# BOUCHARD B120 RELEASE SHORELINE SEGMENT SUMMARY



5 Lan Drive, Suite 200 Westford, Massachusetts 01886 Tel. (978) 692-1114 Fax (978) 692-1115

GeoInsight Project Number 3871-002

SEGMENT IDENTIFICATION: W1E-04

SEGMENT NAME: Crescent Beach

SEGMENT LOCATION: Mattapoisett, Massachusetts (Map attached)

MAXIMUM DEGREE OF INITIAL OILING: Heavy (Oiling Score: 3.92)

SEGMENT INSPECTION STATUS: Passed IRAC criteria endpoints on 08/23/2003.

# **SITE-SPECIFIC INFORMATION**

#### PHYSICAL CHARACTERISTICS:

### Primary Shoreline Type/ Geology:

• 1C: sand and gravel (pebble to boulder) and rip rap groins (jetties).

# Secondary Shoreline Type/ Geology:

- 1B: Less utilized semi-public and private sand beaches; and
- 1F: Salt marshes.

# Hydrogeology:

• Mattapoisett Harbor is located to the west, Pine Island Pond to the east, and Buzzards Bay to the south. Fringing saltwater wetlands are located on the east side of the segment, and back barrier saltwater wetlands are located behind the west side of the segment.

### Bedrock Geology:

 Bedrock underlying this segment is identified as undivided granite, gneiss, and schist (Zen, 1983).

### ENVIRONMENTAL SENSITIVE RECEPTORS (Identified within 500 feet of segment):

Aquifer: None at segment.

Protected Open Space: At segment.

<u>Public Ground Water Supply Wells</u>: None at segment. <u>Public Surface Water Supply Wells</u>: None at segment.

Areas of Critical Environmental Concern (ACEC): None at segment.

Vernal Pools: None at segment.

<u>Priority Habitats of Rare Species</u>: Adjacent to segment: Buzzards Bay aquatic environment. Estimated Habitats of Rare Wildlife: Adjacent to segment: Buzzards Bay aquatic environment.

Floodplains: At segment: 100-year floodplain.

### HUMAN SENSITIVE RECEPTORS (Identified within 500 feet of segment):

<u>Segment Use</u>: Private and semi-public beach. Residential dwellings are located within 500 feet of the segment. The segment is accessible via roadway.

Frequency of Use: Presumably seasonal and year round residential use.

# **SUMMARY OF INSPECTION ACTIVITIES**

### WRF INSPECTIONS

(Wildlife Field Reconnaissance- Shoreline or On-Water Observations; Bird Transect Study.)

WRF inspections pertaining to this segment were not conducted.

### NRDA FIELD ACTIVITIES SUMMARY

(Natural Resource Damage Assessment)

Note: Includes Shoreline Cleanup Assessment Team (SCAT) inspections and activities. SCAT forms were completed by field inspection teams working under the direction of Unified Command.

SUMMARY OF INFORMATION RECORDED BY INSPECTION TEAM
Tarballs and areas of pavement (ranging approximately 3 inches to 3 feet in diameter and
embedded in sediment up to 4 inches deep) were observed primarily in the upper intertidal zone.
Oiled wrack was also observed. Less then 1% surface oil coverage was observed at the segment.
Cleanup crew was on-site during the inspection.
Patches of pavement observed in areas approximately 1,000 feet long and 1 to 3 inches wide
along Crescent Beach. Stained pebbles and small tarballs were observed along Crescent Beach.
Additional cleanup activities were warranted.
Oil coating and tarballs observed near Ned's Point, covering the surface approximately 1% to
10%. Oiled wrack on the sand beach immediately west of the Harbor Master's office at the
Town Wharf was observed. Heavily oiled rocks observed east of Crescent Street.
Cleanup crew was on-site during the inspection.
Additional cleanup activities were warranted, particularly on gravel areas. Removal of rocks
and tarballs and continued cleanup activities in front of residences recommended.

### **IRAC INSPECTIONS**

(Unified Command Immediate Response Action Completion inspections and activities.)

DATE	SUMMARY OF INFORMATION RECORDED BY INSPECTION TEAM
08/25/2003	Splatter was observed near eastern end of the segment. The segment met IRAC criteria
	endpoints.

### MCP FIELD ACTIVITIES SUMMARY

(Massachusetts Contingency Plan inspections and activities under the direction of the Licensed Site Professional-of-Record.)

