



Lawrence Berkeley
National Laboratory

Stormwater Annual Report for 2014-2015

Prepared by:
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Environment/Safety/Health Division
Environmental Services Group
WDID 2 01 I002421

June 2015

Lawrence Berkeley National Laboratory
Berkeley, CA 94720

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Introduction

This *Annual Report* has been prepared for the Lawrence Berkeley National Laboratory (LBNL or Berkeley Lab) located at 1 Cyclotron Road in Berkeley, Alameda County, California (Figure 1-1). The Annual Report was compiled pursuant to the requirements of the California State Water Resources Control Board (SWRCB) Industrial General Permit (IGP) Order No. 97-03-DWQ (SWRCB, 1997).

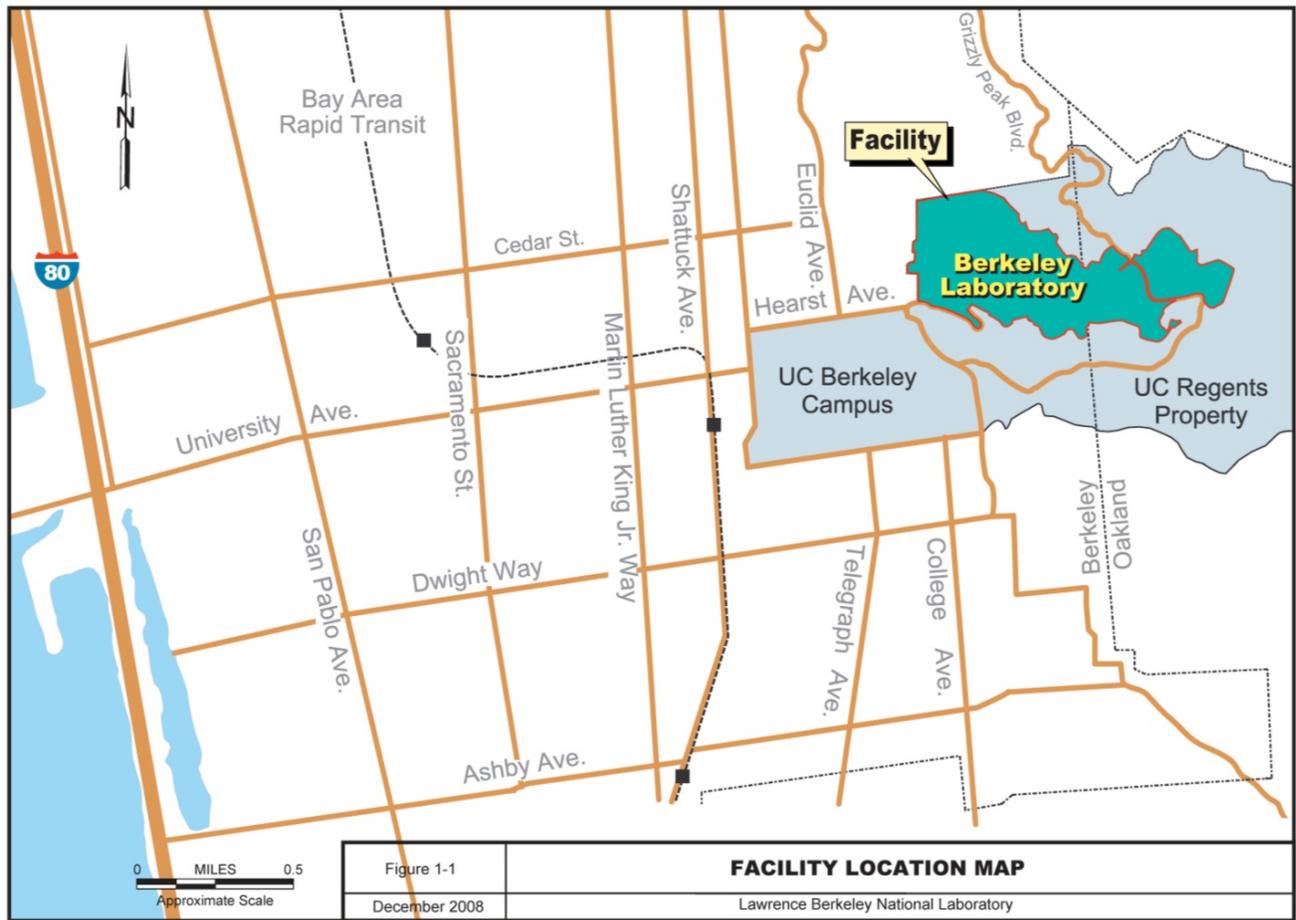


Figure 1-1 Facility Location Map

The Annual Report, in conjunction with LBNL’s *Stormwater Pollution Prevention Plan (SWPPP)* (LBNL, 2014) and the *Alternative Stormwater Monitoring Plan (ASWMP)* (LBNL, 2009), provides the basis for improved management of stormwater to reduce the potential for release of harmful contaminants to surface water. This report includes supporting information, as required, to the *2014-2015 Annual Report for Storm Water Discharges Associated with Industrial Activities* (Appendix A). In addition, per IGP requirements, a copy of this Annual Report will be maintained at the facility.

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Background

Berkeley Lab is a member of the national laboratory system supported by the U.S. Department of Energy through its Office of Science. It is managed by the University of California (UC) and conducts unclassified research across a wide range of scientific disciplines. The facility occupies approximately 200 acres within the Cities of Berkeley and Oakland, both of which are located in Alameda County. Roughly one-half of the site is within Strawberry Canyon and has a south-facing orientation; the balance is within Blackberry Canyon and is oriented toward the west. Approximately 80 permanent buildings and 100 trailers and temporary structures are located at the facility. On the order of 110 acres are undeveloped with vegetated steep slopes. A facility map with major buildings and surrounding creeks is shown on Figure 2-1.

