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FINAL WORK PLAN FOR FREE PRODUCT ASSESSMENT SITE 1116 OLF OUTLYING
LANDING FIELD BRONSON NAS PENSACOLA FL
06/01/2014
TETRA TECH INC

Comprehensive Long-term Environmental Action Navy

CONTRACT NUMBER N62470-08-D-1001



Final Work Plan For Free-Product Assessment Site 1116 Outlying Landing Field Bronson

Naval Air Station Pensacola
Pensacola, Florida

Contract Task Order JM51

June 2014



661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220

FINAL
WORK PLAN FOR FREE-PHASE PRODUCT ASSESSMENT
SITE 1116

OUTLYING LANDING FIELD BRONSON
PENSACOLA, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Prepared for:
Naval Facilities Engineering Command
Southeast
NAS Jacksonville
Jacksonville, Florida 32212-0030

Prepared by:
Tetra Tech
234 Mall Boulevard, Suite 260
King of Prussia, Pennsylvania 19406

CONTRACT NO. N62470-08-D-1001
CONTRACT TASK ORDER JM51

JUNE 2014

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ACRONYMS

bls	below land surface
CAR	Contamination Assessment Report
DOT	Department of Transportation
DPT	direct push technology
FDEP	Florida Department of Environmental Protection
GCTL	Groundwater Cleanup Target Level
IDW	investigation-derived waste
KAG	kerosene analytical group
LIF	Laser Induced Fluorescence
NPWC	Navy Public Works Center
OLF	Outlying Landing Field
OVA	organic vapor analyzer
PAH	polycyclic aromatic hydrocarbon
PVC	polyvinyl chloride
RAP	Remedial Action Plan
SARA	Site Assessment Report Addendum
SRCO	Site Rehabilitation Completion Order
SOP	standard operating procedure
TarGOST®	Tar-specific Green Optical Screening Tool
UST	underground storage tank
UVOST®	Ultraviolet Optical Screening Tool
WRS	WRS Infrastructure & Environment, Inc.

1.0 INTRODUCTION

This Work Plan for a free-phase product assessment was prepared for Naval Facilities Engineering Command Southeast under the Comprehensive Long-term Environmental Action Navy, Contract Number N62470-08-D-1001, Contract Task Order JM51. This Work Plan presents the technical approach and methods that will be used to conduct the assessment of free-phase petroleum at Site 1116 of the Outlying Landing Field (OLF) Bronson, hereafter referred to as Bronson Field in Pensacola, Florida.

The free-phase petroleum at Bronson Field Site 1116 is likely from a past release of Bunker C fuel at the site. Bunker C fuel oil is a viscous, black liquid similar in appearance and odor to asphalt sealing compounds and has been generally described as a thick and sticky residual fuel. Bunker C fuel oil has a specific gravity less than 1.0 and consequently will float in water. As such, it is considered a light non-aqueous phase liquid. As the oil ages, it becomes heavier; however, the oil will continue to float under most conditions. Upon contact with sediment or sand the fuel oil may adhere together and form cohesive globules or lumps.

1.1 SITE DESCRIPTION

Bronson Field is located in Escambia County in northwest Florida east of Perdido Bay approximately five miles west of Naval Air Station Pensacola, Florida and approximately one mile south of the Alabama state line (Figure 1-1). Bronson Field comprises approximately 950 acres and includes four abandoned airstrips, seaplane ramps, and the remains of former support buildings for the airfield. Bronson Field is currently known as the Blue Angel Recreation Park and is used for recreation purposes including camping and leisure activities operated by the Morale, Welfare, and Recreation personnel. Site 1116 is located within Bronson Field just southwest of Site 104, the former hangars (Figure 1-2). Currently, Site 1116 and immediate surrounding area are used for a Frisbee® golf course.

1.2 PURPOSE

Former Building 1116 at Bronson Field was designated on historic facility maps as a Boiler House. There were four underground fuel oil storage tanks and one butane tank associated with the site (Figure 1-3). Several previous investigations and two soil removal events have been performed and a Site Rehabilitation Completion Order (SRCO) was issued by the Florida Department of Environmental Protection (FDEP) for Site 1116 on August 25, 2005 (Appendix A). However, monitoring wells at Site 1116 were not abandoned per the SRCO. The Site 1116 monitoring wells were inspected in February 2013 as part of the facility-wide monitoring well inventory. During this well inspection, free-phase product was discovered in monitoring well MW-1. After confirming the presence of the free-phase product the Navy, in correspondence dated June 5,

2012, provided the Florida Department of Environmental Protection (FDEP) notification of the discovery of free-phase product at Site 1116. Because the free-phase product sticks to the sides of measuring devices (e.g., electric probes, measuring tapes, bailers) the thickness has not been determined. Therefore, the purpose of the proposed work is to determine the lateral and vertical extent of free-phase product in the vicinity of monitoring well MW-1 at Site 1116.

The lateral and vertical extent data of the free-phase product found at Site 1116 will be used to develop a remedial work plan that will provide the results of the free-phase product assessment by Laser Induced Fluorescence (LIF) and evaluate remedial alternative using conventional excavation with dewatering or large diameter augers. However, if free-phase product is not found, the Bronson Field Project Team will convene to determine a path forward.

1.3 PROJECT GUIDANCE

The proposed investigation will follow the methods and procedures in accordance with the following documents:

- *FDEP Standard Operating Procedures (SOPs) for Field Activities*. DEP-SOP-001/01. December 3, (FDEP, 2008).
- Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan), Site Assessment at Site 103 - Bronson Field Flight Line, Site 104 - Bronson Field Hangars, Site 105 - Bronson Field Parts Yard, Bronson Field, Pensacola, Florida. January
- Health and Safety Plan for Remedial Investigation and Feasibility Study at OLF Bronson Sites 103, 104, 105, Pensacola, Florida, Contract Task Order JM51. April

2.0 SITE BACKGROUND AND PREVIOUS ACTIONS

The original identification of the site was in June 1994, when Navy Public Works Center (NPWC) personnel discovered petroleum impacted soil at the site during removal of four fuel oil tanks and one butane tank. The four fuel oil tanks were believed to be approximately 50-years old and used for the storage of Bunker C fuel oil. Approximately 200 cubic yards of petroleum impacted soil were removed during the tank removal and disposed of at a permitted thermal treatment facility and the excavation was back-filled with clean soil. A closure assessment was performed during the removal of the underground tanks, but groundwater samples were not collected (NPWC, 1997).

2.1 PREVIOUS INVESTIGATIONS

Previous investigations include a Contamination Assessment Report (CAR) by the NPWC in March 1997, a Site Assessment Report Addendum (SARA) and SARA II by Tetra Tech in March 2001 and February 2002, respectively, and a Remedial Action Plan (RAP) by Tetra Tech in August 2002.

The above investigations concluded the following:

- A free-phase product plume appeared to extend over an approximate 2,250-square foot area; the approximate maximum thickness was 2.5-feet.
- The depth to groundwater ranged from 12.15 to 15.85 feet below land surface (bls).
- Groundwater flow was typically to the southwest.
- Soil samples from 13 soil borings contained organic vapor analyzer (OVA) responses that exceeded the Florida limit of 50 parts per million (ppm) for kerosene analytical group (KAG) products.
- Based upon elevated OVA readings (greater than 50 ppm) in the area of the former underground fuel tanks, soil contamination appeared to exist within the “smear zone”, approximately 10 to 16-foot bls.
- Free-phase product was present in the monitoring wells MW-1 and MW-7.
- Groundwater samples for monitoring well MW-4 indicated that the Florida groundwater cleanup target level (GCTL) for total recoverable petroleum hydrocarbons was exceeded.
- Slug test results indicated the estimated horizontal hydraulic conductivity at Site 1116 to be 0.6899 feet per day.
- The calculated linear groundwater flow velocity at Site 1116 was estimated to be 0.0069 feet/day or 2.5181 feet per year

2.2 SOURCE REMOVAL ACTIVITIES

WRS Infrastructure & Environment, Inc. (WRS) was tasked to remove contaminated media resulting from the release of Bunker C fuel oil from four underground storage tanks (USTs) at the OLF Bronson Site

1116, Pensacola, Florida (WRS, 2004). Because the USTs had been removed in June 1994, WRS's project objectives included: removal of the fuel oil and petroleum impacted soils, removal of free-phase product, disposal of all waste materials generated during the excavation activities, monitor well abandonment and installation, and restoration of the site to original condition.

At the time of project award, the expected depth to water at the site was 16 to 18 feet bls, allowing excavation of impacted media without the need for dewatering. Increased local and regional rainfall caused a sharp increase in the water table elevation (to approximately 10 to 12 feet bls). These events caused an approximate seven month delay in the project start date and prompted a contract modification. The modification allowed for a change in the method of execution (dewatering) of the proposed excavation plan, allowed for a time extension for the project completion date, and natural attenuation monitoring (NAM) activities of approximately five monitoring wells on a quarterly basis following a baseline sampling event. Figures from the WRS Fourth Quarter Monitoring Report are provided in Appendix B.

WRS prepared a Project Completion Report (September 2004) to document soil removal activities at Site 1116. Prior to soil excavation the concrete foundation of former Building 1116 and a concrete vault identified at the site were demolished and removed from the site. Contaminated soil was excavated to a depth of 16 feet bls over the 45 by 50 foot area and to a depth of 17 feet bls in the area extending west and north of the original excavation area (Figures from the WRS Project Completion Report are provided in Appendix C). During excavation the actual areal extent of petroleum affected soils was evaluated to extend beyond the proposed excavation area as outlined in the RAP (TtNUS, 2002); therefore, approximately 250 additional tons of petroleum was excavated. A total of 941 tons of contaminated soil was removed from Site 1116 and disposed of off-site. The Project Completion Report stated that all petroleum contaminated soil in the vadose zone and smear zone had been removed from the site as confirmed through field analysis using PetroFLAG analysis and offsite laboratory analysis.

During excavation, free-phase product seeped into the bottom of the excavation from the sidewalls and upwelled from the bottom of the excavation during soil removal (WRS, 2004). The free-phase product created a small oil slick on top of the groundwater in the bottom of the excavation. To remove the free-phase product, WRS added a PVC "stinger" pipe to the dewatering system header and this stinger was used to skim free-phase product from the surface of the groundwater in the excavation. Free-phase product and water were pumped into the frac tank located onsite. Absorbent pads in the frac tank were used to remove as much free-phase product as possible before the groundwater was pumped through the granular activated carbon cells prior to discharge. Free-phase product that adhered to soil in the bottom and sidewalls of the excavation was removed by WRS personnel with a shovel and loaded into dump trucks with other petroleum impacted material. Absorbent pads used to soak up free-phase product floating on groundwater were disposed of along with the product affected soil.

3.0 PROPOSED FREE PHASE PRODUCT ASSESSMENT

3.1 PROJECT OBJECTIVES

The objective of the proposed investigation is to conduct LIF profiling using the UVOST® (Ultraviolet Optical Screening Tool) or TarGOST® (Tar-specific Green Optical Screening Tool) at a sufficient number of locations to delineate the horizontal and vertical extent of free-phase product at Bronson Field Site 1116. Soil and groundwater samples will not be collected as part of this investigation.

3.2 TECHNICAL APPROACH

A sample of the free-phase product will be sent to Dakota Technologies, Inc. to determine which of the LIF technologies UVOST® or TarGOST®) would be most suited to characterize the horizontal and vertical extent of the free-phase product and residual petroleum contamination. The UVOST® is used to detect residual-phase semivolatile organic compounds in gasoline, diesel, kerosene, aviation fuel, machine oils, lubricants, and some crude oils. The TarGOST® is used to detect biodiesel, bunker, heavy distillates, crude oil, creosote, dripolene (olefin plant aromatic byproduct), and di(2-ethylhexyl)phthalate and bis(2-ethylhexyl)phthalate. The principal difference between the UVOST® and TarGOST® is the wavelength of the excitation light used. UVOST® uses a laser that emits light in the near-ultraviolet spectrum while TarGOST® uses a laser that emits light in the visible green spectrum. Brochures describing the UVOST® or TarGOST® are provided in Appendix D.

Based on the free-phase product analysis, the most appropriate LIF technology (either UVOST® or TarGOST®) will be used to provide real-time delineation of free-phase and petroleum related constituents in the subsurface at the site via a fiber optic-based sensor system. LIF is light at a specific wavelength generated from a laser that is passed down a fiber optic cable to a sapphire window in the tip of the direct push technology (DPT) rod string as it is advanced into the subsurface. The laser light excites two or three ring aromatic compounds, or PAHs, in the soil adjacent to the sapphire window causing them to fluoresce. The relative response of the sensor depends on the specific analyte being measured because of the varying ratios of PAHs in each hydrocarbon mixture. The induced fluorescence from the PAHs is returned over a second fiber to the surface, where it is quantified using a detector system. The peak wavelength and intensity provide information about the type of petroleum product. Readings will be logged and a computer log generated for each sample location providing PAH distributions with depth in the subsurface. This real-time data reduces level of uncertainty management as the results of the multiple sources of direct sensing information are simultaneously processed. The results can be displayed to field and/or office team members simultaneously.

A utility survey will be conducted prior to conducting the LIF-DPT borings. Each boring locations will be hand augured to a depth of 4 feet bls to further ensure utility clearance prior to advancing the LIF borings using DPT. The estimated total depth for each LIF-DPT boring is 25 feet bls; the actual boring depths may vary based on the real-time data.

Initially four LIF-DPT borings will be advanced in cardinal directions (north, east, south and west) around monitoring well MW-1 at a distance of approximately 5 feet (Figure 3-1). Based on the real-time data, subsequent LIF-DPT step-out borings will be conducted to determine the horizontal and vertical extent of the free-phase product. The additional step-out borings will be at distances of approximately 5, 12 or 25 feet from MW-1. The direction (north, east, south or west) of the additional LIF step-out borings relative to monitoring well MW-1 will also be based on the real-time data.

Location control for each LIF boring will be provided by using a GPS. The GPS used will have real time capability to measure horizontal coordinates using the World Geodetic System (1984, last revised in 2004) to within 1 to 3 meters accuracy.

4.0 DECONTAMINATION

Decontamination of major equipment and sampling equipment will be in general accordance with FC 1000, Cleaning/Decontamination Procedures (FDEP, 2008). The IDW generated during this investigation could potentially include excess water or soil material from the decontamination of the DPT and associated equipment, and personal protective equipment (PPE) and clothing. The IDW must be disposed in such a manner that does not contribute to further environmental contamination or pose a threat to public health or safety. Decontamination fluid will be containerized and stored in a DOT-approved 55-gallon drum. PPE and clothing will be wiped clean and disposed of in trash containers.

5.0 INVESTIGATION-DERIVED WASTE MANAGEMENT

Decontamination fluid will be containerized and stored in a DOT-approved 55-gallon drum. Each drum will be clearly marked with the following information or as otherwise directed by the base contact:

- Company name (Tetra Tech).
- Base contact (Greg Campbell) and phone number (850-452-3131 Extension 3007)
- Identification number (Tetra Tech-SSSS-XXX), where SSSS is the site identifier (e.g., 1116) and XXX is the boring number (e.g., 015).
- Material contained in the drum (e.g., decon water).
- Date the IDW was produced.
- Site designation (e.g. Site 1116).

The drum will be transported to a secured area designated by the Navy. Laboratory analysis will be conducted for hazardous waste characterization to assess disposal options for the IDW following completion of field activities at the site. Proper disposal of the waste will be performed by a licensed waste hauler after the analytical results of the drum contents are received from the laboratory. The Facility (NAS Pensacola or Bronson field personnel) is the generator and therefore will sign the waste manifest.

REFERENCES

Florida Department of Environmental Protection. 2008. Standard Operating Procedures (SOPs) for Field Activities. DEP-SOP-001/01. December

NPWC (Navy Public Works Center), 1997. Contamination Assessment Report – Site 1116, U.S. Navy Outlying Landing Field (OLF) Bronson, Pensacola, Florida. Prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina. March.

Tetra Tech (Tetra Tech NUS, Inc.), 2001. Site Assessment Report Addendum, For Site 1116 – Outlying Landing Field (OLF) Bronson, Pensacola, Florida. Prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina. March.

Tetra Tech, 2002. Site Assessment Report Addendum II, For Site 1116 – Outlying Landing Field (OLF) Bronson, Pensacola, Florida. Prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina. February.

