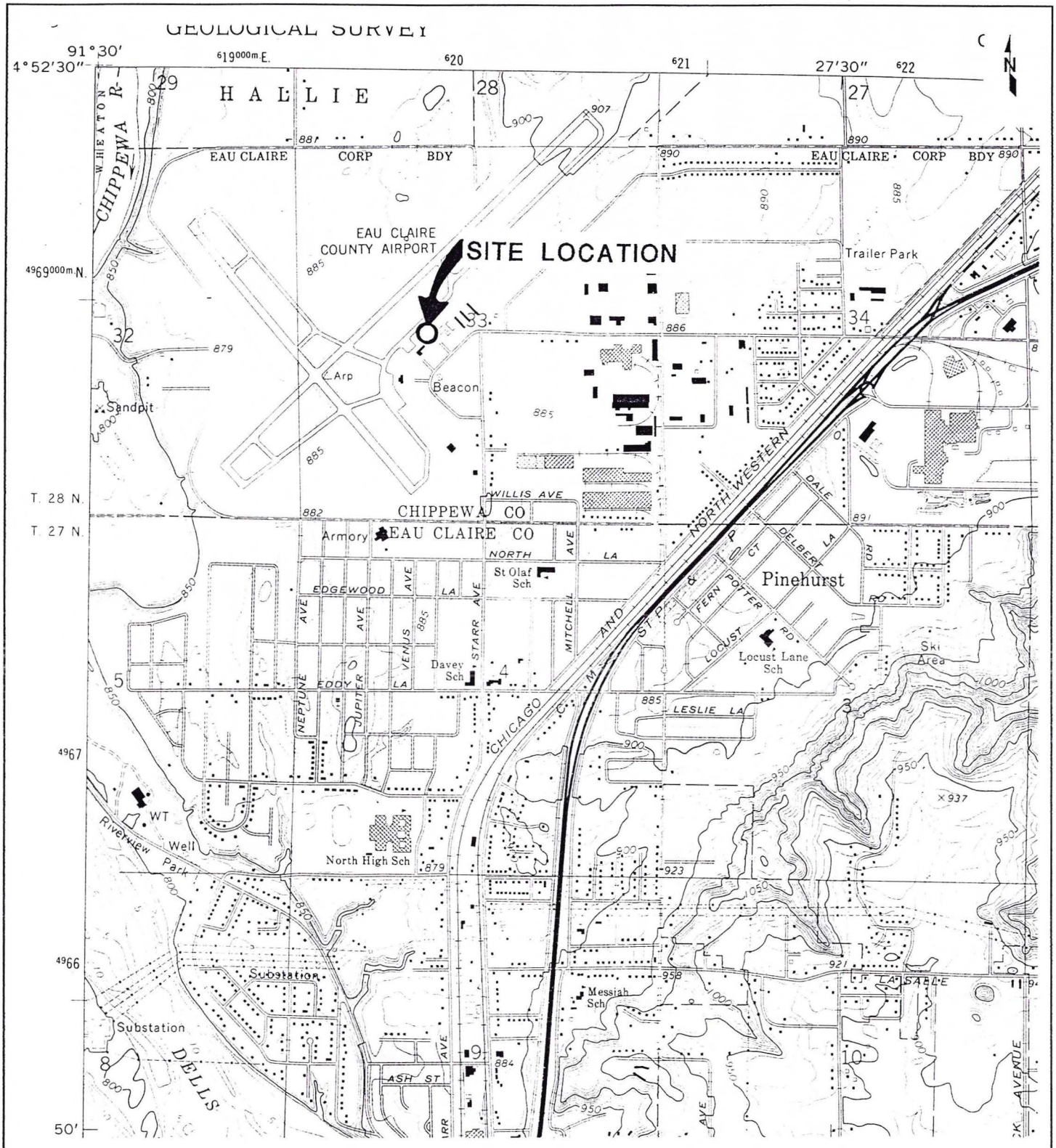
We recommend further investigating the extent of contamination in the area of the northern dispensing island.

TABLE 1

HEARTLAND AVIATION, INC., SITE
LABORATORY RESULTS

Sample ID	Sample Depth (feet)	Soil Type	DROs (mg/kg)	GROs (mg/kg)
1	11	Fine sand (SP)	---	ND
2	11	Fine sand (SP)	---	ND
3	11	Fine sand (SP)	---	ND
4	11	Fine sand (SP)	---	ND
5	11	Fine sand (SP)	---	ND
6	11	Fine sand (SP)	---	ND
7	11	Fine sand (SP)	ND	---
8	11	Fine sand (SP)	ND	---
9	11	Fine sand (SP)	ND	---
10	4	Silty sand (SM)	93	---
B-1a	8-10	Fine sand (SP)	**1,800**	**2,200**
B-1b	13-15	Fine sand (SP)	**3,000**	**2,300**
Methanol Blanks	---	---	---	ND

Shaded areas indicate concentrations above the WDNR investigative guideline of 10 ppm.
Bolded values indicate concentrations above the WDNR remedial action guideline of 100 ppm.
ND = not detected
Mg/kg = milligrams per kilogram
--- = analysis not performed on these samples



NOTE:

BASE MAP DEVELOPED FROM THE EAU CLAIRE EAST, WISCONSIN 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP.

QUADRANGLE LOCATION
SE1/4 NW1/4 SEC.33 T.28N., R.9W.

SCALE (FEET): 0 2000

DRAWN BY: KRK	FIGURE #1 DETAIL SHEET
APPROVED BY:	SITE LOCATION
DATE: 10/30/97	HEARTLAND AVIATION EAU CLAIRE, WISCONSIN
PROJECT #970144.01	ADVENT
REVISION #	ENVIRONMENTAL SERVICES, INC.

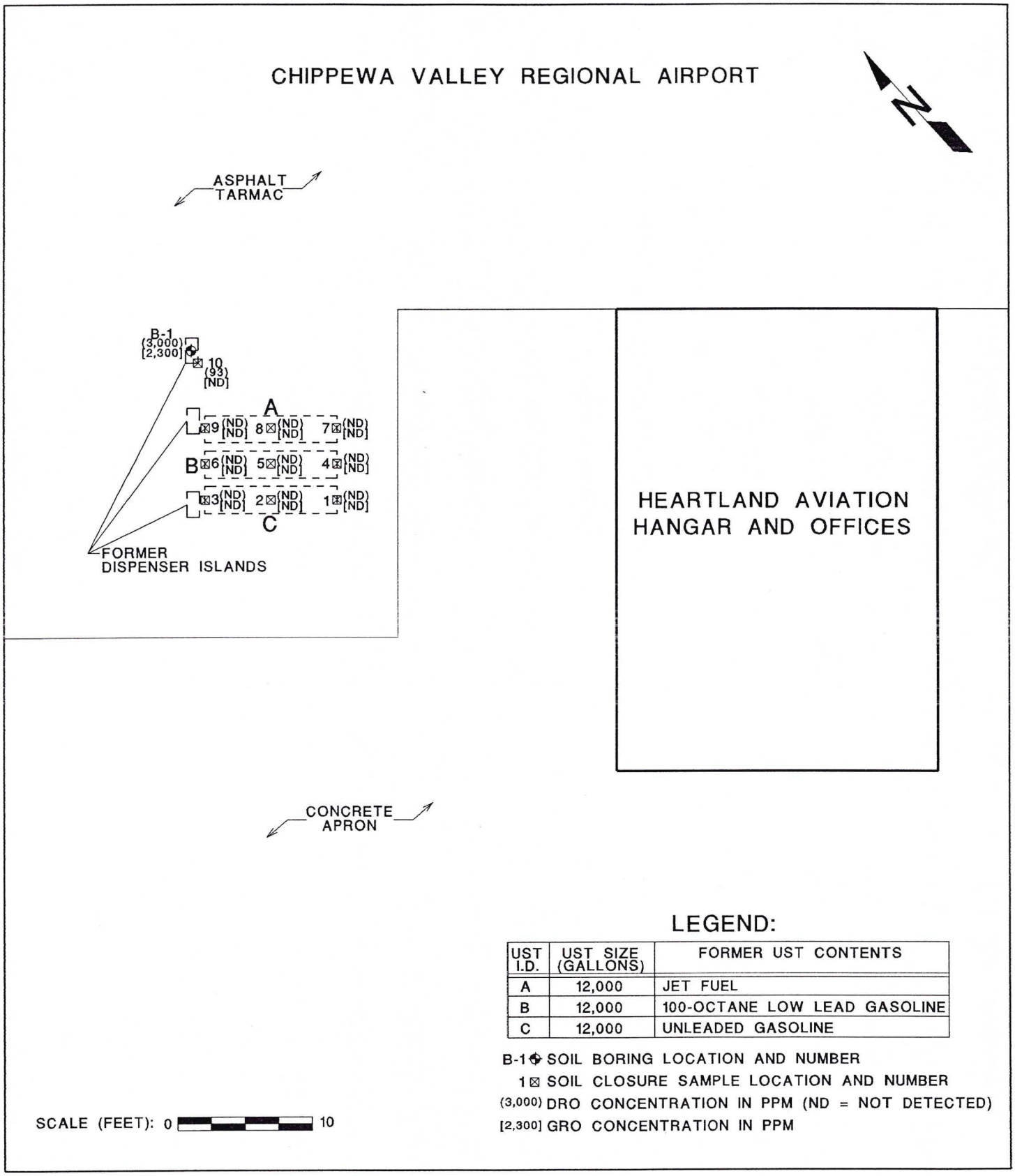


FIGURE 2 SITE FEATURES
HEARTLAND AVIATION
EAU CLAIRE, WISCONSIN

ADVENT
ENVIRONMENTAL SERVICES, INC.
DATE: 10/31/97
DRAWING #970144.01A

APPENDIX A

October 9, 1997

Advent Environmental
c/o Mike Neal
5110 Fairview Drive. Suite A
Eau Claire, WI 54701

Dear Mr. Neal,

Thank you for your assistance with the tank removal project for Heartland Aviation, Eau Claire, Wisconsin. We were able to successfully remove the (3) 12,000 Gallon Aviation tanks listed on the enclosed Checklist for Underground Tank Closure on Thursday, 10/02/97.

The tank was properly decommissioned and removed from the excavation, cleaned on site, transported to and properly scraped at Alter Scrap Processing, Eau Claire, Wisconsin.