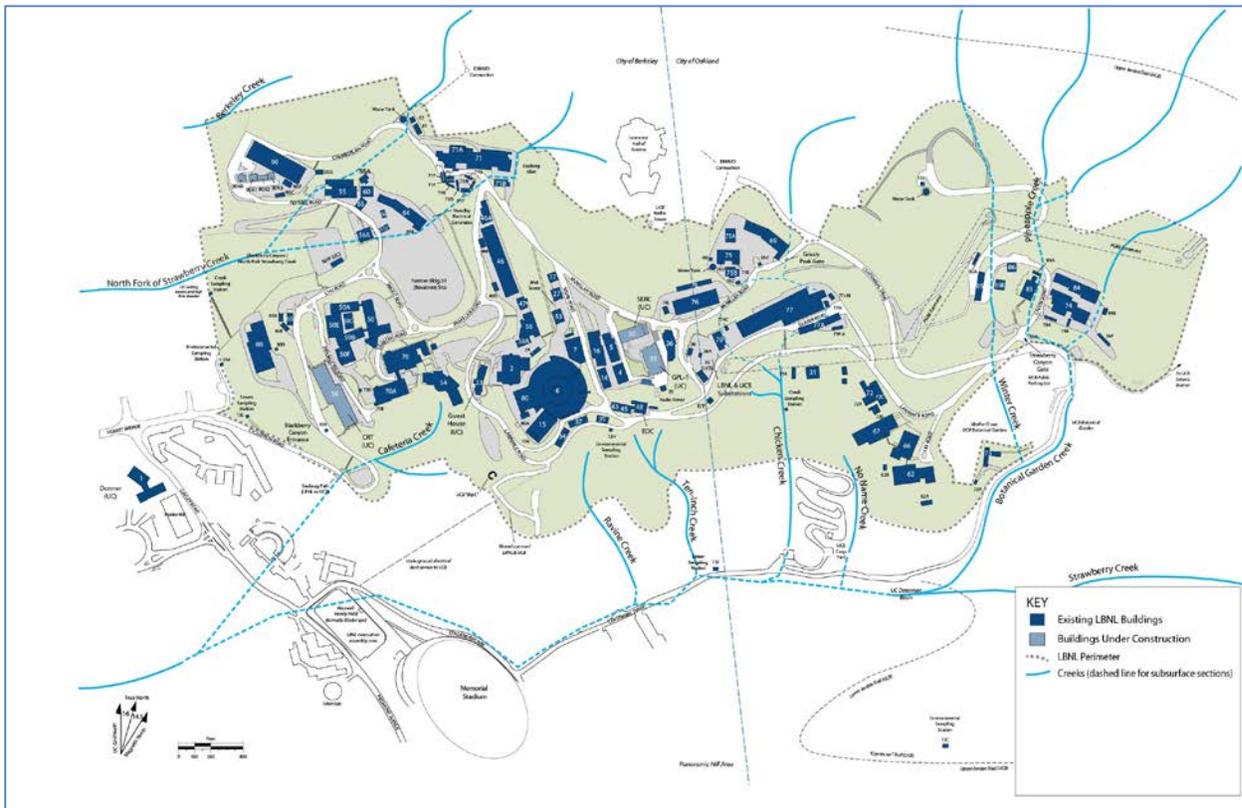


Figure 2-1 Facility Map

LBNL's stormwater discharges are regulated by the IGP based on operations that fall within the following Standard Industrial Classification (SIC) codes:

- 4173 – Terminal and Service Facilities for Motor Vehicle Passenger Transportation
- 3499 – Fabricated Metal Products, Not Elsewhere Classified
- 4953 – Hazardous Waste Treatment Storage or Disposal Facilities
- 5093 – Scrap Recycling Facilities

A Notice of Intent for coverage under the Industrial General Permit was submitted to the San Francisco Bay Regional Water Quality Control Board (RWQCB) on April 1, 1992. The Waste Discharge Identification number issued by RWQCB for the facility is 2 01 I002421.

Historically the LBNL Stormwater Monitoring Plan (LBNL, 2005) focused on larger drainage areas within the site where stormwater discharges have commingled with stormwater from areas with little or no industrial activity. In 2008, LBNL proposed modifying the Stormwater Monitoring Plan so that the focus would be on areas of industrial activity that are specifically regulated by the IGP, as these have the most potential to contribute stormwater pollutants. Alternative stormwater monitoring locations (monitoring points, or MPs) were proposed and presented to the RWQCB in December 2008. The alternative monitoring locations provided discharge data for pollutants closer to potential sources. This allowed for improved evaluation of the specific potential source areas and assessment of additional Best Management Practices (BMPs) to control contributions of pollutants from potential source areas. The ASWMP was developed and implemented in February 2009 and updated in September 2009.

LBNL has identified five permit-regulated industrial areas where stormwater discharges come in contact with industrial activities:

1. Parking and storage at the Blackberry Parking Lot
2. Fuel dispensing at the Building 76 Vehicle Fueling Station
3. Metal fabrication, storage, and scrap recycling area between Buildings 77 and 79
4. Hazardous waste treatment, storage, and disposal at the Building 85 Hazardous Waste Handling Facility
5. Bus parking in front of Building 64

A SWPPP has been developed and maintained for the site. It identifies the BMPs that must be implemented to reduce stormwater pollution. It also establishes an annual stormwater inspection program to evaluate areas associated with industrial activity that have a potential to contribute a stormwater discharge, and the effectiveness of the BMPs to reduce pollutant discharges.

The most recent SWPPP was prepared in April 2014, and has incorporated additional BMPs related to fire hydrant, sprinkler and standpipe flushing. The SWPPP revision also includes specific references to required BMPs.

3

Storm Event Sampling and Analysis

3.1 General Sampling Information

As required by the IGP and LBNL's ASWMP, samples from two rainfall events that resulted in stormwater discharges were collected during the 2014-2015 wet-weather season; the first sampling took place on October 31, 2014 and the second on February 6, 2015. All stormwater samples were collected under the following IGP-required conditions:

- Runoff occurred during normal business operating hours;
- The sample was collected within the first hour of discharge from the site; and
- Rainfall had not been measured at the facility within three working days prior to the sampling event.

For both sampling events, the stormwater discharge locations were sampled in accordance with the LBNL's ASWMP. Figure 3-1 shows the six monitored industrial areas as follows:

MP-1: Blackberry Parking Lot

MP-2: Building 76 Vehicle Fueling Station

MP-3: Building 77/79 Metal Fabrication, Storage and Scrap Recycling Area

MP-4: Building 85 Hazardous Waste Handling Facility, Upper Yard

MP-5: Building 85 Hazardous Waste Handling Facility, Lower Yard

MP-6: Building 64 Bus Parking Lot

For all rainfall sampling events, surface water samples were collected and placed into sample containers prepared by the analytical laboratory following Environmental Services Group (ESG) standard operating procedures *Surface Water Monitoring*, ESG Procedure 263 (LBNL, 2014) and *Environmental Sample Tracking and Data Management*, ESG Procedure 268 (LBNL, 2015). The analytical laboratories contracted by LBNL for stormwater sample analysis are Curtis & Tompkins Laboratories of Berkeley, California and BC Laboratories, Inc. of Bakersfield, California.

