

**NAVFAC SW CONTRACT NO. N62473-07-D-3211
CTO NO. 0008**

FINAL

**FALL 2009 & WINTER 2010 ANNUAL POST-CLOSURE
INSPECTION AND MAINTENANCE REPORT**

May 21, 2010

**INSTALLATION RESTORATION PROGRAM SITE 7 AREA 1
(FORMER STATION LANDFILL)
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA**

DCN: ECSD-3211-0008-0007

Naval Facilities Engineering Command Southwest
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, CA 92132-5190

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ABBREVIATIONS AND ACRONYMS

bgs	below ground surface
DON	Department of the Navy
IRP	Installation Restoration Program
NAVWPNSTA	Naval Weapons Station
NTCRA	non-time-critical removal action
PCIMP	Post-Closure Inspection and Maintenance Plan
RWQCB	Regional Water Quality Control Board
TtEC	Tetra Tech EC, Inc.

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1.0 INTRODUCTION

This report describes the results and findings of the fall 2009 and winter 2010 annual post-closure inspection activities conducted at the Installation Restoration Program (IRP) Site 7 Area 1, also referred to as the Former Station Landfill, located at Naval Weapons Station (NAVWPNSTA) Seal Beach in Seal Beach, California (Figures 1-1 and 1-2). Previous reports were submitted semiannually, but at a meeting between the Department of the Navy (DON) and the Regional Water Quality Control Board (RWQCB) held on January 12, 2010, a decision was made to submit the future reports annually.

The purpose of this report is to document the condition of the landfill cover and access roads, any changes to the landfill cover such as settlement, changes to the surface water management system, and the condition and performance of the vegetative cover that was found during the fall 2009 and winter 2010 inspection events and maintenance activities that were conducted during December 2009.

Tetra Tech EC, Inc. (TtEC) conducted the post-closure inspections described in this report under the DON's directive and under Remedial Action Contract Number N62473-07-D-3211. The inspections were conducted in accordance with the Post-Closeout Inspection and Maintenance Plan (PCIMP) (TtFW 2004a). The PCIMP outlines and describes the procedures and requirements for post-closure inspections and maintenance activities for IRP Site 7 Area 1.

The post-closure inspection conducted on October 14, 2009 serves as the annual pre-rainy season landfill cover inspection for fall 2009. The inspections conducted on December 15, 2009, and January 27, 2010, serve as inspections following rain events. The final inspection conducted on March 17, 2010, serves as the annual inspection after the rainy season has ended. This report includes a description of the inspections conducted, documents the inspection findings, and provides recommendations. Form 104 of the December inspection includes a description of the maintenance activity that was performed on December 2 and 3, 2009.

This report documents the condition of the cover at the time of the inspections to ensure that 1) the soil cover is functioning adequately to isolate the buried waste from the surface; 2) the cover continues to provide adequate drainage, minimizing its erosion; and 3) any settlement and subsidence of the cover are not jeopardizing the cover integrity. The inspections conducted during this reporting period focused on the functional aspects of the cover. Therefore, the soil cover was inspected to document whether it is intact and free of major cracking (defined as cracks 2 inches or wider, deeper than 12 inches, and longer than 20 feet). The cover was also inspected to detect erosion (deeper than 6 inches) and surface depressions that could cause ponding or any unusual surface conditions. A visual inspection of surface drainage swales and slopes was also conducted. The vegetative cover was inspected to document any soil losses caused by precipitation, lack of vegetative cover, and winds and to identify the causes of erosion

problem areas. The vegetation inspection also focused on areas lacking vegetative cover at the western portion of the site and making recommendations to restore this area. All inspections were conducted by a state of California registered civil engineer who has experience in landfill design and site development.

The inspections were conducted as part of 3 years of monitoring and inspection described and proposed in the PCIMP (TtFW 2004a). The last inspection and maintenance activities were documented and reported in the Final Winter 2008/2009 Semiannual Post-Closure Inspection and Maintenance Report (TtEC 2009).

The pertinent PCIMP (TtFW 2004a) inspection forms completed during the inspection are attached as Appendix A to this report. Included with the forms for each of the inspection events is a figure (Figure A-1) depicting the areas covered with vegetation as noted during each of the inspection events. Photographs taken during each inspection event are provided in Appendix B.

This report will be kept on file with the NAVWPNSTA Seal Beach Administration Records. Copies will also be kept in the Naval Facilities Engineering Command Southwest Administrative Record files.

1.1 SITE HISTORY AND BACKGROUND

This section describes the facility and site locations and provides a description of the past history of operations at IRP Site 7, which consists of six distinctive areas (designated as Areas 1 through 6), along with a brief description of the nature and extent of the contamination at this site.

IRP Site 7 totals approximately 33 acres located near the southern boundary of NAVWPNSTA Seal Beach and at the eastern boundary of the Seal Beach National Wildlife Refuge. Landfill activities were reportedly conducted at the site from approximately 1955 to 1973. A large variety of wastes generated by NAVWPNSTA Seal Beach during the period of active landfilling may have been buried in trenches at IRP Site 7. Almost any type of waste generated on the station may have been disposed of at IRP Site 7. The major types of waste reportedly disposed of in the landfill include small, mostly empty containers that once contained paints, petroleum products, various solvents, used rags, batteries, asbestos, and inert construction debris.

IRP Site 7 Area 1 covers approximately 10 acres. Most of the waste disposal and landfilling activities took place in IRP Site 7 Area 1 in a series of unlined trenches lying in an east-west orientation (Naval Energy and Environmental Support Activity 1985). Exploration during a supplemental characterization indicated that the depth of the debris varied between 5.5 and 9 feet below ground surface (bgs), with an average depth of 6.4 feet bgs (SWDIV 1999).

The DON completed a non-time-critical removal action (NTCRA) at IRP Site 7 in April 2004. The intent of the NTCRA was to minimize any potential threats to human health and the surrounding environment. The removal action decision for IRP Site 7 was documented in the

joint Final Action Memorandum/Non-Time-Critical Remedial Action Plan, prepared by the DON (CH2M Hill 2004).

Under the DON's directive, TtEC implemented the removal action at the site under Remedial Action Contract Number N68711-98-D-5713. The removal action was conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act and National Oil and Hazardous Substances Pollution Contingency Plan requirements.

The removal action at IRP Site 7 Area 1 involved repair to the existing soil cover by placing additional cover in areas where waste was exposed or where cover thickness was deficient. The intent of the removal action at IRP Site 7 Area 1 was to repair the existing landfill soil cover and ensure a minimum of 2 feet of soil cover over the buried waste, thus preventing direct contact with buried waste and eliminating the potential migration of contamination through windblown dust, infiltrations, and surface runoff. Removal action at the remaining areas of IRP Site 7 involved removal of buried and surface debris. The removal action at IRP Site 7 (Areas 1 through 6) is documented in the Final Project Closeout Report (TtFW 2004b). Only IRP Site 7 Area 1 (Former Station Landfill) requires post-closure inspection and maintenance.

A PCIMP (TtFW 2004a) was developed following the completion of the removal action to describe the post-closure annual inspections and maintenance activities for IRP Site 7 Area 1.

Based on the recommendations made in the Final 2005 First Semiannual Post-Closure Inspection and Maintenance Report (TtEC 2005) following the March 2005 inspections, landfill cover maintenance was conducted to repair several settlement and ponding areas at the western portion of the landfill, and to reseed and revegetate the western portion following the grading and repairs of the settlement areas. Landfill maintenance was conducted in September 2005. The second 2005 semiannual post-closure inspection was conducted in October and November 2005 (TtEC 2006a). Subsequent third semiannual inspection and maintenance activities were conducted in March 2006, the results of which were discussed and documented in the Final 2006 First Semiannual Post-Closure Inspection and Maintenance Report (TtEC 2006b). Results of the 2006 report indicated that no areas needed repairs or corrective action and that the landfill cover grading provided adequate sheet flow drainage to minimize future ponding. Landfill post-closure inspections and maintenance activities were temporarily suspended after the March 2006 event and resumed with the winter 2008/2009 inspections (TtEC 2009).

1.2 SCOPE OF FALL 2009 AND WINTER 2010 SEMIANNUAL INSPECTIONS

This report addresses landfill cover maintenance, cover inspection, vegetation inspection, and drainage inspection conducted as part of the semiannual inspections for fall 2009 and winter 2010. This report and the inspections conducted during this timeframe do not include groundwater monitoring, landfill gas monitoring, or leachate monitoring.

The DON had developed a groundwater monitoring program for IRP Site 7 to monitor the status and condition of groundwater at this site. Results of the Third Annual Groundwater Monitoring Report for IR Sites 5 & 7 (BEI 2007) recommended discontinuing groundwater monitoring at the site based on findings of a fate and transport evaluation. The Department of Toxics Substances Control and the RWQCB concurred with the findings of this report and the recommendation to discontinue groundwater sampling at IRP Site 7 in their letters dated August 1 and July 12, 2007, respectively (DTSC 2007, RWQCB 2007).

The IRP Site 7 Area 1 does not have a landfill gas control, recovery, or emissions and migration monitoring system. There are no landfill gas migration monitoring wells at this site. Previous investigations conducted at IRP Site 7 Area 1 have indicated insignificant landfill gas (CH₂M Hill 2002). No surface or subsurface emissions of landfill gas, including methane gas, have been detected at IRP Site 7 Area 1 during previous site investigations.

The IRP Site 7 Area 1 does not have a liquid management system, and none is planned for this site. The site neither produces any liquids associated with collection, nor does it have monitoring and disposal of landfill gas condensate, groundwater seepage, a leachate collection system, groundwater extraction wells, or groundwater storage tanks and sumps.