The 5 barrel of tank sludge was containerized, left on site awaiting proper disposal by Waste Research and Reclamation of Eau Claire, Wisconsin. All necessary closure documentation was completed on site and submitted to the State of Wisconsin - DILHR by Eau Claire Fire Dept. If you have any questions or concerns regarding this closure, please feel free to contact me at any time.

Sincerely,

Chad Bartlett
Advanced Tank Service, Inc.

Wisconsin Department of Industry, Labor and Human Relations

Complete one form for each site closure.

CHECKLIST FOR UNDERGROUND TANK CLOSURE

The information you provide may be used by other government agency programs [Privacy Law, s. 15.04 (1) (m)].

RETURN COMPLETED CHECKLIST TO:
Safety & Buildings Division
Fire Prevention & Underground Storage Tank Section
P. O. Box 7969, Madison, WI 53707

A. IDENTIFICATION: (Please Print) Indicate whether closure is for: ☒ Tank System ☐ Tank Only ☐ Piping Only

1. Site Name	2. Owner Name
	~~Early Hosp~~ Heartland Aviation I
Site Street Address (not P.O. Box): 3800 STARR Avenue	Owner Street Address: 3800 STARR Ave.
☐ City ☐ Village ☐ Town of: Eau Claire	☐ City ☐ Village ☐ Town of: EAU CLAIRE; State: WI; Zip Code: 54703
State: WI; Zip Code: 54703; County: Chippewa	County: Chippewa; Telephone No. (include area code): (715) 835-3181
3. Closure Company Name (Print): Advanced Tank Service	Closure Company Street Address: PO Box 1072
Closure Company Telephone No. (include area code): (715) 831-8484	Closure Company City, State, Zip Code: EAU CLAIRE, WI 54702
4. Name of Company Performing Closure Assessment	Assessment Company Street Address, City, State, Zip Code
Telephone # (include area code): ( )	Certified Assessor Name (Print): James [illegible]
Assessor Signature	Assessor Certification No.

Tank ID #	Closure	Temp. Closure	Closure In Place	Tank Capacity	Contents *	Closure Assessment
1. [illegible] 1357	☒	☐	☐	12,000	15	☒ Y ☐ N
2. [illegible] 1358	☒	☐	☐	12,000	15	☒ Y ☐ N
3. [illegible] 1359	☒	☐	☐	12,000	15	☒ Y ☐ N
4.	☐	☐	☐			☐ Y ☐ N
5.	☐	☐	☐			☐ Y ☐ N
6.	☐	☐	☐			☐ Y ☐ N

* Indicate which product by numeric code: 01-Diesel; 02-Leaded; 03-Unleaded; 04-Fuel Oil; 05-Gasohol; 06-Other; 09-Unknown; 10-Premix; 11-Waste oil; 13-Chemical (indicate the chemical name(s) or numbers(s) _____ _____ _____; 14-Kerosene; 15-Aviation.

Written notification was provided to the local agent 15 days in advance of closure date. ☒ Y ☐ N ☐ NA
All local permits were obtained before beginning closure. ☒ Y ☐ N ☐ NA

Check applicable box at right in response to all statements in Sections B - E.

	Remover Verified	Inspector Verified	NA
B. TEMPORARILY OUT OF SERVICE			
Written inspector approval of temporary closure obtained, which is effective until (provide date) _____	☐ Y ☐ N	☐	☐
1. Product Removed			
a. Product lines drained into tank (or other container) and resulting liquid removed, AND	☐ Y ☐ N	☐	☐
b. All product removed to bottom of suction line, OR	☐ Y ☐ N	☐	☐
c. All product removed to within 1" of bottom.	☐ Y ☐ N	☐	☐
2. Fill pipe, gauge pipe, tank truck vapor recovery fittings, and vapor return lines capped.	☐ Y ☐ N	☐	☐
3. All product lines at the islands or pumps located elsewhere are removed and capped, OR	☐ Y ☐ N	☐	☐
4. Dispensers/pumps left in place but locked and power disconnected.	☐ Y ☐ N	☐	☐
5. Vent lines left open.	☐ Y ☐ N	☐	☐
6. Inventory form filed indicating temporary closure.	☐ Y ☐ N	☐	☐
C. CLOSURE BY REMOVAL			
1. Product from piping drained into tank (or other container).	☒ Y ☐ N	☐	☐
2. Piping disconnected from tank and removed.	☒ Y ☐ N	☐	☐
3. All liquid and residue removed from tank using explosion proof pumps or hand pumps.	☒ Y ☐ N	☐	☐
4. All pump motors and suction hoses bonded to tank or otherwise grounded.	☒ Y ☐ N	☐	☐
5. Fill pipes, gauge pipes, vapor recovery connections, submersible pumps and other fixtures removed. **NOTE: DROP TUBE SHOULD NOT BE REMOVED IF THE TANK IS TO BE PURGED THROUGH THE USE OF AN EDUCTOR.**	☒ Y ☐ N	☐	☐
6. Vent lines left connected until tanks purged.	☒ Y ☐ N	☐	☐
7. Tank openings temporarily plugged so vapors exit through vent.	☒ Y ☐ N	☒	☐
8. Tank atmosphere reduced to 10% of the lower flammable range (LEL) - see Section F.	☒ Y ☐ N	☒	☐
9. Tank removed from excavation after **PURGING/INERTING**; placed on level ground and blocked to prevent movement.	☒ Y ☐ N	☒	☐
10. Tank cleaned before being removed being removed from site.	☒ Y ☐ N	☐	☐

- CONTINUE ON NEXT PAGE -

C. CLOSURE BY REMOVAL (continued)

	Remover Verified	Inspector Verified	NA
11. Tank labeled in 2" high letters after removal but before being moved from site.	☒ Y ☐ N	☐	☐
NOTE: COMPLETE TANK LABELING SHOULD INCLUDE WARNING AGAINST REUSE; FORMER CONTENTS; VAPOR STATE; VAPOR FREEING TREATMENT; DATE.			
12. Tank vent hole (1/8 th " in uppermost part of tank) installed prior to moving the tank from site.	☐ Y ☐ N	☐	☐
13. Inventory form filed by owner with Safety and Buildings Division indicating closure by removal.	☒ Y ☐ N	☒	☐
14. Site security is provided while the excavation is open.	☒ Y ☐ N	☒	☐

D. CLOSURE IN PLACE

NOTE: CLOSURES IN PLACE ARE ONLY ALLOWED WITH THE PRIOR WRITTEN APPROVAL OF THE DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS OR LOCAL AGENT.

1. Product from piping drained into tank (or other container).			
2. Piping disconnected from tank and removed.	☐ Y ☐ N	☐	☐
3. All liquid and residue removed from tank using explosion proof pumps or hand pumps.	☐ Y ☐ N	☐	☐
4. All pump motors and suction hoses bonded to tank or otherwise grounded.	☐ Y ☐ N	☐	☐
5. Fill pipes, gauge pipes, vapor recovery connections, submersible pumps and other fixtures removed.	☐ Y ☐ N	☐	☐
NOTE: DROP TUBE SHOULD NOT BE REMOVED IF THE TANK IS TO BE PURGED THROUGH THE USE OF AN EDUCTOR - EDUCTOR OUTPUT 12 FT ABOVE GRADE.			
6. Vent lines left connected until tanks purged.	☐ Y ☐ N	☐	☐
7. Tank openings temporarily plugged so vapors exit through vent.	☐ Y ☐ N	☐	☐
8. Tank atmosphere reduced to 10% of the lower flammable range (LEL) - see Section F.	☐ Y ☐ N	☐	☐
9. Tank properly cleaned to remove all sludge and residue.	☐ Y ☐ N	☐	☐
10. Solid inert material (sand, cyclone boiler slag, pea gravel recommended) introduced and tank filled.	☐ Y ☐ N	☐	☐
11. Vent line disconnected or removed.	☐ Y ☐ N	☐	☐
12. Inventory form filed by owner with Safety and Buildings Division indicating closure in place.	☐ Y ☐ N	☐	☐

E. CLOSURE ASSESSMENTS

NOTE: DETERMINE IF A CLOSURE ASSESSMENT IS REQUIRED BY REFERRING TO ILHR 10.

1. Individual conducting the assessment has a closure assessment plan (written) which is used as the basis for their work on the site.	☐ Y ☐ N	☒	☐
2. Do points of obvious contamination exist?	☐ Y ☐ N	☒	☐
3. Are there strong odors in the soils?	☐ Y ☐ N	☒	☐
4. Was a field screening instrument used to pre-screen soil sample locations?	☐ Y ☐ N	☐	☐
5. Was a closure assessment omitted because of obvious contamination?	☐ Y ☐ N	☐	☐
6. Was the DNR notified of suspected or obvious contamination?	☐ Y ☐ N	☐	☐

Agency, office and person contacted: _____

7. Contamination suspected because of: ☐ Odor ☐ Soil Staining ☐ Free Product ☐ Sheen On Groundwater ☐ Field Instrument Test

F. METHOD OF ACHIEVING 10% LEVEL DESCRIPTION

☐ Educator Or Diffused Air Blower

Eductor driven by compressed air, bonded and drop tube left in place; vapors discharged minimum of 12 feet above ground. Diffused air blower bonded and drop tube removed. Air pressure not exceeding 5 psig.

☐ Dry Ice

Dry ice introduced at 1.5 pounds per 100 gallons of tank capacity. Dry ice crushed and distributed over the greatest possible tank area. Dry ice evaporated before proceeding.

☒ Inert Gas (CO/2 or N/2) **NOTE: INERT GASSES PRODUCE AN OXYGEN DEFICIENT ATMOSPHERE. THE TANK MAY NOT BE ENTERED IN THIS STATE WITHOUT SPECIAL EQUIPMENT**

Gas introduced through a single opening at a point near the bottom of the tank at the end of the tank opposite the vent. Gas introduced under low pressure not to exceed 5 psig to reduce static electricity. Gas introducing device grounded.

☐ Tank atmosphere monitored for flammable or combustible vapor levels.

Calibrate combustible gas indicator. Drop tube removed prior to checking atmosphere. Tank space monitored at bottom, middle and upper portion of tank. Readings of 10% or less of the lower flammable range (LEL) obtained before removing tank from ground.

