



## Department of Energy

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JUN 30 2000

Mr. James A. Saric, Remedial Project Manager  
U.S. Environmental Protection Agency  
Region V, SRF-5J  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

DOE-0802-00

Mr. Tom Schneider, Project Manager  
Ohio Environmental Protection Agency  
401 East 5<sup>th</sup> Street  
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

### **TRANSMITTAL OF MEETING NOTES AND REVISED ADDENDUM 5 TO THE IMPACTED MATERIALS PLACEMENT PLAN FOR THE ON-SITE DISPOSAL FACILITY**

Reference: Letter, T. Schneider to J. Reising, "IMPP Addenda 2, 3, and 4 RTC, and Addendum 5 Submittal," dated December 28, 1999

Enclosed for your approval are May 25, 2000 Meeting Notes and revised Addendum 5 to the Impacted Materials Placement Plan (IMPP) for the On-Site Disposal Facility (OSDF). This submittal is in response to a meeting held at Fernald Environmental Management Project (FEMP) on May 25, 2000 between the U.S. Department of Energy (DOE), Ohio Environmental Protection Agency (OEPA), Fluor Fernald, Inc., and GeoSyntech, concerning alternate placement methods of Category 3 (transite panels) impacted material and the above-referenced letter. The meeting notes summarize the issues identified in the referenced letter and during a field demonstration of placement according to Addendum 5, conducted the week of June 15, 2000, as requested by OEPA. Responses to the issues as presented in the meeting are also summarized. The revised Addendum 5 includes resolutions to these issues, such as requirements pertaining to Category 3 transite panel bundles, which are placed adjacent to berms constructed at an adjacent grid for Category 2 placement.

Mr. James A. Saric  
Mr. Tom Schneider

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JUN 30 2000

If you have any questions regarding this document or need further information, please contact Jay Jalovec at (513) 648-3122.

Sincerely,



Johnny W. Reising  
Fernald Remedial Action  
Project Manager

FEMP:Jalovec

Enclosures

cc w/enclosures:

N. Hallein, EM-31/CLOV  
J. Jalovec, OH/FEMP  
R. J. Janke, OH/FEMP  
G. Jablonowski, USEPA-V, SRF-5J  
T. Schneider, OEPA-Dayton (three copies of enclosures)  
F. Bell, ATSDR  
F. Hodge, Tetra-Tech  
M. Schupe, HSI GeoTrans  
R. Vandegrift, ODH  
AR Coordinator, Fluor Fernald, Inc./78

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J. Reising, OH/FEMP  
A. Tanner, OH/FEMP  
K. Badu-Tweneboah, GeoSyntec/38  
D. Carr, Fluor Fernald, Inc./2  
J. Chiou, Fluor Fernald, Inc./52-0  
T. Hagen, Fluor Fernald, Inc./65-2  
J. Harmon, Fluor Fernald, Inc./90  
S. Hinnefeld, Fluor Fernald, Inc./31  
M. Jewett, Fluor Fernald, Inc./52-2  
U. Kumthekar, Fluor Fernald, Inc./64  
C. Van Arsdale, Fluor Fernald, Inc./64  
T. Walsh, Fluor Fernald, Inc./65-2  
ECDC, Fluor Fernald, Inc./52-7

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CONFERENCE/MEETING NOTES  
LETTER LOG NO.:MN:SWP(SDFP):2000-0057

SUBJECT: CATEGORY 3 ALTERNATE PLACEMENT

MEETING DATE: May 25, 2000

LOCATION: Fluor Fernald Office, Trailer T-82

ISSUE DATE: June 22, 2000

SDFP Letter Log, MS52-0  
Project Number 20103.1.6, ECDC, MS52-7

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DISTRIBUTION: + Attendees      ++ Via Telephone      \* Author of Notes

DOE/Agencies

+ Jay Jalovec, MS45  
+ Don Pfister, MS45  
+ Tom Ontko, OEPA  
James Saric, USEPA  
Tom Schneider, OEPA

Fluor Fernald

+ Jyh-Dong Chiou, MS52-0  
Kevin Harbin, MS64  
+ Mike Godber, MS64  
Uday Kumthekar, MS64  
+ \*Chuck Van Arsdale, MS64  
+ Sam Wolinsky, MS64  
+ Bill Zebick, MS64

GeoSyntec

+ Kwasi Badu-Tweneboah,  
MS38  
++ Jay Beech, MS38

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PURPOSE

This meeting was called to discuss questions and concerns for the alternate placement requirements for Category 3 (transite panels) impacted material following a field demonstration on May 16, 2000 in Cell 3. Transite panel bundles were placed to demonstrate methods described in proposed Addendum 5 to the Impacted Material Placement (IMP) Plan. Addendum 5 was submitted previously to the OEPA and USEPA for review and approval. The demonstration was initiated in response to OEPA's comments on the proposed addendum.

