

## Environmental Review Form for Argonne National Laboratory

Click on the blue question marks (?) for instructions, contacts, and additional information on specific line items.

(?) **Project/Activity Title:** Application of Wastewater Treatment Filter Bed Sand

(?) **ASO NEPA Tracking No.** ASO-CX-264      (?) **Type of Funding:** NA  
B&R Code \_\_\_\_\_

(?) **Identifying number:** ERF-01015 WFO proposal # \_\_\_\_\_ CRADA proposal # \_\_\_\_\_  
Work Project # NA ANL accounting # (item 3a in Field Work Proposal) \_\_\_\_\_  
Other (explain) ESQ Log # \_\_\_\_\_

(?) **Project Manager:** P. Rash      Signature:       Date: 2/1/10

(?) **NEPA Owner:** P. Rash      Signature:       Date: 2/1/10

ANL NEPA Reviewer: M. A. Kamiya      Signature:       Date: 2/9/2010

### I. (?) **Description of Proposed Action:**

This project will recycle spent sanitary wastewater treatment plant trickling filter sand that has collected at Argonne's wastewater treatment plant. The sand will be recycled at the Laboratory per the requirements of the attached permit. The attached map shows the permit approved locations to apply the sand.

This action in addition, allows for multiple "rain gardens" and "bio-swales" to be constructed using the recycled sand. The "Rain gardens" and "Bio-Swales" can be anywhere on site as long as the permit limits are met.

Also, a soil mixing station will be established in the 800 Area. Trees will be planted along the road side near the site and berms will be established around and through the soil mixing site. The soil mixing and composting site will have two areas. One area will be using the recycled sand and one will be using clean sand. Here compost will be purchased and created and mixed with topsoil and sand to create requested mixes used to create the "Rain Gardens" and "Bio-Swales" soils. Refer to the attached map for the soil mixing area. (*Attachment 1*)

### II. (?) **Description of Affected Environment:**

No negative impact to the environment is expected. All excavation activities will take place on previously disturbed and SHPPO cleared areas. Some areas designated for sand applications will be in undisturbed areas but no excavation activities will take place in any of those areas.

This recycling of this material will save landfill space, reduce disposal costs, and promote site wide recycling and stormwater conservation.

### III. (?) **Potential Environmental Effects:** (Attach explanation for each "yes" response. See Instructions for Completing Environmental Review Form)

**A. Complete Section A for all projects.**

1. (?) Project evaluated for Pollution Prevention and Waste Minimization opportunities and details provided under items 2, 4, 6, 7, 8, 16, and 20 below, as applicable Yes X No     

2. (?) Air Pollutant Emissions Yes      No X

This action will use 1 vehicles to load, mix, and spread the sand.

3. (?) Noise Yes      No X

Noise levels due to standard vehicle and truck operational activities will occur but should not exceed 85dB

4. (?) Chemical Storage/Use Yes      No X

5. (?) Pesticide Use Yes      No X

6. (?) Polychlorinated Biphenyls (PCBs) Yes      No X

7. (?) Biohazards Yes      No X

8. (?) Liquid Effluent (wastewater) Yes      No X

During construction of the soil mixing area, permanent berms will be constructed and stabilized with grass. Appropriate erosion control measures will be taken but collected storm water will not be pumped out of the bermed areas.

9. (?) Waste Management

a) Construction or Demolition Waste Yes X No     

During the excavation activities at the soil mixing station, removed topsoil and clay spoils not used in the soil mixing area will be deposited and recycled in the existing topsoil and clay storage areas in the 800 Area.

b) Hazardous Waste Yes      No X

This sand is spent sanitary wastewater treatment plant trickling filter sand. While it has some residual wastewater treatment constituents, it is NOT a RCRA hazardous waste. The material will be handled as such until it is placed. The IEPA permit has restrictions about how much material can be placed on the ground or in rain gardens.