All stormwater samples were analyzed for the standard analytical parameters as stipulated in the IGP and included:

- Total Suspended Solids (TSS) as required by United States Environmental Protection Agency (USEPA) Method SM-2540D
- pH by testing with a calibrated temperature-compensating pH tester
- Specific conductance using USEPA Method SM-2510B or 120.1
- Total oil and grease using USEPA Method 1664 (HEM-SGT)

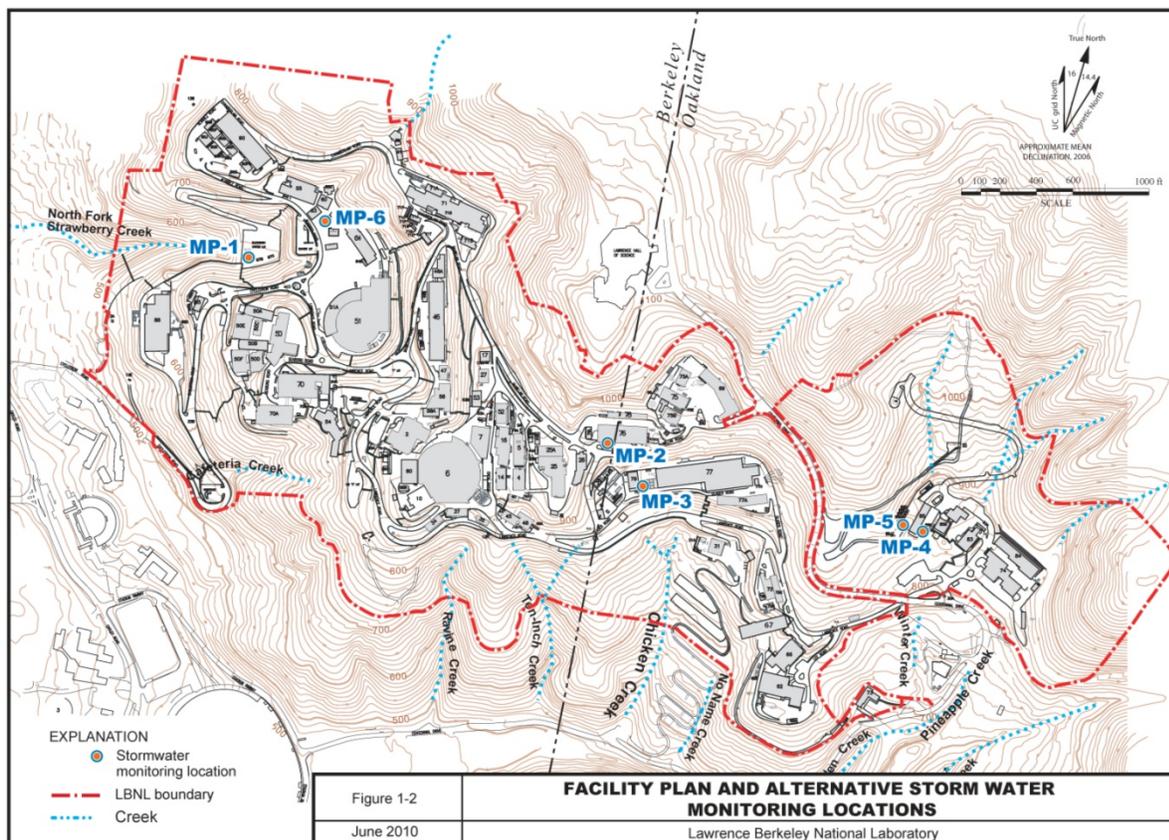


Figure 3-1 Monitoring Locations

Based on SIC 3499 – Fabricated Metal Products and on SIC 5093 – Scrap Recycling Facility, samples from the Building 77/79 metal fabrication, storage and scrap recycling area were also analyzed for the following sector parameters:

- Nitrite and nitrate (as nitrogen) using USEPA Method 300.0 or 353.2
- Total aluminum, total iron and total zinc using USEPA 200.7 or 200.8
- Chemical Oxygen Demand (COD) using USEPA 410.4
- Total aluminum, total copper, total iron, total lead, and total zinc using USEPA 200.7 or 200.8.

Based on SIC 4953 – Hazardous Waste Treatment Storage or Disposal Facilities, samples from the Building 85 Hazardous Waste Handling Facility were also analyzed for the following sector parameters:

- Ammonia as nitrogen using SM-4500 or USEPA 350.1
- Total magnesium using USEPA 200.7
- Chemical Oxygen Demand (COD) using USEPA 410.4
- Total arsenic using USEPA 200.7 or 200.8
- Total cadmium using USEPA 200.7 or 200.8
- Total cyanide using USEPA 335.4
- Total lead using USEPA 200.7 or 200.8

- Total mercury using USEPA 245.1
- Total selenium using USEPA 200.7 or 200.8
- Total silver using USEPA 200.7 or 200.8

The complete set of sample analytical results is found in Attachment A, Form 1. Results were compared to the applicable parameter benchmark values established by the USEPA (USEPA, 1998).

3.2 October 31, 2014 Storm Event

Stormwater samples were collected during a rain event on October 31, 2014 in accordance with the California Water Board's IGP and LBNL's ASWMP. The sampling results showed that LBNL's stormwater BMPs provide adequate control for stormwater discharges at four of six designated industrial locations with the exceptions being the Blackberry Parking Lot the Building 77/79 Metal Fabrication, Storage and Scrap Recycling Area.

At the Blackberry Parking Lot, TSS was detected at 150 milligrams per liter (mg/L) which exceeded the benchmark value of 100 mg/L. At the Building 77/79 Metal Fabrication, Storage and Scrap Recycling Area zinc was detected at 0.30 mg/L which exceeded the benchmark goal of 0.117 mg/L.