1.3 LAND USE CONTROL

No structures or buildings are on the site and none are planned for the future. No regular station activities have taken place at IRP Site 7 Area 1. Future developments or agricultural activities on the landfill are highly unlikely. The future land use at this site is open space and the site will continue to be maintained as such.

2.0 SOIL COVER INSPECTION AND MAINTENANCE

This section addresses and describes landfill soil cover inspections conducted in October 2009, December 2009, January 2010, and March 2010. The inspection and field observation results were evaluated relative to the performance standards and requirements provided in the PCIMP (TtFW 2004a).

The purpose and the primary function of the soil cover are to isolate the buried waste from the surface, promote drainage and minimize erosion or abrasion of the cover, and accommodate settlement and subsidence so that the cover integrity is maintained. To perform these functions, the soil should remain intact and free of major cracking (defined as cracks 2 inches or wider, deeper than 12 inches, and longer than 20 feet), erosion (deeper than 6 inches), and surface depressions that could cause ponding.

2.1 SOIL COVER INSPECTION

Routine visual inspection of the soil cover was conducted in October 2009, December 2009, January 2010, and March 2010. A California-registered civil engineer performed the visual inspection of the soil cover. The following inspection procedures were followed in accordance with the PCIMP:

- Inspection and observation for any surface cracking, ponding, localized depressions, or unusual surface conditions; and
- Inspection and observation of all surface drainage swales and slopes (all slopes and drainage areas were visually inspected and documented on Forms 101 and 102 in Appendix A).

2.2 SUMMARY OF FIELD OBSERVATIONS

A lack of cover vegetation was noted in the western portion of the landfill during all of the inspections and signs of minor erosion (less than 2-inches in depth) and shallow depressions (less than 4 inches in depth) were noted in the March 2010 inspection. No cover failures resulting from stormwater runoff were identified. No waste exposure due to lack of soil cover, unstable cover, or unusual surface conditions was observed during each inspection. The landfill cover was determined to be stable and no severe settlements were noted during each inspection. As shown on Figure 2-1, there are more areas in the western portion with vegetation than previously noted in the February 2009 inspection (TtEC 2009), which indicates slow plant growth.

2.3 SOIL COVER FINDINGS AND RECOMMENDATIONS

There were no unstable surface depressions, deep cracks, major soil losses, or excessive rodent burrowing observed during each inspection for this reporting period. No vector controls for the soil cover will be required at this time.

The eastern half of the landfill appears to be in good condition with good vegetative soil cover and was found to satisfy the requirements of the PCIMP (TtFW 2004a) and project specifications. The western half of the landfill cover does not have adequate ground cover to prevent future soil erosion/loss that could be triggered by heavy rain or excessive winds. Vegetation inspection and maintenance are discussed in more detail in Section 3.0.

It is recommended that maintenance of vegetation ground cover occur in order to avoid soil losses in the future. This includes reseeded or planting additional small plants in the areas with no vegetation.

3.0 VEGETATIVE COVER INSPECTION AND MAINTENANCE

The purpose and the primary function of the vegetative cover are to provide erosion control and visual enhancement across the landfill top and slopes. The vegetative cover at IRP Site 7 Area 1 was designed to evolve into a natural climax vegetation community, which will enable long-term succession of the vegetation to blend with the natural character of adjacent open spaces. The vegetative cover is intended to turn green during the rainy season and is expected to fade to brown during the dry season. The plants will need to survive on seasonal rainfall. This section reviews the vegetative cover inspection, discusses the findings, and provides recommendations for restoration, where needed.

3.1 PROTECTIVE VEGETATIVE COVER INSPECTION

During the October 2009, December 2009, January 2010, and March 2010 inspections, the overall condition of the vegetation growth on the eastern portion of the landfill cover (approximately 8 acres) was observed to be very satisfactory. The western portion of the landfill had some patches of significant vegetative growth as shown on Figure 2-1. The lack of vegetation in the western portion (approximately 2 acres) is probably due to salinity levels rather than soil loss since no soil loss was observed during each inspection.

Form 103 in Appendix A for the inspections conducted for this reporting period indicates no shrubs, no vegetation loss with soil erosion, some non-native plants, and no fire hazards or dead vegetation. The only concern is the lack of vegetative cover.

3.2 VEGETATIVE COVER INSPECTION FINDINGS

The majority of the site (the central and eastern portion) is covered with suitable native and non-native vegetation. Although the vegetation on the eastern portion of the landfill is in satisfactory condition, the western portion lacks adequate coverage. The satisfactory condition of vegetation in the eastern portion of the landfill could be attributed to higher surface elevations of this area that allows drainage to lower areas.

The western portion of the site, which has lower surface elevations, supports only spotty vegetation and stunted live plants. Because it experiences ponding of tidal waters, it is unable to drain (Crooks 2009), thus increasing the build-up of salts in the soils in this area.

Soil samples were collected from the western portion of the landfill in October 2008 and February 2009 and an agronomic analysis was performed at both times, as discussed in the previous report (TtEC 2009). The agronomic analysis was conducted to determine the soil conditions that contributed to the lack of vegetation in this area. The lack of vegetation in the

western area was attributed to high salinity content in the soil due to a rise in tidal waters and slow drainage of the tidal waters in the area.

Ponding at the western section of the landfill, which resulted from rainwater or high tide, is attributed to lack of adequate drainage of the water that accumulates in this area.

To improve the drainage in the southwestern section of the landfill and alleviate ponding and flooding in this area, two 12-inch-diameter corrugated galvanized steel pipes with flapper gates were installed. These pipes were installed in May 2009 near the south side of the site to drain the tide waters back into the drainage channel that leads to the Bolsa Chica Flood Control Channel. The approximate location of the 40-foot-long drainage pipes is shown on Figure 2-1.

The site currently supports a number of native salt marsh plant seedlings in many of the previously bare areas. The current seedling growth could be due to the abundant and regular rainfall that occurred between November 2009 and February 2010. It is likely that the influxes of fresh water have temporarily leached much of the salts in the soils at the site, thus allowing the native salt marsh plants to germinate and grow.

3.3 RECOMMENDATIONS FOR RESTORATION OF VEGETATIVE COVER

Reducing the salinity of the soil in the western portion of the landfill would likely improve the conditions for vegetation establishment in this area. The installation of the drainage pipes discussed above is expected to help improve the drainage in the southwestern area.

As was recommended in the last PCIM Report (TtEC 2009), small 2-inch live plug plants (suitable salt marsh species) could be placed in a grid pattern in areas where the ground is completely bare. The addition of these plug plants is intended to supplement the existing population of young native plant seedlings. Planting should not occur in areas with seedling growth or in any drainage swales. The new live plants will provide “insurance” in the event that survival of existing native plant seedlings is low.

The following plants have been identified as appropriate for the landfill cover:

- Pickleweed (*Salicornia virginica*)
- Saltgrass (*Distichlis spicata*)

Patch planting is prescribed rather than full-scale planting of the entire bare areas of the western portion of the landfill cover. Patch planting will likely involve planting pickleweed and saltgrass provided in liners (small, 2¼-inch by 3-inch containers) or plug plants. Plants would be planted in 30-foot by 30-foot square patches. The plug plants should be spaced 18 inches apart within each patch and thus, each patch would consist of about 450 plug plants. A minimum of 10 patches should be planted. Careful consideration should be provided by an on-site project biologist for the selection of appropriate locations. The planting of the live plants should be

completed in late December or January, because these are the most advantageous months for planting.

3.4 VEGETATIVE COVER MAINTENANCE

As described on Form 104 in Appendix A, minor cover grading was performed on December 2 and 3, 2009, in the areas lacking vegetative cover in the western part of the landfill. The soil in the bare areas was tilled using a rake attached to a backhoe. Care was taken not to damage the existing seedlings or vegetation growth outside the bare areas while tilling. Following raking, native seeds were broadcast by hand and the raked areas were graded to provide a smooth surface. A total of 10 pounds of seed mix (*Heliotropium curassavicum* [6 pounds] and *Frankenia Salina* [4 pounds]) was used for the reseeding of the bare areas.

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4.0 SURFACE WATER MANAGEMENT SYSTEM INSPECTION AND MAINTENANCE

This section provides the scope, data summary, and evaluation of surface water management.

4.1 SURFACE WATER MANAGEMENT SYSTEM INSPECTION

The surface water management system was inspected during the October 2009, December 2009, January 2010, and March 2010 inspections. The inspections included the following:

- Visual inspection of all surface drainage swales and slopes.
- Visual inspection of the cover system for any eroded areas.
- Inspection and observation of surface drainage conditions.

The landfill stormwater control inspection conducted on October 14, 2009, was the first annual inspection since February 2009. One of the inspection objectives was to identify any failure of the surface drainage and sheet flow system, focusing primarily on any cover erosions, wet or saturated cover soils, ponding, or areas where there is a potential for increased infiltration.

4.2 SUMMARY OF FIELD OBSERVATIONS

Downstream drainage obstructions were noted as acceptable on October 14, 2009. Ponding was observed during the December 2009 and January 2010 inspections. Minor erosion (less than 2 inches in depth) and shallow depressions (less than 4 inches in depth) were observed during the March 2010 inspection. Inspection observations were documented in the field on Form 102 and are included in Appendix A.

The eastern half of the landfill cover did not show any evidence of soil loss, which indicates that the vegetation and ground cover in this area have effectively minimized soil erosion. The western portion of the landfill cover had patches of vegetative ground cover and minor soil erosion in this area was observed. There was no vegetation washout or silt deposition. In general, the cover provides adequate positive drainage, with the exception of a few ponding areas discussed earlier.

