RADIAN INTERNATIONAL
A DAMES & MOORE GROUP COMPANY

80003619_030

December 18, 1998

Ron Conetta
Contracting Officer's Representative
U.S. Army Corps of Engineers
Metro West Resident Office
Building 611, Fort Totten
Flushing, NY 11359

Subject: Test Pit Program Summary
Tank Removal at Building 44C
Military Ocean Terminal, Bayonne, NJ

Dear Ron,

At the request of MOTBY and the USACE, Radian conducted a test pit excavation program to identify and delineate fuel oil impacted soils outside of the cofferdam at the Building 44C Underground Storage Tank (UST) removal project . The objective of the test pit program was to identify any free-phase or residual petroleum source areas within the soils and floating on the groundwater. The purpose of this letter is to document, in a forum separate from the tank removal report, the findings of the test pit excavations.

Test pits were excavated around the perimeter of the cofferdam, along the active fuel oil line between the ASTs and the Boiler Plant, and along the former barge fuel oil delivery piping enclosure between the Boiler Plant and the New York Bay. Test pit locations are identified on attached Figure 3.

Where practical, the test pits were excavated to a depth of 1-ft below the water table, typically between 7 to 8-ft below ground surface. Each test pit remained open for a sufficient time to allow the infiltrating groundwater to reach a static elevation. Excavated soils were visually inspected for signs of oil contamination and were classified using the Unified Soils Classification System. Representative samples of each soil horizon within the test pit were collected and soil gas head space screening was performed using a photoionization detector (PID) equipped with a 10.2 eV lamp.

Petroleum impacted soils and groundwater were identified in two areas. The first area was along the barge fuel delivery piping chase from the Northwest corner of the Boiler Plant to the center of Jersey Avenue in the following test pits: TP-01, TP-05, TP-08, and TP-11. Test pit geologic logs and a summary table of the findings at each test pit location are attached. The second impacted area was along the active fuel oil supply piping chase adjacent to the North side of the former USTs. Fuel oil contamination within the soils

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directly beneath the fuel line piping chase was noted during cofferdam pilot trenching activities. The viscous oil was observed extending from the base of the concrete chase down to the water table at approximately 8-ft bgs. Observations during the test pit program indicate that the fuel oil plume appears to extend laterally approximately 3 to 5-ft from the piping chase walls. Vertically, the plume extends down to the water table outside of the piping chase on the North side of the removed USTs.

Finally, product having the odor of diesel and/or kerosene was observed floating on the water table in Test Pit TP-51, along the former harbor supply piping chase near the southeast corner of Building 45. The extent of this plume is not known.

If you have any questions concerning this matter, please feel free to contact me at 301-548-1710.

Sincerely,

David L. Diehl
Radian Project Manager

cc: Ron Conetta-USACE (2 copies)
Gus Lymberis-USACE (1 copy)
Brian Glock-USACE (1 copy)
Mike Marango-MOTBY (2 copies)
Mirza Biag-MOTBY (3 copies)
Bob Hayton-NJDEP (4 copies)
William Lawler-USEPA (1 copy)