G. NOTE SPECIFIC PROBLEMS OR NONCOMPLIANCE ISSUES BELOW

H. REMOVER/CLEANER INFORMATION

Remover Name (print)	Remover Signature	Remover Certification No.	Date Signed
LINDA E. BARTLETT	L. E. Bartlett	05897	10-2-97

I. INSPECTOR INFORMATION

Inspector Name (print)	Inspector Signature	Inspector Certification No.
Charles		

FDID # For Location Where Inspection Performed	Inspector Telephone Number	Date Signed
EAU C	715 834 4825	Oct 2 97

OWNER

Ctrl-Z = HELP

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° WISCONSIN UNDERGROUND STORAGE TANKS °

° FIRE DEPT = 18010 °

ÈÍÍÍÍÍÍÍÍÍ CITY OF EAU CLAIRE ÍÍÍÍÍÍÍÍÍ¼

68 OF 1736

TANK ID	LOCATION	OWNER
180101358	HEARTLAND AVIATION	LARRY HUSBY
	3800 STARR AVE	3800 STARR AVE
	EAU CLAIRE, WI 54703	EAU CLAIRE, WI 54703

LAST UPDATE: 9/15/97
INSTALLED : 9/01/88
ASSESSED :
ABANDONED :
OUT OF SERV:
STATUS : IN USE OR NEW

FED REG? : YES
USER TYPE : GAS STATION
CONTENTS : UNLEADED
CAPACITY : 012000
CHEM CODES:

TANK CONSTR: CATHODICALLY PROTECTED AND COATED STEEL
TANK LEAK DETECTION METHOD(S): INVENTORY CONTROL/TIGHTNESS TESTING
SPILL CONTAINMENT?: YES
PIPE CONSTR: CATHODICALLY PROTECTED & COATED STEEL SACRIFICIAL ANODES
PIPING SYSTEM TYPE: PRESSURIZED PIPING FLOW RESTRICTOR
DOUBLE WALL PIPING?: PIPING LEAK DETEC METHOD(S): TIGHTNESS TESTING
OVERFILL PROTECTION?:

Press F1 or Ctrl-Z for HELP on using this program Ctrl-G = Esc

10-27-97
WDcom Computer inventory search
J. Mutts

Ctrl-Z = HELP

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° WISCONSIN UNDERGROUND STORAGE TANKS °
° FIRE DEPT = 18010 °
ÈÍÍÍÍÍÍÍÍ CITY OF EAU CLAIRE ÍÍÍÍÍÍÍÍ¼

69 OF 1736

TANK ID	LOCATION	OWNER
180101359	HEARTLAND AVIATION	LARRY HUSBY
	3800 STARR AVE	3800 STARR AVE
	EAU CLAIRE, WI 54703	EAU CLAIRE, WI 54703

LAST UPDATE: 9/15/97 FED REG? : YES
INSTALLED : 9/01/88 USER TYPE : GAS STATION
ASSESSED : CONTENTS : AVIATION
ABANDONED : CAPACITY : 012000
OUT OF SERV: CHEM CODES:
STATUS : IN USE OR NEW
TANK CONSTR: CATHODICALLY PROTECTED AND COATED STEEL
TANK LEAK DETECTION METHOD(S): INVENTORY CONTROL/TIGHTNESS TESTING
SPILL CONTAINMENT?: YES
PIPE CONSTR: CATHODICALLY PROTECTED & COATED STEEL SACRIFICIAL ANODES
PIPING SYSTEM TYPE: PRESSURIZED PIPING FLOW RESTRICTOR
DOUBLE WALL PIPING?: PIPING LEAK DETEC METHOD(S): TIGHTNESS TESTING
OVERFILL PROTECTION?:
Press F1 or Ctrl-Z for HELP on using this program Ctrl-G = Esc

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° WISCONSIN UNDERGROUND STORAGE TANKS °
° FIRE DEPT = 18010 °
ÈÍÍÍÍÍÍÍÍ CITY OF EAU CLAIRE ÍÍÍÍÍÍÍÍÍ¼

TANK ID	LOCATION	OWNER
180101357	HEARTLAND AVIATION 3800 STARR AVE EAU CLAIRE, WI 54703	LARRY HUSBY 3800 STARR AVE EAU CLAIRE, WI 54703

LAST UPDATE: 9/15/97 FED REG? : YES
INSTALLED : 9/01/88 USER TYPE : GAS STATION
ASSESSED : CONTENTS : KEROSENE
ABANDONED : CAPACITY : 012000
OUT OF SERV: CHEM CODES:
STATUS : IN USE OR NEW
TANK CONSTR: CATHODICALLY PROTECTED AND COATED STEEL
TANK LEAK DETECTION METHOD(S): INVENTORY CONTROL/TIGHTNESS TESTING
SPILL CONTAINMENT?: YES
PIPE CONSTR: CATHODICALLY PROTECTED & COATED STEEL SACRIFICIAL ANODES
PIPING SYSTEM TYPE: PRESSURIZED PIPING FLOW RESTRICTOR
DOUBLE WALL PIPING?: PIPING LEAK DETEC METHOD(S): TIGHTNESS TESTING
OVERFILL PROTECTION?:
Press F1 or Ctrl-Z for HELP on using this program Ctrl-G = Esc

State of Wisconsin
Department of Commerce

WI Tank ID#: _____

UNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

Information Required By Section 101.142, Wis. Stats.

Send Completed Form To:
Storage Tank, Permitting and
Registration Section
P.O. Box 7969, Madison, WI 53707

Underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances must be registered. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (including piping) located below ground level. A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner. Have you previously registered this tank by submitting a form? ☐ Yes ☐ No If yes, are you correcting/updating information only? ☐ Yes ☐ No

Personal information you provide may be used for secondary purposes. [Privacy Law, s. 15.04 (1)(m)]

This registration applies to a tank that is (check one):
1A. ☐ In Use or
1B. ☐ Newly Installed
2. ☐ Abandoned with Product
3. ☐ Abandoned No Product (empty) or with Water
4. ☒ Closed - Tank Removed
6. ☐ Closed - Filled with Inert Materials
7. ☐ Out of Service - Provide Date: _____
8. ☐ Ownership Change (Indicate new owner name in block 2)

Fire Department providing fire coverage where tank is located:
☐ City ☐ Village
☐ Town of EAU CLAIRE

A. IDENTIFICATION (Please Print)

1. Tank Site Name	Site Address	Site Telephone Number
Heartland Aviation	3800 State Ave	(715) 835-3181
☐ City ☐ Village ☐ Town of: EAU CLAIRE	State: WI	Zip Code: 54703	County: Chippewa
2. Tank Owner Name	Mailing Address	Telephone Number
Heartland Aviation Inc.		
☐ City ☐ Village ☐ Town of:	State	Zip Code	County
3. Previous Name	Previous site address if different than #1	
4. Tank Age (date installed, if known or years old)	5. Tank Capacity (gallons): 12,000	6. If more than one tank is located at facility, please provide tank #

B. TYPE OF USER (check one)
1. ☒ Gas/Retail Sales 2. ☐ Bulk Storage 3. ☐ Utility 4. ☐ Mercantile/Commercial 5. ☐ Industrial
6. ☐ Government 7. ☐ School 8. ☐ Residential 9. ☐ Agricultural 10. ☐ Other (specify):
11. ☐ Tribal Nation 12. ☐ Federal Property 13. ☐ Backup Generator

C. TANK CONSTRUCTION (check one)
1. ☐ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (specify): _____
6. ☐ Lined - Date: _____ 7. ☐ Steel - Fiberglass Reinforced Plastic Composite 9. ☐ Unknown

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other: | Is tank double walled? ☐ Yes ☐ No
Overfill Protection Provided? ☐ Yes ☐ No If yes, identify type: | Spill Containment? ☐ Yes ☐ No

Tank leak detection method:
1. ☐ Automatic tank gauging 2. ☐ Vapor monitoring 3. ☐ Groundwater monitoring
4. ☐ Inventory control and tightness testing 5. ☐ Interstitial monitoring
7. ☐ Manual tank gauging (only for tanks of 1,000 gallons or less) 8. ☐ Statistical Inventory Reconciliation (SIR)

D. PIPING CONSTRUCTION
1. ☐ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (Specify): 9. ☐ Unknown

Vapor Recovery/Stage II
4. ☐ Fiberglass 6. ☐ Flexible 5. ☐ Other (specify): ☐ CARB #: _____ ☐ Operational - Provide Date (mo/day/yr):

Piping System Type: 1. ☐ Pressurized piping with A. ☐ auto shutoff; B. ☐ alarm or C. ☐ flow restrictor
2. ☐ Suction piping with check valve at tank 3. ☐ Suction piping with check valve at pump and inspectable 4. ☐ Not needed if waste oil

Piping leak detection method: used if pressurized or check valve at tank: 1. ☐ Vapor monitoring 2. ☐ Interstitial monitoring
3. ☐ Groundwater monitoring 4. ☐ Tightness testing 5. ☐ Line leak detector 6. ☐ Not required 8. ☐ SIR

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other: | Is pipe double walled? ☐ Yes ☐ No

E. TANK CONTENTS
1. ☐ Diesel 2. ☐ Leaded 3. ☐ Unleaded 4. ☐ Fuel Oil 5. ☐ Gasohol
6. ☐ Other (Specify): _____ 7. ☐ Empty* 8. ☐ Sand/Gravel/Slurry* 9. ☐ Unknown* 10. ☐ Premix
11. ☐ Waste/Used Motor Oil 13. ☐ Chemical _____ 14. ☐ Kerosene 15. ☒ Aviation
(Indicate chemical name and number)

* If 7, 8, or 9 is chosen, this tank is NOT PECFA eligible.

If Tank Closed, Abandoned or Out of Service, give date (mo/day/yr): 10-2-97

Has a site assessment been completed (see reverse side for details)
☒ Yes ☐ No

Owner or Operator Name (please print): HEARTLAND AVIATION, INC

Indicate whether:
☐ Owner or ☐ Operator

Owner or Operator Signature: by: [signature]

Date Signed: 10/2/97

IMPORTANT: Failure to provide sufficient information may cause you to fall under additional regulations, and may delay PECFA eligibility determination. It is necessary to complete ALL shaded areas and as many other items as possible

SBD-7437 (R. 05/96)

State of Wisconsin
Department of Commerce

WI Tank ID#: _____

UNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

Information Required By Section 101.142, Wis. Stats.