c) Radioactive Mixed Waste Yes      No X

d) Radioactive Waste Yes      No X

e) PCB or Asbestos Waste Yes      No X

f) Biological Waste Yes      No X

g) No Path to Disposal Waste Yes      No X

h) Nano-material Waste Yes      No X

10. (?) Radiation Yes      No X

11. (?) Threatened Violation of ES&H Regulations or Permit Requirements Yes      No X

12. (?) New or Modified Federal or State Permits Yes X No

An IEPA Permit is required for the proposed work. The approved permit is attached. (Attachment 2)

13. (?) Siting, Construction, or Major Modification of Facility to Recover, Treat, Store, or Dispose of Waste Yes \_\_\_ No X

14. (?) Public Controversy Yes \_\_\_ No X  
 No public issues are expected. Soil mixing materials will come from a variety of places. Some compost material will be purchased as compost and placed in the mixing site. Other materials will come from on-site such as the grass clippings, leaves, cafeteria vegetable waste. When active, the materials will be placed and mixed promptly. We do not expect any odors from the area or any unsightly long term structures or mounds. Trees are proposed to block site lines from the adjacent roads.

15. (?) Historic Structures and Objects Yes \_\_\_ No X

16. (?) Disturbance of Pre-existing Contamination Yes \_\_\_ No X

17. (?) Energy Efficiency, Resource Conserving, and Sustainable Design Features Yes \_\_\_ No X

**B. For projects that will occur outdoors, complete Section B as well as Section A.**

18. (?) Threatened or Endangered Species, Critical Habitats, and/or other Protected Species Yes \_\_\_ No X

19. (?) Wetlands Yes \_\_\_ No X

20. (?) Floodplain Yes \_\_\_ No X

21. (?) Landscaping Yes X No \_\_\_

In the 800 Area, an area will be excavated and bermed. The berms will be covered with native and perennial grasses. Trees will be planed along the road near the proposed compost area.

22. (?) Navigable Air Space Yes \_\_\_ No X

23. (?) Clearing or Excavation Yes X No \_\_\_

Some minor excavations will occur at the soil mixing station. Appropriate temporary erosion control systems will be put in place and permanent berms will be established to manage long term runoff and prevent runoff from leaving the compost area.

24. (?) Archaeological Resources Yes \_\_\_ No X

A Cultural Resources Survey shall be executed to clear the area planned for the Soil Mixing area Southwest of the intersection of Kearney and Westgate. The State of Illinois and Argonne records not indicate the area has been cleared. Prior to the start of any detailed design for the soil mixing area, this survey should be completed and an approval secured. If it is not cleared, an additional review will be generated.

25. (?) Underground Injection Yes \_\_\_ No X

26. (?) Underground Storage Tanks Yes \_\_\_ No X

- 27. (?) Public Utilities or Services Yes \_\_\_ No X
- 28. (?) Depletion of a Non-Renewable Resource Yes \_\_\_ No X

**C. For projects occurring outside of ANL complete Section C as well as Sections A and B. N/A**

- 29. (?) Prime, Unique, or Locally Important Farmland Yes \_\_\_ No \_\_\_
- 30. (?) Special Sources of Groundwater (such as sole source aquifer) Yes \_\_\_ No \_\_\_
- 31. (?) Coastal Zones Yes \_\_\_ No \_\_\_
- 32. (?) Areas with Special National Designations (such as National Forests, Parks, or Trails) Yes \_\_\_ No \_\_\_
- 33. (?) Action of a State Agency in a State with NEPA-type Law Yes \_\_\_ No \_\_\_
- 34. (?) Class I Air Quality Control Region Yes \_\_\_ No \_\_\_

**IV. (?) Subpart D Determination: (to be completed by DOE/ASO)**

Are there any extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal? Yes \_\_\_ No X

Is the project connected to other actions with potentially significant impacts or related to other proposed action with cumulatively significant impacts? Yes \_\_\_ No X

If yes, is a categorical exclusion determination precluded by 40 CFR 1506.1 or 10 CFR 1021.211? Yes \_\_\_ No \_\_\_

Can the project or activity be categorically excluded from preparation of an Environment Assessment or Environmental Impact Statement under Subpart D of the DOE NEPA Regulations? Yes X No \_\_\_

If yes, indicate the class or classes of action from Appendix A or B of Subpart D under which the project may be excluded. B. 6.8, minor operation changes to minimize waste generation and reuse of materials.