On December 12, 2014 a letter was sent to the San Francisco Bay RWQCB describing these exceedances and the subsequent corrective actions implemented to reduce and/or eliminate them in the future. A copy of the letter (ES-15-023 Stormwater Monitoring Report for LBNL) is provided in Appendix B, which also includes the following October 31, 2014 storm event sampling documents:

- LBNL Sample Collection Form
- pH and Turbidity Calibration and Measurement Worksheet
- Curtis & Tompkins Laboratories Analytical Report

In addition, the benchmark goal for magnesium at the Building 85 Hazardous Waste Handling Facility's Lower and Upper Yards was exceeded; however, a source study in 2009 had determined that the elevated level of magnesium is due to aerial deposition of naturally occurring magnesium in the soil surrounding both yards and not from waste management activities at the facility. As a result, no additional BMPs are warranted.

The Technical Memorandum on the Hazardous Waste Handling Facility Investigative Studies was submitted to the RWQCB with the 2009/10 Annual Stormwater Report and is included as Appendix D of this report.

The SWPPP was revised in April 2014 to incorporate improvements in BMPs and implemented within 90 days in accordance with IGP requirements. It is understood that any revisions to an existing BMP may require modification by the RWQCB.

3.3 February 6, 2015 Storm Event

Stormwater samples were collected on February 6, 2015 in accordance with the California Water Board's IGP and the LBNL ASWMP. The sampling results determined that LBNL's existing and improved stormwater BMPs provide adequate control for stormwater discharges at three of six designated industrial locations; the exceptions being the Blackberry Parking lot, the Building 77/79 Metal Fabrication, Storage and Scrap Recycling Area, and the Building 85 Hazardous Waste Handling Facility's lower yard.

At the Blackberry Parking Lot the TSS value of 240 mg/L exceeded the EPA's benchmark value of 100 mg/L.

At the Building 77/79 Metal Fabrication, Storage, and Scrap Recycling Yard, the COD value of 130 mg/L exceeded the EPA's benchmark value of 120 mg/L, and the nitrate and nitrite value of 1.30 mg/L exceeded the benchmark value of 0.68 mg/L. Aluminum was detected at 1.0 mg/L which exceeded the benchmark goal of 0.75 mg/L, iron was detected at 2.0 mg/L which exceeded the benchmark goal of 1.0 mg/L, zinc was detected at 0.73 mg/L which exceeded the benchmark goal of 0.117 mg/L, and copper was detected at 0.2 mg/L which exceeded the benchmark goal of 0.0636 mg/L.

At the Building 85 Lower Yard the COD value of 140 mg/L exceeded the benchmark value of 25 mg/L.

On March 25, 2015 a letter was sent to the San Francisco Bay RWQCB describing the exceedances and the subsequent corrective actions implemented to reduce and/or eliminate in the future. A copy of the letter (ES-15-048 Stormwater Monitoring Report for LBNL) is provided in Appendix C, which also includes the following February 6, 2015 storm event sampling documents:

- LBNL Sample Collection Form
- pH and Turbidity Calibration and Measurement Worksheet
- Curtis & Tompkins Laboratories Analytical Report

As referenced in Section 3.2, the benchmark goal for magnesium at the Building 85 Hazardous Waste Handling Facility's Lower and Upper Yards was exceeded; however, a source study in 2009 had determined that the elevated level of magnesium is due to aerial deposition of naturally occurring magnesium in the soil surrounding both yards and not from waste management activities at the facility. As a result, no additional BMPs are warranted.

The Technical Memorandum on the Hazardous Waste Handling Facility Investigative Studies was submitted to the RWQCB with the 2009/2010 Annual Stormwater Report and is included as Appendix D of this report.

The SWPPP was revised in April 2014 to incorporate improvements in BMPs and implemented within 90 days in accordance with IGP requirements. It is understood that any revisions to an existing BMP may require modification by the RWQCB.

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Visual Observations of Non-Stormwater and Stormwater Discharges

4.1 Observations of Authorized Non-Stormwater Discharges

Quarterly visual observations conducted during the 2014-2015 season included the following authorized non-stormwater discharges:

- Groundwater discharges from hydraugers
- Retaining wall weep holes
- Discharges of condensate from air conditioning units
- Fire suppression system tests
- Creek flow
- Accumulated rainwater

Visual observations revealed no odor, cloudiness or turbidity, discoloring, staining, floating objects, or oil sheen in these discharges.

During the 2014-2015 season visual observations of the following discharges were also performed:

- On July 8, 2014 an underground water line at Building 75E developed cracks and seeped domestic water through surface cracks and utility vaults within the immediate vicinity of the pipe failure. The water line was shut off and taken out of service to prevent further discharges. Anti-chloramine tablets and storm drain inlet protection were deployed nearby as preventative measures and remained in place until repairs were completed on February 15, 2015. Visual observations revealed no odor, cloudiness or turbidity, discoloring, staining, and floating objects, or oil sheen in the water within the vicinity of the water line break.
- On October 2, 2014 a broken irrigation line at Building 90 discharged less than approximately 50 gallons of domestic water. The water supply was shut off and repairs to the line were completed on October 5, 2014.
- On November 3, 2014 a small fire inside Building 70 activated the fire suppression system which released less than 100 gallons of fire suppression water into the storm drain system below Buildings 70 and 70A, which discharges to the North Fork of Strawberry Creek.
- On May 5, 2015 the Building 54 fire suppression system was tested with inadequate deployment of dechlorination tablets. Approximately 50 gallons of domestic water was discharged to the storm drain system that outfalls into Cafeteria Creek. On May 27, 2015 a meeting was held to review fire suppression system testing procedures and protocols.

A summary of the authorized non-stormwater quarterly visual observations is included in Appendix A, Form 2. The detailed inspection forms are provided in Appendix E.

4.2 Observations of Unauthorized Non-Stormwater Discharges

Quarterly visual observations were conducted on potentially unauthorized non-stormwater discharges on:

- August 12, 2014
- November 10, 2014
- February 13, 2015
- May 5, 2015

No indications of prior unauthorized non-stormwater discharges or evidence of unauthorized discharges were observed during the 2014-2015 wet season. However, additional visual observations were performed on the following un-authorized non-stormwater discharges:

- On October 16, 2014 approximately 400 gallons of untreated and 1000 gallons of treated groundwater was released to the storm drain system after a pump failed at the B51 Fire Trail groundwater treatment system.
- On February 24, 2015 the B46 groundwater treatment system sump pump #1 failed, which filled the sump pump vault, but was not released to the stormwater conveyance system. On February 25, 2015 the system was switched to sump pump #2, which also failed. On February 26, 2015 a temporary sump pump was installed until permanent repairs were completed.

