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NS MAYPORT
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REMEDIAL ACTION ALTERNATIVES WAIVER REQUEST FOR SITE 289 NS MAYPORT FL
7/1/2013
TETRA TECH

**Remedial Alternatives Analysis Waiver Request
Site 289
Naval Station Mayport
Jacksonville, Florida**

Tetra Tech is pleased to submit a Remedial Alternatives Analysis (RAA) Waiver Request for Site 289 at Naval Station (NAVSTA) Mayport. This RAA Waiver Request was prepared for the United States Navy, Naval Facilities Engineering Command Southeast under Contract Task Order JM60 for the Comprehensive Long-term Environmental Action Navy Contract Number N62470-08-D-1001. Approval of the RAA Waiver Request is part of the path forward allowing for the Florida Department of Environmental Protection (FDEP) approval of a Remedial Action Plan Alternative (RAPA) Order/Land Use Control Implementation Plan (LUCIP).

SITE LOCATION

NAVSTA Mayport is located within the corporate limits of the city of Jacksonville, Duval County, Florida, approximately 12 miles to the northeast of downtown Jacksonville and adjacent to the town of Mayport. A Site Vicinity Map is provided as Figure 1. The Station complex is located on the northern end of a peninsula bound by the Atlantic Ocean to the east and the St. Johns River to the north. NAVSTA Mayport occupies the entire northern part of the peninsula except for the town of Mayport, which is located to the west between the Station and the St. Johns River.

SITE DESCRIPTION AND HISTORY

Site 289 includes Building 289, an operational office building located in the south central area of NAVSTA Mayport as shown on Figure 2. The focus of the environmental investigations at Site 289 centers on the release of approximately 40 gallons of fuel oil fuel leaked out of the fill port of an underground storage tank (UST) at Building 289, reportedly caused by rain water filling the tank through a fill port. The UST and fill port were both located in an asphalt parking lot. During a rain event, the fuel oil released flowing out the fill port and south across the asphalt parking lot into a sand bottom storm water ditch located along Moale Avenue. Moale Avenue forms the southern boundary of Site 289. The UST had reportedly been taken out of service approximately 15 years ago, but the contents were never emptied. A Site Plan is provided as Figure 3. Environmental work conducted on site includes spill response and cleanup, tank closure, and a site assessment.

Spill Response/Cleanup – March 2010

During March 2010, IAP Hill responded to the cleanup of Site 289. According to IAP Hill Document Number 2301-291, dated April 7, 2010, the spill response cleanup included the following:

- Thirty cubic yards of contaminated soil were removed from the storm water ditch located along Moale Avenue and backfilled with clean fill.
- Approximately 300 gallons of diesel fuel and 200 gallons of an oil/water mixture were pumped out of the tank.
- The asphalt parking lot was scrubbed with absorbent material.
- No confirmation samples were collected.
- Wastes were transported to at the Mayport NAVSTA hazardous storage facility for disposal.

Tank Closure Report – February 2011

In January 2011, Martin Environmental Solutions, Inc. conducted a tank closure. The estimated 500-gallon capacity, non-regulated fuel oil UST was removed, and closure assessment activities were performed. Results of the Tank Closure Report include the following:

- Soil total recoverable petroleum hydrocarbon (TRPH) impacts at tank pit in excess of FDEP Soil Cleanup Target Levels (SCTLs) at depths greater than 2 feet below land surface (bls).
- Groundwater samples analyzed from tank pit were less than FDEP Groundwater Cleanup Target Levels (GCTLs).

A Tank Closure Report detailing closure activities was prepared in February 2013.

Site Assessment Report – July 2013

Tetra Tech conducted a site assessment between November 2011 and November 2012 that included soil gas surveys and multiple sampling events (soil and groundwater) in the areas of both the former UST and the storm water ditch. A summary of select site assessment results includes the following:

- Ditch Area – No soil or groundwater results were measure exceeding FDEP SCTLs and GCTLs, respectively.
- Former Tank Pit – Soil samples collected 2 feet bls exceeded the FDEP Residential Direct Exposure and Leachability SCTLs for TRPH.
- Former Tank Pit – Groundwater concentrations were less than GCTLs.