The two 12-inch-diameter culverts installed at the south side of the landfill along the drainage channel were also inspected to verify that the pipes are free from debris. A grate has been placed at the inlet of each pipe to help alleviate this concern. No debris, clogging, or obstructions were observed at the grates during the March 2010 inspection.

4.3 FINDINGS AND RECOMMENDATIONS

Neither cover system washout nor waste exposure was observed during each of the inspections. The surface water drainage system complied with the landfill cover system performance criteria described in the PCIMP (TtFW 2004a).

As previously mentioned in Section 3.3, it is recommended that small native species plants be planted to increase vegetative ground cover, which would prevent potential soil loss. In March 2009, wattles were placed on the landfill to slow down sheet flow. The locations of the wattles are shown on Figure 2-1.

It is recommended that the minor shallow depressions be regraded or small drainage swale flowlines be formed to facilitate positive drainage towards the southern boundary of the landfill. These areas are indicated on Figure A-1D in Appendix A.

5.0 LANDFILL SURVEY

This section provides the scope, data summary, and evaluation of landfill settlement.

5.1 SURVEY SCOPE

The scope of the landfill survey is to address settlement of the landfill as it relates to the performance of the cover system.

5.2 SUMMARY OF FIELD OBSERVATIONS

A settlement-related visual site inspection was conducted for routine cover maintenance repairs. Minor depressions (less than 4 inches deep) were observed during the March 17, 2010, inspection.

Visual site inspection findings are documented in photographs taken of the site condition, which are presented in Appendix B. No major earthquakes and no sloughing, cracks, or cover deformation occurred during this reporting period that would require a topographic survey by a licensed land surveyor.

5.3 FINDINGS AND RECOMMENDATIONS

It is recommended that the existing drainage swale flowlines be regraded to facilitate positive drainage towards the southern boundary of the landfill. However, no additional survey of the drainage swale flowlines is warranted at this time.

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6.0 ACCESS ROADS INSPECTION AND MAINTENANCE

This section addresses and describes observations made during the fall 2009 and winter 2010 inspections of the access roads.

6.1 SUMMARY OF ACCESS ROADS OBSERVATIONS

The unpaved access road along the western side of the IRP Site 7 Area 1 was found to be well-graded and in good condition. The access road is expected to continue to provide access to the site in all weather conditions. The access road along the western side of the site is partially paved and partially covered with gravel; therefore, it is considered adequate for providing the necessary safe access to the site in the event of an emergency or for maintenance equipment.

6.2 FINDINGS AND RECOMMENDATIONS

The access road along the western side of the landfill was found to be in good condition and capable of providing adequate access to the landfill for maintenance and inspections.

No unstable ground or surfaces and no major erosion or loss of road base was observed during the inspections of the access road along the west side of IRP Site 7 Area 1. No maintenance is recommended for the access road.

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7.0 SUMMARY OF RECOMMENDATIONS

This section summarizes the recommendations mentioned in Sections 3.3, 4.3, and 5.3 as well as past inspections (TtEC 2009).

It is recommended that maintenance of vegetation ground cover occur, which includes planting pickleweed and saltgrass in the areas with no vegetation. The new plantings should not be allowed to damage groupings of native seedling plants but should instead be distributed in areas with currently limited vegetative cover. The best time for planting live plants in this area is late December or January.

In addition, it is recommended that the minor erosion areas, shallow depressions, and swale flowlines be regraded to facilitate positive drainage towards the southern boundary of the landfill.

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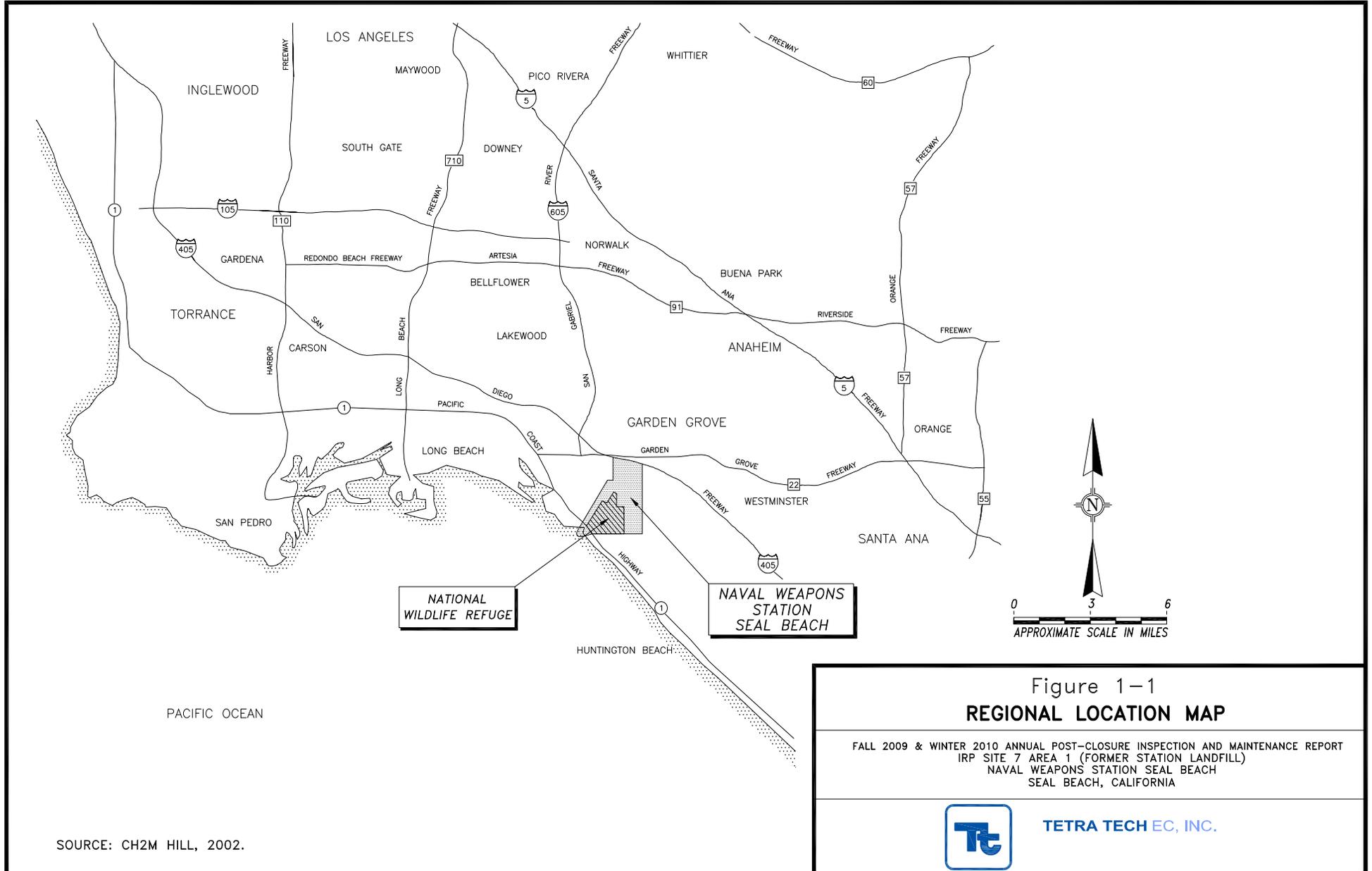
_____. 2009. Final Winter 2008/2009 Semiannual Post-Closure Inspection and Maintenance Report, Installation Restoration Program Site 7 (Former Station Landfill), Naval Weapons Station Seal Beach, Seal Beach, California. July 31.

TtFW (Tetra Tech FW, Inc.) 2004a. Final Post-Closeout Inspection and Maintenance Plan, Installation Restoration Program Site 7 (Station Landfill), Naval Weapons Station Seal Beach, Seal Beach, California. December 8.

_____. 2004b. Final Project Closeout Report, Non-Time-Critical Remedial Action Installation Restoration Program Site 7 (Station Landfill) and Site 4 (Perimeter Road AOPCs 1A and 2A), Naval Weapons Station Seal Beach, Seal Beach, California. August 20.