06/29/2004	Site reconnaissance: Three areas of residual oil were observed: (1) Three boulders with splatter
	8270C/SIM analysis.
	shoreline, were composited in a laboratory, and analyzed for EPH fractions and PAH by
	consisted of three grab samples collected approximately 30 feet apart and parallel to the
	the lower intertidal zone (W1E04-LIT-01, W1E04-LIT-02, and W1E04-LIT-03). Each sample
	from the upper intertidal zone (W1E04-UIT-01, W1E04-UIT-02, and W1E04-UIT-03) and from
	respectively) in the intertidal zone. Two samples were collected from each location, including
	around N41°39.090' W70°46.764', N41°39.155' W70°47.452', and N41°39.137' W70°47.542',
	not observed. Intertidal sediment samples were collected from three sample locations (centered
01/21/2004	Phase I characterization activities: Due to winter conditions and ice cover, evidence of oil was
DATE	SUMMARY OF INFORMATION RECORDED BY INSPECTION TEAM

	(approximately 6 to 12 inches in diameter) were observed in upper intertidal zone. The splatter was scraped until scoured to a stain. Four tar patties (approximately 0.5 to 2 inches in diameter) were removed from along the adjacent channel on the eastern portion of Crescent Beach. (2) Tacky splatter observed in two areas (approximately 6 to 8 inches in diameter) between boulders on a jetty were observed, and scraped until scoured to a stain. (3) A small area of pavement patches (approximately 10 square feet) was observed on fringing marsh and removed with little damage to the salt marsh. One wrack patty (approximately 4 inches in diameter) removed.
08/23/2004	Site reconnaissance: Splatter (approximately up to 12 inches in diameter) was observed on cobbles and in few marsh grass areas in the intertidal zone. The splatter was sporadic, concentrated in clusters 2 to 20 feet apart, and was tacky between N41°39.064' W70°47.664' and N41°39.122' W70°47.585'. Trace dried splatter was also observed on cobbles along the west side of the channel on Crescent Beach. Trace splatter was observed in the upper intertidal zone in front of a point house at N41°39.132' W70°47.283'. Splatter (0.5 to 6 inches in diameter) was observed near the east rocky point in the upper and lower intertidal zones between N41°39.105' W70°46.895' and N41°39.073' W70°46.553'. One tarball (approximately 1 inch in diameter) was removed from the middle intertidal zone of the sandy beach at N41°39.155' W70°47.325'.
05/09/2005	Site reconnaissance: Areas of splatter (dime-size to 1 inch in diameter) were observed on several groins and on a concrete post in the marsh area. The majority of splatter was hardened and did not easily come off to the touch. Two weathered tarballs (not tacky) were removed from the beach.
07/20/2005	Site reconnaissance: Trace dried residual splatter was observed on cobbles in the intertidal zone.
08/31/2005	Phase II characterization activities: Sediment sampling and visual inspection of salt marshes.
and 09/01/2005	Isolated areas of splatter (primarily dime- to quarter-size) were observed on cobbles and boulders in the intertidal zone between N41°39.073' W70°47.638', N41°39.122' W70°47.585', and N41°39.115' W70°46.990'. The splatter was weathered and hardened and did not easily come off to the touch. Patches of weathered pavement were observed (within an approximate 5 by 15 foot area) at N41°39.050' W70°46.666' and N41°39.056' W70°46.675'. The pavement was weathered and hardened, but had a tacky center when broken apart. In addition, small areas of fresh tacky oil (non-B120) was found and removed at N41°39.118' W70°47.263' and at N41°39.110' W70°47.146'. Intertidal sediment samples were collected from two sample locations (centered around N41.65184 W70°47.183' and N41°39.107' W70°47.185' at the first location, and N41°39.114' W70°46.851' and N41°39.108' W70°46.849' at the second location) in the intertidal zone. Two samples were collected from each sample location, from the upper (W1E04-UIT-01 and W1E04-UIT-02) and lower intertidal zones (W1E04-LIT-01 and W1E04-UIT-02). Each sample consisted of three grab samples collected approximately 30 feet apart and parallel to the shoreline, were composited in a laboratory, and analyzed for EPH fractions and PAH by 8270C/SIM analysis. The salt marsh appeared healthy (approximately 90% green, 10% brown vegetation) and oil was not observed in the marsh.
09/13/2005	Site Cleanup: One discontinuous area of pavement (approximately 5 by 15 feet and 7 inches thick) found during the 08/31/05 Phase II inspection was removed from the middle intertidal zone in a rocky and grassy area between N41°39.051' W70°46.683' and N41°39.050' W70°46.666'.