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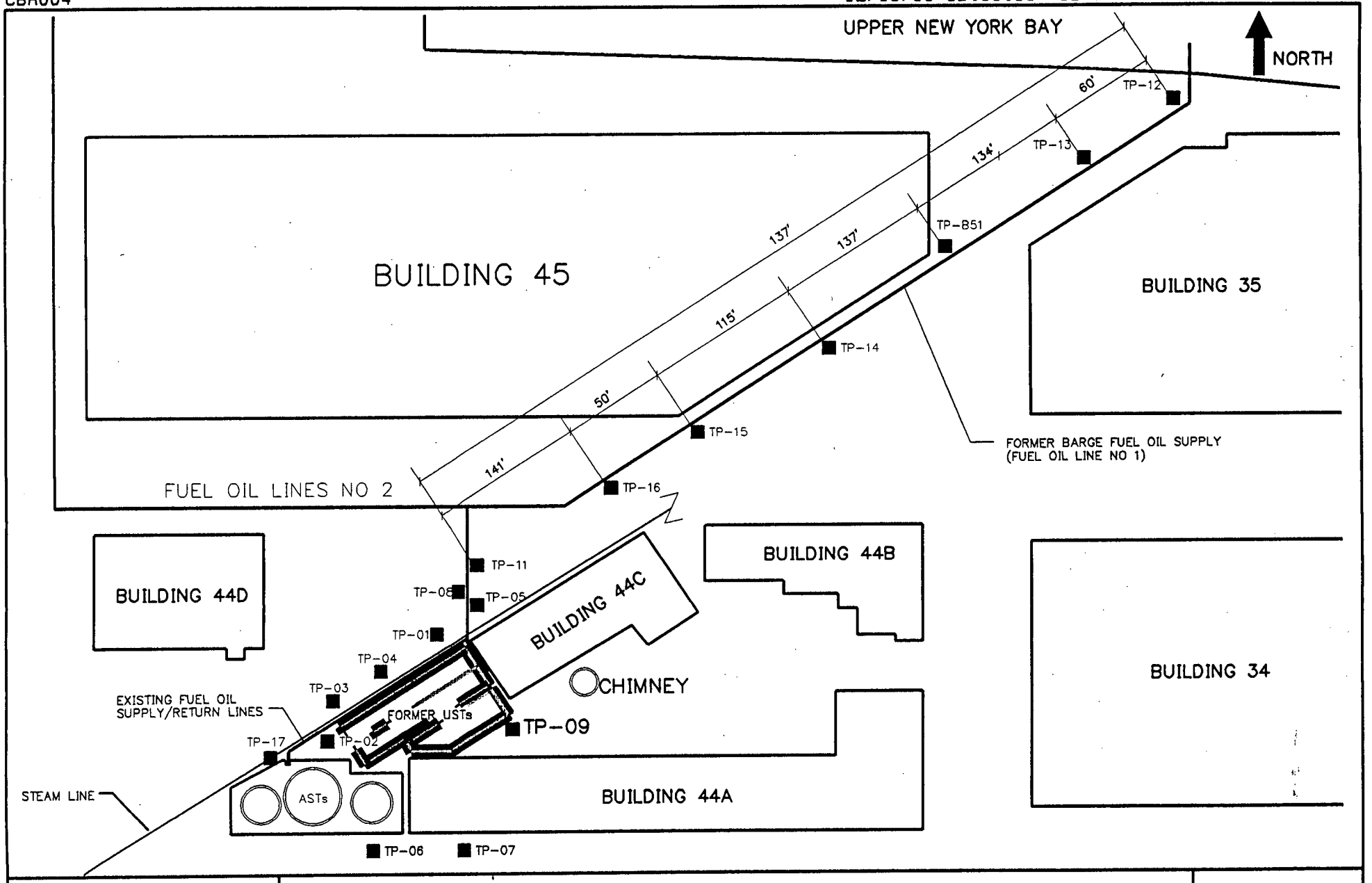