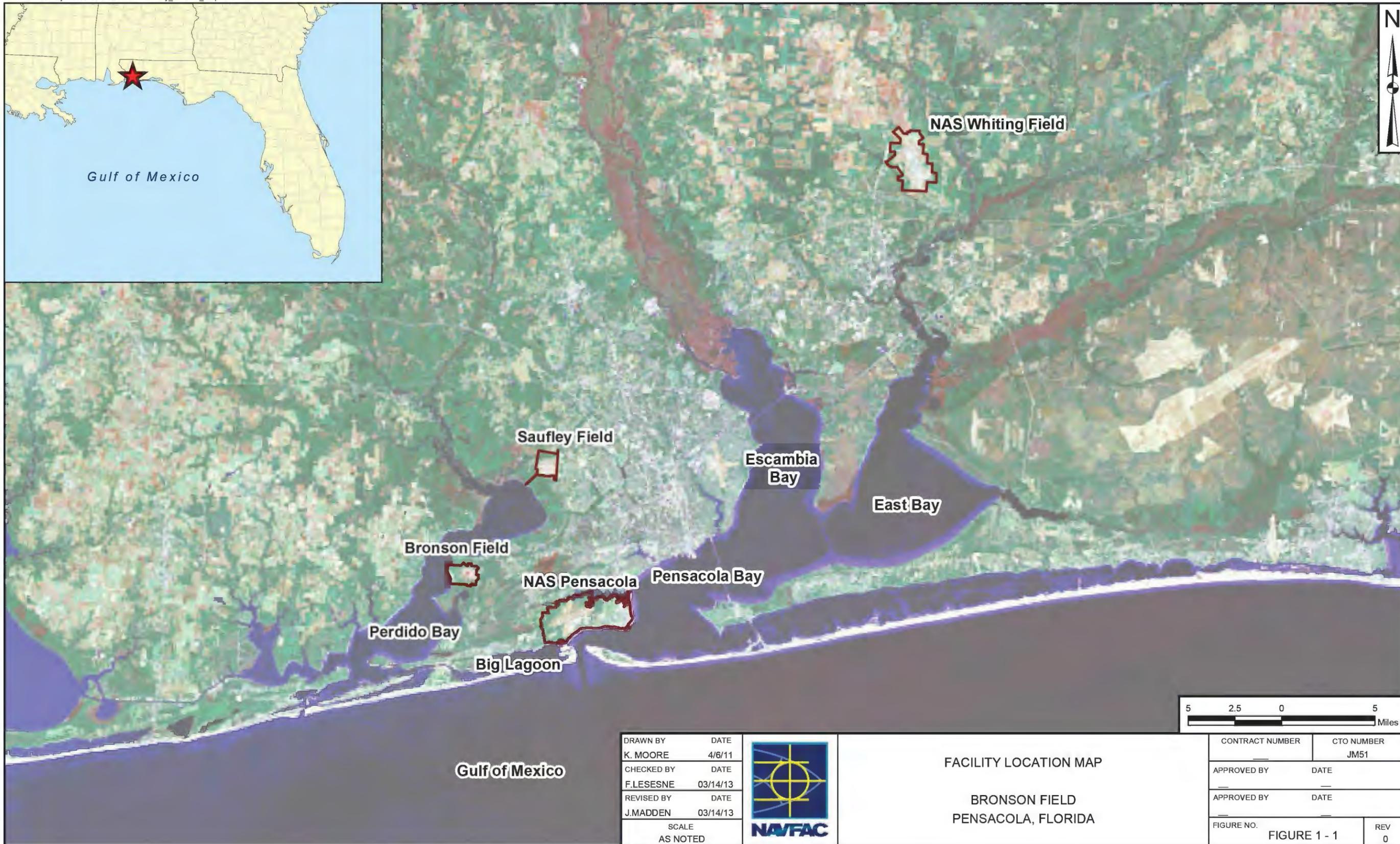
Tetra Tech, Inc., 2012. Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan), Site Assessment at Site 103 - Bronson Field Flight Line, Site 104 - Bronson Field Hangars, Site 105 - Bronson Field Parts Yard, Bronson Field, Pensacola, Florida. January

Tetra Tech, 2011. Health and Safety Plan for Remedial Investigation and Feasibility Study at OLF Bronson Sites 103, 104, 105, Pensacola, Florida, Contract Task Order JM51. April

Westinghouse Infrastructure & Environment, Inc. 2004. Project Completion Report, OLF BRONSON Site 1116, Outlying Landing Field (OLF) Bronson – Pensacola, Florida, Construction Contract # N62467-02-D-0480. September

FIGURES

JAX: M:\GIS\Projects\Bronson OLFM\XD\facility_location_map.mxd



DRAWN BY	DATE
K. MOORE	4/6/11
CHECKED BY	DATE
F. LESESNE	03/14/13
REVISOR BY	DATE
J. MADDEN	03/14/13

SCALE
AS NOTED



FACILITY LOCATION MAP

BRONSON FIELD
PENSACOLA, FLORIDA

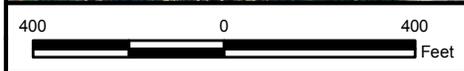


CONTRACT NUMBER	CTO NUMBER
	JM51
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO.	REV
FIGURE 1 - 1	0



Legend

Site Boundary



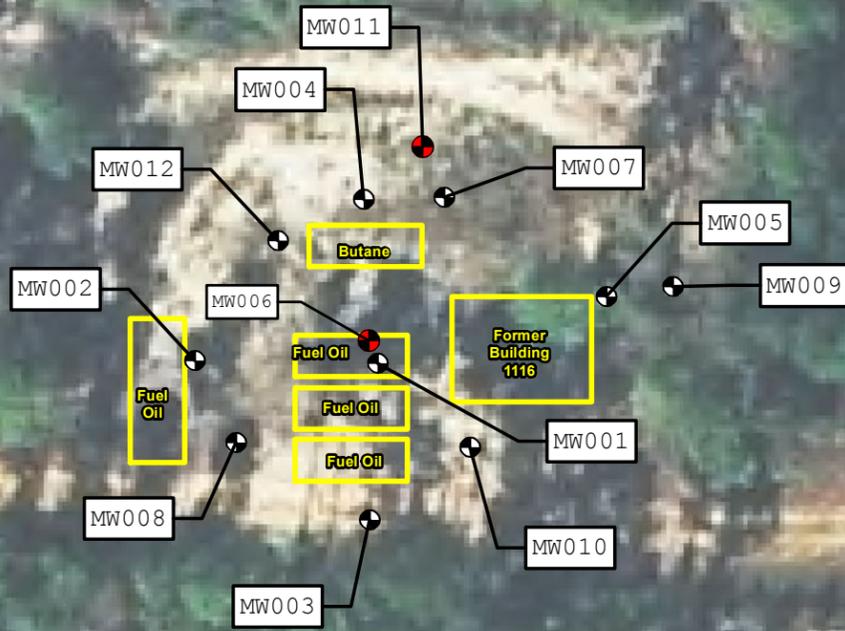
DRAWN BY	DATE
J.MADDEN	02/24/14
CHECKED BY	DATE
F.LESESNE	02/24/14
REVISED BY	DATE
SCALE AS NOTED	



SITE LOCATION MAP
OLF BRONSON FIELD
PENSACOLA, FLORIDA

CONTRACT NUMBER	CTO NUMBER
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APPROVED BY	DATE
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FIGURE NO.	REV
FIGURE 1-2	0

Aerial photograph taken in 2010.



Legend

- Site 1116 Monitoring Wells
- Monitoring Well Not Found
- Site Features



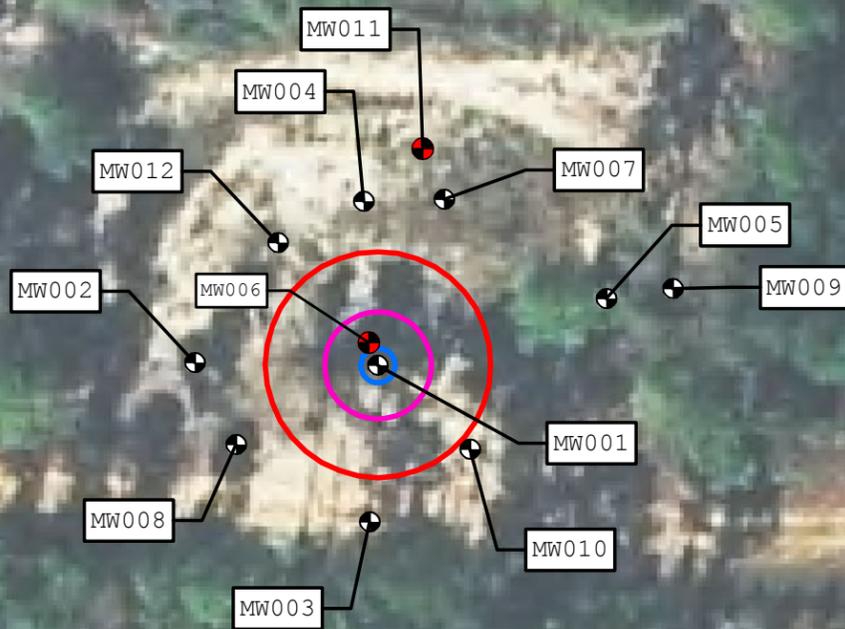
DRAWN BY	DATE
J.MADDEN	02/24/14
CHECKED BY	DATE
F. LESESNE	02/24/14
REVISED BY	DATE
SCALE AS NOTED	



SITE MAP
SITE 1116
NOLF BRONSON
PENSACOLA, FLORIDA

CONTRACT NUMBER	CTO NUMBER
---	JM51
APPROVED BY	DATE
---	---
APPROVED BY	DATE
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FIGURE NO.	REV
FIGURE 1-3	0

Aerial photograph taken in 2010.



Legend

- Site 1116 Monitoring Wells
- Monitoring Well Not Found
- 5-Foot Stepout from Monitoring Well MW-01
- 12-Foot Stepout from Monitoring Well MW-01
- 25-Foot Stepout from Monitoring Well MW-01

DRAWN BY	DATE
J.MADDEN	02/24/14
CHECKED BY	DATE
F. LESESNE	02/24/14
REVISED BY	DATE
SCALE AS NOTED	



PROPOSED LIF STEP OUT LOCATIONS
SITE 1116
NOLF BRONSON
PENSACOLA, FLORIDA

CONTRACT NUMBER	CTO NUMBER
	JM51
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO.	REV
FIGURE 3-1	0



APPENDIX A

Figures from the WRS Project Completion Report (September 2004)



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

August 25, 2005

Mr. Bill Hill
Southern Division NAVFACENGCOM
Post Office Box 190010
North Charleston, South Carolina 29419-9010

RE: Fourth Quarter Monitoring Report Outlying Landing Field Bronson Site 1116, Naval Air Station Pensacola, Florida

Dear Mr. Hill:

I have completed the technical review of the above referenced document dated July 30, 2004 (received August 4, 2004). The Natural Attenuation Report and Further Action Proposal for the subject site, are adequate to meet the requirements of Chapter 62-770, Florida Administrative Code (F.A.C.). Attached is the Site Rehabilitation Completion Order signed by Douglas Jones, Chief, Bureau of Waste Cleanup.

If I can be of any further assistance with this matter, please contact me at (850) 245-8998.

Sincerely,

Tracie L. Vaught
Remedial Project Manager

JHC JJC ESN



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

August 25, 2005

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Bill Hill
Southern Division NAVFACENGCOM
Post Office Box 190010
North Charleston, South Carolina 29419-9010

Subject: Site Rehabilitation Completion Order
OLF Bronson Site 1116
Outlying Landing Field (OLF) Bronson
Naval Air Station Pensacola
Escambia County

Dear Mr. Hill:

The Bureau of Waste Cleanup has reviewed the Project Completion Report dated April 2005 (received May 2, 2005), submitted for the petroleum product discharge discovered at this site. Documentation submitted with the Fourth Quarter Monitoring Report for the subject site confirms that criteria set forth in subsection 62-770 effective 04/17/05, have been met. Please refer to the attached map of the source property and analytical summary tables. The Fourth Quarter Monitoring Report is hereby incorporated by reference in this Site Rehabilitation Completion Order (Order). Therefore, you are released from any further obligation to conduct site rehabilitation at the site for petroleum product contamination, except as set forth below.

- (1) In the event concentrations of petroleum products' contaminants of concern increase above the levels approved in this Order, or if a subsequent discharge of petroleum or petroleum product occurs at the site, the Florida Department of Environmental Protection (Department) may require site rehabilitation to reduce concentrations of petroleum products' contaminants of concern to the levels approved in the Fourth Quarter Monitoring Report or otherwise allowed by Chapter 62-770, F.A.C.
- (2) Additionally, you are required to properly abandon all monitoring wells, except compliance wells required by Chapter 62-761, F.A.C., for release detection, within 60 days of receipt of this Order. The monitoring wells must be plugged and abandoned in accordance with the requirements of subsection 62-532.500(4), F.A.C.

"More Protection, Less Process"

Printed on recycled paper.

Mr. Bill Hill
August 25, 2005
Page Two

Legal Issues

The Department's Order shall become final unless a timely petition for an administrative hearing is filed under sections 120.569 and 120.57, Florida Statutes (F.S.), within 21 days of receipt of this Order. The procedures for petitioning for an administrative hearing are set forth below.

Persons affected by this Order have the following options:

- (A) If you choose to accept the Department's decision regarding the Fourth Quarter Monitoring Report you do not have to do anything. This Order is final and effective as of the date on the top of the first page of this Order.
- (B) If you choose to challenge the decision, you may do the following:
 - (1) File a request for an extension of time to file a petition for an administrative hearing with the Department's Agency Clerk in the Office of General Counsel within 21 days of receipt of this Order; such a request should be made if you wish to meet with the Department in an attempt to informally resolve any disputes without first filing a petition for an administrative hearing; or
 - (2) File a petition for an administrative hearing with the Department's Agency Clerk in the Office of General Counsel within 21 days of receipt of this Order.

Please be advised that mediation of this decision pursuant to section 120.573, F.S., is not available.

How to Request an Extension of Time to File a Petition for an Administrative Hearing

For good cause shown, pursuant to subsection 62-110.106(4), F.A.C., the Department may grant a request for an extension of time to file a petition for an administrative hearing. Such a request must be filed (received) by the Department's Agency Clerk in the Office of General Counsel at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000, within 21 days of receipt of this Order. Petitioner, if different from Naval Facilities Engineering Field Division South, shall mail a copy of the request to Naval Facilities Engineering Field Division South at the time of filing. Timely filing a request for an extension of time tolls the time period within which a petition for an administrative hearing must be made.

How to File a Petition for an Administrative Hearing

A person whose substantial interests are affected by this Order may petition for an administrative hearing under sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) by the Department's Agency Clerk in the Office of General Counsel at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000, within 21 days of receipt of this Order. Petitioner, if different from Naval Facilities Engineering Field Division South, shall mail a copy of the petition to Naval Facilities Engineering Field Division South at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under sections 120.569 and 120.57, F.S.

Pursuant to subsection 120.569(2), F.S. and rule 28-106.201, F.A.C., a petition for an administrative hearing shall contain the following information:

- (a) The name, address, and telephone number of each petitioner; the name, address, and telephone number of the petitioner's representative, if any; the facility owner's name and address, if different from the petitioner; the FDEP facility number, and the name and address of the facility;
- (b) A statement of when and how each petitioner received notice of the Department's action or proposed action;
- (c) An explanation of how each petitioner's substantial interests are or will be affected by the Department's action or proposed action;
- (d) A statement of the disputed issues of material fact, or a statement that there are no disputed facts;
- (e) A statement of the ultimate facts alleged, including a statement of the specific facts the petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the Department to take with respect to the Department's action or proposed action.

This Order is final and effective as of the date on the top of the first page of this Order. Timely filing a petition for an administrative hearing postpones the date this Order takes effect until the Department issues either a final order pursuant to an administrative hearing or an Order Responding to Supplemental Information provided to the Department pursuant to meetings with the Department.

Judicial Review

Any party to this Order has the right to seek judicial review of it under section 120.68, F.S., by filing a notice of appeal under rule 9.110 of the Florida Rules of

Mr. Bill Hill
August 25, 2005
Page Four

Appellate Procedure with the Department's Agency Clerk in the Office of General Counsel at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days after this Order is filed with the Department's clerk (see below).

Questions

Any questions regarding the Department's review of your Fourth Quarter Monitoring Report should be directed to Tracie Vaught at (850) 245-8998. Questions regarding legal issues should be referred to the Department's Office of General Counsel at (850) 245-2242. Contact with any of the above does not constitute a petition for an administrative hearing or a request for an extension of time to file a petition for an administrative hearing.

Sincerely,



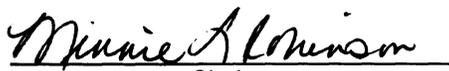
Douglas A. Jones, Chief
Bureau of Waste Cleanup
Division of Waste Management

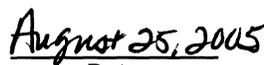
DAJ/tv

Attachments

cc: Tracie Vaught, FDEP – BWC
File

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to
§120.52 Florida Statutes, with the
designated Department Clerk, receipt
of which is hereby acknowledged.


Clerk
(or Deputy Clerk)

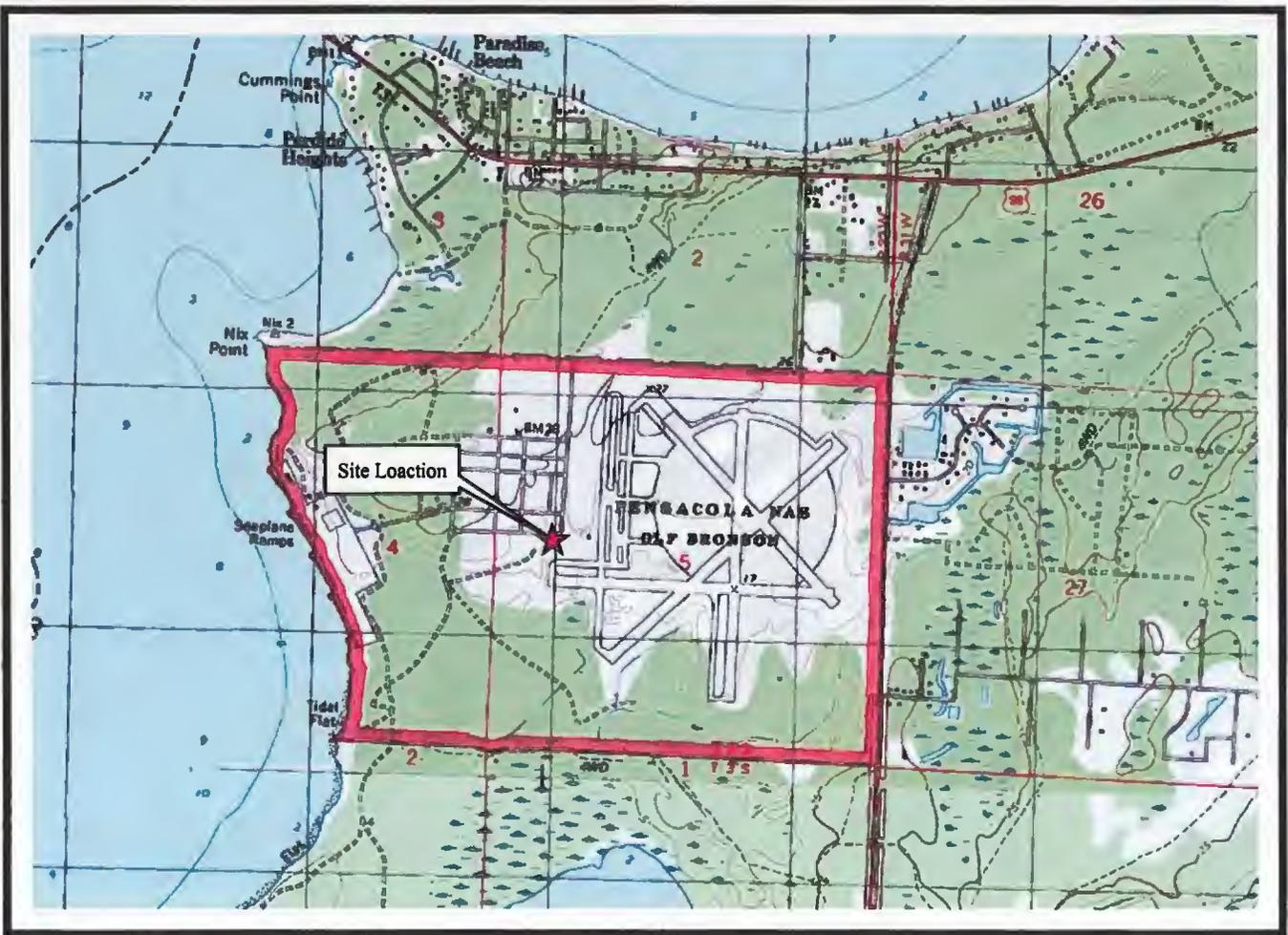
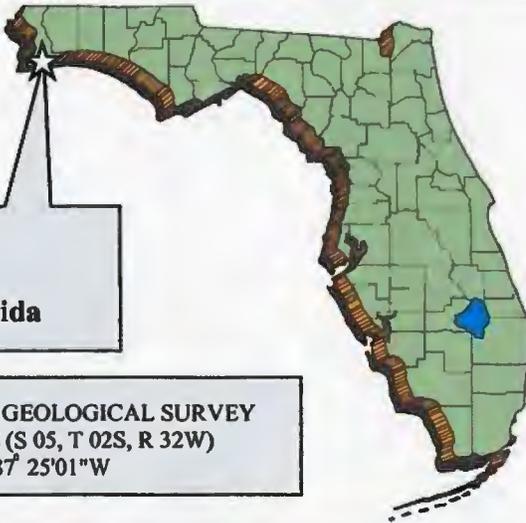

