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MAY 10 2012

Via Certified Mail:  
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Return Receipt Requested

Susan Martinovich, P.E.  
Director  
Nevada Department of Transportation  
1263 South Stewart Street  
Carson City, Nevada 89712

Dear Ms. Martinovich:

Enclosed is the U.S. Environmental Protection Agency's (EPA) report of the Nevada Department on the Transportation (NDOT) Storm Water Management Program (Program) Audit. Representatives from EPA Region 9 and the Nevada Department of Environmental Protection (NDEP) conducted the Audit from August 9 – 12, 2011.

The purpose of the Audit was to assess NDOT's compliance with the *National Pollutant Discharge Elimination System Permit for Discharges from Nevada Department of Transportation Municipal Separate Storm Sewer Systems*, No. NV0023329 (Permit). The Permit covers all NDOT activities statewide that impact storm water quality, including the operation of roads and highways and construction and maintenance activities.

The EPA Audit Team reviewed documents and interviewed NDOT managers and staff at your headquarters office, and visited NDOT construction sites and maintenance facilities in all three NDOT Districts. Your managers and staff participated throughout the Audit process and I appreciate the time they spent preparing for and participating in the Audit. All of your staff and managers were helpful and cooperative during the Audit.

The Audit findings in our report are intended to improve NDOT's storm water program statewide. The report identifies areas where NDOT was not in compliance with its existing Permit requirements. Most significantly, at the time of our Audit, NDOT had not:

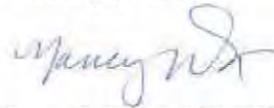
- fully implemented its 2005 Storm Water Management Plan;
- developed facility pollution prevention plans for any of its maintenance facilities;
- fully implemented its Employee Storm Water Training Program; and
- implemented an adequate illicit discharge detection and elimination program.

EPA is evaluating next steps to address NDOT non-compliance. Please respond to the Audit findings with any program updates or clarifying comments by June 29, 2012. We will post

this report on our website in the next week and will include your response once we receive it. Please also submit a copy of your most recent Storm Water Management Plan with your response.

If you have concerns or questions, please call me at (415) 972-3409, or refer staff to Luis Garcia-Bakarich at (415) 972-3237 or via email at [garcia-bakarich.luis@epa.gov](mailto:garcia-bakarich.luis@epa.gov). For legal questions, please contact Ellen Blake in our Office of Regional Counsel at (415) 972-3496, her email is [blake.ellen@epa.gov](mailto:blake.ellen@epa.gov).

Sincerely yours,

A handwritten signature in blue ink that reads "Nancy Woo". The signature is fluid and cursive, with a large initial "N" and "W".

Nancy Woo, Acting Director  
Water Division

Enclosure

cc: Alan Tinney, NDEP (w/enclosure in electronic format)  
Dave Gaskin, NDEP (w/enclosure in electronic format)  
Steve Cooke, NDOT (w/enclosure in electronic format)  
James Murphy, NDOT (w/enclosure in electronic format)

**Nevada Department of Transportation**

**MS4 Audit Report**

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**NPDES Permit NV0023329**

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**Audit Performed by:**

**United States Environmental Protection Agency, Region 9**

**Audit Dates: August 9-12, 2011**

**Report Date: May 10, 2012**



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## I. Executive Summary

The U.S. Environmental Protection Agency (EPA) conducted, from August 9 through 12, 2011, an audit of the Nevada Department of Transportation (NDOT) Municipal Separate Storm Sewer System (MS4) Program. The audit assessed compliance with the *National Pollutant Discharge Elimination System (NPDES) Permit for Discharges from Nevada Department of Transportation Municipal Separate Storm Sewer System (NV0023329)* (2010 Permit) and evaluated NDOT's implementation of its 2005 statewide Storm Water Management Plan (SWMP), as required by the previous permit, issued in 2004. The 2004 and 2010 Permits prescribe specific requirements for SWMP elements and timelines for implementation. The 2005 SWMP details practices and procedures NDOT uses to control the discharge of pollutants in storm water.

EPA reviewed documents, met and interviewed staff to gather information on overall program management, and conducted field inspections at NDOT construction sites and maintenance facilities. Nevada Division of Environmental Protection (NDEP) accompanied EPA throughout the audit. At the conclusion of the audit, EPA shared an initial assessment with the NDOT representatives.

This report includes background information and presents audit findings which are separated into four categories: noteworthy program elements; recommendations for improvements; program deficiencies; and potential permit violations. Although this report describes potential permit violations, this is not a formal finding of violation.

EPA found the following elements of NDOT's current program noteworthy. Specifically, NDOT:

- collaborates with local conservation districts to implement sediment reduction measures beyond NDOT rights-of-way in the Clear Creek Watershed; and
- uses its Roadway Information System to reduce the amount of salt/brine applied to roadways, decreasing the potential for pollutant discharge.

EPA also found potential permit violations. Most significantly, NDOT failed to:

- fully implement the 2005 SWMP;
- develop required pollution prevention plans for all maintenance facilities;
- fully implement an employee training program; and
- implement an illicit discharge, detection and elimination program.

## II. Background

### A. MS4 Program Audits

Storm water runoff, generated when precipitation flows over land or impervious surfaces accumulates pollutants which can adversely affect water quality. Storm water collected by a publicly-owned conveyance or system of conveyances and discharged to a water of the United States requires NPDES permit authorization. Such discharges are regulated through Municipal Separate Storm Sewer (MS4) permits. The pipes, roadways and other storm water conveyances operated by the Nevada Department of Transportation constitute an MS4. In general, NPDES permits require MS4s to develop and implement a storm water management plan (SWMP) to address the following program elements:

- mapping storm water features, including major outfalls;
- public education and outreach;
- illicit discharge detection and elimination;
- construction site runoff control;
- post-construction site runoff control; and
- pollution prevention/good housekeeping at municipal facilities

Audits of MS4s are being conducted nationwide to determine compliance with permit requirements and to evaluate the overall effectiveness of the nation's MS4 programs. EPA Region 9 is conducting audits of MS4s throughout the Pacific Southwest and has performed more than 50 audits over the last 10 years. EPA has performed MS4 audits of Arizona, California and Hawaii state transportation agencies located within Region 9. The audit reports are available on EPA's website at: <http://www.epa.gov/region9/water/npdes/ms4audits.html>.

### B. NDOT's Storm Water Program

NDOT administers over 5,400 miles of roads, 1,000 bridges and operates 49 maintenance facilities. It is organized into four functional divisions (Administration, Engineering, Operations and Planning) and three geographic districts. Each district is managed by a district engineer with the principal responsibility for construction and maintenance programs.

NDEP issued a state-wide MS4 permit to NDOT on February 23, 2004 (2004 Permit). Section 4.1.1 of the 2004 Permit required NDOT to submit a Storm Water Management Plan (SWMP) within one year of Permit issuance while Section 4.1.2 required full implementation of the SWMP within five years of Permit issuance. NDOT submitted the SWMP in January 2005 (2005 SWMP). NDEP re-issued the *NPDES Permit for Discharges from Nevada Department of Transportation Municipal Separate Storm Sewer System (NV0023329)* (2010 Permit) on July 7, 2010. Among other requirements, the 2010 Permit requires NDOT to review, revise and submit an updated SWMP to NDEP by January 7, 2012 and to continue to implement and maintain current BMPs detailed in NDOT's current (2005) SWMP until the new SWMP is submitted. This audit report therefore refers to the 2004 and 2010 Permits, and the 2005 SWMP.

### C. Audit Organization

EPA Region 9, represented by David Wampler, Luis Garcia-Bakarich, and John Tinger, conducted the audit between August 9th and August 12th, 2011. Steve McGoff, Joe Maez, Chris Gravenstein, and Michele Reid from NDEP participated in the audit. The audit consisted of file

reviews, interviews with NDOT staff and management and a number of site-visits at select NDOT maintenance facilities and construction sites. The following program areas were evaluated during the audit:

- program management;
- storm water education for staff, contractors, and the public;
- construction operations;
- illicit discharge detection and elimination;
- maintenance program; and
- monitoring and reporting

### **III. Audit Findings**

This section is organized to generally follow the structure of the 2010 Permit. For each section in our report, we identify, where appropriate, noteworthy aspects of NDOT's storm water program implementation, recommendations for improvement, program deficiencies, and potential permit violations. Our findings are supported by interviews, observations and photographic evidence gathered during the audit as well as documentation obtained before, during or after the audit. Documents provided by NDOT are listed in Appendix A. An itinerary of the audit and EPA's site visit reports, including photos, photo logs, and aerial reference images, are provided in Appendix B.

#### **A. Program Management**

The Water Quality Section of the Environmental Services Division (ESD), within the Engineering Division, is responsible for statewide management of NDOT's storm water program. Although overall storm water management resides within the ESD, other internal programs (e.g., Hydraulics, Construction, and Maintenance) regularly coordinate with ESD. Throughout the audit, EPA met with members of these groups to discuss their role in implementation of the storm water requirements. Prior to the 2005 SWMP, NDOT created the Water Quality Erosion Sediment Control (WQESC) Implementation Team and Steering Committee, made up of numerous divisions or sections, to assist in SWMP development. The WQESC no longer meets, but NDOT indicated it intends to reinstitute it.

##### **A.1. Storm Water Management Plan**

The 2004 Permit required NDOT to implement its 2005 SWMP within five years of the effective date of the permit. The 2005 SWMP included a phased schedule for the implementation of specific BMPs. The 2010 Permit requires NDOT to continue implementing the 2005 SWMP until a revised SWMP is submitted, establishes a deadline for submittal of an updated SWMP, and requires that the revised SWMP be implemented within two years of NDEP's approval.

##### *Potential Permit Violation*

*NDOT has failed to fully implement the SWMP within five years of the authorization date of the 2004 Permit. [2004 Permit Section 4.1.2]*

The 2005 SWMP should have been fully implemented by February 23, 2009. For example, NDOT has not developed and implemented Facility Pollution Prevention Plans for maintenance facilities. Other examples of NDOT's failure to fully implement the 2005 SWMP are described in detail later in this report.

*Potential Permit Violation*

*The 2005 SWMP does not include maps of NDOT's storm sewer system, including the location of any major outfall discharging to waters of the U.S. [2004 Permit Section 4.3.1, and 2010 Permit Section III.C.1]*

NDOT provided district facility maps to EPA prior to our audit. While these maps contain the location of various waterbodies and maintenance facilities, they do not include the location of any MS4 features such as drainage pipes, culverts, or major outfalls discharging to waters of the U.S.

**A.2. Clear Creek Master Storm Water Management Plan**

Section 3.2 of the 2004 Permit and Section III.D of the 2010 Permit require implementation of a separate Storm Water Management Plan for the Clear Creek Watershed (CCSWMP). The 2005 CCSWMP was developed by NDOT to reduce discharge of pollutants to Clear Creek from NDOT activities in the watershed. The CCSWMP describes BMPs and implementation schedules.

EPA, NDEP, and NDOT viewed several sites in the Clear Creek Watershed where NDOT has installed soil stabilization and treatment control BMPs. While some of the sediment projects were located within NDOT's right-of-way, others were on private property, down-slope from U.S. Hwy 50. NDOT's representatives described the difficulties associated with controlling sediment but showed several successful projects in their right-of-way and on private property (field report, Appendix B.2).

*Noteworthy Program Element*

*NDOT has partnered with the local conservation district to install or fund projects that fall outside of its right-of-way.*

NDOT has designed and implemented retrofit projects intended to reduce storm water runoff velocity and sediment transport from U.S. Hwy 50 into Clear Creek. U.S. Hwy 50 between Spooner Summit and Carson City is aligned on a hillside composed of decomposed granite substrate which is highly erosive, and the highway's cuts and benches contribute volumes of sediment to Clear Creek. In some cases, where the project required work beyond NDOT's right-of-way, NDOT has partnered with the local conservation district to implement these projects.

*Potential Permit Violation*

*The Clear Creek Storm Water Management Plan does not describe control techniques used at the Spooner Summit decant facility to ensure no illicit discharge of pollutants into Clear Creek. [2004 Permit Section 3.2.1.3 and 2010 Permit Section III.D.1.c]*

The NDOT Spooner Summit decant facility is located at the summit of Hwy 50 between Carson City and Lake Tahoe. EPA visited the Spooner Summit facility with NDOT and NDEP (field report, Appendix B.3). NDOT stated the Spooner Summit Decant facility and a similar one in Incline Village were constructed to accept accumulated sediment from storm drain features (e.g., vault boxes, drop inlets) within the Tahoe Basin. NDOT must update the CCSWMP to include a description of the controls at the Spooner Summit decant facility. At the facility, NDOT vector trucks unload their accumulated wastes into a settling basin where sediment settles out, and the water either evaporates, infiltrates, or discharges through a culvert drain leading to a tributary of

Clear Creek. Although the basin was dry at the time of the audit, EPA observed evidence of potential discharges, including an open drain and floatable plastics at the top of the containment berm (field report Appendix, B.3).

## **B. Storm Water Education Program**

Section 4.5 of the 2004 Permit and Section III.F of the 2010 Permit requires NDOT to develop and implement a storm water outreach and education program to address the three main audiences that impact NDOT's storm water discharges: NDOT employees, construction contractors, and the public.

### **B.1. Employee Training**

Section 4.5.2.1 of the 2004 Permit and Sections III.F.2 through 5.h of the 2010 Permit describe requirements for employee training. The 2004 Permit requires NDOT to implement the program specified in the 2005 SWMP and provides frequent reminders to reinforce the training. NDOT's 2005 SWMP states NDOT will develop training to introduce staff to water quality principles, NDOT's roles and responsibilities to support SWMP implementation, introduce the SWMP, and train employees to use specific manuals. The 2010 Permit requires NDOT to provide specific training (e.g., to identify illicit discharges/connections, perform construction site inspections and identify non-storm water discharges) to employees identified in the Permit within twelve months of the effective date of the Permit. During the audit, EPA interviewed NDOT employees, reviewed paperwork and asked to see a copy of the employee training program. EPA observed NDOT does not have a formal process for training and that its current approach to training is inconsistent. For example, NDOT did provide a list of employees who recently had taken a 40-hour construction site inspector training which included a module on construction site storm water BMPs. However, based on discussions with individuals at NDOT maintenance stations, and review of annual reports, NDOT maintenance employees typically have not had any storm water training other than construction BMP training.

#### *Potential Permit Violation*

*NDOT has not implemented an Employee Storm Water Training Program within one year of permit issuance. [2010 Permit Section III.F.2]*

NDOT was unable to demonstrate all employees identified by the 2010 Permit had received initial training within twelve months of the effective date of the Permit (see Sections III.F.2 and III.F.5 of the 2010 Permit for a list of employees identified by the Permit).

### **B.2. Construction Contractor Training**

Section 4.5.2.2 of the 2004 Permit requires NDOT to implement the program specified in the 2005 SWMP and provide outreach to contractors to raise awareness of the problems and causes of storm water pollution and to reinforce their training. In Section 5.5 of the 2005 SWMP, NDOT committed to develop a more detailed outreach program to train NDOT contractors. However, based on discussions with NDOT representatives and review of annual reports, the program consists of sporadic workshops for potential contractors and informal, on-site or pre-project meetings.

#### *Recommendation for Improvement*

NDOT's revised SWMP should include contractor-specific training requirements to ensure consistent implementation by all contractors. To comply with the 2010 Permit, the training

should ensure contractors have adequate training to: understand BMP selection, installation and maintenance requirements; recognize activities that may impact storm water quality; and understand the procedures in place to prevent or report illicit discharges or illicit connections to the MS4.

### **B.3. Public Education Program**

Section 4.5.1 of the 2004 Permit requires NDOT to include a Public Outreach and Education Program to reduce the discharge of pollutants to the maximum extent practicable and submit a plan to develop and implement a public education program within 180 days of adoption. In the 2005 SWMP, NDOT commits to develop a public outreach plan to address illicit discharge reporting, and include research and mass media advertising. Section III.F.5.i of the 2010 Permit requires NDOT to continue to implement the Public Education/Outreach Program and adds new program elements.

Based on conversations with staff and a review of recent annual reports, NDOT has an Adopt-A-Highway program, attends Truckee River Festival events as a member of the Truckee Meadows Storm Water Committee, and participates in public meetings or workshops to inform the public about erosion control methods to improve the quality of storm water discharge. The annual reports also describe NDOT's contributions to the Water Wise program. While the most recent reports state the Water Wise Program had ceased they also indicate archived material is as still available at the following website: <http://krnv.envirocast.net/>. When EPA attempted to access this website recently, we found it was no longer functioning.

#### *Program Deficiency*

NDOT should improve the current Public Education/Outreach Program to ensure its public outreach program is effective. For instance, NDOT could highlight innovative projects or programs throughout the state to reduce storm water pollution.

### **C. Construction Program**

The 2004 and 2010 Permits require NDOT to develop and implement a construction site BMP program including structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites in their right-of-way. The program applies to NDOT, its contractors, local government agencies, or third parties on NDOT or non-NDOT projects. During the audit, EPA met with NDOT representatives from hydraulics (Engineering Division) and construction (Operations Division) who described NDOT's process for controlling pollutants in storm water at construction sites, from the pre-planning phase to the completion of the project and final transfer to the maintenance and asset management group within NDOT.

#### **C.1. Project Planning and Design**

In general, during the planning phase, NDOT utilizes internal expertise to evaluate a project's potential threat to water quality, the constructability of certain storm water controls, including post-construction BMPs, and expected storm water protection effectiveness. Prior to construction, NDOT meets with the contractor to review project specifications and, depending on the project, discuss storm water requirements.

According to the 2005 SWMP and discussion with NDOT staff, NDOT staff evaluate all new projects using a Project Categorization Score Sheet to categorize the potential impact to water

quality into one of four categories: no impact, low, medium, and high potential impact. This evaluation helps NDOT prioritize projects and anticipate water quality protection measures when developing contract solicitations. For example, NDOT develops a project-specific lump sum range for Temporary Pollution Control for projects with medium impacts (defined as simple projects with potential to discharge sediment into waters of the U.S., lasting less than two years). For projects with high impacts (complex projects with a high potential for sediment discharge, lasting longer than two years, as well as all projects in the Tahoe Basin), NDOT may condition the project to include specific structural BMP requirements. For all projects, the Project Categorization Score Sheet gives estimated costs for storm water controls to be considered in bid estimates.

*Recommendation for Improvement*

NDOT should consider using the Project Categorization Sheets to ensure adequate BMP implementation and maintenance during the life of the project and to validate cost estimates at the project's completion. Inclusion of specific fixed costs in requests for proposal ensures contractors dedicate the proper resources to storm water controls and ensures a level playing field to evaluate proposals.

**C.2. Contractor Oversight**

Section 4.9 of the 2004 Permit and Section III.G.1 of the 2010 Permit require NDOT to control all construction in the rights-of-way through a program to review construction site plans, implement and maintain structural and non-structural BMPs, conduct site inspections with follow-up enforcement, and to educate construction site operators on construction site storm water requirements. As explained during the audit and discussed in the 2005 SWMP, one of the ways in which NDOT oversees its contractors is by performing weekly oversight inspections. NDOT also described various enforcement tools they can use against contractors, including: withholding payment; shutting down activities; pursuing corrective measures at cost to the contractor; or requesting assistance from NDEP.

NDOT discussed its use of "Partnering" which facilitates communication between the construction contractor and the NDOT Resident Engineer on certain construction projects. Partnering is a process required by the Federal Highways Administration on many NDOT construction projects where NDOT and its contractor(s) discuss project implementation issues, including storm water and erosion controls, early in the project to resolve issues before they escalate. NDOT construction managers and contractors spoke very highly of this arrangement as a way to inform contractors of their storm water obligations and to ensure storm water requirements are met.

*Program Deficiency*

The Weekly Construction Site Discharge Inspection Checklist created by NDOT for oversight inspections does not contain sufficient detail to assess construction general permit compliance. NDOT should revise the Checklist to include more specificity on inspection criteria such as condition of BMPs, timeframes for corrective actions to be taken in response to deficiencies found during inspections, and information about current weather conditions and recent precipitation events.

*Potential Permit Violation*

*NDOT has failed to establish a program to control all construction in the rights-of-way. [2004 Permit Section 4.9.1.1 and 2010 Permit Section III.G.1.a]*

Section 5.2 of the 2005 SWMP describes NDOT Standard Specifications directing construction contractors to obtain all necessary water pollution control permits from NDEP; however, NDOT's rights-of-way also extend into tribal lands where NDEP is not the permitting authority. In such instances, NDOT or the construction contractor should file an application for permit coverage under the EPA Construction General Permit. The revised SWMP should make this explicitly clear. For example, in 2011, NDOT engaged in construction within their right-of-way on lands of the Pyramid Lake Paiute Tribe; however, no permit application had been filed with EPA.

*Potential Permit Violation*

*NDOT has failed to include a description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of construction activity, topography, and the characteristics of soils and receiving water quality. [2004 Permit Section 4.9.1.5]*

Section 5.4 of the 2005 SWMP discusses NDOT's construction oversight program. While the SWMP references the Weekly Construction Site Discharge Inspection Checklist, it does not discuss priorities for inspection and enforcement taking into account the criteria listed in the Permit. For example, EPA observed that NDOT is conducting monthly and rain-triggered inspections at the I-580 project due to the size of the project.

**D. Illicit Discharge Detection and Elimination Program**

Section 4.7 of the 2004 Permit and Section III.J of the 2010 Permit require NDOT to develop an Illicit Discharge Detection and Elimination (IDDE) program to detect and remove illicit discharges and improper disposal into the MS4, including inspections to implement and enforce an ordinance or other means to prevent illicit discharges into the MS4. Additionally, NDOT must conduct field-screening activities, respond to spills, facilitate public reporting, and create a program to educate the public about proper disposal of used oil and other toxic materials.

Section 7 of the 2005 SWMP discusses the IDDE program, implemented through the maintenance program. Typically, this consists of maintenance personnel responding to spill cleanup and illegal dumping on the roadway. NDOT maintains a hotline and has posted information on its website with a phone number for the public to report dumping and spills.

*Potential Permit Violation*

*NDOT failed to describe procedures to conduct on-going field screening activities to detect illicit discharges during the life of the permit, including areas or locations that will be evaluated by such field screens. [2004 Permit Section 4.7.1.2 and 2010 Permit Section III.J.1.b]*

Section 7.0 of the 2005 SWMP states NDOT will conduct routine inspections of drainage structures as a way to detect illicit discharges. Based on review of the annual reports and discussion with NDOT representatives, EPA found no evidence that these inspections had occurred or were currently being performed. Based on EPA review of the BMP manuals provided by NDOT, procedures for detecting illicit discharges were not identified. Further, the 2005 SWMP, Section 7.2, states maintenance personnel will be trained to recognize illicit discharges. Interviews with district maintenance personnel during the audit, however, demonstrated NDOT staff had minimal awareness of illicit discharge detection and reporting beyond spill response and illegal dumping of solid waste. Maintenance field staff noted training in spill reporting and response, but was limited to traffic accidents and illegal dumping. NDOT staff indicated that they had not seen dry weather flows within the MS4 system; however, the EPA audit team observed several instances where non-storm water discharges were occurring at NDOT maintenance facilities. (For example, see Appendix B.7 - Site Report of the Reno/Sparks Maintenance Facility).

**E. Maintenance Program**

Section 4.14 of the 2004 Permit and Sections III.L through S of the 2010 Permit describe the required elements for NDOT's maintenance program. NDOT is required to develop practices to address runoff from highway maintenance facilities, and from various maintenance activities, including snow and ice control, vegetation control, and maintenance of the drainage system.

**E.1. Snow and Ice Control**

Sections 4.14.1.2 and 4.14.1.3 of the 2004 Permit and Section III.P.1.b of the 2010 Permit describe NDOT's pollution control requirements for snow and ice control where abrasives and/or de-icing agents are used on highways.

*Noteworthy Program Element*

The Road Weather Information System (RWIS) enables NDOT to more precisely apply salt/brine/sand on the highway while optimizing the use of equipment and staff. The RWIS consists of seventy meteorological stations strategically located alongside highways. The system allows NDOT to anticipate freezing and snowy conditions that can pose hazardous driving conditions. This system has helped reduce the amount of salt and sand applied to its roadways by 70% since 1990. By reducing the amount of de-icing material on the roadway, NDOT reduces the potential impact to water quality and reduces later maintenance work to clean out sediment from vaults and dispose of the waste material.

**E.2. Drainage System Maintenance Activities**

Section 4.14.1.5 of the 2004 Permit requires NDOT to remove all waste from inlets that pose a significant threat to water quality on an annual basis prior to the winter season. For those inlets that contain significant materials the Permit requires NDOT to consider investigating them under NDOT's illicit discharge program to determine whether enhanced BMPs are required. The 2005 SWMP states that NDOT would establish a cleaning schedule as well as tracking and reporting procedures for the drainage system by 2006. Section III.P through Q of the 2010 Permit requires

NDOT to implement specific BMPs to minimize discharges to and from the storm sewer system, and to report the amount of waste removed from the system.