# Notes:

- 1. GeoInsight did not receive IRA citizen calls pertaining to this segment.
- 2. EPH = Extractable Petroleum Hydrocarbons.
- 3. PAH = Polynuclear Aromatic Hydrocarbons.
- 4. SIM = Selected Ion Monitoring.

# TABLE 1 SAMPLE SUMMARY BUZZARDS BAY, MASSACHUSETTS SEGMENT: WIE-04

Crescent Beach, Mattapoisett

Sample ID	Date Collected	Matrix	Analysis	Laboratory	Sampling Program	Sample l Coord		Sample Location Description	Comments							
	Conceteu					Latitude	Longitude	Description								
W1E-04-UIT-01						N41°39.090'	W70°46.764'	Upper Intertidal Zone								
W1E-04-LIT-01						N41°39.090'	W70°46.764'	Lower Intertidal Zone								
W1E-04-UIT-02						N41°39.155'	W70°47.451'	Upper Intertidal Zone	C							
W1E-04-LIT-02			PAH EPH			N41°39.155'	W70°47.451'	Lower Intertidal Zone	Composite Samples							
W1E-04-UIT-03	1/21/2004	Sediment		GAI	MCP-Phase I Site Assessment	N41°39.1374'	W70°47.542'	Upper Intertidal Zone								
W1E-04-LIT-03			LFII		Assessment	N41°39.1374'	W70°47.542'	Lower Intertidal Zone								
DDD01-UIT-01												N41°39.090'	W70°46.764'	Upper Intertidal Zone	Composite Samples	
DDD01-LIT-01						N41°39.090'	W70°46.764'	Lower Intertidal Zone	(Duplicate W1E-04- UIT-01, LIT-01)							
W1E04-P2-UIT-01	9/21/2005	- Sediment				N41°39.108'	W70°47.185'	Upper Intertidal Zone								
W1E04-P2-LIT-01	8/31/2005		Sediment	C - 1: 4	G - 1: 4	C - 1: t	C - 1: t	C - 1:	G 1:	РАН	CAL	MCP-Phase II Site	N41°39.106'	W70°47.197'	Lower Intertidal Zone	Composito complos
W1E04-P2-UIT-02	9/1/2005			ЕРН	GAI	Assessment	N41°39.113'	W70°46.846'	Upper Intertidal Zone	Composite samples						
W1E04-P2-LIT-02						N41°39.113'	W70°46.846'	Lower Intertidal Zone								

