



June 29, 2011

Project No. 01-114

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Attention: Mr. Safouh Sayed, Project Manager
Southern California Cleanup Operations Branch, Cypress
Department of Toxic Substances Control
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Ascon Landfill Site
Interim Removal Measure Completion Report

Dear Mr. Sayed:

Enclosed please find two copies of the Interim Removal Measure Completion Report for the Ascon Landfill Site located in Huntington Beach, California.

Please feel free to contact me if you have any questions at (714) 863-0017 or tzeier@projectnavigator.com.

Sincerely,

Tamara Zeier, P.E.
Ascon Landfill Site Project Manager

TZ:tz

Enclosure: Ascon Landfill Site Interim Removal Measure Completion Report

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Interim Removal Measure Completion Report



**ASCON LANDFILL SITE
HUNTINGTON BEACH, CALIFORNIA**

June 29, 2011

Prepared for

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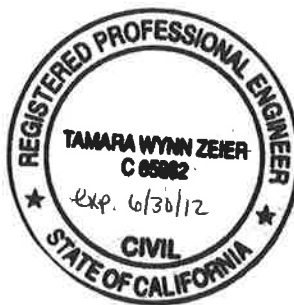


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INTERIM REMOVAL MEASURE COMPLETION REPORT

Ascon Landfill Site
Huntington Beach, California

THIS DOCUMENT WAS PREPARED UNDER THE DIRECTION AND SUPERVISION OF A QUALIFIED
REGISTERED CALIFORNIA PROFESSIONAL ENGINEER



Tamara Zeier 6/29/11

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LIST OF ACRONYMS

ACM	Asbestos containing material
AMP	Air Monitoring Plan
ASTM	American Society for testing Materials
BMP	Best Management Practice
Cal-Mod	California modified
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
City	City of Huntington Beach
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
Geosyntec	Geosyntec Consultants
IRM	Interim Removal Measure
IS	Initial Study
LKM	Lime Kiln Material
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration
NOD	Notice of Determination
NOE	Notice of Exemption
NOI	Notice of Intent
NOT	Notice of Termination
NOx	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
OCVCD	Orange County Vector Control District
OVA	Organic Vapor Analyzer
PAHs	Polycyclic Aromatic Hydrocarbons
PCR	PCR Services Corporation
PID	Photoionization Detector
PNL	Project Navigator, Ltd.
ppm	parts per million
PUF	Polyurethane Foam

LIST OF ACRONYMS (continued)

QA/QC	Quality Analysis/Quality Control
RECON	Remedial Construction Services, Inc.
RES	RES Environmental Services
RP	Responsible Party
SARWQCB	Santa Ana Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
Site	Ascon Landfill Site
SJVAPCD	San Joaquin Valley Air Pollution Control District
SPT	Standard Penetration Test
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

1.0 INTRODUCTION

1.1 *Site Background*

The Interim Removal Measure (IRM) completed at the Ascon Landfill Site (Site) is documented in this IRM Completion Report. This report has been prepared by Project Navigator, Limited (PNL) with assistance from Geosyntec Consultants (Geosyntec) on behalf of the Ascon Landfill Site Responsible Parties (RPs).

Site Description. The Site is an approximately square parcel located at 21641 Magnolia Street in Huntington Beach, California, on the southwestern corner of the intersection of Hamilton Avenue and Magnolia Street, approximately ½ mile north of Huntington Beach State Park and the Pacific Ocean (**Figure 1.1-1**). The Site is approximately 38 acres and is enclosed by a perimeter chain link fence with three 20-foot-wide locked gates, as well as additional internal fencing. The gate at the northwestern corner provides access from Hamilton Avenue and two other gates provide access from Magnolia Street in the southeastern portion of the Site.

The Site was operated as a waste disposal facility from approximately 1938 through 1984. Waste brought to the Site was apparently deposited on the ground and contained by berms. As the waste accumulated, the berms were raised such that most of the Site has an elevation approximately 10 to 20 feet above the adjacent street level. Since 1984, the Site remained mostly unchanged. After the 2003 Consent Order¹, action was taken to improve security fencing, install identification signage, conduct more frequent routine maintenance, and construct improved best management practices for storm water control. Additionally, an Emergency Action was conducted in 2005 through early 2006 to strengthen earthen berms along the northern portion of the Site and improve overall Site storm water control. The Emergency Action consisted of waste removal, predominantly from Lagoons 4 and 5, and Site grading.

Five visible impoundments, referred to as Lagoons 1 through 5, were present at the Site prior to beginning the IRM, as well as one covered pit (Pit F) and several former pits and lagoons that are no longer visible. The approximate locations of the pre-IRM visible impoundments, the seven former pits, and other significant feature such as buildings, gates, and oil production facilities are shown on **Figure 1.1-2**.

¹ Imminent and Substantial Endangerment Determination and Consent Order 02/03-007 with the California Environmental Protection Agency, Department of Toxic Substances Control.

During the early years of operation, until approximately 1971, most of the waste disposed of on the Site came from oil drilling operations. Oil field wastes included drilling muds, wastewater brines, and other drilling wastes. From 1971 to 1984, solid wastes such as asphalt, concrete, metal, soil, and wood were disposed on the Site. Based on the review of aerial photographs, it appears that essentially the entire Site was used during the late 1950's for oil field waste disposal in impoundments, or lagoons. These former lagoons appear to have been partially backfilled with construction debris and fill material, leaving the current lagoons with less surface area and higher surface elevation than the former lagoons. Prior to the IRM, the surface elevation of the tops of Lagoons 1 and 2 was approximately 12 feet above the street level at Magnolia Street.

Regulatory Background. The IRM was conducted by the RPs pursuant to the Imminent and Substantial Endangerment Determination and Consent Order 02/03-007 with the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), effective January 8, 2003, and the Imminent and Substantial Endangerment Determination and Order and Remedial Action Order 02/03-018, effective March 5, 2003.

Following preparation of an IRM-specific health risk assessment and an Initial Study [PCR Services, 2009] pursuant to the California Environmental Quality Act (CEQA), DTSC determined that a Mitigated Negative Declaration (MND) would be the appropriate CEQA mechanism to perform the IRM. This MND was appropriate because of the limited scope and schedule of the IRM work and because all potential environmental impacts from the IRM work could be mitigated to a less-than-significant level. The IRM Workplan and MND were approved in May 2010, and DTSC filed a Notice of Determination (NOD) for the IRM MND with the California State Clearinghouse on May 12, 2010. However, work was postponed until July 2010 to allow for an Addendum to the MND (July 15, 2010) to account for changed Project conditions, principally a proliferation in the number of southern tarplants, a State-designated sensitive plant species present at the Site. The number of southern tarplants present at the Site significantly increased between preparation of the Initial Study for the project and planned mobilization for the fieldwork after DTSC approval (from approximately 67,000 to approximately 660,000). In July 2010, DTSC approved the Addendum (Addendum No. 1) to the MND for the Ascon IRM to account for the increased number of southern tarplants and minor changes with the onsite work areas. On July 16, 2010, DTSC filed a NOD for Addendum No. 1 with the California State Clearinghouse.

On November 23, 2010, DTSC issued a Notice of Exemption (NOE) to allow for the addition of Lime Kiln Material (LKM) to Lagoon 3 in order to increase stability of the berm between Lagoons 2 and 3 by reducing excess moisture caused by recent rains. DTSC filed the NOE with the California State Clearinghouse on November 23, 2010. Shortly thereafter, Amendment No. 2 to the MND (December 7, 2010) was approved by DTSC during IRM work in order to increase the stability of the earthen berm between Lagoons 2 and 3 prior to the future final remedy and to better ensure the containment of Lagoon 3 materials during the period between completion of the IRM and implementation of the final remedy by relieving the load from the north side of the berm between Lagoons 2 and 3. DTSC filed a NOD for Addendum No. 2 with the California State Clearinghouse on December 7, 2010. All changes to the IRM scope of work brought about by the NOE and the two addenda to the MND remained within the original scope of material removal (up to 70,000 cubic yards) and commensurate truck traffic.

Appendix A contains pertinent CEQA documentation and includes the DTSC approval letter for the IRM Workplan (**A-1**), the MND (**A-2**), the May 2010 NOD for the MND (**A-3**), the Mitigation and Monitoring Reporting Program (**A-4**), Amendment No. 1 to the MND (**A-5**), July 2010 NOD (**A-6**), November 2010 NOE (**A-7**), Amendment No. 2 to the MND (**A-8**), and December 2010 NOD (**A-9**).

IRM field work was conducted between July 2010 and March 2011.

1.2 Interim Removal Measure Objectives

The objective of the IRM was to enable assessment of the materials underneath the tarry waste of Lagoons 1 and 2. The materials beneath the tarry wastes were of unknown composition and geotechnical quality and had not been assessed due to the presence of the overlying tarry wastes and worker safety concerns. During a March 20, 2008, meeting with the DTSC, it was decided that an interim removal measure would enable further assessment of these materials under Lagoons 1 and 2. Subsequently, an Interim Removal Measure Workplan (IRM Workplan) was prepared by PNL and Geosyntec and first submitted to the DTSC for review in October 2008 [PNL/Geosyntec 2008], revised in September 2009 [PNL/Geosyntec 2009]. The IRM Workplan was finalized in May 2010 [PNL/Geosyntec 2010a] along with the MND [PCR Services/DTSC 2010]. The IRM Workplan, MND, Mitigation Monitoring and Reporting Program (MMRP), and DTSC's responses to comments on the MND were finalized and approved by DTSC in May 2010 [DTSC 2010a, DTSC 2010b, DTSC 2010c, DTSC 2010d], and subsequently in July 2010 [DTSC

2010e] to account for the significant increase in the number of southern tarplants onsite.

During IRM activities, as waste was removed from Lagoon 2, the project's geotechnical engineer assessed the height, steepness, and stability of the south facing slope of the earthen berm separating Lagoons 2 and 3. As a result of this analysis, a proposal for limited waste removal from Lagoon 3 under the DTSC-approved IRM MND and MND Addendum was provided to DTSC on November 12, 2010 [PNL/Geosyntec 2010b], and a final, revised proposal submitted to DTSC on November 23, 2010 [PNL/Geosyntec 2010c]. The objective of this work was to reduce the load on the berm between Lagoons 2 and 3 and thereby achieve greater berm stability and safety between completion of the IRM and implementation of the final remedy. This proposal was approved by DTSC in December 2010, and DTSC completed and approved Addendum No. 2 to the MND for the IRM in December 2010. DTSC filed a NOD for Addendum No. 2 with the California State Clearinghouse in December 2010 for this work.

1.3 Report Organization

The IRM Completion Report is organized in the following sections:

- Section 2 provides a description of the specific work and site management activities performed during the IRM, including Site preparation activities, a description of required permits, onsite security measures, earthwork, *in-situ* processing of lagoon material, transportation and disposal, additional Lagoon 3 activities, site restoration activities, geotechnical analyses, and storm water runoff control.
- Section 3 summarizes the results of air monitoring performed as part of the IRM. This section includes a summary of the IRM Air Monitoring Plan (AMP) and presents the results of real-time monitoring, meteorological monitoring, SUMMA canister and high-volume samples, and South Coast Air Quality Management District (SCAQMD) Rule 1150/1166 monitoring.
- Section 4 includes methods employed and documentation to demonstrate compliance with the MMRP, including air quality measures -- onsite equipment United States Environmental Protection Agency (USEPA) Tier 3 certification, haul-truck engine requirements, oxides of Nitrogen (NOx) credits, odor complaint tracking -- and biological measures -- avoidance of, minimizing impact to, and offsite restoration of southern tarplant, protection

of disturbed coastal salt marsh, and reduction of potential impacts to migratory birds.

- Section 5 summarizes all aspects of public participation in the IRM process, including public notifications, informational fact sheets, legal display notices, public meetings, project signage, start work notices, City updates, and the 24-hour public hotline.
- Section 6 presents a brief summary and project metrics of the IRM such as transportation and disposal tonnage, excavation tonnage, odors and emissions control, and air monitoring data.
- Section 7 lists the references used in preparation of this Completion Report.

2.0 DESCRIPTION OF WORK ACTIVITIES

Work activities completed during the IRM include the following tasks which are described in more detail in this section of the Report.

- Section 2.1 - Permits – a description of the applicable permits for the project.
- Section 2.2 - Security – a description of the onsite security measures.
- Section 2.3 - Site Preparation Activities – including mobilization, Site preparation activities, and temporary facilities.
- Section 2.4 - Site Grading – a description of earthwork including excavation of material from lagoons, haul road maintenance, grading to comply with the Storm Water Pollution Prevention Plan, and generation of borrow material.
- Section 2.5 - In-Situ Processing – a description of the introduction of admix, a firming agent, to lagoon material to ensure suitability for transportation and placement in the disposal facility.
- Section 2.6 - Transportation and Disposal – a description of how onsite waste was handled, transported and disposed of offsite.
- Section 2.7 - Lagoon 3 Activities – a description of the additional work in Lagoon 3 and how that work was performed.
- Section 2.8 - Site Restoration Activities – a description of the performance of tasks required to leave the Site in a safe, stable condition required by permits, regulations and other requirements.
- Section 2.9 - Geotechnical Investigation – a description of the geotechnical investigation and analyses.
- Section 2.10 - Storm Water Runoff Control – a description of the implementation of measures required for storm water runoff including the Construction Storm Water Pollution Prevention Plan (Construction SWPPP).