NDOT staff indicated its maintenance crews clean all drop inlets and interceptors within the Tahoe Basin annually, and half of all culverts annually within Las Vegas. NDOT utilizes a Maintenance Management System (MMS) database to track all of NDOT's maintenance activities, including maintenance of the drainage system. The audit team observed a demonstration of MMS where NDOT explained that it uses information from the system to identify geographic areas that may lead to public safety hazards. For example, NDOT uses MMS to track the amount of debris removed from various locations to prevent flooding. However, the MMS only tracks geographic location and general information about their storm system (e.g., culverts); the MMS does not contain specific information about individual storm water features, such as inlets, outfalls, or other elements of the drainage system. NDOT should expand the existing database to add major outfalls and other storm water system attributes to improve how they track the amount of debris removed from the drainage system, schedule maintenance and form programmatic decisions (e.g., whether enhanced BMPs are required).

#### *Potential Permit Violation*

*NDOT has failed to identify inlets that pose a significant threat to water quality. [2004 Permit Section 4.14.1.5.1]*

NDOT has not determined which, if any, inlets pose a significant threat to water quality. Further, while NDOT has a schedule for cleaning drop inlets and interceptors in the Tahoe Basin and Las Vegas, NDOT has not developed a plan to identify those that pose a significant threat to water quality for other areas of the state. NDOT does summarize in their annual report the amount of wastes removed from certain storm features in certain portions of the state, but does not detail whether the amounts removed are significant or could warrant additional BMPs.

### **E.3. Maintenance Facilities**

Section 4.14.1.6 of the 2004 Permit and Sections III.L through N and III.S describe NDOT's requirements for maintenance facilities.

NDOT operates 49 maintenance facilities statewide. NDOT staff at larger maintenance facilities performs major repair work of its fleet, while staff at smaller facilities performs minor maintenance of vehicles such as oil and antifreeze changes. Many facilities have capacity to store salt/brine and sand and have wash racks to clean vehicles and equipment. NDOT is in the process of building storage facilities at all maintenance yards to store salt/sand indoors, which will reduce the amount of brine/salt contaminants that may enter the on-site storm drains. NDOT reported that fifteen salt and sand storage sites at maintenance facilities have been covered in the last year alone. EPA observed an uncovered salt/sand storage pile at the intersection of U.S. 95 and S.R. 795 north of Winnemucca, NV. The pile is within Nevada's right-of-way for the highways, and no BMPs were noted at the location. As it continues to address salt and sand storage, NDOT should assess its staging locations, developing site-specific BMPs as needed.

The EPA audit team visited several maintenance facilities in all three districts. EPA observed compliance issues at several maintenance facilities including active unauthorized non-storm

water discharges, improper storage of batteries and oily equipment, and evidence of spills. Facility-specific observations are reported in Appendix B of this report.

During field visits, EPA discussed material mining sites with NDOT representatives. NDOT indicated they have over 3,000 such locations throughout Nevada. NDOT should analyze whether specific mining facilities within their control are industrial facilities subject to storm water permitting requirements.

*Potential Permit Violation*

*NDOT has failed to develop Storm Water/Facility Pollution Prevention Plans for all maintenance facilities. [2004 Permit Section 4.14.1.6.1, and 2010 Permit Section III.S]*  
During the audit EPA requested Facility Pollution Prevention Plans (FPPPs) from NDOT for every maintenance facility visited, but NDOT staff indicated FPPPs had not been developed for any of their maintenance facilities.

**F. Monitoring, Recordkeeping and Reporting**

Section 5 of 2004 Permit and Section IV of the 2010 Permit describes monitoring, record keeping, and reporting requirements. NDOT is required to submit an annual monitoring plan to NDEP no later than October 1 of each year. In developing the plan, NDOT shall evaluate and update as necessary how monitoring may assist in making decisions about program compliance.

Based on interviews with staff and a review of the annual reports and other materials, NDOT is conducting monitoring at the following locations:

- Lake Tahoe – precipitation events have been sampled since 2005 as part of the EIP Phase III Master Plan for highway runoff characterization, BMP effectiveness, and operation monitoring. Twenty three interceptor and pre-treatment vaults in the Lake Tahoe Basin are sampled for a variety of parameters.
- Clear Creek – NDOT partnered with USGS to conduct in-stream turbidity monitoring.
- Carson City Bypass – NDOT monitors grab samples for general characterization and discharge quality of the wetland BMP.
- I-580 - NDOT conducts Water Quality and BMPs effectiveness monitoring at several creeks and at 15 BMP effectiveness monitoring sites.

*Potential Permit Violation*

*NDOT failed to submit a storm water monitoring plan for 2010 and 2011 which evaluated how monitoring may assist in making decisions about program compliance, the appropriateness of indentified BMPs, and progress toward achieving identified measurable goals. [2004 Permit Section 5.1.1 and 2010 Permit Section IV.A.1]*

When EPA requested a copy of the two most recent monitoring plans, NDOT staff indicated they had not created monitoring plans for 2010 or 2011. Further, the 2009 monitoring plan failed to include an evaluation of how monitoring may assist in making decisions about program compliance, the appropriateness of identified BMPs, and progress towards achieving measureable goals.

## **Appendix A**

### **Catalog of Materials Supplied by NDOT**

Materials listed in this appendix are not included in submission of this audit report to NDOT. Copies of materials noted below are maintained as cataloged in U.S. EPA Region 9 records and can be made available upon request. These materials were not generated by U.S. EPA.

- A.1 – 2004 NPDES Permit NV0023329
- A.2 – 2010 NPDES Permit NV0023329
- A.3 – 2005 Storm Water Management Plan
- A.4 – 2005 Clear Creek Storm Water Management Plan
- A.5 – Planning and Design Guide
- A.6 – Construction Site BMP Manual
- A.7 – Inventory of Active Material Sites
- A.8 – USGS Water Quality Report For Clear Creek “Sediment Loads and Yield and Selected Water-Quality Parameters in Clear Creek, Carson City, and Douglas County, NV, Water Years 2004-2007” 2009
- A.9 – Kingsbury Grade, SR 207, SWPPP
- A.10 – TRPA Permit for Kingsbury Grade Project
- A.11 – Training Log
- A.12 – Training Power Point Presentation for NDOT Construction Inspectors
- A.13 – Painted Rock SWPPP
- A.14 – Painted Rock Weekly Inspection Reports
- A.15 – I-580 SWPPP
- A.16 – I-580 Construction Inspection Report 6.24.2011
- A.17 – I-580 Temporary Working in Waters Permit # TNEV2007475, May, 2007
- A.18 – I-580 Notice of SWPPP Renewal / CGP NOI
- A.19 – I-580 U.S. ACE §404 Permit #199825095
- A.20 – I-580 BMP Installation Decision Making Process
- A.21 – I-580 Turbidity Data (Galena Creek Bridge)
- A.22 – I-580 Detention Basin Sand/Oil Interceptor Volumes
- A.23 – I-580 Narrative/Photo Documenting the 8.12.11 BMP Corrective Actions near Ophir Creek
- A.24 – Lake Tahoe Storm Water Monitoring Report (2005-2010) Compact Disk
- A.25 – NDOT Organizational Chart
- A.26 – Nevada Contractors Field Guide for Construction Site BMPs
- A.27 – Construction Site BMP Field Manual
- A.28 – NDOT Silver Book Storm Water BMP Specification “Pull Sheets”
- A.29 – I-15 Design Build Inspection Reports
- A.30 – Wellington Maintenance Station Best Management Plan
- A.31 – Mountain Springs Best Management Plan
- A.32 – Checklist for maintenance facility inspections
- A.33 – Blank Weekly Construction Site Discharge Inspection Checklist for NDOT Inspectors
- A.34 – Materials from Winnemucca Maintenance Station Inspection
- A.35 – Sign-In Sheets for Kick-Off and Close-Out Conferences
- A.36 – 2008, 2009, and 2010 Annual Reports

## Appendix B

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### Summary of Audit Schedule

The following summarizes the site visits performed by EPA's during the four-day Storm Water Audit of NDOT's MS4 Permit. Specific Reports generated by EPA during the site visits are listed below:

- Tuesday, August 9th – Office interview NDOT Headquarters, Environmental Services Division
- Wednesday, August 10th – Carson City Maintenance Facility, erosion control retro-fit projects and the Spooner Summit Decant Facility in the Clear Creek Watershed, and the Kingsbury Grade Sediment Control Project in the Lake Tahoe Basin
- Thursday, August 11th – District maintenance facilities and construction sites:  
District 1 – Maintenance Facilities – Mountain Springs and Las Vegas South  
District 1 – Construction Sites – 160 Lane Widening and Las Vegas design-build  
District 2 – Maintenance Facility – Reno/Sparks  
District 2 – Construction Sites – I-580 and I-80 at Fernley  
District 3 – Maintenance Facility – Winnemucca
- Friday, August 12th – Close-out conference

### Reports of Site Inspections / Visits Performed by U.S. EPA

- B.1 – Carson Maintenance Station
- B.2 – Clear Creek Watershed
- B.3 – Spooner Summit
- B.4 – I-80 Painted Rock Project
- B.5 – I-580 Project
- B.6 – District 1 Materials: I-15 Design-Build, 160 Road Widening, South Maintenance Facility, and Mountain Springs Maintenance Facility
- B.7 – Reno Sparks Maintenance Facility
- B.8 – Winnemucca Maintenance Facility
- B.9 – Material Extraction Pit



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Clean Water Act Compliance Office  
Inspection Report

Site Location: *Carson City Maintenance Facility.*

Date and Time of Visit: 8/10/11

Entry: 0800 hrs

Exit: 1030 hrs (approx)

Site Owner and/or Operator: Nevada Department of Transportation

Site Contact: James Murphy or Robert Piekarz

Conducted by: Luis Garcia-Bakarich, David Wampler and John Tinger (all - EPA)

Accompanied by: Steve McGoff, Joe Maez and Chris Gravenstein (all – NDEP)

Summary Prepared by: Luis Garcia-Bakarich

**Site Summary**

The Carson City Maintenance Facility had multiple uses including motor pool, motor pool maintenance, heavy equipment pool, heavy equipment maintenance, salt and brine storage, sand/salt/brine spreader staging, snow removal equipment staging, surplus material and obsolete equipment storage, herbicide/pesticide storage, fueling depot(s), vehicle rinsing rack and integrated water truck filling station, and vehicle washing.

No facility SWPPP had been developed. No site map had been developed. No physical storm water BMPs were implemented.

**Site Observations**

- Storm drain inlets were not protected or labeled.
- There were no perimeter controls for the facility.
- Oily leaks were observed where absorbent materials had been applied, but soiled absorbent had not been cleaned up.
- Only one drip pan was observed deployed at the facility despite numerous active and chronic leaks.
- Evidence of oil from hydraulic lines associated with salt/sand spreaders were noted throughout the yard, especially at the spreader staging area. All, but one, of the spreaders were staged in such a way that their hydraulic lines dangled and allowed excess fluids to drain from the lines onto the ground. No drip pans were observed at the sand/salt/brine spreader staging area.

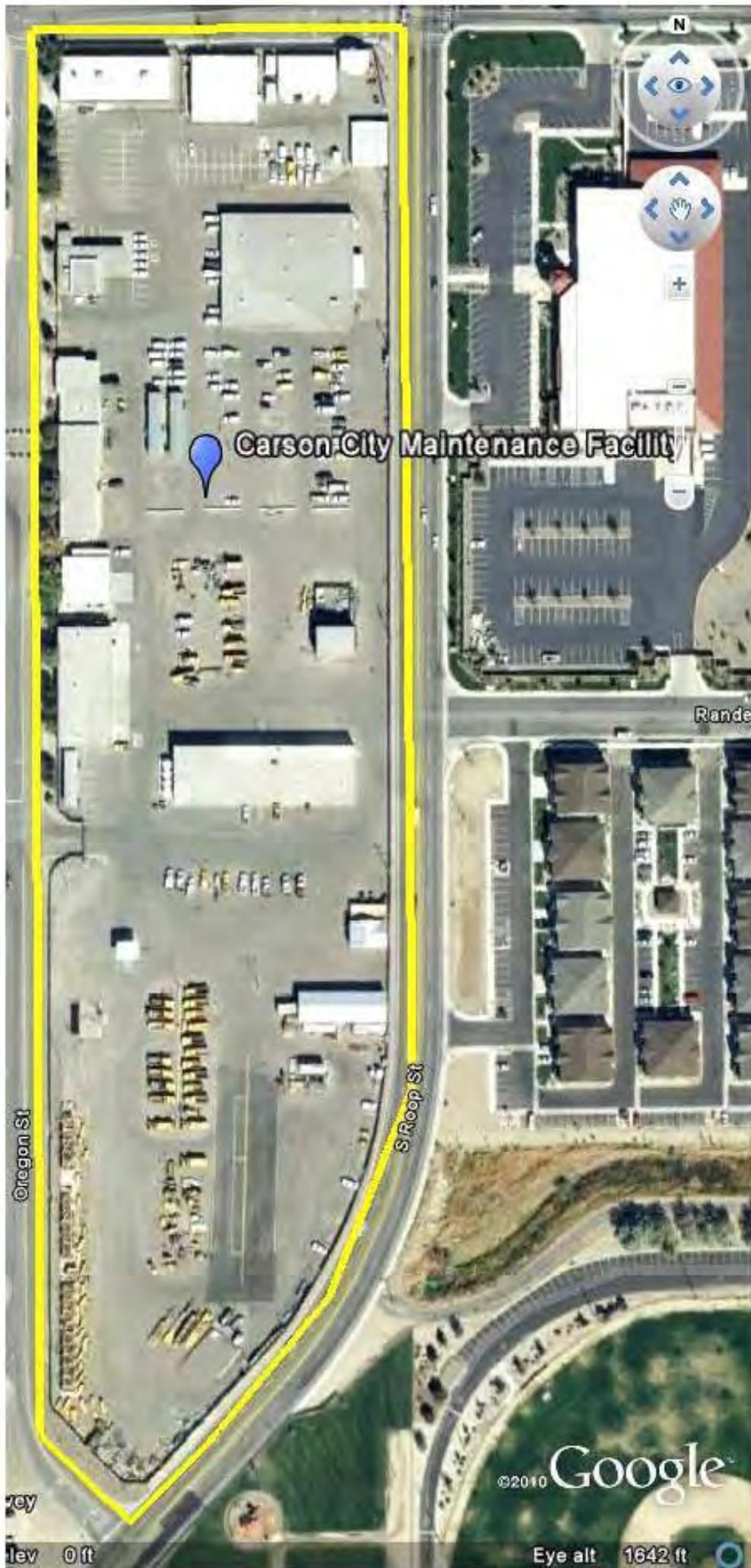
- An open and leaking bucket of what appeared to be hydraulic fluid was observed outside near a storm drain.
- Fuel kit present at fueling station but it was not labeled.
- A road oiler rig was observed with an active leak. Leaks appeared frequent from this piece of equipment based on the accumulated absorbent material at the location.
- Wash water, an unauthorized non-storm water discharge, was observed flowing in a swale towards storm drains. Although the wash rack was intended to drain to a settling basin that was piped to the sanitary sewer, the wash pad was improperly designed and rinsate was observed discharging to the storm drains. The storm drain inlet was clogged with sediment and debris indicating that these illicit discharges had been occurring for a long time.
- Uncovered used vehicle batteries were stored outside awaiting pick-up.

### Attachments

Aerial image of location

Photo Log

Site Photos



## **NDOT MS4 Audit Photo Log – Carson City Maintenance Facility 8.10.2011**

### **Photos taken by Luis Garcia-Bakarich**

**IMGP0570** – Vehicle wash area. Central drain discharges to sand/oil interceptor and then sanitary sewer system. A rolling berm is at the entrance to the covered facility.

**IMGP0571** – Used oil pump drains used oil from drip pans and collection barrels and discharges the oil to the used oil containment vessel on the other side of the wall (outside).

**IMGP0572** – Used oil containment vessel with secondary containment. Feed line does not have secondary containment. Dumpster is uncovered, allowing potential contamination of storm water by dumpster contents and residues.

**IMGP0573** – Diesel powered back-up generators on concrete pads with protecting bollards.

**IMGP0574** – Covered fueling station with labeled spill kit.

**IMGP0575** – Covered equipment storage area.

**IMGP0576** – Uncovered materials stored along the fence line. Yard is generally in-sloped, however some materials over-hang the break-in-slope and potentially polluted storm water could discharge off-site to Carson City MS4.

**IMGP0577** – Uncovered sweeper cores stored on the yard. It was unclear at the time of the site visit if these were new or used cores. Used cores can contain sweeping residues that can pollute storm water discharges.

**IMGP0578** – Rear of a sand/brine rig in the maintenance yard.

**IMGP0579** – Accumulated salt residue at the discharge nozzle for the brine system, blistering paint and rust on the sand spreading chute.

**IMGP0580** – Presumed hydraulic oil tank, with underlying staining presumed from the depicted tank.

**IMGP0581** – Recent spill under a piece of equipment, absorbent and a drip pan is deployed.

**IMGP0582** – Equipment maintenance staging area – denoted by the painted white perimeter line.

**IMGP0583** – Entrance to the salt storage shed.

**IMGP0584** – Entrance to the salt storage shed.

**IMGP0585** – Maintenance yard with equipment maintenance staging area to the right side of the frame and unprotected storm drain drop inlet above the “K” from ‘KEEP CLEAR’ that does receive storm water runoff from the equipment maintenance staging area.

**IMGP0586** – Fugitive oil and oil tracks originating from inside the vehicle bay. These pollutants could become entrained in storm water discharges.

**IMGP0587** – Uncovered empty-barrel storage area with staining on the ground.

**IMGP0588** – Obsolete tire stockpile.

**IMGP0589** – Pesticide storage shed.

**IMGP0590** – Obsolete tire stockpile adjacent to storm drain.

**IMGP0591** – Empty storage tanks with open tops and open drains. If not properly cleaned, storm water could enter through the top opening and discharge out the drain with entrained pollutants. The LPG/Propane tanks was not connected to any features, it did not exhibit “No Smoking” signs, and it was not barricaded from motor vehicles.

**IMGP0592** – Uncontained pile of asphalt patch material.

**IMGP0593** – Uncontained pile of asphalt patch material and other materials.

**IMGP0594** – Uncovered dumpsters and sediment debris.

**IMGP0595** – Uncovered diesel tank with open cap.

**IMGP0596** – Partially covered sand/gravel bags. Plastic bags were partially deteriorated and beginning to leak material. Tarps were also partially deteriorated condition and also partially pulled back.

**IMGP0597** – Storm water ditch outfall to a rock-lined swale at the south end of the yard.

**IMGP0598** – Storm water collection ditch with salt residue. Front end of sand/brine rig racks.

**IMGP0599** – Western fence line behind the sand/brine rigs, grade is sloped off site and accumulated salt residue is visible along the fence line.

**IMGP0600** – Rear of a sand/brine rig with oil staining beneath the sand spreader chute.

**IMGP0601** – Hanging hydraulic lines were contributing to staining on the yard surface.

**IMGP0602** – The only rig with hydraulic lines tucked away, and the only rig with no oil staining at the front of the rig. The other rigs down the line had hanging hydraulic lines and had oil staining underneath.

**IMGP0603** – Bucket of ‘Tractor Oil’ with oil staining in the foreground. Trailers to the left of the bucket are situated over a drop inlet where flowing water has heard.

**IMGP0604** – Drop inlet where flowing water was heard.

**IMGP0605** – Catch basin for wash rack.

**IMGP0606** – Wash rack and water tank filling station.

**IMGP0607** – Non-storm water discharges from the wash rack flowing towards drop inlets.

**IMGP0608** – Drop inlet with accumulated sediment and debris down gradient from the wash rack.

**IMGP0609** – Drop inlet with accumulated debris and trash down gradient from the wash rack.

**IMGP0610** – Covered fueling station with spill kit.

**IMGP0611** – Source of fugitive oil identified in IMGP0586. A road oiler continued leaking after it was parked, and absorbent had been previously deployed for related issues.

**IMGP0612** – Rear of road oiler from outside after the garage door had been opened.

**IMGP0613** – Rear of road oiler from outside after the garage door had been opened.

**IMGP0614** – Uncovered spent batteries outside the stock room.

**IMGP0615** – Used oil barrels in encapsulating tote (Open).

**IMGP0616** - Same encapsulating tote as IMGP0615 (Closed).



IMGP0570.JPG

NDOT MS4 Audit - Carson City Maintenance Station 8.10.11

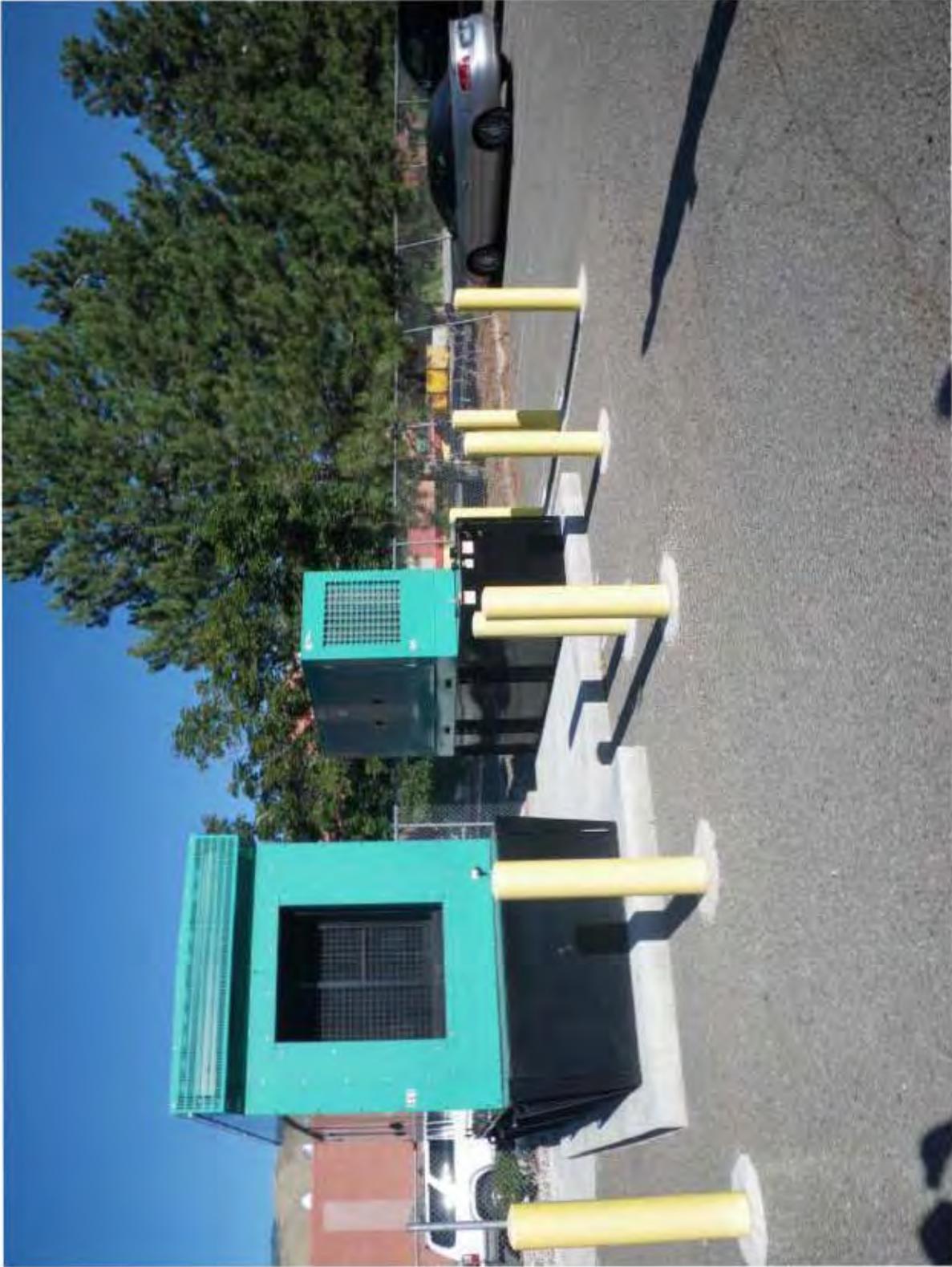


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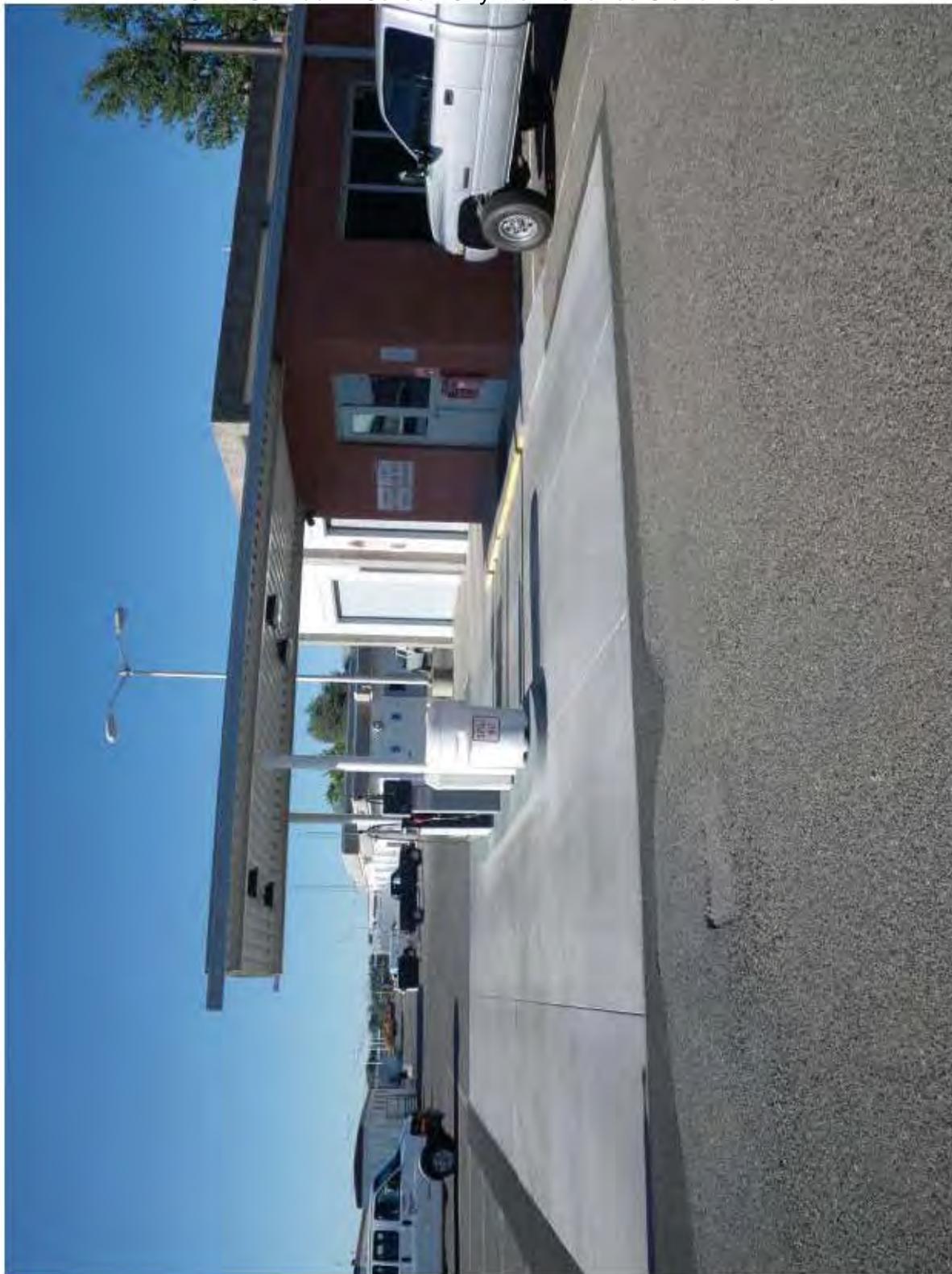
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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11