A summary of the unauthorized non-stormwater quarterly visual observations is included in Form 3 of Appendix A. The detailed inspection forms are provided in Appendix E.

4.3 Monthly Wet Season Observations

Monthly visual observations were conducted during the 2014-2015 wet weather season between October 2014 and May 2015. The monthly observations did reveal some areas of dark brown color, turbidity, floatables, and/or sheen at the stormwater discharges from the North Fork of Strawberry Creek, Chicken Creek, and the Winter Creek and Pineapple Creek effluent and influent location as well as certain selected industrial areas.

Turbidity was probably caused by remobilization due to flow rates within the creek, and the floatables were due to stormwater run-off from impervious surfaces such as roads and parking lots. Foam was also visible, and was most likely the result of decomposing plants and animals releasing fatty acids, which act as a surface tension reducing agent.

The monthly observations from October, November, and December 2014 and February 2015 indicated oil sheen in the following locations:

- At each of the monitoring locations MP-1 through MP-6 during the October 31, 2014 inspection.
- At the MP-1,-2, -3 and -6 monitoring locations on November 13, 2014 and December 11, 2014.
- At the MP-1,-2, -3 monitoring points and Building 54 on February 26, 2015.

The sheen is attributable to dripping oil/gasoline from personal vehicles in stormwater runoff.

All of these locations are now equipped with oil absorbent pads in the storm drain inlets. This BMP appears to be effective; since the 2014-15 wet season stormwater monitoring events show that all the oil and grease data were below the stormwater benchmark of 15 mg/L.

A summary of the wet weather monthly visual observations is presented in Appendix A, Form 4. The detailed inspection forms are provided in Appendix E.

5

References

California State Water Resources Control Board, *National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 State General Permit for Stormwater Discharges Associated with Industrial Activities*, Water Quality Order 97-03-DWQ, April 1997.

Lawrence Berkeley National Laboratory, *Stormwater Pollution Prevention Plan*, Revision 14, Environmental Services Group, April 2014.

Lawrence Berkeley National Laboratory, *Alternative Stormwater Monitoring Program*, Environmental Services Group, September 2009.

Lawrence Berkeley National Laboratory, *Stormwater Monitoring Plan*, Environmental Services Group, November 2005.

Lawrence Berkeley National Laboratory, *Surface Water Monitoring*, ESG Procedure 263, Environmental Services Group, December 2014.

Lawrence Berkeley National Laboratory, *Environmental Sample Tracking and Data Management*, ESG Procedure 268, Environmental Services Group, June 2015.

United States Environmental Protection Agency (USEPA), *Final Modification of the National Pollutant Discharge Elimination System (NPDES) Stormwater Multi-Sector General Permit for Industrial Activities, Termination of the EPA NPDES Storm Water Baseline Industrial General Permit*, September 30, 1998, Washington D.C. Federal Register.

Appendix A

2014-2015 Annual Report

State Water Resources Control Board

To Interested Parties:

2014-2015 ANNUAL REPORT ANNUAL REPORT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

Attached is the 2014-2015 annual report that must be mailed to your Regional Board office by July 1, 2015. Dischargers within the Los Angeles Regional Board are required to electronically submit their annual reports via the Storm Water Multi-Application Reporting and Tracking System (SMARTS), email with a PDF attachment(s) to losangeles@waterboards.ca.gov, or mail a disk. Although electronic submittals are not mandatory for dischargers in other regions, we encourage all dischargers to register and use SMARTS. We anticipate that a new Industrial General Permit (IGP) will be adopted sometime next year that will mandate electronic reporting for future reporting years.

To register to use SMARTS please visit: <https://smarts.waterboards.ca.gov> and download the SMARTS LRP registration form and instructions. Please fill out the form and mail it back to: SMARTS Registration, P.O. Box 1977, Sacramento, CA 95812. Once a complete registration form is received, a login name and password will be emailed to you.

For SMARTS registration questions or information please contact the SMARTS help center at 1-866-563-3107 or by email at stormwater@waterboards.ca.gov.

To receive email updates on Storm Water Industrial permitting issues including updates on the IGP reissuance process (hearings, workshops, schedules, etc.), please sign up at http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml The Storm Water program currently maintains five email lists:

- Storm Water Database Issues
- Storm Water Construction Permitting Issues
- Storm Water Industrial Permitting Issues
- Storm Water Municipal Permitting Issues
- Sustainable Development

Sincerely,

Storm Water Section



State of California
STATE WATER RESOURCES CONTROL BOARD

2014-2015
ANNUAL REPORT
FOR
STORM WATER DISCHARGES ASSOCIATED
WITH INDUSTRIAL ACTIVITIES

Reporting Period July 1, 2014 through June 30, 2015

An annual report is required to be submitted to your local Regional Water Quality Control Board (Regional Board) by July 1 of each year. This document must be certified and signed, under penalty of perjury, by the appropriate official of your company. Many of the Annual Report questions require an explanation. Please provide explanations on a separate sheet as an attachment. **Retain a copy of the completed Annual Report for your records.**

Please circle or highlight any information contained in Items A, B, and C below that is new or revised so we can update our records. Please remember that a Notice of Termination and new Notice of Intent are required whenever a facility operation is relocated or changes ownership.

If you have any questions, please contact your Regional Board Industrial Storm Water Permit Contact. The names, telephone numbers and e-mail addresses of the Regional Board contacts, as well as the Regional Board office addresses can be found at <http://www.waterboards.ca.gov/stormwtr/contact.html>. To find your Regional Board information, match the first digit of your WDID number with the corresponding number that appears in parenthesis on the first line of each Regional Board office.