Personnel trained in hazardous waste operations and air monitoring and a qualified Construction Manager were onsite during the IRM work activities. Qualified personnel oversaw the preparation of the lagoon material for loading and addition of LKM to the material, progress of Site excavation, loading of the haul trucks, manifesting of the waste transported and disposed offsite, and construction of features such as the lagoon sump and final slopes.

Environmental monitoring personnel collected readings of meteorological conditions, total volatile organic compounds (VOCs), odor, and dust (i.e., particulates) emissions at the Site perimeter using handheld instruments, such as an organic vapor analyzer (photoionization detector [PID]) for total VOCs. Refer to Section 3 for a discussion of real-time air monitoring conducted during the IRM.

2.1 Permits

Several types of permits were required from the City of Huntington Beach (City) and other local jurisdictions to complete various IRM activities. Copies of these permits are presented in Appendices B-1 through B-8. A brief description of these permits is outlined below.

2.1.1 Well Destruction Permit

As described in Section 2.1, a Well Destruction Permit was acquired prior to destruction of select onsite wells. The permit was issued by the Orange County Health Care Agency, Environmental Health Division. A copy of the Well Destruction Permit is presented in **Appendix B-1**.

2.1.2 SCAQMD Rule 1150/1166 Permit

Prior to mobilization, a Site-specific Rule 1150/1166 Excavation Permit was obtained from the SCAQMD. This permit contained conditions applicable to execution, monitoring, and notification requirements in the event of disturbance of materials with measurements greater than 50 parts per million (ppm) volatile organic compounds (VOCs) taken with an organic vapor analyzer (OVA), e.g., photoionization detector (PID), within three inches of the excavated material within three minutes of excavation. A copy of the SCAQMD Rule 1150/1166 Excavation Permit is included in **Appendix B-2**. Requirements of the Rule 1150/1166 Permit included:

- Limits to the total volume of VOC-contaminated materials² to be excavated,
- Limits to the size of VOC-contaminated stockpiles (not to exceed 500 cubic yards) and any non-VOC-contaminated stockpiles (not to exceed 5000 cubic yards),

² VOC-contaminated material is defined by SCAQMD as excavated soil that measures greater than 50 ppm total VOCs as measured with an OVA (e.g., PID), within three inches of the excavated material within three minutes of excavation.

- Prohibit excavation during adverse weather conditions (e.g., average wind speed greater than 15 miles per hour over 15 minutes and instantaneous wind speed greater than 25 miles per hour),
- Real-time air monitoring (using an OVA, i.e., PID) at the equipment bucket within three inches of excavated material, as measured by a PID during loading of lagoon materials,
- Conduct and record real-time perimeter air monitoring per the IRM workplan. Real-time air monitoring included real-time particulate, VOC, and odor monitoring,
- Implement mitigation measures, such as workface area reduction, application of vapor suppressant, and cessation of work activities, when real-time monitoring indicated that certain action levels had been reached,
- Cease all work and implement mitigation measures if a considerable number of complaints were received,
- Dispose of VOC-contaminated materials offsite within 30-days; implement odor control measures, such as the application of foam suppressants, during excavation and disturbance of materials while handling,
- Requirements for stockpile management, including inspections.

In accordance with the SCAQMD Rule 1150/1160 Permit, PNL/Geosyntec notified SCAQMD prior to the start of excavation of lagoon materials (**Appendix B-3**) and on the first occasion when VOC-contaminated material, as defined by SCAQMD Rule 1150/1166, was encountered (**Appendix B-4**).

2.1.3 Haul Permit

Prior to mobilization, an Off-Site Hauling 'Permit' was obtained from the City. This haul plan/permit specified the days of the week and hours when hauling was permitted, the number of truck trips allowed per day, the total volume of waste anticipated to be transported offsite, the inbound and outbound truck haul routes, and various street maintenance and dust control provisions. A copy of the Off-Site Hauling Permit is attached in **Appendix B-5**.

2.1.4 Coastal Development Permit

Following a public hearing held on March 3, 2010, and the Huntington Beach Zoning and Subdivision Ordinance appeal period, the City of Huntington Beach approved the application for a Coastal Development Permit (CDP), and the CDP was then approved as final, including requisite conditions prior to the start of IRM construction activities. All development within the coastal zone requires a CDP

unless specifically exempted or excluded. The purpose of the CDP is to implement the California Coastal Act of 1976 (Division 20 of the Public Resources Code), as amended, in accordance with the City's Local Coastal Program. The CDP Notice of Action is attached as **Appendix B-6**. The CDP Final Notice of Action is included as **Appendix B-7**, and the RPs' responses to the City's conditions are included as **Appendix B-8**.

2.1.5 Grading Permit

A Grading Permit was acquired from the City of Huntington Beach prior to clearing, grubbing, excavation or other intrusive work performed as part of the IRM. A Grading Permit is typically required when planned work includes disturbance of soil, including excavation in the City, per Chapter 17.05 of the Huntington Beach Municipal Code. A copy of the Grading Permit for the IRM is attached in **Appendix B-9**.

2.2 Security

Twenty-four-hour, seven days a week Site security was maintained for the duration of the IRM work. Security services were provided by a subcontractor to Remedial Construction Services, Inc. (RECON), the construction contractor for the IRM.

2.3 Site Preparation Activities

Prior to construction activities, pre-construction tasks were performed to prepare the Site and train personnel for the IRM work. Preparations included measures required to comply with the MMRP (**Appendix A**) issued by the DTSC, mobilization of equipment, clearing and grubbing of work areas, establishment of temporary facilities, Site-specific safety orientation training, MMRP-required training of Site personnel, and delineation of work areas and protected/non-work areas per the MMRP.

Details of the MMRP are addressed in Section 4, Compliance with MMRP. The following tasks required by the MMRP were performed during Site preparation:

- All off-road construction equipment greater than or equal to 50 horse power (hp) engine rating was verified and documented as meeting or exceeding USEPA Tier 3 standards.

- All on-road vehicles used to haul tarry materials were verified and documented to be engine model year 2004 or newer, and 2007 or newer if available.
- “No Equipment Zones” were established by a qualified biologist to demark locations of southern tarplants, a State-designated sensitive plant species, and disturbed coastal salt marsh, that warranted protection during the IRM per the MMRP. Orange fencing was installed to delineate these “No Equipment Zones.”
- A qualified biologist conducted a training program for all Site personnel regarding:
 - Site personnel awareness of “No Equipment Zones.”
 - Procedures to minimize impacts when working in proximity to southern tarplants.
 - Allowable and non-allowable activities when working near tarplant locations.
 - Procedures to minimize impacts when working in proximity to the disturbed coastal salt marsh.
- Prior to the start of clearing vegetation, a qualified biologist performed a bird and nest survey and determined that no raptor or songbird nests were located within the applicable onsite buffer areas.

In July 2010, during mobilization, five geoprobe wells and two piezometers were purposefully destroyed (abandoned) to avoid obstruction of equipment and haul truck movement during the IRM. These wells were located in the primary work area of the IRM construction activities (i.e., in the vicinity of Lagoons 1 and 2). Before the wells were destroyed, a Well Destruction Permit was obtained from the Orange County Health Care Agency. This permit is included in **Appendix B**. Details for the well destruction can be found in the Ascon Landfill Site Interim Groundwater Monitoring Report – September 2010 [Geosyntec 2010]. Each well was abandoned by over-drilling to several feet below the bottom of the well and backfilling with cement-bentonite grout pumped to the bottom of the hole through a tremie pipe. Details of the well destruction of these seven wells are included in the September 2010 Interim Groundwater Monitoring Report (Geosyntec 2010).

Site mobilization tasks commenced the third week of July 2010 with arrival of construction personnel from RECON, construction management personnel from Geosyntec, air monitoring services personnel from RES Environmental Services (RES), transportation and disposal coordinator from Clean Harbors Environmental

Services, and the Engineer-in-Responsible Charge and RP oversight from Project Navigator, Ltd.

Initial activities included:

- Mobilization of field staff and establishment of a field office.
- Mobilization of equipment and materials, such as work trailer, excavators, water trucks, front end loader, and pneumatic odor suppressing foam dispenser.
- Mobilize 24 hours per day / 7 days per week Site security.
- Establish work zones and lay-down areas.
- Conducted Site-specific orientation and health and safety training for field personnel.
- Mobilization of RES air monitoring equipment and weather station.
- Set-up and calibration of air monitoring equipment and the weather station.
- Provided air monitoring in accordance with the Site-specific SCAQMD Rule 1150/1166 permit during clearing and grubbing, and grading of temporary roads.
- Confirmed onsite equipment met emission requirements stipulated in the MMRP.
- Removal of existing fences and cables at Lagoons 1 and 2 to allow access to the lagoon materials and work area.
- Installation of a diesel fuel tank for onsite equipment use. This included inspection and permit by the Huntington Beach Fire Department.
- Clearing and grubbing vegetation in preparation of grading and excavation.
- Begin installation of Best Management Practice (BMP) features required by the Construction Storm Water Pollution Prevention Plan.
- Prepare haul roads for trucking operations, including protection of existing wells by installation of K-rail.
- Prepare the Hamilton and Magnolia Site entrance/exit gates for trucking operations, including installation of crushed rock and rumble strips.
- Install scaffolding for the workers to line the haul trucks.
- Conducted required Site orientation and health and safety training for onsite personnel.

Site preparation activities were completed in approximately three weeks. A timeline of major activities for the IRM project is shown in **Figure 2.3-1**

2.4 Site Grading and Excavation

Earthwork (i.e., grading, excavation, or other disturbance of Site waste, fill, or soils) was performed within selected portions of the IRM operational area. This earthwork was done for various purposes, including: maintaining access for equipment and haul trucks; directing the onsite flow of storm water; maintaining the stability of the lagoon side-slopes, and finish contouring of the bottom of Lagoons 1 and 2 after completion of the excavation. All IRM grading activities and tasks were performed in accordance with IRM permits and requirements. Earthwork was limited to areas outside of delineated southern tarplant protected locations (MMRP, BIO-1, BIO-2). Air monitoring at the cut face (i.e., excavator bucket) and Site perimeter was performed during all IRM excavation activities per SCAQMD Rule 1150/1166 Permit and other applicable requirements. Dust/particulate, odor, and emissions preventive and mitigation measures were identified and implemented per permits and plan requirements.

Conditions of excavation varied significantly across the Site. Debris, including concrete, rebar, wire, cable, wire rope, metal debris and metal, plastic and concrete pipe, was located throughout the Site on the surface and at depth.

2.4.1 Clearing and Grubbing

Vegetative material found in roadways and borrow areas was removed to approximately 3 inches below existing grade and stockpiled onsite.

2.4.2 Establishing and Maintaining Haul Roads

Haul roads, including several new Site access roads, were maintained throughout construction activities. Maintenance consisted of grading and removal of tarry material occasionally found on the surface of some roads. Crushed rock/gravel was installed on haul roads during the rainy season as a safety measure and to help keep haul truck tires clean and reduce the need for wheel washing during decontamination operations in damp conditions.

2.4.3 Grading to Implement the IRM Construction Storm Water Pollution Prevention Plan (SWPPP)

Grading was performed to achieve storm water flows and drainage specified in the IRM Construction SWPPP. Areas at the perimeter of Lagoons 1, 2, and 3 were sloped away from the lagoons, and a low berm was constructed in areas to prevent storm water from flowing into the excavated lagoons.

2.4.4 Generation of Borrow Material

Borrow material (i.e., soils, fill) required to build slopes, achieve grade, and provide cover material was generated onsite during SWPPP-related activities and other Site grading. All identified potential borrow material was screened for total VOCs using a PID and segregated as necessary in accordance with applicable permit requirements. Onsite materials used for borrow were non-VOC-contaminated (as defined by the SCAQMD Rule 1150/1166 permit) and generally free of significant debris.

2.4.5 Excavation for Removal of Tarry Material from Lagoons 1, 2, and 3

Tarry material in Lagoons 1, 2, and 3 was processed by introduction of LKM as an additive prior to excavation, loading, and transportation and disposal. This is described below in Section 2.5, *In-Situ* Processing. Tarry lagoon materials were excavated at the edge of the lagoons and direct-loaded into haul trucks. Tarry materials were not stockpiled.