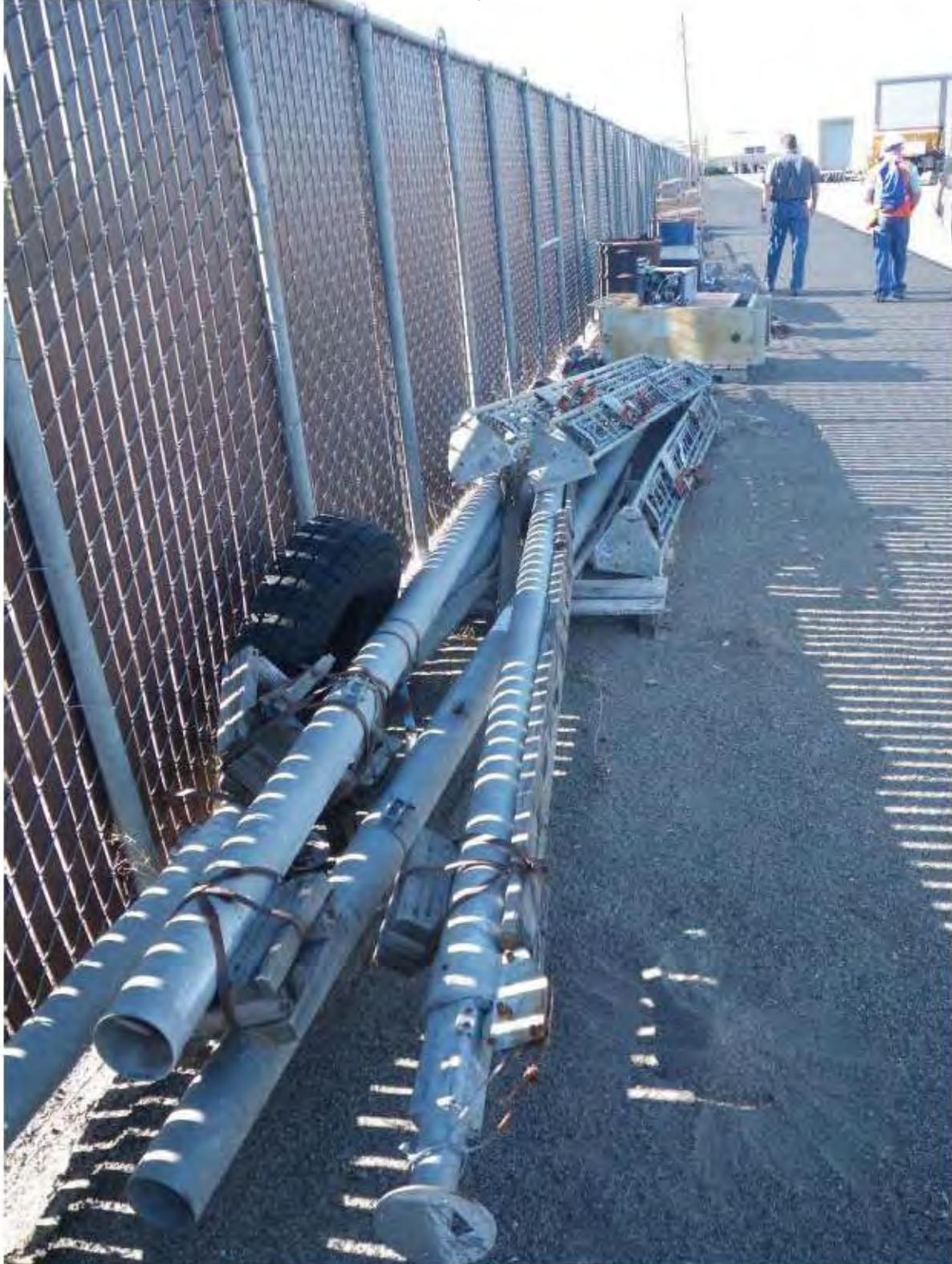


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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



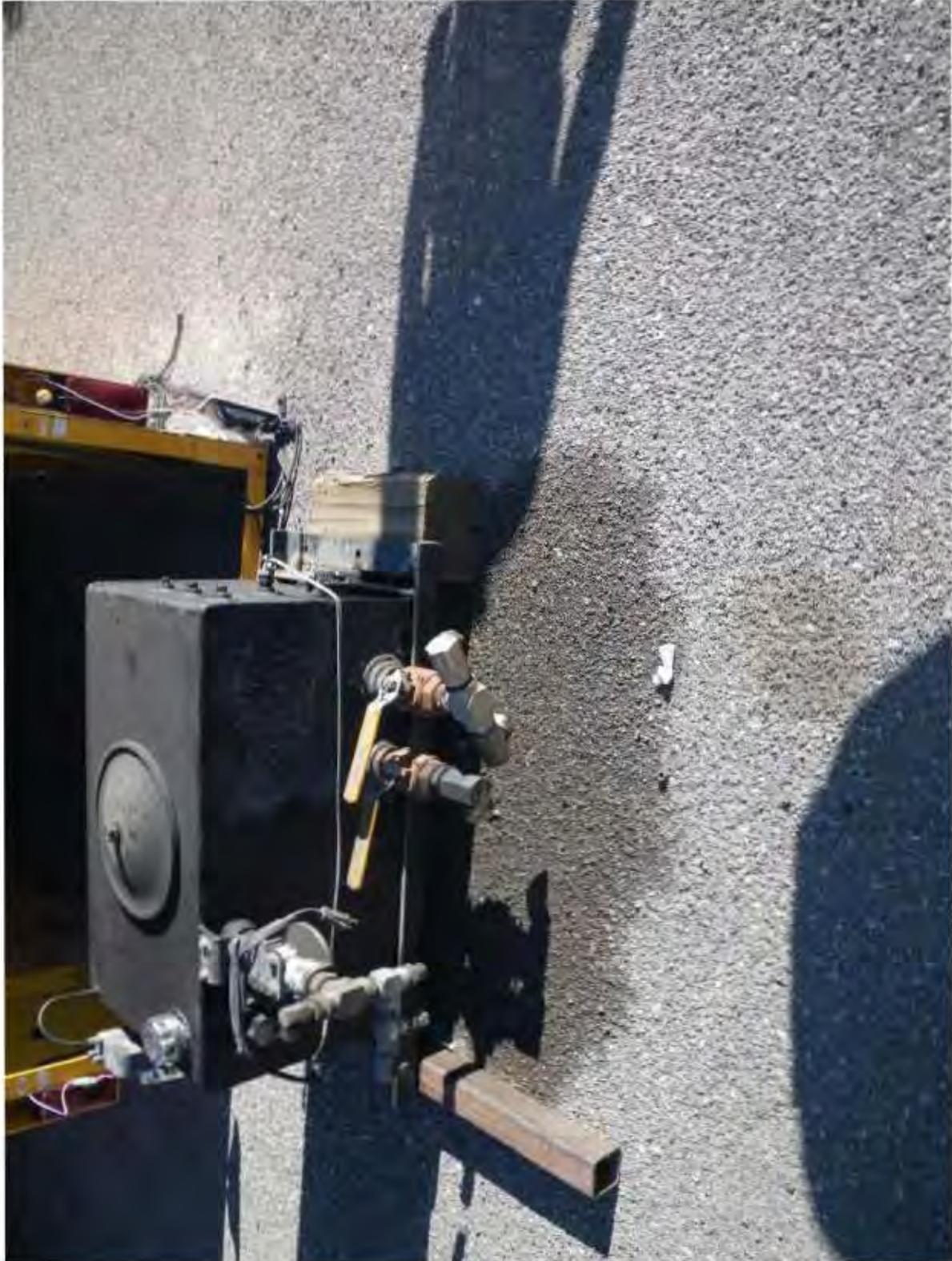
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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



IMGP0582.JPG

NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



IMGP0584.JPG

NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



IMGP0585.JPG

NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



IMGP0586.JPG

NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



IMGP0587.JPG



IMGP0588.JPG

NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



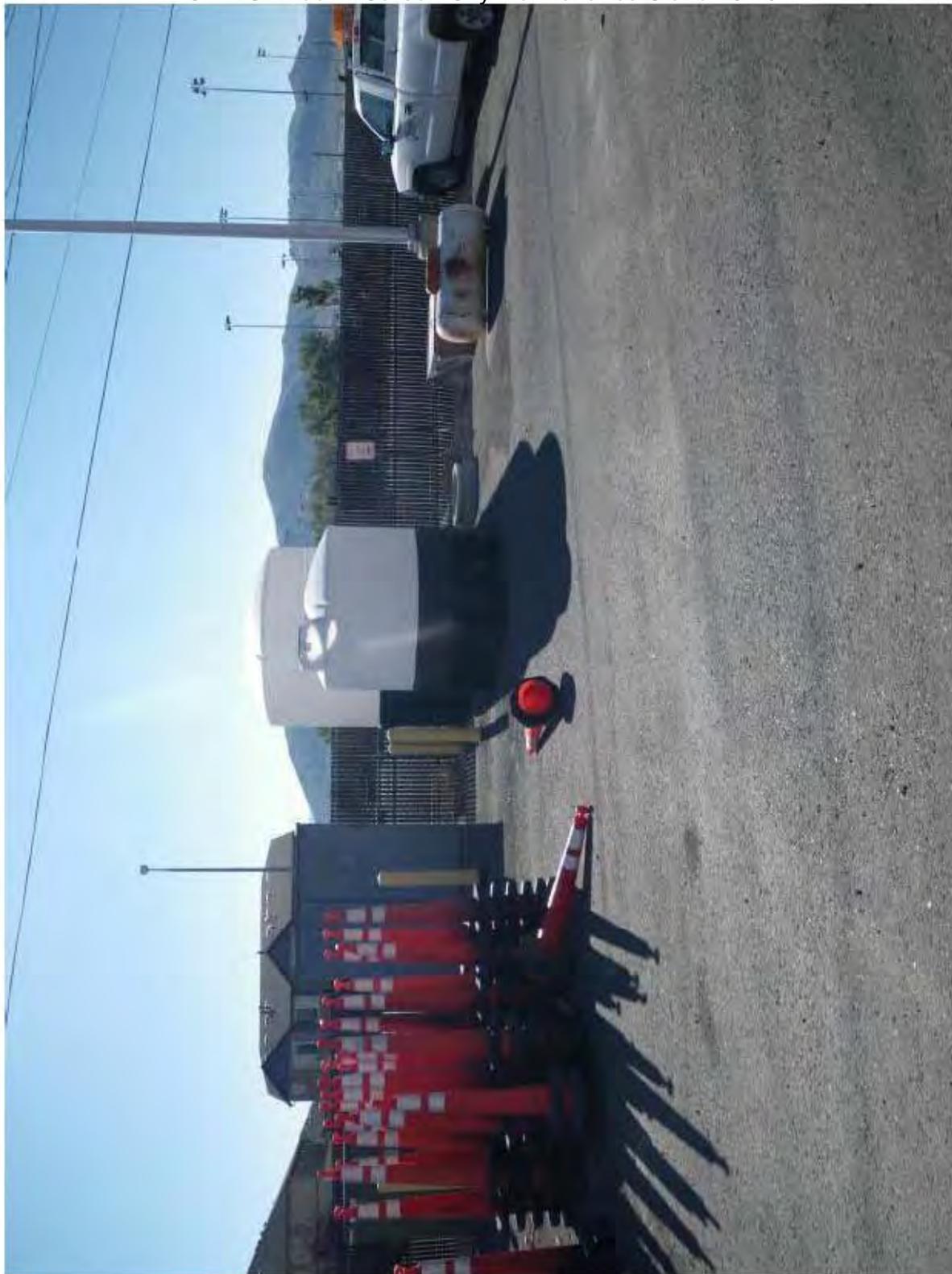
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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



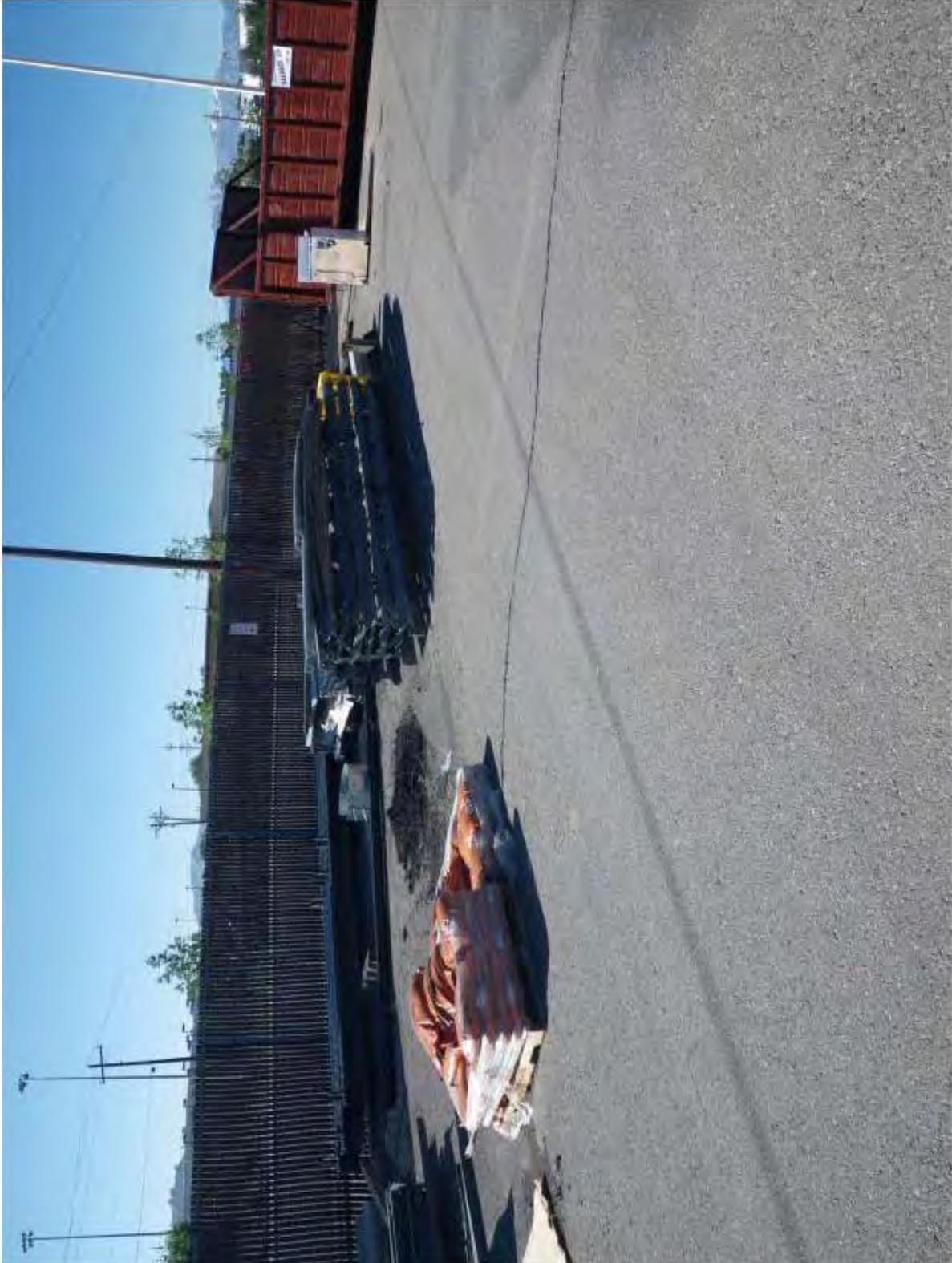
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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



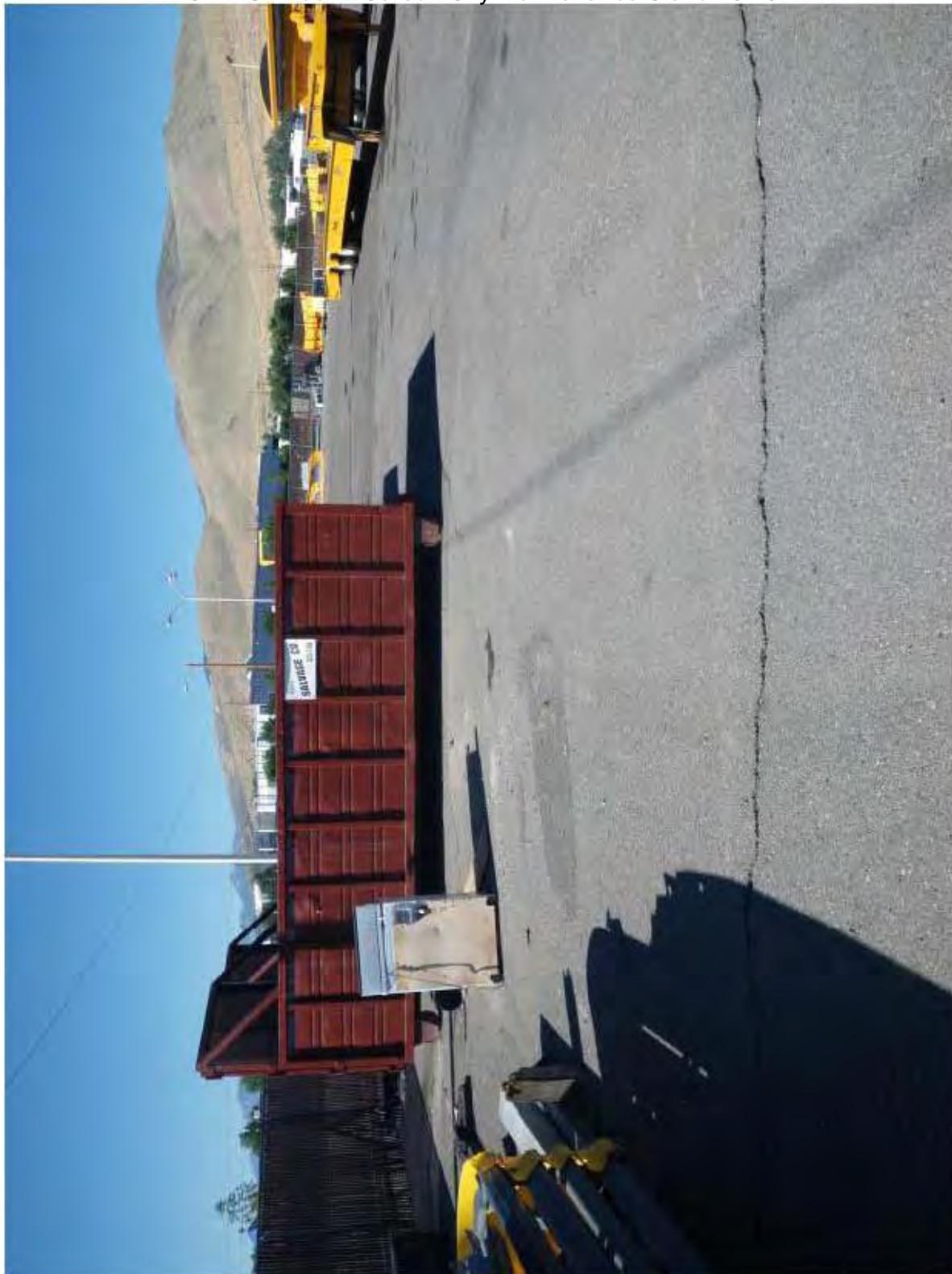
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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



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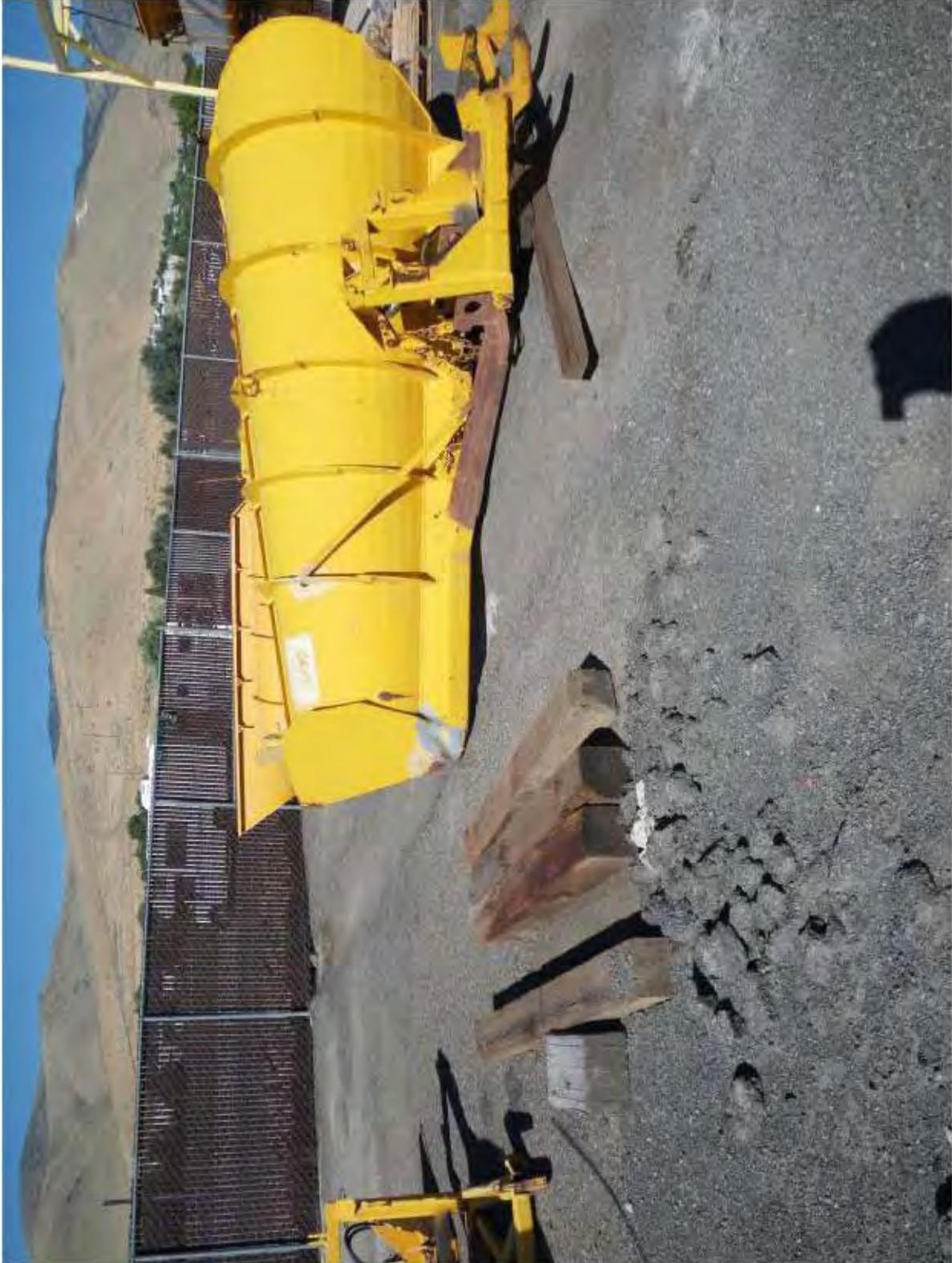
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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



