

Monsanto

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FROM  
NAME-LOCATION-PHONE: J. N. McGuire -- E1NA -- 4-5262

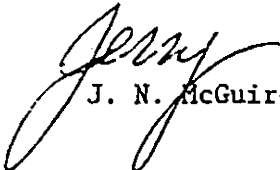
DATE : September 26, 1984

SUBJECT : Nitro TCDD Remedial Work  
EPA Response

REFERENCE :

TO : W. J. McCarville G3WG  
F. E. Kearney E3NA

The attached document is Nitro's proposal response to Walter Lee, USEPA Region 3 request for a written description of Nitro's TCDD Remedial Work plan. The plant wants to send Monsanto's response as soon as possible. Your speedy review and reply will be appreciated.

  
J. N. McGuire

**CONFIDENTIAL**  
SUBJECT TO PROTECTIVE ORDER.

AC 7: FEL  
& WJ. A-C 25143 6:00

# Monsanto

POLYMER PRODUCTS COMPANY  
Nitro, West Virginia 25143  
Phone: (304) 755-3341

Date: 9/24/84

## TRANSMITTAL PAGE

EINA

MESSAGE FOR:

J. N. MCGUIRE

TELEPHONE NUMBER:

5262

LOCATION:

EINA

NUMBER OF PAGES BEING SENT:

4

(Excluding transmittal page)

PLEASE CALL THE ABOVE INDIVIDUAL UPON RECEIPT FOR THEIR IMMEDIATE PICKUP.

**CONFIDENTIAL**  
SUBJECT TO PROTECTIVE ORDER.

MESSAGE FROM:

RICK BALTZ

TELEPHONE NUMBER:

365

LOCATION:

NITRO

C11957

TCDD REMEDIAL WORK

Monsanto Company  
Nitro, West Virginia

During the period from 1948 to 1969, Monsanto's Nitro plant manufactured 2,4,5-T which contained trace amounts of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). Sampling conducted during 1983 indicated the presence of TCDD at the plant. A statistical grid sampling program was then developed by Monsanto and Region III of the EPA. Over four hundred surface and subsurface soil samples and surface gravel samples were collected and analyzed for TCDD. The analytical data as well as quality assurance and quality control documentation were previously submitted to the EPA. The proposed remedial action consists of paving with asphalt in the areas where 2,4,5-T was manufactured, removal of soil from a small contaminated area, covering the area where a trash incinerator was located with crushed limestone, and providing a clay cap over the disposal site of the equipment from the 2,4,5-T production facilities.

Blocks H and I include the former 2,4,5-T production areas. Portions of these blocks will be graded to promote proper drainage, and additional crushed limestone will be added as necessary to provide a suitable base for paving. Both blocks will be paved with two inches of asphalt. The gravel area inside the dike walls for two storage tanks (block I) will be paved with four inches of concrete. A six-inch-thick concrete pad will be

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poured at the southeast corner of Building 41 in block H to handle truck traffic from a loading dock.

The contaminated soil will be removed from a 120 foot by 60 foot area where TCDD was detected inside the fence on the south edge of the plant. This soil will be placed in the existing subgrade containment basins formerly associated with three storage tanks. The basins are located in the portion of block I which will be paved.

The north area of the plant contained a trash incinerator when 2,4,5-T was manufactured at Nitro. An earthen dike will be constructed along the property line to contain all runoff. The area will be graded to slope toward two new catch basins. Additional crushed limestone will be provided to ensure that the entire area is covered with a minimum thickness of three inches. Due to the immobility of TCDD in the soil, crushed limestone will provide an excellent barrier for employee protection.