RADIAN INTERNATIONAL LLC

TANK & TEST PIT LOCATION PLAN

BUILDING 44C UNDERGROUND STORAGE TANK REMOVAL | MILITARY OCEAN TERMINAL BAYONNE, NJ

SCALE: 1" = 100'-0" | PROJECT NUMBER: 80003619 | DATE: 12/15/98

FIGURE 3

TABLE 5

TEST PIT OBSERVATION SUMMARY

Test Pit No	Location	Observations
TP-01	20-ft North and 19-ft west of the Northwest corner of Bld 44C. (North of Boiler Plant pipe chase; East end)	1. Minor amount of fuel oil entered excavation with infiltrating groundwater at approx. 7-ft BGS 2. No visual observation of free phase fuel oil or soil staining. 3. PID headspace measurements range from 4.7 ppm at surface to 0.7 ppm at 8-ft depth.
TP-02	5-ft South and 22-ft West of North west corner of former tanks (West end of Boiler Plant pipe chase at ASTs)	1. No evidence of fuel oil within soils or groundwater. 2. PID headspace measurements are non-detect.
TP-03	20-ft North and 14-ft East of Northwest corner of former tanks (North of Boiler Plant pipe chase on west end of the former tanks)	1. No evidence of fuel oil within soils or groundwater. 2. PID headspace measurements are non-detect.
TP-04	20-ft North and 61-ft West of the Northwest corner of Bld 44C (North of Boiler Plant pipe chase at the center of the former tanks)	1. No evidence of fuel oil within soils or groundwater. 2. PID headspace measurements range from non-detect to 1 ppm.
TP-05	20-ft North and 13-ft East of the Northwest corner of Bld 44C (East side of Barge piping chase)	1. Residual fuel oil detected within soils from 4-ft BGS to the water table at 6.9-ft BGS. Residual oil extends approximately 7-ft laterally (East) from the chase structure. 2. Some free phase fuel oil entered excavation with infiltrating groundwater at 6.9-ft BGS. 3. PID headspace measurements range from non-detect at surface to 32 ppm at 8-ft depth.
TP-06	7-ft South and 10-ft West of the Southwest corner of Bld 44A. (Southeast corner of ASTs)	1. No fuel oil detected within the soils. 2. Trace oil odor and sheen within the groundwater. 3. PID headspace measurements range from non-detect at surface to 3.1 ppm at 10-ft depth.
TP-07	12-ft South and 25-ft east of the Southwest corner of Bld 44A (Southeast of the ASTs)	1. No fuel oil detected within the soils to the water table. 2. PID headspace measurements are non-detect.
TP-08	30-ft North and 6-ft East of the Northwest corner of Bld 44C. (West side of Barge pipe chase)	1. Residual fuel oil observed in soils from 3 to 6-ft BGS at the water table. Residual oil extends approximately 2-ft laterally (West) from the concrete chase structure. 2. Fuel oil entered pit with infiltrating groundwater. 3. PID headspace measurements range from non-detect at surface to 3.1 ppm at 10-ft depth.
TP-09	22-ft South and 3-ft west of the Southeast corner of Bld 44C (Southeast corner of former tanks)	1. No fuel oil detected within soils and groundwater. 2. PID headspace measurements are non-detect.

Test Pit No	Location	Observations
TP-10	42-ft north and 20-ft West of the ASTs valve pit (North of ASTs;Center of roadway)	1. No fuel oil detected within soils and groundwater. 2. PID headspace measurements are non-detect.
TP-11	33-ft North and 16-ft East of the Northwest corner of bld 44C. (Pit extends from TP-08 to the railroad tracks)	1. Residual fuel oil detected within soils outside of the piping structure from 3-ft BGS to the base of the excavation at 4-ft BGS. Residual oil extends greater than 3-ft laterally (West) from the Barge piping structure. 2. No fuel oil detected within the gravel fill of the piping chase structure. 3. No PID measurement taken.
TP-12	100-ft Northwest of Northwest corner of Building 35 and 28-ft perpendicular to Building 35.	1. No fuel oil detected in soils or groundwater. 2. PID headspace measurements non-detect
TP-13	50-ft Northwest of Northwest corner of Building 35 and 28-ft perpendicular to Building 35.	1. No fuel oil detected in soils or groundwater. 2. PID headspace measurements non-detect
TP-14	125-ft Northeast of Southeast corner of Building 45, location between railroad tracks.	1. No fuel oil detected in soils or groundwater. 2. PID headspace measurements non-detect
TP-15	South of Southeast corner of Building 45 at railroad track termination	1. No fuel oil detected in soils or groundwater. 2. PID headspace measurements non-detect to 2-ppm
TP-16	100-ft Southwest of TP-15 adjacent to former pipe chase	1. No free-phase fuel oil detected in soils or groundwater. Slight sheen on groundwater. 2. PID headspace measurements non-detect to 1.7-ppm
TP-17	Adjacent to steam line at the Northeast corner of the ASTs secondary containment area	1. No fuel oil detected in soils or groundwater. 2. PID headspace measurements 0.5 to 2-ppm

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TEST PIT NO. TP-01

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD EXCAVATION CONTRACTOR RADIAN

DATE 10-1-98 EXCAVATION START DATE 10-1-98 EXCAVTION COMPLETION DATE 10-1-98

CHK BY _____ SURFACE ELEVATION _____

DATE _____

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
	SS-1	ASPHALT BROWN 10YR 4/3 FINE SAND, TRACE SILT - MOIST	SP		4.7 PPM		
2	SS-2				4 PPM		
4	SS-3				4 PPM		
6	SS-4	V. DK GRAY 2.5Y 3/1 WET FINE SAND, TRACE SILT LITTLE GRAVEL (1/2 TO 2-IN)	SP		1.5 PPM		
	SS-5	DK GRAY 2.5Y 4/1 FINE SAND, LITTLE SILT - SATURATED	SP	7.0	0.7 PPM		MINOR AMT OF OIL ENTERING EXCAVATION WITH GROUNDWATER
8		TOTAL DEPTH = 8 FT EXCAVATION COLLAPSED					NO VISUAL OBSERVATION OF SOIL STAINING OR FREE PHASE PETROLEUM IN SOILS.