# NOTES:

1. GAI: Groundwater Analytical, Inc.

### TABLE 2 SUMMARY OF ANALYTICAL RESULTS BUZZARDS BAY, MASSACHUSETTS SEGMENT: WIE-04

Crescent Beach, Mattapoisett

	WIE04-UIT-01	WIE04-LIT-01	WIE04-UIT-02	WIE04-LIT-02	MCP Method 1 Standards			Effects Range-Low
Analyte	Upper Intertidal	Lower Intertidal	Upper Intertidal	Lower Intertidal	MCP I	Method 1 Sta	Benchmarks Marine	
	Sediment	Sediment	Sediment	Sediment	S-1 / GW-1   S-1 / GW-2   S-1 / GW			Sediments
	1/21/2004	1/21/2004	1/21/2004	1/21/2004	S-1 / GW-1	S-1 / GW-2	S-1/GW-3	ER-L
ЕРН								
C <sub>9</sub> -C <sub>18</sub> Aliphatic Hydrocarbons	ND(34)	ND(36)	ND(32)	ND(30)	1,000	1,000	1,000	NA
C <sub>19</sub> -C <sub>36</sub> Aliphatic Hydrocarbons	ND(34)	ND(36)	ND(32)	ND(30)	2,500	2,500	2,500	NA
C <sub>11</sub> -C <sub>22</sub> Aromatic Hydrocarbons	ND(34)	ND(36)	ND(32)	ND(30)	200	NA	800	NA
PAH by GC/MS-SIM by								
method 8270C								
Naphthalene	0.010 j	0.011 j	0.011	0.010	4	40	500	0.160
2-Methylnapthalene	0.006 j	0.007 j	0.007 j	0.006 j	4	500	500	0.070
Acenaphthylene	ND(0.011)	ND(0.012)	ND(0.011)	ND(0.010)	100	100	100	0.044
Acenaphthene	ND(0.011)	ND(0.012)	ND(0.011)	ND(0.010)	20	1,000	1,000	0.016
Fluorene	ND(0.011)	ND(0.012)	ND(0.011)	ND(0.010)	400	1,000	1,000	0.019
Phenanthrene	ND(0.011)	ND(0.012)	0.011	0.018	700	1,000	100	0.240
Anthracene	ND(0.011)	ND(0.012)	ND(0.011)	ND(0.010)	1,000	1,000	1,000	0.085
Fluoranthene	ND(0.011)	ND(0.012)	0.016	0.024	1,000	1,000	1,000	0.600
Pyrene	ND(0.011)	ND(0.012)	0.020	0.028	1,000	1,000	1,000	0.665
Benzo(a)anthracene	ND(0.011)	ND(0.012)	0.006 j	0.008 j	7	7	7	0.261
Chrysene	ND(0.011)	ND(0.012)	0.013	0.014	7	7	7	0.384
Benzo(b)fluoranthene	ND(0.011)	ND(0.012)	0.006 j	0.007 j	7	7	7	NA
Benzo(k)fluoranthene	ND(0.011)	ND(0.012)	0.006 j	0.008 j	70	70	70	NA
Benzo(a)pyrene	ND(0.011)	ND(0.012)	0.006 j	0.007 j	2	2	2	0.430
Indeno(1,2,3-c,d)pyrene	ND(0.011)	ND(0.012)	ND(0.011)	ND(0.010)	7	7	7	NA
Dibenzo(a,h)anthracene	ND(0.011)	ND(0.012)	ND(0.011)	ND(0.010)	0.7	0.7	0.7	0.063
Benzo(g,h,i)perylene	ND(0.011)	ND(0.012)	ND(0.011)	0.005 j	1,000	1,000	1,000	NA

### NOTES:

- 1. Results in mg/Kg (milligrams per kilogram).
- 2. EPH: Extractable Petroleum Hydrocarbons.
- 3. ND(x): Constituent not detected at practical quantitation limits (PQL) noted in parentheses.
- 4. PAH by GC/MS-SIM: Polynuclear Aromatic Hydrocarbon analysis by Gas Chromatography/Mass Spectrometry with Selected Ion Monitoring.
- 5. j: Estimated concentration/ detected below standard laboratory reporting limits.
- 6. Bold values exceed laboratory PQL.
- 7. ER-L: Effects Range Low (Long and Morgan 1991).
- 8. NA: Not Applicable.
- 9. MCP: Massachusetts Contingency Plan.

#### **TABLE 2 (continued)**

### SUMMARY OF ANALYTICAL RESULTS BUZZARDS BAY, MASSACHUSETTS

#### SEGMENT: WIE-04

Crescent Beach, Mattapoisett

Analyte	WIE04-UIT-03 Upper Intertidal Sediment 1/21/2004	WIE04-LIT-03 Lower Intertidal Sediment 1/21/2004	DDD01-UIT-01 Upper Intertidal Sediment 1/21/2004	DDD01-LIT-01 Lower Intertidal Sediment 1/21/2004	MCP Method 1 Standards S-1 / GW-1   S-1 / GW-2   S-1 / GW-3			Effects Range-Low Benchmarks Marine Sediments ER-L
ЕРН								
C <sub>9</sub> -C <sub>18</sub> Aliphatic Hydrocarbons	ND(31)	ND(30)	ND(31)	ND(31)	1,000	1,000	1,000	NA
C <sub>19</sub> -C <sub>36</sub> Aliphatic Hydrocarbons	ND(31)	ND(30)	ND(31)	ND(31)	2,500	2,500	2,500	NA
C <sub>11</sub> -C <sub>22</sub> Aromatic Hydrocarbons	ND(31)	ND(30)	ND(31)	ND(31)	200	NA	800	NA
PAH by GC/MS-SIM								
by method 8270C								
Naphthalene	0.010	0.009 j	0.010	0.010	4	40	500	0.160
2-Methylnapthalene	0.006 j	0.007 j	0.007 j	0.008 j	4	500	500	0.070
Acenaphthylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	100	100	100	0.044
Acenaphthene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	20	1,000	1,000	0.016
Fluorene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	400	1,000	1,000	0.019
Phenanthrene	0.015	0.012	0.006 j	ND(0.010)	700	1,000	100	0.240
Anthracene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	1,000	1,000	1,000	0.085
Fluoranthene	0.030	0.026	0.019	ND(0.010)	1,000	1,000	1,000	0.600
Pyrene	0.027	0.023	0.017	ND(0.010)	1,000	1,000	1,000	0.665
Benzo(a)anthracene		0.008 j	0.008 j	ND(0.010)	7	7	7	0.261
Chrysene		0.013	0.010 j	ND(0.010)	7	7	7	0.384
Benzo(b)fluoranthene	0.012	0.010	0.008 j	ND(0.010)	7	7	7	NA
Benzo(k)fluoranthene		0.009 j	0.007 j	ND(0.010)	70	70	70	NA
Benzo(a)pyrene	0.014	0.011	0.008 j	ND(0.010)	2	2	2	0.430
Indeno(1,2,3-c,d)pyrene		0.008 j	ND(0.010)	ND(0.010)	7	7	7	NA
Dibenzo(a,h)anthracene		ND(0.010)	ND(0.010)	ND(0.010)	0.7	0.7	0.7	0.063
Benzo(g,h,i)perylene		0.009 j	0.006 j	ND(0.010)	1,000	1,000	1,000	NA