As the lagoon excavations progressed, long-reach excavators were used to move material from the centers of lagoons to loading areas along the edges of the lagoons. Earthen ramps were constructed into the lagoons, when necessary, to allow long-reach excavators access to material. Crane mats were used, when necessary, to stabilize the excavators during operation in loose soils or waste. Sloughing soil caused by existing debris and low-strength soils at the lagoon slopes occurred at times and was repaired as needed during excavation.

Stability of the slopes and berms was regularly monitored by the Site's geotechnical engineer to maintain safe working conditions for personnel and equipment. In Lagoons 1 and 2, tarry material was removed until a stable surface capable of supporting a drill rig was achieved. In Lagoon 3, material was removed to a determined depth to increase stability of the berm between Lagoons 2 and 3.

The entire berm between Lagoons 1 and 2 was removed, creating a single excavation, now referred to as Lagoon 1-2. The bottom of Lagoon 1-2 was graded to allow drainage from the bottom of the lagoon side-slopes to a new sump located within the footprint of the former berm. The berm between Lagoons 1-2 and 3 was graded per direction of the project's geotechnical engineer to promote geotechnical stability.

2.4.6 Grading to stabilize excavated lagoons

As the tarry material was removed from Lagoons 1, 2, and 3, a cover layer of borrow soil from the Site was placed over the bottom as a mitigation measure for potential odor and VOC emissions control. During this soil placement, lagoon slopes were installed with a steepness from 1.5H:1V to greater than 3H:1V (horizontal:vertical) to minimize the potential for future slope failure. As an approximation, just over half of the final lagoon slopes were completed using fill along the lower reaches of the slopes rather than cutting back the upper reaches of the slopes due to difficulty in cutting back slopes that were filled with debris and low strength soils.

2.4.7 Odor and Dust Suppression

During grading and excavation activities, dust and odors were controlled to achieve compliance with SCAQMD Rule 403, Fugitive Dust, and the SCAQMD Rule 1150/1166 permit. Dust was controlled on Site roadways by the application of water by a water truck. Mitigation measures to address potential dust, total VOCs, and odor generation while handling the lagoon materials included application of water spray utilizing handheld pressure washers, application of Odex® (commercial odor suppressant), and Rusmar® foam (commercial odor suppressant).

2.4.8 Site Restoration

Following lagoon excavation, areas including haul roads, truck staging area, and areas adjacent to lagoons were graded to drain per SWPPP requirements. In order to minimize the potential for sediment erosion, crushed rock was placed on unpaved areas that were disturbed by IRM activities.

2.5 *In-Situ Processing*

The tarry material from the lagoons possessed poor handling characteristics (e.g., “splatter,” requiring greater effort for onsite decontamination) that might have impacted loading, transportation and placement of the material at the receiving landfill. However, despite the poor handling characteristics of unprocessed tarry material, testing and visual observation indicated that all waste materials were acceptable for transportation per applicable Department of Transportation (DOT) standards, including passing the “Paint Filter Test” for free liquids (e.g., USEPA test Method 9095B).

To improve the handling characteristics, tarry material in Lagoons 1, 2, and 3 was processed prior to excavation/loading by adding and mixing LKM into the lagoons’

tarry material, which acted as a firming agent. LKM, also known as lime kiln dust, is a fine, dry powder that is a by-product from the manufacture of lime and contains calcium oxide as an active ingredient. LKM-processed material loaded into trucks with less splatter, had lower susceptibility to shifting in transit, and had a reduced risk of water separating from lagoon material during transit than unprocessed material. Upon arrival at the disposal facility, processed lagoon material was able to be discharged from haul trucks and placed more efficiently than unprocessed material.

LKM was delivered to the Site in dry bulk pneumatic trailers. The LKM trailers used pressurized air to move the dry LKM from the trailer through a four-inch hose to the point of delivery. The hose ran from the trailer to an excavator, then along the boom of the excavator to a steel box that was the point of delivery into the lagoon tarry material. The box was designed and fabricated to place LKM into tarry lagoon material while minimizing the potential for airborne particulates. The box was suspended from the excavator and lowered onto the surface of the tarry material, creating a seal. LKM was pushed through the line into the box at approximately ten cubic feet per minute. Bag filters on top of the box relieved pressure within the box that could have caused loss of the seal. The LKM was pushed into and below the surface of the tarry material creating a bulb of LKM within the tarry material. In order to mitigate the potential for fugitive dust, handheld pressure washers were used to apply a water mist around the delivery point.

Once a bulb of LKM was placed within the lagoon material, a long-reach excavator was used to gently mix the LKM and tarry material in place. Pressure washers were used to apply a mist of water at the point of mixing to mitigate potential dust. The LKM-mixed tarry material was then moved to loading areas at the lagoon edges using excavators. The mixed tarry materials were generally left in place long enough to allow for additional firming prior to loading into trucks for disposal.

During November, 2010, DTSC issued a Notice of Exemption per CEQA, to allow for the addition of LKM into tarry materials at the southern end of Lagoon 3. This was needed to increase the stability of the berm between Lagoons 2 and 3 by reducing excess moisture caused by rains received at the Site. Waste from Lagoon 3 was not removed until DTSC subsequently approved Addendum No. 2 to the MND, in December, 2010, to allow for removal of some materials in Lagoon 3. This partial removal of Lagoon 3 materials was approved in order to increase the stability of the berm between Lagoons 2 and 3 prior to the future final remedy and to better ensure the containment of Lagoon 3 materials during the period between

completion of the IRM and implementation of the final remedy. DTSC filed a NOD for Addendum No. 2 with the California State Clearinghouse in December 2010.

2.6 Transportation and Disposal

Following in-place mixing of the tarry wastes with LKM, the waste materials were loaded into lined trucks for transportation to the offsite disposal facility. A total of approximately 97,187 tons of lagoon material from Lagoons 1, 2, and 3 was loaded and hauled offsite in a total of 4,141 truck trips. All impacted material hauled offsite was disposed at Clean Harbors Environmental Services' Buttonwillow Landfill facility. The offsite Haul Plan/Permit, presented in **Appendix B-5**, shows the specific haul route utilized by outbound (full) and inbound (empty) haul trucks. Based on characterization sampling and profiling of lagoon waste and impacted soils from the Site, all IRM waste materials (i.e., drilling mud mixed with LKM or impacted soil) were profiled and shipped from the Site as non-RCRA hazardous waste (California hazardous waste).

Haul trucks entered the Site at the Hamilton gate entrance in the northwestern corner of the Site. Street traffic during truck arrival was controlled by a trained flagman to ensure safety due to the trucks' wide turns. Signage warning the public of the truck activity was clearly posted along Hamilton Avenue and Magnolia Street. Upon arrival at the Site, each waste haul truck was directed to a temporary staging area, where a plastic liner was placed inside its truck bed prior to the truck being loaded. The plastic liners were designed to facilitate removal of the disposed waste from the bed at the disposal facility and to prevent or minimize contact of the waste material with the truck bed.

Next, each truck proceeded to the loading station at the lagoon perimeter. The location of the loading station along the lagoon perimeter varied daily according to the availability and accessibility of material mixed with LKM. Once each truck reached the loading station, an excavator removed material from the lagoon and placed it directly into the lined truck bed. This direct-loading approach eliminated the need for stockpiling waste material.

Once loaded, each truck was weighed using an electronic scale so that the gross truck weight was under the maximum weight for legal highway travel. When a truck was found to be over-weight, the truck returned to the loading area for adjustment of its load. Trucks were weighed again to confirm optimum legal load prior to tarping, decontamination, manifesting, and sending trucks offsite.

After weighing and, if necessary, adjustment, each truck proceeded over rumble strips to the tarping station, located near the Magnolia gate. A tarp was placed and secured over the truck bed and load. The truck, and trailer exteriors, including tires, were inspected for waste material and dirt and were cleaned as required. While at this station, the driver of each truck received a hazardous waste manifest signed by an authorized representative for the generator. Once given a manifest and after re-inspection to ensure that the truck and tires were clean, the driver signed the hazardous waste manifest and left a copy with the onsite project team. Then each truck ran across a second set of rumble strips and exited the Site onto Magnolia Street heading south, then followed the prescribed route to the disposal facility. Appropriate signage was posted, and a flag man was positioned on Magnolia Street when trucks were exiting the Site to warn and control oncoming traffic.

2.7 Lagoon 3 Activities

As discussed in the IRM Objectives section, conditions observed as excavation of Lagoons 1 and 2 proceeded indicated that stabilizing of the berm between Lagoons 2 and 3 was prudent. A geotechnical evaluation of the berm in November 2010 identified the need to increase the stability of the berm prior to the final remedy and to better ensure the containment of Lagoon 3 materials during the period between completion of the IRM and implementation of the final remedy (**Appendix C**). A memorandum was submitted to DTSC in November 2010 proposing partial removal of material in Lagoon 3 to increase the stability of the berm [PNL, 2010]. DTSC approved this proposed action in December 2010, and filed a NOD for the partial removal of material from Lagoon 3 (Addendum No. 2) with the California State Clearinghouse.

The existing fence around Lagoon 3, brush and vegetative material were removed as required to permit access to Lagoon 3. Orange plastic fence was installed to identify the restricted work area (i.e., “No Equipment Zones”) containing protected southern tarplant near and within Lagoon 3. During the 2010 growing season, Lagoon 3 had a significant number of southern tarplants growing in the lagoon crusts located at the northern end of the lagoon.

Lagoon 3 work was conducted in conformance with proposed criteria approved by DTSC (Addendum No. 2 to the MND [Appendix A-8]). All work was performed in accordance with the same requirements established by permits, conditions and regulations required for work in Lagoons 1 and 2, including air monitoring and protection of existing southern tarplant (MMRP, BIO-1, BIO-2). An approximately

15-foot wide access road, or causeway, was constructed using Site soils and debris for the use of construction equipment. This access road extended from the east bank of Lagoon 3 to the west bank north of the berm between Lagoons 2 and 3. The access road was constructed starting at the east bank by removing tarry materials within its footprint and filling the resulting void with soil and concrete debris.

Approximately 6,300 tons of tarry material was processed and removed from the section of Lagoon 3 between the access road and the berm to the south (the berm between Lagoons 2 and 3), in the same manner as described in Section 2.4, Site Grading and Excavation, lowering the surface of the southern portion of Lagoon 3 approximately seven feet. Remaining tarry material at the bottom of the Lagoon 3 excavation was covered with Site soils.

2.8 Site Restoration

Site restoration activities were performed to leave the Site in a finished condition that complies with the general NPDES permit for storm water runoff. Site restoration activities included the following:

- Removal of construction equipment, including heavy equipment, scaffolding, water stand, fuel tank, crane mats, and rumble strips.
- Removal and disposal per SCAQMD requirements and approved process of a single piece of asbestos containing material (ACM), uncovered during grading activities at the Site (see **Appendix D**).
- Removal of the orange plastic fabric of the “no equipment zone” fencing. The fence posts were painted to provide continued delineation of the zones. The fabric was vulnerable to wind and was no longer needed following IRM operations.
- Haul and access roads were graded, and crushed rock was installed over disturbed areas to minimize erosion.
- Temporary construction BMPs no longer required by the SWPPP were removed (e.g., straw wattle).
- Chain link fencing and locked gates, with appropriate signage, were installed around Lagoons 1-2 and 3.

- Grading was performed to provide access to groundwater monitoring wells.
- To satisfy a condition of the CDP, a final survey of the condition of Hamilton Avenue was performed jointly with the City of Huntington Beach Department of Public Works. Photographs of asphalt conditions on Hamilton Avenue were taken on July 29, 2010 (before IRM hauling of waste), and March 22, 2011 (after IRM hauling of waste), to enable comparison. A map of survey photograph vantage points is found in **Appendix E-1**. **Appendix E-2** contains side-by-side photographs of Hamilton Avenue asphalt conditions taken before and after the IRM activities. Because the IRM did not degrade the existing asphalt pavement condition, the City of Huntington Beach determined no repairs to Hamilton Avenue were required (see **Appendix E-3**).
- A new concrete entrance driveway was installed at the Hamilton Gate to facilitate future Site trucking operations.

Figure 2.8-1 provides a completion aerial photograph of the Site after the Interim Removal Measure activities identified in this report were completed.

2.9 Geotechnical Investigation

Upon removal of tarry wastes from Lagoons 1 and 2 and the construction of an access road for access over Lagoon 3, a geotechnical investigation was carried out within the footprints of these lagoons. The investigation consisted of a review and interpretation of relevant Site information, drilling, *in-situ* testing, recovery of representative soil samples, and geotechnical laboratory testing of representative soil samples. This geotechnical investigation was performed in accordance with the DTSC-approved IRM Workplan, dated May 2010 [PNL/Geosyntec 2010a], and its Addendum, dated December 2010 [PNL/Geosyntec 2010d].