ADDITIONAL REMARKS

LOCATION: FROM NW CORNER OF BLD 44C;
20-FT NORTH
19-FT WEST

FILE: \FORMS\GEOLOGY\TP-1

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TEST PIT NO. TP-02

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 10-1-98

EXCAVATION START DATE 10-1-98 EXCAVTION COMPLETION DATE 10-1-98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT					
	SS-1	BROWN 10YR 4/3 FINE SAND, TRACE SILT AND GRAVEL (1/4 TO 1/2-IN) -MOIST			0 PPM		NO VISUAL OBSERVATION OF FUEL OIL WITHIN SOILS
2	SS-2	AS ABOVE, GRAVEL (1/2 TO 2-IN)	SP		0 PPM		NO OBSERVATION OF GROUNDWATER INFILTRATION DUE TO COLLAPSE OF EXCAVATION
4	SS-3	AS ABOVE, GRAVEL (1/2 TO 2-IN) LITTLE COARSE SAND			0 PPM		
6	SS-4	DK GRAY 2.5Y 4/1 FINE SAND, LITTLE SILT WET, SATURATED AT 7.0 FT.	SP	▽ 7 FT	0 PPM		
8		TOTAL DEPTH = 8 FT EXCAVATION COLLAPSED					

ADDITIONAL REMARKS

LOCATION RELATIVE TO NW CORNER OF FORMER TANKS:
5-FT SOUTH
22-FT WEST

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-03

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 10-1-98

EXCAVATION START DATE 10-1-98 EXCAVTION COMPLETION DATE 10-1-98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT					
	SS-1	BROWN 10YR 4/3 FINE TO MED. SAND, LITTLE SILT, TRACE GRAVEL (1/4 TO 1/2 IN) MOIST			BAR 0		NO VISUAL OBSERVATION OF FUEL OIL WITHIN SOILS OR GROUNDWATER
2							
4	SS-2	BROWN 10YR 4/3 FINE SAND, TRACE SILT AND GRAVEL (1/2 TO 2-IN) MOIST	SP		BAR 0		
6	SS-3	DK GRAY 2.5Y 4/1 FINE SAND, TRACE SILT WET, SATURATED BELOW 6.6 FT	SP	▽ 6.6 FT	BAR 0		AS ABOVE.
8		TOTAL DEPTH = 8 FT					

ADDITIONAL REMARKS

LOCATION RELATIVE TO NW CORNER OF FORMER TANKS:
20-FT NORTH
14-FT EAST

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-01

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80005619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 10-1-98

EXCAVATION START DATE 10-1-98 EXCAVTION COMPLETION DATE 10-1-98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT					NO FUEL OIL OBSERVED IN SOILS OR GROUNDWATER
	SS-1	BROWN 10YR 4/3 FINE SAND, TRACE SILT & GRAVEL (1/2 TO 2-IN) MOIST	SP		0 PPM		
2	SS-2				0 PPM		
4	SS-3	BROWN 10YR 4/3 FINE TO MED SAND, TRACE SILT & GRAVEL (1/2 TO 2-IN) MOIST			0 PPM		
6	SS-4	DK. GRAY 2.5Y 4/1 FINE SAND, TRACE SILT. SATURATED BELOW 6.6 FT	SP	▽ 6.6 FT	1 PPM		
8		TOTAL DEPTH = 8 FT					