If no, indicate the NEPA recommendation and class(es) of action from Appendix C or D to Subpart D to Part 1021 of 10 CFR.

**ASO NEPA Coordinator Review: Ken Chiu**

Signature: Ken Chiu

Date: 2/10/10

**ASO NCO Approval of CX Determination:**

The preceding pages are a record of documentation that an action may be categorically excluded from further NEPA review under DOE NEPA Regulation 10 CFR Part 1021.400. I have determined that the proposed action meets the requirements for the Categorical Exclusion identified above.

Signature: *Peter R. Siebach*  
Peter R. Siebach  
Acting Argonne Site Office NCO

Date: 2/10/2010

**ASO NCO EA or EIS Recommendation:**      *N/A*

Class of Action: \_\_\_\_\_

Signature: \_\_\_\_\_  
Peter R. Siebach  
Acting Argonne Site Office NCO

Date: \_\_\_\_\_

**Concurrence with EA or EIS Recommendation:**

CH GLD: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**ASO Manager Approval of EA or EIS Recommendation:**

An \_\_\_\_\_ EA \_\_\_\_\_ EIS shall be prepared for the proposed \_\_\_\_\_ and  
\_\_\_\_\_ shall serve as the document manager.

Signature: \_\_\_\_\_  
Ronald J. Lutha  
Site Manager

Date: \_\_\_\_\_

Scoping Document and Sludge Management Plan  
Sanitary Wastewater Treatment Permit Renewal