Date

APPENDIX B

Figures from the WRS Fourth Quarter Monitoring Report (April 2005)

**Site Location:
Pensacola,
Escambia County, Florida**

SOURCE: UNITED STATES GEOLOGICAL SURVEY
LILIAN QUADRANGLE (S 05, T 02S, R 32W)
30° 23' 03" N, 87° 25' 01" W



DRAWING STATUS DRAFT FINAL

PROJECT NO.: 303611	CADD ID: 303611G001	PROJECT MANAGER: DALE FRIERSON	PLOT DATE: 03/21/05	CHK BY: K.G.	CHK DATE: 03/21/05
REVISION NO.:	REVISION DATE:	DRN BY: D.B.H.	DRN DATE: 03/21/05	APPVD BY: D.F.	APPVD DATE: 03/21/05



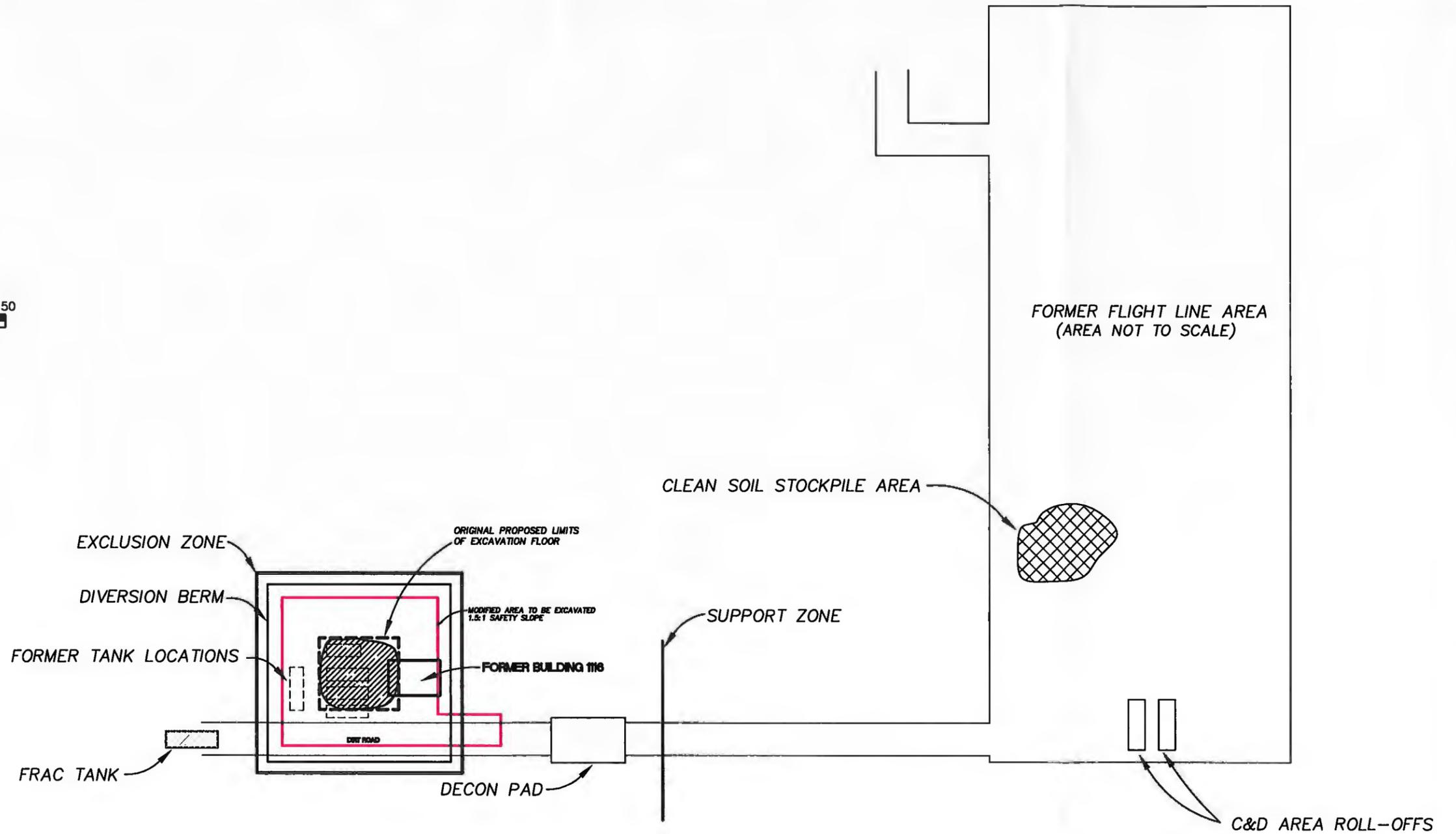
**WRS Infrastructure &
Environment, Inc.**

221 HOBBS STREET, SUITE 108, TAMPA, FLORIDA 33619
PH: (813) 684-4400 FAX: (813) 684-9177

**FIGURE 1
SITE VICINITY MAP
FOURTH QUARTERLY MONITORING REPORT
OLF BRONSON, SITE 1116
PENSACOLA, ESCAMBIA COUNTY, FLORIDA
EMAC, REGION 4, FLORIDA ONLY
CONTRACT NUMBER N62467-02-D-0480**



0 75 150
 APPROXIMATE SCALE: 1"=75'



DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	DALE FRIERSON		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611G001	PLOT DATE:	03/21/05
DRN BY:	D.B.H.	DRN DATE:	03/21/05
CHK BY:	K.G.	CHK DATE:	03/21/05
APPVD BY:	D.F.	APPVD DATE:	03/21/05



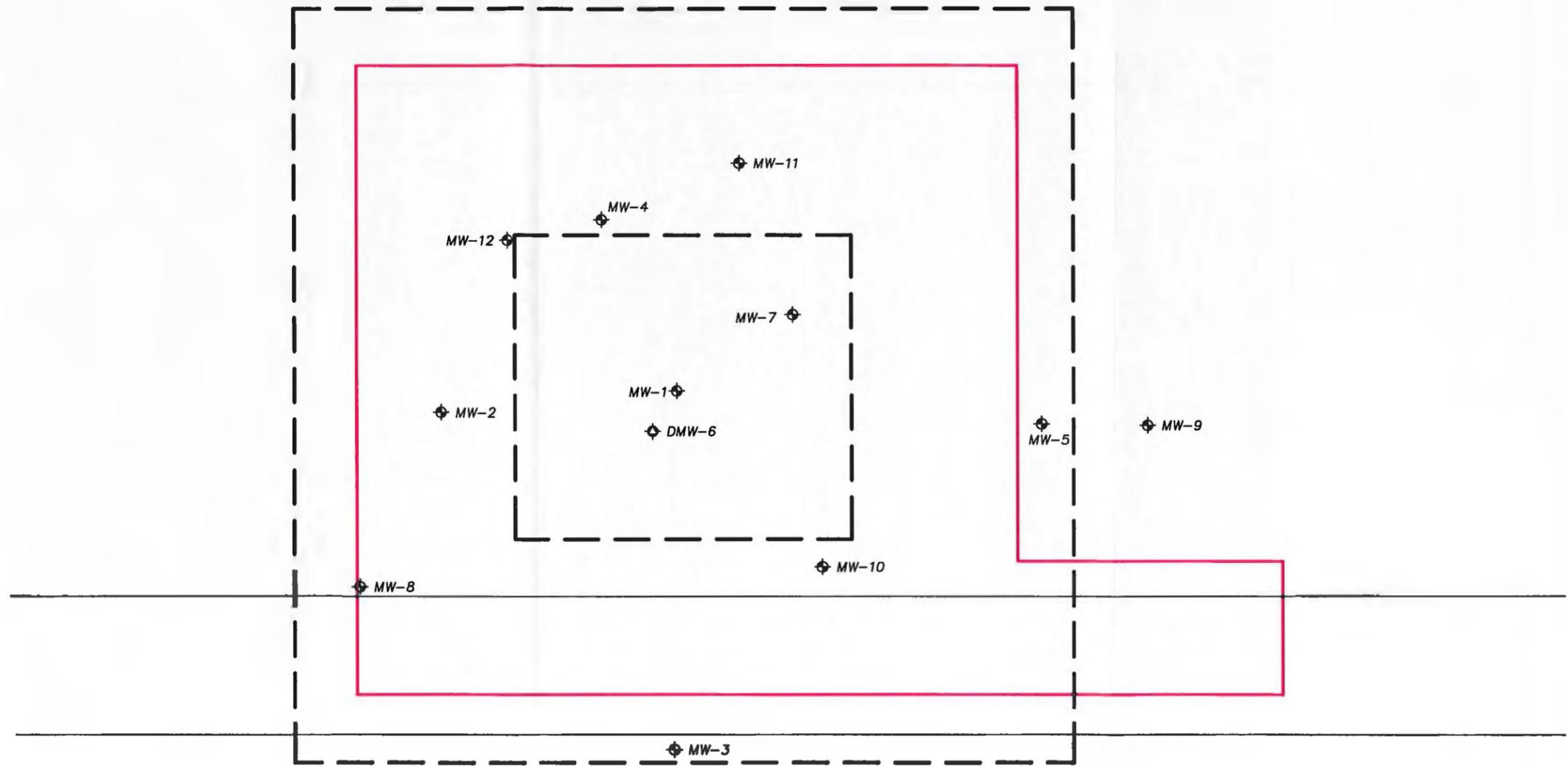
WRS Infrastructure & Environment, Inc.

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 PH: (813) 684-4400 FAX: (813) 684-9177

FIGURE 2
SITE MAP
 FOURTH QUARTERLY MONITORING REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



0 20 30 40
 APPROXIMATE SCALE: 1"=20'



LEGEND:	
⊕	MONITOR WELL LOCATION (MW)
⊕	DEEP MONITOR WELL LOCATION (DMW)

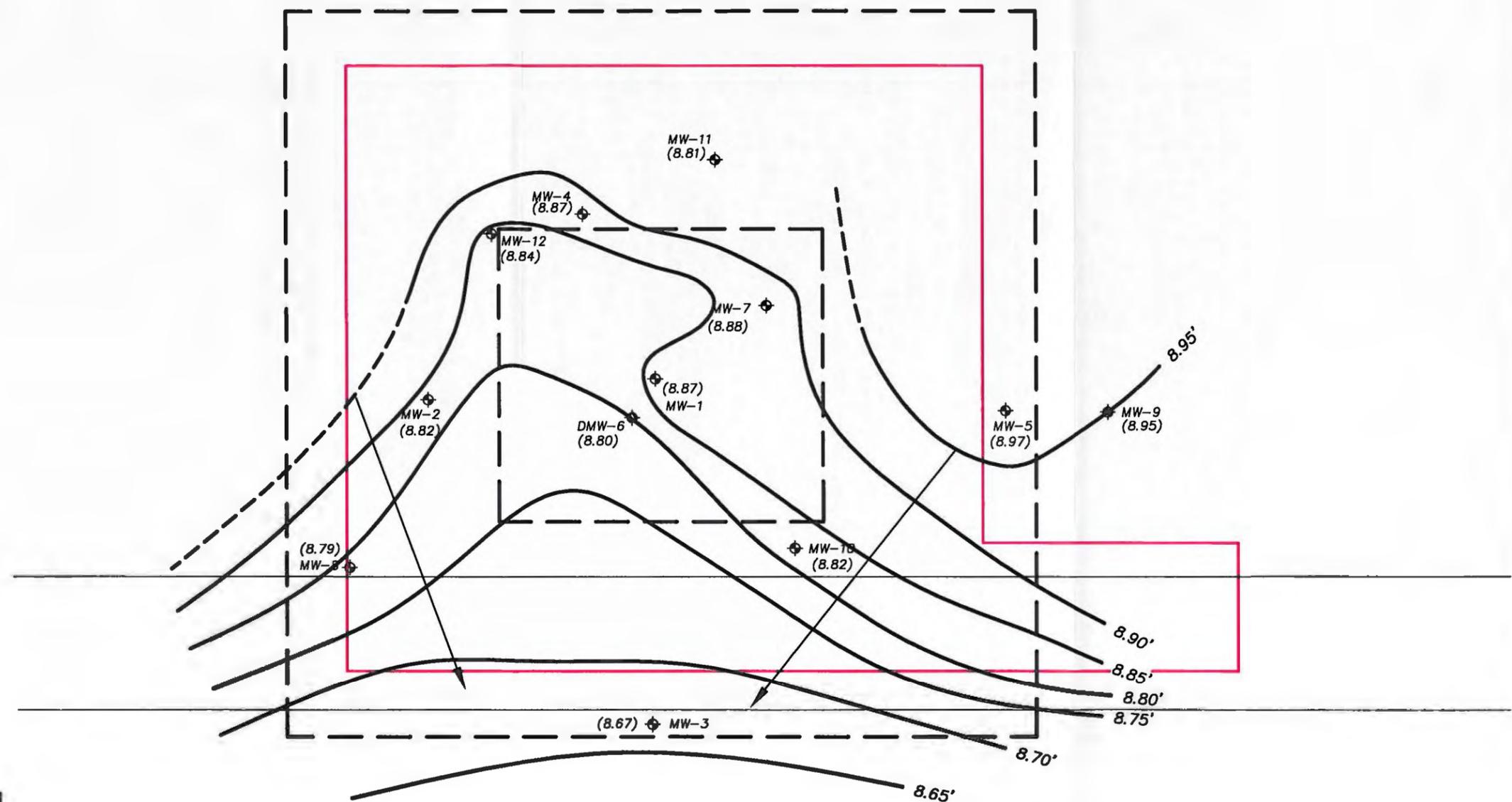
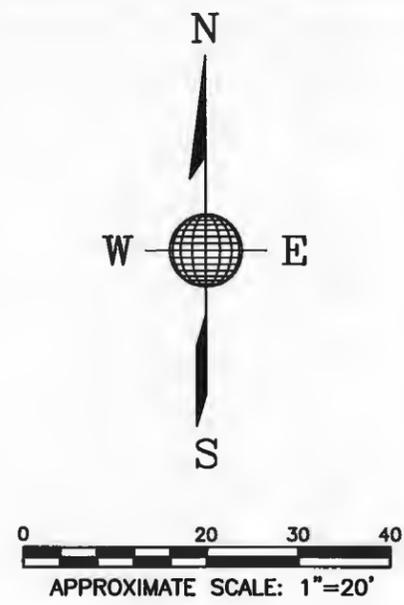
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PROJECT NO. : 303611			
PROJECT MANAGER: DALE FRIERSON			
SCALE: AS SHOWN			
REVISION NO.: 0	REV DATE:		
CADD ID: 303611G002	PLOT DATE: 03/21/05		
DRN BY: D.B.H.	DRN DATE: 03/21/05		
CHK BY: K.G.	CHK DATE: 03/21/05		
APPVD BY: D.F.	APPVD DATE: 03/21/05		



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FIGURE 3
MONITOR WELL LOCATION MAP
 FOURTH QUARTERLY MONITORING REPORT
 OLF BRONSON, SITE 1118
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



LEGEND:

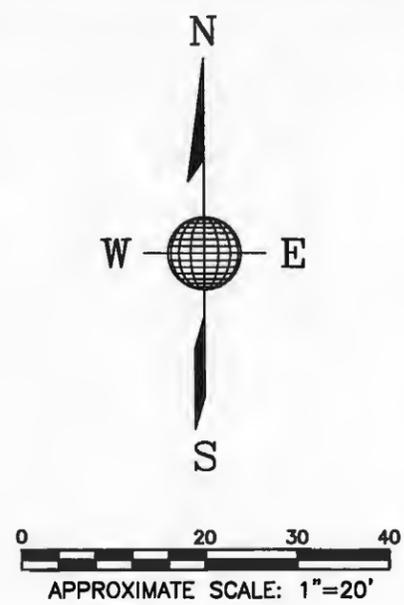
- ◆ MONITOR WELL LOCATION (MW)
- ◆ DEEP MONITOR WELL LOCATION (DMW)
- (8.79) GROUNDWATER ELEVATION (FEET NGVD)
- GROUNDWATER POTENTIOMETRIC CONTOUR LINE (DASHED WHERE INFERED)
- GROUNDWATER FLOW DIRECTION
- (NM) NOT MEASURED

DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	DALE FRIERSON		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611G003	PLOT DATE:	03/21/05
DRN BY:	D.B.H.	DRN DATE:	03/21/05
CHK BY:	K.G.	CHK DATE:	03/21/05
APPVD BY:	D.F.	APPVD DATE:	03/21/05