GENERAL INFORMATION:

Facility WDID No: 2 01I002421

A. Facility Information:

Facility Business: Lawrence Berkeley National Laboratory Contact Person: Brendan J. Mulholland

Physical Address: 1 Cyclotron Road e-mail: bjmulholland@lbl.gov

City: Berkeley State: California Zip: 94720 Phone: (510) 486-5284

Standard Industrial Classification (SIC) Code(s): 8733, 4953, 5093

B. Facility Operator Information:

Operator Name: Lawrence Berkeley National Laboratory Contact Person: Brendan J. Mulholland

Mailing Address: 1 Cyclotron Road MS75B0101 e-mail: bjmulholland@lbl.gov

City: Berkeley State: California Zip: 94720 Phone: (510) 486-5284

C. Facility Billing Information:

Operator Name: Lawrence Berkeley National Laboratory Contact Person: Ron Pauer

Mailing Address: 1 Cyclotron Road MS75B0101 e-mail: ROPauer@lbl.gov

City: Berkeley State: California Zip: 94720 Phone: (510) 486-7614

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SPECIFIC INFORMATION

MONITORING AND REPORTING PROGRAM

D. SAMPLING AND ANALYSIS EXEMPTIONS AND REDUCTIONS

1. For the reporting period, was your facility exempt from collecting and analyzing samples from **two** storm events in accordance with sections B.12 or 15 of the General Permit?

YES Go to Item D.2 **NO** Go to Section E

2. Indicate the reason your facility is exempt from collecting and analyzing samples from **two** storm events. Attach a copy of the first page of the appropriate certification if you check boxes ii, iii, iv, or v.

i. Participating in an Approved Group Monitoring Plan **Group Name:** _____

ii. Submitted **No Exposure Certification (NEC)** Date Submitted: ____/____/____
Re-evaluation Date: ____/____/____

Does facility continue to satisfy NEC conditions? YES NO

iii. Submitted **Sampling Reduction Certification (SRC)** Date Submitted: ____/____/____
Re-evaluation Date: ____/____/____

Does facility continue to satisfy SRC conditions? YES NO

iv. Received Regional Board Certification Certification Date: ____/____/____

v. Received Local Agency Certification Certification Date: ____/____/____

3. If you checked boxes i or iii above, were you scheduled to sample **one** storm event during the reporting year?

YES Go to Section E **NO** Go to Section F

4. If you checked boxes ii, iv, or v, go to Section F.

E. SAMPLING AND ANALYSIS RESULTS

1. How many storm events did you sample? 2 If less than 2, **attach explanation** (if you checked item D.2.i or iii. above, only attach explanation if you answer "0").

2. Did you collect storm water samples from the first storm of the wet season that produced a discharge during scheduled facility operating hours? (Section B.5 of the General Permit)

YES **NO** **attach explanation (Please note that if you do not sample the first storm event, you are still required to sample 2 storm events)**

3. How many storm water discharge locations are at your facility? 6 monitored industry specific sampling locations

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4. For each storm event sampled, did you collect and analyze a sample from each of the facility's' storm water discharge locations? YES, go to Item E.6 NO
5. Was sample collection or analysis reduced in accordance with Section B.7.d of the General Permit? YES NO, **attach explanation**
- If "YES", **attach documentation** supporting your determination that two or more drainage areas are substantially identical.
- Date facility's drainage areas were last evaluated _____ / _____ / _____
6. Were all samples collected during the first hour of discharge? YES NO, **attach explanation**
7. Was all storm water sampling preceded by three (3) working days without a storm water discharge? YES NO, **attach explanation**
8. Were there any discharges of storm water that had been temporarily stored or contained? (such as from a pond) YES NO, go to Item E.10
9. Did you collect and analyze samples of temporarily stored or contained storm water discharges from two storm events? (or one storm event if you checked item D.2.i or iii. above) YES NO, **attach explanation**
10. Section B.5. of the General Permit requires you to analyze storm water samples for pH, Total Suspended Solids (TSS), Specific Conductance (SC), Total Organic Carbon (TOC) or Oil and Grease (O&G), other pollutants likely to be present in storm water discharges in significant quantities, and analytical parameters listed in Table D of the General Permit.
- a. Does Table D contain any additional parameters related to your facility's SIC code(s)? YES NO, Go to Item E.11
- b. Did you analyze all storm water samples for the applicable parameters listed in Table D? YES NO
- c. If you did not analyze all storm water samples for the applicable Table D parameters, check one of the following reasons:
- _____ In prior sampling years, the parameter(s) have not been detected in significant quantities from two consecutive sampling events. **Attach explanation**
- _____ The parameter(s) is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities based upon the facility operator's evaluation. **Attach explanation**
- _____ Other. **Attach explanation**
11. For each storm event sampled, attach a copy of the laboratory analytical reports and report the sampling and analysis results using **Form 1** or its equivalent. The following must be provided for each sample collected:
- Date and time of sample collection
 - Name and title of sampler
 - Parameters tested
 - Name of analytical testing laboratory
 - Discharge location identification
 - Testing results
 - Test methods used
 - Test detection limits
 - Date of testing
 - Copies of the laboratory analytical results

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F. QUARTERLY VISUAL OBSERVATIONS

1. **Authorized Non-Storm Water Discharges**

Section B.3.b of the General Permit requires quarterly visual observations of all authorized non-storm water discharges and their sources.

- a. Do authorized non-storm water discharges occur at your facility?

YES **NO** Go to Item F.2

- b. Indicate whether you visually observed all authorized non-storm water discharges and their sources during the quarters when they were discharged. **Attach an explanation for any "NO" answers.** Indicate "N/A" for quarters without any authorized non-storm water discharges.

July-September **YES** **NO** **N/A** October-December **YES** **NO** **N/A**

January-March **YES** **NO** **N/A** April-June **YES** **NO** **N/A**

- c. Use **Form 2** to report quarterly visual observations of authorized non-storm water discharges or provide the following information:

- i. name of each authorized non-storm water discharge
- ii. date and time of observation
- iii. source and location of each authorized non-storm water discharge
- iv. characteristics of the discharge at its source and impacted drainage area/discharge location
- v. name, title, and signature of observer
- vi. **any** new or revised BMPs necessary to reduce or prevent pollutants in authorized non-storm water discharges. Provide new or revised BMP implementation date.

2. **Unauthorized Non-Storm Water Discharges**

Section B.3.a of the General Permit requires quarterly visual observations of all drainage areas to detect the presence of unauthorized non-storm water discharges and their sources.