The final Site 289 Site Assessment Report (SAR), which recommended a RAPA Order with a LUCIP, was approved by the FDEP in July 2013. Soil and groundwater analytical tables from the SAR (Tables 3-3 and 3-4, respectively) are included in the Tables section of this report.

CONCLUSIONS

Based on the environmental work conducted the following conclusions can be made:

- Groundwater concentrations were less than FDEP GCTLs.
- Soil samples collected 2 feet bls exceeded the FDEP Residential Direct Exposure and Leachability SCTLs for TRPH at the former tank pit.
- Contaminated soils are covered by an asphalt parking lot preventing exposure to site users.
- Per Chapter 62-770, Florida Administrative Code, Remedial Management Option II, a conditional closure instituting an LUC for impacted soils is applicable for Site 289. The LUC area is depicted in Figure 4.

Based on the information pertaining to environmental work conducted, a RAA Waiver is requested. Upon receiving the RAA Waiver, Tetra Tech will pursue, on behalf of the Navy, an FDEP approved RAPA Order that will include a LUCIP. Once the order is received, Site 289 will be incorporated into the Basewide Management Plan where institutional controls, engineering controls, and information documenting the annual inspection of site conditions form the corrective measures associated with this site. The inspector conducting the annual inspection will evaluate site conditions on an annual basis and any changes are to be conveyed to the FDEP.

TABLES

**TABLE 3-3
SOIL LABORATORY ANALYTICAL RESULTS**

Site Assessment Report, Site 289
Naval Station Mayport
Jacksonville, Florida
Page 1 of 2

LOCATION	FL CTL 62-777	FL CTL 62-777	FL CTL 62-777	MPT-289-SS01	MPT-289-SS02	MPT-289-SS03	MPT-289-SS04	MPT-289-SS05	MPT-289-SS06	MPT-289-SS07	MPT-289-SS08	MPT-289-SS09	MPT-289-SS10
SAMPLE IDENTIFICATION	Industrial	Residential	Leachability	MPT-289-SS01-04-20120124	MPT-289-SS02-04-20120124	MPT-289-SS03-04-20120124	MPT-289-SS04-04-20120124	MPT-289-SS05-04-20120124	MPT-289-SS06-04-20120124	MPT-289-SS07-04-20120124	MPT-289-SS08-03-20120124	MPT-289-SS09-03-20120124	MPT-289-SS10-03-20120124
SAMPLE DATE	Soil-Direct	Soil-Direct	Based GW	1/24/2012	1/24/2012	1/24/2012	1/24/2012	1/24/2012	1/24/2012	1/24/2012	1/24/2012	1/24/2012	1/24/2012
VOLATILES (µg/kg)													
METHYLENE CHLORIDE (1)	26000	17000	20	1.63 U	1.37 U	1.43 U	1.37 U	1.4 U	1.29 U	1.67 J	1.19 U	1.52 J	1.25 U
POLYCYCLIC AROMATIC HYDROCARBONS (µg/kg)													
1-METHYLNAPHTHALENE (1)	1800000	200000	3100	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	1.98 U	2.62 J	2.01 U