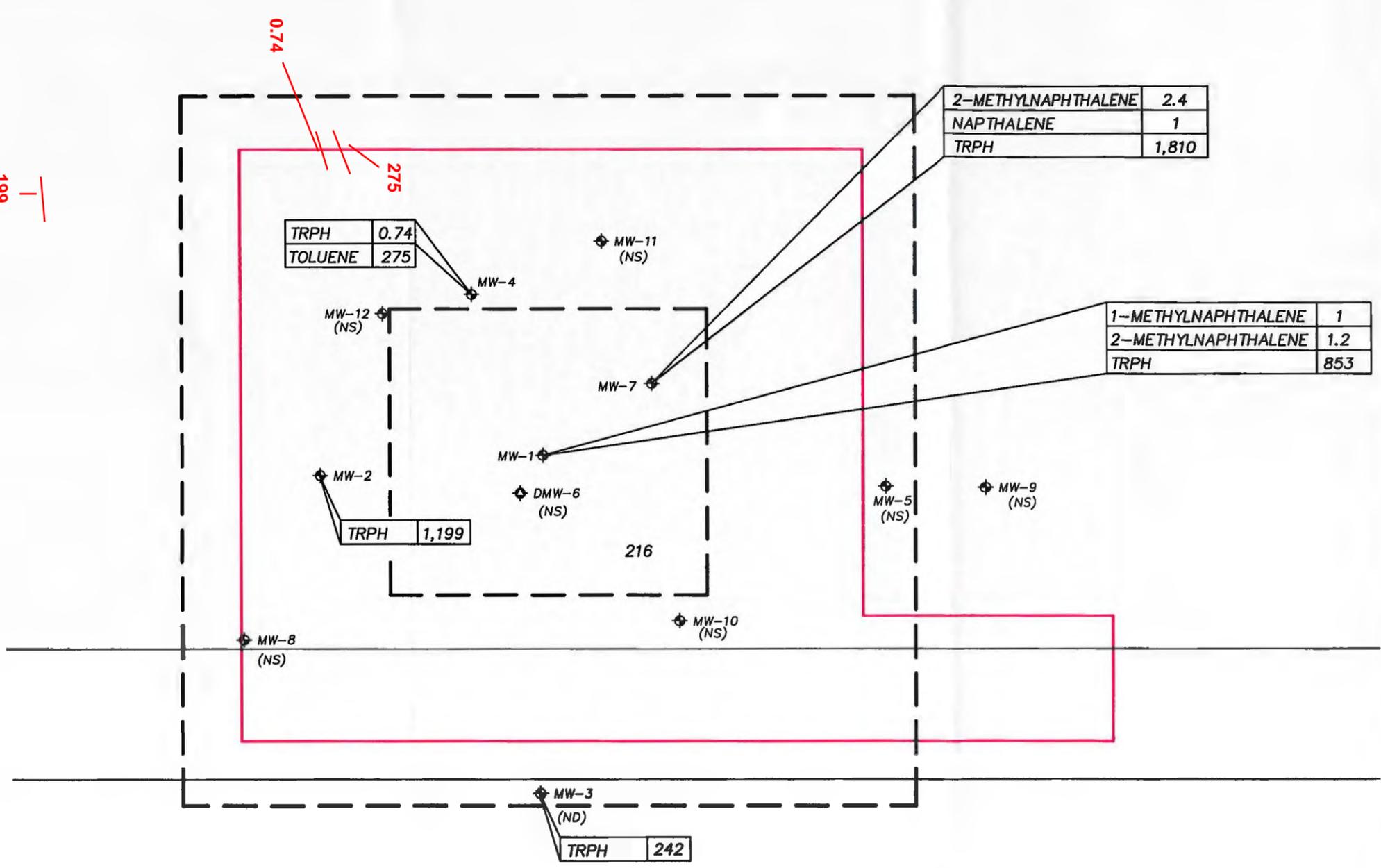


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FIGURE 4
 GROUNDWATER POTENTIOMETRIC SURFACE MAP
 FEBRUARY 4, 2005
 FOURTH QUARTERLY MONITORING REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



199



LEGEND:

- ◆ MONITOR WELL LOCATION (MW)
- ◆ DEEP MONITOR WELL LOCATION (DMW)

CONTAMINANT	GCTL	NADC
1-METHYLNAPHTHALENE	20	200
2-METHYLNAPHTHALENE	20	200
NAPHTHALENE	20	200
TRPH	5,000	50,000
TOLUENE	40	400
FLOURINE	280	2,800
PHENANTHRENE	210	2,100

GCTL = FDEP GROUNDWATER CLEANUP TARGET LEVEL BASED ON GROUNDWATER CRITERIA FROM FDEP CHAPTER 62-777, FAC, TABLE 1

NADC = FDEP NATURAL ATTENUATION DEFAULT CONCENTRATION FROM CHAPTER 62-777, FAC, TABLE V

ALL CONCENTRATIONS EXPRESSED IN MICROGRAMS PER LITER (µg/L)

ONLY ANALYTES WITH CONCENTRATIONS GREATER THAN THE LABORATORY MDL'S ARE LISTED

DRAWING STATUS	DRAFT	FINAL <input checked="" type="checkbox"/>
PROJECT NO. :	303611	
PROJECT MANAGER:	DALE FRIERSON	
SCALE:	AS SHOWN	
REVISION NO.:	0	REV DATE:
CADD ID:	303611G004	PLOT DATE:
DRN BY:	D.B.H.	DRN DATE:
CHK BY:	K.G.	CHK DATE:
APPVD BY:	D.F.	APPVD DATE:

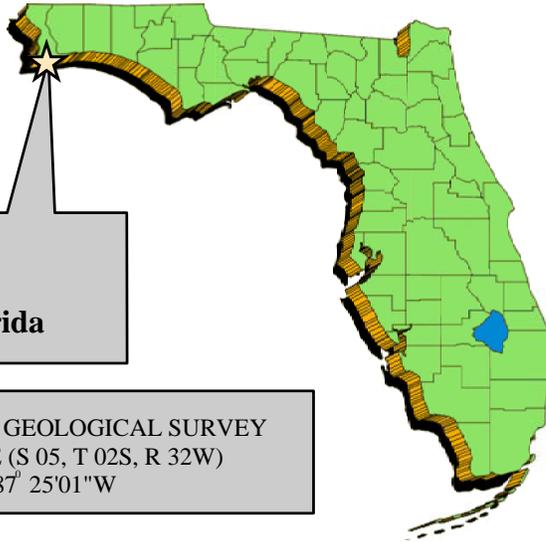


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FIGURE 5
 GROUNDWATER CONTAMINANT DISTRIBUTION MAP
 FEBRUARY 4, 2005
 FOURTH QUARTER MONITORING REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480

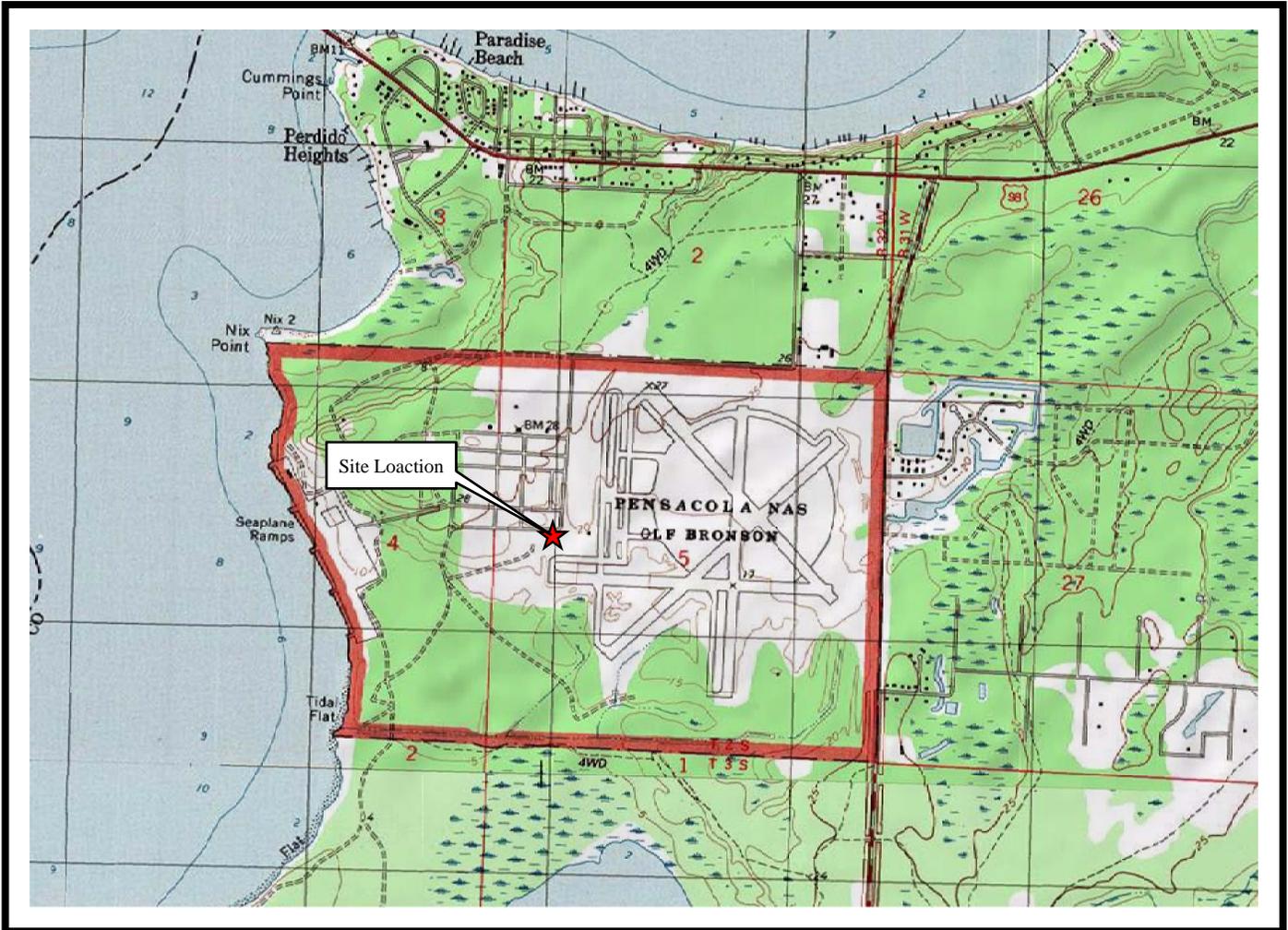
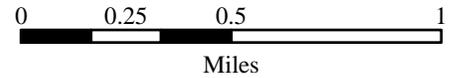
APPENDIX C

Figures from the WRS Project Completion Report (September 2004)



Site Location:
Pensacola,
Escambia County, Florida

SOURCE: UNITED STATES GEOLOGICAL SURVEY
 LILIAN QUADRANGLE (S 05, T 02S, R 32W)
 30° 23' 03" N, 87° 25' 01" W



DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
----------------	-------	-------	-------------------------------------

PROJECT NO.: 303611		PROJECT MANAGER: MARK WHITE			
SCALE: AS SHOWN	CADD ID: 303611D001	PLOT DATE: 07/14/04	CHK BY: D.F.	CHK DATE: 07/14/04	
REVISION NO.:	REVISION DATE:	DRN BY: D.K.M.	DRN DATE: 07/14/04	APPVD BY: M.W.	APPVD DATE: 07/14/04



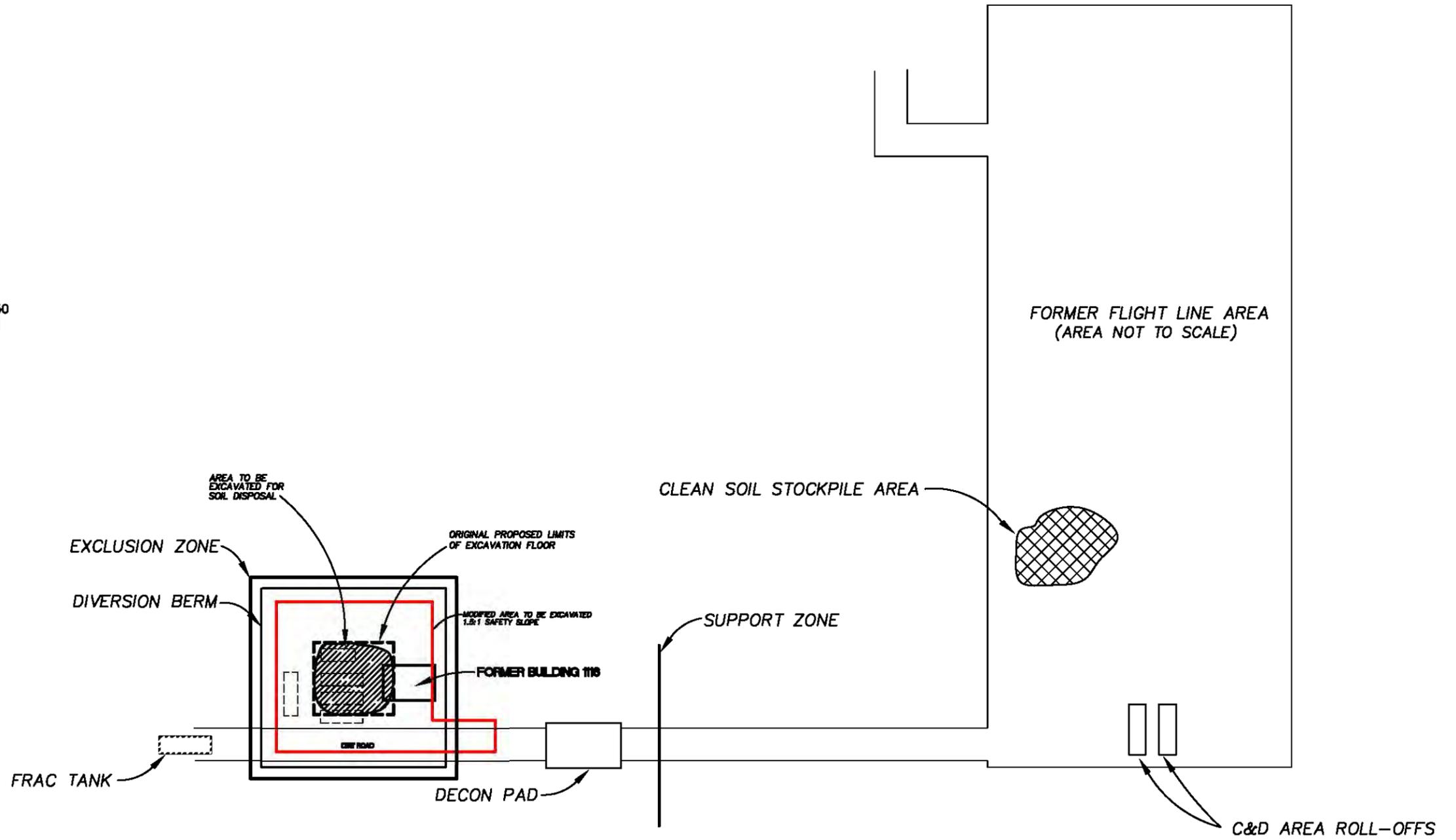
**WRS Infrastructure &
 Environment, Inc.**

221 HOBBS STREET, SUITE 108, TAMPA, FLORIDA 33619
 PH: (813) 684-4400 FAX: (813) 684-9177

FIGURE 1
SITE VICINITY MAP
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 EMAC, REGION 4, FLORIDA ONLY
 CONTRACT NUMBER N62467-02-D-0480



0 75 150
 APPROXIMATE SCALE: 1"=75'



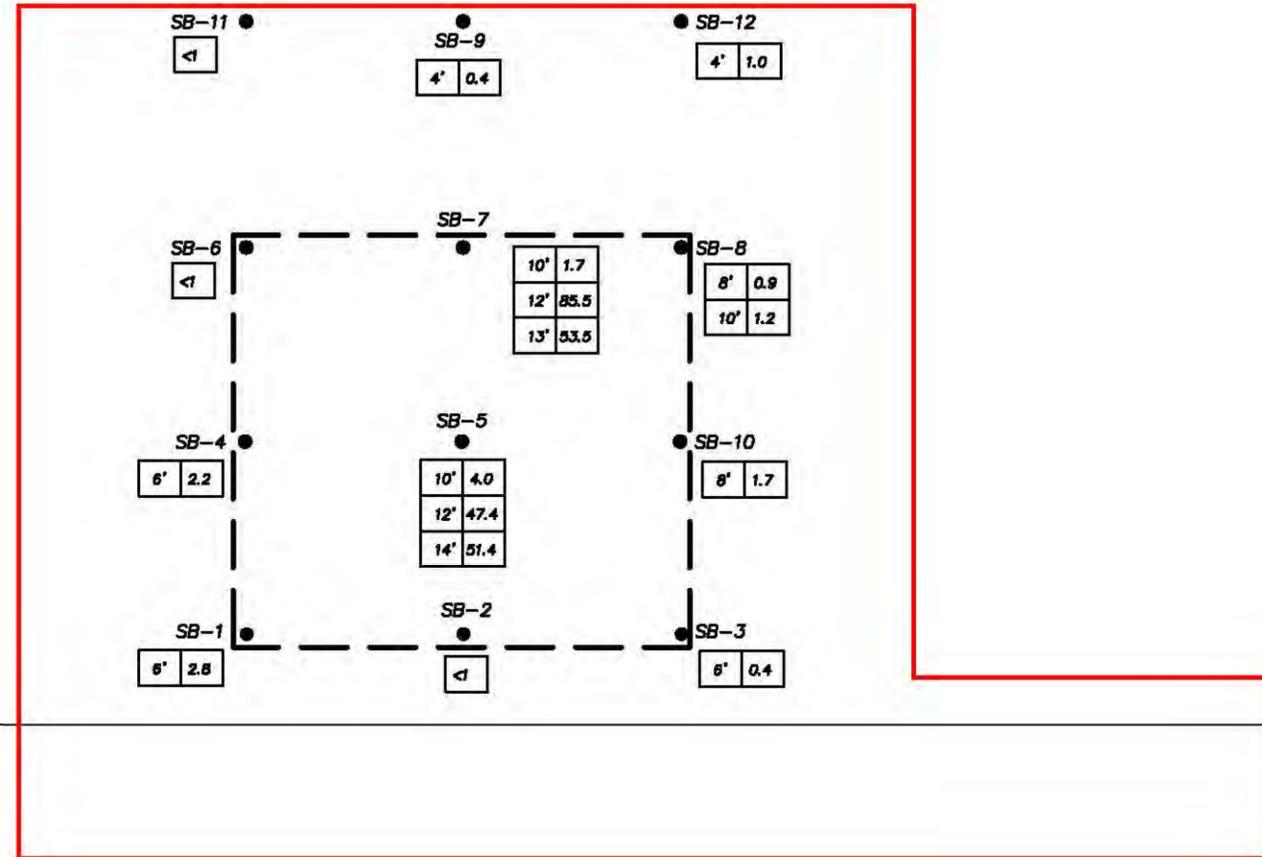
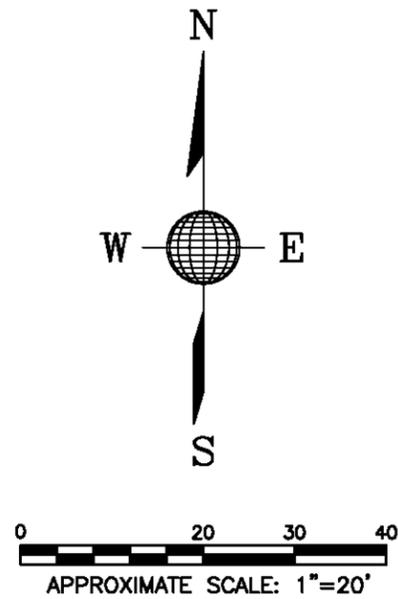
DRAWING STATUS	DRAFT	FINAL	X
PROJECT NO.:	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E001	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



WRS Infrastructure & Environment, Inc.