- a. Indicate whether you visually observed all drainage areas to detect the presence of unauthorized non-storm water discharges and their sources. **Attach an explanation for any "NO" answers.**

July-September **YES** **NO** October-December **YES** **NO**

January-March **YES** **NO** April-June **YES** **NO**

- b. Based upon the quarterly visual observations, were any unauthorized non-storm water discharges detected?

YES **NO** Go to Item F.2.d

- c. Have each of the unauthorized non-storm water discharges been eliminated or permitted?

YES **NO** **Attach explanation**

- d. Use **Form 3** to report quarterly unauthorized non-storm water discharge visual observations or provide the following information:

- i. name of each unauthorized non-storm water discharge
- ii. date and time of observation
- iii. source and location of each unauthorized non-storm water discharge
- iv. characteristics of the discharge at its source and impacted drainage area/discharge location
- v. name, title, and signature of observer
- vi. **any** corrective actions necessary to eliminate the source of each unauthorized non-storm water discharge and to clean impacted drainage areas. Provide date unauthorized non-storm water discharge(s) was eliminated or scheduled to be eliminated.

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G. MONTHLY WET SEASON VISUAL OBSERVATIONS

Section B.4.a of the General Permit requires you to conduct monthly visual observations of storm water discharges at all storm water discharge locations during the wet season. These observations shall occur during the first hour of discharge or, in the case of temporarily stored or contained storm water, at the time of discharge.

1. Indicate below whether monthly visual observations of storm water discharges occurred at all discharge locations. **Attach an explanation for any "NO" answers.** Include in this explanation whether any eligible storm events occurred during scheduled facility operating hours that did not result in a storm water discharge, and provide the date, time, name and title of the person who observed that there was no storm water discharge.

	YES	NO		YES	NO
October	<input checked="" type="checkbox"/>	<input type="checkbox"/>	February	<input checked="" type="checkbox"/>	<input type="checkbox"/>
November	<input checked="" type="checkbox"/>	<input type="checkbox"/>	March	<input checked="" type="checkbox"/>	<input type="checkbox"/>
December	<input checked="" type="checkbox"/>	<input type="checkbox"/>	April	<input checked="" type="checkbox"/>	<input type="checkbox"/>
January	<input checked="" type="checkbox"/>	<input type="checkbox"/>	May	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2. Report monthly wet season visual observations using **Form 4** or provide the following information:
- date, time, and location of observation
 - name and title of observer
 - characteristics of the discharge (i.e., odor, color, etc.) and source of any pollutants observed
 - any** new or revised BMPs necessary to reduce or prevent pollutants in storm water discharges. Provide new or revised BMP implementation date.

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION (ACSCE)

H. ACSCE CHECKLIST

Section A.9 of the General Permit requires the facility operator to conduct one ACSCE in each reporting period (July 1-June 30). Evaluations must be conducted within 8-16 months of each other. The SWPPP and monitoring program shall be revised and implemented, as necessary, within 90 days of the evaluation. The checklist below includes the minimum steps necessary to complete a ACSCE. Indicate whether you have performed each step below. **Attach an explanation for any "NO" answers.**

1. Have you inspected all potential pollutant sources and industrial activities areas? YES NO
The following areas should be inspected:
- | | |
|--|--|
| <ul style="list-style-type: none"> • areas where spills and leaks have occurred during the last year • outdoor wash and rinse areas • process/manufacturing areas • loading, unloading, and transfer areas • waste storage/disposal areas • dust/particulate generating areas • erosion areas | <ul style="list-style-type: none"> • building repair, remodeling, and construction • material storage areas • vehicle/equipment storage areas • truck parking and access areas • rooftop equipment areas • vehicle fueling/maintenance areas • non-storm water discharge generating areas |
|--|--|
2. Have you reviewed your SWPPP to assure that its BMPs address existing potential pollutant sources and industrial activities areas? YES NO
3. Have you inspected the entire facility to verify that the SWPPP's site map is up-to-date? The following site map items should be verified: YES NO
- | | |
|--|--|
| <ul style="list-style-type: none"> • facility boundaries • outline of all storm water drainage areas • areas impacted by run-on • storm water discharges locations | <ul style="list-style-type: none"> • storm water collection and conveyance system • structural control measures such as catch basins, berms, containment areas, oil/water separators, etc. |
|--|--|

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4. Have you reviewed all General Permit compliance records generated since the last annual evaluation? YES NO

The following records should be reviewed:

- quarterly authorized non-storm water discharge visual observations
- monthly storm water discharge visual observation
- records of spills/leaks and associated clean-up/response activities
- quarterly unauthorized non-storm water discharge visual observations
- Sampling and Analysis records
- preventative maintenance inspection and maintenance records

5. Have you reviewed the major elements of the SWPPP to assure compliance with the General Permit? YES NO

The following SWPPP items should be reviewed:

- pollution prevention team
- list of significant materials
- description of potential pollutant sources
- assessment of potential pollutant sources
- identification and description of the BMPs to be implemented for each potential pollutant source

6. Have you reviewed your SWPPP to assure that a) the BMPs are adequate in reducing or preventing pollutants in storm water discharges and authorized non-storm water discharges, and b) the BMPs are being implemented? YES NO

The following BMP categories should be reviewed:

- good housekeeping practices
- spill response
- employee training
- erosion control
- quality assurance
- preventative maintenance
- material handling and storage practices
- waste handling/storage
- structural BMPs

7. Has all material handling equipment and equipment needed to implement the SWPPP been inspected? YES NO

I. ACSCE EVALUATION REPORT

The facility operator is required to provide an evaluation report that includes:

- identification of personnel performing the evaluation
- the date(s) of the evaluation
- necessary SWPPP revisions
- schedule for implementing SWPPP revisions
- any incidents of non-compliance and the corrective actions taken

Use **Form 5** to report the results of your evaluation or develop an equivalent form.

J. ACSCE CERTIFICATION

The facility operator is required to certify compliance with the Industrial Activities Storm Water General Permit. To certify compliance, both the SWPPP and Monitoring Program must be up to date and be fully implemented.

Based upon your ACSCE, do you certify compliance with the Industrial Activities Storm Water General Permit? YES NO

If you answered "NO" **attach an explanation** to the ACSCE Evaluation Report why you are not in compliance with the Industrial Activities Storm Water General Permit.