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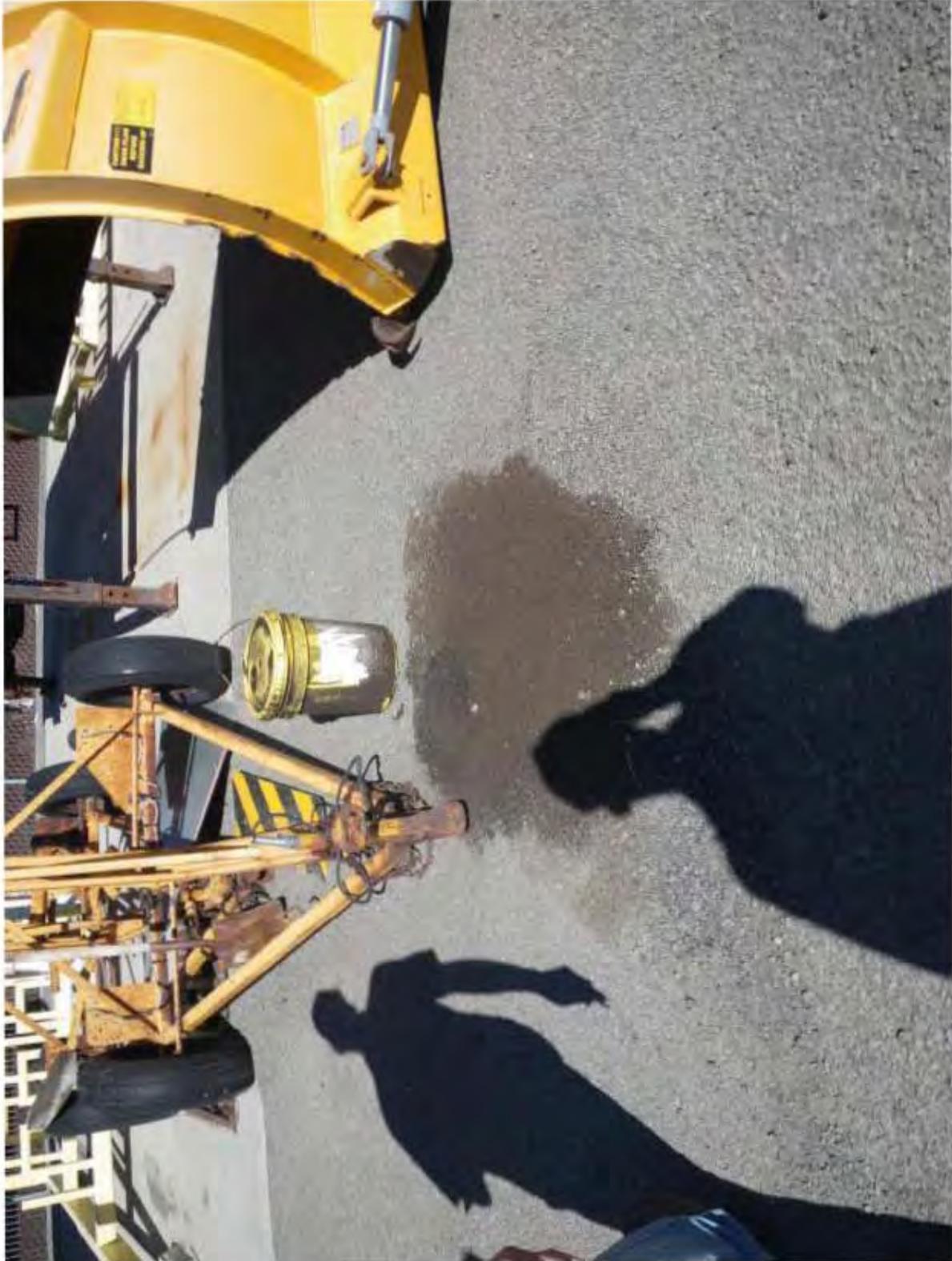
NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



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IMGP0603.JPG

NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



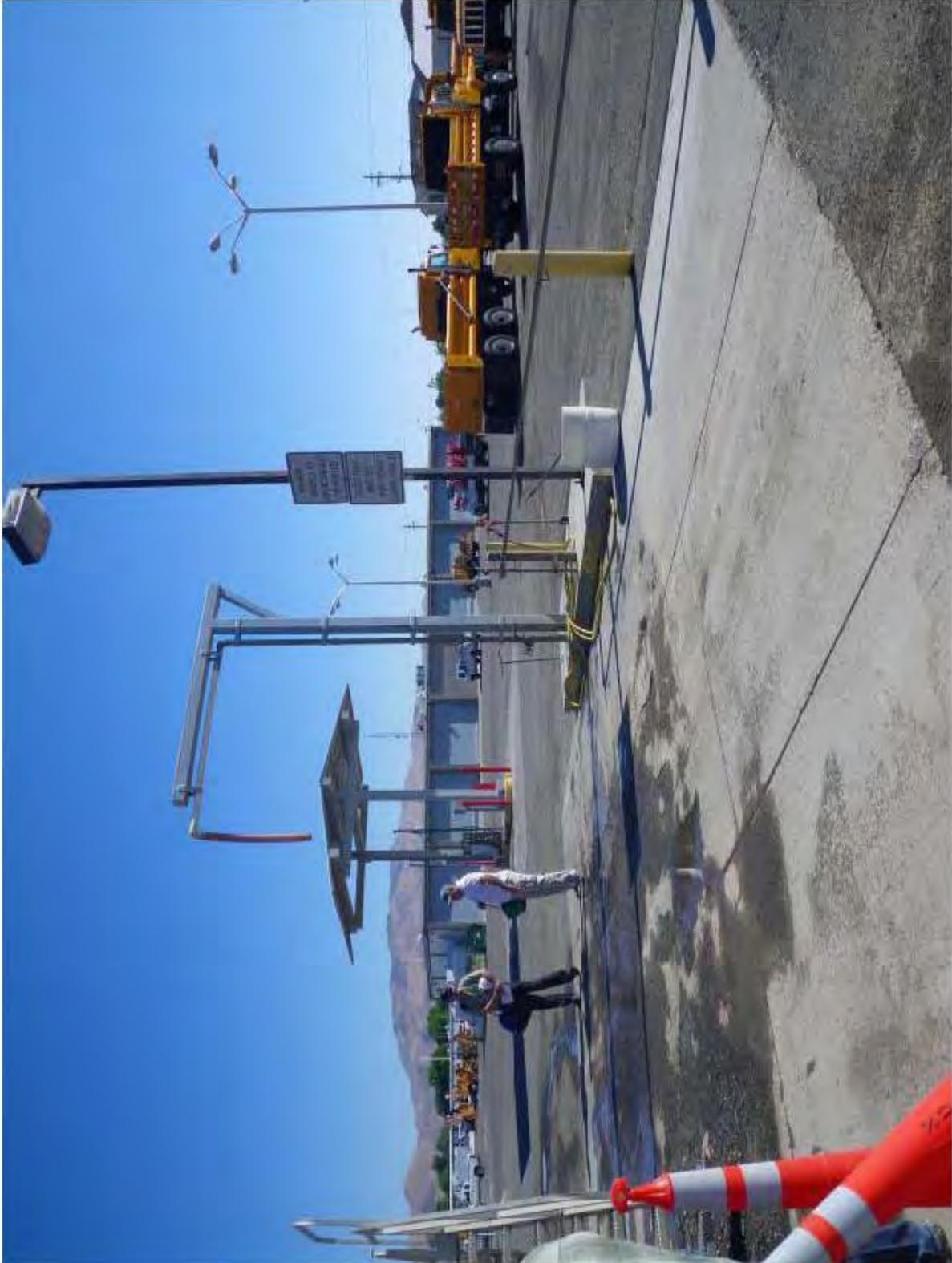
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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11

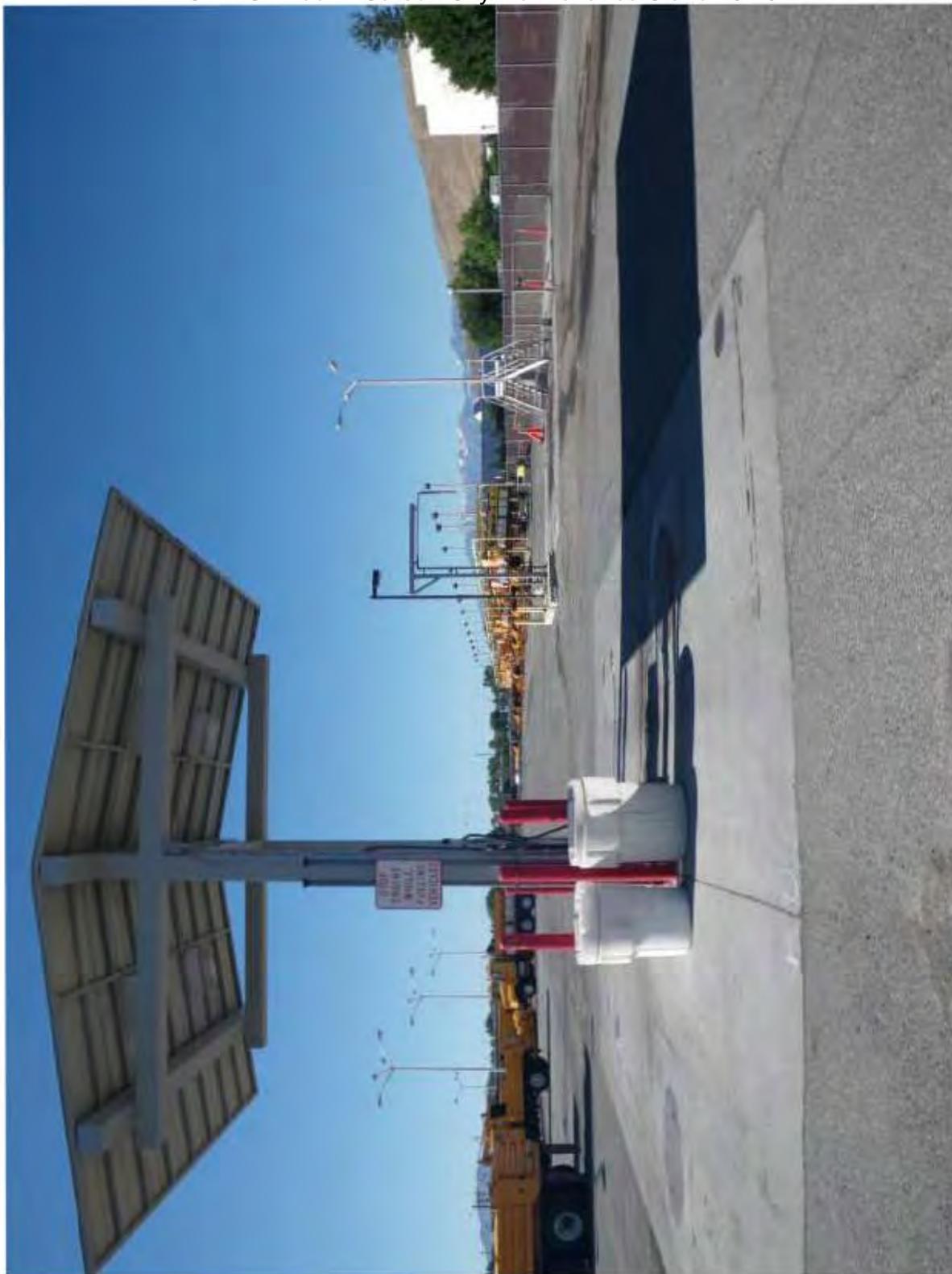


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NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



IMGP0610.JPG

NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



IMGP0611.JPG



IMGP0612.JPG



IMGP0613.JPG



IMGP0614.JPG

NDOT MS4 Audit - Carson City Maintenance Station 8.10.11



IMGP0615.JPG



IMGP0616.JPG



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Clean Water Act Compliance Office  
Inspection Report

Site Location: *Clear Creek Watershed Retrofit Drainage Improvements.*

Date and Time of Visit: 8/10/11

Entry: 1100 hrs

Exit: 1230 hrs (approx)

Site Owner and/or Operator: Nevada Department of Transportation

Site Contact: James Murphy or Steve Cooke

Conducted by: Luis Garcia-Bakarich, David Wampler and John Tinger (all - EPA)

Accompanied by: Steve McGoff, Joe Maez and Chris Gravenstein (all – NDEP)

Summary Prepared by: Luis Garcia-Bakarich

**Site Summary**

NDOT is implementing several erosion control projects to mitigate impacts of storm water discharges in this highly erodible watershed. Since the individual activities had various associations to specific projects, areas may be generically described in the photo log.

**Site Observations**

- Temporary BMPs
- Retrofit BMPs
- Post construction BMPs

**Attachments**

Aerial image of location

Photo Log

Site Photos



**NDOT MS4 Audit – Clear Creek Watershed – US 50 – 8.10.2011**

**Photos taken by: Luis Garcia-Bakarich**

**IMG0617** – Title Shot

**IMG0618** – (Area 1) Gravel covered wide-spot and rock-lined channel to dissipate storm water runoff energy to reduce erosion within storm water conveyance channels. Culvert outfall directly below the truck in the image is the source for the majority of the flow in this portion of the channel.

**IMG0619** – (Area 1) Rock-lined channel and gravel on wide-spot surface.

**IMG0620** – (Area 1) Culvert inlet to pass storm water discharges under the highway to the outfall on the downhill side. To the left of the image is a culvert outfall from a drop inlet along the road way.

**IMG0621** – (Area 1) Culvert outfall noted in IMG0620.

**IMG0622** – (Area 1) Drop inlet that feeds the culvert and outfall noted in IMG0621.

**IMG0623** – (Area 2) Staging area for storm drainage channel rehabilitation and armoring project. Straw wattle separating aggregate staging area from transfer route to area of activity.

**IMG0624** – (Area 2) Staging area, picture taken from highway, culvert that discharges to drainage channel where rehab and armoring working is happening.

**IMG0625** – (Area 2) Drop inlet to culvert that discharges to drainage channel.

**IMG0626** – (Area 2) Drop inlet basin (same as IMG0625).

**IMG0627** – (Area 2) Drop inlet and discharge culvert to drainage channel.

**IMG0628** – (Area 2) Out fall of discharge culvert from drop inlet identified in IMG0625-627. Significant scour and head cut due to erosive nature of parent material is evident.

**IMG0629** – (Area 2) Bottom end of drainage channel project area that discharges to a creek.

**IMG0630** – (Area 2) Concrete headwall of drainage culvert that passes the creek under US 50.

**IMGP0631** – (Area 2) Shrubbery growing in the drainage channel between the outfall of the project area and the headwall of the culvert previously mentioned.

**IMGP0632** – (Area 3) Post construction stabilized and revegetated hillside.

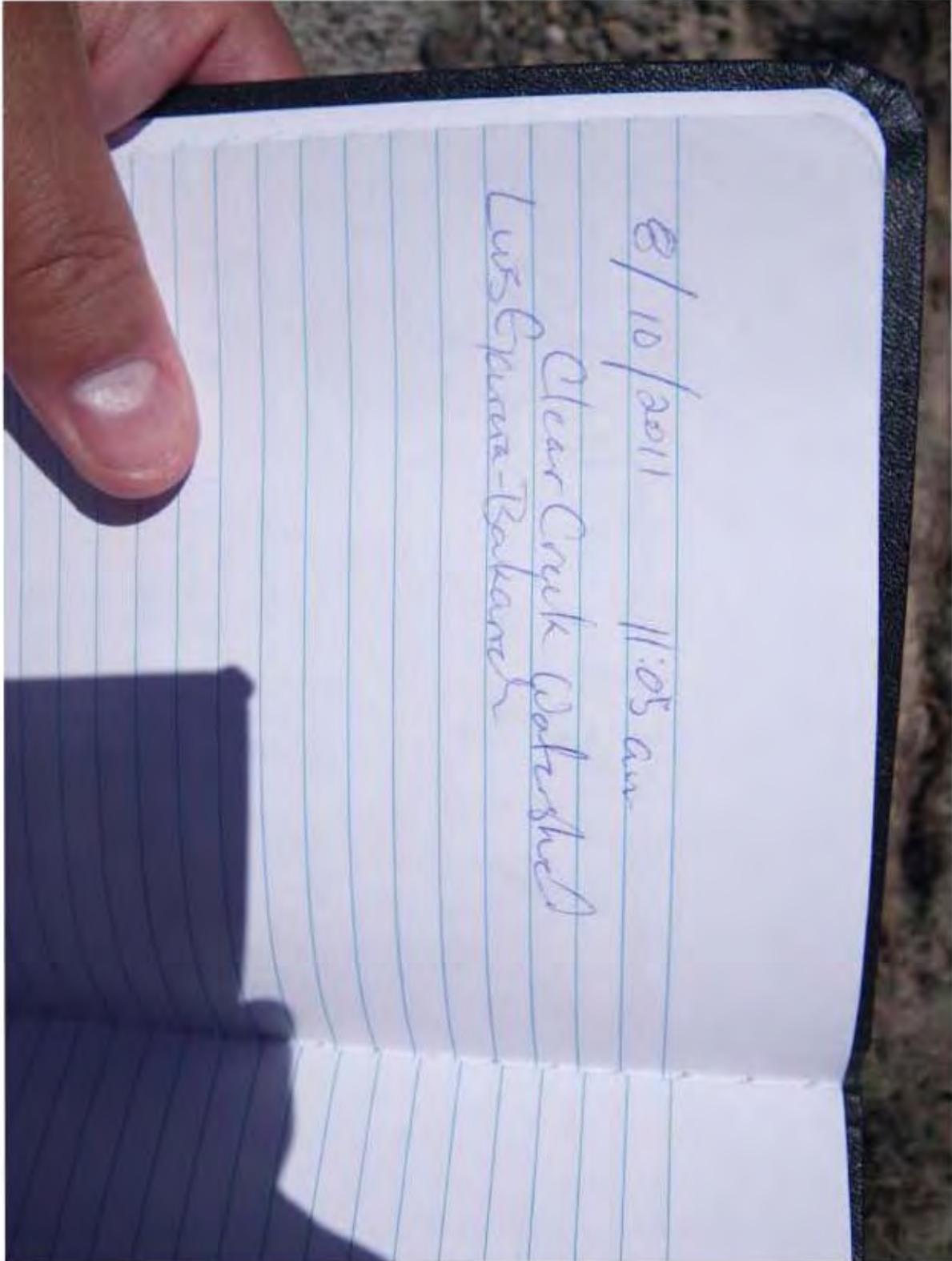
**IMGP0633** – (Area 3) Storm water detention basin with stabilized and revegetated hillside.

**IMGP0634** – (Area 3) Culvert out falls that discharge to the detention basin. Stabilized and revegetated hillside, and articulated blocks that serve as the bottom liner for the basin and promote infiltration of storm water.

**IMGP0635** – (Area 3) Storm water detention basin with stabilized and revegetated hillside, storm water culvert outfalls, and drop inlet for basin discharge.

**IMGP0636** – (Area 3) Outfall from detention basin.

**IMGP0367** – (Area 3) Rock-lined drainage channel for detention basin discharges.



IMGP0617.JPG

NDOT MS4 Audit - Clear Creek Watershed 8.10.11



IMGP0618.JPG



IMG0619.JPG



IMGP0620.JPG



IMGP0621.JPG



IMGP0622.JPG



IMGP0623.JPG

NDOT MS4 Audit - Clear Creek Watershed 8.10.11



IMGP0624.JPG

NDOT MS4 Audit - Clear Creek Watershed 8.10.11



IMGP0625.JPG



IMGP0626.JPG

NDOT MS4 Audit - Clear Creek Watershed 8.10.11



IMGP0627.JPG

NDOT MS4 Audit - Clear Creek Watershed 8.10.11



IMGP0628.JPG



IMGP0629.JPG

NDOT MS4 Audit - Clear Creek Watershed 8.10.11



IMGP0630.JPG

NDOT MS4 Audit - Clear Creek Watershed 8.10.11



IMGP0631.JPG



IMGP0632.JPG

NDOT MS4 Audit - Clear Creek Watershed 8.10.11



IMGP0633.JPG



IMGP0634.JPG



IMGP0635.JPG



IMGP0636.JPG

NDOT MS4 Audit - Clear Creek Watershed 8.10.11



IMGP0637.JPG



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Clean Water Act Compliance Office  
Inspection Report

Site Location: Spooner Summit Decant Facility.

Date and Time of Visit: 8/10/11

Entry: 1555 hrs

Exit: 1630 hrs (approx)

Site Owner and/or Operator: Nevada Department of Transportation

Site Contact: James Murphy or Steve Cooke

Conducted by: Luis Garcia-Bakarich, David Wampler (all - EPA)

Accompanied by: Joe Maez and Chris Grenvenstein (all – NDEP)

Summary Prepared by: Luis Garcia-Bakarich

**Site Summary**

The Spooner Summit Decant Facility is an unstaffed seasonal maintenance facility that has a covered sand/salt stock pile and a decanting basin for vacuum truck wastes. A bob-cat loader and a roll-off bin were staged at the facility and the bin was mostly filled with vacuum truck waste. (Later inquiries revealed that the hauling truck had mechanical problems and was taken out of service before the decanting basin could be completely cleared of waste material and disposed of at a landfill facility.) The decanting basin was lined with articulated concrete block. The basin had a culvert drain/outfall to a rock-lined tributary to Clear Creek with a manual gate to regulate flows, and at the time of the site visit, the gate was in the “open” position. Wastewater discharges from the culvert drain are unauthorized non-storm water discharges and may require separate NPDES permit coverage. Water within the decanting basin appeared to have over-topped the containment berm. Indicators of over-flow were observed along the top of the berm including floatable trash that had been screened by the vegetation on the tributary side of the containment berm and rilling on the tributary side of the berm near the discharge pipe. The rock lined tributary to Clear Creek had a straw wattle at the fence line, and the fiber roll was clearly not entrenched.