In total, six geotechnical boreholes were advanced to a depth of approximately 50 feet below ground surface. Two boreholes were advanced within the footprint of each of the Lagoons in the IRM area. All six boreholes had outer diameters of approximately 3.75 in and were advanced using the “Mud Rotary” drilling technique. Additionally, in order to observe groundwater levels near the borings in Lagoons 1 and 2, four hand auger holes were advanced near geotechnical boring locations to approximately 5 ft below ground surface. Each hand auger hole was advanced before the start of drilling at its corresponding borehole and remained open for several hours until completion of the corresponding borehole. Disturbed and

relatively undisturbed samples were collected from the boreholes using a combination of sampling techniques, including Standard Penetration Test (SPT) sampling, California modified (Cal-Mod) sampling, and Shelby tube sampling.

Upon completion of drilling at each borehole location, the borehole and, in Lagoons 1 and 2, the nearby hand auger hole, were backfilled with a cement-bentonite grout. The grout was pumped through a tremie pipe placed at the bottom of the borehole and raised slowly as the grout filled the borehole.

Selected representative samples recovered during the geotechnical drilling were sent to a geotechnical laboratory for testing. The geotechnical laboratory testing program included soil classification (ASTM D2487), moisture content and density testing (ASTM D2216 & D2937), and saturated hydraulic conductivity testing (ASTM D5084). Modified Proctor compaction testing (ASTM D1557) was also conducted on three representative soil samples.

The drilling, *in-situ* testing, and sampling programs were completed in February 2011, and laboratory testing was completed thereafter. Full findings of the geotechnical investigation program are contained in the geotechnical report, which is presented in **Appendix F**.

2.10 Storm Water Runoff Control

2.10.1 Background/Objectives

An existing General Industrial National Pollution Discharge Elimination System (NPDES) permit (Industrial General Permit No. CAS000001 [WDID 8 30I019978]) is in place from the State Water Resources Control Board (SWRCB) to enable discharge of storm water from the Site to the City's storm drain system. A separate Construction SWPPP was prepared and a Notice of Intent (NOI) for compliance with the SWRCB's General Construction National Pollution Discharge Elimination System (NPDES) permit was submitted to the SWRCB for the IRM work. Both the General Industrial and Construction SWPPPs were in place and implemented during the IRM work.

The following sections describe the Construction SWPPP and BMPs that governed work activities during the IRM, provisions of the Industrial SWPPP that will supersede the Construction SWPPP following installation of BMPs in the IRM disturbed areas, and the State approved Notice of Termination (NOT) for the Construction SWPPP.

2.10.2 Permitting Strategy

The Site's Industrial SWPPP remained in place, and was implemented throughout the duration of the IRM field work. The Industrial SWPPP governed the control of surface water and sediments on the entire Site. The IRM disturbed approximately 14 of the 38 acres that make up the Site. The disturbed areas were entirely within the boundaries of the Industrial SWPPP BMPs. **Figure 2.10-1** depicts the IRM disturbed areas, BMP placement, and the Industrial SWPPP BMPs.

2.10.3 Construction SWPPP

The Construction SWPPP governed the control of surface water and sediments within the IRM disturbed areas. The Construction SWPPP remained in place and was implemented until completion of the IRM field activities and the installation of post construction BMPs. On February 3, 2011, the Construction SWPPP was amended to revise the planned commencement date of July 6, 2010, to the actual start date of July 28, 2010, and the anticipated completion date from February 28, 2011, to April 28, 2011. (The actual completion date of the IRM project was March 30, 2011.) This amendment resulted in a change to the risk determination, per the General Construction NPDES permit, from Risk Level 1 to Risk Level 2. The Construction SWPPP was therefore amended to address the requirements for Risk Level 2. The Risk Level 2 requirements were implemented beginning from the date of the amendment.

2.10.4 Post-Construction Industrial SWPPP

After completion of the IRM field work, the IRM disturbed areas were stabilized with crushed rock as an erosion BMP. Following the installation of the crushed rock, a NOT for the Construction SWPPP was submitted to the SWRCB on April 28, 2011, and was accepted by the SWRCB on April 28, 2011. The SWRCB approved the NOT on May 16, 2011. The Industrial SWPPP remains in effect, and BMPs remain in place.

The Construction SWPPP Amendment, with the approved NOT, is attached as **Appendix G**.

3.0 AIR MONITORING

An Air Monitoring Plan (AMP) for the IRM was submitted as Appendix A to the IRM Work Plan [PNL and Geosyntec, 2010] and approved by the Department of Toxic Substances Control (DTSC). SCAQMD incorporated relevant action levels and actions of the AMP into the Site Specific SCAQMD Rule 1150 Excavation Permit/Rule 1166 Contaminated Soil Mitigation Plan (SCAQMD Rule 1150/1166 permit). The following is a brief summary of the IRM AMP activities which were implemented at the Site.

3.1 Interim Removal Measure Air Monitoring Program

The AMP included provisions for air monitoring both at the perimeter of the Site and at the excavation work area. Perimeter air monitoring at five monitoring locations included: (i) real-time monitoring using hand-held direct-reading instruments for Volatile Organic Compounds (VOCs) and particulates and worker perception for odor; and (ii) periodic time-integrated sampling using fixed laboratory measurements for VOCs, total particulate matter (PM-10), Polycyclic Aromatic Hydrocarbons (PAHs), and select metals. In addition, the AMP included logging of wind speed and direction at a meteorological station. Sampling and monitoring locations and the meteorological station location are shown in **Figure 3.1-1**. Excavation work area monitoring was conducted in accordance with SCAQMD Rule 1166 monitoring requirements.

Real-time perimeter air monitoring was conducted at each monitoring location using a “walk around procedure” approximately every hour throughout each work day. Monitoring included measurements for total VOCs using a PID, particulate matter (i.e., dust) using a Dust Track monitor, and odors using worker perception (recorded according to the SCAQMD odor classification scale). Action levels for real-time air measurements were established in Tables 3a through 3c of the AMP [PNL and Geosyntec, 2010]. When measured concentrations were greater than the action levels, specific mitigation measures were employed to control VOC emissions, dust, and odors at the Site perimeter.

Time-integrated perimeter sampling consisted of collecting one 8-hour to 10-hour (depending on the expected length of the workday) SUMMA canister sample from each of 5 locations per sampling day. SUMMA canister samples were analyzed for VOCs by EPA Method TO-15. SUMMA canister data were used primarily for assessment of potential offsite impacts, including comparison to the criteria

identified in Table 2 of the AMP [PNL and Geosyntec, 2010]. For the first two weeks of each major activity as defined in the AMP, VOC samples were collected 5 days per week. During this initial sampling, results indicated that concentrations were below the established comparison criteria and consistent with background concentrations (i.e., upwind and downwind concentrations of chemicals were similar); therefore, the sampling frequency for VOCs was reduced to 2 days per week, in accordance with the DTSC-approved AMP [PNL and Geosyntec, 2010]. In addition, samples of airborne dust were collected at one upwind and two downwind locations using high-volume particulate samplers for analyses for PM-10 and metals and using polyurethane foam (PUF) samplers for analysis for PAHs. The particulate samples were collected twice per week during the first two weeks of each major activity of the project. Results of the initial two week sampling indicated that concentrations were below comparison criteria and consistent with background concentrations; therefore, the sampling was discontinued, as prescribed by the AMP [PNL and Geosyntec, 2010].

Wind speed and direction determined by the onsite meteorological station were logged each hour in conjunction with the real-time perimeter monitoring. The station also provided continuous wind speed and direction data that were later used to create wind rose diagrams.

Excavation workplace monitoring for VOCs in accordance with the SCAQMD Rule 1150/1166 permit for the IRM and the DTSC-approved AMP was conducted using a PID whenever excavation took place at the Site. Activities subject to SCAQMD Rule 1166 monitoring included grading and excavation of previously undisturbed soils in addition to excavation of tarry materials from the lagoons.

3.2 Air Monitoring Results

The results of real-time air monitoring and wind monitoring were used to control work practices and vapor/odor suppression practices to minimize potential emissions, in accordance with the DTSC-approved AMP [PNL and Geosyntec, 2010] and the subsequent Site Specific SCAQMD Rule 1150/1166 permit. The results of the SUMMA canister and high-volume sampling were used to assess possible offsite impacts and to validate the effectiveness of the real-time monitoring.

3.2.1 Real-time Monitoring

Real-time perimeter air monitoring for VOCs and dust was conducted with hand-held instruments and logged along with odor threshold values once per hour at each

of five perimeter air monitoring locations. Perimeter air monitoring logs are included in **Appendix H**. SCAQMD Rule 1166 monitoring logs recording PID measurements from the bucket of excavated material per the SCAQMD Rule 1150/1166 permit are included in **Appendix I** and are discussed in Section 3.2.4.

Rusmar® vapor suppressant foam and Odex® odor neutralizer were used as necessary to mitigate potential odors during the excavation activities. However, odors were noticed during excavation. Noticeable odors in the downwind locations generally correlated to times of excavation during warmer weather conditions and light winds. It should be noted that there were unusual weather conditions during August and September 2010, during which there were record high temperatures and wind direction shifts. The onsite team utilized odor suppressants and neutralizer to respond to changing conditions.

At no time during the IRM did real-time perimeter air measurements exceed the action level of 5 ppm total VOCs above background requiring work stoppage, nor did measurements ever exceed the action level of 0.5 ppm total VOCs above background requiring increased vapor suppression.

3.2.2 SCAQMD Rule 1166 Monitoring

SCAQMD Rule 1166 monitoring logs recording PID measurements at the excavation workface are included in **Appendix I**. All materials removed from the lagoons were direct loaded into trucks and transported to an appropriate disposal facility regardless of whether the readings exceeded action levels. VOC-contaminated material, as defined in the SCAQMD Rule 1150/1166 permit, was observed during a single day, August 4, 2010, while loading trucks.

3.2.3 Meteorological Monitoring

Measured wind directions at the Site during the IRM were found to be generally consistent with those recorded during the Emergency Action [PNL, 2006] and previous perimeter air monitoring events [Geosyntec, 2002, 2003a, 2003b, 2004]. Wind rose diagrams for each day of work, corresponding to sampling events, and for all weekly data, are included in **Appendix J**. Wind directions at different times of each day are shown in the perimeter air monitoring logs (**Appendix H**).

3.2.4 SUMMA and High-Volume Samples

During the IRM activities conducted from July 2010 through March 2011, concentrations of VOCs measured at the property perimeter were comparable to background concentrations. Measured concentrations of constituents were below

health-based comparison criteria, with the exception of two (2) detections of naphthalene collected on August 17, 2010, and November 5, 2010, and two (2) detections of 1,2,4-trimethylbenzene collected on November 5, 2010, and December 6, 2010, that slightly exceeded chronic comparison criteria. Chronic exposure concentrations are based on long-term continuous exposures at that concentration lasting for 365 days or more, much longer than these exceedances, even if assumed to have lasted all of one day. It should be noted that exposure to a level above the chronic comparison criteria does not mean that adverse health effects will occur (<http://www.atsdr.cdc.gov/mrls/index.html>). Therefore, the observed naphthalene and 1,2,4-trimethylbenzene concentrations did not result in a significant offsite exposure. Furthermore, three of the four exceeding concentrations, those sampled in August and November 2010, were found at air station IRM-AA-06, the station farthest from residential areas and closest to the excavated lagoons.

A project cumulative summary of the analytical results from each sampling location is provided in **Table 3.2-1**. Weekly perimeter air monitoring summaries of detected analytes from the samples collected from each perimeter air monitoring station were submitted to DTSC on a weekly basis, were posted on DTSC's Envirostor website by DTSC, and are included in **Appendix K**.

A total of 102 laboratory data reports were received and are provided in **Appendix L**. Geosyntec completed Level 2 QA/QC review for approximately 67 percent of the laboratory data reports. The QA/QC sheets are included in **Appendix M**. Four sampling events were selected for Level IV data validation. The Level IV data validation reports are included in **Appendix N**. All data reviewed were considered acceptable for use in evaluating the air quality during the Interim Removal Measures activities.

4.0 COMPLIANCE WITH the MMRP

In accordance with the CEQA regulations, the DTSC issued a MND for the IRM. The MND was developed based on an Initial Study/Draft MND prepared by PCR Services Corporation (PCR), at the direction of DTSC, dated October 2009 [PCR Services, 2009], and includes a MMRP. The MND and MMRP list a set of mitigation measures to be implemented during the IRM to minimize potential IRM-related impacts on air quality and local biological populations. The MMRP is a companion document to the MND. The MMRP lists a set of requirements, including documentation, to ensure fulfillment of each corresponding MND requirement.

Compliance with the MMRP only is discussed below based on the understanding that compliance with the requirements of the MMRP implies fulfillment of the corresponding MND requirements.

4.1 *Air Quality Measures*

4.1.1 AQ-1 On-Site Equipment EPA Tier 3 Certified

The MMRP required that records of the conformance of all onsite construction equipment with USEPA Tier 3 emissions standards be maintained and made available for inspection upon request by DTSC. This requirement applied for all off-road construction equipment used onsite with an engine rating greater than or equal to 50 hp.