September 2009

REF 01015

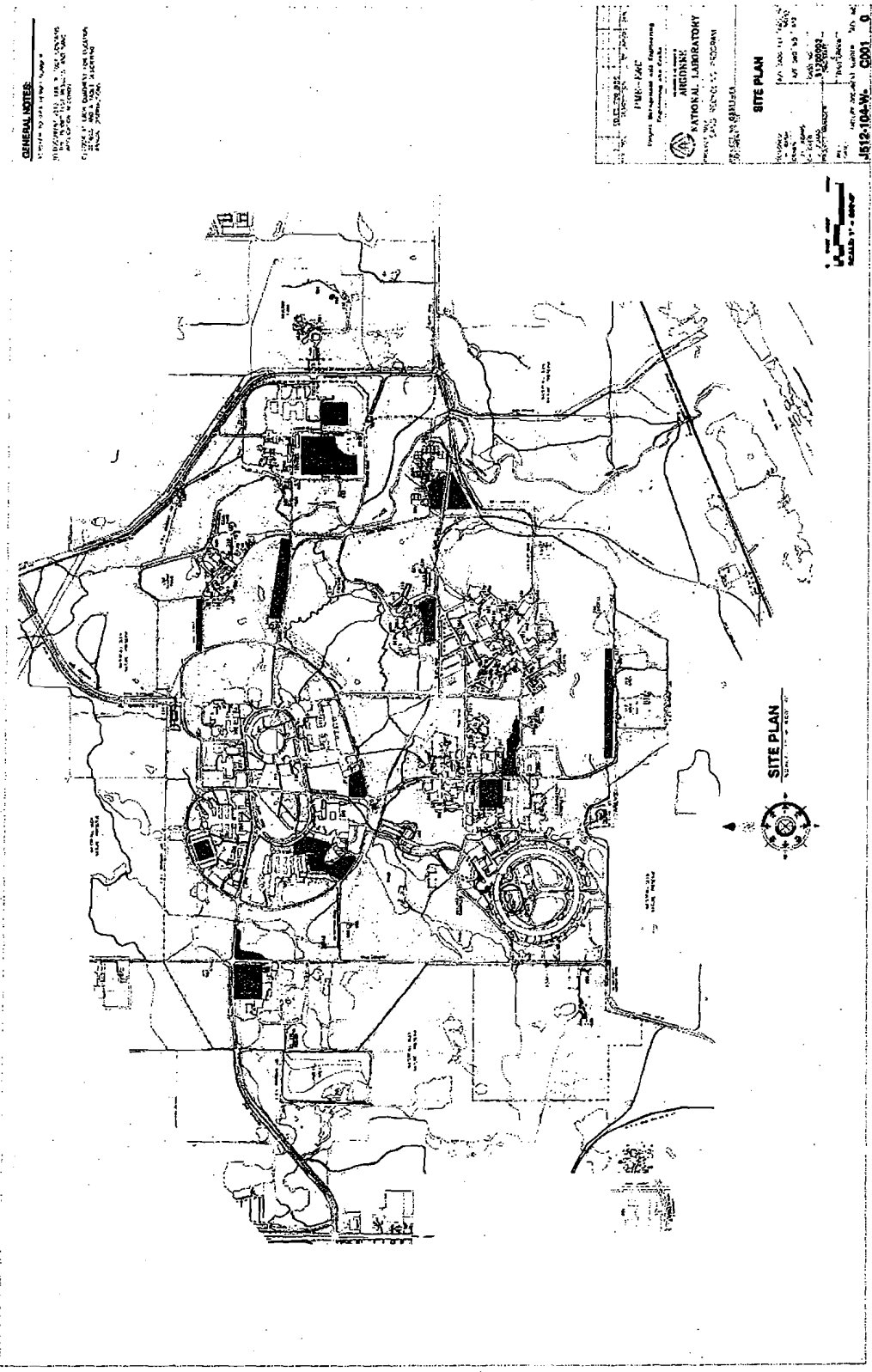
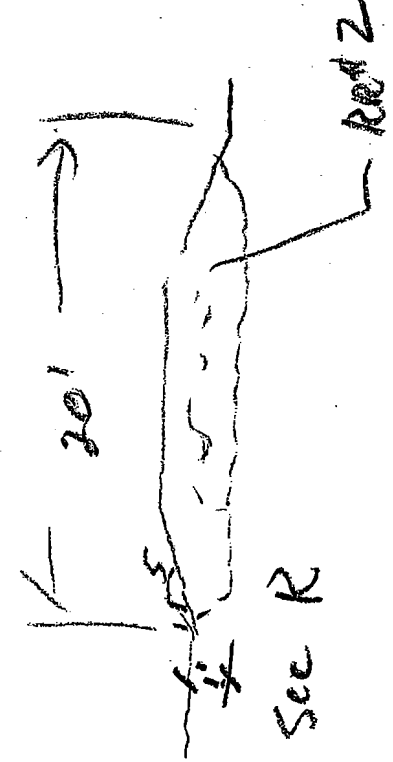
