FINAL WASTE MANAGEMENT PLAN
FOR
CONSTRUCTION TASKS
GM-38 AREA GROUNDWATER REMEDIATION
AT
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

Issued:

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Prepared for:

Engineering Field Activity, Northeast
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, Pennsylvania 19113-2090

Remedial Action Contract No. N62472-99-D-0032
Contract Task Order No. 96

Prepared by:

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Revision	Date	Prepared By	Approved By	Pages Affected
0	5/8/06	Joseph Gray	Stavros Patselas	All

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LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
CFR	Code of Federal Regulations
CTO	Contract Task Order
EFANE	Engineering Field Activity, Northeast
EHS	Environmental Health and Safety
GOCO	Government Owned Contractor Operated
lbs	pounds
n.o.s.	not otherwise specified
NGC	Northrop Grumman Corporation
NTR	Navy Technical Representative
NWIRP	Naval Weapons Industrial Reserve Plant
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
OSHA	Occupational Safety and Health Administration
PM	Project Manager
POTW	Publicly Owned Treatment Works
PPE	personal protective equipment
RAC	Remedial Action Contract
RCRA	Resource Conservation and Recovery Act
ROICC	Resident Officer in Charge of Construction
SHSP	Site-Specific Health and Safety Plan
TAGM	Technical and Administrative Guidance Memorandum
TCLP	Toxicity Characteristic Leaching Procedure
TDS	total dissolved solids
TSS	total suspended solids
TtEC	Tetra Tech EC, Inc.
ug/L	micrograms per liter
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

1.0 INTRODUCTION

Tetra Tech EC, Inc. (TtEC) has been contracted by the United States Department of the Navy, Engineering Field Activity, Northeast (EFANE) to construct a pump and treat system for the GM-38 Area groundwater remediation at the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, in Bethpage, New York. This Waste Management Plan has been prepared to satisfy the requirements of Remedial Action Contract (RAC) Number N62472-99-D-0032, Contract Task Order (CTO) Number 96.

1.1 Site Location and Description

NWIRP Bethpage is located in east central Nassau County, Long Island, New York, approximately 30 miles east of New York City. The Navy's property totaled approximately 109.5 acres and was formerly a Government Owned Contractor Operated (GOCO) facility that was operated by the Northrop Grumman Corporation (NGC) until September 1998. NWIRP Bethpage is bordered on the north, west, and south by property owned, or formerly owned, by NGC that covered approximately 605 acres, and, on the east, by a residential neighborhood.

The GM-38 Area refers to a cluster of monitoring wells that were installed in the 1990s by NGC and that first identified an isolated groundwater contaminant plume in this area. Chlorinated volatile organic compounds (VOCs) were identified in moderately deep groundwater (220 to 470 feet below ground surface [bgs]) at concentrations greater than 500 micrograms per liter (ug/L). The contaminated groundwater in the area represents a relatively large mass of chlorinated VOCs that would remain for extended periods and could adversely affect public water supplies in the area, as well as other downgradient water supplies. Two public water supply systems are present in the general area and extract groundwater at depths ranging from 540 to 740 feet bgs. Navy and contractor funded systems are in place at the public water supply wells to remove VOCs from the water prior to distribution.

The GM-38 Area is approximately 8,500 feet south southeast and hydraulically downgradient of NWIRP Bethpage. Specifically, the center of the project area is a utility easement that is located east of Broadway Avenue, west of the Seaford – Oyster Bay Expressway, and between the north and south dead ends of Windhorst and Herman Streets.

1.2 Scope of Work

The scope of work includes the following:

- Construction of a groundwater extraction system.
- Construction of a groundwater treatment plant.
- Construction of a groundwater re-injection system.
- Installation of all associated piping and utilities, including a new sanitary sewer main and new underground electric wiring.
- Construction of an access road and parking area.

2.0 WASTE TYPES

Waste materials that are determined to be non-hazardous will be managed in compliance with applicable New York solid waste regulations. If Resource Conservation and Recovery Act (RCRA) hazardous wastes are identified, they will be managed in accordance with New York State (NYS) Hazardous Waste Regulations. TtEC employees will have current RCRA Hazardous Waste (HW) and United States Department of Transportation (USDOT) Hazardous Material Transportation Training. Waste generation activities will be conducted under the worker protection provisions of regulations promulgated by the Occupational Safety and Health Administration (OSHA) in 29 Code of Federal Regulations (CFR) Parts 1910 and 1926.