### NOTES:

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#### **TABLE 2 (continued)**

### SUMMARY OF ANALYTICAL RESULTS BUZZARDS BAY, MASSACHUSETTS

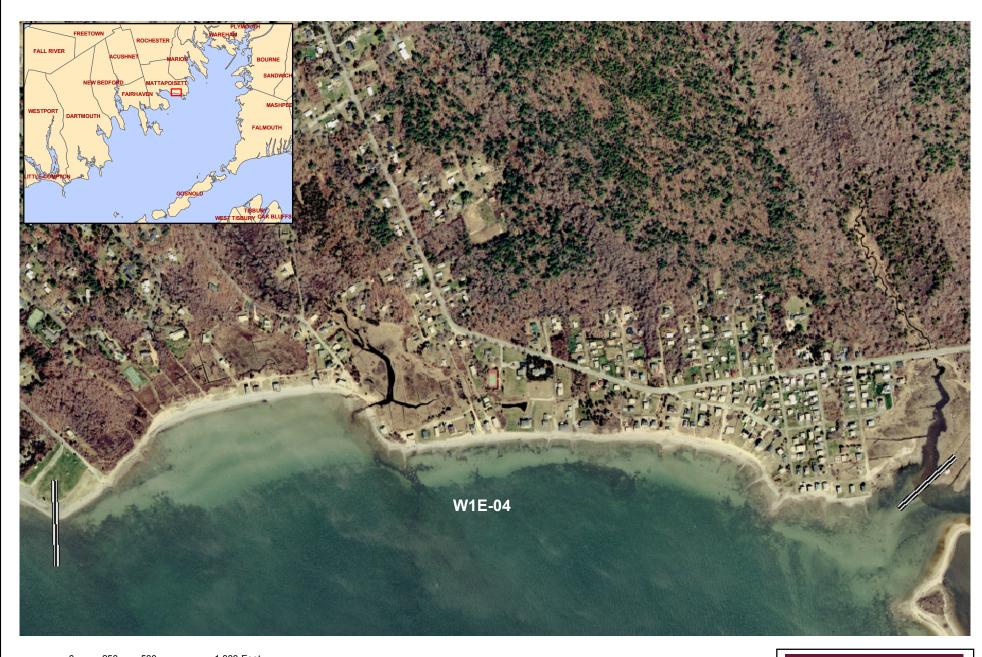
#### SEGMENT: WIE-04

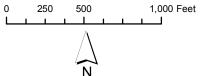
#### Crescent Beach, Mattapoisett

Analyte	W1E04-P2-UIT-01 Upper Intertidal Sediment	W1E04-P2-LIT-01 Lower Intertidal Sediment	Upper Intertidal Sediment	W1E04-P2-LIT-02 Lower Intertidal Sediment	MCP Method 1 Standards S-1 / GW-1   S-1 / GW-2   S-1 / GW-3			Effects Range-Low Benchmarks Marine Sediments
ЕРН	8/31/2005	8/31/2005	9/1/2005	9/1/2005	S-1 / GW-1	S-1 / GW-2	S-1/GW-3	ER-L
	ND (20)	ND (25)	ND (01)	ND (0.1)	1.000	4.000	1.000	37.4
C <sub>9</sub> -C <sub>18</sub> Aliphatic Hydrocarbons	, , ,	ND(37)	ND(31)	ND(34)	1,000	1,000	1,000	NA
C <sub>19</sub> -C <sub>36</sub> Aliphatic Hydrocarbons	ND(30)	ND(37)	ND(31)	ND(34)	2,500	2,500	2,500	NA
C <sub>11</sub> -C <sub>22</sub> Aromatic Hydrocarbons	ND(30)	ND(37)	ND(31)	ND(34)	200	NA	800	NA
PAH by GC/MS-SIM								
by method 8270C								
Naphthalene	0.005j	0.007j	ND(0.013)	0.006j	4	40	500	0.160
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Anthracene	ND(0.010)	ND(0.012)	ND(0.013)	ND(0.011)	1,000	1,000	1,000	0.085
Fluoranthene	0.006j	0.023	ND(0.013)	0.023	1,000	1,000	1,000	0.600
Pyrene	0.005j	0.020	ND(0.013)	0.025	1,000	1,000	1,000	0.665
Benzo(a)anthracene	ND(0.010)	0.014	ND(0.013)	0.011	7	7	7	0.261
Chrysene	ND(0.010)	0.015	ND(0.013)	0.011	7	7	7	0.384
Benzo(b)fluoranthene	ND(0.010)	0.007j	ND(0.013)	ND(0.011)	7	7	7	NA
Benzo(k)fluoranthene	ND(0.010)	0.007j	ND(0.013)	ND(0.011)	70	70	70	NA
Benzo(a)pyrene	ND(0.010)	ND(0.012)	ND(0.013)	ND(0.011)	2	2	2	0.430
Indeno(1,2,3-c,d)pyrene	0.007j	0.013	ND(0.013)	0.008j	7	7	7	NA
Dibenzo(a,h)anthracene	ND(0.010)	ND(0.012)	ND(0.013)	ND(0.011)	0.7	0.7	0.7	0.063
Benzo(g,h,i)perylene	ND(0.010)	0.007j	ND(0.013)	ND(0.011)	1,000	1,000	1,000	NA

### NOTES:

- 1. Results in mg/Kg (milligrams per kilogram).
- 2. EPH: Extractable Petroleum Hydrocarbons.
- 3. ND(x): Constituent not detected at practical quantitation limits noted in parentheses.
- 4. PAH by GC/MS-SIM: Polynuclear Aromatic Hydrocarbon analysis by Gas Chromatography/Mass Spectrometry with Selected Ion Monitoring.
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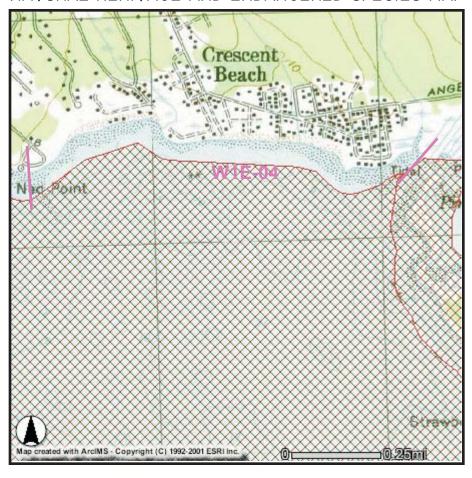