During the demonstration, a group of three transite panel bundles were placed according to the side by side method and end to end method. Each group of transite panel bundles were separated by a minimum of 8 feet. The transite panel bundles were stacked no higher than 4 feet. Category 1 material was placed and compacted around the group of transite panel bundles in 1-foot lifts. Representatives of GeoSyntec Consultants, Fluor Fernald, DOE, and OEPA observed the demonstration.

## DISCUSSIONS

Dr. Jay Beech of GeoSyntec Consultants prepared the addendum for the alternate placement requirements for the Category 3 (transite panels) impacted material. Dr. Beech summarized the report and discussed the following issues via teleconference:

### A. Orientation of Transite panels

As shown in Figures 1 and 2 attached, the transite panel bundles were placed next to each other such that the interface between each bundle is aligned in an east-west direction. This orientation is recommended to eliminate a potential slip surface passing through a vertical interface between transite panel bundles. Furthermore, this orientation was selected with long-term stability being the primary consideration.

If transite panel bundles were placed with the interfaces aligned in a north-south direction, abutting bundles of transite panels could result in vertical interfaces with potentially low shear strengths. As transite panel bundles are placed in the On-Site Disposal Facility (OSDF), a series of these potentially low strength interfaces can occur at varying horizons of the placed impacted material. A long-term stability concern is that these interfaces could become interconnected to form a weak slip surface through the impacted material. Placement of transite panel bundles with interfaces aligned in the north-south direction is not recommended unless supported by stability analysis. The recommended east-west orientation described in the preceding paragraph eliminates the need to know the exact locations of the bundles at the outset of placement, or the need to conduct stability analyses during operation of the OSDF. Placement of transite panel bundles in any orientation is not recommended for the most northerly and southerly cells under long term conditions.

### B. Number of transite panels in a group

Three transite panel bundles placed together in a group were chosen for constructability reasons. Placing three transite panel bundles together will allow the operator to push exterior bundles to close gaps between them. Although more bundles may be successfully placed together after more field experience is obtained, it is recommended to limit the number of bundles in each group to three bundles initially.

### C. Void spaces at interfaces

The proposed Addendum 5 states that space between the transite panel bundles shall not be more than 2 inches. The demonstration on May 16, 2000 showed the bundles can be placed directly adjacent to one another with little or no space between the bundles.

The 2-inch spacing was proposed based on a similar situation stated on Page 4-3 of the IMP Plan (Revision 1, October 1999). The IMP Plan states that piping with a nominal diameter of 12 inches or greater shall be split in half. This means that a pipe less than 12 inches does not have to be split according to the IMP Plan. Therefore, the void in cubic feet created by a 10-inch diameter pipe, 10 feet long, would be similar to a 2-inch void between 4-foot high by 4-foot wide by 12-foot long transite panel bundles placed side by side.

Voids that may occur between transite panel bundles will also be filled with Category 1 material soil as the lifts are placed around the bundles and over top of the bundles. Therefore, voids are minimized and would not affect stability, especially if the transite panel bundles are oriented as discussed earlier.

D. Infiltration Surface

During operation of the OSDF, most precipitation is expected to runoff the surface of the impacted material to a catchment area. However, some precipitation will infiltrate into the impacted material and a pathway needs to be provided for the runoff to reach the leachate collection system of the cell liner system. Placing transite panel bundles adjacent to one another does reduce the amount of Category 1 material placed around the transite panel bundles to transmit the infiltrating runoff. This alternate method of placement allows 67 percent of the material to transmit infiltrating runoff; as opposed to 81 percent with the current placement method within an 100-foot by 100-foot grid. This reduction in the surface area surrounding the Category 3 material is sufficient to transmit infiltrating precipitation. Overall, this reduction of infiltrating areas has negligible effect on the entire OSDF capacity to infiltrate runoff.