**Attachments**

Aerial image of location

Photo Log

Site Photos



Spooner Summit Decant Facility

## **NDOT MS4 Audit Photo Log – Spooner Summit Decant Facility 8.10.11**

**Photos taken by: Luis Garcia-Bakarich**

**IMGP0638** – Title shot

**IMPG0639** – Vacuum truck staged at the facility.

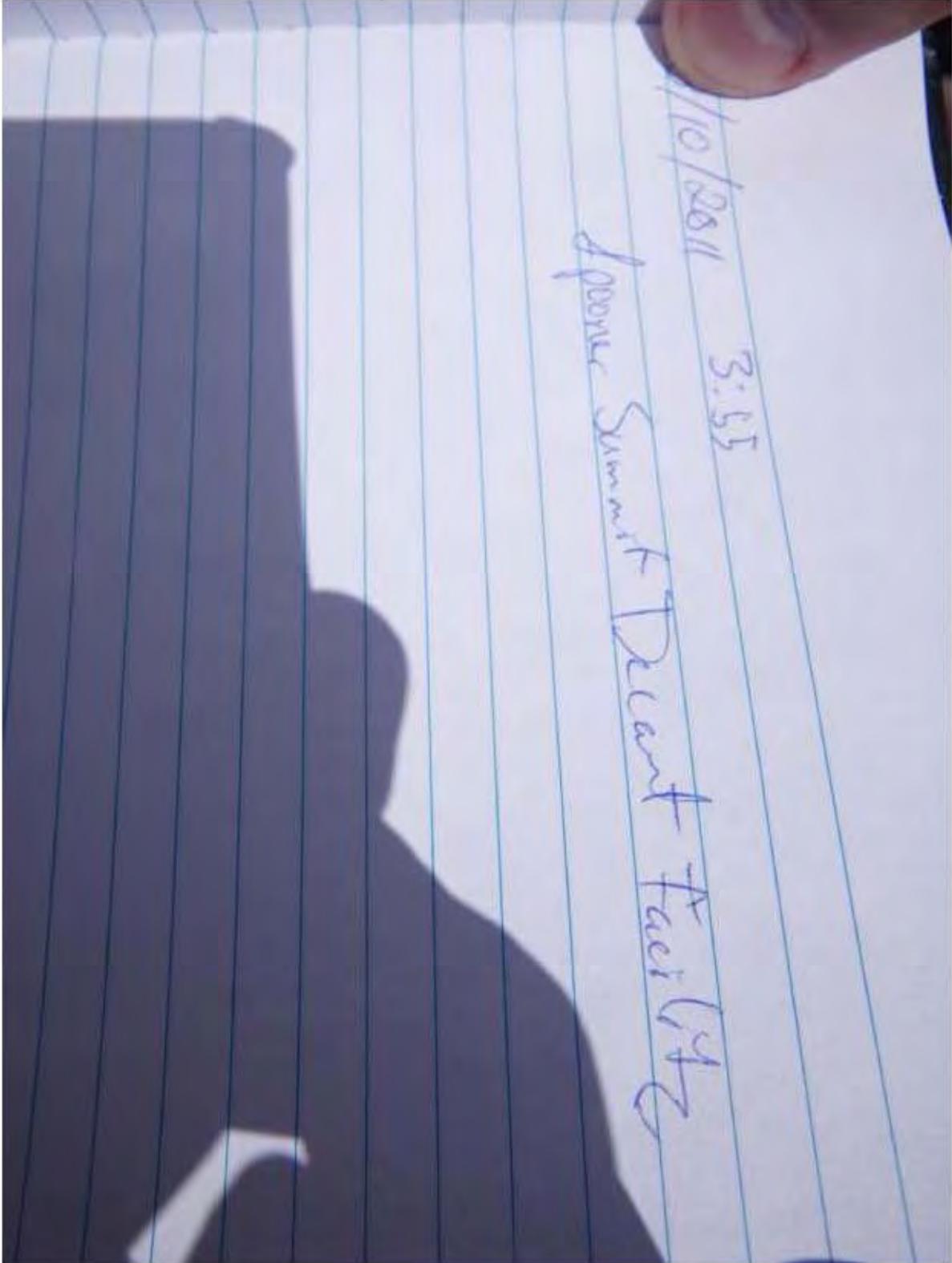
**IMGP0640** – Vacuum waste decanting pond. The pile of material is associated with pond clearance and maintenance activities in preparation for off-site disposal. The K-rail bisects the pond. Depicted is the dumping zone of the decant pond.

**IMGP0641** – Close-up of the waste material and pond lining.

**IMGP0642** – The back-half of the decant pond with an outfall gate (open). A Bobcat loader had been clearing the accumulated material along the right flank of the pond.

**IMGP0643** – The outfall culvert discharges into a rock-lined drainage channel. Accumulated sediment was observed in the channel resulting from opening the outfall gate during heavy runoff that was causing the pond to over-top its berm.

**IMGP0644** – Drainage channel where it exits the facility to a culvert that will pass it under US 50 and into Clear Creek. Accumulated sediment and a fiber roll deployed in the channel at the fence line was observed.



IMGP0638.JPG



IMGP0639.JPG

NDOT MS4 Audit - Spooner Summit Decant Facility 8.10.11



IMGP0640.JPG

NDOT MS4 Audit - Spooner Summit Decant Facility 8.10.11



IMGP0641.JPG



IMGP0642.JPG

NDOT MS4 Audit - Spooner Summit Decant Facility 8.10.11



IMGP0643.JPG

NDOT MS4 Audit - Spooner Summit Decant Facility 8.10.11



IMGP0644.JPG



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Clean Water Act Compliance Office  
Inspection Report

Site Location: Painted Rock Project (I-80 @ Fernley)

Date and Time of Visit: 8/11/11

Entry: 0830 hrs

Exit: 1030 hrs (approx)

Site Owner and/or Operator: Nevada Department of Transportation

Site Contact: James Murphy

Conducted by: Luis Garcia-Bakarich

Accompanied by: Joe Maez and Chris Gravenstein (all – NDEP)

Summary Prepared by: Luis Garcia-Bakarich

**Site Summary**

This project consisted of roadway improvement, drainage improvement, seismic retrofit of a bridge. Construction contractor was contouring shoulders and embankments to reduce impact to vehicles that drive off the roadway surface. Post construction BMPs which consisted of rock-lined swales and drainage channels. A bridge was being reinforced with additional concrete. Contracted over-sight personnel stated that construction contractor had been responsive to requests for maintenance of temporary BMPs. NDOT stated that hydro-seeding (“bonded fiber matrix”) is the selected final, site-stabilizing BMP for the areas or disturbance.

**Site Observations**

- Temporary BMPs were in place during the active construction.
- Wind-deposited sediments proved an ongoing challenge for the temporary and some permanent BMPs, to which the construction contractor had elected to increase maintenance versus developing more sophisticated BMPs.
- A silt fence that protected median outfalls to the Truckee River was improperly installed and inappropriately situated. The silt fence was set atop a concrete slab and not keyed into the ground, and the fence was situated across the drainage channel where flow was concentrated.
- At a bridge retro-fit project, a concrete washout had been established, however EPA observed cement operators washing a wheel-barrel and a shovel away from the washout basin.

- A contracted inspector stated that his storm water training consisted of on-the-job-training, and not the 40-hour construction site inspector training.

**Attachments**

Aerial image of location

Photo Log

Site Photos



## **NDOT MS4 Audit Photo Log – Interstate 80 Roadway Improvement Project at Fernley**

**Photos by: Luis Garcia-Bakarich**

**IMGP0645** – Newly constructed culvert inlet that had been cleaned out and maintained after failure during a storm event. Accumulated wind-deposited sediment inundated the inlet basin, and sediment laden storm water caused a failure of the fiber roll. Sediment was cleared from the inlet, and the fiber-roll was re-keyed and staked.

**IMGP0646** – Close-up of culvert inlet, deposited sediments have been partially cleaned out.

**IMGP0647** – Title shot – photographer neglected to take the title shot prior to taking the first picture while in the field.

**IMGP0648** – Rehabilitated culvert inlet that had been cleaned out and maintained after failure during a storm event. Accumulated wind-deposited sediment inundated the inlet basin, and sediment laden storm water caused a failure of the fiber roll. Sediment was cleared from the inlet, and the fiber-roll was re-keyed and staked.

**IMGP0649** – Culvert out fall with accumulated sediments, vegetation, and trash.

**IMGP0650** – Drop inlet in the median protected by staked fiber roll.

**IMGP0651** – Rock-lined storm water pass-through and catchment basin that has been inundated by wind deposited sediments. Water would flow from left to right in the image. New head walls and culverts.

**IMGP0652** – Rock-lined storm water pass-through and newly constructed barrier wall with accumulated wind-deposited sediment.

**IMGP0653** – Rock-lined median culvert outfall.

**IMGP0654** – Rock-lined drainage channel that discharges at a “cattle-crossing”.

**IMGP0655** – Sign that had been removed while new barrier wall was being constructed.

**IMPG0656** – Construction debris piled up at the out fall of a rock-lined channel that discharges to a concrete channel and ultimately to the Truckee River. The silt fence spanned the concrete channel.

**IMGP0657** – Down-gradient of the silt fence.

**IMGP0658** – Same as IMGP0657, different angle for better lighting in the shadowed area.

**IMGP0659** – Rock-lined channel that ultimately discharges to the Truckee River through the silt fence depicted in IMGP0656-0658.

**IMGP0660** – Outfall of rock-lined channel to concrete flume with construction debris and silt fence.

**IMGP0661** – Silt fence and concrete flume outfall on opposite bank of Truckee River.

**IMGP0662** – Same as IMGP0661, however includes vegetated bank and Truckee River.

**IMGP0663** – Bathtub ring on the silt fence and an area where the water tunneled under the silt fence that was not trenched-in over and immediately adjacent to the concrete flume.

**IMGP0664** – Opposite side of the silt fence where tunneled water emerged.

**IMGP0665** – At a bridge retro-fit project, cement truck is washing out a wheel barrel across the road from the concrete washout (also pictured on the right-hand margin of the photo).

**IMGP0666** – Concrete washout.

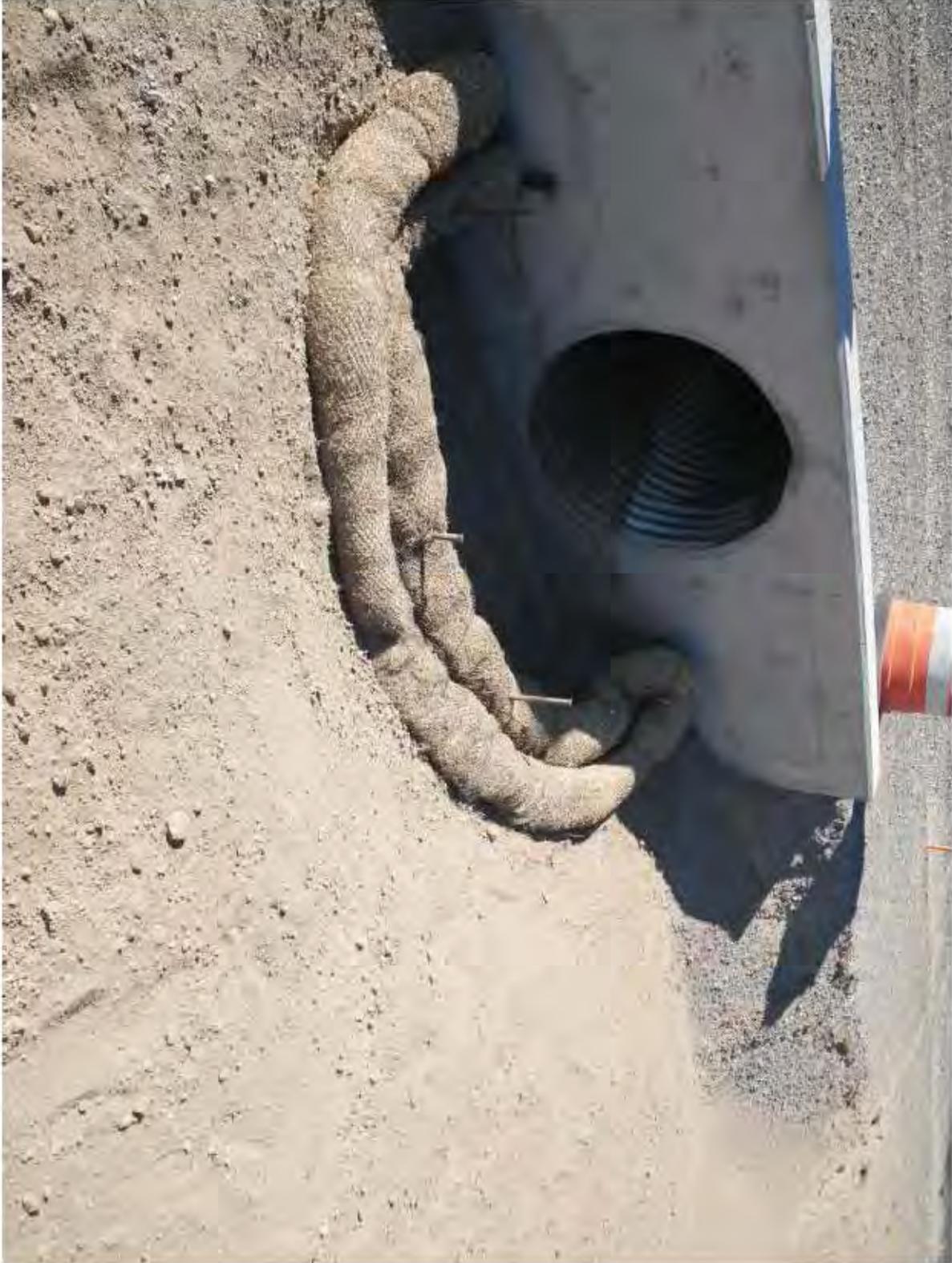
**IMGP0667** – Cement mixer and pumper at the project site.

**IMGP0668** – Worker/public safety signage.

**IGMP0669** – Construction lay-down area on the north side of I-80.

**IGMP0670** – Cured cement from previous day's concrete washout collection, waiting for disposal.

**IGMP0671** – Collected concrete washout in the structure depicted in IMGP0666.

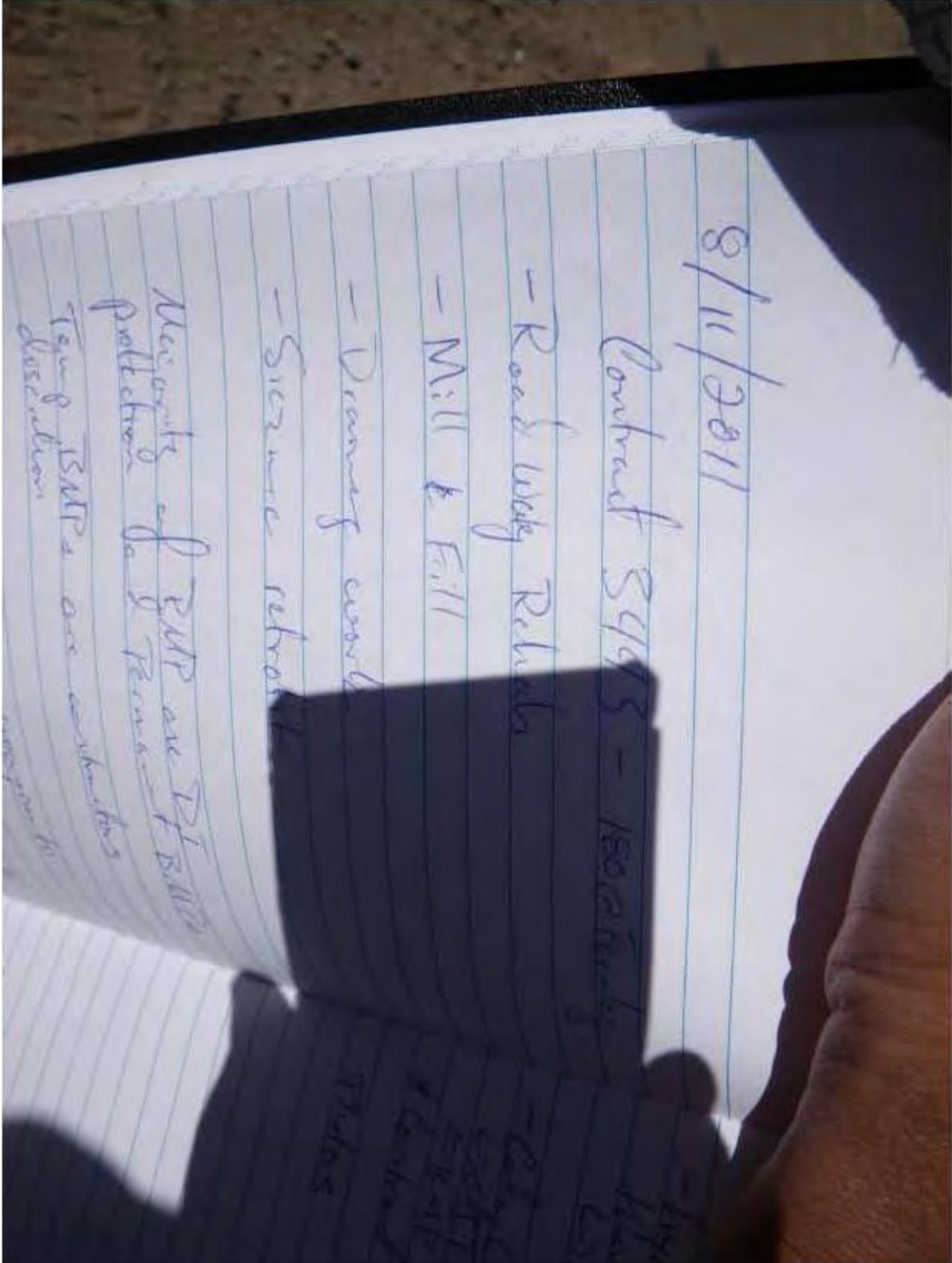


IMGP0645.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0646.JPG



IMGP0647.JPG



IMGP0648.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0649.JPG



IMGP0650.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0651.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0652.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0653.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0654.JPG



IMGP0655.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0656.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0657.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0658.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0659.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0660.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMG0661.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0662.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0663.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0664.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMG0665.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0666.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0667.JPG



IMG0668.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0669.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMGP0670.JPG

NDOT MS4 Audit - Painted Rock Project 8.11.11



IMG0671.JPG



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Clean Water Act Compliance Office  
Inspection Report

Site Location: I-580 Construction

Date of Visit: 8/11/11 and 8/12/11

Site Owner and/or Operator: Nevada Department of Transportation

Site Contact: James Murphy or Steve Cooke

Conducted by: David Wampler on August 11, 2011,  
and John Tinger and David Wampler on August 12, 2011

Accompanied by: Michele Reid (NDEP)

Summary Prepared by: David Wampler

**Site Summary**

On August 11, EPA met with the NDOT contractor Fisher Sand and Gravel (Norm Bessler, foreman) its subcontractor, Eastern Sierra Engineering (Debbie Jenkins representing), and NDOT's project engineer, Mark Cooper, NDOT's Head of Construction, Jeff Shapiro, and NDOT's Head of Environmental Services, Steve Cooke. The SWPPP for the project was reviewed and EPA obtained a copy of the primary section (included with the relevant portions of Appendix A for the I-580 project). EPA asked for and received a copy of the recent monthly (whole-site) inspection report (also included with the relevant portions of Appendix A for the I-580 project). NDOT described the project as the largest construction site in NV, with costs around \$400 million. The final project will include three lanes in both directions and 100% of storm water will be treated via detention/settling basins prior to discharge. According to NDOT, sodium acetate will be used as the de-icing agent – which has less BOD impact than sodium chloride.

On the August 12, 2011, site visit EPA was joined by Steve Cooke to focus on the south end of the I-580 project to evaluate the BMPs that were in place at that site. We were joined at the site by Norm Bessler, Debbie Jenkins, and Mark Cooper.. Along this stretch of highway, EPA asked the contractor and NDOT personnel why certain BMPs were selected and installed. NDOT described the challenges this site presented (e.g., high winds, erosion of graded slope) and how they evaluated the effectiveness of controls.

EPA requested immediately following our site visit and received, on September 23, 2011, documentation from NDOT explaining the rationale for the BMPs selected at the site and

documents to show that on September 1, 2011, NDOT completed the necessary corrections identified by EPA during the August 12, 2011 site visit.

### **Site Observations**

During the August 11, 2011, tour of the I-580 project, the following sites were visited:

- The main construction yard/staging area where fuels and materials are stored.
- The fuel storage area was sufficiently bermed but considerable sediments had accumulated in portions of it, making inspections of the liner difficult and raised questions about sufficiency of storage capacity and freeboard (see photos: IMGP 0177).
- A cure container without any secondary containment.
- Concrete Plant (not operating). At this site, we saw two large volume ponds used as process water in the aggregate cleaning operation: the primary pond IMGP0178, and the secondary pond IMGP0180. The second settling pond appeared to have limited freeboard in the far side (north east portion) of the pond. Permit for the pond is obtained from the Nevada Division of Water Resources – Dams and Dam Safety. Between the two ponds is a large earthen berm. Atop the berm was a concrete washout area (photo IMGP0179).
- Galena forest drainage (adjacent to the concrete plant) – At this location several dirt roads criss-crossed the area and we noted the BMPs in the area had deteriorated (see photo IMGP0181).
- Viewed the Pleasant Valley Water Quality Basin from the roadway above (see photo IMGP0812). This is the largest of the 12 detention basins to be used on the project.
- Visited the Galena Bridge and requested a copy of the §404 permit and the in-stream turbidity testing performed during the construction.
- The Saint James WQ basin and the Parker Ranch Road detention basin.

The following observations were noted during the August 12, 2011:

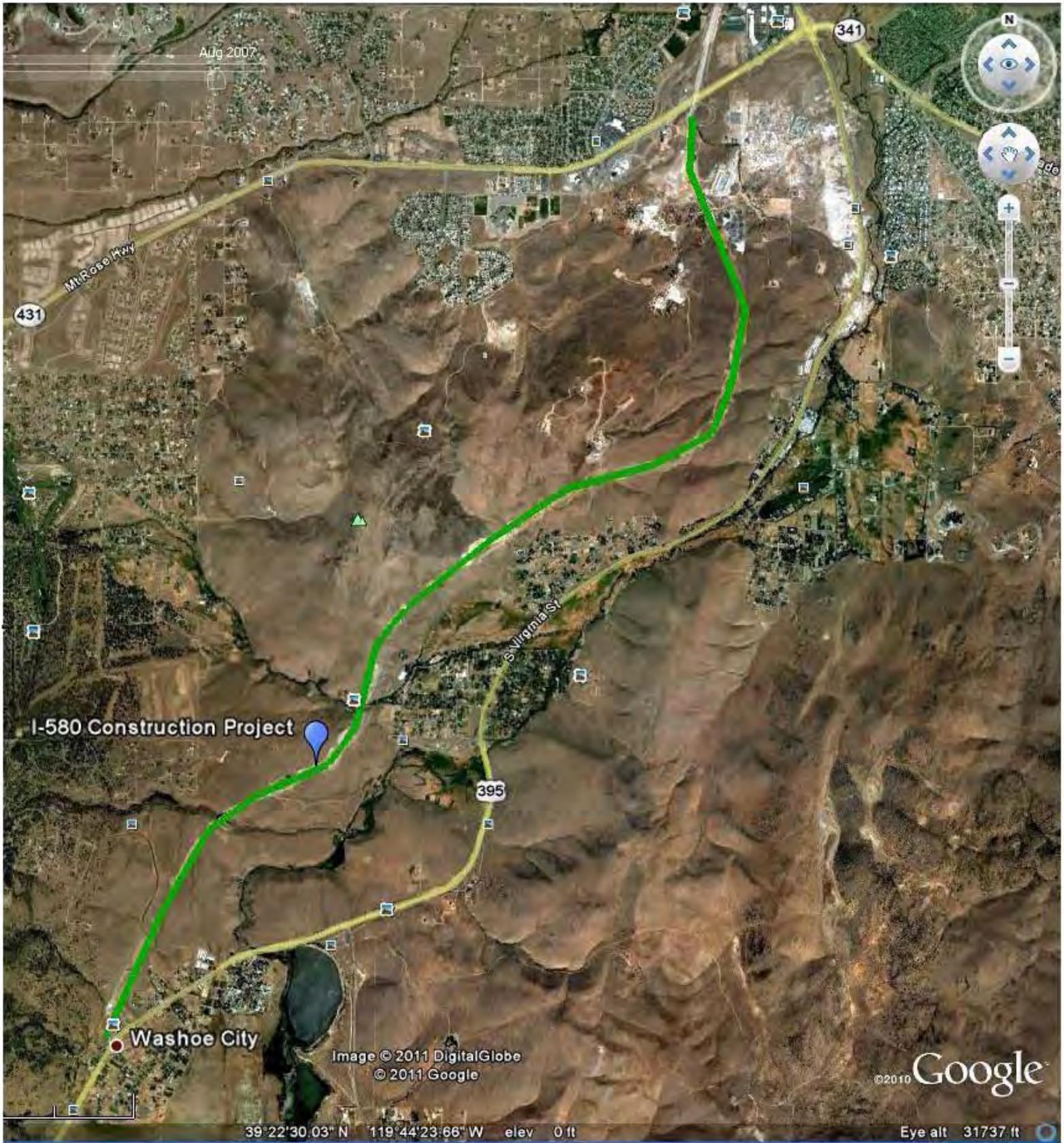
- Silt fences were not installed properly because they were not: a) entrenched along the bottom (see photo IMPG 0217 and IMPG0218); and/or b) they were not extended to effectively contain sediment from adjacent disturbed land into Ophir Creek (see IMPG0216, IMPG0218, IMPG 0219). NDOT's contractor explained the process for BMP decision making (e.g., high winds in area, unstable slope, direction of water flow from adjacent pasture).
- NDOT had constructed downpipes in certain areas to take water from the roadway to the foot of the western side of the roadway grade.

### **Attachments**

Aerial image of location

Photo Log

Site Photos



## Photo Log – NDOT Audit

### I-580 Construction Project

Photos taken by David Wampler on August 11, 2011 using a Pentax Optio W80 Camera.