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FIGURE 2
SITE MAP
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



- NOTES: 1) EXCESSIVELY CONTAMINATED SOIL IS DEFINED AS 50 PARTS PER MILLION OR GREATER FOR KEROSENE ANALYTICAL GROUP (CHAPTER 62-770.200C12).
- 2) ONLY OVA HEADSPACE CONCENTRATION GREATER THAN 1 PPM ARE SHOWN AS INDICATED IN LEGEND.
- 3) OVA HEADSPACE CONCENTRATIONS FOR SOIL BORING LOCATIONS SB-2, SB-8, AND SB-11 ARE LESS THAN 1 PPM FROM 2 TO 12 FEET BELOW LAND SURFACE.

LEGEND:

- TOP LIMIT OF SLOPE
 - - - PROPOSED EXCAVATION AREA
 - SOIL BORING LOCATIONS (SB)
- FEET BELOW LAND SURFACE
- | | |
|----|-----|
| 6' | 2.8 |
|----|-----|
- OVA HEADSPACE RESULT IN PPM

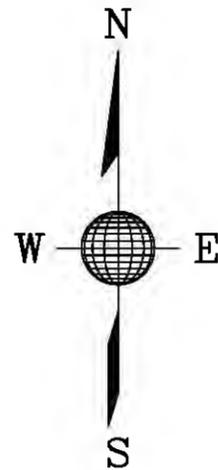
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PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E002	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



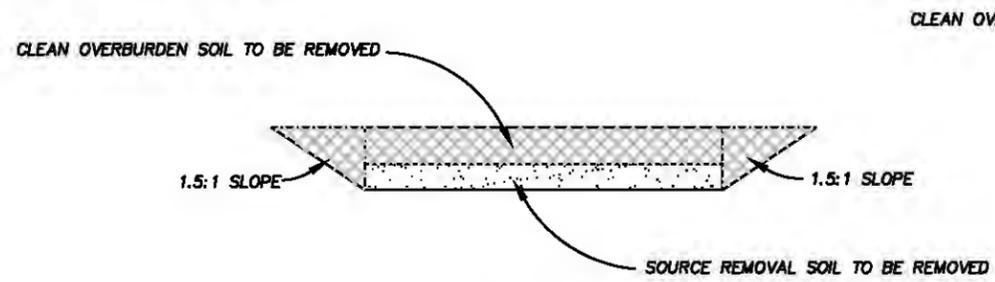
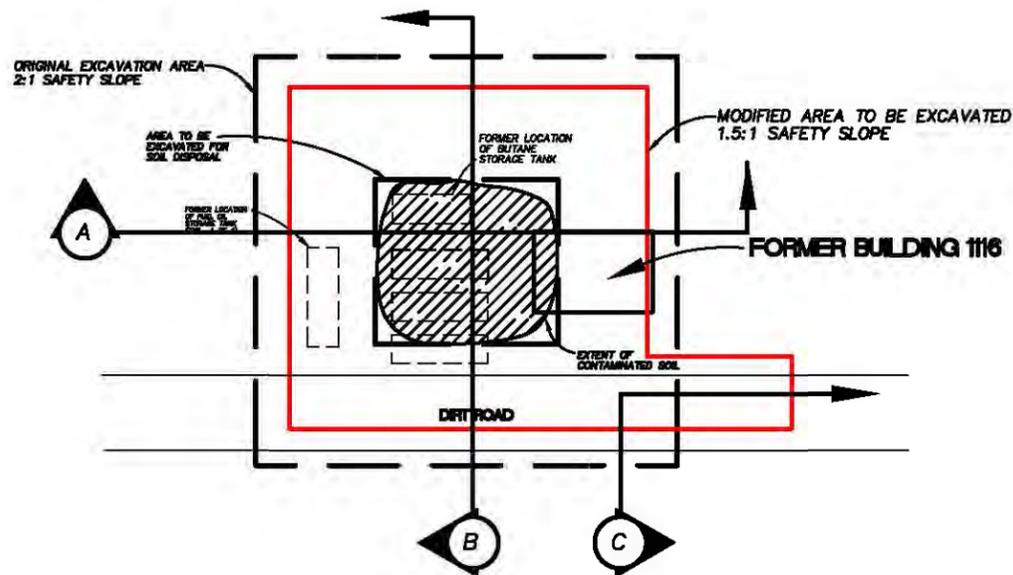
WRS Infrastructure & Environment, Inc.

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 PH: (813) 684-4400 FAX: (813) 684-9177

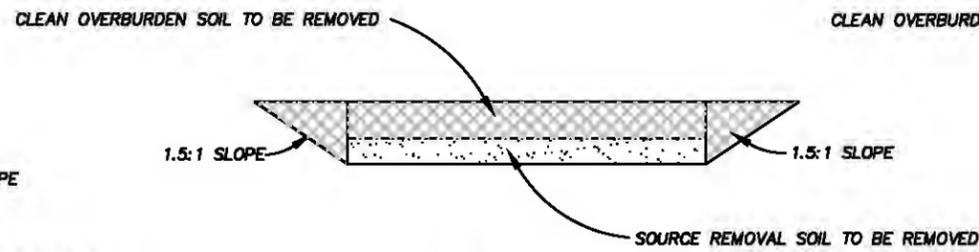
FIGURE 3
 PRE-EXCAVATION SOIL SCREENING LOCATIONS
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



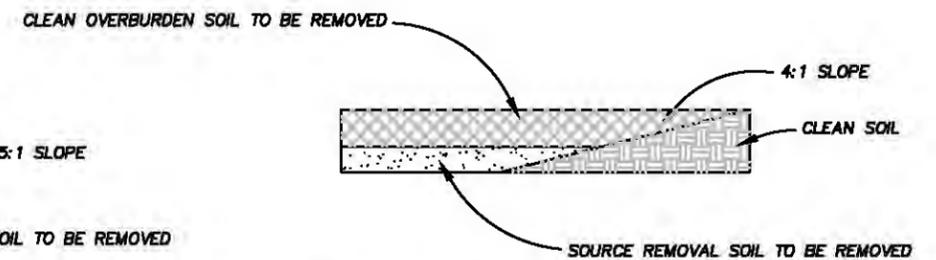
0 50 100
 APPROXIMATE SCALE: 1"=50'



SECTION A - EXCAVATION PROFILE



SECTION B - EXCAVATION PROFILE



SECTION C - EXCAVATION PROFILE

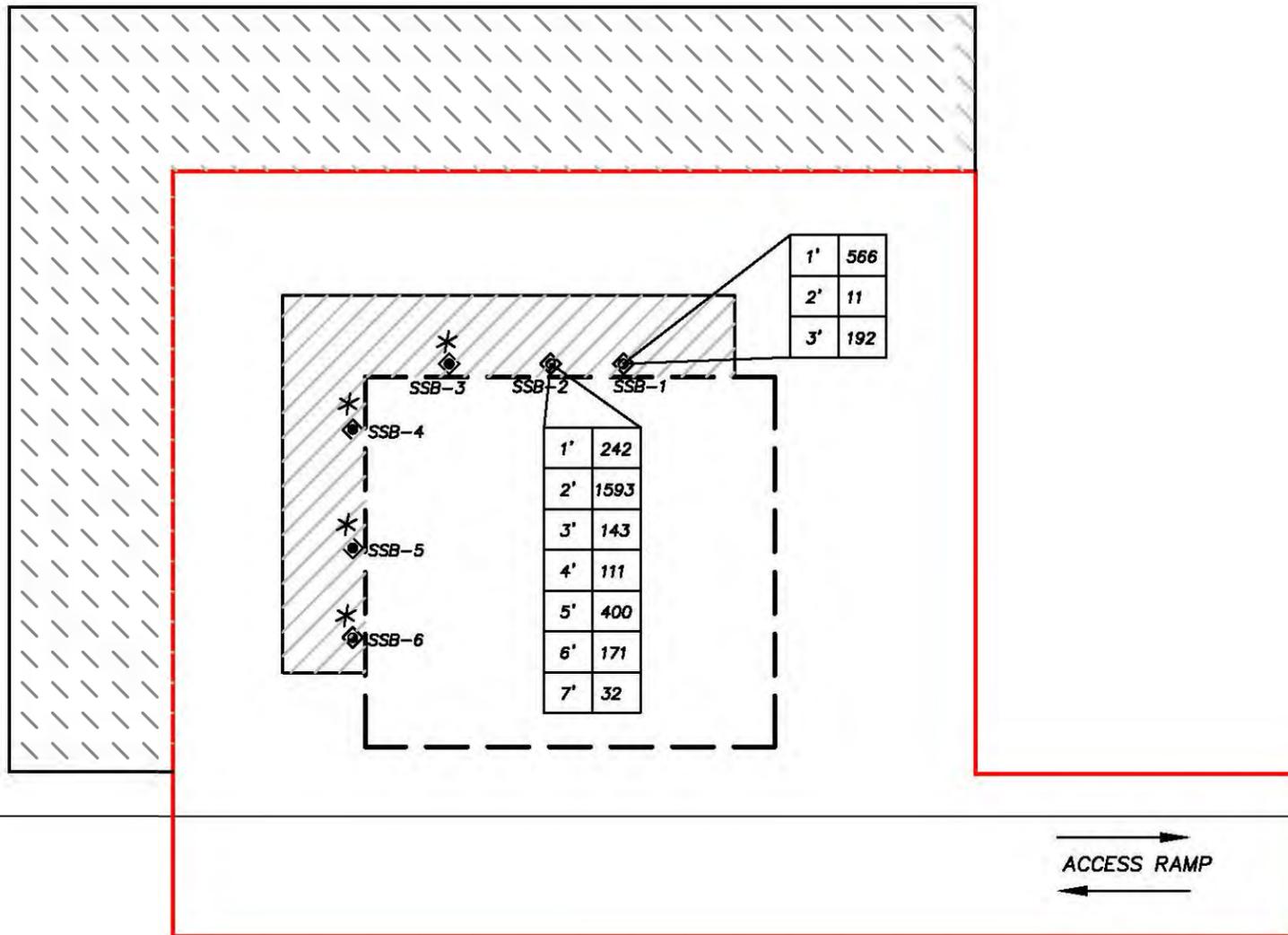
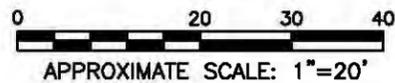
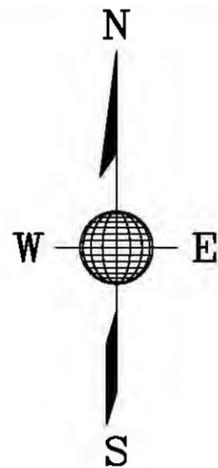
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PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E003	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



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FIGURE 4
 ORIGINAL EXCAVATION PLAN & CROSS SECTION VIEW
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0460



LEGEND:

- * SOIL OVA DATA NOT COLLECTED
- ◆ HORIZONTAL SOIL SCREENING BORING LOCATION (SSB)
- ORIGINAL LIMITS OF EXCAVATION FLOOR
- - - ORIGINAL LIMITS OF EXCAVATION FLOOR
- ▨ APPROXIMATE LIMITS OF EXPANDED EXCAVATION SLOPE
- ▩ EXPANDED LIMITS OF EXCAVATION FLOOR

FEET INTO EXCAVATION SIDEWALL

6'	2.8
----	-----

OVA HEADSPACE RESULT IN PPM

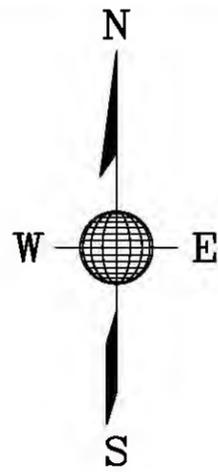
NOTES: 1) EXCESSIVELY CONTAMINATED SOIL IS DEFINED AS 50 PARTS PER MILLION OR GREATER FOR KEROSENE ANALYTICAL GROUP (CHAPTER 62-770.200C12).

DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E004	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



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FIGURE 5
 EXPANDED EXCAVATION PLAN AND SOIL SCREENING LOCATION
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



0 20 30 40
 APPROXIMATE SCALE: 1"=20'

EXTRACTION PUMP SKID

AIR SPARGE LINE

MOBILE AIR COMPRESSOR

INFILTRATION GALLERY

FRAC TANK

CARBON VESSELS

ACCESS RAMP

LEGEND:

- EXTRACTION WELL POINT LOCATION (APPROX.)
- MONITOR WELL LOCATION (MW)
- EXCAVATION FOOTPRINT
- ORIGINAL LIMITS OF EXCAVATION FLOOR
- EXTRACTION HEADER AND PIPING
- PUMP
- VALVE
- MOTOR
- FLOW
- EXPANDED LIMITS OF EXCAVATION FLOOR

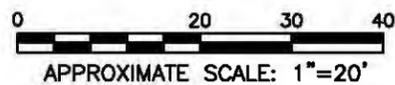
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PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E005	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



WRS Infrastructure & Environment, Inc.

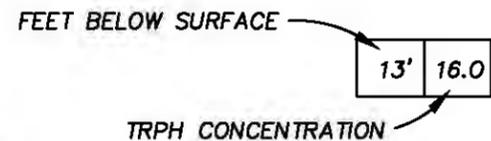
221 HOBBS STREET, SUITE 108, TAMPA, FLORIDA 33619
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FIGURE 6
 DEWATERING SYSTEM LAYOUT
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480

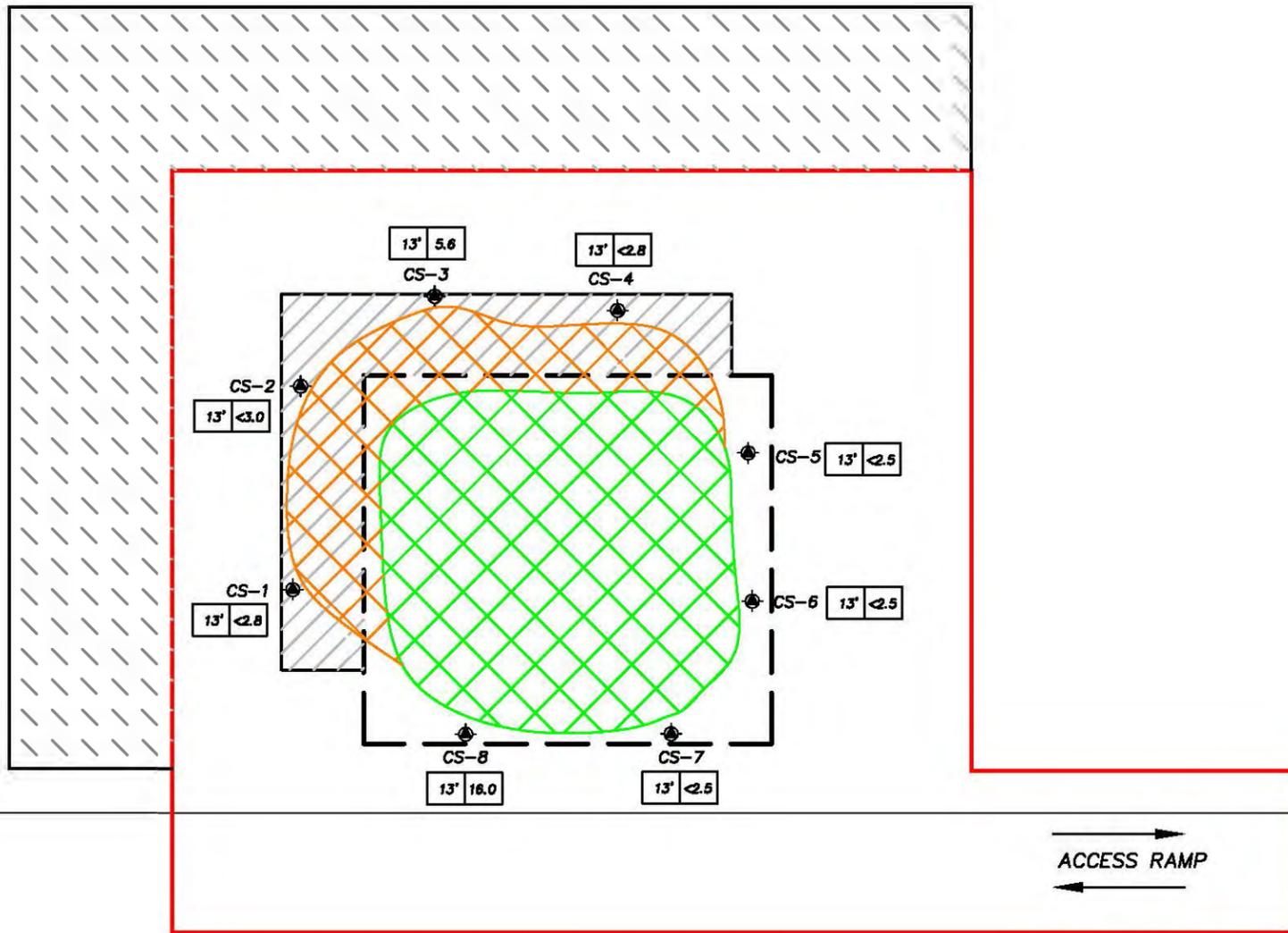


LEGEND:

- CONFIRMATORY SAMPLE LOCATION AND PETROFLAG SCREENING LOCATION (CS)
- ORIGINAL LIMITS OF EXCAVATION SLOPE
- ORIGINAL LIMITS OF EXCAVATION FLOOR
- ORIGINAL CONTAMINATED SOIL REMOVAL AREA
- EXPANDED CONTAMINATED SOIL REMOVAL AREA
- APPROXIMATE LIMITS OF EXPANDED EXCAVATION SLOPE
- EXPANDED LIMITS OF EXCAVATION FLOOR



SCTL, LEACHABILITY (TRPH) = 340 mg/kg
 SCTL, COMMERCIAL/INDUSTRIAL (TRPH) = 2500 mg/kg
 SCTL, LEACHABILITY = FDEP SOIL CLEANUP TARGET LEVEL LEACHABILITY BASED ON GROUNDWATER CRITERIA FROM CHAPTER 62-777, FAC.
 SCTL, COMMERCIAL/INDUSTRIAL = FDEP SOIL CLEANUP TARGET LEVEL LEACHABILITY BASED ON COMMERCIAL/INDUSTRIAL SETTINGS FROM CHAPTER 62-777, FAC.



DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E006	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



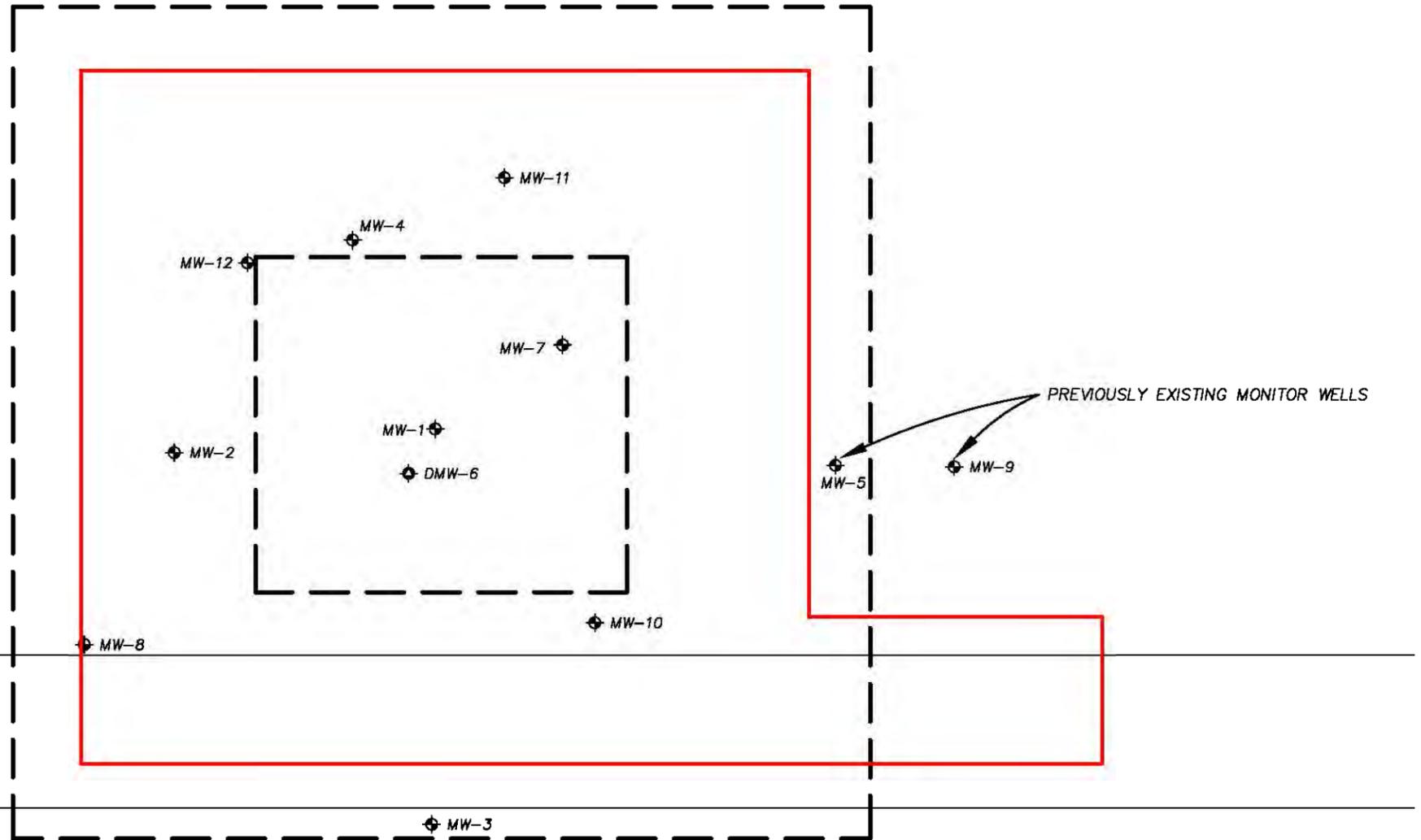
WRS Infrastructure & Environment, Inc.

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 PH: (813) 684-4400 FAX: (813) 684-9177

FIGURE 7
 CONFIRMATORY SOIL SAMPLE LOCATION MAP AND CONTAMINANT DISTRIBUTION
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



0 20 30 40
 APPROXIMATE SCALE: 1"=20'



LEGEND:

- ⊕ MONITOR WELL LOCATION (MW)
- ⊕ DEEP MONITOR WELL LOCATION (DMW)

DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. : 303611			
PROJECT MANAGER: MARK WHITE			
SCALE: AS SHOWN			
REVISION NO.: 0	REV DATE:		
CADD ID: 303611E007	PLOT DATE: 09/17/04		
DRN BY: D.B.H.	DRN DATE: 09/17/04		
CHK BY: D.F.	CHK DATE: 09/17/04		
APPVD BY: M.W.	APPVD DATE: 09/17/04		



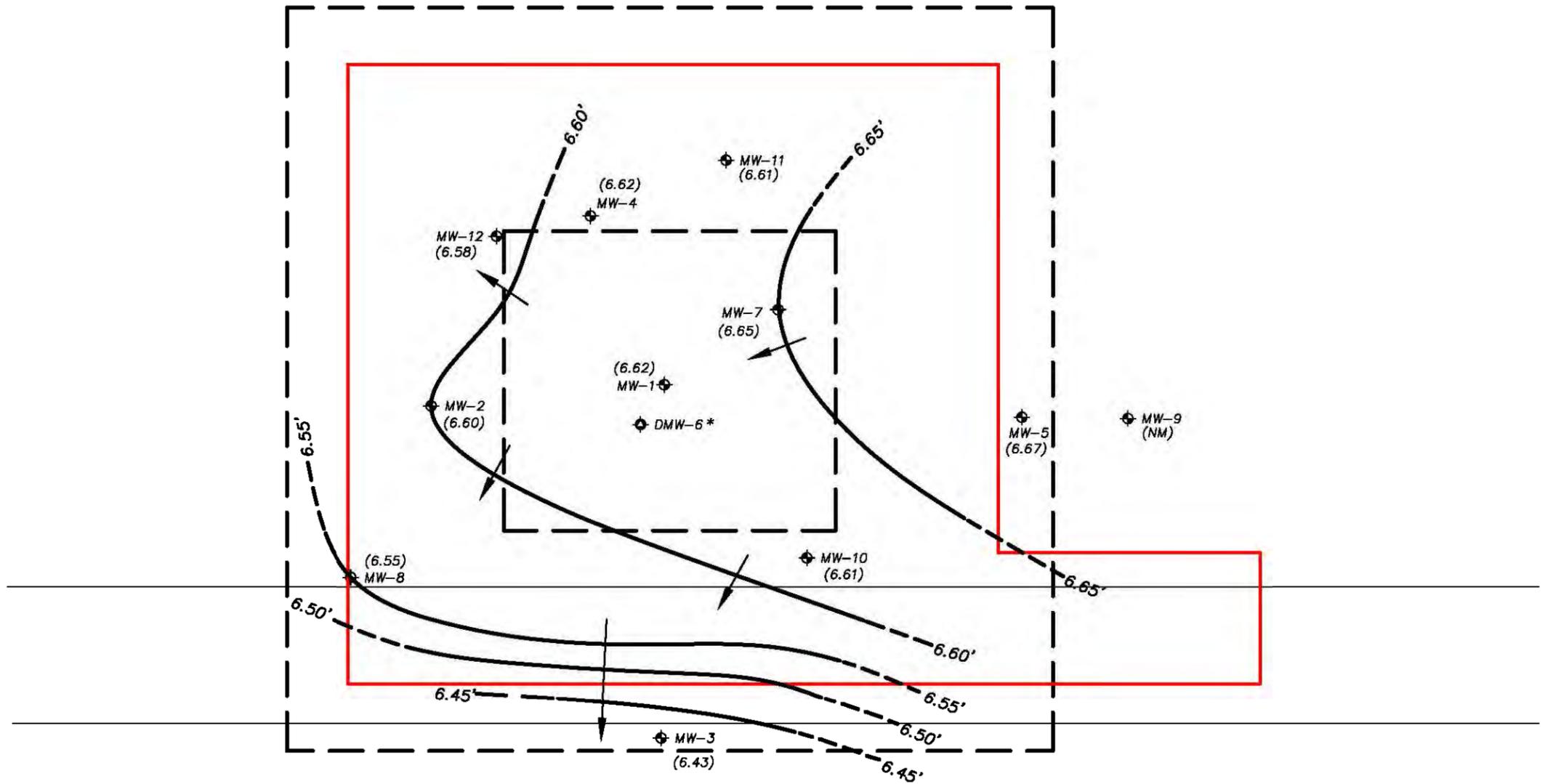
WRS Infrastructure & Environment, Inc.

221 HOBBS STREET, SUITE 108, TAMPA, FLORIDA 33619
 PH: (813) 684-4400 FAX: (813) 684-9177

FIGURE 8
MONITOR WELL LOCATION MAP
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



0 20 30 40
 APPROXIMATE SCALE: 1"=20'



LEGEND:

- ⊕ MONITOR WELL LOCATION (MW)
- ⊕ DEEP MONITOR WELL LOCATION (DMW)
- (6.55) GROUNDWATER ELEVATION (FEET NGVD)
- GROUNDWATER POTENTIOMETRIC CONTOUR LINE (DASHED WHERE INFERED)
- GROUNDWATER FLOW DIRECTION
- (NM) NOT MEASURED
- * WELL NOT USED FOR CONTOURING

DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E008	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



WRS Infrastructure & Environment, Inc.

221 HOBBS STREET, SUITE 108, TAMPA, FLORIDA 33619
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FIGURE 9
GROUNDWATER POTENTIOMETRIC SURFACE MAP
 MAY 4, 2004
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



LEGEND:

- ⊕ MONITOR WELL LOCATION (MW)
- ⊕ DEEP MONITOR WELL LOCATION (DMW)

CONTAMINANT	GCTL	NADC
ACENAPTHENE	20	200
ETHYLBENZENE	30	300
FLOURINE	280	2,800
1-METHYLNAPHTHALENE	20	200
2-METHYLNAPHTHALENE	20	200
LEAD	15	150
NAPHTHALENE	20	200
PHENANTHRENE	210	2,100
TOTAL XYLENES	10	100
TRPH	5,000	50,000

CONCENTRATION EXPRESSED IN BOLD TYPE EXCEED GCTL'S
 CONCENTRATION EXPRESSED IN BOLD TYPE AND
 SHADED EXCEED GCTL AND NADC VALUES

ND = NO ANALYTES ABOVE LABORTORY MDL's DETECTED

GCTL = FDEP GROUNDWATER CLEANUP TARGET LEVEL
 BASED ON GROUNDWATER CRITERIA FROM FDEP
 CHAPTER 62-777, FAC, TABLE 1

NADC = FDEP NATURAL ATTENUATION DEFALT
 CONCENTRATION FROM CHAPTER 62-777, FAC, TABLE V

ALL CONCENTRATIONS EXPRESSED IN MICROGRAMS
 PER LITER (µg/L)

ONLY ANALYTES WITH CONCENTRATIONS GREATER
 THAN THE LABORATORY MDL's ARE LISTED

DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E009	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



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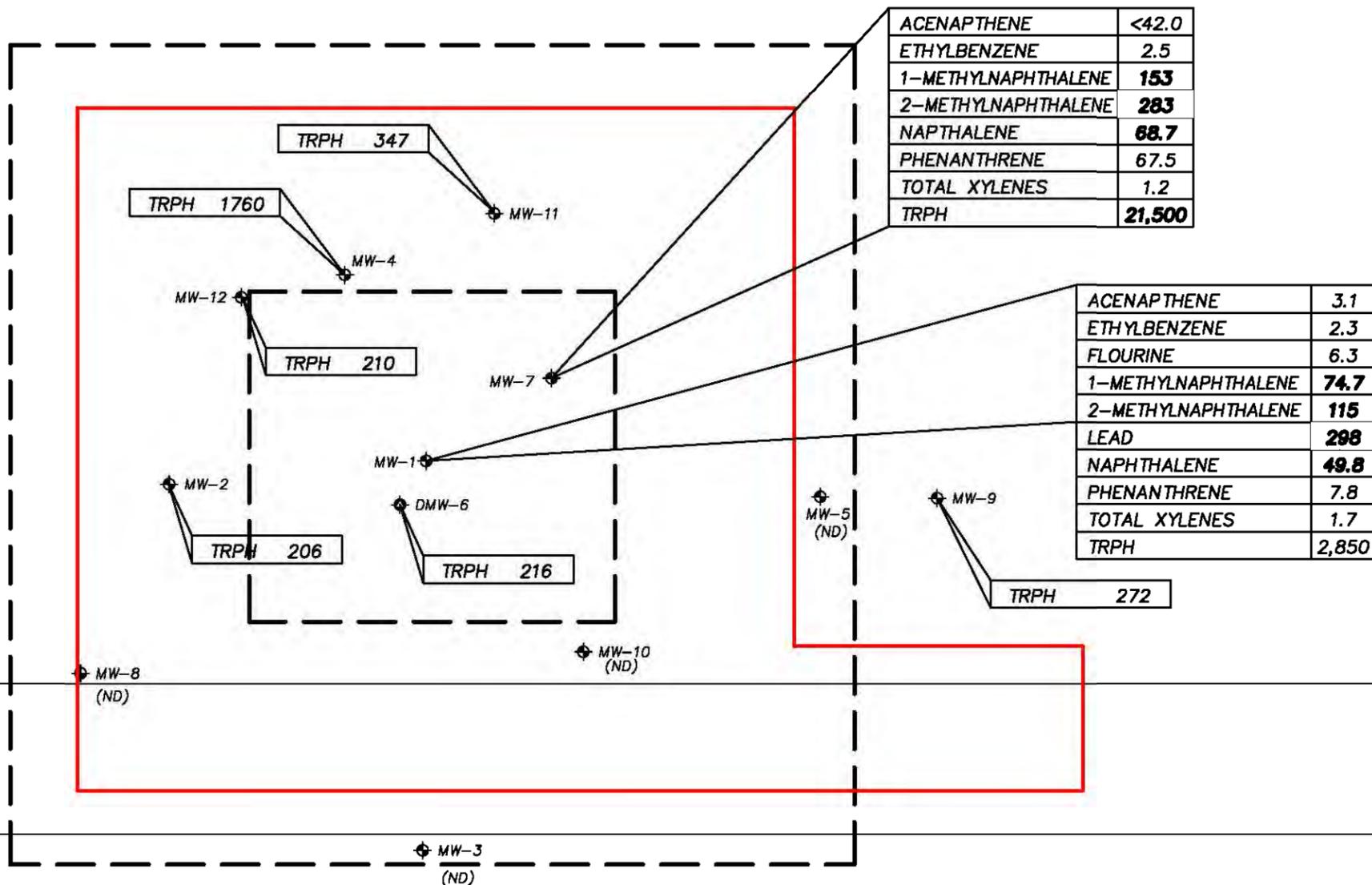
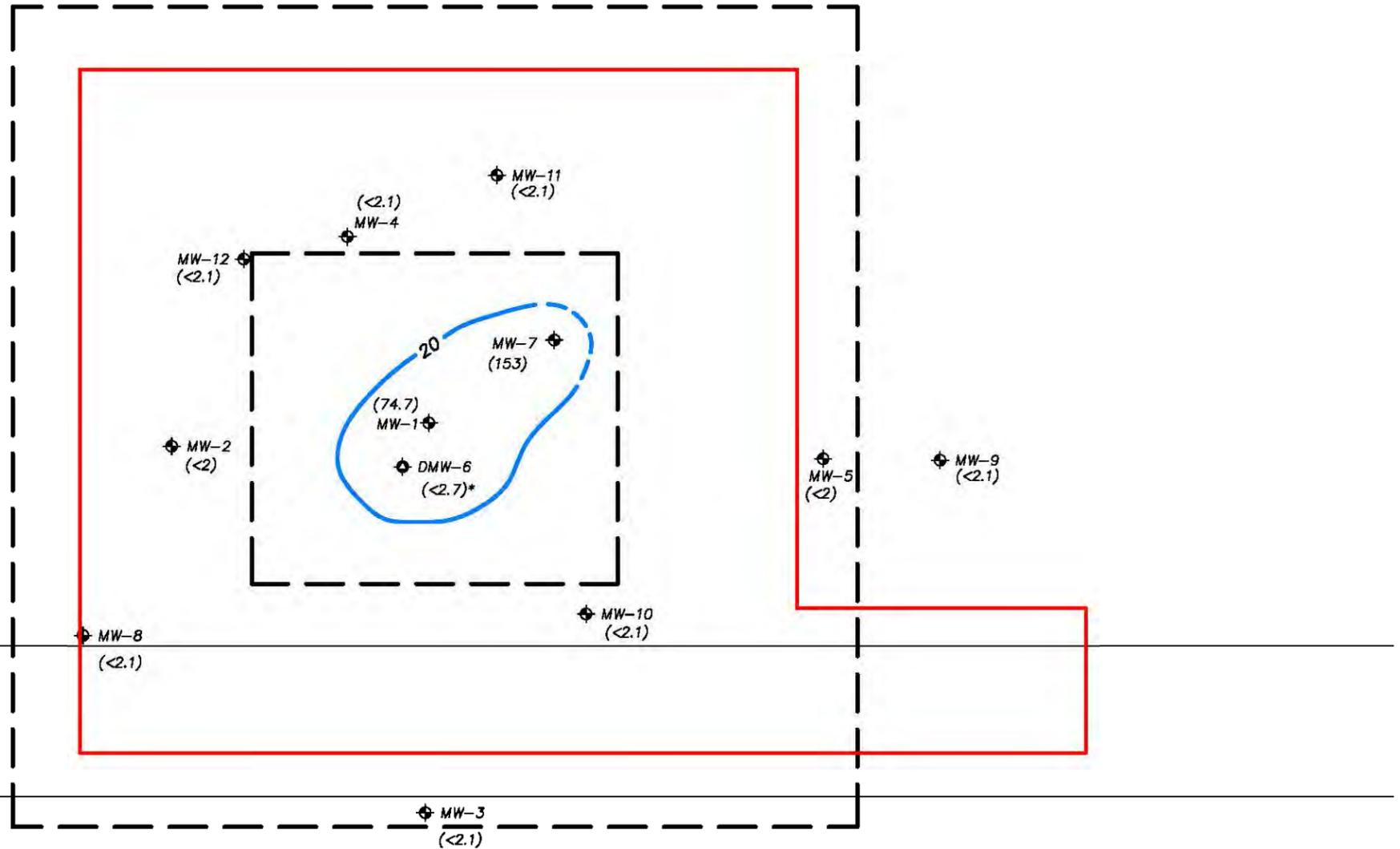


FIGURE 10
 GROUNDWATER CONTAMINANT DISTRIBUTION MAP
 MAY 4, 2004
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62487-02-D-0480



LEGEND:

- ◆ MONITOR WELL LOCATION (MW)
- ◆ DEEP MONITOR WELL LOCATION (DMW)
- (74.7) 1-METHYLNAPHTHALENE CONCENTRATION IN µg/L
- 1-METHYLNAPHTHALENE (20µg/L) ISOCONCENTRATION CONTOUR IN ACCORDANCE WITH FDEP CHAPTER 62-777, FAC, TABLE 1
- * NOT INCLUDED IN INTERPRETATION