2-METHYLNAPHTHALENE (1)	2100000	210000	8500	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	1.98 U	3.5 J	2.01 U
ACENAPHTHENE (1)	20000000	2400000	2100	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	1.98 U	3.75 J	2.01 U
ACENAPHTHYLENE (1)	20000000	1800000	27000	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	20	19.1	8.1
ANTHRACENE (1)	300000000	21000000	2500000	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	4.77 J	9.22	2.01 U
BAP EQUIVALENT-HALFND (1)	700	100	8000	5.71256	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	15.72589	17.8302	10.07897
BAP EQUIVALENT-POS (1)	700	100	8000	4.646	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	15.219	17.8302	9.07397
BENZO(A)ANTHRACENE (1)	--	--	800	2.67 J	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	3.39 J	10.5	3.93 J
BENZO(A)PYRENE (1)	700	100	8000	3.87 J	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	8.57	9.18	6.97 J
BENZO(B)FLUORANTHENE (1)	--	--	2400	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	9.92 U	12	7.91 J
BENZO(G,H,I)PERYLENE (1)	52000000	2500000	32000000	4.72 J	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	31.9	26.8	16.6
BENZO(K)FLUORANTHENE (1)	--	--	24000	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	1.98 U	5.95 J	3.01 J
CHRYSENE (1)	--	--	77000	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	1.98 U	10.7	3.87 J
DIBENZO(A,H)ANTHRACENE (1)	--	--	700	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	4.52 J	4.71 J	2.01 U
FLUORANTHENE (1)	59000000	3200000	1200000	3.36 J	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	3.05 J	25.5	4.65 J
FLUORENE (1)	33000000	2600000	160000	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	1.98 U	6.23 J	2.01 U
INDENO(1,2,3-CD)PYRENE (1)	--	--	6600	5.09 J	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	17.9	16.2	8.86
NAPHTHALENE (1)	300000	55000	1200	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	1.98 U	4.34 J	2.01 U
PHENANTHRENE (1)	36000000	2200000	250000	1.92 U	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	1.98 U	16.4	2.37 J
PYRENE (1)	45000000	2400000	880000	3.06 J	1.78 U	1.74 U	1.73 U	1.7 U	1.79 U	1.81 U	3.38 J	22.5	7.12 J
PETROLEUM HYDROCARBONS (mg/kg)													
C11-C22 AROMATICS	15000	1800	1000	--	--	--	--	--	--	--	--	--	--
C19-C36 ALIPHATICS	280000	42000	not a concern	--	--	--	--	--	--	--	--	--	--
C9-C10 AROMATICS	3400	560	380	--	--	--	--	--	--	--	--	--	--
C9-C12 ALIPHATICS	11000	1700	31000	--	--	--	--	--	--	--	--	--	--
C9-C18 ALIPHATICS	21000	2900	140000	--	--	--	--	--	--	--	--	--	--
TRPH (C08-C40)	2700	460	340	12.8 U	11.7 U	11.6 U	11.4 U	11.6 U	11.3 U	12.1 U	13.5 U	13.8 U	17.4 J