In compliance with this requirement, documentation of the conformance of the off-road construction equipment to Tier 3 standards was maintained at the Site for the duration of the IRM work. This documentation is attached hereto as **Appendix O-1**. Additionally, documentation of compliance with other regulated equipment not subject to Tier 3 standards (e.g., stationary equipment with an engine rating less than 50 hp) is also presented in **Appendix O-1**. All required documentation was maintained onsite and available for review by DTSC for the duration of the project.

4.1.2 AQ-2 Haul Truck Engine Requirements

The MMRP required that the haul trucks used for hauling tarry material be engine model year 2004 or newer, or older so long as they were retrofitted to 2004 model year (2.4 g/bhp-hr)³. Trucks with engine model year 2007 or newer were to be used, if available. During the Project, to increase the pool of eligible trucks, PCR

³ NOx emissions measured in grams per brake horsepower hour, or g/bhp-hr.

issued a memorandum (dated October 7, 2010, and presented in **Appendix O-7**) clarifying this requirement and stating that haul trucks with engines that had been retrofitted to reduce emissions to near-2004 levels (2.8 g/bhp-hr), and that were operating legally as retrofitted 2004 trucks, would be allowed. PCR determined that impacts from the use of these additional trucks would be less than significant. Documentation was required to be kept onsite and made available for inspection by DTSC upon request.

Documentation kept for compliance with this requirement is attached hereto as **Appendix O-2** and includes letters from the transportation and disposal contractor addressing the limited availability of new trucks. All required documentation was maintained and was available for review by DTSC for the duration of the project.

4.1.3 AQ-3 NOx Credits

The MMRP required oxides of nitrogen (NOx) emissions to be estimated and offset, as necessary (i.e., if NOx emissions were to exceed one hundred pounds per day). Only NOx emissions due to IRM-related activities within the jurisdiction of the SCAQMD were required to be estimated, as it was determined by DTSC that the applicable threshold for NOx emissions in the San Joaquin Valley Air Pollution Control District (SJVAPCD) would not be exceeded by the IRM work [PCR Services, 2009].

In order to offset NOx emissions above one hundred pounds per day during the IRM at the Site, Regional Clean Air Incentives Market Trading Credits (RTCs), or “offset credits,” needed to be purchased to account for potential NOx emissions above one hundred pounds per day, and retired to the SCAQMD.

The purchase of offset credits required a mitigation agreement to be in-place between the Project Proponent (Ascon RPs), SCAQMD, and the DTSC before the start of IRM activities. The mitigation agreement allowing for purchase and retiring of credits was executed on July 9, 2010. A copy of this executed agreement is presented in **Appendix O-3**. Offset credit purchases were confirmed on July 20, 2010, and February 11, 2011, from the air broker, and SCAQMD issued letters confirming that the transactions for the purchases of the offset credits were recorded. The SCAQMD’s transfer confirmation letters dated July 30, 2010, and February 17, 2011, are presented in **Appendix O-4**.

An accounting of the NOx emissions generated per day during the IRM and credits purchased and used during the IRM were tracked in a Daily NOx Emissions Log.

For the duration of the IRM activities, logs of daily haul truck throughput and weekly working hours for each piece of qualifying equipment were kept. These logs are presented in **Appendix O-5**.

With the working hours data for onsite equipment, NOx emissions for onsite equipment were estimated on a weekly basis using URBEMIS 2007 software [Rimpo and Associates, 2007]. Weekly URBEMIS 2007 documentation is attached as **Appendix O-6**. This weekly total was then divided by the number of working days for the week to calculate daily emissions (e.g., if 100 pounds (lb) of NOx was estimated for a week with 5 working days, then the estimated daily emissions would be 20 lb/day NOx).

Estimated NOx emissions for haul trucks were calculated on a daily basis by summing the NOx emissions from all daily truck trips within the South Coast Air Basin (SCAB). The amount of NOx generated for a single trip was assumed based on the NOx calculations presented in the Initial Study. The number of truck trips per day was multiplied by this factor to give an estimate of daily NOx emissions due to truck traffic (e.g., for 50 truck daily trips and a factor of 2.6 lb/truck trip/day, daily NOx emissions would be 130 lb/day).

As the IRM progressed, and as additional trucks of model year 2004 or newer became difficult to secure, DTSC approved the use of 2003 truck engines that were retrofitted with engines conforming to near-2004 emissions, as explained in Section 4.1.2 above. For these trucks, the estimated NOx emissions were adjusted upward, as outlined in the memorandum attached hereto in **Appendix O-6**, although the adjustment was small (i.e., typically on the order of 1% of estimated daily emissions).

Estimated daily NOx emissions due to onsite equipment and haul truck trips were summed to calculate total estimated daily NOx emissions. If this value exceeded the threshold of 100 lb/day NOx, then offset credits were deducted from the retired total number of credits. Required documentation of equipment hours, truck trips, and calculations were maintained onsite and available for inspection upon request by DTSC. The spreadsheet with the accounting of the NOx emissions and credits is attached as **Appendix O-8**.

4.1.4 AQ-4 Odor Complaint Tracking

The MMRP required that two telephone numbers for odor complaints from the public be posted at the project Site, including a public hotline number and a number

for the SCAQMD (1-800-CUT-SMOG). The MMRP also required information to be mailed to surrounding property owners regarding the initiation of remedial work and procedures for odor concerns.

The Start Work Notice was distributed to nearby residents, businesses, and community information sites in June 2010, before the start of IRM activities. For the duration of IRM field activities, a twenty-four hour, seven days/week hotline was operated, and the required telephone numbers remained posted on the perimeter fence. Logs of hotline calls were kept, were maintained onsite for inspection upon request by DTSC, and were regularly submitted to DTSC. For further information on the hotline and mailers, see Section 5.0, Public Participation, below.

The MMRP form, signed by DTSC to indicate agreement as to the success of each mitigation measure, is attached as **Appendix O-9**.

4.2 Biological Measures

4.2.1 BIO-1 Avoidance of Southern Tarplant

In order to mitigate potential IRM-related impacts to onsite southern tarplant populations, the MMRP required that IRM activities avoid southern tarplant populations when possible.

In accordance with the MMRP compliance measures, southern tarplant populations identified by PCR were cordoned off using high-visibility orange temporary fencing. Upon installation of the temporary fencing, PCR biologists inspected and approved the fence locations. For the duration of the IRM work, all onsite equipment and haul trucks remained outside these “no equipment zones” (i.e., southern tarplant populations delineated by temporary fencing).

On July 26, 2010, before the start of IRM work, PCR biologist Ms. Maile Tanaka conducted a training session using materials presented in **Appendix P-1** to familiarize Site personnel with the locations of southern tarplant populations, temporary fencing, and “No Equipment Zones.” A list of participants in this initial training session may be found in **Appendix P-2**. Every Site worker arriving to the Site later in the course of the IRM work received a similar briefing from a previously trained person.

Throughout the duration of the IRM work, PCR biologists Ms. Crysta Dickson or Ms. Maile Tanaka performed weekly inspections to verify that temporary fencing remained in place and protected southern tarplant populations remained unharmed.

These inspections are documented in a series of memoranda presented in **Appendix P-3**. In accordance with MMRP requirements, these memoranda were submitted to the DTSC.

4.2.2 BIO-2 Minimize Impact to Southern Tarplant

Although preference was given in the MMRP to avoidance of protected southern tarplant populations when practical, the MMRP also contained provisions for IRM activities to be conducted in or near “No Equipment Zones.”

All reasonable measures were taken to ensure avoidance of protected southern tarplant populations. However, some IRM-related activities, notably, perimeter air monitoring, required limited pedestrian access to “no equipment zones.” In accordance with the requirements of the MMRP, every Site worker was briefed on southern tarplant impact minimization before starting work. The content of the southern tarplant avoidance briefings substantially conformed to that shown in **Appendix P-1**.

Additional measures were taken within the IRM operational areas. Every equipment operator, truck driver, or other Site worker was instructed to remain within the IRM operational areas (i.e., outside of “No Equipment Zones”) and to obey established onsite speed limits. Parking and staging areas for equipment were maintained as far away as practical from “No Equipment Zones.” Temporary above-ground diesel fuel storage tanks, outfitted with secondary containment, were placed at a distance over ten feet away from the nearest protected southern tarplant population.

Throughout the duration of the IRM work, PCR biologists Ms. Crysta Dickson or Ms. Maile Tanaka performed weekly onsite inspections to verify compliance with requirements to minimize impacts to protected southern tarplant populations. These inspections are documented in a series of memoranda attached hereto as **Appendix P-3**. In accordance with MMRP requirements, these memoranda were sent to the DTSC.

4.2.3 BIO-3 Offsite Restoration of Southern Tarplant

Offsite restoration of an established quantity of southern tarplants is required per MMRP mitigation measure BIO-3 due to the Project’s inability to avoid and protect all southern tarplants. A count of 154,414 southern tarplants that could not be avoided or protected was established in the MND Addendum No. 1, dated July 15,

2010, and later modified in MND Addendum No. 2, dated December 7, 2010, to 153,180 southern tarplants⁴. Per the MMRP, mitigation measure BIO-3 will be successfully completed when this number of southern tarplants (153,180) is restored (i.e., grown and counted) at an offsite location before or during the third growing season following the Project (i.e., by Summer/Fall of 2014). A sufficient number of southern tarplant seeds was collected from onsite specimens during the fall months of 2009 and 2010 for offsite planting by DTSC/PCR Services, and the seeds are presently being stored at the Rancho Santa Ana Botanical Garden under DTSC's oversight and direction.

The offsite location for southern tarplant restoration is to be determined by a qualified and DTSC-approved biologist, presently Ms. Crysta Dickson of PCR. PCR is currently negotiating with potential offsite southern tarplant receptors. Receptor site preparation and the offsite planting of the southern tarplant seeds will begin after arrangements have been formalized with the selected offsite entity.

4.2.4 BIO-4 Protection of Disturbed Coastal Salt Marsh

The MMRP imposed several requirements regarding protection of the disturbed salt marsh, located along the southwest perimeter of the Site, from potential impacts of IRM-related activities.

The location of the onsite disturbed coastal salt marsh, as identified in the Initial Study [PCR Services, 2009], is within "No Equipment Zones" delineated for southern tarplant avoidance purposes. Consequently, the temporary fencing (described above) installed at the boundaries of the IRM operational areas also satisfied the MMRP requirement to delineate the disturbed coastal salt marsh area. This temporary fencing was installed by Site personnel and inspected by PCR before the start of IRM work.

In order to minimize the potential for migration of sediments or contaminants out of IRM operational areas, various BMPs were used in and around these areas. Before the start of IRM work, straw wattle was installed around the perimeter of the IRM operational areas. This straw wattle remained in-place until the end of grading

⁴ Of the 154,414 southern tarplants documented in the July 2010 MND Amendment No. 1 to be impacted by the Project, 9,499 were actually avoided, and 11 potentially impacted southern tarplants were impacted, making 144,926 an interim total number of impacted southern tarplants. Then later, to enable the additional Lagoon 3 work, the December 2010 MND Amendment No. 2 documented a count of 8,254 additional southern tarplants to be impacted, making 153,180 the final total number of southern tarplants impacted by the Project.

activities. No equipment maintenance was conducted within 100 feet of the disturbed coastal salt marsh. Applicable litter and pollution practices were adhered to during the IRM. Furthermore, the disturbed coastal salt marsh area is topographically isolated from all operation areas due to the western storm water swale that is located between the marsh and operation areas, making any marsh impacts from overland spills impossible.

Hazardous substances, namely, diesel fuel for onsite equipment, was stored at a distance greater than 100 feet from the disturbed coastal salt marsh. Additionally, two spill clean-up kits were maintained onsite for the duration of the IRM work. Upon completion of grading activities, straw wattle was removed, and crushed rock was placed over all unpaved IRM operational areas.

Throughout the duration of the IRM work, PCR biologists Crysta Dickson and Maile Tanaka performed weekly onsite inspections to verify compliance with requirements to mitigate potential impacts to disturbed coastal salt marsh. These inspections are documented in a series of memoranda attached hereto as **Appendix P-3**. In accordance with MMRP requirements, these memoranda were sent to the DTSC.

4.2.5 BIO-5 Reduction of Impacts to Migratory Birds

The MMRP contained two provisions relating to mitigation of impacts to migratory birds: 1) removal prior to nesting season of potential nesting vegetation, and 2) performing a bird survey for nesting songbirds and raptors prior to the commencement of construction activities. In compliance with the requirements of the MMRP, tall vegetation was removed from near IRM operation areas prior to February 15, 2010, the beginning of the nesting season. A PCR biologist, Ms. Maile Tanaka, conducted an inspection of potential nesting habitat before the start of IRM activities, on July 20, 2010. PCR did not report the presence of any active nests nor determine further monitoring to be necessary.

At no point during the IRM work did PCR biologists report any potential impact to a migratory raptor or songbird, and no raptor or songbird nests were found.