FIGURES

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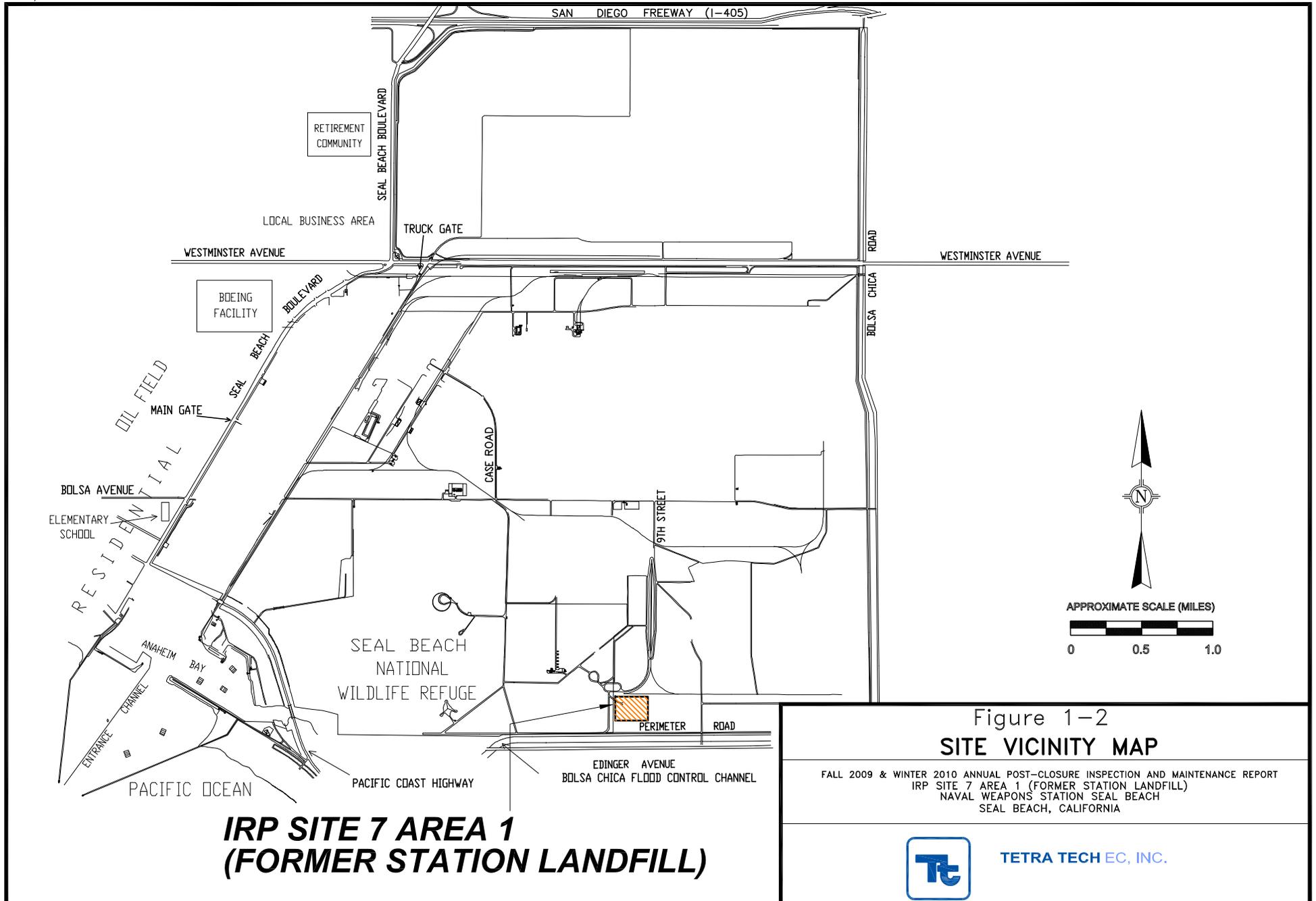
SOURCE: CH2M HILL, 2002.

Figure 1-1
REGIONAL LOCATION MAP

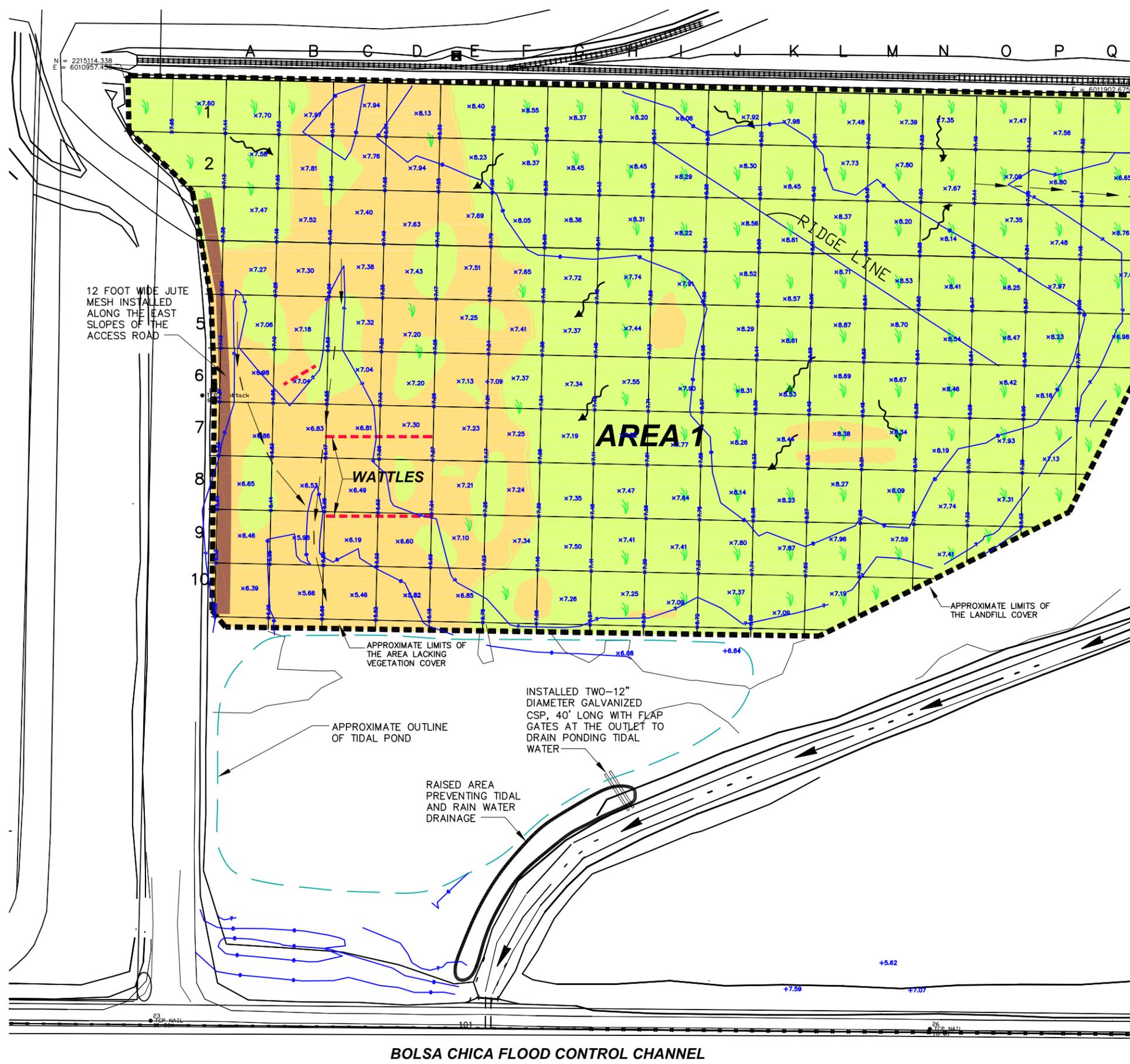
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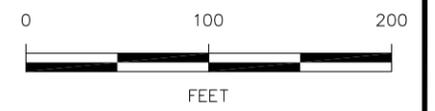
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E = 6010957.45



LEGEND

- AS-BUILT SPOT ELEVATIONS IN FEET ABOVE MSL (4/5/04)
- AS-BUILT SURVEY CONTOUR LINES (4/5/04)
- SHEET FLOW DIRECTION
- CONTROLLED FLOW DIRECTION
- 50'X50' GRID
- VEGETATION COVER
- NO GROUND COVER
- WATTLE PLACED ON MARCH 6, 2009
- AREA 1 BOUNDARY

NOTE:
GREEN SHADED AREAS INDICATE APPROXIMATE AREAS WITH VEGETATION COVER.



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**Figure 2-1
SITE MAP**

FALL 2009 & WINTER 2010 ANNUAL POST-CLOSURE INSPECTION AND MAINTENANCE REPORT
IRP SITE 7 AREA 1 (FORMER STATION LANDFILL)
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

TETRA TECH EC, INC.

BOLSA CHICA FLOOD CONTROL CHANNEL

APPENDIX A

INSPECTION RESULTS

APPENDIX A-1 – OCTOBER 14, 2009 INSPECTION RESULTS

APPENDIX A-2 – DECEMBER 15, 2009 INSPECTION RESULTS

APPENDIX A-3 – JANUARY 27, 2010 INSPECTION RESULTS

APPENDIX A-4 – MARCH 17, 2010 INSPECTION RESULTS

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APPENDIX A-1 – OCTOBER 14, 2009 INSPECTION RESULTS

FORM 101 – SOIL COVER INSPECTION

FORM 102 – STORMWATER/EROSION CONTROL INSPECTION

FORM 103 – PROTECTIVE VEGETATIVE COVER INSPECTION

FIGURE A-1A – LANDFILL COVER INSPECTION MAP

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FORM 101

**SOIL COVER INSPECTION
(OCTOBER 14, 2009)**

Type of Inspection: Semiannually

Inspector Name: Michael Cowan, P.E. Affiliation (Name of Navy Consultant or Representative): Tetra Tech EC, Inc. (TtEC)

Date: 10/14/09 Time: 2:00 p.m. Weather Condition: Cloudy

OBSERVATION TYPE AND DETAILED DESCRIPTION:

Erosion Sloughing/Sliding Cracks/Fissures Subsidence/Depression Evidence of Excessive Borrowing Rodents Others

No signs of erosion, depression, or other areas of concern—looks good other than lacking ground cover.

LOCATION OF OBSERVATION (Shown on the attached Figure A-1A): _____

Lacking ground cover areas from last inspection are showing signs of growth.

RECOMMENDATIONS: _____

Plant small plants in areas shown on Figure A-1A.

REMARKS: _____

Nature plants are showing signs of slow growth.

Signature

Site Inspector/Engineer



Date 10/16/09

FORM 102

**STORMWATER/EROSION CONTROL INSPECTION
(OCTOBER 14, 2009)**

Date: 10/14/09 **Name of Inspector/Engineer:** Michael Cowan, P.E.