Wastes generated from the site activities are expected to be non-hazardous and may include the following:

- Well purging and development water.
- Decontamination water.
- Excess cuttings and drilling mud.
- Personal protective equipment and disposable sampling equipment.
- Cleared and grubbed material.
- General construction debris and trash.
- Concrete and asphalt.
- Spent air stripper tower packing.

The following sections provide further detail on management of anticipated waste streams.

2.1 Well Purging and Development Water

Groundwater from well purging and development will be containerized prior to discharge to the Cedar Creek Water Pollution Control Plant of the County of Nassau – Department of Public Works. Waste characterization samples will be collected and analyzed for VOCs, total dissolved solids (TDS), total suspended solids (TSS), cadmium and chromium, in accordance with the County of Nassau Department of Public Works Wastewater Acceptance Limits. If the containerized groundwater meets the Wastewater Acceptance Limits, TtEC will proceed to discharge into designated sewer manholes at a flow rate not to exceed 200 gallons per minute. Groundwater will either be pre-treated prior to sewer discharge or shipped off-site for disposal if concentrations exceed the Wastewater Acceptance Limits. It is not anticipated that this water will need to be pre-treated. The Appendices contains drawings C-4 and C-5 that identify the location of the sewer manholes to be used as discharge points.

2.2 Decontamination Water

All decontamination liquids, including those generated from cleaning the air stripper tower, will be containerized in 55-gallon USDOT-approved drums. Waste characterization samples will be collected and analyzed for VOCs, TDS, TSS, and metals, in accordance with the County of Nassau Department of Public Works Wastewater Acceptance Limits. If the decontamination liquids meet the Wastewater Acceptance Limits, they will be discharged to the Publicly Owned

Treatment Works (POTW); otherwise, the liquids will be pre-treated prior to sewer discharge or will be shipped off-site for treatment and disposal.

2.3 Excess Cuttings and Drilling Mud

Excess soils cuttings and drilling mud will be initially drummed and then consolidated into roll-off containers. Composite samples will be collected from the roll-off containers and analyzed for VOCs in accordance with New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) 4046. The TAGM soil objectives set residential and commercial/industrial soil cleanup standards for soils and are used to determine if soils can be reused on-site or must be disposed off-site. If the analytical results meet the applicable soil cleanup objectives, the soil cuttings and drilling mud will be disposed of as non-hazardous waste at an approved a NYSDEC permitted RCRA Subtitle D solid waste landfill or temporarily stockpiled on-site for future use. With regulatory approval of concentrations that meet the applicable soil clean-up objective, these soils could be used in earthen berms to be constructed in the project area as visual barriers. Materials that do not meet the TAGM standard shall be transported to an approved disposal facility. All containers will be shipped using a Bill of Lading or non-hazardous waste manifest.

2.4 Personal Protective Equipment and Disposable Sampling Equipment

Used personal protective equipment (PPE) and disposable sampling equipment will be stored in USDOT-approved containers prior to off-site disposal. Since the cuttings and purge water are anticipated to be non-hazardous, PPE and sampling equipment contaminated with these materials are expected to be non-hazardous. These wastes will be regulated as non-hazardous wastes by NYSDEC and will be transported by a non-hazardous solid waste transporter to a NYSDEC permitted RCRA Subtitle D solid waste landfill. Wastes will be shipped using a Bill of Lading or non-hazardous waste manifest.

2.5 Cleared and Grubbed Material

Since surface soils and vegetation are not contaminated, cleared trees, bushes, and other vegetative matter will be loaded and transported off-site to be chipped and recycled at a NYSDEC licensed recycling facility.

2.6 General Construction Debris and Trash

Construction debris and trash are expected to be non-hazardous will be placed into roll-off containers for disposal as non-hazardous waste at an approved off-site facility.

2.7 Concrete and Asphalt

Concrete and asphalt from construction activities will be non-hazardous and will be placed into roll-off containers for off-site recycling or disposal as non-hazardous waste at an NYSDEC licensed recycling facility or NYS DEC permitted RCRA Subtitle D solid waste landfill.

2.8 Spent Air Stripper Tower Packing

Spent air stripper tower packing will be containerized USDOT-approved roll-off containers. Waste characterization samples will be collected and analyzed for toxicity characteristic leaching procedure (TCLP) metals and TCLP VOCs. Based on the analytical results, it is expected that the spent air stripper tower packing will be suitable for disposal at a permitted RCRA Subtitle D solid waste landfill; if not, it will be disposed of as hazardous waste at a RCRA Subtitle C landfill.