Send Completed Form To:
Storage Tank, Permitting and
Registration Section
P.O. Box 7969, Madison, WI 53707

Underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances must be registered. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (including piping) located below ground level. A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner. Have you previously registered this tank by submitting a form? ☐ Yes ☐ No If yes, are you correcting/updating information only? ☐ Yes ☐ No

Personal information you provide may be used for secondary purposes. [Privacy Law, s. 15.04 (1)(m)]

This registration applies to a tank that is (check one):
1A. ☐ In Use or
1B. ☐ Newly Installed
2. ☐ Abandoned with Product
3. ☐ Abandoned No Product (empty) or with Water
4. ☒ Closed - Tank Removed
6. ☐ Closed - Filled with Inert Materials
7. ☐ Out of Service - Provide Date: _____
8. ☐ Ownership Change (Indicate new owner name in block 2)

Fire Department providing fire coverage where tank is located:
☒ City ☐ Village
☐ Town of EAU CLAIRE

A. IDENTIFICATION (Please Print)

1. Tank Site Name	Site Address	Site Telephone Number
Heartland Aviation, Inc.	3800 STARR AVE.	(715) 835-3181
☐ City ☐ Village ☐ Town of: EAU CLAIRE	State: WI / Zip Code: 54703	County: Chippewa
2. Tank Owner Name: ~~Larry Husby~~ HEARTLAND AVIATION, INC	Mailing Address: SAME	Telephone Number: SAME
☐ City ☐ Village ☐ Town of:	State / Zip Code	County
3. Previous Name	Previous site address if different than #1	
4. Tank Age (date installed, if known or years old)	5. Tank Capacity (gallons): 12,000	6. If more than one tank is located at facility, please provide tank #

B. TYPE OF USER (check one)
1. ☒ Gas/Retail Sales 2. ☐ Bulk Storage 3. ☐ Utility 4. ☐ Mercantile/Commercial 5. ☐ Industrial
6. ☐ Government 7. ☐ School 8. ☐ Residential 9. ☐ Agricultural 10. ☐ Other (specify):
11. ☐ Tribal Nation 12. ☐ Federal Property 13. ☐ Backup Generator

C. TANK CONSTRUCTION (check one)
1. ☐ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (specify): _____
6. ☐ Lined - Date: _____ 7. ☐ Steel - Fiberglass Reinforced Plastic Composite 9. ☐ Unknown

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other:
Is tank double walled? ☐ Yes ☐ No
Overfill Protection Provided? ☐ Yes ☐ No If yes, identify type:
Spill Containment? ☐ Yes ☐ No

Tank leak detection method:
1. ☐ Automatic tank gauging 2. ☐ Vapor monitoring 3. ☐ Groundwater monitoring
4. ☐ Inventory control and tightness testing 5. ☐ Interstitial monitoring
7. ☐ Manual tank gauging (only for tanks of 1,000 gallons or less) 8. ☐ Statistical Inventory Reconciliation (SIR)

D. PIPING CONSTRUCTION
1. ☐ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (Specify): 9. ☐ Unknown

Vapor Recovery/Stage II
4. ☐ Fiberglass 6. ☐ Flexible 5. ☐ Other (specify):
☐ CARB #: _____
☐ Operational - Provide Date (mo/day/yr):

Piping System Type: 1. ☐ Pressurized piping with A. ☐ auto shutoff; B. ☐ alarm or C. ☐ flow restrictor
2. ☐ Suction piping with check valve at tank 3. ☐ Suction piping with check valve at pump and inspectable 4. ☐ Not needed if waste oil

Piping leak detection method: used if pressurized or check valve at tank: 1. ☐ Vapor monitoring 2. ☐ Interstitial monitoring
3. ☐ Groundwater monitoring 4. ☐ Tightness testing 5. ☐ Line leak detector 6. ☐ Not required 8. ☐ SIR

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other:
Is pipe double walled? ☐ Yes ☐ No

E. TANK CONTENTS
1. ☐ Diesel 2. ☐ Leaded 3. ☐ Unleaded 4. ☐ Fuel Oil 5. ☐ Gasohol
6. ☐ Other (Specify): _____ 7. ☐ Empty* 8. ☐ Sand/Gravel/Slurry* 9. ☐ Unknown* 10. ☐ Premix
11. ☐ Waste/Used Motor Oil 13. ☐ Chemical _____ 14. ☐ Kerosene 15. ☒ Aviation
(Indicate chemical name and number)

* If 7, 8, or 9 is chosen, this tank is NOT PECFA eligible.

If Tank Closed, Abandoned or Out of Service, give date (mo/day/yr): 10-2-97

Has a site assessment been completed (see reverse side for details)
☒ Yes ☐ No

Owner or Operator Name (please print): HEARTLAND AVIATION, INC

Indicate whether:
☐ Owner or ☐ Operator

Owner or Operator Signature: by: [signature]

Date Signed: 10/2/97

IMPORTANT: Failure to provide sufficient information may cause you to fall under additional regulations, and may delay PECFA eligibility determination. It is necessary to complete ALL shaded areas and as many other items as possible

SBD-7437 (R. 05/96)

State of Wisconsin
Department of Commerce

WI Tank ID#: _____

JNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

Information Required By Section 101.142, Wis. Stats.

Send Completed Form To:
Storage Tank, Permitting and
Registration Section
P.O. Box 7969, Madison, WI 53707

Underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances must be registered. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (including piping) located below ground level. A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner. Have you previously registered this tank by submitting a form? ☐ Yes ☐ No If yes, are you correcting/updating information only? ☐ Yes ☐ No

Personal information you provide may be used for secondary purposes. [Privacy Law, s. 15.04 (1)(m)]

This registration applies to a tank that is (check one):

1A. ☐ In Use or
1B. ☐ Newly Installed
2. ☐ Abandoned with Product
3. ☐ Abandoned No Product (empty) or with Water
4. ☒ Closed - Tank Removed
6. ☐ Closed - Filled with Inert Materials
7. ☐ Out of Service - Provide Date: _____
8. ☐ Ownership Change (Indicate new owner name in block 2)

Fire Department providing fire coverage where tank is located:
☐ City ☐ Village
☐ Town of Eau Claire

A. IDENTIFICATION (Please Print)

1. Tank Site Name	Site Address		Site Telephone Number
Heartland Aviation	3800 Starr Ave.		(715) 835-3181
☐ City ☐ Village ☐ Town of: Eau Claire	State: WI	Zip Code: 54703	County: Chippewa
2. Tank Owner Name: Heartland Aviation Inc.	Mailing Address		Telephone Number
☐ City ☐ Village ☐ Town of:	State	Zip Code	County
3. Previous Name	Previous site address if different than #1		
4. Tank Age (date installed, if known or years old)	5. Tank Capacity (gallons): 12,000	6. If more than one tank is located at facility, please provide tank #	

B. TYPE OF USER (check one)

1. ☒ Gas/Retail Sales 2. ☐ Bulk Storage 3. ☐ Utility 4. ☐ Mercantile/Commercial 5. ☐ Industrial
6. ☐ Government 7. ☐ School 8. ☐ Residential 9. ☐ Agricultural 10. ☐ Other (specify):
11. ☐ Tribal Nation 12. ☐ Federal Property 13. ☐ Backup Generator

C. TANK CONSTRUCTION (check one)

1. ☐ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (specify): _____
6. ☐ Lined - Date: _____ 7. ☐ Steel - Fiberglass Reinforced Plastic Composite 9. ☐ Unknown

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other:
Is tank double walled? ☐ Yes ☐ No

Overfill Protection Provided? ☐ Yes ☐ No If yes, identify type:
Spill Containment? ☐ Yes ☐ No

Tank leak detection method:
1. ☐ Automatic tank gauging 2. ☐ Vapor monitoring 3. ☐ Groundwater monitoring
4. ☐ Inventory control and tightness testing 5. ☐ Interstitial monitoring
7. ☐ Manual tank gauging (only for tanks of 1,000 gallons or less) 8. ☐ Statistical Inventory Reconciliation (SIR)

D. PIPING CONSTRUCTION

1. ☐ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (Specify): 9. ☐ Unknown

Vapor Recovery/Stage II
4. ☐ Fiberglass 6. ☐ Flexible 5. ☐ Other (specify):
☐ CARB #: _____
☐ Operational - Provide Date (mo/day/yr):

Piping System Type: 1. ☐ Pressurized piping with A. ☐ auto shutoff; B. ☐ alarm or C. ☐ flow restrictor
2. ☐ Suction piping with check valve at tank 3. ☐ Suction piping with check valve at pump and inspectable 4. ☐ Not needed if waste oil

Piping leak detection method: used if pressurized or check valve at tank: 1. ☐ Vapor monitoring 2. ☐ Interstitial monitoring
3. ☐ Groundwater monitoring 4. ☐ Tightness testing 5. ☐ Line leak detector 6. ☐ Not required 8. ☐ SIR

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other:
Is pipe double walled? ☐ Yes ☐ No

E. TANK CONTENTS

1. ☐ Diesel 2. ☐ Leaded 3. ☐ Unleaded 4. ☐ Fuel Oil 5. ☐ Gasohol
6. ☐ Other (Specify): _____ 7. ☐ Empty* 8. ☐ Sand/Gravel/Slurry* 9. ☐ Unknown* 10. ☐ Premix
11. ☐ Waste/Used Motor Oil 13. ☐ Chemical _____ (Indicate chemical name and number) 14. ☐ Kerosene 15. ☒ Aviation

* If 7, 8, or 9 is chosen, this tank is NOT PECFA eligible.

If Tank Closed, Abandoned or Out of Service, give date (mo/day/yr): 10-2-97

Has a site assessment been completed (see reverse side for details)
☒ Yes ☐ No

Owner or Operator Name (please print): Heartland Aviation, Inc.