**IMGP0177.JPG** –Photo shows secondary containment around diesel fuel and equipment lubrication operation at the contractor staging area. Note stained area within the containment area. This area was also inspected by NDOT Contractor and reported in June 24 inspection report (photo 11) as requiring liquid at the time to be removed. I recommended that the contractor also remove the oil-stained dirt from within the area so the liner could be properly inspected for tears.

**IMGP0178.JPG** – View looking south of settling pond adjacent to the concrete batch plant along I-580 project. The plant was not operating at the time of our visit. This pond receives sediment laden water from the aggregate washing operation on-site (see conveyor arms and aggregate pile in the background in photo). This was the first of two major ponds used to clarify and reuse process wash water for their onsite aggregate cleaning.

**IMGP0179.JPG** – View looking east of atop berm separating the primary settling pond (right) and the secondary settling pond (left). In the immediate foreground is a concrete washout area that drained to towards the right to the primary pond.

**IMGP0180.JPG** – View looking northeast of secondary settling pond at concrete batch plant. Water from this pond is pumped back up hill to the on-site aggregate washing operation. Note the low freeboard in the northeast corner of the pond. Contractor noted that this is less freeboard than they would like but said it's been permitted by the state of NV (Water Resources – Dam Construction).

**IMGP0181.JPG** – View looking northeast at the bottom of the Galena Forest drainage. In the background, pipes from the geothermal plant can be seen crossing the land. In the foreground BMPs at the bottom and eastern portion of drainage were not maintained and in a state of disrepair. This area is adjacent to and north of the concrete batch plant.

**IMGP0182.JPG** – Photo looking northeast from atop I-580 project roadway. The largest post-construction detention pond (the Pleasant Valley Water Quality Basin) on the project site is located at the far right of this photo. There is a second basin just off to the right of the photo that provides additional capacity to this primary basin. Note also the slope stabilization in the area. BMP straw waddles on the immediate slope are, according to the BMP contractor, will remain in place as this slope will not be further manipulated.

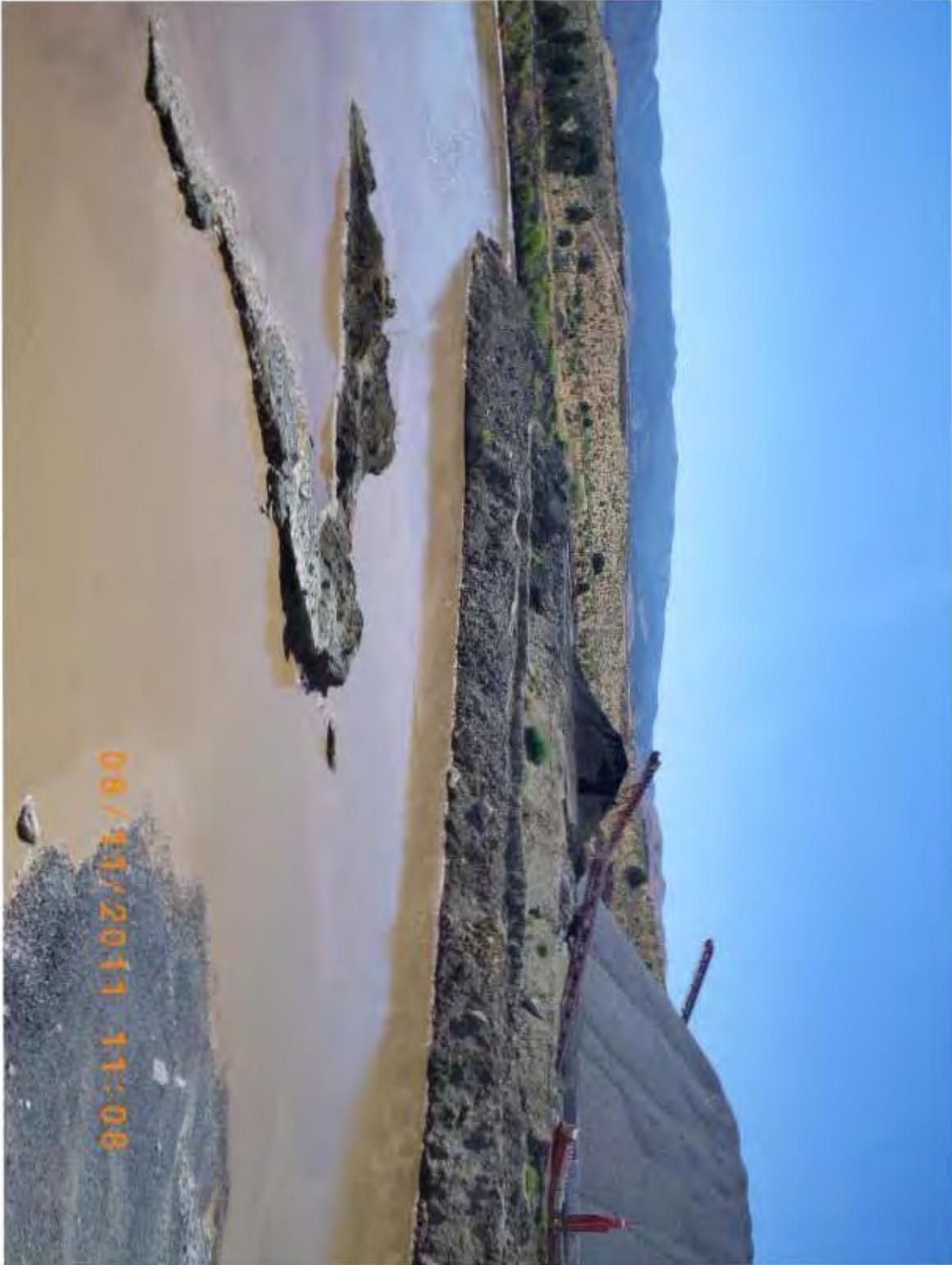
**IMGP0183.JPG** – Photo of St. James Water Quality basin (looking northeast). This is one of the smaller basins and it is currently being used to manage construction storm water. NDOT said it will be maintained and cleaned once construction site runoff ends so it can be ready for its role as a post-construction BMP.

**IMGP0184.JPG** – Photo looking east and down the slope from I-580 construction site at Winters Creek. Note silt fences in place to capture onsite and offsite surface water that may have sediment entrained in it.

**IMGP0185.JPG** – View looking southeast near Winters Creek. Note silt fences at toe of slope and Hwy 395 in the background. Considerable amounts of rock are also used to support the slope of hwy during and after construction.



IMGP0177.JPG



IMGP0178.JPG

NDOT MS4 Audit - I-580 Construction 8.11.11



IMGP0179.JPG

NDOT MS4 Audit - I-580 Construction 8.11.11



IMGP0180.JPG

NDOT MS4 Audit - I-580 Construction 8.11.11



IMGP0181.JPG

NDOT MS4 Audit - I-580 Construction 8.11.11

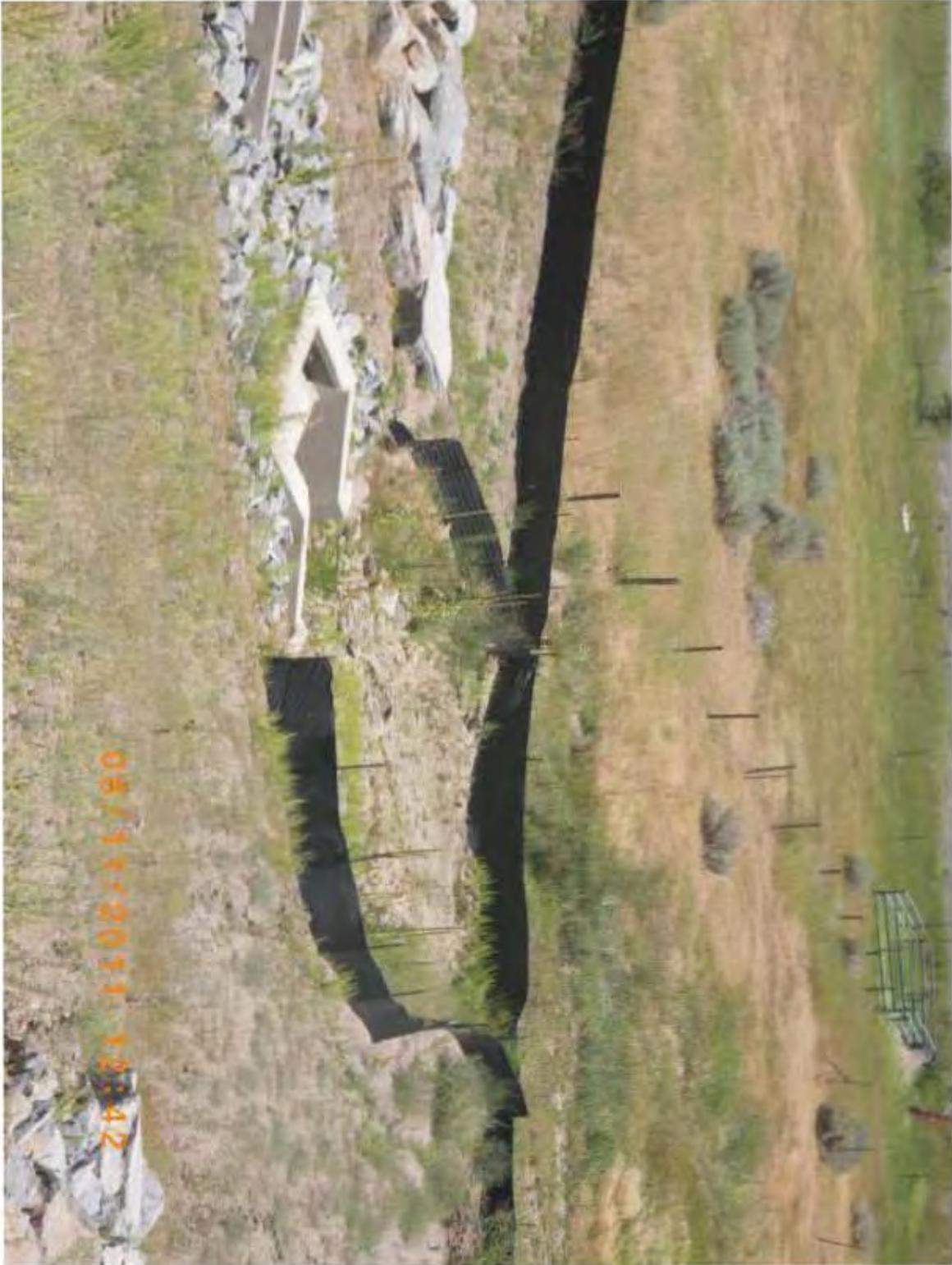


IMGP0182.JPG

NDOT MS4 Audit - I-580 Construction 8.11.11



IMGP0183.JPG



IMGP0184.JPG



IMGP0185.JPG

## Photo Log – NDOT Audit

### I-580 Construction Project - South

All photos taken by David Wampler on August 12, 2011 using a Pentax Optio W80 Camera. All photos are taken along the western edge of I-580 at the southern end of the project where it merges (or will merge) with Route 395.

**IMGP0200.JPG** – This photo is looking to south. The new roadway is atop the slope shown on the left side of the photo. To the right is a large meadow which drains towards the bank.

**IMGP0201.JPG** – Photo of culvert that channels drainage from the meadow west of I-580 to the east side of the highway. Sandbags and straw waddles collect sediments that otherwise would become entrained in water flow into culvert and through to Washoe Lake.

**IMGP0202.JPG** – Inlet of cattle culvert under I-580. Like the smaller culvert in picture IMGP0201.jpg, this larger culvert allows water from the meadow to the west and roadway drainage accumulated along the west side of the road to travel under the highway to the east. Note the relatively clean bottom of the concrete culvert.

**IMGP0203.JPG** – Photo looking north along western edge. Silt fence to the left is the right-of-way boundary of NDOT's project. Silt fence on the right retains some slope sediments but according to NDOT's contractors, the silt fences are not effective since water channels form under them.

**IMGP0204.JPG** – Photo looking west across meadow from the western edge of roadway at the toe of the bank. Slide Mountain is the mountain in distance. Water from meadow drains towards the east and is transmitted under the I-580 project through several culverts.

**IMGP0205.JPG** – Photo taken atop roadbed at gravel bed in which 4" inch pipe is located. This gravel/pipe arrangement carried stormwater from the road bed down to the toe of slope without creating erosion cuts in slope.

**IMGP0206.JPG** – View looking down the slope from where we stood in photo IMGP0205. At the bottom of the slope the inlet of the pipe in IMPG0205 is outlet. Note the slope bank has recently been worked when they installed the pipe.

**IMGP0207.JPG** – View looking north. Drain pipe in IMGP0205 and IMGP0206 is located in this bank of roadway.

**IMGP0208.JPG** – Water flowing along western edge of I-395 roadway. Note there is no silt fence at the toe of this slope. NDOT Contractors stated that the slope was too unstable and the wind through this area to high to use silt fence without damage or time-consuming maintenance. Instead of using silt fencing or other temporary erosion control BMPs, they have used drain pipes and gravel to direct flow off roadbed.

**IMGP0209.JPG** – Old sand bags near the entrance to the cattle culvert in photo IMGP0202. This line of sandbags was used in addition to those shown in IMGP0202.

**IMGP0210.JPG** – Outlet of cattle culvert looking east towards Washoe Lake. Note sediment build-up along this end of the culvert.

**IMGP0211.JPG** – Inside the cattle culvert at its mid-point. Daylight from above comes in through drop inlet which is in the middle of the existing lanes of route 395 immediately above culvert. Sediment accumulation downstream of this inlet was greater than the sediment upstream.

**IMGP0212.JPG** – Further south along western edge of roadway (near dead tree). Photo taken looking north. Water alongside the roadway slope was moving very slowly and was generally clear. See photo IMGP0213 for picture of culvert through which this water flowed.

**IMGP0213.JPG** – Looking south. Culvert drained water from alongside western edge of roadbed. Sandbags retained some sediment, but water was generally clear on this morning. Note dead tree in the distance.

**IMGP0214.JPG** – Looking south. Photo of water buildup along the west edge of I-580 project. Note sediment build-up in water due to roadway runoff. This shows the difficulties NDOT has had with the slope in this area. NDOT contractors indicated work along this stretch was disturbed in the past month. Water shown in picture drained to culvert in picture IMGP0213.

**IMGP0215.JPG** – View to the west at Ophir Creek culvert crossing. Silt fence was installed here atop the culvert. NDOT mentioned this creek is often dry this time of year. The creek was very clear.

**IMGP0216.JPG** – View looking south of Ophir Creek crossing. Note the limited extent of silt fence. NDOT indicated the fence needs to be extended to the north and south to more fully capture runoff from the highway project.

**IMGP0217.JPG** -- Photo of silt fence along Ophir Creek. John Tinger dug by hand to expose the foot of fence to see if it was properly entrenched, and it was not. NDOT indicated that this was not properly installed.

**IMGP0218.JPG** – Photo of southern edge of silt fence along Ophir Creek. See the exposed foot of the silt fence which we had unearthed to see how well it was installed. Not only did NDOT indicate the fence wasn't properly entrenched, they also said it needed to be extended to the south to properly capture runoff from roadway.

**IMGP0219.JPG** – View looking northwest of Ophir Creek (flowing right to left, from west to east). Note the disturbed soil here with insufficient BMPs to control sediment discharge to Ophir Creek. NDOT indicated the fence should be extended to properly control sediment runoff from the slope to the creek.



IMGP0200.JPG



IMGP0201.JPG



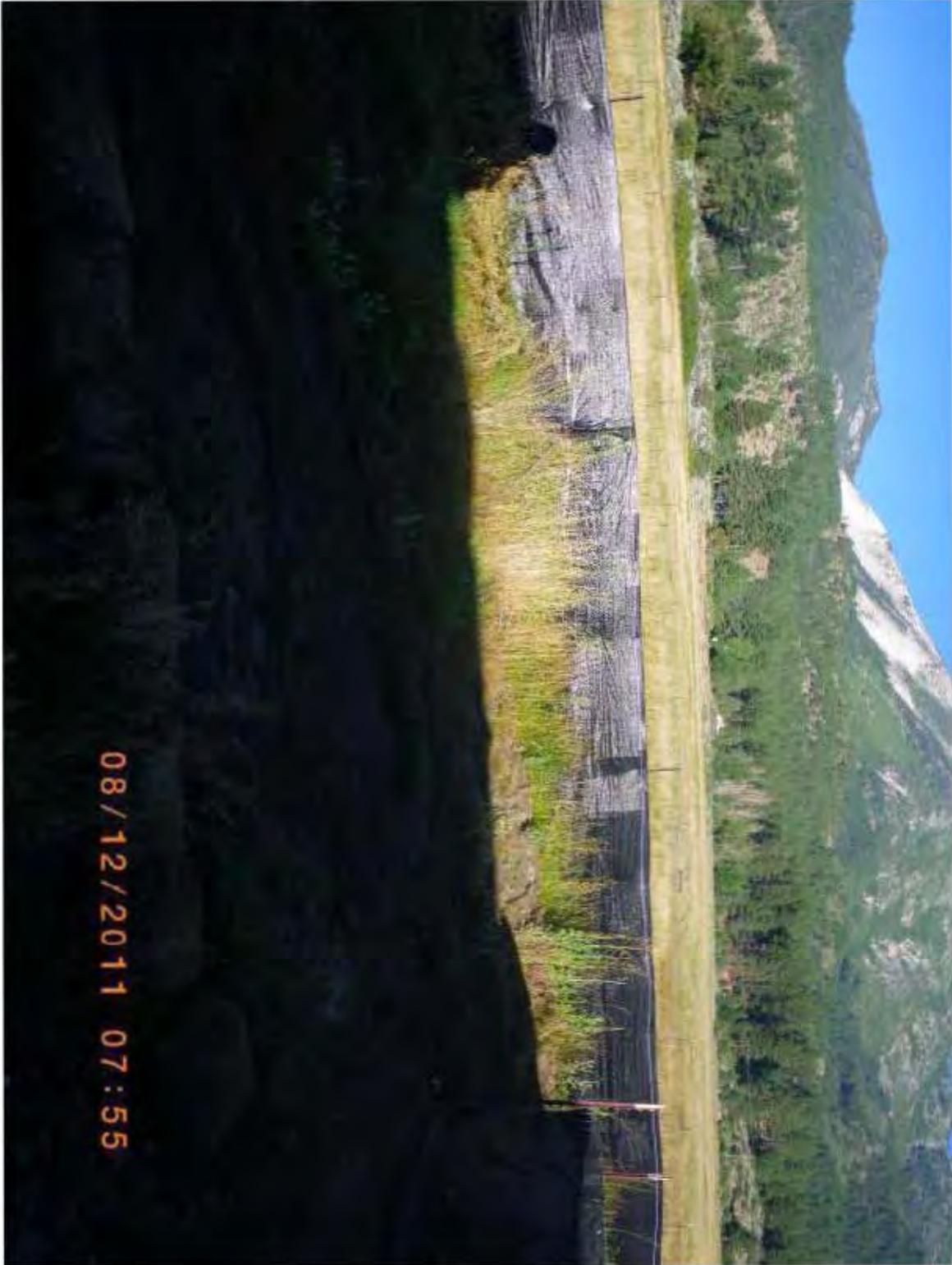
IMGP0202.JPG

NDOT MS4 Audit - I-580 South Construction 8.12.11



IMGP0203.JPG

NDOT MS4 Audit - I-580 South Construction 8.12.11



IMGP0204.JPG

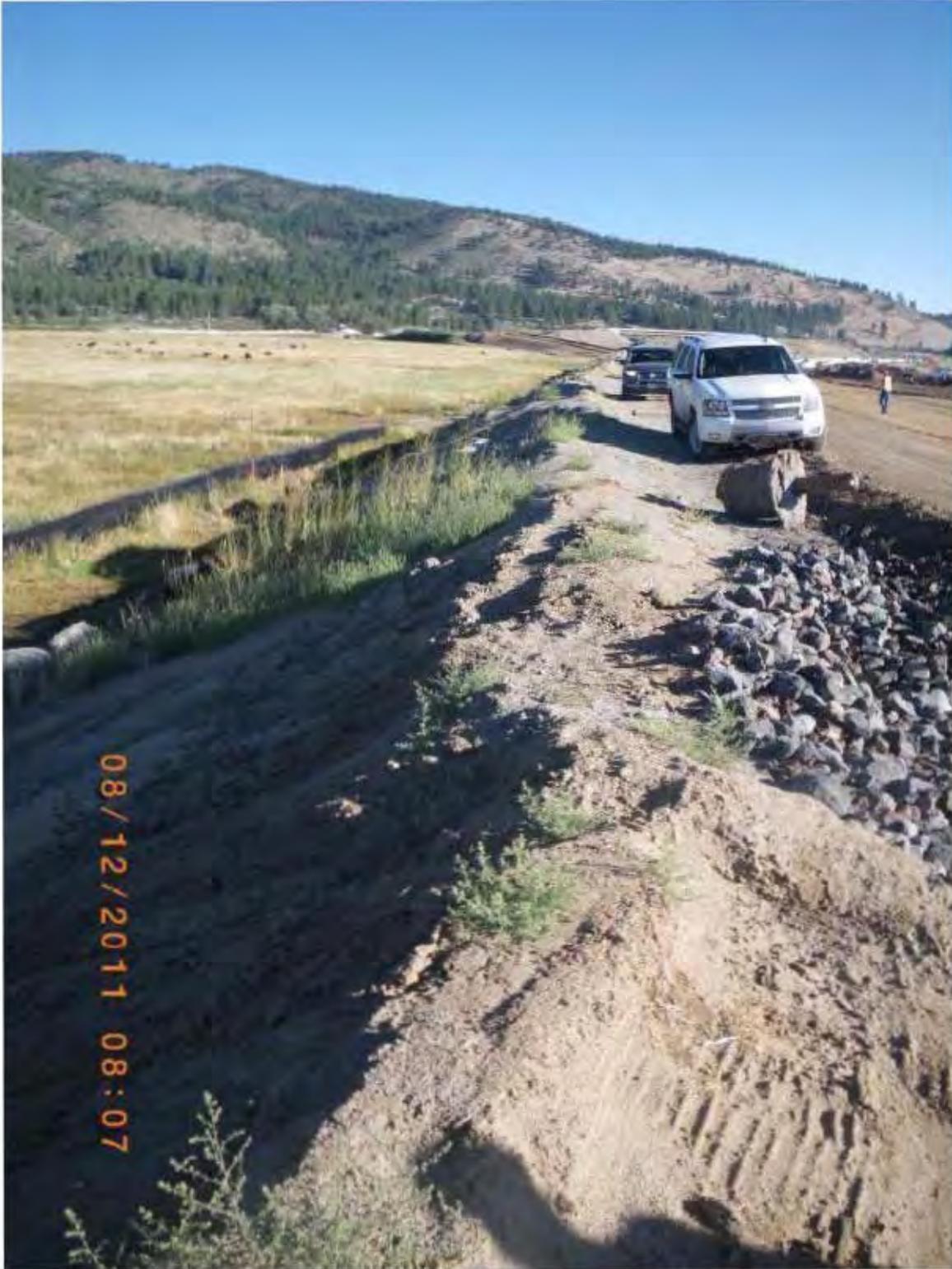
NDOT MS4 Audit - I-580 South Construction 8.12.11



IMGP0205.JPG



IMGP0206.JPG



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NDOT MS4 Audit - I-580 South Construction 8.12.11



IMGP0208.JPG



IMGP0209.JPG



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IMGP0210.JPG



IMG0211.JPG

NDOT MS4 Audit - I-580 South Construction 8.12.11



IMGP0212.JPG



IMGP0213.JPG

NDOT MS4 Audit - I-580 South Construction 8.12.11



IMGP0214.JPG



IMGP0215.JPG



IMGP0216.JPG

NDOT MS4 Audit - I-580 South Construction 8.12.11



IMGP0217.JPG



IMGP0218.JPG



IMGP0219.JPG



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Clean Water Act Compliance Office  
Inspection Report

Site Location: NDOT District 1

Date of Visit: 8/11/11

Site Owner and/or Operator: Nevada Department of Transportation

Site Contact: James Murphy or Steve Cooke

Conducted by: John Tinger

Accompanied by: Steve McGoff (NDEP)

Summary Prepared by: John Tinger

**Site Summaries**

*I-15 Las Vegas design build*

The following were observed:

- SWPPP had not been updated to reflect staging area.
- Post-construction controls consisted mainly of rock mulch to control erosion.
- Drop inlet protection was observed in all active areas of construction.
- Outlet protection at staging area was installed incorrectly.
- Several containment structures appeared inadequate –for example, thin plastics degrade quickly the Las Vegas sun and do not appear to be appropriate and the liner used for concrete washouts had rips and tears.

*160 Lane Widening near Las Vegas, NV*

Project consists of a 6 mile long road widening project crossing numerous drainage channels; box culverts are being extended to accommodate new lanes.