**TABLE 3-3
SOIL LABORATORY ANALYTICAL RESULTS**

Site Assessment Report, Site 289
Naval Station Mayport
Jacksonville, Florida
Page 2 of 2

LOCATION	FL CTL 62-777	FL CTL 62-777	FL CTL 62-777	MPT-289-SS11	MPT-289-SS12	MPT-289-SS13	MPT-289-SS14	MPT-289-SS15	MPT-289-SS16	MPT-289-SS17	MPT-289-SS18	MPT-289-SS19	
SAMPLE IDENTIFICATION	Industrial	Residential	Leachability Based GW	MPT-289-SS11-03-20120124	MPT-289-SS12-07-20120125	MPT-289-SS13-07-20120125	MPT-289-SS14-07-20120125	MPT-289-SS15-07-20120125	MPT-289-SS16-07-20120125	MPT-289-SS16-07-20120126	MPT-289-SS16-07-20120127	MPT-289-SS16-07-20120128	
SAMPLE DATE	Soil-Direct	Soil-Direct	Soil-Direct	1/24/2012	1/25/2012	1/25/2012	1/25/2012	1/25/2012	1/25/2012	1/25/2012	5/23/2012	5/23/2012	7/25/2012
VOLATILES (µg/kg)													
METHYLENE CHLORIDE (1)	26000	17000	20	1.41 U	--	--	--	--	--	--	--	--	
POLYCYCLIC AROMATIC HYDROCARBONS (µg/kg)													
1-METHYLNAPHTHALENE (1)	1800000	200000	3100	1.76 U	--	--	--	--	--	--	--	--	
2-METHYLNAPHTHALENE (1)	2100000	210000	8500	1.76 U	--	--	--	--	--	--	--	--	
ACENAPHTHENE (1)	20000000	2400000	2100	1.76 U	--	--	--	--	--	--	--	--	
ACENAPHTHYLENE (1)	20000000	1800000	27000	1.76 U	--	--	--	--	--	--	--	--	
ANTHRACENE (1)	300000000	21000000	2500000	1.76 U	--	--	--	--	--	--	--	--	
BAP EQUIVALENT-HALFND (1)	700	100	8000	1.76 U	--	--	--	--	--	--	--	--	
BAP EQUIVALENT-POS (1)	700	100	8000	1.76 U	--	--	--	--	--	--	--	--	
BENZO(A)ANTHRACENE (1)	--	--	800	1.76 U	--	--	--	--	--	--	--	--	
BENZO(A)PYRENE (1)	700	100	8000	1.76 U	--	--	--	--	--	--	--	--	
BENZO(B)FLUORANTHENE (1)	--	--	2400	1.76 U	--	--	--	--	--	--	--	--	
BENZO(G,H,I)PERYLENE (1)	52000000	2500000	32000000	1.76 U	--	--	--	--	--	--	--	--	
BENZO(K)FLUORANTHENE (1)	--	--	24000	1.76 U	--	--	--	--	--	--	--	--	
CHRYSENE (1)	--	--	77000	1.76 U	--	--	--	--	--	--	--	--	
DIBENZO(A,H)ANTHRACENE (1)	--	--	700	1.76 U	--	--	--	--	--	--	--	--	
FLUORANTHENE (1)	59000000	3200000	1200000	1.76 U	--	--	--	--	--	--	--	--	
FLUORENE (1)	33000000	2600000	160000	1.76 U	--	--	--	--	--	--	--	--	
INDENO(1,2,3-CD)PYRENE (1)	--	--	6600	1.76 U	--	--	--	--	--	--	--	--	
NAPHTHALENE (1)	300000	55000	1200	1.76 U	--	--	--	--	--	--	--	--	
PHENANTHRENE (1)	36000000	2200000	250000	1.76 U	--	--	--	--	--	--	--	--	
PYRENE (1)	45000000	2400000	880000	1.76 U	--	--	--	--	--	--	--	--	
PETROLEUM HYDROCARBONS (mgkg)													
C11-C22 AROMATICS	15000	1800	1000	--	5300 R L	--	--	--	4100 R L	--	--	--	
C19-C36 ALIPHATICS	280000	42000	not a concern	--	4200	--	--	--	2100	--	--	--	
C9-C10 AROMATICS	3400	560	380	--	2000 R L	--	--	--	2000 R L	--	--	--	
C9-C12 ALIPHATICS	11000	1700	31000	--	510	--	--	--	970	--	--	--	
C9-C18 ALIPHATICS	21000	2900	140000	--	18000 R	--	--	--	10000 R	--	--	--	
TRPH (C08-C40)	2700	460	340	11.4 U	62300	14.1 J	12.7 U	13.3 U	41400	14 U	86.5	35.5	

Notes:

- (1) = The criteria value for this parameter has been converted to match the reported result.
- (2) = The criteria units and the result units for this parameter do not match, and a unit conversion mapping has not been established. Exceedance shading was not performed.
- = The chemical was not analyzed or no value was available.
- Data Qualifiers:
- Blank (i.e., no qualifier) = the chemical was detected.
- > = The chemical was detected.
- J = The chemical was detected but the concentration reported is an estimated value.
- U = The chemical was not detected.
- < = The chemical was not detected.
- R = The chemical was rejected.