Indicate whether:
☐ Owner or ☐ Operator

Owner or Operator Signature:

Date Signed: 10/2/97

IMPORTANT: Failure to provide sufficient information may cause you to fall under additional regulations, and may delay PECFA eligibility determination. It is necessary to complete ALL shaded areas and as many other items as possible

SBD-7437 (R. 05/96)

APPENDIX B

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122
7-91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HEARTLAND AVIATION	_ _ _ _ _ _ _ _	B-1

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started (M M D D Y Y)	Date Drilling Completed (M M D D Y Y)	Drilling Method
Maxim, Eau Claire, Todd Fields	10/16/97	10/16/97	Hollow Stem Auger

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _	_ _ _ _ _ _ _ _	—	— Feet MSL	— Feet MSL	8 inches

Boring Location
State Plane _____ N, _____ E S/C/N
SE 1/4 of NW 1/4 of Section 33, T 28 N, R 9 E W

Lat _____ Long _____

Local Grid Location (If applicable)
_____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
CHIPPEWA	09	EAU CLAIRE

Sample Number	Sample Length Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
			1–5	GRAVEL, SAND, SILTY SAND FILL										
B-1a			9–10	SAND, fine, tan oily sheen	SP					M				Strong petrol
B-1b			14–15	SAND, fine, tan oily sheen	SP					M				Strong petrol
				End of Boring 15.0'										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm _____

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 of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: B-1

County: CHIPPEWA

SE 1/4 of NW 1/4 of Sec. 33 ; T. 28 N; R. 9 [ ] E [X] W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. [ ] N. [ ] S., _____ ft. [ ] E. [ ] W.

Civil Town Name: —

Street Address of Well: 3800 STARR AVENUE

City, Village: Eau Claire WI 54701

(2) FACILITY NAME

Original Well Owner (If Known): HEARTLAND AVIATION

Present Well Owner: SAME

Street or Route: 3800 STARR AVENUE

City, State, Zip Code: EAU CLAIRE WI 54703

Facility Well No. and/or Name (If Applicable): —

WI Unique Well No.: _____

Reason For Abandonment: To prevent surface contaminants from infiltrating.

Date of Abandonment: 10-16-97

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): 10-16-97

[ ] Monitoring Well
[ ] Water Well
[X] Drillhole
[ ] Borehole

Construction Report Available? [X] Yes [ ] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[ ] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 15' (From groundsurface) Casing Diameter (ins.) Not Appl.

Casing Depth (ft.) Not Appl.

Was Well Annular Space Grouted? [ ] Yes [X] No [ ] Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) Not Appl.

Pumping & Piping Removed? [ ] Yes [ ] No [X] Not Applicable
Liner(s) Removed? [ ] Yes [ ] No [X] Not Applicable
Screen Removed? [ ] Yes [ ] No [X] Not Applicable
Casing Left in Place? [ ] Yes [X] No
If No, Explain This is a soil boring, not a well.

Was Casing Cut Off Below Surface? [ ] Yes [X] No
Did Sealing Material Rise to Surface? [X] Yes [ ] No
Did Material Settle After 24 Hours? [ ] Yes [X] No
If Yes, Was Hole Retopped? [ ] Yes [X] No

(5) Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [ ] Other (Explain)

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[X] Chipped Bentonite
[ ] Bentonite Pellets
[ ] Granular Bentonite
[ ] Bentonite - Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
BENTONITE	Surface	15		100%

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: ADVENT ENVIRONMENTAL SERVICES, INC.
Signature of Person Doing Work: [signature] Date Signed: 10-27-97
Street or Route: 5110 Fairview Dr. Telephone Number: (715) 831-1530
City, State, Zip Code: Eau Claire WI 54701

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

APPENDIX C

SAMPLING PROCEDURES

Soil Sample Collection

We collected soil samples from native soil within the UST excavations using a backhoe bucket. We sampled soils by removing a minimum of 6 inches of soil from the backhoe bucket with a clean steel trowel. Soil samples that could be acquired at shallow depths (<4 feet) were obtained by removing a minimum of 6 inches of soil with a stainless steel trowel and collecting the sample. We collected soil samples during the expanded closure assessment with a drill rig and a clean stainless steel split spoon sampler. Soil sampling locations were determined in accordance with WDILHR 10 Appendix B, Part IV, Letter C, "Soil Sample Locations" and applicable soil sampling and WDNR guidelines.

Soil Samples Submitted for Laboratory Analysis

After collection, we put the soil samples into the appropriate containers as follows:

ANALYTE	CONTAINER TYPE	FIELD PRESERVATIVE
GRO and GRO/PVOC	60-ml vial with TLC	methanol
DRO	60-ml vial with TLC	none
DRY Weight	60-ml vial with TLC	none

TLC = Teflon-lined cap

Samples were then sealed and cooled to 4°C for transport to the laboratory. All samples were identified with the following information:

- Site name
- Sample number
- Sample location
- Date and time of collection
- Analysis requested
- Name of sampler
- Other applicable information (i.e., PID readings, odors)

Chain of Custody Procedures

Advent completed a chain of custody record in triplicate immediately after sample collection. The chain of custody record was kept with the samples during transport to the laboratory. When transferring sample custody, the individuals relinquishing and receiving the samples signed, dated, and noted the time on the chain of custody record. A designated sample custodian accepted custody of the shipped samples and verified that the sample identification numbers matched those on the chain of custody record. The laboratory then retained a copy of the chain of custody record until analyses were completed. The record was then transferred to the site file with the analytical results.

APPENDIX D

GREAT LAKES ANALYTICAL

CHAIN OF CUSTODY REPORT

BUFFALO GROVE, ILLINOIS 60089-4505
(708) 808-7766 FAX (708) 808-7772

Client: ADVENT ENvironmental	Bill To: ADVENT	TAT: 5 DAY 4 DAY (3 DAY) 2 DAY 1 DAY < 24 HR	
Address: 5110 Fairview Dr.	Address: E.C.	DATE RESULTS NEEDED: TUES Oct 21 199	
Eau Claire WI 54701		TEMPERATURE UPON RECEIPT:	
Report to: Jim Mertes Phone #: (715) 831-1530 Fax #: ( ) 831-1531	State & Program: WI LUST	Phone #: ( ) Fax #: ( )	AIR BILL NO. Fedex 8010 0654 0563
Project: Heartland Aviation			
Sampler: Jim Mertes			
PO/Quote #:			

	FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	GRO/PVOC	DRO	ANALYSIS	SAMPLE CONTROL: CRACKED/BROKEN	SAMPLE CONTROL: IMPROPERLY SEALED	SAMPLE CONTROL: GOOD CONDITION	LABORATORY ID NUMBER
1	B-1a 8-10'	10-16-97	3:10	SOIL	MEOH for GRO/PVOC	3		X	X					7103015
2	B-1b 13-15'		3:25			3		X	X					7103016
3	MeOH Blank		3:30			1		X						7103017
4														
5														
6														
7														
8														
9														
10														

RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME	RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME
Jim J. Mertes	10-16-97	5Pm				Doug Fro	10/17/97
RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME	RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME

COMMENTS: Sent to ~~Prairie~~ Great Lakes on ice via ~~Great Lakes~~ Fed Ex

PAGE OF

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Date: October 22, 1997

Advent Environmental Services
5110 Fairview Dr., Suite A
Eau Claire, WI 54701
Attention: Jim Mertes

Project: Heartland Aviation

Enclosed are the results from 2 soil samples and 1 liquid sample received at Great Lakes Analytical on October 17, 1997. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
7103015	Soil: B-1a	10/16/97	PVOC, EPA 5030/8021 Percent Solids, EPA 7.3.3.1.5 WDNR DRO WDNR GRO
7103016	Soil: B-1b	10/16/97	PVOC, EPA 5030/8021 Percent Solids, EPA 7.3.3.1.5 WDNR DRO WDNR GRO
7103017	Liquid: MeOH Blank	10/16/97	PVOC, EPA 5030/8021 WDNR GRO

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Certifications: AALA-461.01; US Army Corps of Engineers; Delaware HSS-IL069; Illinois EPA 100261; New Jersey DEP-54001; New York DOH-11487; Pennsylvania DEP-68-500; Tennessee DOH-02804; Tennessee DEC; Virginia DGS-00164; Wisconsin DNR-999917160

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation	Sampled:	Oct 16, 1997
5110 Fairview Dr., Suite A	Sample Descript:	Soil	Received:	Oct 17, 1997
Eau Claire, WI 54701	Analysis for:	Percent Solids, EPA 7.3.3.1.5		
Attention: Jim Mertes	First Sample #:	710-3015	Analyzed:	Oct 17, 1997
			Reported:	Oct 22, 1997

LABORATORY ANALYSIS FOR: Percent Solids, EPA 7.3.3.1.5

Sample Number	Sample Description	Detection Limit %	Sample Result %
710-3015	B-1a	0.10	93
710-3016	B-1b	0.10	92

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7103015.ADE <1>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation	Sampled:	Oct 16, 1997
5110 Fairview Dr., Suite A	Matrix Descript:	Soil	Received:	Oct 17, 1997
Eau Claire, WI 54701	Analysis Method:	WDNR DRO	Extracted:	Oct 20, 1997
Attention: Jim Mertes	First Sample #:	710-3015	Analyzed:	Oct 21, 1997
			Reported:	Oct 22, 1997

DIESEL RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	High B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
710-3015	B-1a	270	1,800	Non Diesel Pattern Early Peaks-Diesel Range
710-3016	B-1b	270	3,000	Non Diesel Pattern Early Peaks-Diesel Range

High Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance, July 1993 WDNR SW 130 93 REV. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7103015.ADE <2>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation	Sampled:	Oct 16, 1997
5110 Fairview Dr., Suite A	Matrix Descript:	Soil	Received:	Oct 17, 1997
Eau Claire, WI 54701	Analysis Method:	WDNR GRO		
Attention: Jim Mertes	First Sample #:	710-3015	Analyzed:	Oct 21, 1997
			Reported:	Oct 22, 1997

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
710-3015	B-1a	540	2,200	Late Peaks, Elevated Baseline
710-3016	B-1b	270	2,300	Late Peaks, Elevated Baseline

High Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance, July 1993 WDNR SW 130 93 REV. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7103015.ADE <3>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation	Sampled:	Oct 16, 1997
5110 Fairview Dr., Suite A	Matrix Descript:	Liquid	Received:	Oct 17, 1997
Eau Claire, WI 54701	Analysis Method:	WDNR GRO		
Attention: Jim Mertes	First Sample #:	710-3017	Analyzed:	Oct 20, 1997
			Reported:	Oct 22, 1997

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit µg/L (ppb)	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Chromatogram Description
710-3017	Methanol Blank	5,000	N.D.	-----

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Undergound Storage Tank Analytical Guidance July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7103015.ADE <4>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation	Sampled:	Oct 16, 1997
5110 Fairview Dr., Suite A	Sample Descript:	Soil: B-1a	Received:	Oct 17, 1997
Eau Claire, WI 54701	Analysis Method:	EPA 5030/8021		
Attention: Jim Mertes	Lab Number:	710-3015	Analyzed:	Oct 20, 1997
			Reported:	Oct 22, 1997