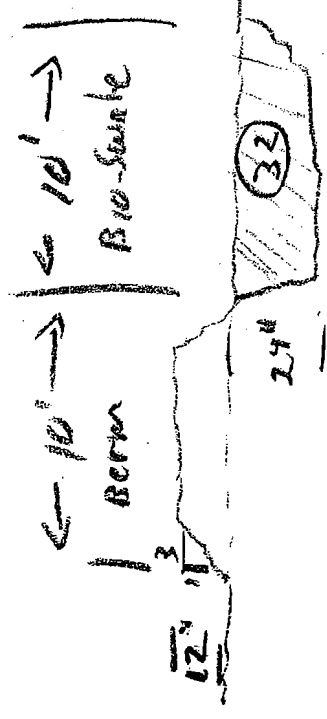
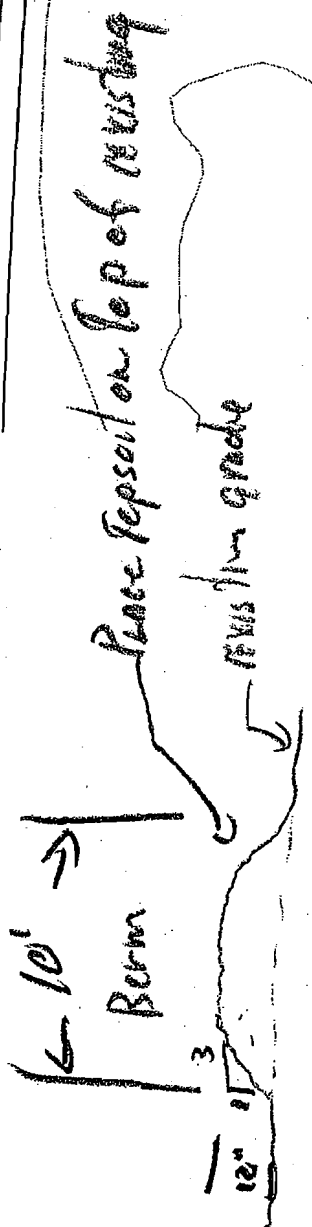
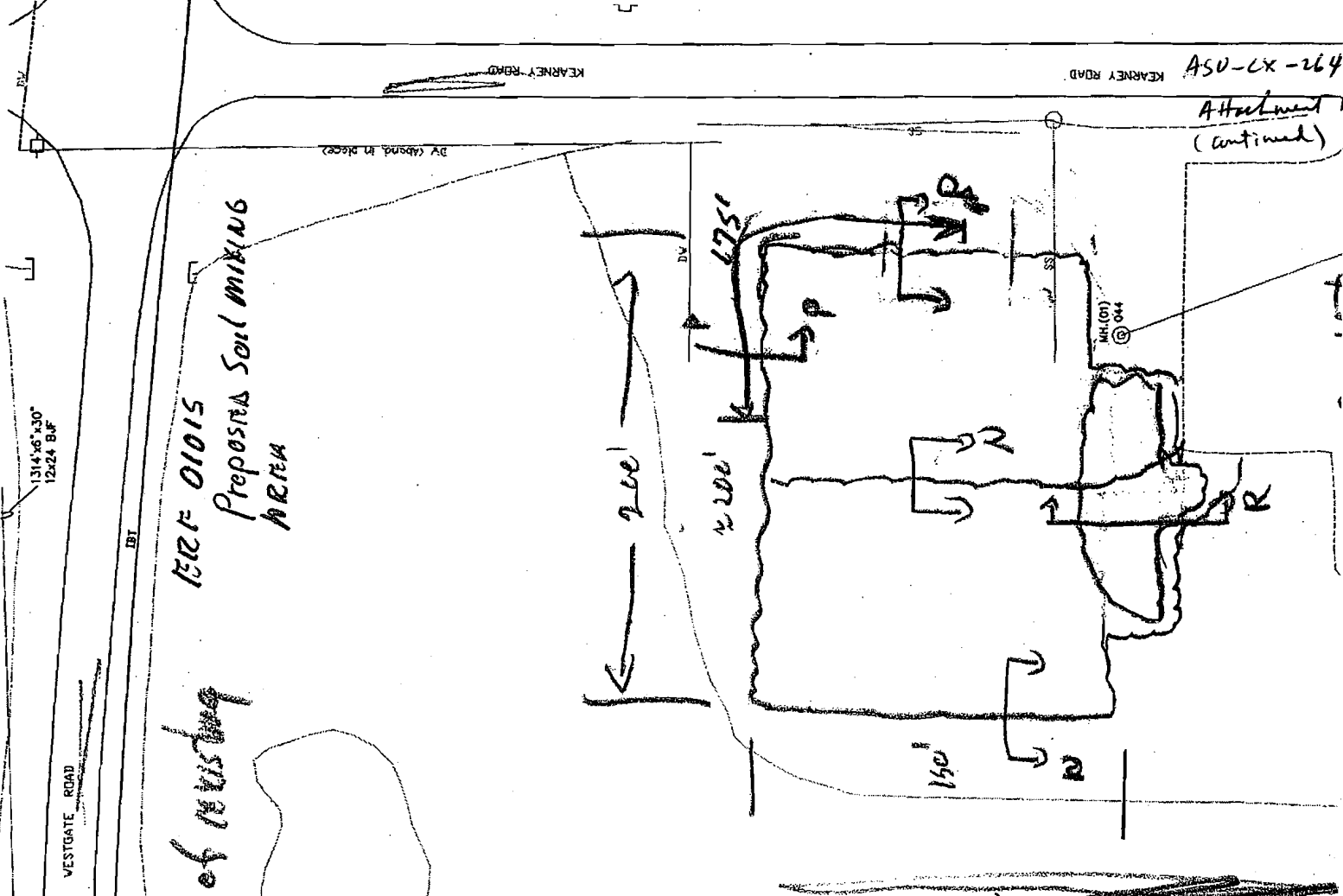