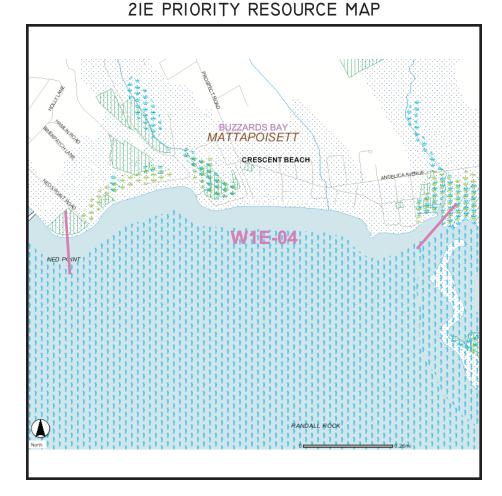


### ENTRIX

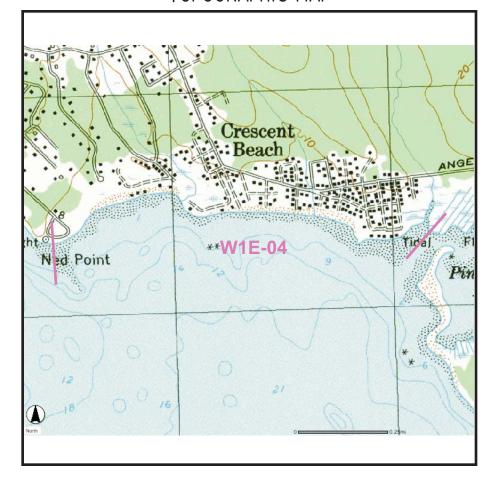
W1E-04 Crescent Beach Bouchard B No. 120 Oil Spill Buzzards Bay, MA