ADDITIONAL REMARKS

LOCATION RELATIVE TO THE NW CORNER OF BLD 44C:
61-FT WEST
20-FT NORTH

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-05

PROJECT NAME: MOTBY TANK REMOVAL — PROJECT NO. 80003619

LOCATION: BAYONNE NJ — GEOLOGIST: KEITH DODRILL

BY: KD — EXCAVATION CONTRACTOR: RADIAN

DATE: 10-2-98 — EXCAVATION START DATE: 10-1-98 — EXCAVTION COMPLETION DATE: 10-2-98

CHK BY: — SURFACE ELEVATION:

DATE:

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT					
2	SS-1	BROWN 10YR 4/3 FINE TO MED SAND, LITTLE SILT, TRACE GRAVEL (1/4 TO 1/2-IN) MOIST	SP		0 PPM		
	SS-2				0.7 PPM		
4	SS-3/SS-4	V. DK BROWN 10YR 2/2 FINE TO MED SAND, LITTLE SILT, TRACE GRAVEL (1/4-1/2-IN) WET, PETROLEUM ODOR BETWEEN CONCRETE STRUCTURE & 6-IN CLAY SEWE-LINE (SS-3) - MOIST			SS-3 = 21.5 / SS-4 = 0.7		SOIL FREE OF STAINING ON EAST SIDE OF 6-IN CLAY PIPE BROWN 10YR 4/3 (SS-4)
6	SS-5	DK GRAY 2.5Y 4/1 FINE SAND, LITTLE SILT SATURATED AT 6.9 FT V. DK BROWN STAINING BENEATH CONCRETE STRUCTURE (HA-BOR FILL LINE)	SP	▽ 6.9 FT	32 PPM		GROUNDWATER EXIBITS SOME FREE PHASE FUEL OIL ON SURFACE
8		TOTAL DEPTH = 8 FT					

NOTE: EXCAVATION EXTENDS ~7 FT EAST OF HARBOR FILL LINE CONCRETE STRUCTURE. SOIL STAINING NOTED BENEATH STRUCTURE & EXTENDS ~4 FT EAST TO Ø6-IN CLAY PIPE.

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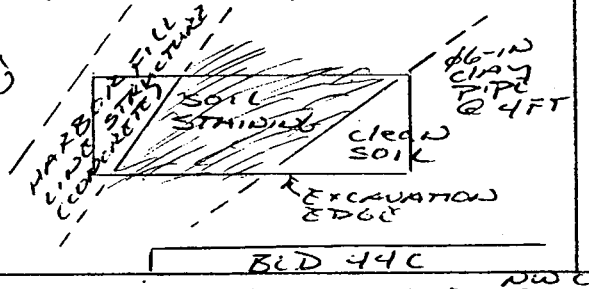

ADDITIONAL REMARKS: LOCATION RELATIVE TO BLD 44C NW CORNER OF: 20-FT-NORTH, 13-FT EAST

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-06

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 10-5-98

EXCAVATION START DATE 10-5-98 EXCAVTION COMPLETION DATE 10-5-98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT					
	35-1	BROWN 10 YR 4/3 FINE TO COARSE SAND LITTLE GRAVEL (1/2 TO 2-IN) TRACE SILT MOIST	SP		0 PPM		NO FREE PETROLEUM OBSERVED WITHIN SOILS. TRACE OIL SHEEN ON GROUNDWATER WITHIN EXCAVATION & EXHIBITS PETROLEUM ODOR.
2	35-2				1.5 PPM		
4	35-3				0.7 PPM		
6	35-4	LT OLIVE BROWN 2.5Y 5/3 FINE SAND, TRACE SILT AND GRAVEL (1/4-IN) MOIST			0.7 PPM		
8	35-5	DK GRAY 2.5Y 4/1 FINE SAND, LITTLE SILT SATURATED. PETROLEUM ODOR	SP		3.1 PPM		
10		TOTAL DEPTH = 10 FT					