FIGURE 3. Argonne Site Drawing Showing Proposed Soil Augmentation Locations





**Department of Energy**  
Argonne Site Office  
9800 South Cass Avenue  
Argonne, Illinois 60439

DEC 10 2009

Dr. Eric D. Isaacs  
Director, Argonne National Laboratory  
President, UChicago Argonne, LLC  
9700 S. Cass Avenue  
Argonne, Illinois 60439

Dear Dr. Isaacs:

**SUBJECT: ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) PERMIT FOR LAND APPLICATION OF WASTEWATER TREATMENT FILTER BED SAND**

The IEPA has issued the enclosed water pollution control permit to Argonne for land application of wastewater treatment filter bed sand on site. The permit has several special conditions and expires on November 30, 2014.

If you have any questions, please contact me or have your staff contact Ken Chiu at extension 2-2376.

Sincerely,

A handwritten signature in black ink, appearing to read "Joanna M. Livengood".

Dr. Joanna M. Livengood  
Acting Manager

Enclosure:  
As Stated

cc: P. Lynch, ANL/ESG, 201, w/enc



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
WATER POLLUTION CONTROL PERMIT

Aso-cx-264  
Attachment 2  
(continued)

LOG NUMBERS: 2914-09

PERMIT NO.: 2009-SC-2914

FINAL PLANS, SPECIFICATIONS, APPLICATION  
AND SUPPORTING DOCUMENTS

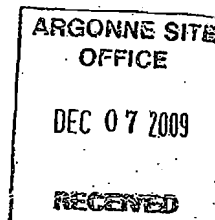
DATE ISSUED: December 4, 2009

PREPARED BY: Argonne National Laboratory

SUBJECT: ARGONNE NATIONAL LABORATORY – Land Application of STP Filter Sand

PERMITTEE TO OWN AND OPERATE

U.S. Department of Energy  
Argonne Site Office  
9800 South Cass Avenue  
Argonne, Illinois 60439



Permit is hereby granted to the above designated permittee(s) to construct and/or operate water pollution control facilities described as follows:

Land application of approximately 500 dry tons/year of spent filter sand from the Permittee's domestic wastewater treatment plant to approximately 60 acres of the Permittee's property consisting of the following parcels in Downers Grove Township, T37N, R11E, 3rd P.M., DuPage County, Illinois at a rate not to exceed 10 dry tons/acre/year. In addition, 1500 dry tons of spent filter sand may be land applied, on a one-time basis and with incorporation, to an approximately 0.32 acre parcel of the Permittee's land located in Downers Grove Township in the NE¼ & SE¼ of Section 9, T37N, R11E, 3rd P.M., DuPage County, Illinois.

*1500 Ton/Rain Garden ~ 10 RAINS*

This operating permit expires on November 30, 2014.