E. Factor of Safety

The original placement requirement of placing one transite panel bundle at eight feet apart from one another was solely based on original estimates of Category 3 material quantity and generating schedule. At the time it did not seem necessary to place more than that amount in an individual grid since there was enough capacity within the OSDF to accommodate the projected estimate. However, as estimates were fine tuned and construction schedules were changed, it became apparent that an alternate requirement needed to be analyzed. Estimates for some building demolition estimates have shown increases of about 30 percent from the original estimate of transite material.

Dr. Beech stated that for the long term, placing bundles individually or by three adjacent to one another does not change the factor of safety for stability, settlement, concentrated stresses, and tensile stresses. This alternative requirement for placement of transite panel bundles has no effect on the integrity of the liner system or cap system and the overall performance of the OSDF as long as the material is placed as described in Addendum 5.

DISCUSSIONS OF ITEMS OF CONCERN OUTSIDE OF MEETING

A. Compaction around transite panel bundles

When a grid is chosen for Category 3 material placement, it may occur next to a grid that contains Category 2 material. A Category 2 grid is prepared by constructing a 2-foot high berm around the grid to provide a 10-foot buffer between debris material in grids. When Category 3 material is placed next to a Category 2 grid, it will be placed at the toe of the adjacent berm to maximize the number of transite panel bundles in a grid.

Mr. Ontko of OEPA raised a concern that the placement next to the berm was not mentioned in the Addendum. Therefore, we will modify the addendum to include this scenario and provide specific compaction techniques around the bundles adjacent to the berm. The Contractor may:

1. excavate an area of the berm in order to place and compact Category 1 impacted material around the transite panel bundles; or
2. use a tamping plate, small roller, jumping jack, or other equipment as appropriate to compact Category 1 impacted material between the berm and the transite panel bundle.

B. Layers of transite panel bundles

Presently, Category 3 transite panel bundles are placed on pallets at the production area in approximately 1 to 2-foot high bundles. In the future, the bundles will be placed on pallets at the production area in approximately 3 1/2-foot high bundles. Dr. Jay Beech stated that if the material is stacked or placed in one piece, it will have no effect on the integrity of the liner system or final cover system and the overall performance of the OSDF.

ACTION ITEMS

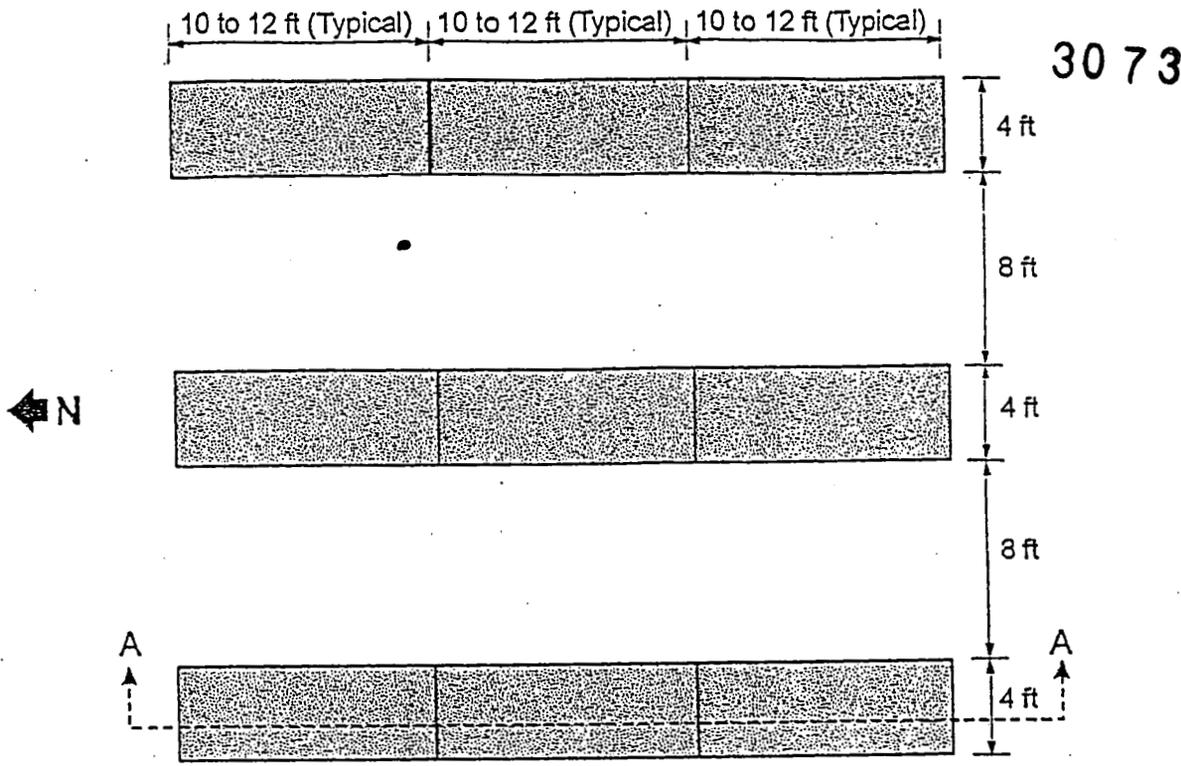
This memo serves as the action item discussed in the meeting. We believe these meeting minutes and the attached sketches and Addendum 5 for the proposed alternative placement requirements for Category 3 (transite panels) will address the questions and concerns to the satisfaction of the OEPA. If any additional information is necessary, please contact Jyh-Dong Chiou at (513) 648-3726 or Chuck Van Arsdale at (513) 648-5116.