Site Visit by John Tinger, August 11, 2011

The following were observed:

- The SWPPP improperly described BMPs, improperly showed storm water flow, did not identify outfalls or waters of the U.S.
- The SWPP lacked sufficient detail and did not indicate the type, placement, or installation of BMPs.
- BMPs were installed incorrectly. The BMPs consisted of straw waddles which were placed within the channels perpendicular to flow instead of placement at toes of slopes.
- Soil stockpiles were located within the drainage alongside the highway with no BMPs.

*Las Vegas South Maintenance Facility.*

Site visit by John Tinger, August 11, 2011.

The Las Vegas South Facility contains fueling areas, indoor vehicle maintenance, a wash rack, temporary trash storage, and vehicle and equipment storage. The wash rack drains to a sand interceptor, oil water separator and then the sanitary sewer. BMPs observed include weekly sweeping of the yard, use of absorbent material to clean up spills (swept up every Friday), site drainage to a dry detention pond, and a roofed storage facility with secondary containment for chemical storage. An open bucket of absorbent material with a scooper was left placed next to the fueling stations, an indication of facility personnel's opinion that "If you make it accessible, they will use it". Site observations include:

- No SWPPP had been developed, no storm drains were labeled

*Mountain Springs Maintenance Facility. SR 160 east of Las Vegas.*

Site visit by John Tinger, August 11, 2011.

Mountain Springs is a staffed staging area for vehicle storage, fueling, snow plows, and minor repairs. The facility has a wash rack which drains to a sand interceptor, oil water separator and leach field. Sand and salt is stored in an enclosed facility. Site observations include:

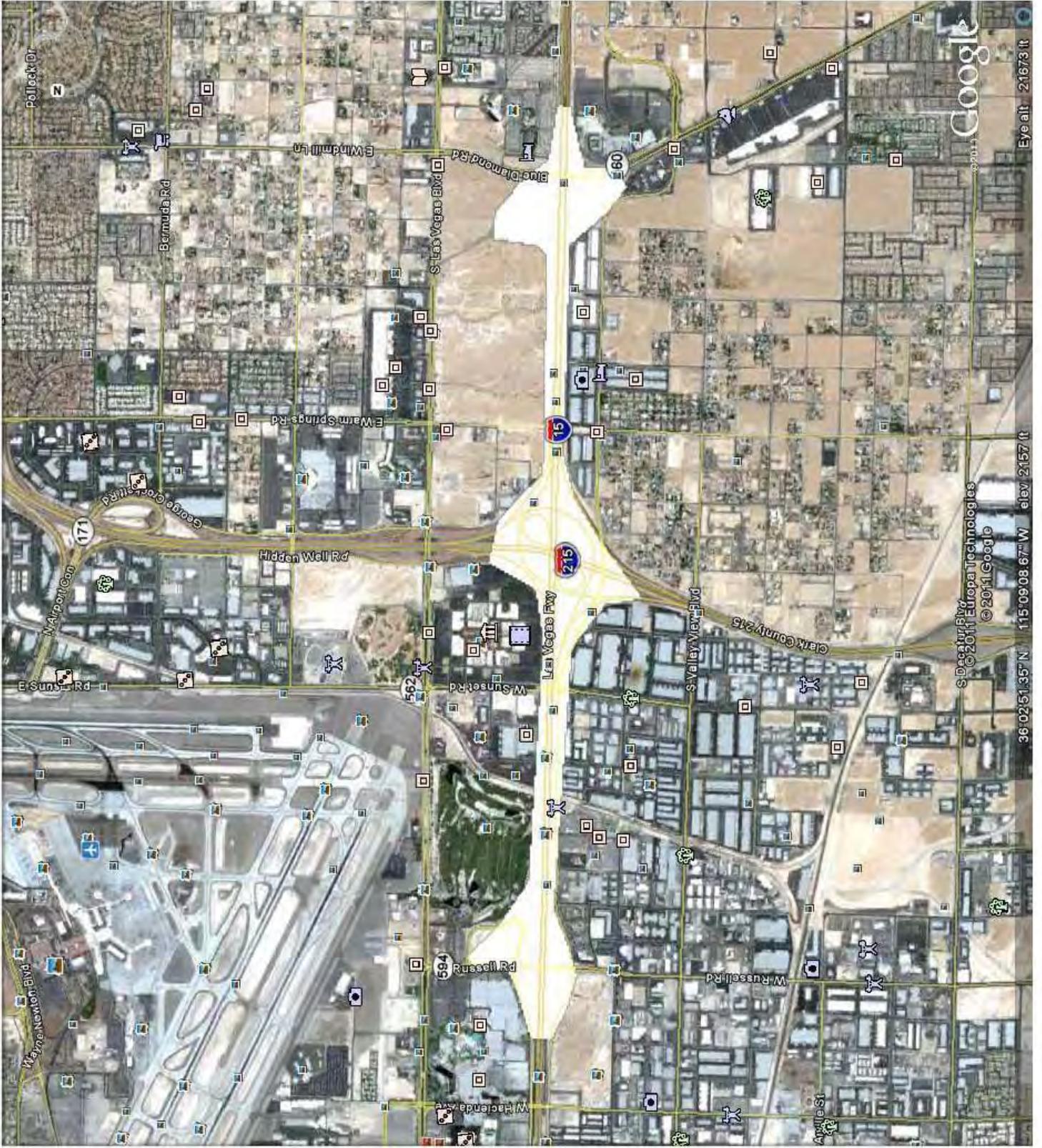
- No SWPPP had been developed, no storm drains were labeled

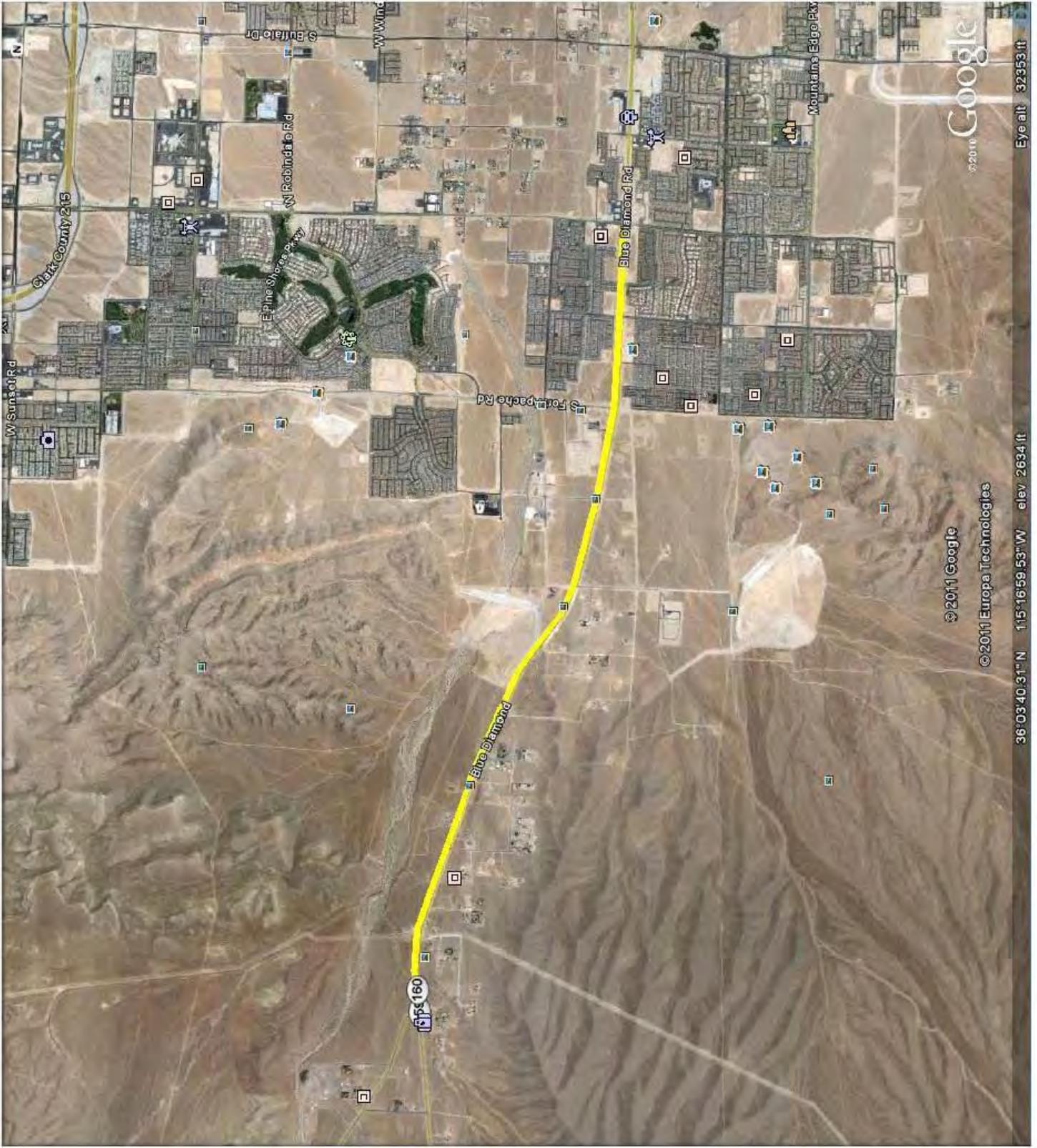
**Attachments**

Photo Log

Aerial image(s): I-15 Las Vegas Design-Build, 160 Las Vegas Road Widening, South Maintenance Facility (Las Vegas), Mountain Springs Maintenance Facility

Site Photos





**US EPA ARCHIVE DOCUMENT**

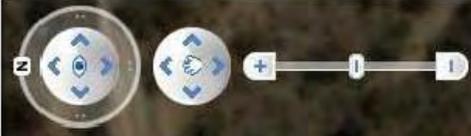


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Eye alt = 3708 ft

38°04'18.11"N 115°12'09.35"W elev 2317 ft



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Eye alt: 6094 ft

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Image © 2011 DigitalGlobe  
36° 01' 24.62" N 115° 30' 25.85" W elev: 5449 ft

Imagery Date: Mar 3, 2011

## **NDOT MS4 Audit Photo Log – District 1 Visit 8.11.2011**

### **Photos taken by John Tinger**

#### **I-15 Las Vegas Design-Build**

**IMG\_4663** Staging Area, looking south toward highway

**IMG\_4664** BMP at staging area – outlet protection consisting of straw waddle. Straw waddle recently installed, improperly installed (stakes are placed in front of & behind waddle not through waddle, not trenched).

**IMG\_4665** BMP at staging area – concrete washout. Lightweight plastic is ripped.

**IMG\_4666, 4667, 4668** post construction – rock mulch on final design grade.

**IMG\_4669** BMPs along I-15, looking east. Silt fences had been previously installed but were removed when construction completed and stabilized. DI protection will be left in place until road way is re-opened to traffic.

**IMG\_4670** – Detail of typical DI protection.

#### **160 Las Vegas Road Widening**

**IMG\_4671** - looking west, north side of highway. Example of BMPs improperly installed – waddles placed in wash. BMPs for all drainages were similarly installed incorrectly in channels.

**IMG\_4672** - top of culvert looking west

**IMG\_4673** – top of culvert looking west

**IMG\_4674** - top of culvert looking south

**IMG\_4675** – wash draining north typical of site

**IMG\_4676** – looking west on south side of highway. Materials stored in drainage channel with no BMPs.

#### **South Maintenance Facility, Las Vegas**

**IMG\_4677** – Wash rack – drains to grit chamber and then to sanitary

**IMG\_4678** - Wash rack – grit chamber in background

**IMG\_4679** – Roof drainage with erosion protection

**IMG\_4680** – Fueling station – bucket of absorbent material stored for easy access

**IMG\_4681**- Fueling station – detail of bucket of absorbent material stored for easy access

**IMG\_4682** – Secondary containment & roof structure BMP.

#### **Mountain Springs Maintenance Facility**

**IMG\_4683** – Entryway

**IMG\_4684** – Fueling areas with labeled fuel kit

**IMG\_4685** – Enclosed salt and sand storage area. Track-out of material.

**IMG\_4686**- wash rack – drains to grit chamber and then to leach field

**IMG\_4687** - wash rack – drains to grit chamber and then to leach field

**IMG\_4688** – leach field from wash rack.

NDOT MS4 Audit - District 1



IMG\_4663.jpg

NDOT MS4 Audit - District 1



IMG\_4664.jpg

NDOT MS4 Audit - District 1



IMG\_4665.jpg

NDOT MS4 Audit - District 1



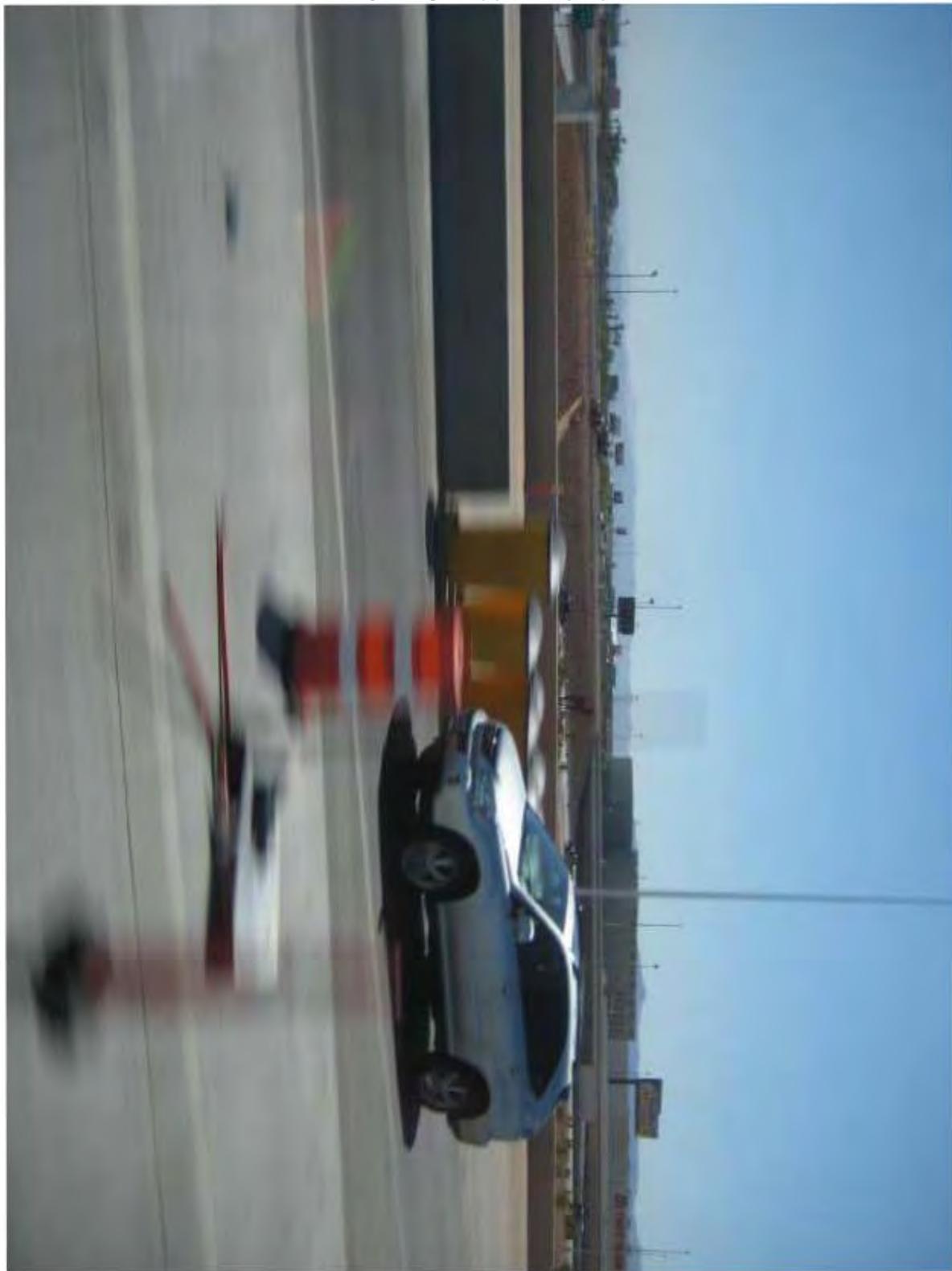
IMG\_4666.jpg

NDOT MS4 Audit - District 1



IMG\_4667.jpg

NDOT MS4 Audit - District 1



IMG\_4668.jpg

NDOT MS4 Audit - District 1



IMG\_4669.jpg

NDOT MS4 Audit - District 1



IMG\_4670.jpg

NDOT MS4 Audit - District 1



IMG\_4671.jpg

NDOT MS4 Audit - District 1



IMG\_4672.jpg

NDOT MS4 Audit - District 1



IMG\_4673.jpg

NDOT MS4 Audit - District 1



IMG\_4674.jpg

NDOT MS4 Audit - District 1



IMG\_4675.jpg

NDOT MS4 Audit - District 1



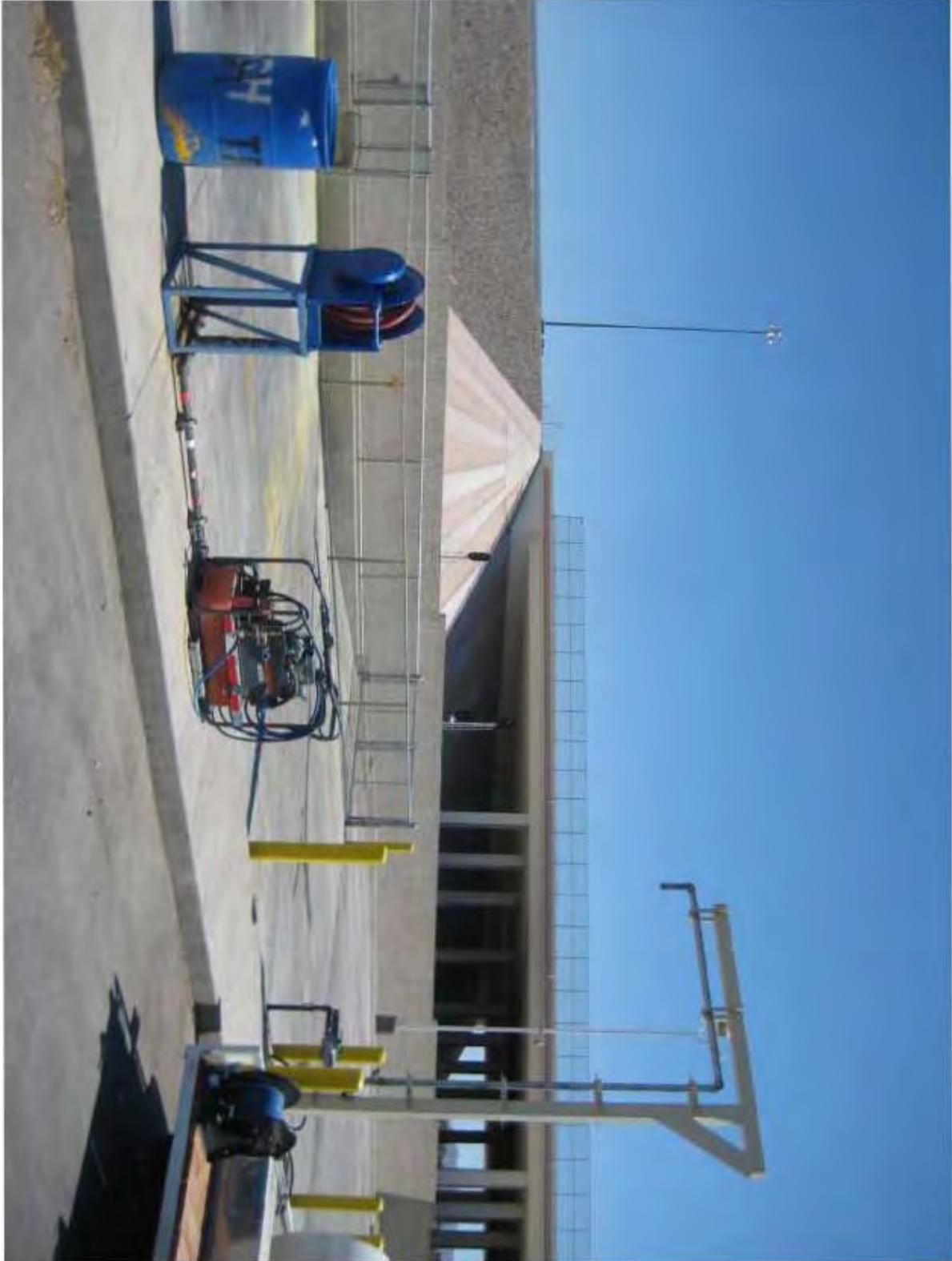
IMG\_4676.jpg

NDOT MS4 Audit - District 1



IMG\_4677.jpg

NDOT MS4 Audit - District 1



IMG\_4678.jpg

NDOT MS4 Audit - District 1



IMG\_4679.jpg

NDOT MS4 Audit - District 1



IMG\_4680.jpg



IMG\_4681.jpg

NDOT MS4 Audit - District 1



IMG\_4682.jpg



IMG\_4683.jpg

NDOT MS4 Audit - District 1



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NDOT MS4 Audit - District 1



IMG\_4685.jpg

NDOT MS4 Audit - District 1



IMG\_4686.jpg

NDOT MS4 Audit - District 1



IMG\_4687.jpg

NDOT MS4 Audit - District 1



IMG\_4688.jpg



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Clean Water Act Compliance Office  
Inspection Report

Site Location: *Reno/Sparks Maintenance Facility and Equipment Repair Shop*

Date of Visit: 8/11/11

Site Owner and/or Operator: Nevada Department of Transportation

Site Contact: James Murphy or Steve Cooke

Conducted by: David Wampler

Accompanied by: Michele Reid (NDEP)

Summary Prepared by: David Wampler

**Site Summary**

The overall site is divided into two distinct areas: 1) the maintenance facility located to the west of Galletti Way, and 2) the central repair shop to the east of Galletti Way. The maintenance facility houses highway maintenance equipment (snow plows, blowers, salt/brine/sand trucks and supporting equipment and staff offices) for the on-going highway maintenance work performed by NDOT District II personnel. At the central repair shop, NDOT maintains its state-wide fleet of vehicles. During the site visit, the repair shop was undergoing extensive surface repair work and many of the vehicles ordinarily parked there were instead parked in the back lot (far west end) of the maintenance facility.

**Site Observations**

- No SWPPP;
- Observed non-storm water discharges draining from an on-site tank truck (truck in distance of photo IMGP0188) to the ground and from its vehicle wash rack (photo IMGP0186). Both discharges were observed entering an unmarked on-site storm drain (photo IMGP0188);
- Observed a storm drain along the south eastern portion of the facility. Sandbags were partially blocking the storm drain inlet (photo IMGP0193). An NDOT representative looked over the fence to see if there was an apparent outlet, but he did not see one;
- Observed white staining on the asphalt from what appeared to be dry salt/brine solution along the asphalt/driveway surface near the drain but slightly to the west. This is consistent with the observation that NDOT was installing new brine mixing tanks in the vicinity (See photos IMGP0189, 0191, 0192);

- Observed discharge on the ground (IMGP0194) from a water truck filling station in the distance (IMGP0198). Water on the ground in photo IMGP0194 drained to an unmarked storm drain in far southwest corner of maintenance facility (IMGP0195). Furthermore, water shown in the drain includes waste water from a vactor decant site (IMGP0197) uphill from the drain. At the drain, BMPs were in place (e.g., straw waddles, sandbags, and sand/oil separator). NDOT representative stated that discharge from the drain (IMGP0196) goes directly to Truckee River (to the west) after passing through an oil/sand separator immediately downstream of the drain on the property line of the NDOT facility. We saw the vactor decant site and the indoor salt/sand storage facility (big tented structure in photo IMGP0198);
- No storm drains were labeled, no site map;
- No storm water inspection requirements in place to observe and minimize or eliminate the non-storm water discharges.

### Attachments

Aerial image

Photo Log

Site Photos



NDOT Reno Maintenance Facility

Galletti Way

Nukietzke Ln

395

667

647

80

Ferrari St

E 5th St

E 4th St

Schine St

Depauli St

Prater Way

## Photo Log – NDOT Audit

### Reno Maintenance Yard and Equipment/Vehicle Repair Shop

Photos taken by David Wampler on August 11, 2011, using a Pentax Optio W80 Camera.

**IMGP0186.JPG** – Truck wash rack (looking east) at the Reno Maintenance Yard (eastern portion) with settling pond to the left of pad. Oil/sand separator is located along far left edge of settling pond. Note excess wash water draining off pad to the east. NDOT did not have best management practices in place to reduce or eliminate non-storm water discharges from entering their on-site storm drains.