2.9 Recyclable Materials

The following uncontaminated recyclable materials may be generated during project activities and will be recycled if suitable recycling facilities are available:

- Metals.
- Paper and cardboard.
- Glass, metal, and plastic beverage containers.
- Mechanical and electrical products and equipment.

2.9.1 Recycling Procedures

The necessary containers and bins for recycling will be provided at the project site. They will be clearly and appropriately marked. Contamination of recyclable materials due to contact with incompatible products and materials will be prevented by good housekeeping practices.

Construction waste at the project site will be separated by one of the following methods:

- Source Separated Method: Recyclable waste products and materials are separated from trash and sorted into appropriately marked separate containers and then transported to the respective recycling facility for further processing. Trash will be transported to a permitted Subtitle D landfill.

- Co-Mingled Method: All construction waste is placed into a single container and then transported to a recycling facility, where the recyclable materials are sorted and processed and the remaining trash is transported to a landfill or incinerator.

- Other methods approved by the Contracting Officer.

As procurement activities progress, details regarding recycling methods, means of transporting recyclables, and destination will be provided prior to any off-site shipment of material.

2.10 Contact Information

As treatment, disposal, and recycling facilities are procured, names, addresses, and phone numbers of the facilities will be provided.

3.0 PROCEDURES FOR HANDLING CONTAMINATED SOLIDS AND LIQUIDS

Procedures for handling contaminated solids and liquids include, but are not limited to, the following:

- The contaminated area will remain isolated, and site access will be restricted to authorized TtEC employees, subcontractors, and authorized Navy employees. The Exclusion Zone will be barricaded with signs and caution tape. Entry to the Exclusion Zone will be restricted to one passageway and signage will be displayed.

- A majority of decontamination activities will be conducted within the NWIRP Bethpage property. During decontamination activities, contaminated solids and liquids will be collected in a manner intended to prevent contact with personnel. This will include the use of appropriate PPE. All on-site personnel will be informed of the known hazards and will be properly trained in safe handling procedures contained herein and in the Site-Specific Health and Safety Plan (SHSP).

- During collection of the contaminated solids, proper equipment and work procedures will be utilized to control the flow of material and to eliminate the potential for any of the material to reach an uncontaminated surface.

- Contaminated solid material will be collected in the appropriate sized containers (USDOT approved drums or roll-off boxes with liners) and immediately covered. Polyethylene sheeting will be used when necessary for spill protection while containers are being filled. Spill control materials will be on-site during all waste handling activities. All containers will be inspected prior to use. Containers will be placed in the waste staging area to await off-site disposal at an approved facility. Waste container exteriors will be inspected and any waste material adhering to the exterior of the waste container will be removed prior to off-site transportation. Containers will be labeled with non-hazardous waste labels. All waste containers will also be labeled with the waste description, the generation date and location, and a unique container identifier number using indelible markers or paints. All waste containers will be securely closed or tarped while being stored prior to off-site disposal.

- Solid wastes will be securely containerized to prevent release to the environment. They will be stored on-site for no more than ninety (90) days and will be inspected weekly to ensure that containers are sound and not leaking. Inspections will be documented on a TtEC Drum/Container Inspection Form and will be retained in the project file.

- Solid waste and liquids will be disposed according to the following procedures.

    - Manifests and Shipping Papers - TtEC will organize and maintain the material shipment records/manifests required by RCRA (Public Law 94-580), NYS, and the disposal facility. All manifests will be signed by the designated NWIRP Bethpage representative. Copies of all final completed manifests, including final waste quantities and disposition, will be submitted during the project to the

NWIRP representative, retained in the TtEC project file, and will be included in TtEC's Final Report submitted to the Navy.

- TtEC will coordinate the schedule for truck arrival and material deliveries at the disposal site to meet the approved schedule. The schedule will be compatible with the availability of equipment and personnel for material handling operations.

- Roll-off Containers (if required) - Lined and tarped, USDOT-approved roll-off containers will be provided by the selected transport or disposal facility and will be located in the lay down area. Roll-offs will be inspected before loading to verify that the liners are present and intact. Necessary steps for spill prevention and control of spills will be implemented during loading and containers will be labeled. Roll-offs will be labeled with non-hazardous waste labels.