WDNR PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8021)

Analyte	Method Detection Limit µg/kg	Practical Quanitation Limit µg/kg	WDNR Reporting Limit µg/kg Wet Weight	Sample Results µg/kg Dry Weight
Benzene	4.8	15	25	N.D.
Ethyl Benzene	5.0	16	25	2,800
Methyl-t-Butyl Ether	12	37	25	N.D.
Toluene	7.0	22	25	210
124 Trimethylbenzene	8.9	28	25	30,000
135 Trimethylbenzene	8.2	26	25	20,000
Xylene	4.9	16	25	13,000

Analytes reported as N.D. were not present above the WDNR Reporting Limit IN WET WEIGHT as specified in Release News, Volume 4, Number 3, July 1994.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7103015.ADE <5>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation	Sampled:	Oct 16, 1997
5110 Fairview Dr., Suite A	Sample Descript:	Soil: B-1b	Received:	Oct 17, 1997
Eau Claire, WI 54701	Analysis Method:	EPA 5030/8021		
Attention: Jim Mertes	Lab Number:	710-3016	Analyzed:	Oct 20, 1997
			Reported:	Oct 22, 1997

WDNR PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8021)

Analyte	Method Detection Limit µg/kg	Practical Quanitation Limit µg/kg	WDNR Reporting Limit µg/kg Wet Weight	Sample Results µg/kg Dry Weight
Benzene	4.8	15	25	N.D.
Ethyl Benzene	5.0	16	25	770
Methyl-t-Butyl Ether	12	37	25	N.D.
Toluene	7.0	22	25	70
124 Trimethylbenzene	8.9	28	25	18,000
135 Trimethylbenzene	8.2	26	25	9,700
Xylene	4.9	16	25	4,100

Analytes reported as N.D. were not present above the WDNR Reporting Limit IN WET WEIGHT as specified in Release News, Volume 4, Number 3, July 1994.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7103015.ADE <6>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation	Sampled:	Oct 16, 1997
5110 Fairview Dr., Suite A	Sample Descript:	Liquid: MeOH Blank	Received:	Oct 17, 1997
Eau Claire, WI 54701	Analysis Method:	EPA 5030/8021		
Attention: Jim Mertes	Lab Number:	710-3017	Analyzed:	Oct 20, 1997
			Reported:	Oct 22, 1997

WDNR PETROLEUM VOLATILE ORGANIC COMPOUNDS (EPA 8021)

Analyte	Method Detection Limit µg/L	Practical Quanitation Limit µg/L	WDNR Reporting Limit µg/L	Sample Results µg/L
Benzene	4.8	15	25	N.D.
Ethyl Benzene	5.0	16	25	N.D.
Methyl-t-Butyl Ether	12	37	25	N.D.
Toluene	7.0	22	25	N.D.
124 Trimethylbenzene	8.9	28	25	N.D.
135 Trimethylbenzene	8.2	26	25	N.D.
Xylene	4.9	16	25	N.D.

Analytes reported as N.D. were not present above the WDNR Reporting Limit IN WET WEIGHT as specified in Release News, Volume 4, Number 3, July 1994.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7103015.ADE <7>

GREAT LAKES ANALYTICAL

CHAIN OF CUSTODY REPORT

1380 BUSCH PARKWAY -
BUFFALO GROVE, ILLINOIS 60089-4505
(847) 808-7766 FAX (847) 808-7772

Client: ADVENT ENVIRONMENTAL
Address: 5110 Fairview Drive, Suite A
Report to: JIM MERTES Phone #: (715) 831-1530 Fax #: (715) 831-1531

Bill To: ADVENT
Address: Eau Claire
State & Program: WI LUST Phone #: ( ) Fax #: ( )

TAT: ~~5 DAY~~ ~~4 DAY~~ 3 DAY 2 DAY 1 DAY < 24 HRS. STANDARD
DATE RESULTS NEEDED: 10-10-97
TEMPERATURE UPON RECEIPT: ON ICE
AIR BILL NO.

Project: HEARTLAND Aviation
Sampler: JIM MERTES
PO/Quote #: 970414.01

	FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	GRO	DRO	SAMPLE CONTROL: CRACKED/BROKEN	SAMPLE CONTROL: IMPROPERLY SEALED	SAMPLE CONTROL: GOOD CONDITION	LABORATORY ID NUMBER
1	#1 11'	10-2-97	11:00	SOIL	GRO = MEOH DRO = None	2		X				✓	7100533
	#2 11'		11:05			2		X				✓	7100534
2	#3 11'		11:07			2		X				✓	7100535
	#4 11'		1:00			2		X				✓	7100536
3	#5 11'		1:05			2		X				✓	7100537
	#6 11'		1:07			2		X				✓	7100538
4	#7 11'		2:30			2			X			✓	7100539
	#8 11'		2:35			2			X			✓	7100540
5	#9 11'		2:37			2			X			✓	7100541
	#10 4'		2:45			2			X			✓	7100542
6	MEOH Blank		11:00			1		X				✓	7100543
7													
8													
9													
10													

RELINQUISHED	RECEIVED	RELINQUISHED	RECEIVED
10-2-97 4:45PM			
RELINQUISHED	RECEIVED 10/3/97 K. Kull	RELINQUISHED	RECEIVED

COMMENTS: Sent to Great Lakes Analytical on ice via FedEx

PAGE OF

JG958198

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Date: October 13, 1997

Advent Environmental Services
5110 Fairview Dr., Suite A
Eau Claire, WI 54701
Attention: Jim Mertes

Project: Heartland Aviation, 970144.01

Enclosed are the results from 10 soil samples and 1 liquid sample received at Great Lakes Analytical on October 3, 1997. The requested analyses are listed below:

SAMPLE#	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
7100533	Soil, 1, 11'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR GRO
7100534	Soil, 2, 11'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR GRO
7100535	Soil, 3, 11'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR GRO
7100536	Soil, 4, 11'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR GRO
7100537	Soil, 5, 11'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR GRO
7100538	Soil, 6, 11'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR GRO
7100539	Soil, 7, 11'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR DRO
7100540	Soil, 8, 11'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR DRO
7100541	Soil, 9, 11'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR DRO
7100542	Soil, 10, 4'	10/2/97	Percent Solids, EPA 7.3.3.1.5 WDNR DRO
7100543	Liquid, Methanol Blank	10/2/97	WDNR GRO

This report may not be reproduced, except in full, without the written approval of the laboratory.

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation, 970144.01	Sampled:	Oct 2, 1997
5110 Fairview Dr., Suite A	Sample Descript:	Soil	Received:	Oct 3, 1997
Eau Claire, WI 54701	Analysis for:	Percent Solids, EPA 7.3.3.1.5		
Attention: Jim Mertes	First Sample #:	710-0533	Analyzed:	Oct 3, 1997
			Reported:	Oct 13, 1997

LABORATORY ANALYSIS FOR: Percent Solids, EPA 7.3.3.1.5

Sample Number	Sample Description	Detection Limit %	Sample Result %
710-0533	1, 11'	0.10	96
710-0534	2, 11'	0.10	98
710-0535	3, 11'	0.10	96
710-0536	4, 11'	0.10	95
710-0537	5, 11'	0.10	97
710-0538	6, 11'	0.10	96
710-0539	7, 11'	0.10	95
710-0540	8, 11'	0.10	96
710-0541	9, 11'	0.10	95
710-0542	10, 4'	0.10	94

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7100533.ADE <1>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation, 970144.01	Sampled:	Oct 2, 1997
5110 Fairview Dr., Suite A	Matrix Descript:	Soil	Received:	Oct 3, 1997
Eau Claire, WI 54701	Analysis Method:	WDNR DRO	Extracted:	Oct 6, 1997
Attention: Jim Mertes	First Sample #:	710-0539	Analyzed:	Oct 7, 1997
			Reported:	Oct 13, 1997

DIESEL RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	High B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
710-0539	7, 11'	5.3	N.D.	-----
710-0540	8, 11'	5.2	N.D.	-----
710-0541	9, 11'	5.3	N.D.	-----
710-0542	10, 4'	5.3	93	Non Diesel Pattern, Diesel Range Elevated Baseline, Peaks

High Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance, July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7100533.ADE <2>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation, 970144.01	Sampled:	Oct 2, 1997
5110 Fairview Dr., Suite A	Matrix Descript:	Soil	Received:	Oct 3, 1997
Eau Claire, WI 54701	Analysis Method:	WDNR GRO		
Attention: Jim Mertes	First Sample #:	710-0533	Analyzed:	Oct 12, 1997
			Reported:	Oct 13, 1997

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
710-0533	1, 11'	5.2	N.D.	-----
710-0534	2, 11'	5.1	N.D.	-----
710-0535	3, 11'	5.2	N.D.	-----
710-0536	4, 11'	5.3	N.D.	-----
710-0537	5, 11'	5.2	N.D.	-----
710-0538	6, 11'	5.2	N.D.	-----

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Undergound Storage Tank Analytical Guidance July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

Please Note:
Sample 1,11' (710-0533) was received at a weight less than 20 grams

7100533.ADE <3>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089
(847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation, 970144.01	Sampled:	Oct 2, 1997
5110 Fairview Dr., Suite A	Matrix Descript:	Liquid	Received:	Oct 3, 1997
Eau Claire, WI 54701	Analysis Method:	WDNR GRO		
Attention: Jim Mertes	First Sample #:	710-0543	Analyzed:	Oct 12, 1997
			Reported:	Oct 13, 1997

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit µg/L (ppb)	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Chromatogram Description
710-0543	Methanol Blank	5,000	N.D.	-----

Low to Medium Boiling Point Hydrocarbons is performed as described in Leaking Undergound Storage Tank Analytical Guidance July 1993 WDNR SW 130 93 REV. Analytes reported as N.D. were not present above the stated limit of detection.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7100533.ADE <4>

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
Scott Humrickhouse, Regional Director

West Central Region Headquarters
1300 W. Clairemont Avenue
PO Box 4001
Eau Claire, WI 54702-4001
TELEPHONE 715-839-3700
FAX 715-839-6076/1605
TTY 715-839-2786

October 27, 1997

Site ID #: 03-09-174629
Chippewa County

Mr. Larry Husby, President
Heartland Aviation
3800 Starr Avenue
Eau Claire, WI 54703

SUBJECT: Reported Contamination at Heartland Aviation Located at 3800 Starr Avenue, Eau Claire, WI

Dear Mr. Husby:

On October 24, 1997, Jim Mertes, Advent Environmental Services, Inc., informed the DNR that soil contamination exists at the above-named location.