The permit renews and replaces Permit Number 2004-SC-1419 which was previously issued for the herein permitted facilities.

This Permit is issued subject to the following Special Condition(s). If such Special Condition(s) require(s) additional or revised facilities, satisfactory engineering plan documents must be submitted to this Agency for review and approval for issuance of a Supplemental Permit.

SPECIAL CONDITION 1: The application of spent filter sand to land consisting of Romeo soil (Soil No. 316) and/or Muskego and Houghton soil (Soil No. 903) is prohibited.

SPECIAL CONDITION 2: Spent filter sand applications shall include incorporation of the sand into the soil unless established vegetation is present. In areas where incorporation is not required, application depth shall be limited so as to prevent damage to the existing vegetation and/or the lateral migration of sand.

Page 1 of 3

THE STANDARD CONDITIONS OF ISSUANCE INDICATED ON THE REVERSE SIDE MUST BE COMPLIED WITH IN FULL. READ ALL CONDITIONS CAREFULLY.

SAK:MEL:291409.wpd

DIVISION OF WATER POLLUTION CONTROL

cc: EPA - Des Plaines FOS  
Records - Industrial  
Binds

A handwritten signature in black ink that reads "Alan Keller".

Alan Keller, P.E.  
Manager, Permit Section

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
WATER POLLUTION CONTROL PERMIT

ASO-CX-264  
Attachment 2  
(continued)

LOG NUMBERS: 2914-09

PERMIT NO.: 2009-SC-2914

FINAL PLANS, SPECIFICATIONS, APPLICATION  
AND SUPPORTING DOCUMENTS

DATE ISSUED: December 4, 2009

PREPARED BY: Argonne National Laboratory

SUBJECT: ARGONNE NATIONAL LABORATORY -- Land Application of STP Filter Sand

SPECIAL CONDITION 3:

- A. Spent filter sand shall be applied to sites within the following guidelines:
1. Spent filter sand shall not be applied to sites during precipitation.
  2. Spent filter sand shall not be applied to sites which are saturated or with ponded water.
  3. Spent filter sand shall not be applied to ice or snow covered sites.
  4. Frozen land, which is not ice or snow covered and has a slope of 5% or less, may be used for land application of spent filter sand provided a 200 foot grassy area exists between the spent filter sand applied land and any surface water or potable water supply well.
- B. It is not recommended that spent filter sand be applied to sites:
1. When precipitation is imminent,
  2. Which have received greater than 1/4 inch rainfall within the 24-hour period preceding the intended spent filter sand application time.
- C. Spent filter sand shall not be applied to land which lies within 200 feet from a community water supply well, potable water supply well, surface waters or intermittent streams or within one-fourth of a mile of any potable water supply wells located in consolidated bedrock such as limestone or sinkhole areas unless a 50 foot depth of non-sandy or non-gravelly unconsolidated material exists. In no case shall spent filter sand be applied within 400 feet of a community water supply well deriving water from an unconfined shallow fractured or highly permeable bedrock formation or from an unconsolidated and unconfined sand and gravel formation.
- D. Spent filter sand shall not be applied to sites during the periods in which the seasonal high water table rises within 3 feet of the surface at the site.
- E. Spent filter sand shall only be applied to land with a background soil pH of 6.5 or greater unless lime or other suitable materials are applied to the site prior to spent filter sand application to raise the soil pH to a minimum of 6.5.
- F. Spent filter sand shall be applied and incorporated into the site soils within the following guidelines:
1. Spent filter sand may be surface applied without incorporation (except as part of the "Rain Garden" project on the 0.32 acre tract) only if the site slope is less than 8% and the annual soil loss does not exceed 5 tons/acre as determined by the Universal Soil Loss Equation. ✎
  2. Spent filter sand shall be incorporated if:
    - A) Site slope exceeds 8% but the annual soil loss is less than 5 tons/acre, or
    - B) Site slope is less than 8% but the annual soil loss exceeds 5 ton/acre.