ADDITIONAL REMARKS

LOCATION RELATIVE TO SW CORNER OF BLD 44A
7-FT SOUTH
10-FT WEST

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-07

PROJECT NAME MOBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD EXCAVATION CONTRACTOR RADIAN

DATE 10-5-98 EXCAVATION START DATE 10-5-98 EXCAVTION COMPLETION DATE 10-5-98

CHK BY _____ SURFACE ELEVATION _____

DATE _____

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT					
2 4		BROWN 10YR 4/3 FINE TO COARSE SAND LITTLE GRAVEL (1/2 TO 2-IN) TRACE SILT & COBBLES (12-IN) MOIST	SP				NO FUEL OIL OBSERVED WITHIN SOILS. EXCAVATION BACKFILLED PRIOR TO GROUNDWATER-INFILTRATION DUE TO SIDEWALL COLLAPSE & POTENTIAL OF UNDER-MINING STORM SEWER-LINES adjacent TO excavation.
6		LT OLIVE BROWN 2.5Y 5/3 FINE SAND, TRACE SILT MOIST	SP				
8		DK GRAY 2.5Y 4/1 FINE SAND, LITTLE SILT WET	SP				
		V. DK GRAY 2.5Y 3/1 FINE SAND, SOME SILT SATURATED, ORGANIC ODOR	SM	▽ 9.0 FT			
10		TOTAL DEPTH = 10 FT					

ADDITIONAL REMARKS: LOCATION RELATIVE TO SW CORNER OF BLD 44A
12-FT SOUTH
25-FT EAST

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-08

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 10/19/98

EXCAVATION START DATE 10/19/98 EXCAVTION COMPLETION DATE 10/19/98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
2	SS-1	BROWN 10YR 4/3 FINE TO MED SAND TRACE SILT & GRAVEL (1-IN) MOIST	SP		0 PPM		
4	SS-2	AS ABOVE WET, PETROLEUM STAINED BLACK 5Y 2.5/1	SP		41 PPM		
	SS-3 SS-4	BLACK 10YR 2/1 (SS-3) FINE TO MEDIUM SAND V. DK GRAYISH BROWN 2.5Y 3/2 (SS-4)		▼	3.7 / 7 PPM		SS-3 2' FROM STRUCTURE SS-4 3' FROM STRUCTURE
6	SS-5	V. DK GRAY 2.5Y 3/1 FINE TO MED SAND. LITTLE SHELL FRAGMENTS TRACE SILT SLIGHT PETROLEUM ODOR	SP	6.0	3.7 PPM		FUEL OIL ENTERING EXCAVATION WITH GROUNDWATER
8		TOTAL DEPTH SOIL STAINING OCCURS TO APPROX 2-FT EXTENT WEST OF CONCRETE STRUCTURE. NO UNDERMINE EXCAVATION OF STRUCTURE PERFORMED.					

ADDITIONAL REMARKS

LOCATION: 13 FT NORTHEAST OF TP-05 ON WEST SIDE OF HARBOR FILL PIPING STRUCTURE

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-09

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD EXCAVATION CONTRACTOR RADIAN

DATE

EXCAVATION START DATE 10/19/98 EXCAVTION COMPLETION DATE 10/19/98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
2	SS-1	BROWN 10 YR 4/3 FINE SAND, TRACE SILT, LITTLE GRAVEL (1-IN) MOIST	SP		1 APPM 0		NO PETROLEUM FOUND
4	SS-2	AS ABOVE, TRACE GRAVEL			1 APPM 0		
	SS-3				1 APPM 0		
6	SS-4	DARK GRAY 2.5 Y 4/1 FINE SAND, LITTLE SILT MOIST TO WET	SP		1 APPM 0		NO PETROLEUM FOUND
8	SS-5	SATURATED AT 8 FT		8.0	1 APPM 0		NO OIL ENTERING WITH GROUNDWATER EXCAVATION CAVED
10		TOTAL DEPTH					

ADDITIONAL REMARKS

LOCATION: SE CORNER OF FORMER TANKS RELATIVE TO BLD 44C SW CORNER:
SOUTH: 22 FT
WEST: 3 FT

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-10

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE, NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 10/20/96

EXCAVATION START DATE 10/20/96 EXCAVTION COMPLETION DATE 10/20/96

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT					NO PETROLEUM CONSTITUENTS OBSERVED
	SS-1	BROWN 10YR 4/3 FINE SAND, TRACE SILT, MOIST	SP		0 PPM		
2	SS-2				0 PPM		
4	SS-3				0 PPM		
6	SS-4	DK GRAY 2.5Y 4/1 FINE SAND, TRACE SILT SATURATED AT 7.0 FT	SP	7.0	0 PPM		EXCAVATION COLLAPSED AT 7.0 FT
8		TOTAL DEPTH					