CCV:ccv

Attachments:        Figures 1 - 2  
                          Addendum 5

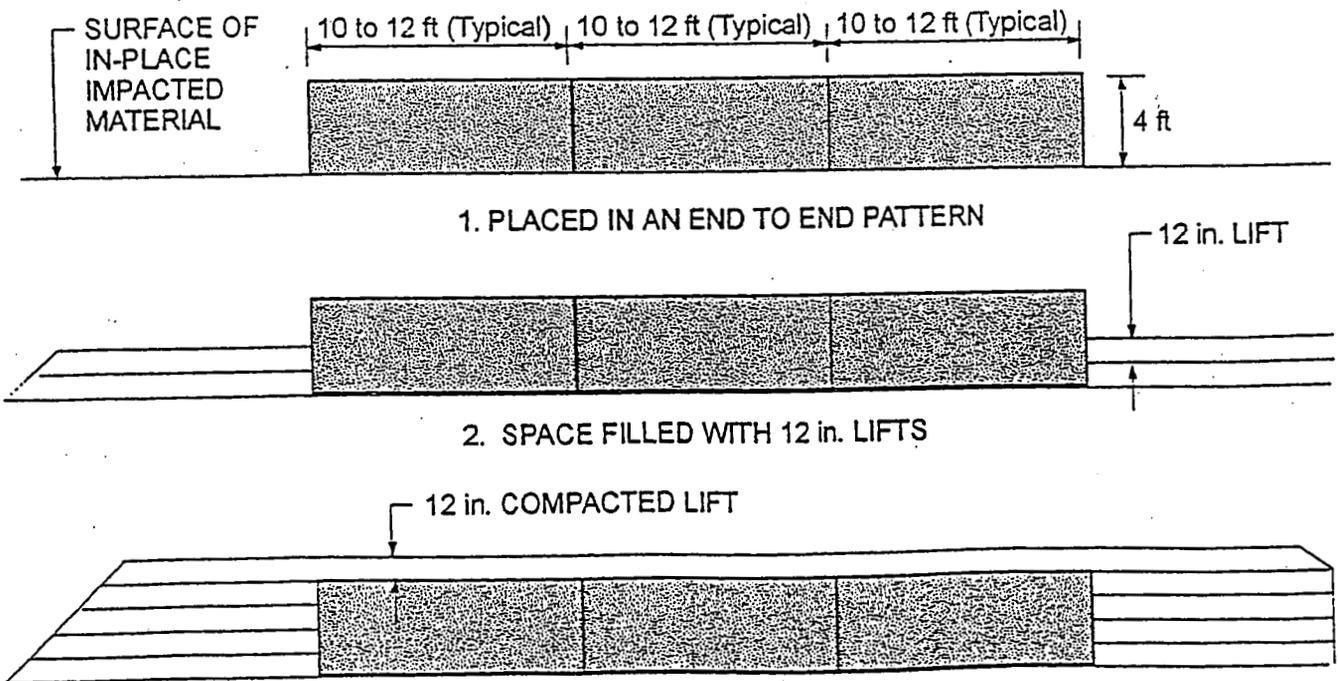
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# CATEGORY 3 MATERIAL - ALTERNATIVE 2 - PLACEMENT SEQUENCE