- Drums - Solid waste that should be containerized will be placed in USDOT-specified, 1A2 55-gallon drums or similar USDOT-approved container. At least 6 to 12 inches of empty space will be allowed in each drum to facilitate the addition of absorbent, if necessary. Spill prevention and control steps will be taken and the containers will be labeled.

Once filled, drums will be stored on pallets under a shelter. The drums will be arranged in rows of two pallets with adequate space between rows. This arrangement allows access to any drum without rearranging drums. Drums will be arranged so the numbers on the sides are facing outward and are visible after staging. Drums will not be stacked on top of each other unless the contents are known to be non-explosive and non-flammable. If stacked, drum layers must be separated using pallets. Under no circumstances will drums be stacked more than two high.

4.0 OFF-SITE TRANSPORTATION

TtEC is responsible for all transportation of waste. TtEC will prepare all waste manifests and other shipping documents for the NWIRP representative's signature as generator. TtEC will not sign any waste manifests/shipping document or assume generator status for transportation purposes.

All waste materials destined for off-site disposal are expected to be non-hazardous and not meet the definition of a USDOT hazardous material; however, in the event hazardous materials are encountered, TtEC will follow the following requirements for waste and sample shipments. Hazardous materials will be assigned the proper hazard class, described, packaged, marked, labeled, and in condition for shipment as required by 49 CFR 171.

Waste that does not exhibit one of the nine USDOT hazard class characteristics (i.e., explosive, flammable, poison, combustible, etc.) is not regulated under USDOT rules for the transportation of hazardous material. If waste is suspected to be hazardous, then it will be shipped under the suspected hazard class. If a particular hazard class is unable to be determined, then the soil or water may be shipped under either of the following:

Shipping Name	Hazard Class	ID Number	Packing Group	Label
Environmentally hazardous substances, liquid, n.o.s.	9	UN3082	III	CLASS 9
Environmentally hazardous substances, solid, n.o.s.	9	UN3077	III	CLASS 9

When using either one of these "not otherwise specificed" (n.o.s.) shipping names, at least two technical names must follow (i.e., "Environmentally hazardous substances, liquid, n.o.s. [Benzene and Acetone]").

The shipping name, identification number, packing group, instructions, cautions, weights, United States Environmental Protection Agency (USEPA) waste code numbers and consignee/consignor designations will be marked on packages for shipment. Labeling provides information regarding the USDOT hazard class.

The label to be placed on the material will depend upon the results of sampling. Once the waste is characterized, reference should be made to the Hazardous Materials Table in 49 CFR 172.101 to determine the appropriate label. The package (or drum) will be marked and labeled as specified in 49 CFR 172.301.

The person offering hazardous material for shipment will offer placards, if the amount of hazardous material meets placarding threshold requirements (49 CFR 172.506). Any quantity of material listed in Table 1 of the regulations will be placarded. However, if there is less than 1,000 pounds (lbs) of a Table 2 material, no placard is required. A Class 9 placard is not required for domestic shipments. If a placard is required, the label referenced above will be affixed on each side and each end of the vehicle(s).

Hazardous material shipping papers will have the following description of the hazardous material, in the following order:

- Proper shipping name.
- Hazard class or division.
- Identification number.
- Packaging group.
- Total quantity (must appear either before or after the above information).
- Technical and chemical group names may be entered in parentheses between the proper shipping name and hazard class or following the basic description (e.g., "Flammable liquids, n.o.s. [contains xylene and benzene], 3 UN1993, PG II").

Other required information includes:

- USEPA identification number (on manifests).
- Emergency Response Guidebook numbers.
- Twenty-four hour emergency response number, supplied by the generator and answered by a knowledgeable person.
- Signatures.

- Shipper's certification.

Although the site wastes are anticipated to be non-hazardous, if they are determined to be hazardous, a USDOT Hazardous Materials Security Plan may be required. A USDOT Hazardous Material Security Plan is required and will be prepared for any shipments of high hazard materials (i.e. USDOT Class 1 explosives, Class 2.3 Poison inhalation hazards, Class 7 Radioactive materials) or any placarded quantity of Class 3 Flammable Liquids or Class 9 materials. If these materials are encountered, the Project Manager (PM) will contact the TtEC Regulatory Specialist to prepare a USDOT Hazardous Materials Security Plan.