Based on the information received by the Department of Natural Resources, we believe you are responsible for restoring the environment at this site under Section 292.11, Wisconsin Statutes, known as the hazardous substances spills law. Your responsibilities include investigating the extent of the contamination and then selecting and implementing the most appropriate remedial action.

Legal Responsibilities:

Your legal responsibilities are defined both in statute and in administrative codes. The hazardous substances spill law, Section 292.11(3) Wisconsin Statutes, states:

> **RESPONSIBILITY.** A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of the state.

Wisconsin Administrative Codes chapters NR 700 through NR 728 establish requirements for emergency and interim actions, public information, site investigations, design and operation of remedial action systems, and case closure. Chapter NR 708 includes provisions for immediate actions in response to limited contamination. Wisconsin Administrative Code chapter NR 140 establishes groundwater standards for contaminants that reach groundwater.

Steps to Take:

The longer contamination is left in the environment the farther it can spread and the more it may cost to clean up. Quick action may lessen damage to your property and to neighboring properties and reduce your costs in investigating and cleaning up the contamination. To ensure that your cleanup complies with Wisconsin's laws and administrative codes, you should hire a professional environmental consultant who understands what needs to be done. These are the first four steps to take:

1. Within 30 days from the date of this letter, please submit written verification (such as a letter from the consultant) that you have hired an environmental consultant.

2. Within 60 days from the date of this letter, your consultant must develop a work plan according to NR 716.09 and submit it to the Department. Your consultant must follow the Department's administrative codes and technical guidance documents. Please include with your work plan a copy of any previous information that has been completed (such as an underground tank removal report or a preliminary soil excavation report).

3. When the site investigation is complete, your consultant must submit a full report on the extent and degree of soil and groundwater contamination and a proposal for cleaning up the contamination.

4. If the site investigation does not include groundwater contamination, the responsibility for government oversight of this site will be transferred to the Department of Commerce in accordance with Wisconsin Act 27.

Due to the number of contaminated sites and our staffing levels, we may be unable to review all work plans or reports for this site. You are still required to proceed in accordance with NR 716 and submit a copy of each investigative or site report. Please send only one copy of all reports. To maintain your compliance with the spills law and chs. NR 700 through NR 728, do not delay the investigation and cleanup of your site by waiting for Department responses. We have provided detailed technical guidance to environmental consultants. Your consultant is expected to be familiar with our technical procedures and administrative codes and should be able to answer your questions on meeting Wisconsin's cleanup requirements.

Your correspondence and reports regarding this site should be sent to the Department at the following address:

John R. Grump
Department of Natural Resources
P.O. Box 4001
Eau Claire, WI 54702-4001

Information for Site Owners:

Reimbursement from the Petroleum Environmental Cleanup Fund (PECFA) may be available for the costs of cleaning up contamination from eligible petroleum storage tanks. The fund is administered by the Department of Commerce (Commerce). Please contact Commerce at (608) 266-2424 for more information on eligibility and regulations for this program. If you are eligible for reimbursement of costs under Wisconsin's PECFA program, you will need to compare at least three consultants' proposals before hiring a consultant.

If you are interested in obtaining the protection of limited liability, please contact Loren Brumberg at (715) 839-3770 in the Department of Natural Resources' West Central Region office for more information. The liability exemption is available to persons who meet the definition of "purchaser" and receive Department approval for the response actions taken at the property undergoing cleanup. The Department will determine eligibility for this program on a case-by-case basis, **PRIOR** to the "purchaser" developing a scope of work for conducting a ch. NR 716 site investigation at the property.

If you have any questions concerning this letter, please contact me at (715) 839-3775.

Sincerely,

John R. Grump
Hydrogeologist

JRG/ah

c: Jim Mertes - Advent
Larry Schaefer - WCR

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Notification of Petroleum Contamination from Underground/Aboveground Storage Tank Systems

Please complete this form and FAX it to the appropriate WDNR contact person (see list on second page) immediately upon discovery of a release from an UST/AST system.

To: WDNR, Attn: John Grump
FAX #: 839-6076

1. **Name, company, mailing address and phone number of person reporting the discharge:**

Jim Mertes
Advent Environmental Services, Inc.
5110 Fairview Drive, Suite A
Eau Claire WI 54701
(715) 831-1530

2. **Site Information:**

Name of site at which discharge occurred (local name of site/business--not responsible party name, unless a residence): Heartland Aviation
(at the Chippewa Valley Regional Airport)

Location (actual street address, not P.O. Box; if no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60):
3800 Star Avenue
Eau Claire, WI 54703

Municipality (city, village, township in which the site is located--not mailing address):
Eau Claire WI

County: Chippewa County

Legal Description: SE 1/4, NW 1/4, Section 33, Tn 28N, Range 9 E(W)

3. **Responsible Party (RP) and/or RP Representative Information:**

RP/Company Name: Heartland Aviation Inc.

Contact Person (if different): Larry Husby, President

Mailing Address (include zip code): Same as "Location" Above

Telephone Number: (715) 835-3181

4. **Identity, physical state and quantity of the hazardous substance discharged (check all that apply):**

___Unleaded gasoline
___Leaded gasoline
___Diesel
___Fuel oil
___Waste oil
✓ Other Jet Fuel

5. **Impacts to the environment (enter "K" for known or "P" for potential for all that apply):**

___Fire/explosion threat
___Contaminated private wells (# of wells) ____
___Contaminated public wells
___Groundwater contamination
✓ Soil contamination
___Surface water impacts
___Floating product
___Other _____

6. **Contamination was discovered as a result of:**

✓ Tank closure assessment ___Site assessment ___Other _____

On what date: Received lab results on 10-16-97

Additional Comments: The following USTs were closed/removed on 10-2-97

1 - 12,000 unleaded gas
1 - 12,000 aviation fuel (100 octane)
1 - 12,000 Jet Fuel

3 Samples were collected from beneath each tank. No detects for GRO or DRO in ~~the samples collected where appropriate~~. One sample was collected at a depth of 4' beneath an adjacent jet fuel dispensing island. The sample result from this location was 93 ppm DRO. We will do an expanded site assessment at this location within the next two days. We will collect samples at 9' and at 14' and analyze for DRO & PVOCs.

FAX Numbers for Reporting Leaking Tank Sites in DNR's Five Regions:

Northeast Region: 920-492-5859 Attention: Janis DeBrock (underground tanks)
Attention: Roxanne Chronert (aboveground tanks)
Brown, Calumet, Door, Fond du Lac *(except City of Waupun--see South Central Region)*, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menomonee, Oconto, Outagamie, Shawano, Waupaca, Waushara, Winnebago Counties

Northern Region: 715-365-8932 Attention: Janet Kazda
Ashland, Barron, Bayfield, Burnett, Douglas, Florence, Forest, Iron, Langlade, Lincoln, Polk, Price, Oneida, Rusk, Sawyer, Taylor, Vilas, Washburn Counties

South Central Region: 608-275-3338 Attention: Marilyn Jahnke
Columbia, Crawford, Dane, Dodge, Fond du Lac *(City of Waupun only)*, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk Counties

Southeast Region: 414-229-0810 Attention: Mike Farley
Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, Waukesha Counties

West Central Region: 715-839-6076 Attention: John Grump
Adams, Buffalo, Chippewa, Clark, Dunn, Eau Claire, Jackson, Juneau, La Crosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood Counties

rev. 8/97

cc/ Heartland Aviation

P. 01

TRANSACTION REPORT

OCT-16-97 THU 10:45

DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE
OCT-16	10:44	8396076	1'31"	2	SEND	OK

John Grump- Results of expanded site assessment show contamination gets stronger with depth. Results are attached. A site investigation will be necessary.

Jim Mentz
10-24-97

GREAT LAKES ANALYTICAL

CHAIN OF CUSTODY REPORT

1380 BUSCH PARKWAY
BUFFALO GROVE, ILLINOIS 60089-4505
(708) 808-7766 FAX (708) 808-7772

OCT 24 '97 PE:40PM GREAT LAKES ANAL

Client: ADVENT ENvironmental
Address: 5110 Fairview Dr.
Eau Claire WI 54701
Report to: Jim Myrka
Phone #: (715) 831-1530
Fax #: ( ) 831-1531
Project: Heartland Aviation
Sampler: Jim Markes
PO/Quote #:

Bill To: ADVENT
Address: E.C.
State & Program: WI LUST
Phone #: ( )
Fax #: ( )

TAT: 6 DAY 4 DAY (3 DAY) 2 DAY 1 DAY < 24 HR
DATE RESULTS NEEDED: TUES Oct 21 199
TEMPERATURE UPON RECEPT:
AIR BILL NO. Fedex 6010 0654 0865

FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	ANALYSIS TYPE: GRO/BTEX	ANALYSIS TYPE: DRO	SAMPLE CONTROL: CHECKED BROKEN	SAMPLE CONTROL: PROPERLY SEALED	SAMPLE CONTROL: GOOD CONDITION	LABORATORY ID NUMBER
B-1a B-10'	10/16/97	3:10	SOIL	MEOH for GRO/BTEX	3		X	X				7103015
B-1b 13-15'		3:25			3		X	X				7103016
MeOH Blank		3-30			1		X					7103017

RELINQUISHED	DATE	TIME	RECEIVED	DATE	TIME	RELINQUISHED	DATE	TIME	RECEIVED	DATE	TIME
Jim J. Markes	10/16-97	5Pm									

COMMENTS: Sent to [illegible] on ice via [illegible]

PAGE OF

GREAT LAKES ANALYTICAL 1380 Busch Parkway • Buffalo Grove, Illinois 60089 (847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation	Sampled:	Oct 16, 1997
5110 Fairview Dr., Suite A	Matrix Descript:	Soil	Received:	Oct 17, 1997
Eau Claire, WI 54701	Analysis Method:	WDNR DRO	Extracted:	Oct 20, 1997
Attention: Jim Mertes	First Sample #:	710-3015	Analyzed:	Oct 21, 1997
			Reported:	Oct 22, 1997