Observations:

- | | | | |
|------|-------------------------------------|----------------------------|---------------------------------|
| None | 1. Ponding | Fair | 5. Lack of Positive Drainage |
| Ok | 2. Downstream Drainage Obstructions | Fair | 6. Silt Deposition at Low Areas |
| None | 3. Cover Washouts | None – | 7. Vegetation Washout |
| None | 4. Gully Erosion | Slow growth
areas noted | |

TYPE OF DEFICIENCY: _____

Lacking vegetative ground cover.

LOCATION OF OBSERVATION (shown on the attached Figure A-1A): _____

See Figure A-1A for areas of concern with lacking ground cover.

RECOMENDATIONS: _____

Maintain vegetation ground cover to avoid soil losses.

COMMENTS: _____

Areas of last inspection showing lacking ground cover are showing small plant growth
this inspection.

Signature

Site Inspector/Engineer 

Date 10/16/09

FORM 103

PROTECTIVE VEGETATIVE COVER INSPECTION (OCTOBER 14, 2009)

Location: IRP Site 7 Landfill **Date and Time:** 10/14/09 2:00 p.m.

Boundary Roads: Patrol Road **Inspector Name:** Michael Cowan, P.E.

General Soil Condition: Wet Dry **Weather:** Cloudy

ITEM	COMMENTS	RECOMMENDATIONS
Grass Cover	Lacking	Plant small ground cover plants
Shrubs	None	Ok
Vegetation Loss with Soil Erosion	None	Drainage looks good
Non-native Plants	None	N/A
Fire Hazard, Dead Vegetation, and Deep Rooted Plants	Clear	Looks green and clear of dead growth

Signature

Site Inspector/Engineer



Date 10/16/09

N = 2215114.338
E = 6010957.45

LEGEND

-  AS-BUILT SPOT ELEVATIONS IN FEET ABOVE MSL (4/5/04)
-  AS-BUILT SURVEY CONTOUR LINES (4/5/04)
-  SHEET FLOW DIRECTION
-  CONTROLLED FLOW DIRECTION
-  50'X50' GRID
-  VEGETATION COVER
-  NO GROUND COVER
-  WATTLE PLACED ON MARCH 6, 2009
-  AREA 1 BOUNDARY

NOTE:
GREEN SHADED AREAS INDICATE APPROXIMATE AREAS WITH VEGETATION COVER.

12 FOOT WIDE JUTE MESH INSTALLED ALONG THE EAST SLOPES OF THE ACCESS ROAD

APPROXIMATE LIMITS OF THE LANDFILL COVER

AREA 1

WATTLES

Drainage Ditch

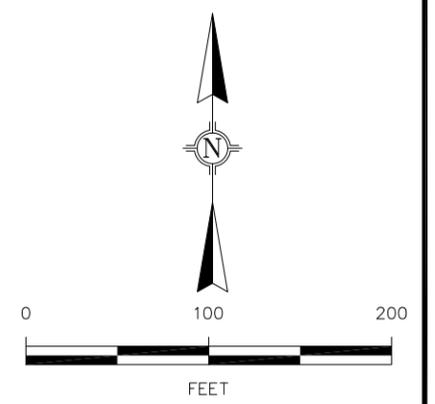
APPROXIMATE LIMITS OF THE AREA LACKING VEGETATION COVER

INSTALLED TWO-12" DIAMETER GALVANIZED CSP, 40' LONG WITH FLAP GATES AT THE OUTLET TO DRAIN PONDING TIDAL WATER

APPROXIMATE OUTLINE OF TIDAL POND

RAISED AREA PREVENTING TIDAL AND RAIN WATER DRAINAGE

- REFERENCE FORM:
- 101 SOIL COVER INSPECTION
 - 102 STORMWATER/EROSION CONTROL INSPECTION
 - 103 PROTECTIVE VEGETATIVE COVER INSPECTION
 - 104 LANDFILL COVER REPAIR RECORD



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INSPECTOR: MICHAEL COWAN P.E.
INSPECTION DATE: OCTOBER 14, 2009



TETRA TECH EC, INC.

Figure A-1A
LANDFILL COVER INSPECTION MAP
OCTOBER 14, 2009

FALL 2009 & WINTER 2010 ANNUAL POST-CLOSURE INSPECTION AND MAINTENANCE REPORT
IRP SITE 7 AREA 1 (FORMER STATION LANDFILL)
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

APPENDIX A-2 – DECEMBER 15, 2009 INSPECTION RESULTS

FORM 101 – SOIL COVER INSPECTION

FORM 102 – STORMWATER/EROSION CONTROL INSPECTION

FORM 103 – PROTECTIVE VEGETATIVE COVER INSPECTION

FORM 104 – LANDFILL COVER REPAIR RECORD

FIGURE A-1B – LANDFILL COVER INSPECTION MAP

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FORM 101

SOIL COVER INSPECTION (DECEMBER 15, 2009)

Type of Inspection: Periodic

Inspector Name: Michael Cowan, P.E. Affiliation (Name of Navy Consultant or Representative): Tetra Tech EC, Inc. (TtEC)

Date: 12/15/09 Time: 2:00 p.m. Weather Condition: Clear

OBSERVATION TYPE AND DETAILED DESCRIPTION:

Erosion Sloughing/Sliding Cracks/Fissures Subsidence/Depression Evidence of Excessive Borrowing Rodents Others

No erosion, cracks, or 6" depressions were noted after the season's first high rain event (0.80"). There were no subsidences.

LOCATION OF OBSERVATION (Shown on the attached Figure A-1B): _____

Small areas of ponding were noted (minor, less than 3"-4"). No soil losses were observed or signs of erosion in these areas.

RECOMMENDATIONS: _____

Small ponding area could be filled in with an estimated 75 cubic yards of SM soil import (5 to 7 truck loads).

REMARKS: _____

No action is required for minor 3" depressions. However, to avoid lack of vegetation in these areas, additional soil will raise the grade to drain properly.

Signature

Site Inspector/Engineer



Date 12/15/09

FORM 102

**STORMWATER/EROSION CONTROL INSPECTION
(DECEMBER 15, 2009)**

Date: 12/15/09 **Name of Inspector/Engineer:** Michael Cowan, P.E.

Observations:

- | | | | |
|---|-------------------------------------|---|---------------------------------|
| X | 1. Ponding | X | 5. Lack of Positive Drainage |
| | 2. Downstream Drainage Obstructions | | 6. Silt Deposition at Low Areas |
| | 3. Cover Washouts | | 7. Vegetation Washout |
| | 4. Gully Erosion | | |

TYPE OF DEFICIENCY: _____
Small areas of ponding (less than 6" in depth) were noted after the first major storm event (November 2009).

LOCATION OF OBSERVATION (shown on the attached Figure A-1B): _____
Location identified in Figure A-1B.

RECOMENDATIONS: _____
Fill in lower area with SM soil import to a grade that will drain.

COMMENTS: _____
Approximately 75 cubic yards (5 to 7 truck loads) of material would be needed to be spread in a 3" lift. Compaction 85% (wheel rolled).

Signature

Site Inspector/Engineer



Date 12/15/09

FORM 103

PROTECTIVE VEGETATIVE COVER INSPECTION (DECEMBER 15, 2009)

Location: IRP Site 7 Landfill **Date and Time:** 12/15/09 2:00 p.m.

Boundary Roads: Good/dry **Inspector Name:** Michael Cowan, P.E.

General Soil Condition: Wet _____ Dry X **Weather:** Clear

ITEM	COMMENTS	RECOMMENDATIONS
Grass Cover	N/A	Salt plants only
Shrubs	Small	No concern
Vegetation Loss with Soil Erosion	None	Lacking vegetation (not do to erosion)
Non-native Plants	Five-hook bassia & non-native ice plant are present	Non-native plants are estimated to be about 30% of the vegetative cover
Fire Hazard, Dead Vegetation, and Deep Rooted Plants	None	Clear of debris

Signature

Site Inspector/Engineer



Date 12/15/09

FORM 104

**LANDFILL COVER REPAIR RECORD
(DECEMBER 15, 2009)**

Maintenance Engineer: Michael Cowan, P.E. **Date:** 12/15/09 **Time:** 2:00 p.m.

Affiliation: TtEC

DEFICIENCY TYPE AND DETAILED DESCRIPTION:

Erosion Sloughing/Sliding Cracks/Fissures Subsidence/Depression Other

Lacking vegetation area in the western portion of the landfill – repairs were made on December 2 and 3, 2009.

Minor cover grading was performed on December 2 and 3, 2009 in areas lacking vegetative cover. The soils in the bare areas, in the western portion of the site, were tilled using a rake attached to a backhoe. Following raking, native seeds were broadcast with hand, and the raked areas were graded to provide a smooth surface. A total of 10 pounds of seed mix (*Heliotropium curassavicum* [6 pounds], and *Frankenia Salina* [4 pounds]) was used for the reseeding of the bare areas.

LOCATION OF REPAIR ACTIVITY: _____

Western and southwestern portions of the landfill.

REPAIR ACTION TAKEN (refer to repair detail or design drawing as appropriate): _____

The areas of concern from spring of 2009 inspection event (that was lacking vegetation in last report) was tilled, regraded, and reseeded.

ATTACHMENTS: (as-built drawings, compaction reports, etc. as appropriate): _____

None needed.

COMMENTS: _____

Seeding will require time to show any stable growth.