ADDITIONAL REMARKS

LOCATION: RELATIVE TO AST SECONDARY CONTAINMENT VALVE PIT:
NORTH: 42-FT
WEST: 20-FT

FILE: \FORMS\GEOLOGY\TP-1

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TEST PIT NO. TP-11 PAGE 1 OF 1

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 10/20/98

EXCAVATION START DATE 10/20/98 EXCAVTION COMPLETION DATE 10/20/96

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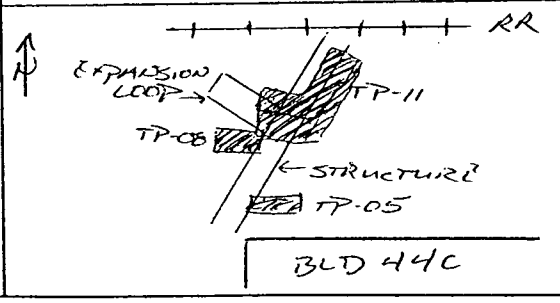
SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT					
2		BROWN 10YR 4/3 FINE TO MED SAND TRACE SILT & GRAVEL (1-IN) MOIST	SP				
		AS ABOVE, LITTLE GRAVEL (1-IN) BLACK 5Y 2.5/1 RESIDUAL PETROLEUM WITHIN SOILS	SP/SW				PETROLEUM EXTENDS > 3 FT EAST OF CONCRETE STRUCTURE
4		TOTAL DEPTH					

NOTE: ABOVE CLASSIFICATION IS FOR SOILS ADJACENT TO THE EAST SIDE OF THE FORMER HARBOR FILL PIPING CONCRETE STRUCTURE.

MATERIAL WITHIN THE CONCRETE STRUCTURE CONSIST OF ~1-IN STRUCTURAL GRAVEL FILL. NO FUEL OIL OR PETROLEUM STAINING OBSERVED WITHIN THE STRUCTURE.



ADDITIONAL REMARKS

LOCATION: RELATIVE TO THE NW CORNER OF BLD 44C
NORTH: FROM 30 TO 35 FT
EAST: FROM 6 TO 26 FT
(TP-08 TO RAILROAD TRACKS)

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-12

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE, NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 12-9-98

EXCAVATION START DATE 12-9-98 EXCAVTION COMPLETION DATE 12-9-98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
	SS-1	BROWN 10 YR 4/3 FINE SAND, LITTLE GRAVEL, TRACE SILT - MOIST	SP		0 PPM		
2	SS-2	CONCRETE RUBBLE FROM 2-4 FT			0 PPM		
4	SS-3	BROWN 10 YR 4/3 FINE SAND, LITTLE GRAVEL (1-IN DIA) TRACE SILT - MOIST	SP		0 PPM		
6		TOTAL DEPTH = 6 FT AT CONCRETE STRUCTURE NO PETROLEUM CONSTITUENTS DETECTED.					

ADDITIONAL REMARKS

LOCATION: NORTH SIDE OF BARGE FILL PIPE CHASE ADJACENT TO BLD 35 28-FT PERPENDICULAR TO BLD 35 #100-FT NW OF NW CORNER OF BUILDING. (28 FT OFF OF BLD)

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-13

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 12-9-98

EXCAVATION START DATE 12-9-98 EXCAVTION COMPLETION DATE 12-9-98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
	SS-1	BROWN 10YR 4/3 FINE SAND, LITTLE SILT AND GRAVEL (1/2 TO 1-IN DIA) MOIST	SP/SM		0 PPM		
2	SS-2	BROWN 10YR 4/3 FINE TO MEDIUM SAND, TRACE SILT AND GRAVEL (1/2-IN DIA). SOME CONCRETE RUBBLE FROM 2 TO 4-FT	SP		0 PPM		
4	SS-3				0 PPM		
6	SS-4				3 PPM		
8		TOTAL DEPTH = 8 FT NO VISUAL OBSERVATION OF PETROLEUM WITHIN SOIL OR GROUNDWATER		8 FT			