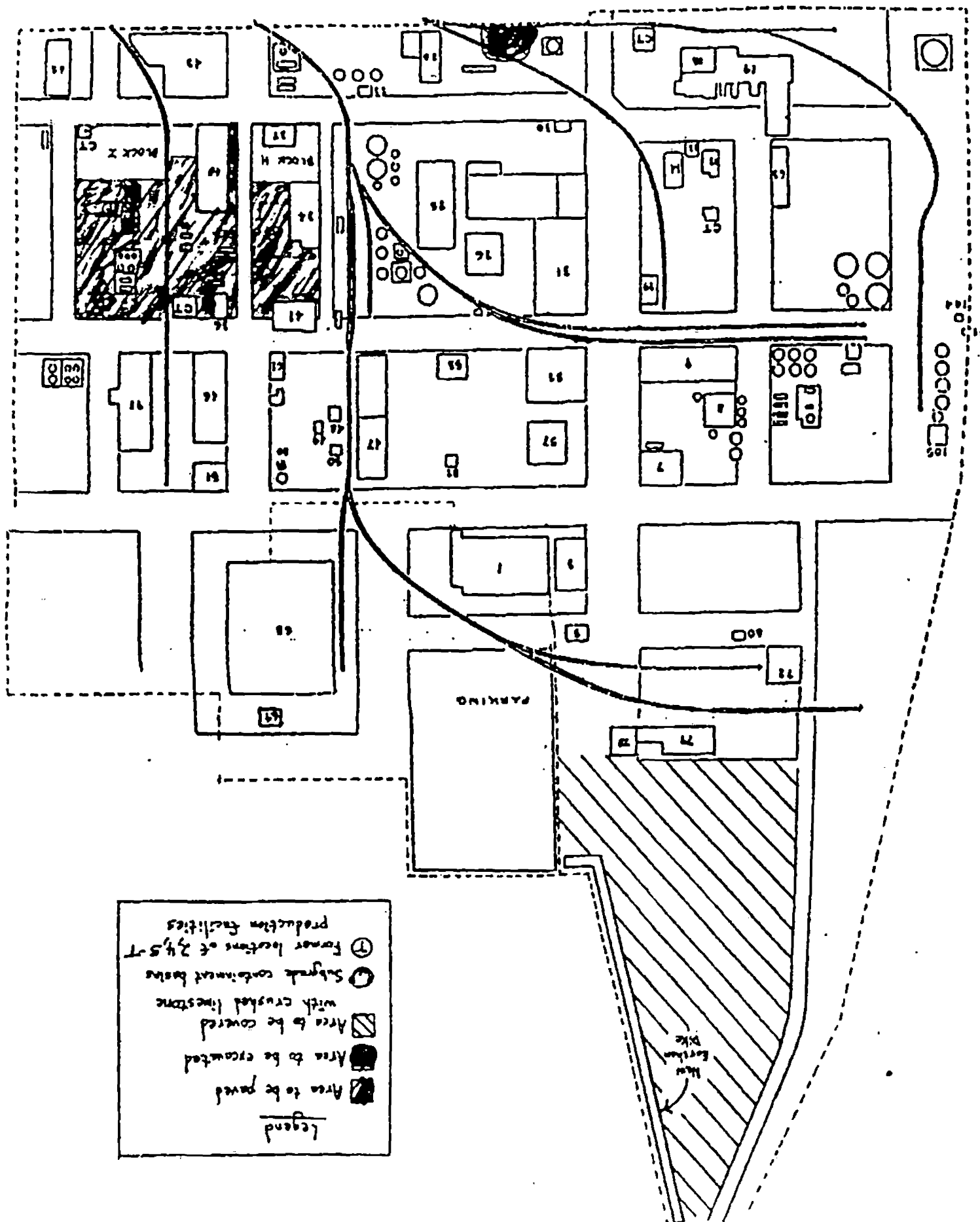
Equipment from the former 2,4,5-T production facilities is buried at Monsanto's wastewater treatment plant. Groundwater monitoring wells were installed around the perimeter of the disposal area in 1983. No groundwater contamination has been detected in these wells. This project will cover the area with a three-inch-thick clay cap. The area will then be covered with topsoil and seeded.