Signature

Site Inspector/Engineer

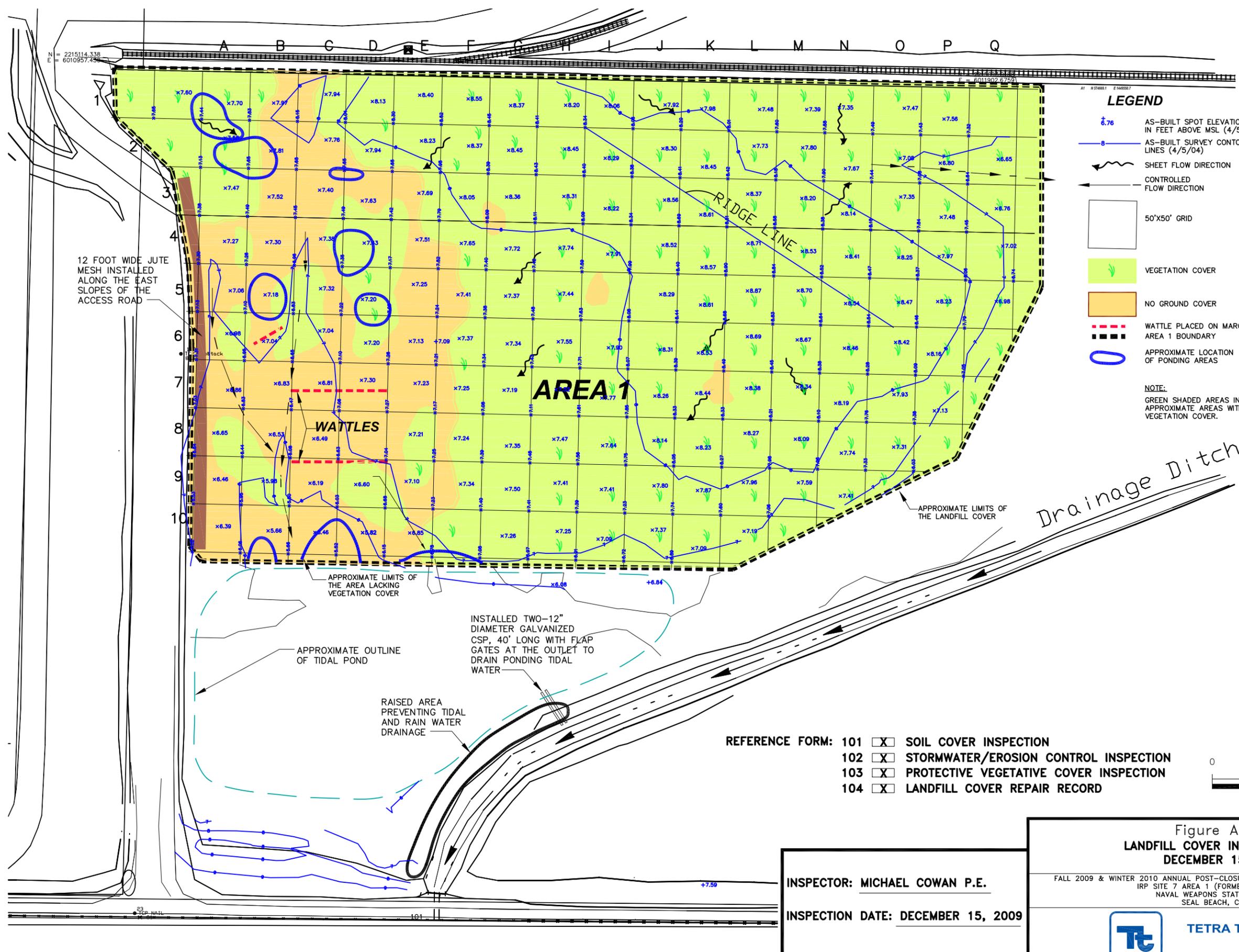


Date 12/15/09

NAVWPNSTA Seal Beach
representative (IR Program
Coordinator or ROICC)

Date _____

N = 2215114.338
E = 6010957.45



LEGEND

- AS-BUILT SPOT ELEVATIONS IN FEET ABOVE MSL (4/5/04)
- AS-BUILT SURVEY CONTOUR LINES (4/5/04)
- SHEET FLOW DIRECTION
- CONTROLLED FLOW DIRECTION
- 50'X50' GRID
- VEGETATION COVER
- NO GROUND COVER
- WATTLE PLACED ON MARCH 6, 2009
- AREA 1 BOUNDARY
- APPROXIMATE LOCATION OF PONDING AREAS

NOTE:
GREEN SHADED AREAS INDICATE APPROXIMATE AREAS WITH VEGETATION COVER.

12 FOOT WIDE JUTE MESH INSTALLED ALONG THE EAST SLOPES OF THE ACCESS ROAD

APPROXIMATE LIMITS OF THE AREA LACKING VEGETATION COVER

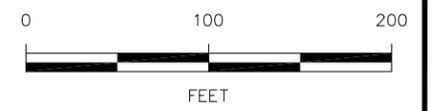
APPROXIMATE OUTLINE OF TIDAL POND

RAISED AREA PREVENTING TIDAL AND RAIN WATER DRAINAGE

- REFERENCE FORM:
- 101 SOIL COVER INSPECTION
 - 102 STORMWATER/EROSION CONTROL INSPECTION
 - 103 PROTECTIVE VEGETATIVE COVER INSPECTION
 - 104 LANDFILL COVER REPAIR RECORD

APPROXIMATE LIMITS OF THE LANDFILL COVER

Drainage Ditch



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INSPECTOR: MICHAEL COWAN P.E.
INSPECTION DATE: DECEMBER 15, 2009



TETRA TECH EC, INC.

Figure A-1B
LANDFILL COVER INSPECTION MAP
DECEMBER 15, 2009

FALL 2009 & WINTER 2010 ANNUAL POST-CLOSURE INSPECTION AND MAINTENANCE REPORT
IRP SITE 7 AREA 1 (FORMER STATION LANDFILL)
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA

APPENDIX A-3 – JANUARY 27, 2010 INSPECTION RESULTS

FORM 101 – SOIL COVER INSPECTION

FORM 102 – STORMWATER/EROSION CONTROL INSPECTION

FORM 103 – PROTECTIVE VEGETATIVE COVER INSPECTION

FIGURE A-1C – LANDFILL COVER INSPECTION MAP

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FORM 101

SOIL COVER INSPECTION (JANUARY 27, 2010)

Type of Inspection: Periodic

Inspector Name: Anna Baldenegro, P.E. Affiliation (Name of Navy
Consultant or Representative): Tetra Tech EC, Inc. (TtEC)

Date: 1/27/10 Time: 2:00 p.m. Weather Condition: Sunny

OBSERVATION TYPE AND DETAILED DESCRIPTION:

Erosion Sloughing/Sliding Cracks/Fissures Subsidence/
Depression Evidence of Excessive
Borrowing Rodents Others

There were no signs of erosion or cracks present. The soil cover in the 1/3 western portion of the landfill was wet due to the recent rain that occurred from January 18-22 and on January 26, 2010. Several areas with shallow ponding were observed. The ponding areas were similar to those observed during the prior inspection that was conducted on December 15, 2009.

LOCATION OF OBSERVATION (Shown on the attached Figure A-1C): _____
The approximate locations of the ponding areas are indicated on Figure A-1C.

RECOMMENDATIONS: _____

Fill in the deeper (and larger) ponding areas in compliance with Section 2.4 Earthwork Specifications of the Final Post-Closeout Inspection and Maintenance Plan Revision 0, dated December 8, 2004; or regrade using rakes to facilitate proper drainage towards the southern boundary of the landfill.

REMARKS: _____

No deep ponding (greater than 6-inches deep) was observed. The shallow ponds are expected to evaporate – raking would be sufficient to help these areas drain properly.

Signature

Site Inspector/Engineer



Date 1/27/10

FORM 102

**STORMWATER/EROSION CONTROL INSPECTION
(JANUARY 27, 2010)**

Date: 1/27/10 **Name of Inspector/Engineer:** Anna Baldenegro, P.E.

- Observations:
- | | | | |
|---|--|---|---|
| X | 1. Ponding (shallow, 2 to 3 inches deep) | X | 5. Lack of Positive Drainage (in the shallow ponding areas) |
| | 2. Downstream Drainage Obstructions | | 6. Silt Deposition at Low Areas |
| | 3. Cover Washouts | | 7. Vegetation Washout |
| | 4. Gully Erosion | | |

TYPE OF DEFICIENCY: _____
Shallow ponding (less than 3-inches deep) was observed in several locations.

LOCATION OF OBSERVATION (shown on the attached Figure A-1C): _____
See Figure A-1C for the approximate locations of the ponding areas.

RECOMENDATIONS: _____
Regrade the ponded areas or depressions to facilitate proper drainage towards the southern boundary of the landfill.

COMMENTS: _____
During hand grading, ensure that the grades will enable drainage into the tidal pond just south of the landfill.

Signature

Site Inspector/Engineer



Date 1/27/10

FORM 103

PROTECTIVE VEGETATIVE COVER INSPECTION (JANUARY 27, 2010)

Location: IRP Site 7 Landfill **Date and Time:** 1/27/10 2:00 p.m.

Boundary Roads: Good condition **Inspector Name:** Anna Baldenegro, P.E.