All TtEC and subcontractor personnel involved in USDOT Hazardous Material Shipment activities will have been trained in accordance with USDOT Hazardous Material Regulations. All waste transporters and disposal/recycling facilities will be reviewed and approved by TtEC prior to disposal in accordance with TtEC Environmental Health and Safety (EHS) Procedure 1-4 - *Subcontractor Selection and Management.*

Additional procedures for transportation include, but are not limited to, the following:

- TtEC will utilize fully licensed, permitted, appropriate vehicles and operating practices to prevent spillage or leakage of contaminated material from occurring en-route.

- TtEC will not deliver waste to any facility other than the disposal facility(s) listed on the shipping manifest/bill of lading.

- TtEC will coordinate vehicle inspection, manifest review, and recording of quantities leaving the site with the Navy. These quantities will be verified with recorded quantities at the disposal facility(s). If any deviation between the two weight records occurs, the matter will be reported in a timely manner to the Resident Officer in Charge of Construction (ROICC) and Navy Technical Representative (NTR).

- TtEC will use an approved designated transport route to haul waste off-site. This route will be determined based on facility requirements.

- TtEC will ensure that trucks are protected against contamination by properly covering and lining them with compatible material or by decontaminating them prior to any use other than hauling contaminated materials.

- Liquid-containing drums, if generated, will be sealed by TtEC or its subcontractor in a manner such that tampering with the contents cannot occur without breaking the seal.

- The designated NWIRP representative will sign the manifest as the generator. Copies of all final completed manifests will be submitted to the NWIRP Bethpage representative within one week after removal of waste from the site. The Navy will review waste profiles before wastes are shipped off-site.

5.0 OFF-SITE DISPOSAL

Procedures for off-site disposal include, but are not limited to, the following:

- TtEC will use only approved treatment, disposal, and/or recycling facilities. All facilities and transporters will be approved prior to use in accordance with TtEC EHS Procedure 1-4 *Subcontractor Selection and Management*). Substitutions or additions will not be permitted without prior written approval from the Navy.

- TtEC will ensure that the facility is properly permitted to accept the stated material and that the facility provides the stated treatment and/or disposal services.

6.0 RECORDKEEPING

TtEC will obtain manifest forms and complete the shipment manifest records as required by the appropriate regulatory agencies for verifying the material type (Code No.) and quantity of each load in unit of volume and weight. Copies of each manifest will be submitted to the Navy within one week following shipment, and as soon as possible after notification of receipt of the disposal facility. Copies of the manifests and all waste documentation will be retained in the TtEC project file and will be returned to the client with the project closeout report. Any manifest discrepancies will be reported immediately to the Navy ROICC and NTR, and will be resolved by TtEC.

TtEC will maintain a Drum/Container Log for all wastes generated. The log will contain the date and location where the waste was generated, the waste name, the waste classification, the sampling date (if applicable), shipment date, and manifest/bill of lading number. A Daily Shipment Log that documents each day's off-site waste shipments will be maintained. Both logs will be retained in the project file.

TtEC will maintain in the project file copies of all waste documentation including drum/container inventory and inspection forms, waste characterization analyses and waste determinations, waste profile sheets and waste manifests/shipping papers for all waste shipments. TtEC will maintain a tickler file on the project site for all waste manifests. Copies of the outgoing manifests will be maintained in the project file, which will be checked weekly. TtEC will review final manifest copies returned from the disposal facility and match them with the initial copies. Both copies will be retained in the project file. If the returned manifest copy has not been received within 30 days after the shipment date, TtEC will contact the disposal facility to obtain the copy. If the manifest copy is not received within 45 days after the shipment date, TtEC will contact the Navy and will prepare a Manifest Discrepancy letter, which will be signed by the Navy and sent to the USEPA Region II Regional Administrator.

Waste drum/container storage areas will be inspected weekly, and will be documented either in the project notebooks or on a TtEC Drum/Container Inspection Sheet. Deficiencies will be corrected immediately.

7.0 HAZARDOUS MATERIALS

Hazardous materials are not expected to be encountered or generated during this project. However, if hazardous materials are encountered, TtEC will notify the Contracting Officer and ROICC. In the unlikely event that hazardous waste is generated, it will be stored, handled, transported, and disposed in accordance with federal, state, and local regulations.

Appendix A

Drawing C-4 – Groundwater Treatment Plant Piping and Utility Route Detail

NOTES:

1. SEE NOTES ON DRAWING C-2.
2. FOR CONCRETE PULL BOX SEE DETAIL 1 ON DRAWING E-4.
3. FOR RECOVERY WELL CONSTRUCTION DETAILS, SEE DETAIL 1 ON DRAWING C-10.
4. FOR LEAK DETECTION ACCESS PORT DETAILS, SEE DETAIL 5 ON DRAWING C-10.