ADDITIONAL REMARKS

LOCATION: NORTH SIDE OF BARGE FILL PIPE CHASE ADJACENT TO BLD 35 50-FT NE OF NW CORNER OF BLD 35 & 28-FT OFF OF BLD

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-14

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 12-9-98

EXCAVATION START DATE 12-9-98 EXCAVTION COMPLETION DATE 12-9-98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT					
		2-IN DIA STONE ROAD BED AND RAILROAD TRACKS	/				NO PETROLEUM OBSERVED IN SOILS
		DK BRN FINE SAND AND CINDER ROAD BED	/				
2		BROWN FINE TO MEDIUM SAND SOME GRAVEL (1/4-1/2-IN) TRACE SILT, -MOIST	SP/GP		0 PPM		
4					0 PPM		
6		TOTAL DEPTH = 6 FT					

ADDITIONAL REMARKS

LOCATION: BETWEEN RAILS OF ABANDONED RAILROAD ADJACENT TO BLD 45. 125-FT NE OF SE CORNER OF BLD 45

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-15

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST KEITH DODRILL

BY KD

EXCAVATION CONTRACTOR RADIAN

DATE 12-9-98

EXCAVATION START DATE 12-9-98 EXCAVTION COMPLETION DATE 12-9-98

CHK BY

SURFACE ELEVATION

DATE

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
0		ASPHALT					
		2-IN GRAVEL ROADBED AND FORMER RAILROAD TIES					
	SS-1	DK BROWN FINE SAND AND CINDER FILL			0 PPM		
2		10Y 4/3 BROWN FINE SAND, TRACE SILT AND GRAVEL (1/2-IN DIA) - MOIST	SP		2 PPM		
4	SS-2						
6							
7		TOTAL DEPTH = 7 FT AT REFUSAL ON CONCRETE RUBBLE NO PETROLEUM VISUALLY OBSERVED IN SOILS					

ADDITIONAL REMARKS

LOCATION: SOUTH SIDE OF BARGE FILL PIPE CHASE AT TERMINATION OF RR TRACKS. & SOUTH OF THE SE CORNER OF BLD 45

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-16

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST D. DEIHL

BY D.D.

EXCAVATION CONTRACTOR RADIAN

DATE 12-11-98

EXCAVATION START DATE 12-11-98 EXCAVTION COMPLETION DATE 12-11-98

CHK BY KD

SURFACE ELEVATION

DATE 12-15-98

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT (0 TO 8-IN)					
		BLACK CINDERS WITH INTERBEDDED LAYERS OF FINE TO MEDIUM BROWN SAND - MOIST					
2	SS-1	3FT			1.7 PPM		
		BROWN FINE TO MEDIUM SAND, TRACE GRAVEL					
4	SS-2		SP		0.5 PPM		
6	SS-M			7.5'	0 PPM		SLIGHT ORGANIC SHEEN ON GROUNDWATER SURFACE.
8		TOTAL DEPTH = 8-FT NO FREE PHASE FUEL OILS OBSERVED WITHIN SOILS					

ADDITIONAL REMARKS

FILE: \FORMS\GEOLOGY\TP-1

RADIAN INTERNATIONAL

TEST PIT NO. TP-17

PROJECT NAME MOTBY TANK REMOVAL PROJECT NO. 80003619

LOCATION BAYONNE NJ GEOLOGIST D. DIETHL

BY DD

EXCAVATION CONTRACTOR RADIAN

DATE 12-11-98

EXCAVATION START DATE 12-11-98 EXCAVTION COMPLETION DATE 12-11-98

CHK BY KD

SURFACE ELEVATION

DATE 12-15-98

DEPTH FEET	SAMPLE NO.	LITHOLOGIC CLASSIFICATION	PROFILE	STATIC WATER LEVEL (FT)	PID READING	DEPTH (FEET)	OBSERVATIONS/ REMARKS
		ASPHALT (0 TO 6-IN)					
		2-IN DIA GRAVEL (0.5 TO 1-FT)					
2		BROWN FINE TO MEDIUM SAND	SP		0.5 PPM		NO FUEL OIL OBSERVED WITHIN SOILS OR GROUNDWATER
4					1.7 PPM		
6		7 FT			0.5 PPM		
		GRAY FINE SAND	SP	7.5'			
8		TOTAL DEPTH = 8 FT					

ADDITIONAL REMARKS

FILE: \FORMS\GEOLOGY\TP-1