General Soil Condition: Wet Dry **Weather:** Sunny

ITEM	COMMENTS	RECOMMENDATIONS
Grass Cover	Lacking in portions of the western side	Plant small ground cover plants
Shrubs	None	N/A
Vegetation Loss with Soil Erosion	None noticed	N/A
Non-native Plants	Present	Monitor if a concern
Fire Hazard, Dead Vegetation, and Deep Rooted Plants	Not apparent	N/A

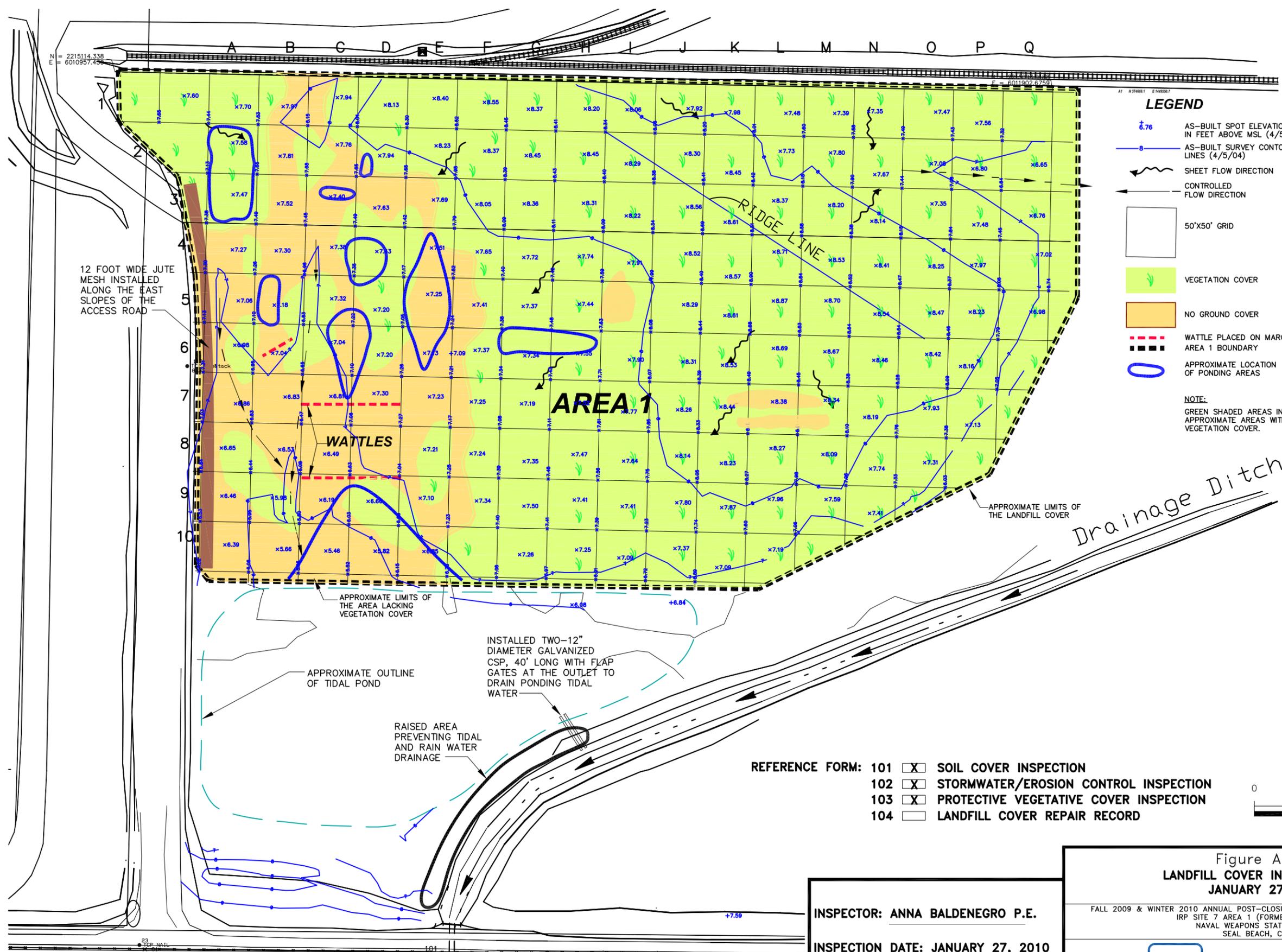
Signature

Site Inspector/Engineer



Date 1/27/10

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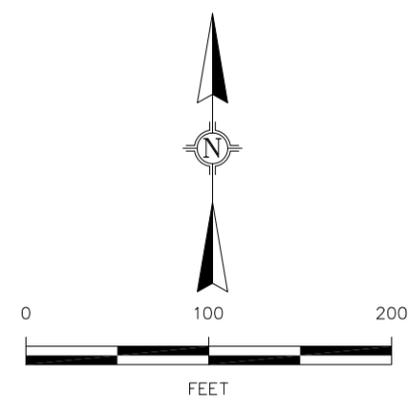


LEGEND

- x 6.76 AS-BUILT SPOT ELEVATIONS IN FEET ABOVE MSL (4/5/04)
- AS-BUILT SURVEY CONTOUR LINES (4/5/04)
- SHEET FLOW DIRECTION
- CONTROLLED FLOW DIRECTION
- 50'X50' GRID
- VEGETATION COVER
- NO GROUND COVER
- - - WATTLE PLACED ON MARCH 6, 2009
- - - AREA 1 BOUNDARY
- APPROXIMATE LOCATION OF PONDING AREAS

NOTE:
 GREEN SHADED AREAS INDICATE APPROXIMATE AREAS WITH VEGETATION COVER.

- REFERENCE FORM:
- | | | |
|-----|--------------------------|--|
| 101 | <input type="checkbox"/> | SOIL COVER INSPECTION |
| 102 | <input type="checkbox"/> | STORMWATER/EROSION CONTROL INSPECTION |
| 103 | <input type="checkbox"/> | PROTECTIVE VEGETATIVE COVER INSPECTION |
| 104 | <input type="checkbox"/> | LANDFILL COVER REPAIR RECORD |



INSPECTOR: ANNA BALDENEGRO P.E.
 INSPECTION DATE: JANUARY 27, 2010

Figure A-1C
 LANDFILL COVER INSPECTION MAP
 JANUARY 27, 2010

FALL 2009 & WINTER 2010 ANNUAL POST-CLOSURE INSPECTION AND MAINTENANCE REPORT
 IRP SITE 7 AREA 1 (FORMER STATION LANDFILL)
 NAVAL WEAPONS STATION SEAL BEACH
 SEAL BEACH, CALIFORNIA



TETRA TECH EC, INC.

APPENDIX A-4 – MARCH 17, 2010 INSPECTION RESULTS

FORM 101 – SOIL COVER INSPECTION

FORM 102 – STORMWATER/EROSION CONTROL INSPECTION

FORM 103 – PROTECTIVE VEGETATIVE COVER INSPECTION

FIGURE A-1D – LANDFILL COVER INSPECTION MAP

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FORM 101

SOIL COVER INSPECTION (MARCH 17, 2010)

Type of Inspection: Periodic

Inspector Name: Anna Baldenegro, P.E. Affiliation (Name of Navy Consultant or Representative): Tetra Tech EC, Inc. (TtEC)

Date: 3/17/10 Time: 11:00 a.m. Weather Condition: Sunny

OBSERVATION TYPE AND DETAILED DESCRIPTION:

Erosion Sloughing/Sliding Cracks/Fissures Subsidence/Depression Evidence of Excessive Borrowing Rodents Others

There are a few small areas where minor erosion less than 3-inches deep are present. The minor eroded areas are near the southern boundary of the landfill (the low point) and the depressions (less than 6-inches deep) are present at about the middle of the western third of the landfill (at the location of two of the ponding areas that were observed during the prior inspection on January 27, 2010).

LOCATION OF OBSERVATION (Shown on the attached Figure A-1D): _____
The approximate locations of the minor erosions and shallow depressions (less than 6-inches deep) are indicated on Figure A-1D.

RECOMMENDATIONS: _____
Monitor the minor erosions and shallow depressions (less than 6-inches deep), smooth out the minor erosion areas and regrade so that drainage is positive.

REMARKS: _____
No cracking was observed.

Signature

Site Inspector/Engineer



Date 3/17/10

FORM 102

**STORMWATER/EROSION CONTROL INSPECTION
(MARCH 17, 2010)**

Date: 3/17/10 **Name of Inspector/Engineer:** Anna Baldenegro, P.E.

Observations:

- | | | |
|-------------------------------------|---|---|
| 1. Ponding | X | 5. Lack of Positive Drainage
(the depressions) |
| 2. Downstream Drainage Obstructions | | 6. Silt Deposition at Low Areas |
| 3. Cover Washouts | | 7. Vegetation Washout |
| X 4. Gully Erosion | | |

TYPE OF DEFICIENCY: _____

Minor erosion was observed near the southern boundary of the landfill.

LOCATION OF OBSERVATION (shown on the attached Figure A-1D): _____

See Figure A-1D for the approximate locations of the minor eroded areas.

RECOMENDATIONS: _____

Regrade the minor eroded areas and shallow depressions to facilitate positive drainage.

COMMENTS: _____

Signature

Site Inspector/Engineer



Date 3/17/10

FORM 103

PROTECTIVE VEGETATIVE COVER INSPECTION (MARCH 17, 2010)

Location: IRP Site 7 Landfill **Date and Time:** 3/17/10 11:00 a.m.

Boundary Roads: Good condition **Inspector Name:** Anna Baldenegro, P.E.