# NATURAL HERITAGE AND ENDANGERED SPECIES MAP





# TOPOGRAPHIC MAP

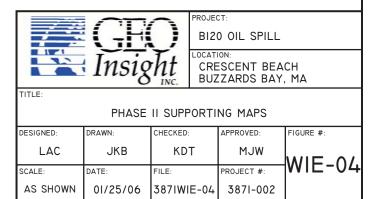


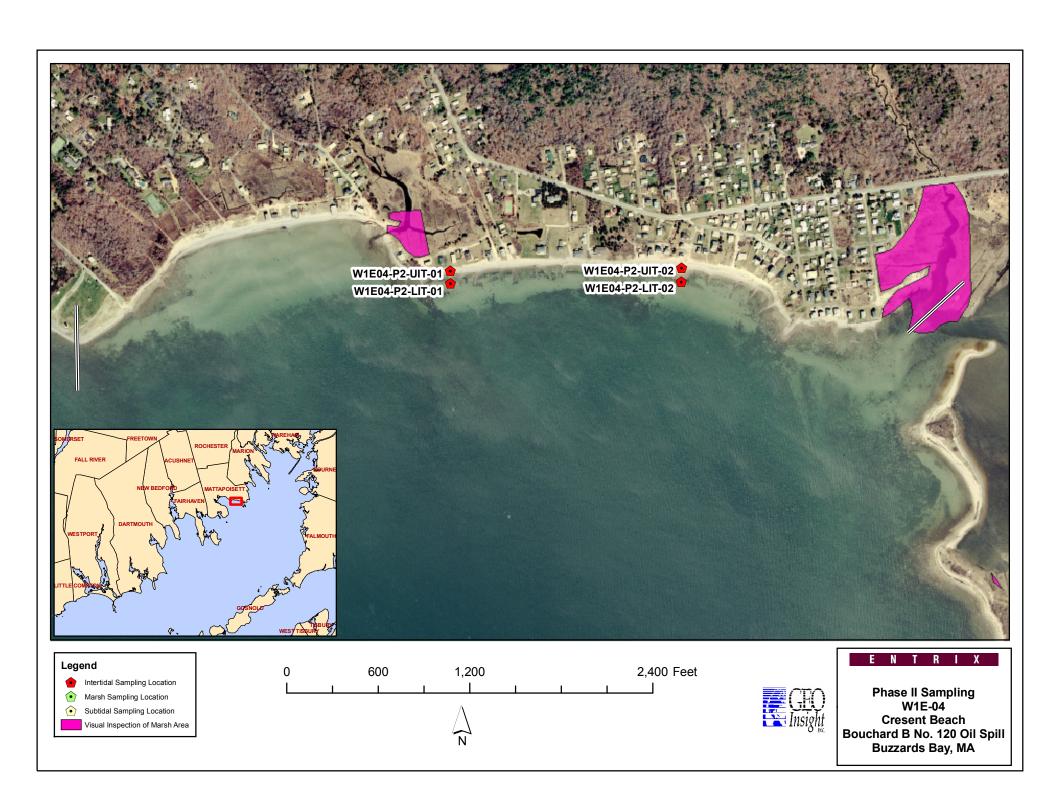
# LEGEND

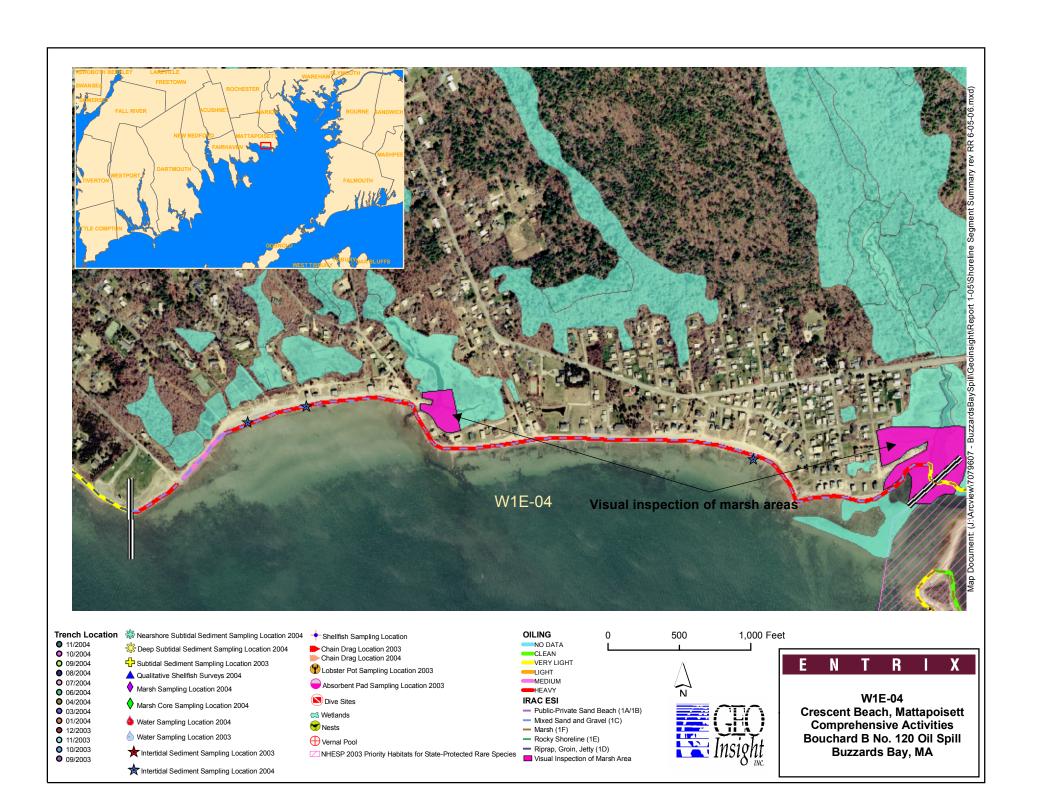
NHESP 2005 MA PRIORITY
HABITATS FOR STATE-PROTECTED
RARE SPECIES

NHESP 2005 MA ESTIMATED HABITATS OF RARE WILDLIFE









Segment: W1E-04 Crescent Beach

