OPERATION, MAINTENANCE, MONITORING AND OPTIMIZATION REPORTING OF SOIL AND GROUNDWATER REMEDIATION SYSTEMS

PURPOSE AND APPLICABILITY OF THIS FORM: Completion of this form is required under s. NR 724.13(e), Wis. Adm. Code. Use of this form is mandatory. Failure to submit this form as require is a violation of s. NR 724.13, Wis. Adm. Code, and is subject to the penalties in s. 144.99, Wis. Stats. This form must be submitted every six months for active soil and groundwater remediation projects and every twelve months for passive (natural attenuation) remediation projects that are regulated under the NR 700 series of Wis. Adm. Code. Specifically, for sites meeting any of the following criteria:

- Soil or groundwater remediation projects that report progress in accordance with s. NR 700.11(1), Wis. Adm. Code.
- Soil or groundwater remediation projects that report progress in accordance with s. NR 724.13(3), Wis. Adm. Code. (Note: s. NR 724.13(3) requires progress reports for operation and maintenance of active systems to be submitted every three months however the Department considers submittal of this form every six months to satisfy the requirements of the rules, unless otherwise directed by the Department on a site specific basis.)
- Soil or groundwater remediation projects that report progress in accordance with s. NR 724.17(3), Wis. Adm. Code. (Note: s. NR 724.17(3) requires progress reports every time that samples are collected however the Department considers submittal of this form every twelve months to satisfy the requirements of the rules for monitoring natural attenuation, unless otherwise directed by the Department on a site specific basis.)

Submittal of this form is not a substitute for reporting required by Department programs such as Wastewater or Air Management. Personally identifiable information on this form is not intended to be used for any other purpose than tracking progress of the remediation by the Bureau for Remediation and Redevelopment.

Please refer to the instructions that are attached to the back of these forms starting on page INS-1. In all cases, when asked to "explain," those explanations are to be included on separate sheets of paper. Explanations must include a title that refers to the page and item number, for example: Page GI-2, C.1.a.

A. GENERAL INFORMATION:

1. Site name: Twin Disc, Inc. Broach Machine #2525
2. Reporting period from: 7/1/02 To: 12/31/02 Days in period: 180
3. Regulatory agency (enter DNR, DCOM, DATCP and/or other): WDNR
4. DNR issued site number: FID# 252007140; BRRTS# 02-52-000072
5. State reimbursement fund claim number and fund name (if not applicable, enter NA): NA
6. Site location:
   a. DNR region and county: Southeast Region; Racine County
   b. Street address and municipality: 4600 21st Street, Racine, WI 53405
   c. Township, range, section and quarter quarter section:
7. Responsible party:
   a. Name: Twin Disc, Inc. c/o Ms. Raechell Thuot-Rann
   b. Mailing address: 4600 21st Street
      Racine, WI 53405
   c. Phone number: (262) 554-0640, Ext. 3614
8. Consultant:
   a. Company name: Environmental Audits, Inc.
   b. Mailing address: 6233 Bankers Road, Suite 20
      Racine, WI 53403
   c. Phone number: (262) 554-5071
9. Contaminants: DRO, VOC
10. Soil types (USCS or USDA): Clays
11. Hydraulic conductivity (cm/sec): 1.4E-7 12. Average linear velocity of groundwater (ft/yr): NA

GENERAL SITE INFORMATION, CONTINUED

SITE NAME AND REPORTING PERIOD:

Site name: Twin Disc, Inc.

Reporting period from: 7/1/02 To: 12/31/02 Days in period: 180

A. GENERAL INFORMATION (CONTINUED):

13. If soil is treated ex situ, is the treatment location off site? (Y/N) If yes, give location:

    a. DNR region and county: _____

    b. Township, range, section and quarter quarter section: _____

B. REMEDIATION METHOD: Only submit pages that apply to an individual site. Check all that apply:

_____ Groundwater extraction (submit a completed page GW-1).
__X__ Free product recovery (submit a completed page GW-1).
_____ In situ air sparging (submit a completed page GW-2).
_____ Groundwater natural attenuation (submit a completed page GW-3).
_____ Other groundwater remediation method (submit a completed page GW-4).
_____ Soil venting (including soil vapor extraction and bioventing, submit a completed page IS-1).
_____ Soil natural attenuation (submit a completed page IS-2).
_____ Other in situ soil remediation method (submit a completed page IS-3).
_____ Biopiles (submit a completed page ES-1).
_____ Landspreading/thinspreading of petroleum contaminated soil (submit a completed page ES-2).
_____ Other ex situ soil remediation method (submit a completed page ES-3).

C. GENERAL EFFECTIVENESS EVALUATION FOR ALL ACTIVE SYSTEMS: If the remediation is active (not natural attenuation), complete this subsection.