General Soil Condition: Wet _____ Dry X **Weather:** Sunny

ITEM	COMMENTS	RECOMMENDATIONS
Vegetation Cover	Lacking in the western third of landfill	This area was tilled and reseeded in December and as a result is expected to show an increased vegetation growth. Monitor changes in vegetation growth and coverage.
Shrubs	None	N/A
Vegetation Loss with Soil Erosion	None noticed	N/A
Non-native Plants	Present	Monitor if a concern
Fire Hazard, Dead Vegetation, and Deep Rooted Plants	Not apparent	N/A

Signature

Site Inspector/Engineer



Date 3/17/10

N = 2215114.338
E = 6010957.45

LEGEND

-  AS-BUILT SPOT ELEVATIONS IN FEET ABOVE MSL (4/5/04)
-  AS-BUILT SURVEY CONTOUR LINES (4/5/04)
-  SHEET FLOW DIRECTION
-  CONTROLLED FLOW DIRECTION
-  50'X50' GRID
-  VEGETATION COVER
-  NO GROUND COVER
-  WATTLE PLACED ON MARCH 6, 2009
-  AREA 1 BOUNDARY
-  APPROXIMATE LOCATION OF DEPRESSION AREAS

NOTE:
GREEN SHADED AREAS INDICATE APPROXIMATE AREAS WITH VEGETATION COVER.

12 FOOT WIDE JUTE MESH INSTALLED ALONG THE EAST SLOPES OF THE ACCESS ROAD

ERODED AREAS

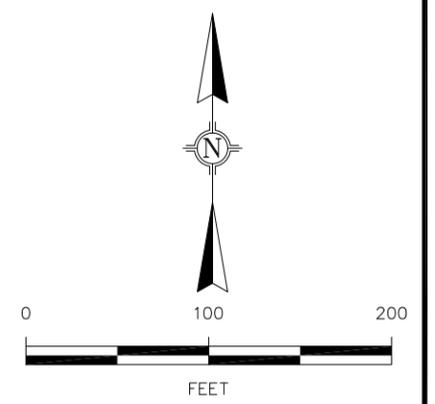
APPROXIMATE LIMITS OF THE AREA LACKING VEGETATION COVER

APPROXIMATE OUTLINE OF TIDAL POND

RAISED AREA PREVENTING TIDAL AND RAIN WATER DRAINAGE

INSTALLED TWO-12" DIAMETER GALVANIZED CSP, 40' LONG WITH FLAP GATES AT THE OUTLET TO DRAIN PONDING TIDAL WATER

- REFERENCE FORM:
- 101  SOIL COVER INSPECTION
 - 102  STORMWATER/EROSION CONTROL INSPECTION
 - 103  PROTECTIVE VEGETATIVE COVER INSPECTION
 - 104  LANDFILL COVER REPAIR RECORD



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Figure A-1D
LANDFILL COVER INSPECTION MAP
MARCH 17, 2010

FALL 2009 & WINTER 2010 ANNUAL POST-CLOSURE INSPECTION AND MAINTENANCE REPORT
IRP SITE 7 AREA 1 (FORMER STATION LANDFILL)
NAVAL WEAPONS STATION SEAL BEACH
SEAL BEACH, CALIFORNIA



TETRA TECH EC, INC.

INSPECTOR: ANNA BALDENEGRO P.E.
INSPECTION DATE: MARCH 17, 2010

APPENDIX B
SITE PHOTOGRAPHS

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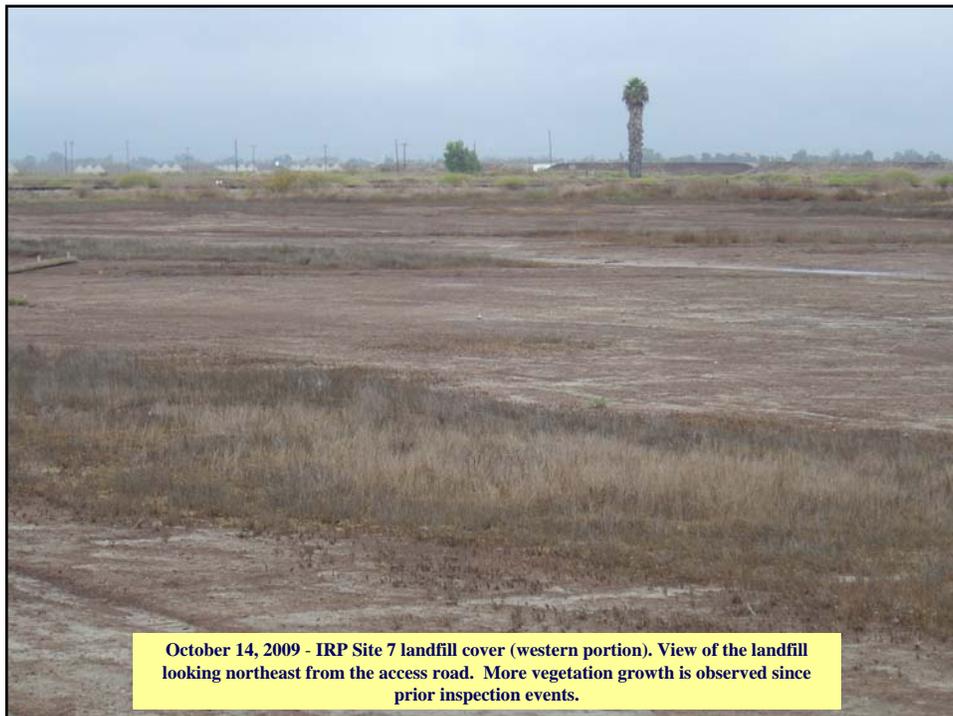
October 14, 2009 - IRP Site 7 landfill cover (western portion). View of the landfill looking northeast and along the access road. No wet spots, depressions, or erosion are observed.



October 14, 2009 - IRP Site 7 landfill cover (southwestern portion). Minor wet spots are observed.



October 14, 2009 - IRP Site 7 landfill cover (western portion). View of the landfill looking northeast. Some vegetation growth is observed.



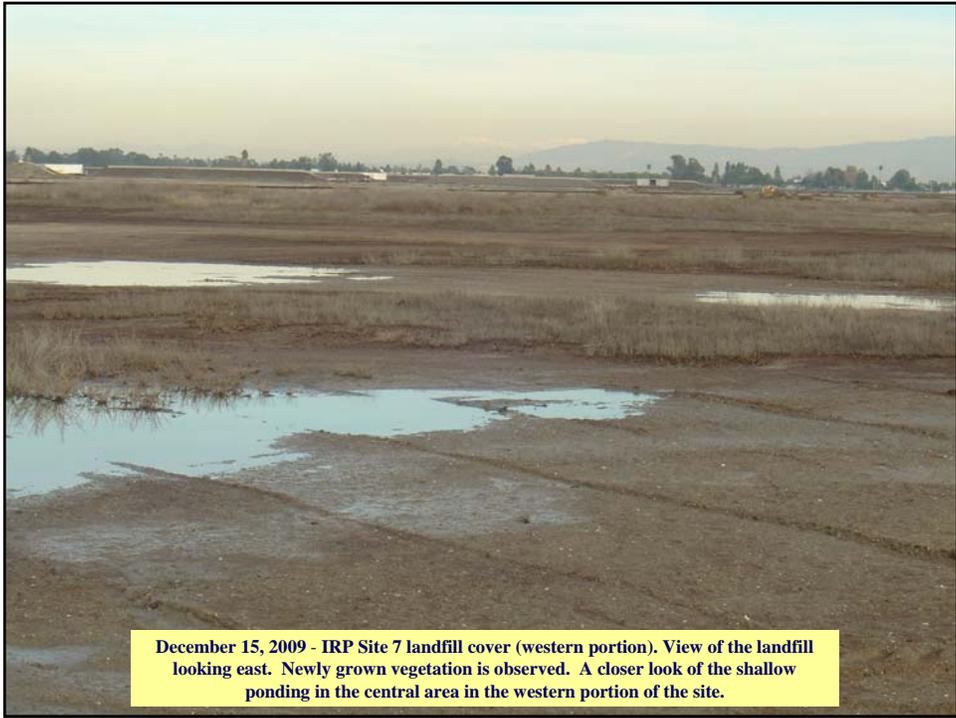
October 14, 2009 - IRP Site 7 landfill cover (western portion). View of the landfill looking northeast from the access road. More vegetation growth is observed since prior inspection events.



December 15, 2009 - IRP Site 7 landfill cover (western portion). View of the landfill looking toward north and along the access road. Wet spots observed at the northwest corner of the site.



December 15, 2009 - IRP Site 7 landfill cover (center of the western portion). Several shallow (less than 4 inches deep) wet spots were observed following heavy rains.







January 27, 2010 - IRP Site 7 landfill cover (western portion). View of the landfill looking southwest. New vegetation growth is observed in this area. In the background some shallow ponding is observed.



January 27, 2010 - IRP Site 7 landfill cover (eastern portion). View of the landfill looking west. The majority of the landfill (about 2/3 of the area) has dense vegetation cover.



March 17, 2010 - IRP Site 7 landfill cover (southwest corner). Looking west towards the boundary road – minor erosion is seen.



March 17, 2010 - IRP Site 7 landfill cover (southwestern area). Minor erosion and depressions are seen.



March 17, 2010 - IRP Site 7 landfill cover (near southern boundary, western side).
View of the landfill looking north.
Minor erosion is seen, as well as scattered vegetation.



March 17, 2010 - IRP Site 7 landfill cover (southern boundary). View looking
southeast toward installed corrugated steel pipes.



**March 17, 2010 - IRP Site 7 landfill cover (at southern boundary).
View looking northeast. Abundant vegetation is seen.**



**March 17, 2010 - IRP Site 7 landfill cover (western area). View looking northwest.
Some new vegetation growth is seen.**



March 17, 2010 - IRP Site 7 landfill cover (middle of western area). Depression is seen.



March 17, 2010 - IRP Site 7 landfill cover (middle of western area).
View looking northwest. Northern depression area is seen.