**TABLE 3-4
GROUNDWATER LABORATORY ANALYTICAL RESULTS**

Site Assessment Report, Site 289
Naval Station Mayport
Jacksonville, Florida

LOCATION		MPT-289-MW01	MPT-289-MW02		MPT-289-MW03D		MPT-289-MW04	MPT-289-MW05	MPT-289-PZ01	MPT-289-PZ02	MPT-289-PZ02
SAMPLE IDENTIFICATION	FL CTL 62-777 GW-Table I	MPT-289-MW01-20120712	MPT-289-MW02-20120712	MPT-289-MW02-20121101	MPT-289-MW03D-20120712	MPT-289-MW03D-20121101	MPT-289-MW04-20120712	MPT-289-MW05-20120712	PZ-1-20111219	PZ-2-20111219	MPT-289-PZ02-081612
SAMPLE DATE		7/12/2012	7/12/2012	11/1/2012	7/12/2012	11/1/2012	7/12/2012	7/12/2012	12/19/2011	12/19/2011	8/16/2012
SEMIVOLATILES (µg/L)											
1-METHYLNAPHTHALENE	28	0.0463 U	0.814	1.83	4.58	0.522	0.0463 U	0.0463 U	0.0467 U	0.0485 U	--
2-METHYLNAPHTHALENE	28	0.0463 U	0.596	0.206	3.32	0.357	0.0463 U	0.0463 U	0.0467 U	0.0485 U	--
ACENAPHTHENE	20	0.0463 U	0.0706 J	0.049 U	0.435	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.0485 U	--
BENZO(A)ANTHRACENE	0.05	0.0463 U	0.0463 U	0.049 U	0.1 J	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.103 J	0.0463 U
BENZO(A)PYRENE	0.2	0.0463 U	0.0463 U	0.049 U	0.0719 J	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.0778 J	--
BENZO(B)FLUORANTHENE	0.05	0.0463 U	0.0463 U	0.049 U	0.1 J	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.112 J	0.0463 U
BENZO(G,H,I)PERYLENE	210	0.0463 U	0.0463 U	0.049 U	0.0895 U	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.145 J	--
BENZO(K)FLUORANTHENE	0.5	0.0463 U	0.0463 U	0.049 U	0.0936 J	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.101 J	--
CHRYSENE	4.8	0.0463 U	0.0463 U	0.049 U	0.104 J	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.0987 J	--
DIBENZO(A,H)ANTHRACENE	0.005	0.0463 U	0.0463 U	0.049 U	0.089 U	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.134 J	0.0463 U
FLUORANTHENE	280	0.0463 U	0.0463 U	0.049 U	0.145 J	0.0463 U	0.0801 J	0.0463 U	0.0467 U	0.0975 J	--
FLUORENE	280	0.0463 U	0.0463 U	0.049 U	0.695	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.0485 U	--
INDENO(1,2,3-CD)PYRENE	0.05	0.0463 U	0.0463 U	0.049 U	0.0851 J	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.115 J	0.0463 U
NAPHTHALENE	14	0.0463 U	0.192	0.237	0.518	0.0463 U	0.0463 U	0.0463 U	0.0467 U	0.0485 U	--
PHENANTHRENE	210	0.0926 U	0.148 J	0.049 U	0.736	0.0463 U	0.115 J	0.0926 U	0.0935 U	0.0971 U	--
PYRENE	210	0.0463 U	0.0463 U	0.0711	0.157 J	0.0697	0.0723 J	0.0463 U	0.0467 U	0.0958 J	--
PETROLEUM HYDROCARBONS (mg/L)											
TRPH (C08-C40) (1)	5	0.157 U	2.08	NS	1.04	NS	0.157 U	0.157 U	0.17 U	0.17 U	--

Notes:

(1) = The criteria value for this parameter has been converted to match the reported result.

(2) = The criteria units and the result units for this parameter do not match, and a unit conversion mapping has not been established. Exceedance shading was not performed.

-- = The chemical was not analyzed or no value was available.

Data Qualifiers:

Blank (i.e., no qualifier) = the chemical was detected.

> = The chemical was detected.