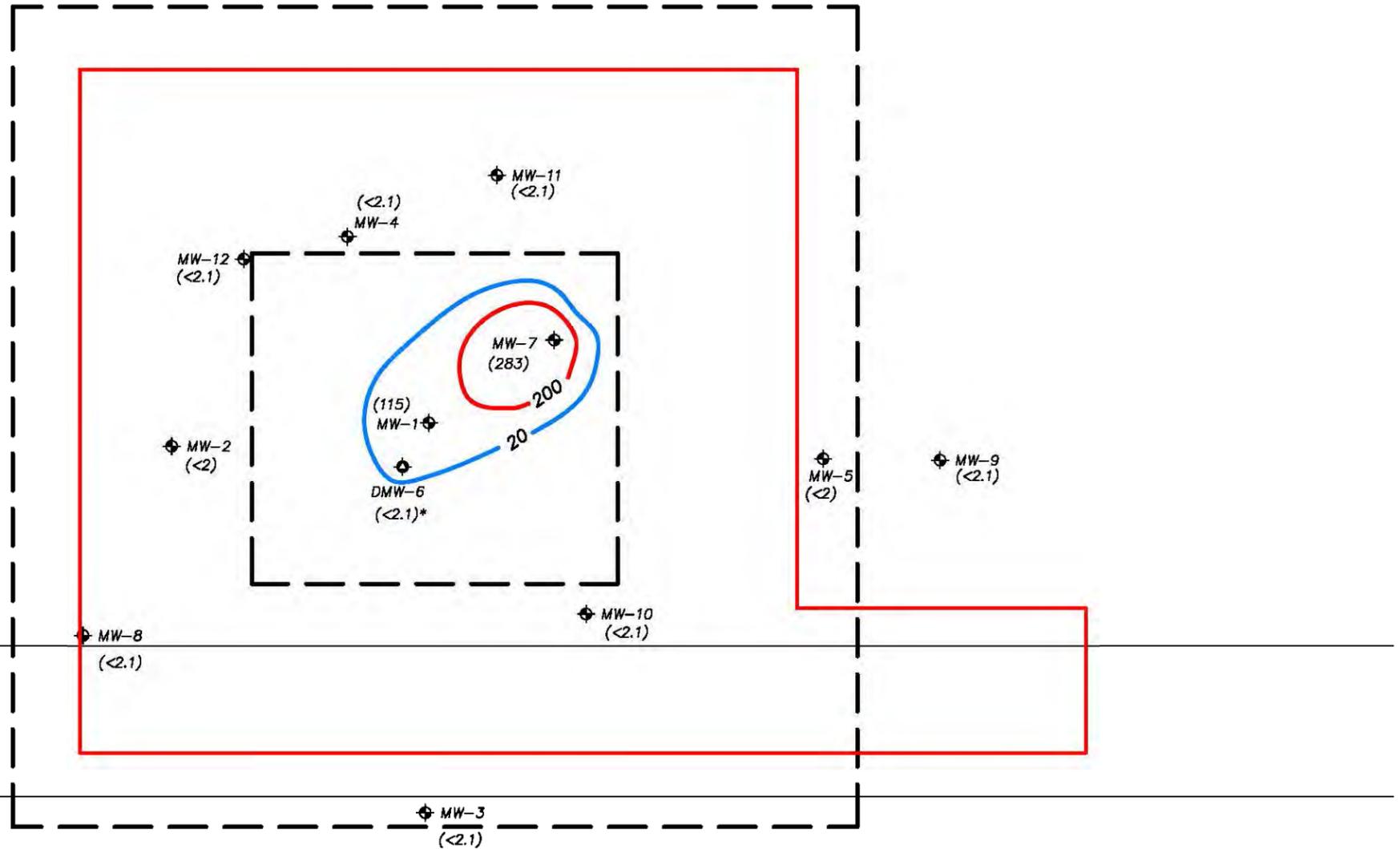
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PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E010	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



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FIGURE 11
1-METHYLNAPHTHALENE ISOCONCENTRATION MAP
 MAY 4, 2004
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



LEGEND:

- ⊕ MONITOR WELL LOCATION (MW)
- ⊕ DEEP MONITOR WELL LOCATION (DMW)
- (115) 2-METHYLNAPHTHALENE CONCENTRATION IN µg/L
- 2-METHYLNAPHTHALENE (20 µg/L) ISOCONCENTRATION CONTOUR IN ACCORDANCE WITH FDEP CHAPTER 62-777, FAC, TABLE 1
- 2-METHYLNAPHTHALENE (200 µg/L) ISOCONCENTRATION CONTOUR IN ACCORDANCE WITH FDEP CHAPTER 62-777, FAC, TABLE V
- * NOT INCLUDED IN INTERPRETATION

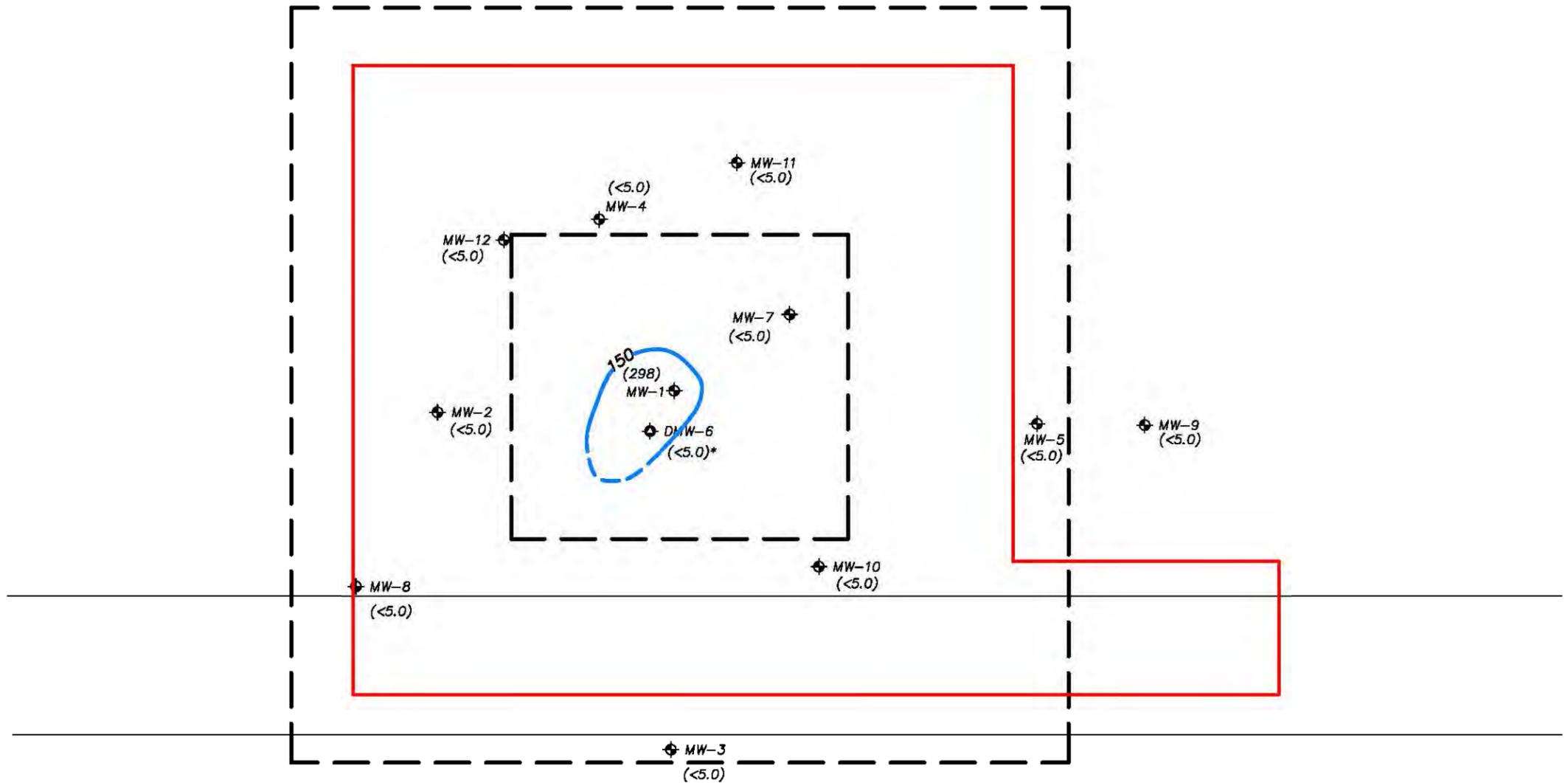
DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E010	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



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FIGURE 12
2-METHYLNAPHTHALENE ISOCONCENTRATION MAP
 MAY 4, 2004
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480



LEGEND:

- ⊕ MONITOR WELL LOCATION (MW)
- ⊕ DEEP MONITOR WELL LOCATION (DMW)
- (298) LEAD CONCENTRATION IN µg/L
- NADC (150 µg/L) ISOCONCENTRATION CONTOUR IN ACCORDANCE WITH FDEP CHAPER 62-777, FAC, TABLE V
- * NOT INCLUDED IN INTERPRETATION

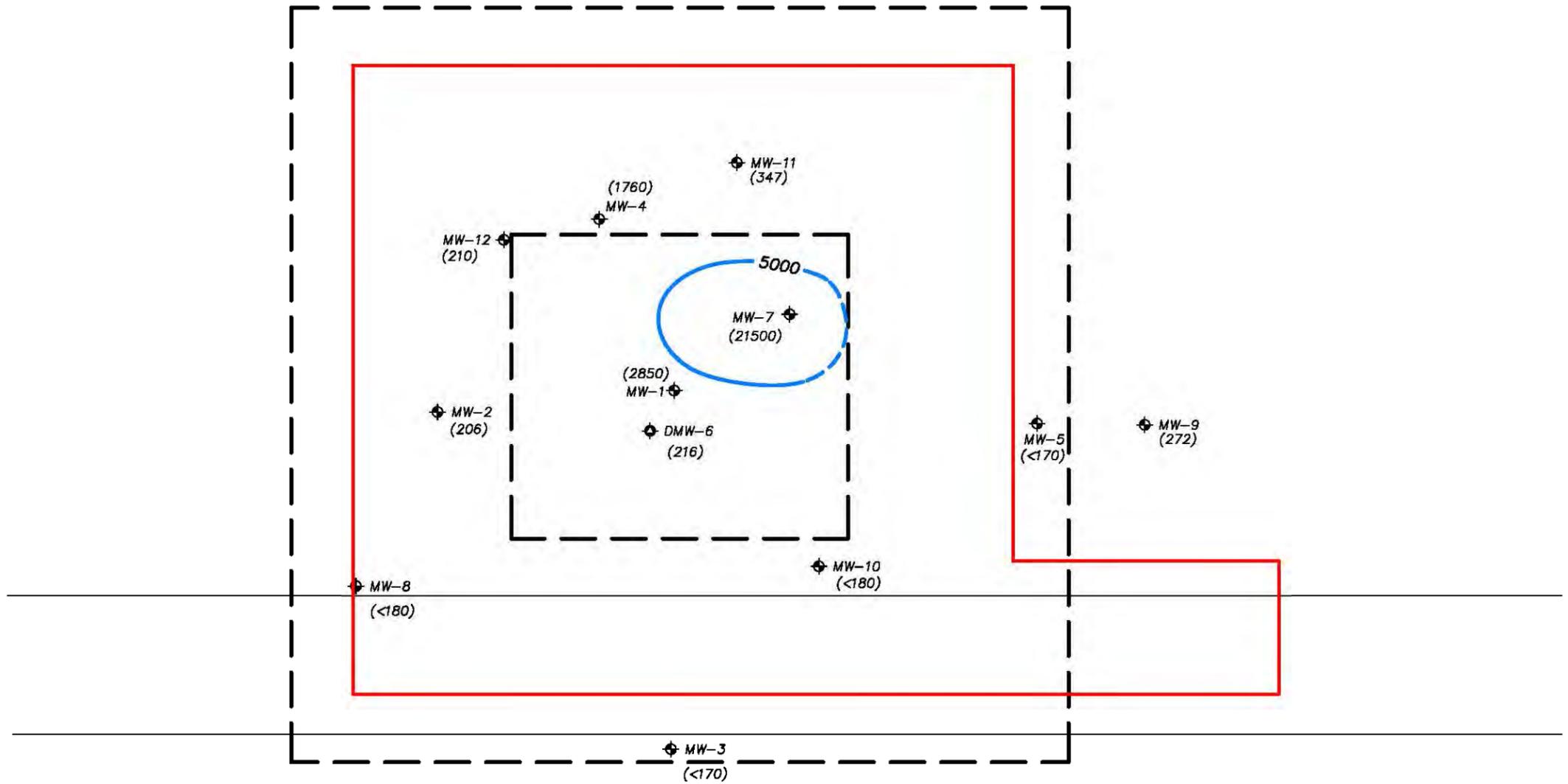
DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E012	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



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**FIGURE 13
 LEAD ISOCONCENTRATION MAP
 MAY 4, 2004
 PROJECT COMPLETION REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480**



LEGEND:

- ⊕ MONITOR WELL LOCATION (MW)
- ⊕ DEEP MONITOR WELL LOCATION (DMW)
- (206) TRPH CONCENTRATION IN $\mu\text{g/L}$
- TRPH (5000 $\mu\text{g/L}$) ISOCONCENTRATION CONTOUR IN ACCORDANCE WITH FDEP CHAPTER 62-777, FAC, TABLE 1

DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	MARK WHITE		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611E013	PLOT DATE:	09/17/04
DRN BY:	D.B.H.	DRN DATE:	09/17/04
CHK BY:	D.F.	CHK DATE:	09/17/04
APPVD BY:	M.W.	APPVD DATE:	09/17/04



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FIGURE 14
TRPH ISOCONCENTRATION MAP
MAY 4, 2004
PROJECT COMPLETION REPORT
OLF BRONSON, SITE 1116
PENSACOLA, ESCAMBIA COUNTY, FLORIDA
ENVIRONMENTAL MULTIPLE AWARD CONTRACT
CONTRACT NUMBER N62467-02-D-0480

APPENDIX D

UVOST® and TarGOST® Information



At ZEBRA, we understand the challenges involved in combining high tech with demanding field conditions.



Our Ultra-Violet Optical Screening Tool (UVOST®) is the culmination of over a decade of field experience as LIF service providers. Its highly sophisticated yet rugged design allows the UVOST to reliably delineate nearly any petroleum NAPL including gasoline, diesel, crude oil, kerosene, and many others. It can be deployed by any type of direct push platform. UVOST is simply the world's finest commercial laser-induced fluorescence (LIF) system and it was built to do one thing – find petroleum NAPL.

Petroleum hydrocarbons contain significant amounts of naturally fluorescent PAHs. Laser-induced fluorescence systems consistently detect them. The UVOST system was specifically designed to respond to these challenging NAPLs and precisely log their presence versus depth.



UVOST benefits include:

- ◆ Real-time data—allows for “on-the-fly” guidance of the next bore-hole location, leading to better bounding of source term
- ◆ No IDW—true in-situ information without investigation derived waste, carryover, or handling and storage of samples
- ◆ Fast—production rates of 300 to 500 feet per day (typical direct push conditions)
- ◆ Flexible—percussion (i.e. Geoprobe®) or cone penetration test (CPT)
- ◆ Color-coded logs—the ultimate in qualitative and semi-quantitative information at-a-glance
- ◆ High data density—one inch/data point
- ◆ Sensitive—low detection limits and baselines that only laser-based systems provide
- ◆ Selective—fluorescence time-domain waveforms offer positive identification and interference rejection
- ◆ Proven—you’ll be offering technology with over 10 years experience built in
- ◆ Quality—you’ll be trained to operate, maintain, and provide LIF service by the scientists who pioneered commercial LIF

Our innovative UVOST mates with direct-push platforms such as Geoprobe and CPT. UVOST is percussion-drivable... a Dakota Technologies, Inc. exclusive!

The UVOST system uses a sapphire window in the side of the direct push probe to measure front-face fluorescence of the petroleum NAPL as the probe is advanced into the soil with nearly any DPT platform.

PAH fluorescence of fuels/oils is directed back to the surface where it is analyzed. Responses are indicated in real-time on a graph of UVOST signal vs. depth.

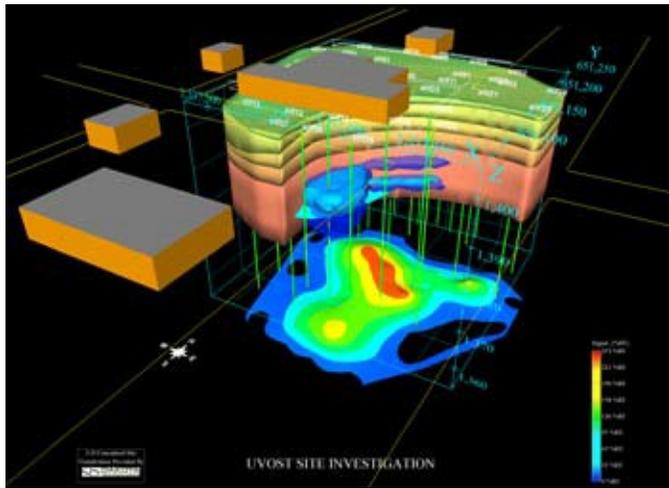




Successful remediation and treatment systems require detailed knowledge of NAPL location and distribution. UVOST provides your client with a conceptual site model at unprecedented speed, detail, and efficiency. Sampling simply can't compete with UVOST's production rates.