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PLAN VIEW



SECTION A - A

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**GEO SYNTEC CONSULTANTS**  
ATLANTA, GEORGIA

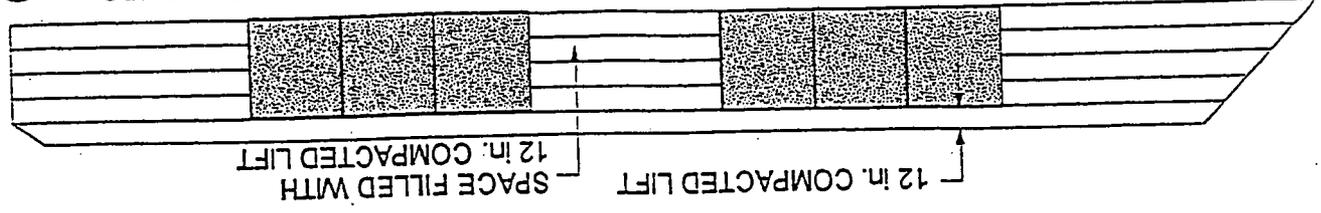
FIGURE NO.	4
PROJECT NO.	GQ0573-11
DOCUMENT NO.	F9930116
FILE NO.	FIGS1.cdr

FILE NO.	FIGS1.cdr
DOCUMENT NO.	F9930116
PROJECT NO.	G00573-11
FIGURE NO.	2

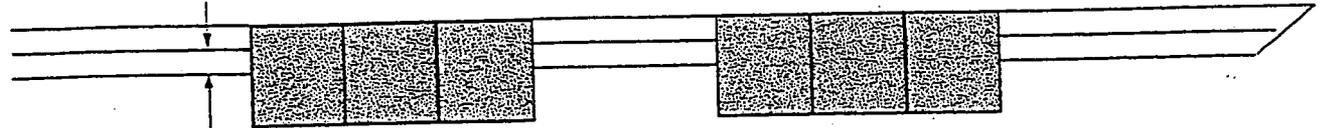
**SECTION A - A**

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3. FINAL 12 in. COMPACTED LIFT PLACED ABOVE GROUPS

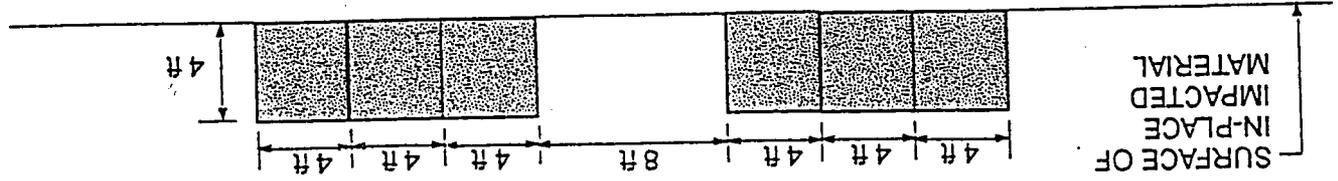


2. SPACE FILLED WITH 12 in. LIFTS

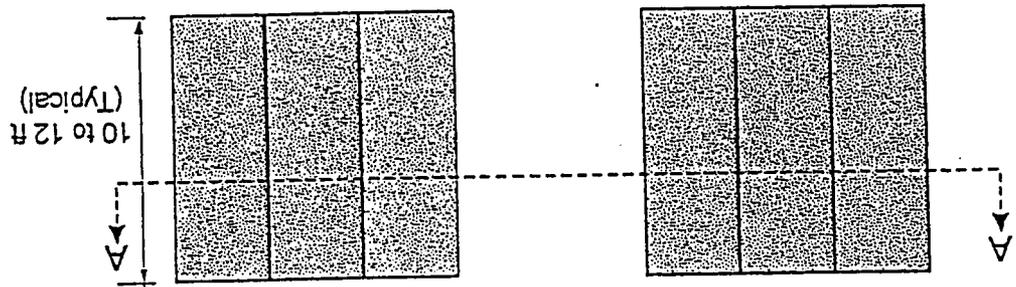


12 in. LIFT

1. PLACED IN A SIDE BY SIDE PATTERN



**PLAN VIEW**



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**CATEGORY 3 MATERIAL - ALTERNATIVE 1 - PLACEMENT SEQUENCE**