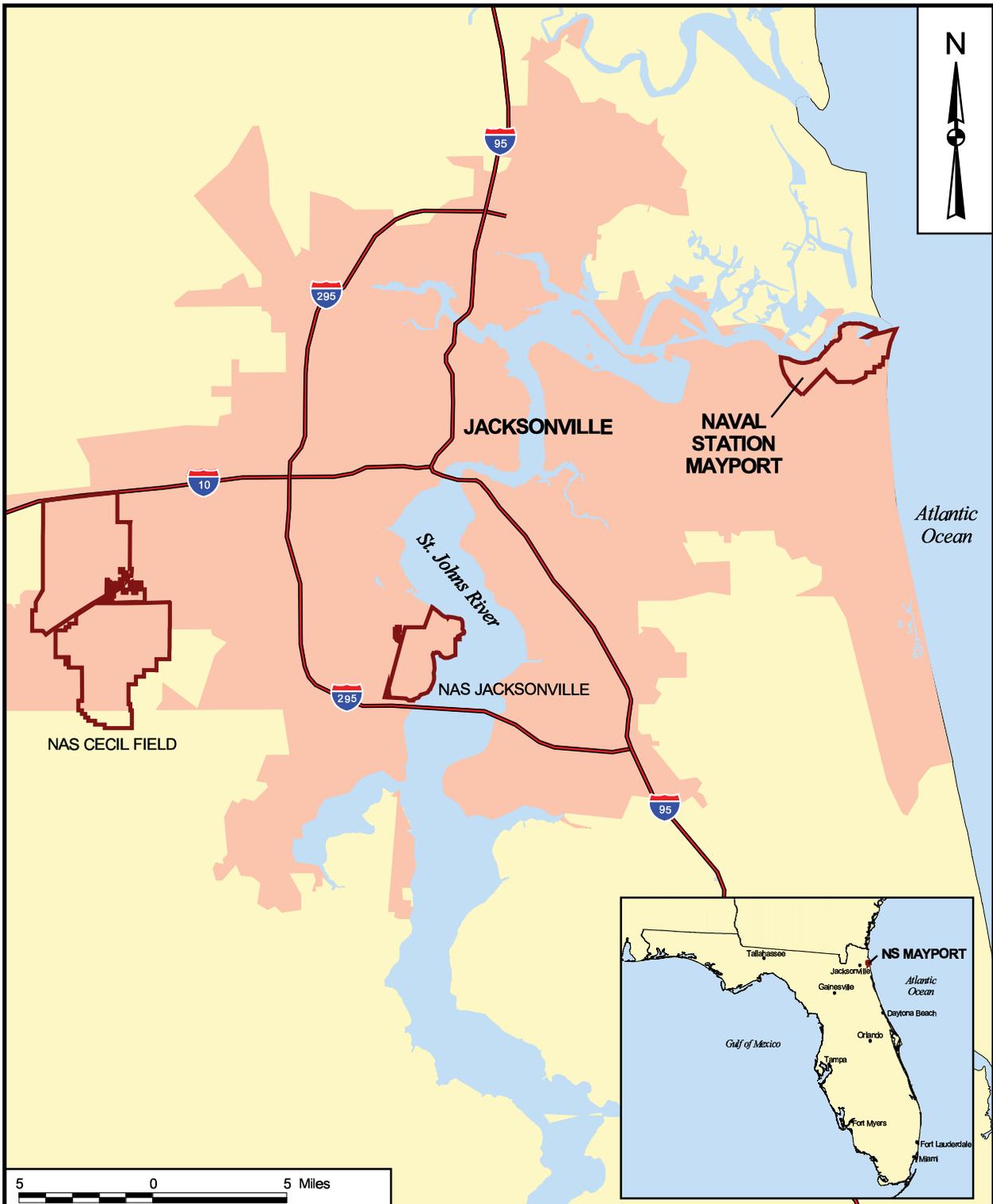
J = The chemical was detected but the concentration reported is an estimated value.

U = The chemical was not detected.

< = The chemical was not detected.

R = The chemical was rejected.

FIGURES



DRAWN BY K. PEILA	DATE 4/17/06
CHECKED BY D. SIEFKEN	DATE 5/11/06
COST/SCHEDULE-AREA	
SCALE AS NOTED	



**SITE VICINITY MAP
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA**

CONTRACT NUMBER 112G02316	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0



DRAWN BY	DATE
S. STROZ	08/26/11
CHECKED BY	DATE
T. DECK	08/26/11
COST/SCHEDULE-AREA	
SCALE AS NOTED	



SITE LOCATION MAP
BUILDING 289
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA

CONTRACT NUMBER	
APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—
DRAWING NO.	REV
FIGURE 2	0