The MMRP form, documented by DTSC to indicate agreement as to the success of each mitigation measure, is included along with supporting documentation as **Appendix P-4**. Mitigation measure BIO-3, the offsite southern tarplant restoration, is ongoing and therefore not yet fully documented.

5.0 Public Participation

5.1 Public Participation Plan for the Interim Removal Measure

The Public Participation Plan for the IRM was implemented through briefings and Site tours for key local officials, media briefings, distribution of Fact Sheets and Start Work notices, legal notices regarding public input opportunities, public meetings, project information on public websites, public repository information, and project-specific Site signage. Public outreach for the IRM began at the end of 2008 to ensure awareness of City staff and the public. These activities are described in more detail below.

5.2 Fact Sheets

Fact Sheet #10 was prepared by DTSC and distributed via direct mail and hand delivery in October 2009 to serve as both an explanation of the IRM work and as a notice for the October 14, 2009, public meeting/open house for the surrounding community. Fact Sheet #10 was distributed to the DTSC mandatory direct mail distribution list (residents and businesses within a ¼-mile radius of the Site and other interested parties) and posted on the www.ascon-hb.com website. Fact Sheet #10 was also distributed to other community information sites, including the Banning Branch Library, Edison High School, the Magnolia Fire Station, Edison Park Recreation Center, and Huntington Beach City Hall.

A second fact sheet (Fact Sheet #11) was distributed in December 2010 to provide an update on work progress and to inform the public of additional work to be performed (i.e., partial Lagoon 3 tarry waste removal). Fact Sheet #11 was distributed following the same distribution lists and community information sites as used for Fact Sheet #10. See **Appendices Q-1 and Q-2** for Fact Sheet #10 and Fact Sheet #11, respectively.

5.3 Legal Display Notice

Legal display notices announcing the October 22, 2009, through November 23, 2009, public comment period for the IRM Draft MND and IRM Workplan were published in local newspapers on October 22, 2009. Additional legal display notices with information about the IRM project status and additional work to be conducted (i.e., NOE filed for the addition of LKM into Lagoon 3, and the NOD filed for partial Lagoon 3 tarry waste removal) were published in local newspapers in December 2010. Those papers included the Huntington Beach Independent (a Los Angeles

Times weekly) and the Huntington Beach Wave (an Orange County Register weekly). See **Appendices Q-3** and **Q-4** for the proof of publication affidavits for the legal display notices published during October 2009 and December 2010, respectively.

5.4 Public Meetings

The Huntington Beach City Council was briefed on the IRM at a January 5, 2009, public study session. Previously, several council members participated in Site tours. The City Council was also provided with an update on October 5, 2009, regarding the IRM and planned open house.

A public open house was held on October 14, 2009, at 6 p.m., at the Edison High School multi-purpose room to further introduce the IRM to the public. The open house was held prior to the public comment period for the draft IRM Workplan and the draft MND. Representatives from the DTSC, the Ascon Responsible Parties Group, and the project team were present to answer questions and explain the proposed work activities and mitigation and safety measures.

5.5 Public Repositories

Public documents for the IRM (e.g., the Initial Study/Draft MND, Draft IRM Workplan) were placed in public repositories for public review and comment. These repositories included the Banning Branch Library near the Site, the Central Library located on Talbert Ave., and the DTSC offices in Cypress, California. These documents also were posted on the www.ascon-hb.com website. The public information locations and the review and comment period were announced in the fact sheets, start work notice, and legal display advertisements.

5.6 Public Review and Comments

The required 30-day public review and comment period was held from October 22 through November 23, 2009, for the IRM Workplan and Initial Study/Draft MND. All public comments were received by DTSC, reviewed, and responded to by DTSC in the Response to Comments on the Interim Removal Measure, issued by DTSC on May 13, 2010. Addenda to the MND were added to the repositories as they were published.

5.7 Site Signage

At the start of the fieldwork mobilization, project specific Site signage was posted at the Hamilton Avenue and Magnolia Street gates to inform the community of the IRM work and provide contact information. The telephone numbers for an information hotline (discussed in Section 5.10 below) and the SCAQMD odor complaint line were posted on the signs.

5.8 Start Work Notice

A Start Work Notice with information and key contacts for the IRM was direct mailed to the community within a ½-mile radius prior to the start of the IRM in June 2010. Extra copies of the Start Work Notice were hand delivered to Huntington Beach City Hall, Edison High School, Huntington Beach Fire Station #4 next to the Site, the Banning Branch Library, and the Edison Park Recreation Center. The Start Work Notice is included as **Appendix Q-5**.

5.9 Other City Updates

Information regarding public meetings, work mobilization, and specific work activities was provided to key contacts with the City of Huntington Beach. Throughout 2009, updates were provided to the South East Area Committee, a City Council subcommittee including council members, key staff and residents from southeast Huntington Beach. Briefings were provided to Edison High School administration and staff. Site orientations and tours were provided to elected City officials and staff, the Huntington Beach Fire Department, the City Council-appointed Huntington Beach Environmental Board, and the Huntington Beach Wetlands Conservancy. Just prior to onsite field work, Huntington Beach Fire Department first responders were given an onsite briefing to ensure familiarity with Site access and emergency procedures.

The Ascon Landfill Site's website, www.ascon-hb.com, was regularly updated throughout the IRM to keep the public informed about current Site activities.

5.10 Ascon Interim Removal Measure Information Hotline

An information hotline (714-388-1833) was set up to give the surrounding community the opportunity to ask questions regarding the IRM and identify any potential concerns or complaints, including odor complaints. The information line was answered by a hotline service provider twenty-four hours a day, seven days a

week, during all IRM field work, beginning in the week that the IRM field activities began in late July 2010.

All calls into the information hotline and all other inquiries were responded to by the IRM project team, with follow up reporting to DTSC. DTSC also was informed of every call via email notification from the hotline service provider. The SCAQMD also responded independently to odor complaints received through the SCAQMD hotline. The majority of calls addressed odor and consisted of complaints, questions, or concerns about odors and emissions. In summary, there were a total of 89 calls during the IRM field work, including the known calls to SCAQMD. Fifty-two of the 89 calls were odor complaints (approximately 58% of the calls). Twenty three calls (approximately 26%), addressed the project schedule, questions about public protection measures, or general IRM-related questions. The remaining calls consisted of noise complaints (3), dust complaints (2), haul truck-related complaints (2), a traffic control complaint, a complaint about rats⁵ unrelated to Site work, and calls or questions of an administrative nature not directly related to the IRM (5).

SCAQMD inspectors visited the Site 13 times to respond to odor complaints (these 13 calls are included in the 52 odor complaints mentioned above) and an additional 21 times for routine inspections that included reconnaissance, record review for permit compliance, and observing Site operations. There were no outstanding issues resulting from the SCAQMD inspections.

The information hotline helped the workers and the IRM project staff identify community concerns during the field work and respond to the community's concerns in an expedited manner. It was noted that calls made directly to SCAQMD and not to the information hotline required additional response time due to additional steps in the process. The IRM project team received telephone and email notification of hotline calls immediately after receipt of the call and was able to respond from the field. SCAQMD calls necessitated assignment to a SCAQMD inspector and an investigation that did not disclose specifics regarding the caller or complaint,

⁵ A call was indirectly received on August 19, 2010, complaining of rats allegedly being driven from the Site and into the neighboring community. As a result, the Orange County Vector Control District (OCVCD) was dispatched to the Site and nearby area to investigate. Following their inspections and observations of bait stations left by OCVCD at the complainant's address, the OCVCD stated that the area had experienced "normal rat activity" and that the rats were likely to be coming from "an established neighborhood population and not the Ascon Landfill" [e-mail received by OCVCD on September 29, 2010].

preventing an expeditious response and remedy. The IRM project staff was not able to directly respond to those who filed complaints with SCAQMD.

The 24-hour hotline was deactivated following termination of the IRM fieldwork (March 30, 2011, was the last day), and public inquiries were directed to the project team contact information on the www.ascon-hb.com website.

6.0 Interim Removal Measure Metrics

6.1 Summary

In summary:

- The IRM Site work commenced in July 2010 and was completed in March 2011.
- The objectives of the IRM were achieved with the removal of most of the tarry wastes from Lagoons 1 and 2, a portion of the tarry materials from Lagoon 3; and the advancement of geotechnical borings in the lagoons as prescribed in the DTSC-approved IRM Workplan, Proposal for limited waste removal from Lagoon 3, and IRM Workplan Addendum.
- The excavated lagoons were finish graded. Areas outside the lagoons disturbed during the IRM work were graded to control surface water and covered with crushed rock as an erosion control BMP.
- While odors were at times noticeable, this did not indicate a public health risk. Odors were effectively controlled during the excavation work with the application of foam and odor suppressing agents. Notification by the public regarding location of odor concerns, particularly during unusual heat and changing wind conditions, contributed to the onsite team's odor suppression efforts.
- Applicable permits were obtained prior to performing the work, and all work was performed in accordance with the permit conditions.
- Air monitoring data indicate there was no significant offsite exposure, and the project remained in compliance with DTSC and SCAQMD requirements. Summaries of the air monitoring data were posted on the DTSC website for the public's review.
- The MMRP has been implemented to the satisfaction of the DTSC, with ongoing efforts for offsite southern tarplant mitigation.
- The Construction SWPPP was implemented, and the Santa Ana Regional Water Quality Control Board/SWRCB approved the Notice of Termination of the Construction SWPPP, indicating acceptance of the Site's post-

construction condition. The Site remains in compliance with the Industrial SWPPP and BMPs for longer term storm water control.

- Public information and participation activities ensured that the public had opportunity to review and comment on IRM project documents, as required per CEQA, and were informed regarding IRM activities.

6.2 Project Metrics

A summary of key project metrics, such as work duration, excavation rate, and disposal volume, are presented in **Table 6.2-1**.

**Table 6.2-1
Project Metrics
Interim Removal Measure**

Excavation and Site Restoration		
1	Approximate Excavation Quantities	
	a. Lagoons 1 and 2 (tons)	90,839
	b. Lagoon 3(tons)	6,348
2	Restoration	
	a. Rock applied to graded areas (tons)	4,552
Transportation and Disposal		
1	Truck Loads to Buttonwillow Landfill	4,141
2	Waste Disposed (tons)	97,187
Odors and Emissions Control		
1	Rusmar® Foam Applied (gallons)	258,250
2	Odex® Odor Agent Used (gallons)	125,200
3	LKM used/added (tons)	5,473
4	NOx Credits Consumed	4,815
Air Monitoring		
1	Number of SUMMA canister samples (TO-15 VOCs)	450
2	Number of Puff and PM ₁₀ samples	31

7.0 References

- Geosyntec Consultants, 2002. Report – Ambient Air Quality Evaluation, Ascon Site, Huntington Beach, California, September 13, 2002.
- Geosyntec Consultants, 2003a. May 2003 Perimeter Air Sampling Report, July 24, 2003.
- Geosyntec Consultants, 2003b. August 2003 Perimeter Air Sampling Report, October 16, 2003.
- Geosyntec Consultants, 2004. Report of Findings, Perimeter Air Sampling Program, February 23, 2004.
- Geosyntec Consultants, 2010. September 2010 Interim Groundwater Monitoring Report, November 9, 2010.
- PCR Services Corporation, 2009. Ascon Landfill Site Interim Removal Measure Initial Study/Draft Mitigated Negative Declaration, October, 2009.
- Project Navigator, Ltd., 2006. Emergency Action Completion Report, March 2, 2006.
- Project Navigator, Ltd. and Geosyntec Consultants, 2008. Interim Removal Measure Work Plan: Lagoons 1 and 2, October, 2008.
- Project Navigator, Ltd. and Geosyntec Consultants, 2009. Draft Interim Removal Measure Work Plan: Lagoons 1 and 2, October, 2009.
- Project Navigator, Ltd. and Geosyntec Consultants, 2010a. Interim Removal Measure Work Plan: Lagoons 1 and 2, May, 2010.
- Project Navigator, Ltd. and Geosyntec Consultants, 2010b. Proposal for Limited Waste Removal from Lagoon 3 at the Ascon Landfill Site under the DTSC-approved Interim Removal Measure Mitigated Negative Declaration and MND Addendum, November 12, 2010.
- Project Navigator, Ltd. and Geosyntec Consultants, 2010c. Final Proposal for Limited Waste Removal from Lagoon 3 at the Ascon Landfill Site under the DTSC-approved Interim Removal Measure Mitigated Negative Declaration and MND Addendum, November 23, 2010.

Project Navigator, Ltd. and Geosyntec Consultants, 2010d. Addendum to the Ascon Landfill Site Interim Removal Measure Workplan for the geotechnical sampling to be conducted in Lagoons 1, 2, and 3, December, 2010.