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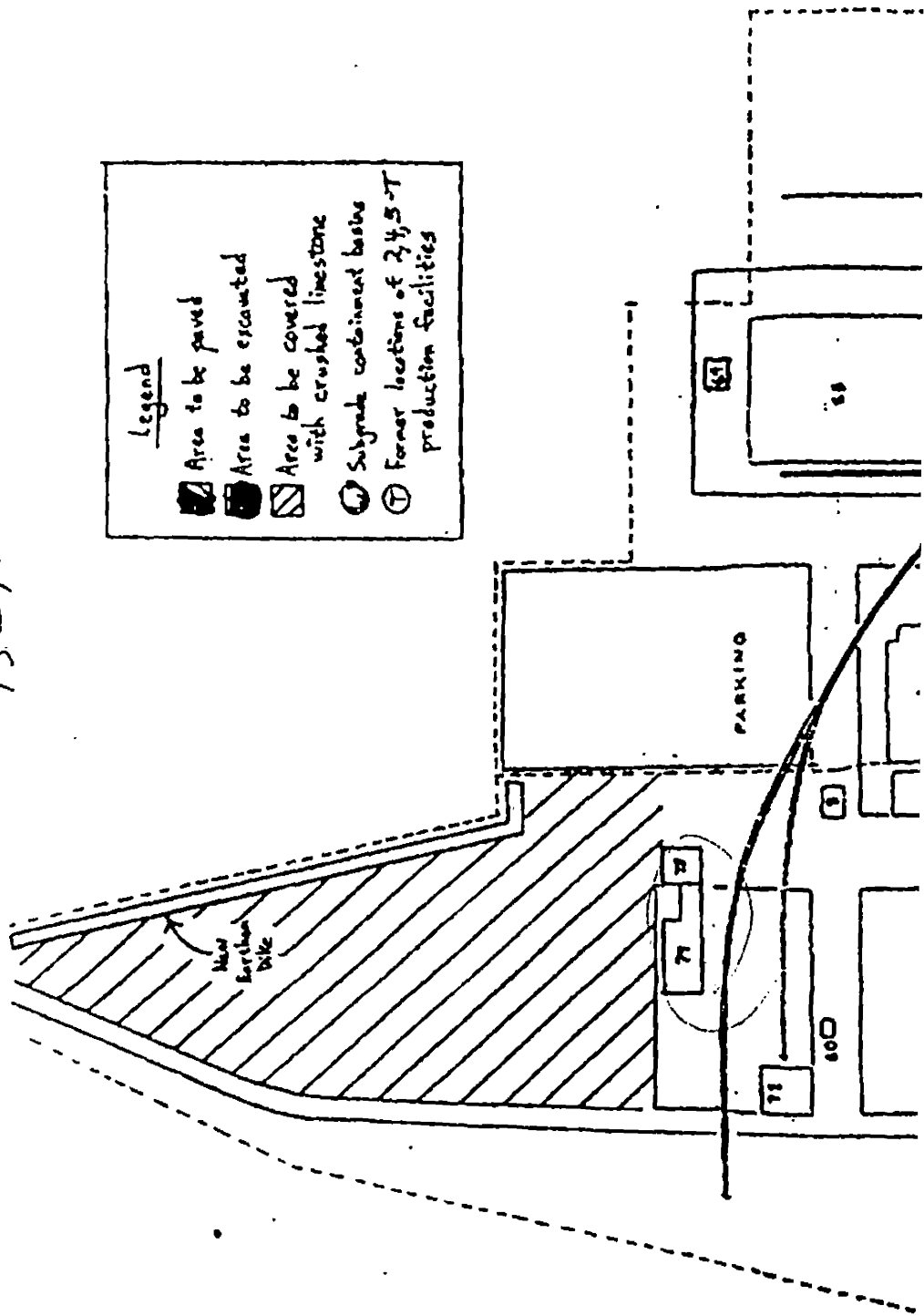
Monsanto has approved funding for this project, which is currently scheduled for execution during the 1985 construction season. A bid package will be issued in February, 1985, and a contract will be awarded in March, 1985. Construction is tentatively scheduled to begin on May 1, 1985 and is expected to be completed within three months and no later than August 31, 1985. Actual construction time is difficult to estimate because the Nitro plant is built on the site of a World War I nitrocellulose plant and subsurface obstructions are often encountered. Detailed project drawings and construction specifications for the remedial action are available upon request.