50	0	50
Feet		
DRAWN BY	DATE	
J. ENGLISH	08/08/12	
CHECKED BY	DATE	
D. SIEFKEN	08/08/12	
REVISED BY	DATE	
SCALE AS NOTED		

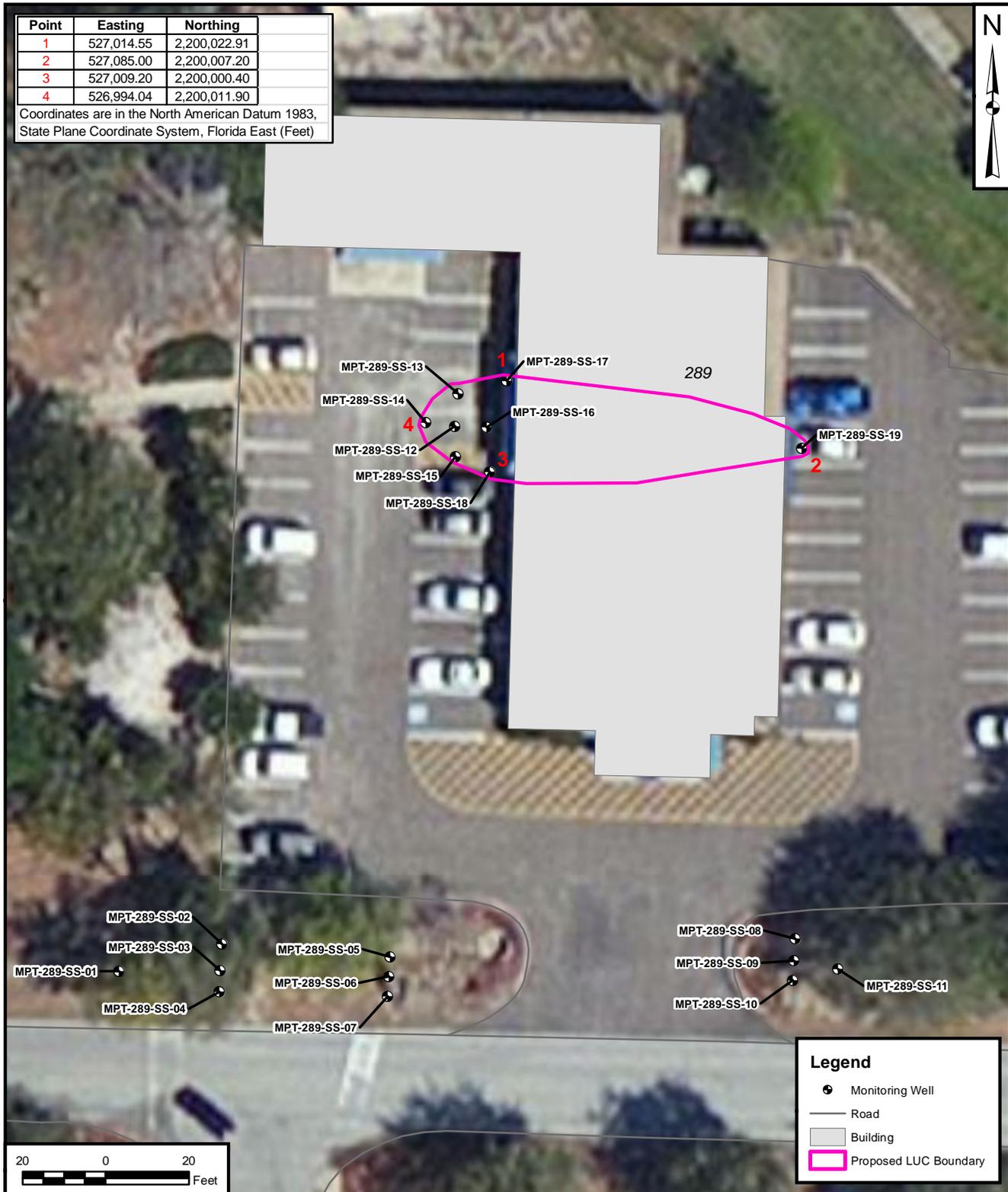


SITE PLAN
SITE 289
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA

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

Point	Easting	Northing
1	527,014.55	2,200,022.91
2	527,085.00	2,200,007.20
3	527,009.20	2,200,000.40
4	526,994.04	2,200,011.90

Coordinates are in the North American Datum 1983, State Plane Coordinate System, Florida East (Feet)



DRAWN BY	DATE
J.MADDEN	07/30/13
CHECKED BY	DATE
D.SIEFKEN	07/30/13
REVISED BY	DATE
SCALE AS NOTED	



PROPOSED LUC BOUNDARIES
BUILDING 289
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA

CONTRACT NUMBER	CTO NUMBER
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO.	REV
FIGURE 4	0