TABLES

Table 3.2-1
Summary of Laboratory Data
Perimeter Air Samples - 28 July 2010 Through 1 April 2011
Ascon Landfill Site Interim Removal Measure

Detected Analytes	SAMPLE ID														
	IRM-AA-02					IRM-AA-03					IRM-AA-05				
	Minimum Detected (µg/m³)	Maximum Detected (µg/m³)	Number Analyzed	Number Detected	Frequency of Detection (%)	Minimum Detected (µg/m³)	Maximum Detected (µg/m³)	Number Analyzed	Number Detected	Frequency of Detection (%)	Minimum Detected (µg/m³)	Maximum Detected (µg/m³)	Number Analyzed	Number Detected	Frequency of Detection (%)
VOC															
Acetone	7.2	59	89	60	67%	6.8	37	88	63	72%	6.1	59	91	57	63%
Trichlorofluoromethane	1.0	1.7	89	88	99%	1.0	1.7	88	88	100%	0.81	3.4	91	90	99%
Methylene chloride	0.77	3.4	89	48	54%	0.71	3.1	88	33	38%	0.65	3.9	91	31	34%
Toluene	0.64	20	89	74	83%	0.79	44	88	71	81%	0.71	21	91	73	80%
d-Limonene	0.78	5.1	89	14	16%	0.78	2.7	88	12	14%	0.68	5.0	91	13	14%
1,2,4-Trimethylbenzene	0.66	3.6	89	21	24%	0.70	15	88	25	28%	0.69	4.3	91	27	30%
2-Hexanone	0.75	14	89	4	4%	0.68	0.99	88	2	2%	0.71	1.0	91	6	7%
n-Hexane	0.72	3.9	89	34	38%	0.67	19	88	37	42%	0.70	4.8	91	43	47%
Benzene	0.68	3.8	89	37	42%	0.65	6.0	88	41	47%	0.66	6.6	91	41	45%
Ethylbenzene	0.70	3.2	89	19	21%	0.73	11	88	21	24%	0.76	3.7	91	25	27%
m,p-Xylenes	1.4	12	89	31	35%	1.4	44	88	34	39%	1.4	13	91	34	37%
o-Xylene	0.80	3.9	89	19	21%	0.71	16	88	26	30%	0.80	4.6	91	24	26%
n-Nonane	0.62	1.1	89	5	6%	0.80	2.5	88	5	6%	0.83	2.3	91	6	7%
4-Ethyltoluene	0.63	1.2	89	3	3%	0.72	4.5	88	5	6%	0.72	1.3	91	6	7%
1,3,5-Trimethylbenzene	1.1	1.1	89	1	1%	0.72	5.2	88	5	6%	0.75	1.3	91	3	3%
Naphthalene	0.62	0.86	89	2	2%	0.61	1.9	88	5	6%	0.68	1.0	91	3	3%
Chloroethane	-	-	89	-	-	-	-	88	-	-	3.8	3.8	91	1	1%
4-Methyl-2-pentanone	1.2	4.3	89	3	3%	1.5	1.5	88	1	1%	1.0	1.0	91	1	1%
Styrene	0.73	2.1	89	8	9%	0.62	5.0	88	10	11%	0.68	1.6	91	10	11%
Cumene	-	-	89	-	-	-	-	88	-	-	0.93	0.93	91	1	1%
alpha-Pinene	0.67	5.4	89	12	13%	0.91	3.0	88	9	10%	0.67	4.8	91	15	16%
1,4-Dioxane	-	-	89	-	-	-	-	88	-	-	0.85	0.85	91	1	1%
1,1-Dichloroethene	-	-	89	-	-	-	-	88	-	-	-	-	91	-	-
Trichlorotrifluoroethane	0.61	0.70	89	3	3%	0.64	0.64	88	1	1%	0.66	0.66	91	1	1%
1,1,1-Trichloroethane	-	-	89	-	-	-	-	88	-	-	-	-	91	-	-
Trichloroethene	0.97	1.3	89	2	2%	1.2	1.2	88	1	1%	0.83	1.3	91	2	2%
Chloromethane	0.71	0.77	89	2	2%	0.63	0.63	88	1	1%	0.65	0.82	91	2	2%
Carbon Disulfide	8.9	8.9	89	1	1%	-	-	88	-	-	-	-	91	-	-
1,3-Butadiene	0.93	0.93	89	1	1%	0.69	0.84	88	2	2%	0.79	1.2	91	2	2%
Chloroform	0.72	1.2	89	2	2%	0.65	0.69	88	3	3%	0.66	0.89	91	2	2%
Tetrachloroethene	0.69	1.1	89	6	7%	0.81	0.92	88	4	5%	0.71	1.9	91	4	4%
1,4-Dichlorobenzene	0.80	0.80	89	1	1%	-	-	88	-	-	-	-	91	-	-
1,1,2-Trichloroethane	-	-	89	-	-	-	-	88	-	-	-	-	91	-	-
Methyl tert-Butyl Ether	-	-	89	-	-	-	-	88	-	-	-	-	91	-	-
2-Butanone	-	-	89	-	-	-	-	88	-	-	-	-	91	-	-
cis-1,2-Dichloroethene	-	-	89	-	-	1.5	1.5	88	1	1%	-	-	91	-	-
PAH															
Fluorene	-	-	10	-	-	-	-	0	-	-	0.0044	0.0044	9	1	11.11%
Phenanthrene	0.0036	0.0036	10	1	10%	-	-	0	-	-	0.0043	0.0047	9	2	22.22%
Naphthalene	-	-	10	-	-	-	-	0	-	-	-	-	9	-	-
Metals															
Chromium	0.0093	0.017	10	4	40%	-	-	0	-	-	-	-	9	-	-
Lead	0.0371	0.0371	10	1	10%	-	-	0	-	-	-	-	9	-	-
Particulates															
PM10	0.019 ⁽¹⁾	0.035 ⁽¹⁾	10	10	100%	-	-	0	-	-	0.019 ⁽¹⁾	0.045 ⁽¹⁾	9	9	100.00%

- = Single dash indicates no detection at sample location

⁽¹⁾ = Concentration reported in mg/m³

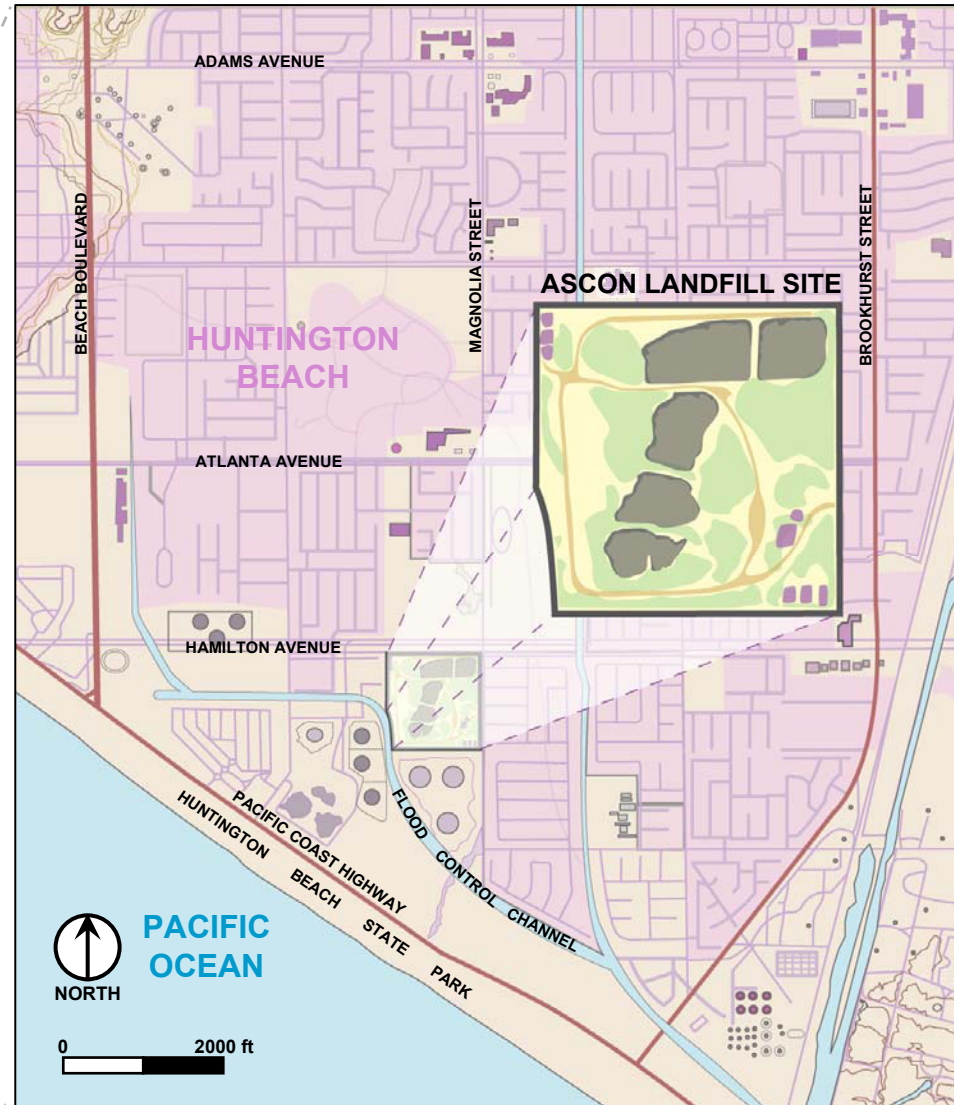
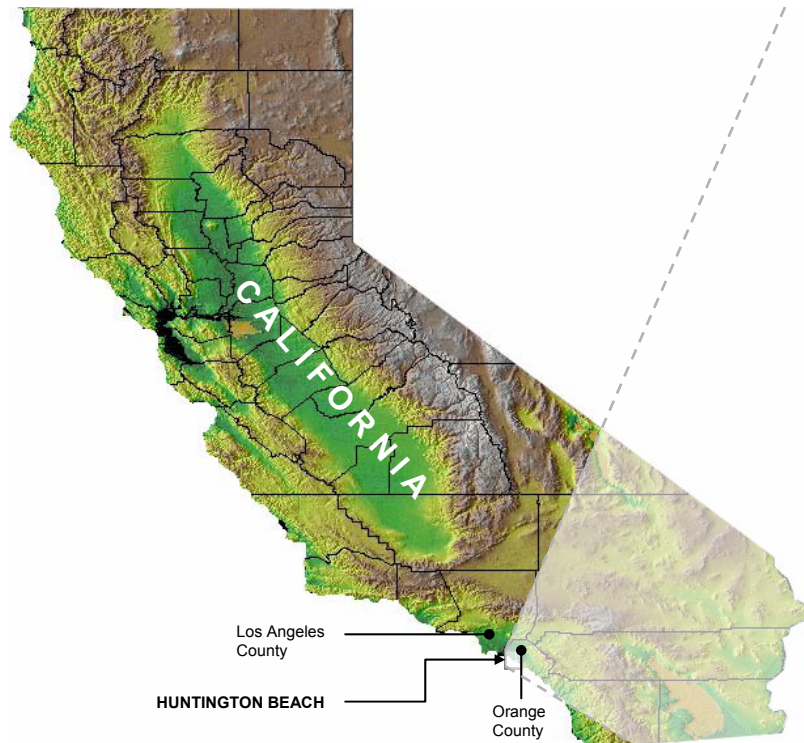
Table 3.2-1
Summary of Laboratory Data
Perimeter Air Samples - 28 July 2010 Through 1 April 2011
Ascon Landfill Site Interim Removal Measure