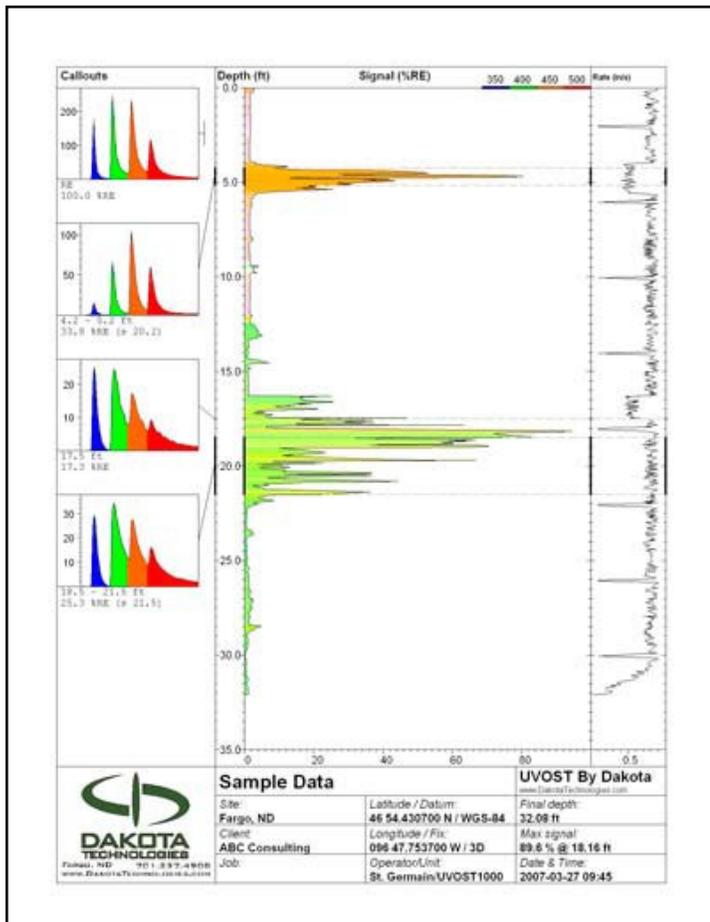
Since the first full-scale site characterization project with UVOST LIF technology in 1997, the UVOST system has been successfully applied and validated across a wide range of site conditions and deployment platforms, including Geoprobe and CPT. Nearly every major consulting firm in the U.S. has used UVOST to generate CSMs of petroleum NAPL.

UVOST Data—Conceptual Site Model (CSM)



The end result of a UVOST boring is a high-density, non-subjective electronic data log (left) readily incorporated into accurate conceptual site models (top). Accurate source term models lead to knowledgeable decisions, accurate treatment and removal designs, and realistic cost estimates—saving time and money.

Example Field UVOST Log



Each UVOST system includes a 1 year warranty and comes "ready to log". Dakota supplies you with all the tools, spares, and consumables necessary to start booking jobs as soon as you become certified (training takes 2-3 days).

Once certified, you and your UVOST crew will confidently generate detailed colorized logs like the one at left – clearly painting a picture of your client's NAPL in the subsurface. The unique ability to offer LIF will set you and your company apart from your competitors. Once a client tries UVOST they are typically "hooked" – leading to more work at the same site or other NAPL sites they manage.

UVOST®
 Ultra-Violet Optical Screening Tool



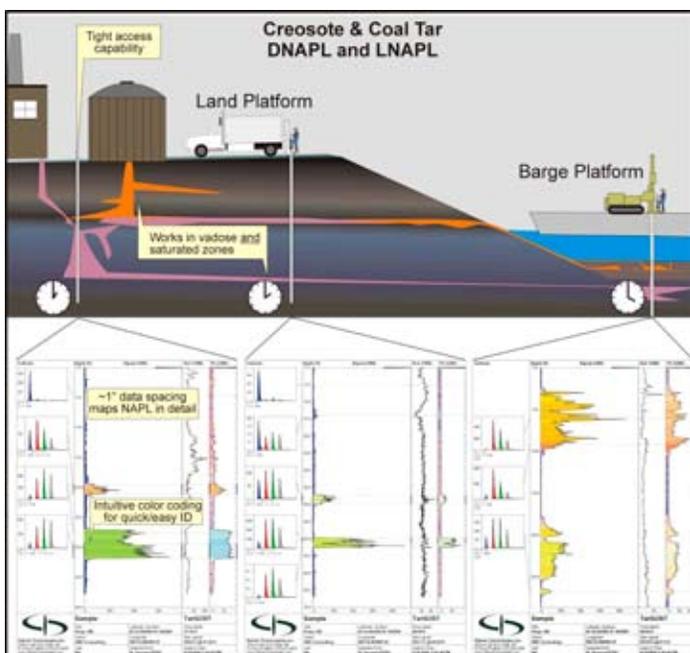
ZEBRA Environmental, Inc.
 Telephone: (516) 596-6300
 www.TEAMZEBRA.com

At Dakota Technologies, we understand the challenges involved in detecting and characterizing PAH-laden contaminants at former manufactured gas plants (MGPs) and wood treatment facilities.



Our Tar-specific Green Optical Screening Tool (TarGOST®) is designed specifically for delineating the non aqueous-phase liquids found at MGP and creosote sites. TarGOST can be deployed by all forms of direct push across a wide range of site conditions.

MGP waste and creosote NAPLs contain large amounts of naturally fluorescent PAHs, but UV-based fluorescence systems fail to consistently detect them. The TarGOST system was specifically designed to respond to these challenging materials and precisely log their response versus depth.



TarGOST benefits include:

- ◆ Real-time data—allows for “on-the-fly” determination of the next bore-hole location, leading to better bounding of source term
- ◆ No samples—true in-situ information without derived waste, carryover, or handling and storage
- ◆ Fast—production rates of 200 to 500 feet per day (typical direct push conditions)
- ◆ Flexible—percussion (i.e. Geoprobe®) or cone penetration test (CPT)
- ◆ Color-coded logs—the ultimate in qualitative and semi-quantitative information at-a-glance
- ◆ High data density—one inch/data point
- ◆ Sensitive—low detection limits and baselines that only laser-based systems provide
- ◆ Selective—fluorescence time-domain waveforms offer positive identification and interference rejection

Our innovative TarGOST mates with direct-push platforms such as Geoprobe and CPT. TarGOST is percussion-drivable — a Dakota Technologies, Inc. exclusive!

The TarGOST system uses a sapphire window in the side of the direct push probe to conduct front-face fluorescence measurements as the probe is advanced into the soil with nearly any DPT platform.

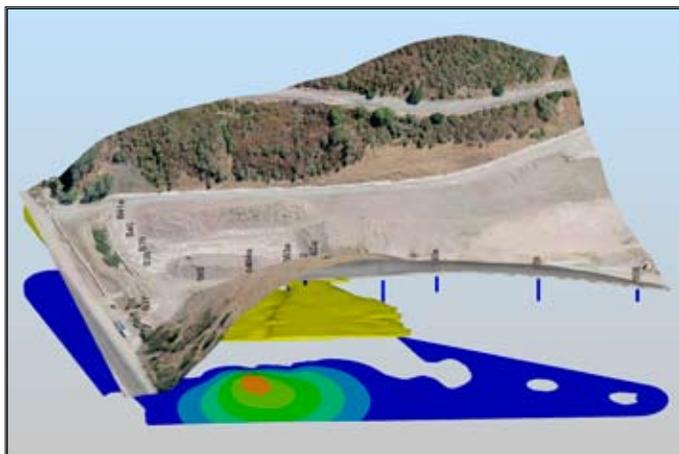
Fluorescence and / or scattered light are directed up-hole to be analyzed. Responses are indicated in real-time on a graph of signal versus depth. The graphs also display colorized logs and waveforms to aid in interpretation.



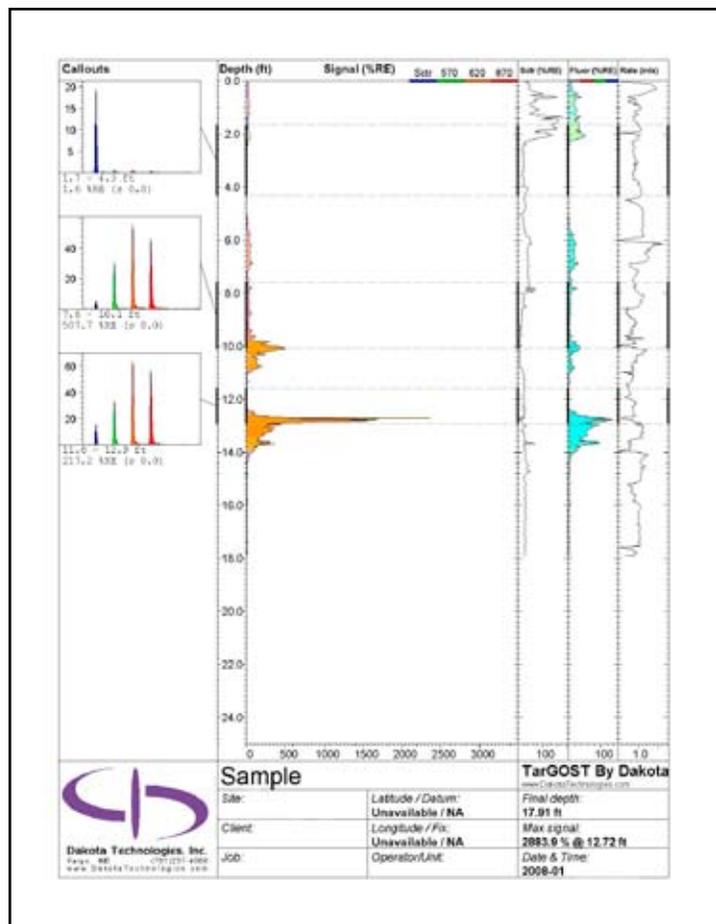
Successful remediation and treatment systems require detailed knowledge of NAPL location and distribution. TarGOST provides this knowledge at unprecedented speed, detail, and efficiency. Sampling simply can't compete with TarGOST's production rates.

Since the first full-scale site characterization project in June 2003, the TarGOST system has been successfully applied and validated across a wide range of site conditions and deployment platforms, including Geoprobe and CPT. Barge deployment is now common, and continues to be a growing deployment platform for TarGOST.

TarGOST Data—Conceptual Site Model (CSM)



High Resolution TarGOST Logs



TarGOST data is typically acquired at 1-inch vertical resolution—orders of magnitude higher than what is possible with traditional sampling methods. TarGOST simply doesn't miss stringers or narrow seams of NAPL. The high-resolution logs simplify field work and eliminate delays and remobilizations. They supply the user with real-time data ideally suited for incorporation into an adaptive site characterization plan, such as those recommended by EPA's TRIAD.

The end result of a TarGOST boring is a high-density, non-subjective electronic data log (left) readily incorporated into 2D and 3D conceptual site models. Accurate source term models lead to knowledgeable decisions, accurate treatment and removal designs, and realistic cost estimates—saving time and money.

APPENDIX E

Response to FDEP Comments

Response to FDEP Comments (May 13, 2014)
Draft Work Plan for Free-Phase Product Assessment
UST Site 1116, Outlying Landing Field Bronson,
Pensacola, Florida

Comment 1. Please state how much free product was identified in MW-1 when inspected in February 2013 and when free product was confirmed in May 2013.

Response. Because the free-phase product sticks to the sides of measuring devices (e.g., electric probes, measuring tapes, bailers) the thickness has not been determined. This statement was added to work plan in Section 1.2 Purpose.

Comment 2. The Work Plan proposes to identify and assess the extent of free-phase product using Laser Induced Fluorescence (LIF). It states that the free product is likely from a past release of Bunker C fuel. I understand that LIF may encounter difficulties in detecting bunker fuels because of self-quenching/intersystem crossing/photon cycling (energy transfer). The percent recovery (14.7%) for the LIF response to Bunker C, presented in Appendix D, also seems low. I suggest collecting a sample of the free product from MW-1 and sending it for analysis to determine if LIF can readily detect the product.

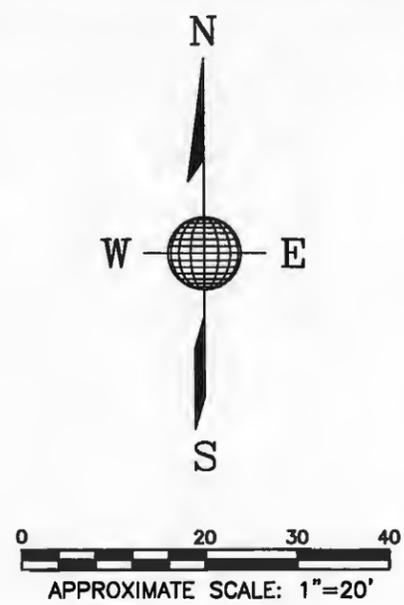
Response. A sample of the free-phase product will be sent to Dakota Technologies, Inc. to determine which of the LIF technologies UVOST® (Ultraviolet Optical Screening Tool) or TarGOST® (Tar-specific Green Optical Screening Tool) would be most suited to characterize the horizontal and vertical extent of the free-phase product and residual petroleum contamination. The UVOST® is used to detect residual-phase semivolatile organic compounds in gasoline, diesel, kerosene, aviation fuel, machine oils, lubricants, and some crude oils. The TarGOST® is used to detect biodiesel, bunker, heavy distillates, crude oil, creosote, dripolene (olefin plant aromatic byproduct), and di(2-ethylhexyl)phthalate and bis(2-ethylhexyl)phthalate.

The principal difference between the UVOST® and TarGOST® is the wavelength of the excitation light used. UVOST® uses a laser that emits light in the near-ultraviolet spectrum while TarGOST® uses a laser that emits light in the visible green spectrum.

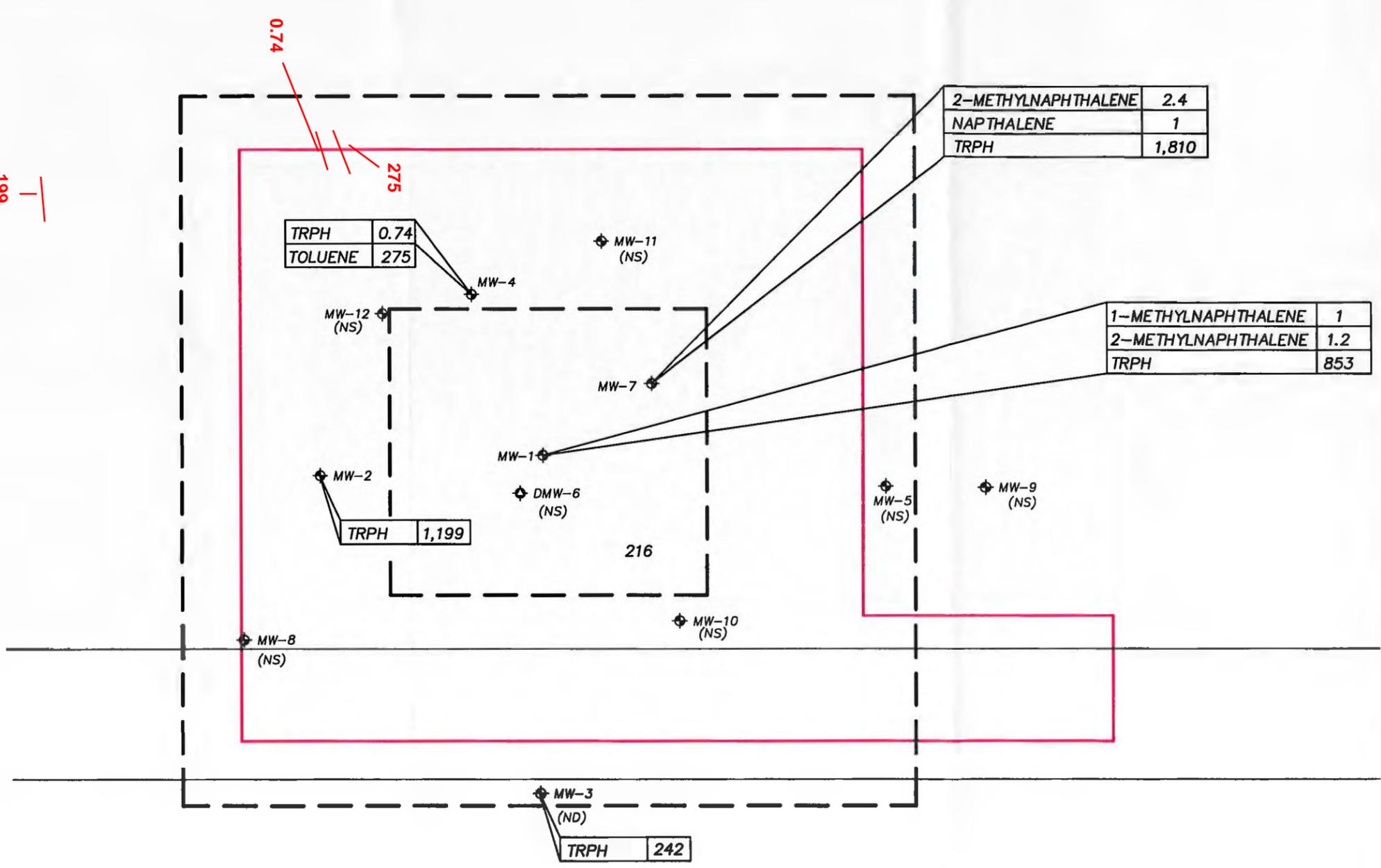
The above information was added to the work plan in Section 3.2 Technical Approach.

Comment 3. Figure 5 in Appendix B is incorrect. The TRPH and toluene concentrations in MW-4 are swapped. Also, the concentration of TRPH in well MW-2 should be 199 µg/L rather than 1,199 µg/L.

Response. Figure 5 in Appendix B (attached), which was prepared by WRS Infrastructure and Environment Inc., has been annotated to show the correct values.



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LEGEND:

- ◆ MONITOR WELL LOCATION (MW)
- ◆ DEEP MONITOR WELL LOCATION (DMW)

CONTAMINANT	GCTL	NADC
1-METHYLNAPHTHALENE	20	200
2-METHYLNAPHTHALENE	20	200
NAPHTHALENE	20	200
TRPH	5,000	50,000
TOLUENE	40	400
FLOURINE	280	2,800
PHENANTHRENE	210	2,100

GCTL = FDEP GROUNDWATER CLEANUP TARGET LEVEL BASED ON GROUNDWATER CRITERIA FROM FDEP CHAPTER 62-777, FAC, TABLE 1

NADC = FDEP NATURAL ATTENUATION DEFAULT CONCENTRATION FROM CHAPTER 62-777, FAC, TABLE V

ALL CONCENTRATIONS EXPRESSED IN MICROGRAMS PER LITER (µg/L)

ONLY ANALYTES WITH CONCENTRATIONS GREATER THAN THE LABORATORY MDL'S ARE LISTED

DRAWING STATUS	DRAFT	FINAL	<input checked="" type="checkbox"/>
PROJECT NO. :	303611		
PROJECT MANAGER:	DALE FRIERSON		
SCALE:	AS SHOWN		
REVISION NO.:	0	REV DATE:	
CADD ID:	303611G004	PLOT DATE:	03/21/05
DRN BY:	D.B.H.	DRN DATE:	03/21/05
CHK BY:	K.G.	CHK DATE:	03/21/05
APPVD BY:	D.F.	APPVD DATE:	03/21/05



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FIGURE 5
 GROUNDWATER CONTAMINANT DISTRIBUTION MAP
 FEBRUARY 4, 2005
 FOURTH QUARTER MONITORING REPORT
 OLF BRONSON, SITE 1116
 PENSACOLA, ESCAMBIA COUNTY, FLORIDA
 ENVIRONMENTAL MULTIPLE AWARD CONTRACT
 CONTRACT NUMBER N62467-02-D-0480