ASU-CX-264  
Attachment 2  
(continued)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
WATER POLLUTION CONTROL PERMIT

LOG NUMBERS: 2914-09

PERMIT NO.: 2009-SC-2914

FINAL PLANS, SPECIFICATIONS, APPLICATION  
AND SUPPORTING DOCUMENTS

DATE ISSUED: December 4, 2009

PREPARED BY: Argonne National Laboratory

SUBJECT: ARGONNE NATIONAL LABORATORY -- Land Application of STP Filter Sand

- 3. Spent filter sand shall not be applied to a site with slope greater than 8% with annual soil loss in excess of 5 ton/acre.
- 4. Unless surface application is allowed pursuant to this condition, or otherwise specified in this permit, spent filter sand shall be incorporated within 48 hours of application or prior to any rainfall whichever is more restrictive.

G. Spent filter sand amended land shall have vegetation grown pursuant to normal horticultural practices.

H. The delivery and application of spent filter sand, and the choice of an application site, shall be made so as to minimize the emission of odors to nearby residents taking into account the direction of wind, humidity and day of the week.

I. Spent filter sand application shall not exceed the following maximum metal loading rates over the lifetime of a site (pounds per acre).

1. Soils with 5-15 meq/100 grams Cation Exchange Capacity (CEC):

<u>Metal</u>	<u>Total Loading</u>	<u>Annual Loading</u>
Cadmium	10	2
Nickel	100	--
Copper	250	--
Zinc	500	--
Manganese	900	--
Lead	1000	--

2. Soils with 0-5 meq/100 grams CEC shall apply only half the metal loading rates set forth in item I(1) above.

3. Soils with 15 or greater meq/100 grams CEC may apply double the total metal loading rates set forth in item I(1) above, however a supplemental permit shall be required for that specific site.

SPECIAL CONDITION 4: The permitted land application sites are identified as follows:

Argonne National Lab sites identified as 60 acres in the following sections: SW¼, SE¼ & NW¼ of Section 3; SW¼, SE¼ & NE¼ of Section 4; SE¼ of Section 5; SE¼, NW¼ & NE¼ of Section 8; SE¼, SW¼, NW¼ & NE¼ of Section 9; SE¼, SW¼, NW¼ & NE¼ of Section 10; SW¼ & NW¼ of Section 11; NW¼ of Section 15; NW¼ & NE¼ of Section 16 ; NE¼ of Section 17. All sections are in Downers Grove Township in DuPage County.

**READ ALL CONDITIONS CAREFULLY:  
STANDARD CONDITIONS**

The Illinois Environmental Protection Act (Illinois Revised Statutes Chapter 111-12, Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

1. Unless the construction for which this permit is issued has been completed, this permit will expire (1) two years after the date of issuance for permits to construct sewers or wastewater sources or (2) three years after the date of issuance for permits to construct treatment works or pretreatment works.
2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted by the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.
4. The permittee shall allow any agent duly authorized by the Agency upon the presentations of credentials:
  - a. to enter at reasonable times, the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit;
  - b. to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit;
  - c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit;
  - d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants;
  - e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.
5. The issuance of this permit:
  - a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;
  - b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
  - c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
  - d. does not take into consideration or attest to the structural stability of any units or parts of the project;
  - e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
6. Unless a joint construction/operation permit has been issued, a permit for operating shall be obtained from the agency before the facility or equipment covered by this permit is placed into operation.
7. These standard conditions shall prevail unless modified by special conditions.
8. The Agency may file a complaint with the Board for suspension or revocation of a permit:
  - a. upon discovery that the permit application contained misrepresentations, misinformation or false statement or that all relevant facts were not disclosed; or
  - b. upon finding that any standard or special conditions have been violated; or
  - c. upon any violation of the Environmental Protection Act or any Rules or Regulation effective thereunder as a result of the construction or development authorized by this permit.