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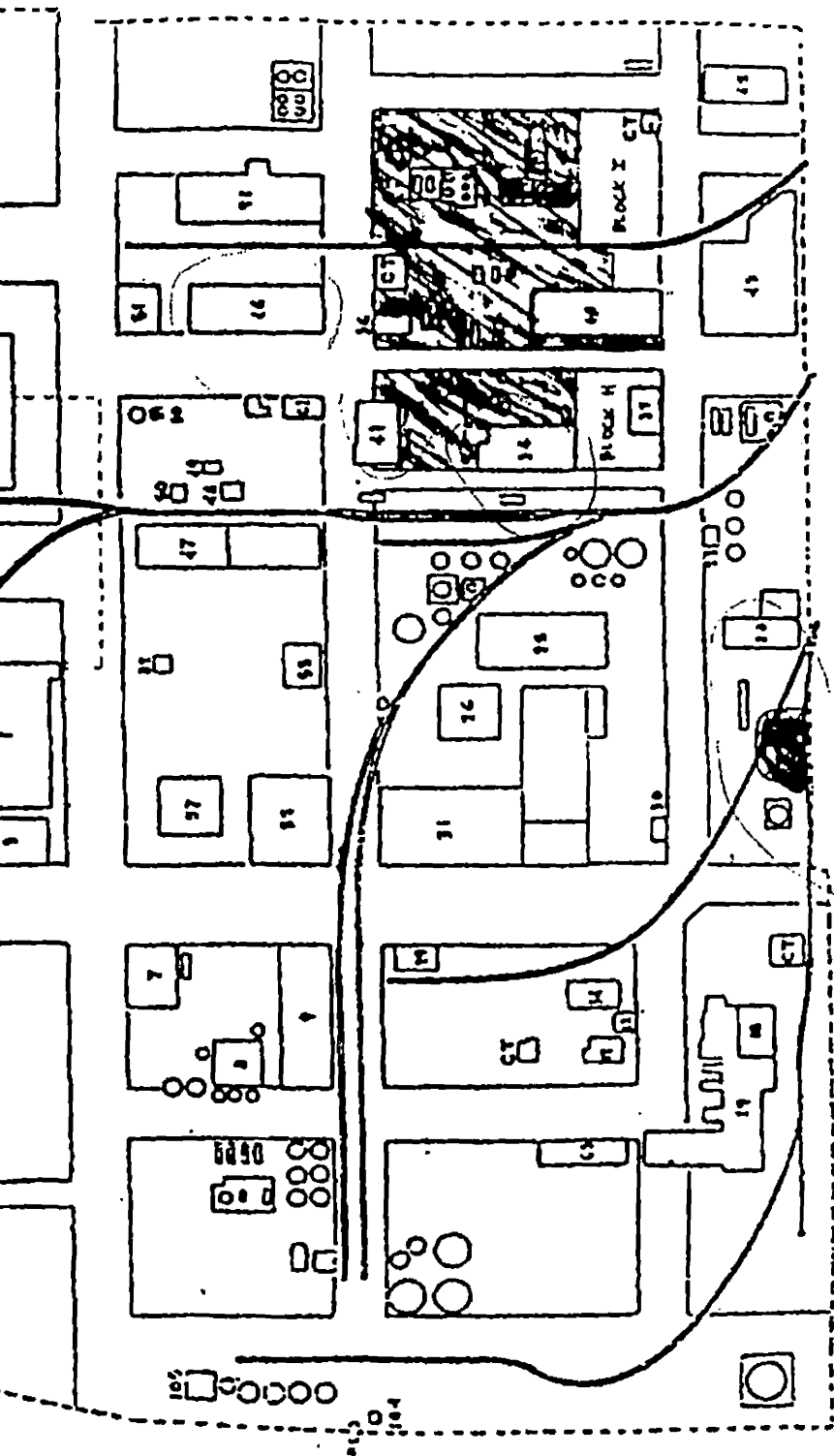


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Legend

-  Area to be paved
-  Area to be excavated
-  Area to be covered with crushed limestone
-  Subgrade containment basins
-  Former locations of 2, 4, 5-T production facilities



PLOT PLAN NITRO PLANT

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PCDDs are in progress. The carcinogenic potentials of PCDFs have not been studied.

2,3,7,8-TCDD is teratogenic in mice and hamsters. The threshold teratogenic dose in mice was estimated to be 0.1 mcg per day (Smith et al, 1976). 2,3,7,8-TCDD has been shown to be fetotoxic in a wide variety of species, including primates. HCDD was teratogenic in rats at a dose of 100 mcg/kg per day (IARC, 1977). There is as yet no data on the fetotoxic potentials of PCDFs in animals.

The toxic effects of 2,3,7,8-TCDD in man are summarized in Table 7. The toxic effects most consistently observed in occupational studies are chloracne, liver dysfunction, neuropsychiatric disturbances, and abnormalities in porphyrin metabolism. Table 8 summarizes the findings of the morbidity studies of workers exposed to 2,3,7,8-TCDD to date. The few follow-up studies which have been done show resolution of gross liver dysfunction and porphyrin abnormalities following removal from exposure. (Pazderova-Vijlupkova et al, 1981; Suskind, 1984).

Several of the occupational exposures occurred as the result of uncontrolled exothermic reactions during the production of trichlorophenol. A similar process accident at Seveso, Italy in 1976 resulted in widespread community exposure to 2,3,7,8-TCDD. Health effects included chloracne, primarily in children, and peripheral neuropathy in a small percent of those exposed (Pocchiari et al, 1979).

The epidemiologic studies on the carcinogenicity of TCDD are summarized in Table 9. While individual occupational mortality studies reveal no excess of cancer, the pooled data suggest an excess of soft tissue sarcoma (Honchar and Halperin, 1981).