REFERENCE:

L. K. McLEAN ASSOCIATES, P.C.
437 SO. COUNTRY ROAD, BROOKHAVEN, NY
TOPOGRAPHIC SURVEY, NAVAL WEAPONS INDUSTRIAL RESERVE PLANT,
GM-38 AREA, FILE # 04033.000
AUGUST 2, 2004

LEGEND:

- EXISTING GRADE-MAJOR CONTOUR
- EXISTING GRADE-MINOR CONTOUR
- PROPOSED GRADE
- TAX LOT LINE
- OVERHEAD ELECTRIC WIRES
- UNDERGROUND ELECTRIC WIRES
- WATER MAIN
- GAS MAIN
- DRAINAGE LINES (STORM SEWER)
- SANITARY SEWER MAIN
- WOODED AREA
- CHAIN-LINK OR BOARD FENCE
- DIRT TRAIL
- LIMITS OF CLEARING
- SILT FENCE
- NEW UNDERGROUND ELECTRIC WIRES
- NEW WATER LINE
- NEW SANITARY SEWER MAIN
- HDPE PIPE AND ELECTRICAL CONDUIT
- TAX LOT NUMBER
- WATER VALVE
- GAS VALVE
- MONITORING WELL
- RECOVERY WELL
- INJECTION WELL
- PB = PULL BOX
- LEAK DETECTION ACCESS PORT
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- WHITE PINE TREE LOCATION
- SIGN
- MANHOLE
- GRAVEL
- TEMPORARY ACCESS ROAD
- PUBLIC WATER SUPPLY WELL

GRAPHIC SCALE

TETRA TECH EC, INC.

REV	DESCRIPTION	PREP BY	DATE	APPR'VD

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY - NORTHEAST

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

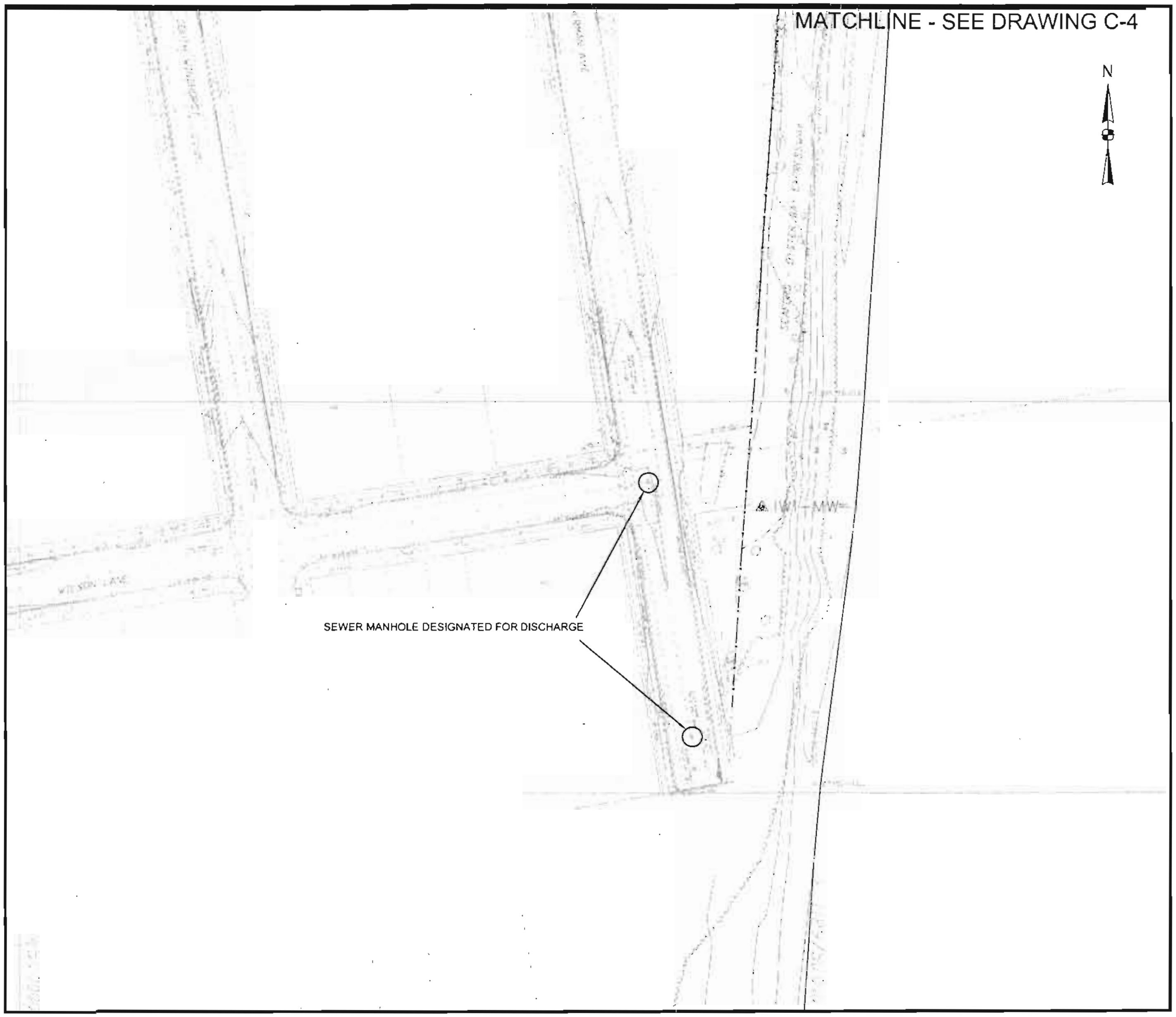
GM-38 AREA
GROUNDWATER TREATMENT PLANT
PIPING AND UTILITY ROUTE DETAIL (SHEET 2 OF 3)