DIESEL RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	High B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
710-3015	B-1a	270	1,800	Non Diesel Pattern Early Peaks-Diesel Range
710-3015	B-1b	270	3,000	Non Diesel Pattern Early Peaks-Diesel Range

High Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance, July 1993 WDNR SW 130 93 REV. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7103015.ADE <2>

GREAT LAKES ANALYTICAL
1380 Busch Parkway • Buffalo Grove, Illinois 60089 (847) 808-7766 FAX (847) 808-7772

Advent Environmental Services	Client Project ID:	Heartland Aviation	Sampled:	Oct 16, 1997
5110 Fairview Dr., Suite A	Matrix Descript:	Soil	Received:	Oct 17, 1997
Eau Claire, WI 54701	Analysis Method:	WDNR GRO		
Attention: Jim Mertes	First Sample #:	710-3015	Analyzed:	Oct 21, 1997
			Reported:	Oct 22, 1997

GASOLINE RANGE ORGANICS

Sample Number	Sample Description	Detection Limit mg/kg, Dry Weight (ppm)	Low/Medium B.P. Hydrocarbons mg/kg, Dry Weight (ppm)	Chromatogram Description
710-3015	B-1a	540	2,200	Late Peaks, Elevated Baseline
710-3016	B-1b	270	2,300	Late Peaks, Elevated Baseline

High Boiling Point Hydrocarbons is performed as described in Leaking Underground Storage Tank Analytical Guidance, July 1993 WDNR SW 130 93 REV. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GREAT LAKES ANALYTICAL

Kevin W. Keeley
Laboratory Director

7103015.ADE <3>

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Notification of Petroleum Contamination from Underground/Aboveground Storage Tank Systems

Please complete this form and FAX it to the appropriate WDNR contact person (see list on second page) immediately upon discovery of a release from an UST/AST system.

To: WDNR, Attn: John Grump
FAX #: 839 6076

1. **Name, company, mailing address and phone number of person reporting the discharge:**

Jim Mertes
Advent Environmental Services, Inc.
5110 Fairview Drive, Suite A
Eau Claire WI 54701
(715) 831-1530

2. **Site Information:**

Name of site at which discharge occurred (local name of site/business--not responsible party name, unless a residence): Heartland Aviation
(at the Chippewa Valley Regional Airport)

Location (actual street address, not P.O. Box; if no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60):
3000 Star Avenue
Eau Claire, WI 54703

Municipality (city, village, township in which the site is located--not mailing address):
Eau Claire WI

County: Chippewa County

Legal Description: SE 1/4, NW 1/4, Section 33, Tn 28N, Range 9 E/(W)

3. **Responsible Party (RP) and/or RP Representative Information:**

RP/Company Name: Heartland Aviation Inc.

Contact Person (if different): Larry Husby, President

Mailing Address (include zip code): same as "location" above

Telephone Number: (715) 835-3181

4. **Identity, physical state and quantity of the hazardous substance discharged (check all that apply):**

___Unleaded gasoline
___Leaded gasoline
___Diesel
___Fuel oil
___Waste oil
✓ Other Jet Fuel

5. **Impacts to the environment (enter "K" for known or "P" for potential for all that apply):**

___Fire/explosion threat	✓ Soil contamination
___Contaminated private wells (# of wells) ___	___Surface water impacts
___Contaminated public wells	___Floating product
___Groundwater contamination	___Other _____

6. **Contamination was discovered as a result of:**

✓ Tank closure assessment ___Site assessment ___Other _____

On what date: Received lab results on 10-16-97

Additional Comments: The following USTs were closed/removed on 10-2-97

1 - 12,000 unleaded gas
1 - 12,000 aviation fuel (100 octane)
1 - 12,000 Jet Fuel

3 Samples were collected from beneath each tank. No detects for GRO or DRO in ~~the~~ ~~where appropriate~~ the samples collected. One sample was collected at a depth of 4' beneath an adjacent jet fuel dispensing island. The sample result from this location was 93 ppm DRO. We will do an expanded site assessment at this location within the next two days. We will collect samples at 9' and at 14' and analyze for BRO & PVOCs.

FAX Numbers for Reporting Leaking Tank Sites in DNR's Five Regions:

Northeast Region: 920-492-5859 Attention: Janis DeBrock (underground tanks)
Attention: Roxanne Chronert (aboveground tanks)
Brown, Calumet, Door, Fond du Lac *(except City of Waupun--see South Central Region)*, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Waupaca, Waushara, Winnebago Counties

Northern Region: 715-365-8932 Attention: Janet Kazda
Ashland, Barron, Bayfield, Burnett, Douglas, Florence, Forest, Iron, Langlade, Lincoln, Polk, Price, Oneida, Rusk, Sawyer, Taylor, Vilas, Washburn Counties

South Central Region: 608-275-3338 Attention: Marilyn Jahnke
Columbia, Crawford, Dane, Dodge, Fond du Lac *(City of Waupun only)*, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk Counties

Southeast Region: 414-229-0810 Attention: Mike Farley
Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, Waukesha Counties

West Central Region: 715-839-6076 Attention: John Grump
Adams, Buffalo, Chippewa, Clark, Dunn, Eau Claire, Jackson, Juneau, La Crosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood Counties

rev. 8/97

cc/ Heartland Aviation

Department of Natural Resources

LEAKING UNDERGROUND STORAGE TANK (Case Tracking)
Form 4400-146 Rev. 2-93

UID Number: 03-09-174629 **FID Number:** 609109380 **PMN Number:**

County: Chippewa
Site Name: Heartland Aviation
Address: 3800 Starr Ave
Municipality: Eau Claire, WI 54703
Legal Descript.: SE 1/4 NW 1/4 sec. 33 T 28 N R 09 (E/W)
Lat.: _____ Long.: _____

Initial Contact Date: 10/24/97
Date RPLetter Sent: 10/27/97
Date Closure Approved: ___/___/___

Person/Firm Reporting: Jim Mertes
Advent
Phone Number: (715) 831-1530

Priority Screening
___ 1 = High
___ 2 = Medium
___ 3 = Low
X 4 = Unknown

Scoring Criteria
1. ___
2. ___
3. ___
4. ___
5. ___

Score: ___ Init.: ___ Date: ___/___/___

Funding Source
X 1 = RP
___ 2 = LTF
___ 3 = EF
___ 4 = Other

Effective Date
___/___/___
___/___/___
___/___/___
___/___/___

LUST Trust Eligible
X 1 = Federal
___ 2 = Non-Federal

Case Status

	Start Date	End Date
___ (F) Free Product Removal	___/___/___	___/___/___
___ (E) RP Emergency Response	___/___/___	___/___/___
___ (R) LTF Emergency Response	___/___/___	___/___/___
___ (L) Long Term Monitoring	___/___/___	___/___/___

Responsible Party
Contact Person: Larry Husby, President
Company Name: Heartland Aviation
Address: 3800 Starr Ave
Eau Claire, WI 54703
Phone Number: (715) 835-3181

CC's: Larry Schaeser - WCR
Jim Mertes - Advent

Impacts
Enter "P" for potential and "K" for known
___ (1) Fire/Explosion Threat
___ (2) Contaminated Private Well(s) ___ # of Wells
___ (3) Contaminated Public Well
___ (4) Groundwater Contamination
K (5) Soil Contamination
___ (6) Other: _____
___ (7) Surface Water Impacts
___ (9) Floating Product

Consultant
Contact Name: _____
Company Name:: _____
Address: _____
_____
Telephone: ( )

Substances	# Tank(s)	Size
___ (1) Leaded Gas		
X (2) Unleaded Gas	1	12,000 gal
___ (3) Diesel		
___ (4) Fuel Oil		
___ (5) Unkwn Hydrocrbn		
X (8) Other Aviation fuel	1	12,000 gal
Jet fuel	1	12,001 gal.
___ (12) Waste Oil		

CASE STATUS SUMMARY

BRRTS TRACKING UPDATES

LUST Action Codes - Program #03
ERP Action Codes - Program #02

1 **Notification***
2 RP Letter Sent
3 Notice of Noncompliance
4 Enforcement Conference
11 Activity Closed
14 Notice of Violation
18 Administrative Order
21 Contest Case Hearing
23 Referral to DOJ
30 Notice to Proceed
33 Tank Closure/SA Report Received
35 SI Work Plan Received
36 SI Work Plan Approved
37 **SI Report Received***
38 SI Report Approved
39 RA Work Plan Received
40 RA Work Plan Approved
41 **RA Report Received***
42 RA Report Approved
43 Status Report
44 Form 4 Received
45 Form 4 Approved
47 PECFA Reimbursement
48 **Site Closed/NR140 Exemption***
49 Alternative Water Supply
50 **Site Closed/GW Use Restrictions***
51 **Deed Affidavit at Close Out***
52 **Deed Restriction at Close Out***
53 **Deed Affidavit for Enforcement***
54 **Activity Transferred to DATCP***
55 **Site Closed/NR720.19 Soil Standards***
58 **Enforcement Start***
59 **Enforcement End***
60 Request for Further Work
61 **NR718 Landspreading Request***
62 **NR718 Landspreading Approval***
63 Injection/Infiltration Request
64 Injection/Infiltration Approval
66 Refer to Enforcement
70 **Emergency Response Start***
71 **Emergency Response End***
74 **Long-Term Monitoring Start***
75 **Long-Term Monitoring End***
76 **Activity Transferred to DCOM***
77 **Free Product Removal Start***
78 **Free Product Removal End***
79 Closure Review Requested
80 Close Out Denied
81 SI Work Plan Denied
82 RA Work Plan Denied
83 Close Out under NR708.09
84 Conditional Closure
85 **NR720.19 Performance Based Closure***
86 Activity Closed/Site Specific Conditions
87 Close Out under NR726.07
88 In Abeyance
89 **DCOM Transferred Activity Back to DNR***
90 Start Review
91 End Review
92 O & M Form 4400-194 Received
99 Miscellaneous

***Required Codes**

Action Code	Date Received/Sent	Compliance Due Date	Compliance Achieved	Date Entered In Tracking
01	10 / 24 / 97 (R/S)	/ /	/ /	/ /
02	10 / 27 / 97 (R/S)	/ /	/ /	/ /
33	11 / 10 / 97 (R/S)	/ /	/ /	/ /
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