**IMGP0187.JPG** – Oil/Sand separator inlet at vehicle wash rack at the Reno Maintenance Yard (eastern portion).

**IMGP0188.JPG** – Reno Maintenance Facility (eastern portion) looking south at an on-site storm drain near the vehicle wash rack. Non-storm water entering the drain comes from two locations: a) from the truck holding the large white tank which had been discharging liquid at the time of the inspection and whose operator had just shut off the water valve immediately before this photo being taken; and b) from the truck wash pad to the north of where this photo was taken (see IMGP0186). Note that this drain (and all drains observed during the Reno Maintenance Facility Audit) did not have any markings to identify it or alert NDOT personnel that certain non-stormwater discharges are not allowed.

**IMGP0189.JPG** – Looking northeast at brine/salt staining on ground outside brine mixing building (photo IMGP0190) at the NDOT Reno Maintenance Yard (western portion). The stains shown in this picture are in the same vicinity as the stains shown in photo IMGP0191 (note stacked pipes behind orange cones are the same as those seen in 0191).

**IMGP0190.JPG** – Photo taken inside brine mixing tank building on southern edge of NDOT Maintenance Yard (western portion). Note salt/brine on ground and roll-up door to the left. Tank in photo was disassembled as NDOT was in the process of switching process to store and mix brine in enclosed tanks located outside this building but in a secondary containment area under construction. Brine may have been released from this building which could have resulted in brine/salt staining shown in picture IMGP0191.

**IMGP0191.JPG** – Looking east at NDOT Maintenance Yard (western portion). Brine staining on ground may have originated from recent brine tank maintenance and construction. See photo IMGP0190.

**IMGP0192.JPG** – Picture looking southeast shows sandbags in place around drain shown in picture IMGP0193. Brine/salt staining shown on Maintenance Yard (western portion) ground in picture IMGP0191 is to the right but just out of this photo.

**IMGP0193.JPG** – Looking south at wet sediment with salt/brine staining at the Reno Maintenance Yard (western portion). Drain in background is located along the southern edge of the property next to N. Kietzke Lane (NV Route 667) but to the east of drain shown in IMGP0195. Sandbags were in place to prevent some material from entering the drain. NDOT employees joining the inspection did not know the location of the outfall of this drain. The Truckee River is immediately to the south of the property, just across N. Kietzke Lane (NV Route 667).

**IMGP0194.JPG** – Photo looking north of non-stormwater flow originating from what is believed to be the water truck filling station (near two yellow/orange pieces of equipment in distance) at the Reno Maintenance Yard (western portion). Flow discharged to drain shown in IMGP0915.

**IMGP0195.JPG** – Photo looking north showing BMPs in place and non-stormwater discharge entering the storm drain in the southwest corner of Reno Maintenance Yard (western portion). Liquid in photo immediately ahead (to the north of drain) appeared to originate from overflow at water truck filling station (shown in picture IMGP0199) and vector waste decant site (IMGP0197). In addition, liquid came to drain from the east (right, in photo) from what appeared to be a separate flow from the water truck loading area (see IMGP0194). Finally, according to NDOT staff the liquid entering the drain in this picture goes through a sand/oil separator immediately to the south before it's discharged into culvert and to the Truckee River (IMGP0196). Note the sediment build-up atop sandbags and around drain area, indicating larger volumes of liquid flow to and through this drain than what appeared this day.

**IMGP0196.JPG** – Photo of culvert inlet at the southwest corner of Reno Maintenance Yard (western portion). This culvert drains to the Truckee River, which is just south of this location across N. Kietzke Lane (NV Route 667). Visible liquid in drain came from liquid collecting in the drop inlet drain shown in picture IMGP0195. NDOT District II Engineer stated that there was a sand/oil separator between the drain in picture in IMGP0195 and the water entering the culvert in this picture.

**IMGP0197.JPG** – Photo shows vector waste disposal site at NDOT's Reno/Sparks Maintenance Yard (western portion). Vector waste material in pile was wet and uncontrolled liquid and sediment drained from the pile down the slight slope where it joined water overflow from the water truck loading area (located to the left). Salt/sand storage building is in the background.

**IMGP0198.JPG** – NDOT's Reno Maintenance Yard (western portion). Water Truck filling station in foreground and covered salt/sand storage building/tent in the background. Water from the filling of trucks appeared to overflow at times and drain downhill to the left and right of the salt/sand storage building.

**IMGP0199.JPG** – Wash Rack Drainage inlets at Reno Maintenance – Vehicle/Equipment Repair Shop. The Vehicle/Equipment repair shop is separately managed and across Galletti Way to the east from the Reno Maintenance Yard. The wash rack is not shown in the photo but is located slightly behind and to the right in the photo. The area was dry and no vehicles were being cleaned at the time.



IMGP0186.JPG



IMGP0187.JPG

NDOT MS4 Audit - Reno Maintenance Facility 8.11.11



IMGP0188.JPG



IMGP0189.JPG



IMGP0190.JPG

NDOT MS4 Audit - Reno Maintenance Facility 8.11.11



IMGP0191.JPG

NDOT MS4 Audit - Reno Maintenance Facility 8.11.11

US EPA ARCHIVE DOCUMENT



IMGP0192.JPG

NDOT MS4 Audit - Reno Maintenance Facility 8.11.11

US EPA ARCHIVE DOCUMENT



IMGP0193.JPG

NDOT MS4 Audit - Reno Maintenance Facility 8.11.11



IMGP0194.JPG

NDOT MS4 Audit - Reno Maintenance Facility 8.11.11



IMGP0195.JPG



08/11/2011 15:48

IMGP0196.JPG



IMGP0197.JPG



IMGP0198.JPG



IMGP0199.JPG



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Clean Water Act Compliance Office  
Inspection Report

Site Location: Winnemucca Maintenance Facility

Date of Visit: 8/11/11

Site Owner and/or Operator: Nevada Department of Transportation

Site Contact: James Murphy or Steve Cooke

Conducted by: Luis Garcia-Bakarich

Accompanied by: Joe Maez and Chris Gravenstein (NDEP)

Summary Prepared by: Luis Garcia-Bakarich

**Site Summary**

The Winnemucca facility is located within the town of Winnemucca, Nevada. The facility had the following attributes: fueling depot, vehicle and equipment maintenance buildings, covered truck stalls, a wood shop, a sign shop, a materials testing lab, an equipment shop, a paint storage and mixing shed, vehicle rinsing rack and integrated water truck filling station, vehicle and equipment parking and staging, surplus material and obsolete equipment storage, sand/salt/brine spreader staging, and a covered hazardous materials storage area. Wayne Dryer of the NDOT Hazardous Materials Section participated in the inspection.

**Site Observations**

- There are no direct connections to the Winnemucca MS4, however there are multiple run-off points where storm water from the facility could enter the MS4 via road-side gutters and drop inlets.
- Slurry from the vehicle rinsing rack catch basin was observed dumped on the yard without any pollution controls.
- Dry absorbent was observed deployed onto minor spills, however needed to be swept up.
- Sand/salt/brine spreaders were staged in such a way that leaks from the hydraulic lines were minimized and very little staining was observed.
- Past practices had resulted in the disposal of excess paint down the storm drain. This practice has since been halted, however residue from previously disposed paint is evident in a drop inlet near the paint storage shed.
- The facility has two sand/oil separators that discharge treated waste water via the municipal sanitary sewer.

- A covered hazardous materials storage area with associated bays for used batteries was a positive element.
- No SWPPP had been developed

**Attachments**

Aerial image

Photo Log

Site Photos



Winnemucca Maintenance Station



©2010 Google

Image USDA Farm Service Agency  
© 2011 Google

252 ft

40°57'57.79" N 117°44'18.69" W elev. 0 ft

Eye alt. 880 ft

## **NDOT MS4 Audit Photo Log – Material Extraction Pit – Near Winnemucca, NV**

**Photos by: Luis Garcia-Bakarich**

**IMGP0672** – Fueling station near the main entrance with absorbent deployed on the ground.

**IMGP0673** – Title shot.

**IMGP0674** – Spill kit adjacent to the fueling station.

**IMGP0675** – Parking area with absorbent deployed. The darker piles of absorbent have been deployed for a longer period of time and they have not been swept up.

**IMGP0676** – Fully enclosed paint shed.

**IMGP0677** – Paint spills on the staging area outside the paint shed.

**IMGP0678** – Uncontrolled waste slurry extracted from the wash-rack catchment basin.

**IMGP0679** – Storm drain drop inlet where paint had been disposed of. Facility personnel stated that practice has since ceased, however the nature of traffic paint has a high adhesion property and as such, cleanup has been excessively difficult.

**IMGP0680** – Outfall of previously depicted drop inlet.

**IMGP0681** – Uncontrolled pile of waste material extracted from the wash rack catchment basin, with a slurry tongue that runs downhill the staging area below. (Also noted in IMGP0678)

**IMGP0682** – Wash rack and catchment basin. Inspection participants observed a vehicle get rinsed and that the site-engineering appropriately directed the rinsate to the catchment basin.

**IMGP0683** – Used oil storage tank.

**IMGP0684** – Covered and screened hazardous materials staging areas.

**IMGP0685** – Empty barrel staging area.

**IMGP0686** – Secondary containment platform within the covered and screened hazardous materials staging area, used battery staging area is depicted.

**IMGP0687** – Covered and contained, central hazardous waste storage area.

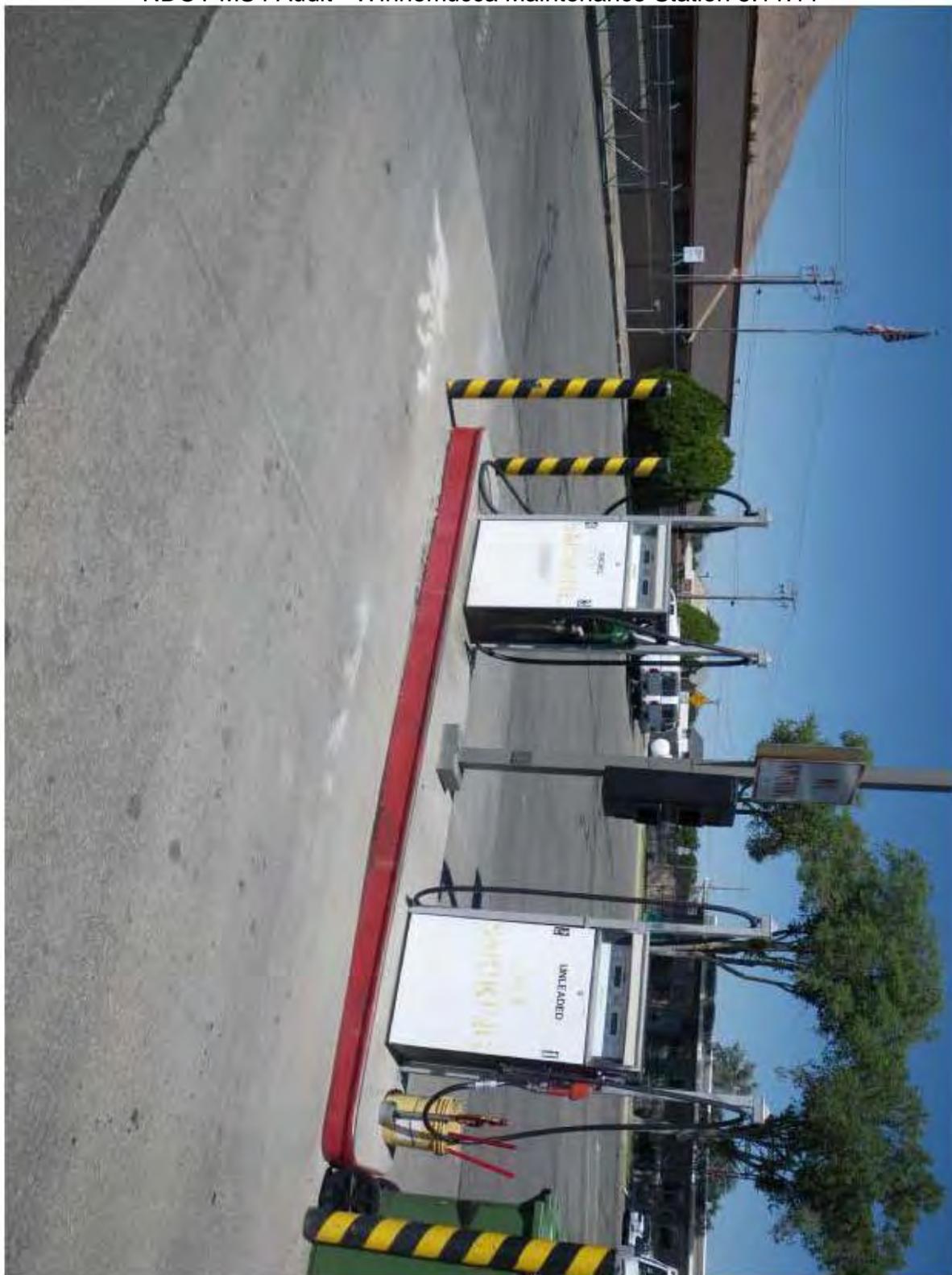
**IMGP0688** – Used oil barrels on secondary containment platforms in the covered and screened hazardous materials staging area.

**IMGP0689** – Obsolete motors staged in an area where they could be exposed to storm water.

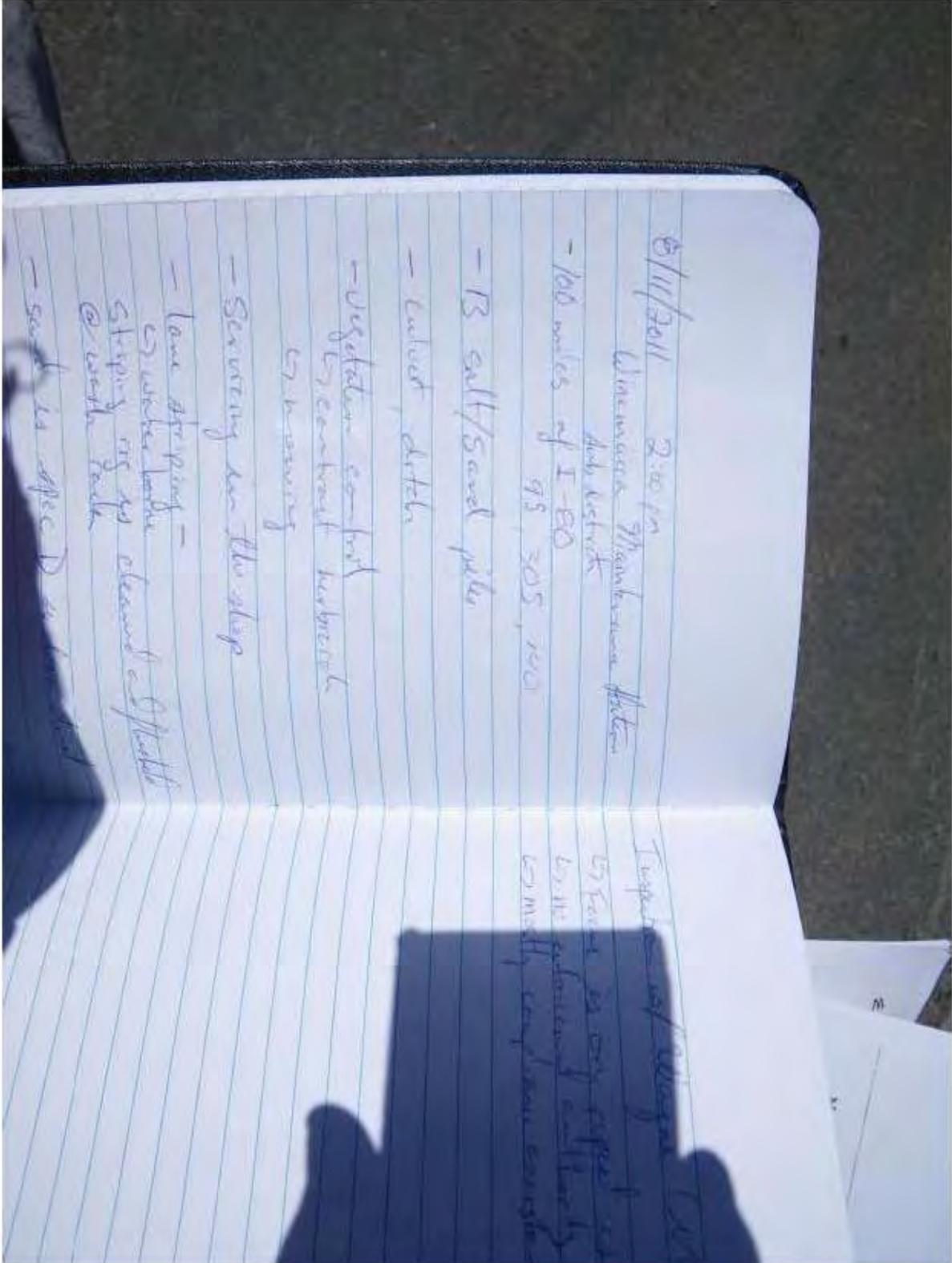
**IMGP0690** – Storm water drop inlet at an upper staging/parking area.

**IMGP0691** – Outfall of the previous drop inlet to lower parking/staging area.

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0672.JPG



8/11/2011 2:00 pm  
Winnemucca Maintenance Station  
Hub Network  
- 100 miles of I-80  
98, 505, 100  
- 13 salt/sand piles  
- culvert, ditch  
- vegetation control  
↳ cement curbwork  
↳ mowing  
- Sewerage in the shop  
- low striping -  
↳ missing lane lines  
↳ striping not cleared @ work yard  
- sand in spec D

Temperature of effluent 100  
↳ some in very pipe  
↳ some sulfurous smell  
↳ mostly compliance issues

IMGP0673.JPG



IMGP0674.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0675.JPG



IMGP0676.JPG



IMGP0677.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0678.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0679.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0680.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0681.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0682.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0683.JPG



IMGP0684.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0685.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0686.JPG



IMGP0687.JPG



IMGP0688.JPG

NDOT MS4 Audit - Winnemucca Maintenance Station 8.11.11



IMGP0690.JPG



IMGP0691.JPG



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Clean Water Act Compliance Office  
Inspection Report

Site Location: Material Extraction Pit near Winnemucca, NV

Date of Visit: 8/11/11

Site Owner and/or Operator: Nevada Department of Transportation

Site Contact: James Murphy or Steve Cooke

Conducted by: Luis Garcia-Bakarich

Accompanied by: Joe Maez and Chris Gravenstein (NDEP)

Summary Prepared by: Luis Garcia-Bakarich

**Site Summary**

An approximately 5 acre material extraction pit was inspected to assess potential impacts to storm water. The pit did not appear to have been utilized in several months, possibly a year. The working face showed evidence of rilling, and a large material stock pile was present. There was evidence of sediment transport off the site via a small but developed channel. The channel discharges to a culvert that flows under Highway 95.

This site was not covered by an industrial general permit and no SWPPP was developed for this site.

**Attachments**

Aerial image  
Photo Log  
Site Photos



Old Hwy 95

95



Material Extraction Pit



Image USDA Farm Service Agency  
© 2011 Google

©2010 Google

41°00'42.73" N 117°43'58.40" W elev 0 ft

Eye alt 1718 ft



## **NDOT MS4 Audit Photo Log – Material Extraction Pit – Near Winnemucca, NV**

**Photos by: Luis Garcia-Bakarich**

**IMPG0701** – Over view of the pit area from Old Hwy 95. Working face and material stockpiles are depicted.

**IMPG0702** – Access road into the pit area. A second material stockpile is also depicted at the base of the pit area.

**IMPG0703** – Drainage culvert under Hwy 95 that drains the pit area. Culvert is to the left of the red post depicted in the center of the frame.

**IMPG0704** – Drainage channel with evidence of soil transport (lack of established vegetation), that links the pit area to the drainage culvert in IMGP0704.

**IMPG0705** – Ground level view of the pit area and the material stock piles.

**IMPG0706** – Second drainage channel with evidence of soil transport (lack of established vegetation), that links the pit area to the drainage culvert in IMGP0704.

**IMPG0707** – Unstabilized material stockpile faces.

**IMPG0708** – Looking back to the drainage culvert area and Hwy 95.

**IMPG0709** – Unstabilized working face of the material extraction pit, rills are depicted.

NDOT MS4 Audit - Material Extraction Pit 8.11.11



IMGP0701.JPG

NDOT MS4 Audit - Material Extraction Pit 8.11.11



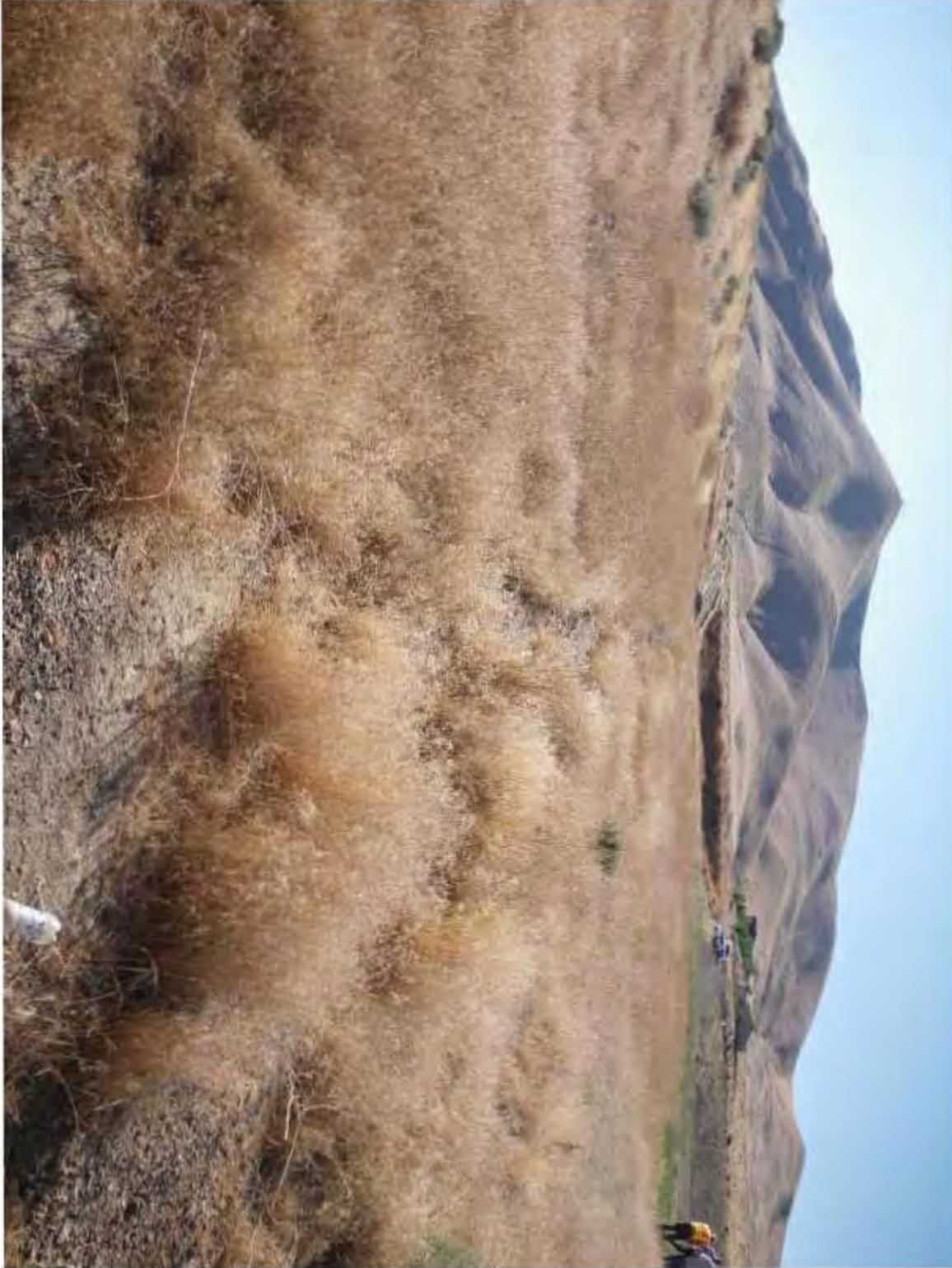
IMGP0702.JPG

NDOT MS4 Audit - Material Extraction Pit 8.11.11



IMGP0703.JPG

NDOT MS4 Audit - Material Extraction Pit 8.11.11



IMGP0704.JPG

NDOT MS4 Audit - Material Extraction Pit 8.11.11



IMGP0705.JPG

NDOT MS4 Audit - Material Extraction Pit 8.11.11



IMGP0706.JPG

NDOT MS4 Audit - Material Extraction Pit 8.11.11



IMGP0707.JPG

NDOT MS4 Audit - Material Extraction Pit 8.11.11



IMGP0708.JPG

NDOT MS4 Audit - Material Extraction Pit 8.11.11



IMGP0709.JPG