Mattapoisett, MA

Phase II Sampling: August 31, 2005

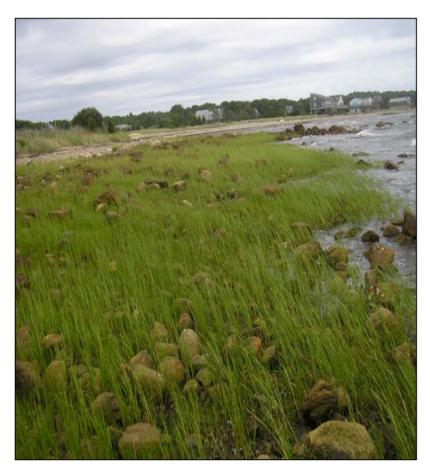


Photo 1: Overview of shoreline type.



Photo 2: Overview of shoreline type.

Segment: W1E-04 Crescent Beach

Mattapoisett, MA

Phase II Sampling: August 31, 2005



Photo 3: Splatter observed on boulder.

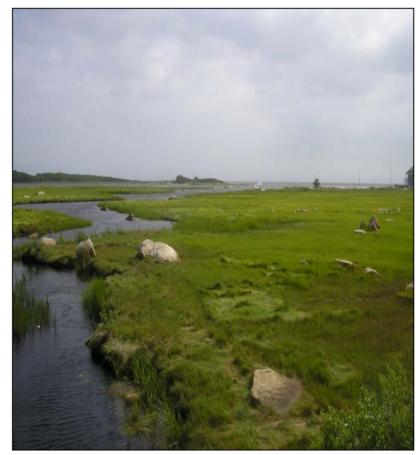


Photo 4: Northeast end of segment.