CONSTR. CONTR. NO. N62472-99-D-0032

SIZE D
DWG. NO. WMP-4

Appendix B

Drawing C-5 – Groundwater Treatment Plant Piping and Utility Route Detail



NOTES:

1. SEE NOTES ON DRAWING C-2.
2. FOR INJECTION WELLHEAD VAULT CONSTRUCTION DETAILS, SEE DETAIL 2 ON DRAWING C-10.
3. INJECTION WELL IW-1 IS CURRENTLY EXISTING. INJECTION WELLS NOS. 2 THROUGH 4 ARE TO BE INSTALLED DURING CONSTRUCTION PHASE. LOCATIONS OF THE INJECTION WELLS (3) TO BE INSTALLED ARE APPROXIMATE AND MAY BE ADJUSTED BASED ON REQUIREMENTS OF PROPERTY OWNERS (NYS DOT).

REFERENCE:

L. K. McLEAN ASSOCIATES, P.C.
437 SO. COUNTRY ROAD, BROOKHAVEN, NY
TOPOGRAPHIC SURVEY, NAVAL WEAPONS INDUSTRIAL RESERVE PLANT,
GM-38 AREA, FILE # 04033.000
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- EXISTING GRADE–MAJOR CONTOUR
- EXISTING GRADE–MINOR CONTOUR
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- WOODED AREA
- CHAIN–LINK OR BOARD FENCE
- DIRT TRAIL
- LIMITS OF CLEARING
- SILT FENCE
- NEW UNDERGROUND ELECTRIC WIRES
- NEW WATER LINE
- NEW SANITARY SEWER MAIN
- HDPE PIPE AND ELECTRICAL CONDUIT
- TAX LOT NUMBER
- WATER VALVE
- GAS VALVE
- RW1–MW–1 MONITORING WELL
- RW–1 RECOVERY WELL
- INJECTION WELL
- PB PULL BOX
- LEAK DETECTION ACCESS PORT
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- WHITE PINE TREE LOCATION
- SIGN
- MANHOLE
- GRAVEL
- TEMPORARY ACCESS ROAD
- PUBLIC WATER SUPPLY WELL

GRAPHIC SCALE

SCALE: 1 INCH = 30 FEET

REV	DESCRIPTION	PREP BY	DATE	APPRVD

TETRA TECH EC, INC.

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY – NORTHEAST
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK
GM-38 AREA
GROUNDWATER TREATMENT PLANT
PIPING AND UTILITY ROUTE DETAIL (SHEET 2 OF 3)

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SCALE: AS SHOWN	
SPEC. NO.	
CONSTRN. CONTR. NO.	N62472-99-D-0032
NAVFAC DRAWING NO.	
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SIZE: D	WS. DR. NO. WMP-5