Detected Analytes	SAMPLE ID									
	IRM-AA-06					IRM-AA-07				
	Minimum Detected (µg/m³)	Maximum Detected (µg/m³)	Number Analyzed	Number Detected	Frequency of Detection (%)	Minimum Detected (µg/m³)	Maximum Detected (µg/m³)	Number Analyzed	Number Detected	Frequency of Detection (%)
VOC										
Acetone	7.3	140	90	56	62%	6.3	85	91	67	74%
Trichlorofluoromethane	1.0	1.7	90	90	100%	1.0	1.8	91	91	100%
Methylene chloride	0.70	4.5	90	33	37%	0.61	3.7	91	32	35%
Toluene	0.67	18	90	67	74%	0.64	17	91	70	77%
d-Limonene	0.68	8.8	90	23	26%	0.76	5.9	91	21	23%
1,2,4-Trimethylbenzene	0.75	12	90	30	33%	0.61	3.5	91	25	27%
2-Hexanone	0.69	1.8	90	5	6%	0.65	1.0	91	6	7%
n-Hexane	0.66	17	90	37	41%	0.61	3.9	91	38	42%
Benzene	0.65	6.4	90	35	39%	0.69	3.6	91	41	45%
Ethylbenzene	0.73	19	90	29	32%	0.71	3.4	91	22	24%
m,p-Xylenes	1.7	17	90	31	34%	1.3	10	91	36	40%
o-Xylene	0.73	6.7	90	29	32%	0.64	3.6	91	27	30%
n-Nonane	0.73	7.5	90	15	17%	0.68	1.2	91	6	7%
4-Ethyltoluene	0.75	4.3	90	8	9%	0.64	1.1	91	4	4%
1,3,5-Trimethylbenzene	0.72	3.5	90	7	8%	0.59	1.1	91	4	4%
Naphthalene	0.90	29	90	9	10%	0.70	0.81	91	2	2%
Chloroethane	-	-	90	-	-	-	-	91	-	-
4-Methyl-2-pentanone	1.7	1.7	90	1	1%	0.69	1.4	91	2	2%
Styrene	0.70	1.5	90	4	4%	0.71	1.7	91	9	10%
Cumene	0.79	5.1	90	5	6%	-	-	91	-	-
alpha-Pinene	0.70	4.2	90	14	16%	0.70	180	91	23	25%
1,4-Dioxane	1.1	1.1	90	1	1%	-	-	91	-	-
1,1-Dichloroethene	3.0	3.0	90	1	1%	-	-	91	-	-
Trichlorotrifluoroethane	0.66	8.5	90	2	2%	0.66	0.66	91	1	1%
1,1,1-Trichloroethane	11	11	90	1	1%	-	-	91	-	-
Trichloroethene	0.82	1.2	90	2	2%	1.9	1.9	91	1	1%
Chloromethane	0.85	0.85	90	1	1%	0.61	0.77	91	4	4%
Carbon Disulfide	-	-	90	-	-	-	-	91	-	-
1,3-Butadiene	0.64	0.64	90	1	1%	0.81	0.81	91	1	1%
Chloroform	0.97	0.97	90	1	1%	0.65	0.95	91	3	3%
Tetrachloroethene	0.75	2.0	90	5	6%	0.71	1.8	91	8	9%
1,4-Dichlorobenzene	0.70	0.70	90	1	1%	-	-	91	-	-
1,1,2-Trichloroethane	1.0	1.0	90	1	1%	-	-	91	-	-
Methyl tert-Butyl Ether	-	-	90	-	-	1.8	1.8	91	1	1%
2-Butanone	-	-	90	-	-	33	33	91	1	1%
cis-1,2-Dichloroethene	-	-	90	-	-	-	-	91	-	-
PAH										
Fluorene	-	-	9	-	-	-	-	0	-	-
Phenanthrene	0.0036	0.0036	9	1	11%	-	-	0	-	-
Naphthalene	0.037	0.037	9	1	11%	-	-	0	-	-
Metals										
Chromium	0.0209	0.0209	9	1	11%	-	-	0	-	-
Lead	0.0453	0.0453	9	1	11%	-	-	0	-	-
Particulates										
PM10	0.017 ⁽¹⁾	0.035 ⁽¹⁾	9	9	100%	-	-	0	-	-

- = Single dash indicates no detection at sample location

⁽¹⁾ = Concentration reported in mg/m³

FIGURES



Site Location Map

Figure 1.1-1

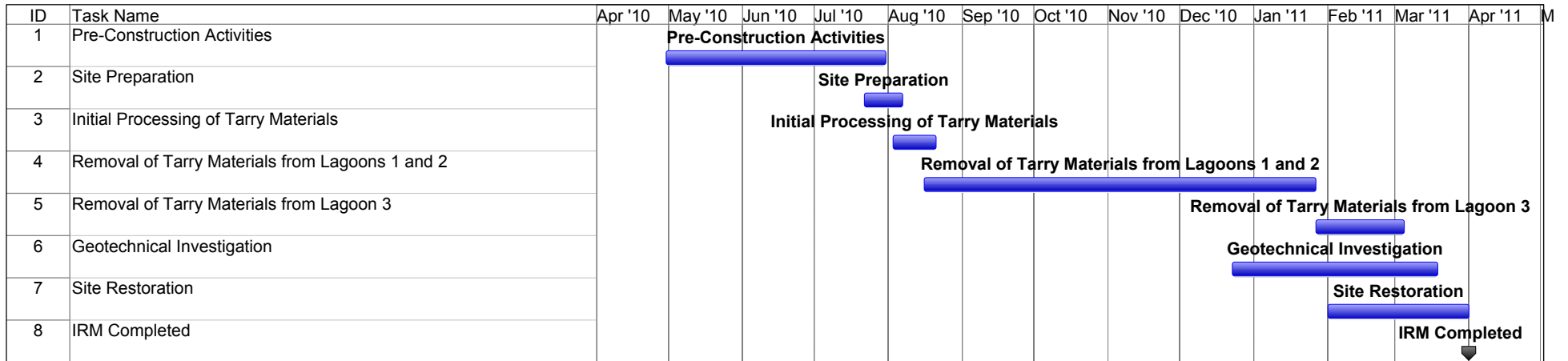


Legend

- Lagoons Outline
- Internal Fences
- Site Gate
- Trailer
- Buried Pits

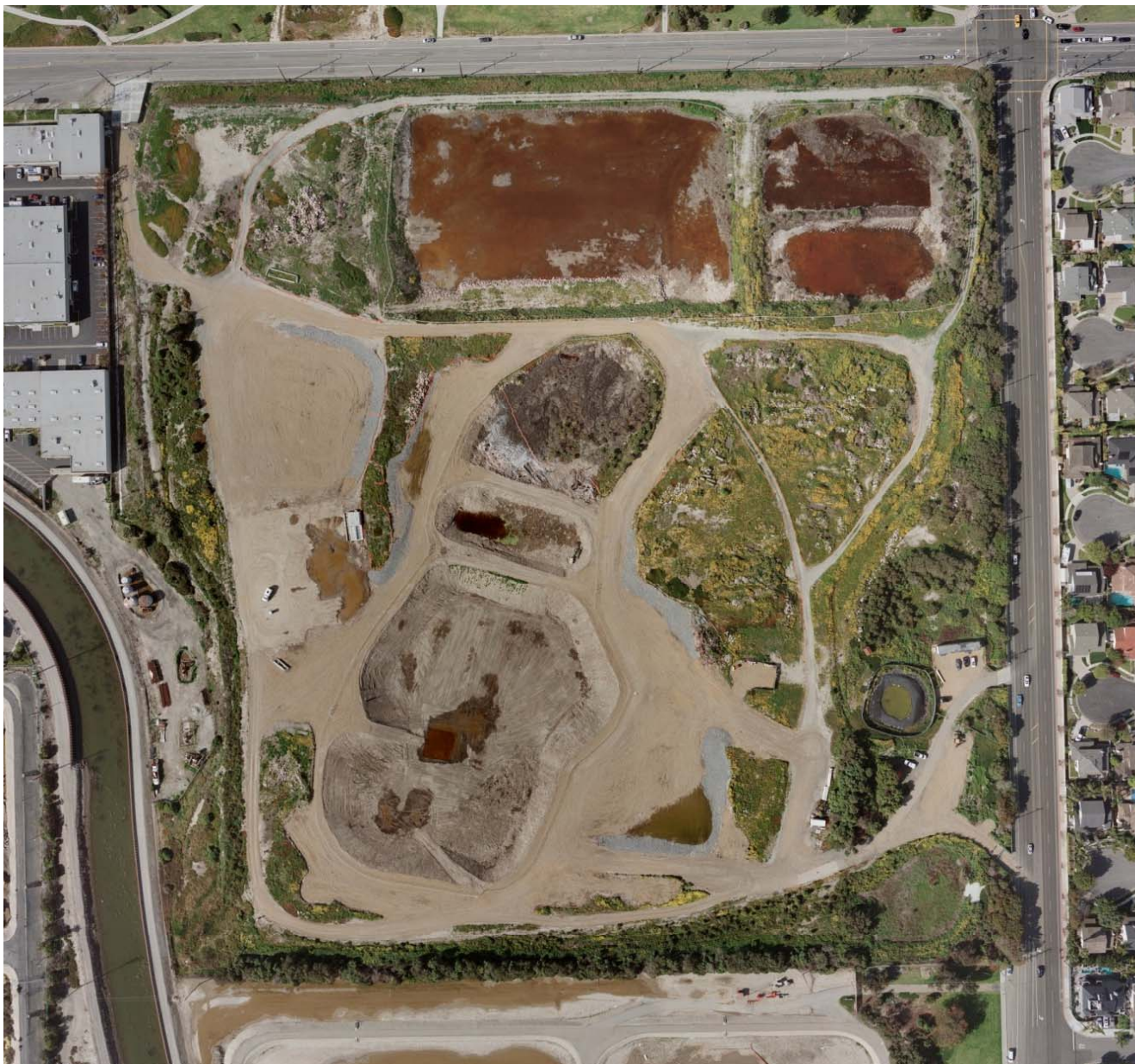
Site Features Map

Figure 1.1-2



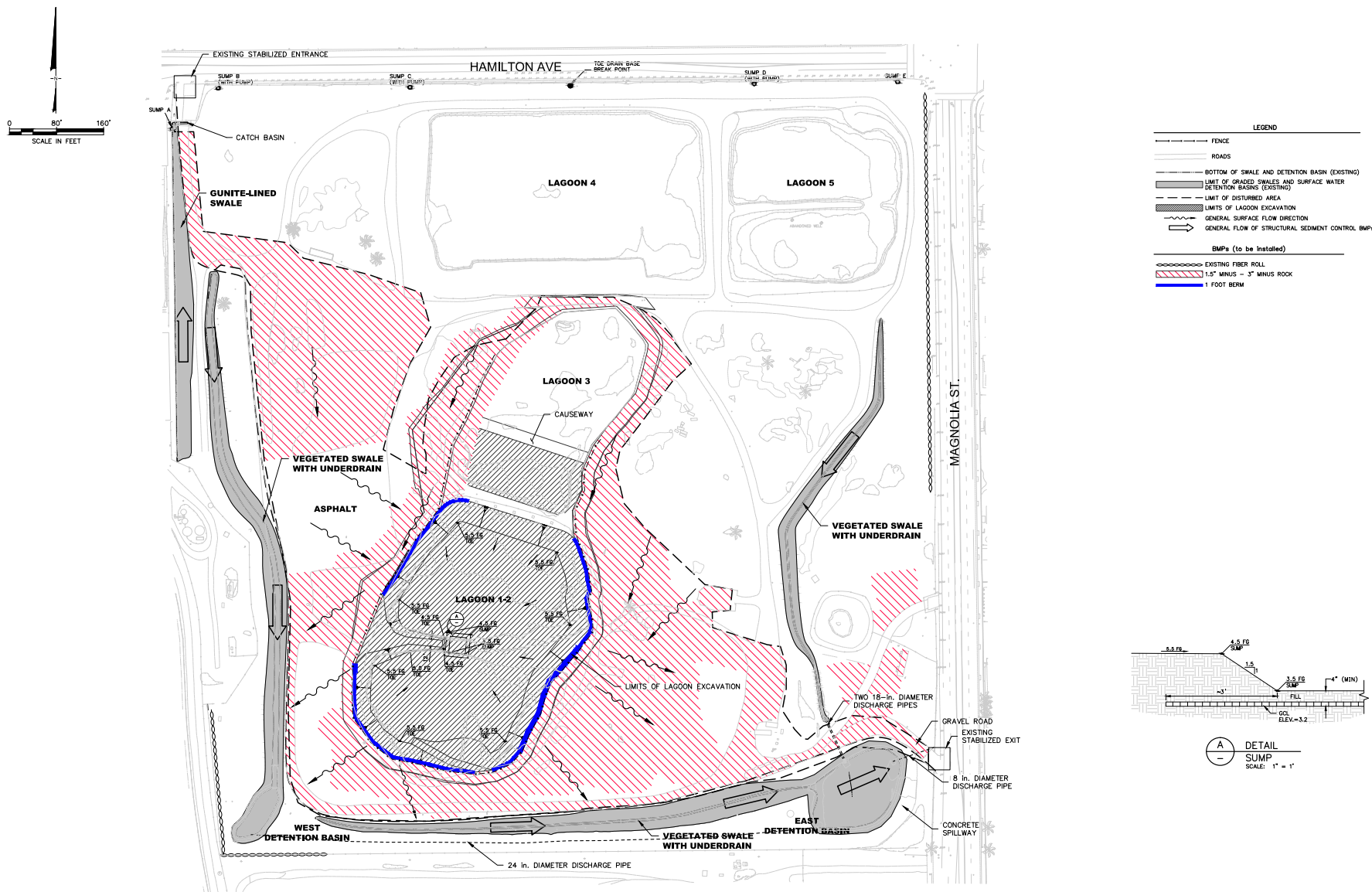
Project Timeline

Figure 2.3-1



Ascon Landfill Site 2011 Aerial Photograph

Figure 2.8-1






Post IRM SWPPP BMPs

Figure 2.10-1



0 110 220
Feet

Legend

-  Lagoons Outline
-  Meteorological Monitoring Station
(to monitor wind conditions)
-  Air Monitoring and Sampling
Station (Approximate) for Real-
time and Time-integrated
Sampling

Note:

1. Sample location number designation used from Emergency Action to maintain consistency.

IRM Sampling and Monitoring Locations

Figure 3.1-1