1. Is the system operating at design rates and specifications? (Y/N): Y
   If the answer is no, explain whether or not modifications are necessary to achieve the goal that was previously established in design.
2. Are modifications to the system warranted to improve effectiveness? (Y/N) If yes, explain: N
3. Is natural attenuation an effective low cost option at this time? (Y/N): N
4. Is closure sampling warranted at this time? (Y/N): N
5. Are there any modifications that can be made to the remediation to improve cost effectiveness? (Y/N) If yes, explain: N

D. ECONOMIC AND COST DATA TO DATE:

1. Total investigation costs ($): NA
2. Implementation costs (design, capital and installation costs, excluding investigation costs) ($): NA
3. Total costs during the previous reporting period ($): NA
4. Total costs during this reporting period ($): NA
5. Total anticipated costs for the next reporting period ($): NA
6. Are any unusual or one-time costs listed in the reporting periods covered by D.3., D.4. or D.5. above? (Y/N) If yes explain: N
7. If close out is anticipated within 12 months, estimated costs for project closeout ($): NA

GENERAL SITE INFORMATION, CONTINUED

SITE NAME AND REPORTING PERIOD:

Site name: Twin Disc, Inc. Broach Machine #2525

Reporting period from: 7/1/02 To: 12/31/02 Days in period: 180

E. NAME(S), SIGNATURE(S) AND DATE OF PERSON(S) SUBMITTING FORM: Legibly print name, date and sign. Only persons qualified to submit reports under ch. NR 712 Wis. Adm. Code are to sign this form.

Registered Professional Engineers:

I (print name) _____, 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.

Signature, title, P.E. number and date: _____

Hydrogeologists:

I (print name) _____, 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 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.

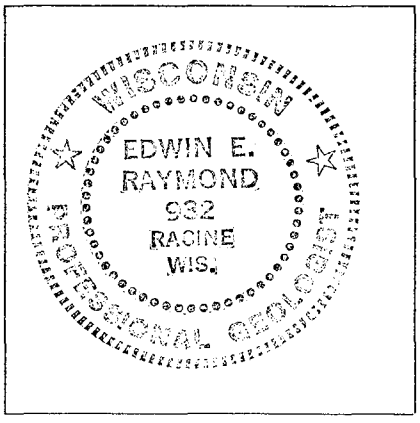
Signature, title and date: _____

Scientists:

I (print name) Edwin E. Raymond, 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 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.

Signature, title and date: Edwin E. Raymond Professional Geologist 1/29/03

Professional Seal(s), if applicable:



State of Wisconsin
Department of
Natural Resources

OPERATION, MAINTENANCE, MONITORING AND OPTIMIZATION REPORTING OF SOIL AND GROUNDWATER REMEDIATION SYSTEMS

Form 4400-194
7-96

GROUNDWATER PUMP AND TREAT SYSTEMS AND FREE PRODUCT RECOVERY SYSTEMS

SITE NAME AND REPORTING PERIOD:

Site name: Twin Disc, Inc. Broach Machine #2525

Reporting period from: 7/1/02 To: 12/31/02 Days in period: 180

Date that the system was first started up: _____

A. GROUNDWATER EXTRACTION SYSTEM OPERATION:

1. Total number of groundwater extraction wells or trenches available and the number in use during period: _____
2. Number of days of operation (only list the number of days the system actually operated, if unknown explain): _____
3. System utilization in percent (days of operation divided by reporting time period multiplied by 100). If < 80%, explain: _____
4. Quantity of groundwater extracted during this time period (gallons): _____
5. Average groundwater extraction rate (gpm): _____
6. Quantity of dissolved phase contaminants removed during this time period in pounds: _____

B. FREE PRODUCT RECOVERY SYSTEM OPERATION:

1. Is free product (nonaqueous phase liquid) being recovered at this site? (Y/N) If yes, list method: Y; Extraction Pumps
2. Quantity of free product extracted during this time period (gallons, enter none if none): 50 gallons
3. Average free product extraction rate (gpd): 0.28

C. SYSTEM EFFECTIVENESS EVALUATION:

1. Is a contaminated groundwater plume fully contained in the capture zone? (Y/N) If no, explain: Y
2. If free product is present, is the free product fully contained in capture zone? (Y/N) If no, explain: Y
3. If free product is present in any wells at the site, but free product was not recovered during reporting period, explain.
4. If free product is not present, determine the single contaminant that requires the greatest percent reduction to achieve ch. NR 140 ES and PAL. Perform this calculation for all contaminants that were present at the site that have ch. NR 140 standards. Use the highest contaminant concentration measured in any sampling points during reporting period. If free product is present, write "FREE PRODUCT" in C.4.a:
   a. Contaminant: Free Product
   b. Percent reduction necessary to reach ch. NR 140 ES and PAL: _____
   c. Maximum contaminant concentration level in any monitoring well of that contaminant (µg/L): _____
   d. Maximum contaminant concentration level in any extraction well of that contaminant (µg/L): _____
   e. If the maximum concentration in a monitoring well is more that one order of magnitude above the concentration measured in an extraction well, explain why the extracted groundwater contamination levels are significantly less than the levels at other locations within the aquifer.

D. ADDITIONAL ATTACHMENTS: Attach the following to this form:

- Most recent report to the DNR Wastewater Program, if applicable.
- Groundwater contour map with capture zone indicated.
- Groundwater contaminant distribution map (may be combined with contour map).
- Graph of cumulative contaminant removal, if both free product recovery and ground water extraction are used, provide separate graphs.
- Time versus groundwater contaminant concentration graphs for the contaminant listed in C.4.a. (above), as follows:
  - — Graph of contaminant concentrations versus time for each extraction well in use during the period.
  - — Graph of contaminant concentrations versus time for the monitoring well with the greatest level of contamination.
- Groundwater contaminant chemistry table.
- Groundwater elevations table.
- System operational data table.