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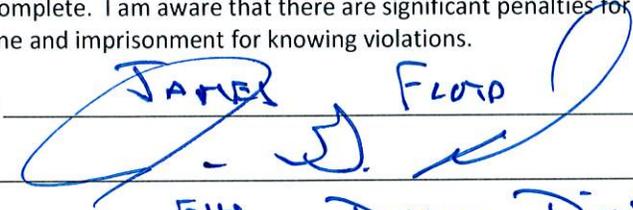
ATTACHMENT SUMMARY

Answer the questions below to help you determine what should be attached to this annual report. Answer NA (Not Applicable) to questions 2-4 if you are not required to provide those attachments.

- 1. Have you attached Forms 1,2,3,4, and 5 or their equivalent? YES (Mandatory)
- 2. If you conducted sampling and analysis, have you attached the laboratory analytical reports? YES NO NA
- 3. If you checked box II, III, IV, or V in item D.2 of this Annual Report, have you attached the first page of the appropriate certifications? YES NO NA
- 4. Have you attached an explanation for each "NO" answer in items E.1, E.2, E.5-E.7, E.9, E.10.c, F.1.b, F.2.a, F.2.c, G.1, H.1-H.7, or J? YES NO NA

ANNUAL REPORT CERTIFICATION

I am duly authorized to sign reports required by the INDUSTRIAL ACTIVITIES STORM WATER GENERAL PERMIT (see Standard Provision C.9) and I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: JAMES FLOTO
Signature:  Date: 6-27-15
Title: EHS Deputy Director

EXPLANATIONS TO SPECIFIC 2014-2015 ANNUAL REPORT QUESTIONS

E.5

Sample collection and analysis was not reduced in accordance with Section B.7.d of the general Permit. On February 1st, 2009 the Regional Water Quality Control Board (RWQCB) approved LBNL's Alternative Stormwater Monitoring Plan (ASWMP).

E.10.b

For the first storm water sampling event on 10/31/2014, several analytical results exceeded their corresponding benchmark values including:

- TSS at MP1 (150 mg/l)
- Zinc at MP3 (0.3 mg/l)
- Magnesium at MP4 & MP5 (0.19 mg/l and 0.18 mg/l, respectively).

On December 12, 2014 a letter was sent to the San Francisco Bay Regional Water Quality Control Board describing these exceedances and the subsequent corrective actions implemented to reduce and/or eliminate them in the future. A copy of the letter (ES-15-023 Stormwater Sampling Report for Rain Event on October 31, 2014) is included in Appendix B.

For the second storm water sampling event on 02/06/2015, the following analytical results exceeded their corresponding benchmark values:

- TSS at MP1 (240 mg/l)
- Nitrate plus Nitrite at MP3 (1.3 mg/l)
- Aluminum, iron, zinc & copper at MP3 (1.00 mg/l, 2.00 mg/l, 0.73 mg/l, & 0.2 mg/l, respectively)
- Chemical Oxygen Demand (COD) at MP3 & MP4 (130 mg/l & 140 mg/l, respectively)
- Magnesium at MP4 & MP5 (1.00 mg/l and 0.64 mg/l, respectively).

On March 25, 2015 a letter was sent to the San Francisco Bay Regional Water Quality Control Board describing these exceedances and the subsequent corrective actions implemented to reduce and/or eliminate them in the future. A copy of the letter (ES-15-048 Stormwater Sampling Report for Rain Event on February 6, 2015) is included in Appendix C.

F.1.b

With few exceptions, only the authorized discharges that were occurring during the quarterly observation period were inspected. It is possible that authorized non-storm water discharges may occur at other times when no quarterly observations are taking place.

DESCRIPTION OF BASIC ANALYTICAL PARAMETERS

The Industrial Activities Storm Water General Permit (General Permit) requires you to analyze storm water samples for at least four parameters. These are pH, Total Suspended Solids (TSS), Specific Conductance (SC), and Total Organic Carbon (TOC). Oil and Grease (O&G) may be substituted for TOC. In addition, you must monitor for any other pollutants which you believe to be present in your storm water discharge as a result of industrial activity and analytical parameters listed in Table D of the General Permit. There are no numeric limitations for the parameters you test for.

The four parameters which the General Permit requires to be tested are considered *indicator* parameters. In other words, regardless of what type of facility you operate, these parameters are nonspecific and general enough to usually provide some indication whether pollutants are present in your storm water discharge. The following briefly explains what each of these parameters mean:

pH is a numeric measure of the hydrogen-ion concentration. The neutral, or acceptable, range is within 6.5 to 8.5. At values less than 6.5, the water is considered acidic; above 8.5 it is considered alkaline or basic. An example of an acidic substance is vinegar, and a alkaline or basic substance is liquid antacid. Pure rainfall tends to have a pH of a little less than 7. There may be sources of materials or industrial activities which could increase or decrease the pH of your storm water discharge. If the pH levels of your storm water discharge are high or low, you should conduct a thorough evaluation of all potential pollutant sources at your site.

Total Suspended Solids (TSS) is a measure of the undissolved solids that are present in your storm water discharge. Sources of TSS include sediment from erosion of exposed land, and dirt from impervious (i.e. paved) areas. Sediment by itself can be very toxic to aquatic life because it covers feeding and breeding grounds, and can smother organisms living on the bottom of a water body. Toxic chemicals and other pollutants also adhere to sediment particles. This provides a medium by which toxic or other pollutants end up in our water ways and ultimately in human and aquatic life. TSS levels vary in runoff from undisturbed land. It has been shown that TSS levels increase significantly due to land development.

Specific Conductance (SC) is a numerical expression of the ability of the water to carry an electric current. SC can be used to assess the degree of mineralization, salinity, or estimate the total dissolved solids concentration of a water sample. Because of air pollution, most rain water has a SC a little above zero. A high SC could affect the usability of waters for drinking, irrigation, and other commercial or industrial use.

Total Organic Carbon (TOC) is a measure of the total organic matter present in water. (All organic matter contains carbon) This test is sensitive and able to detect small concentrations of organic matter. Organic matter is naturally occurring in animals, plants, and man. Organic matter may also be man made (so called synthetic organics). Synthetic organics include pesticides, fuels, solvents, and paints. Natural organic matter utilizes the oxygen in a receiving water to biodegrade. Too much organic matter could place a significant oxygen demand on the water, and possibly impact its quality. Synthetic organics either do not biodegrade or biodegrade very slowly. Synthetic organics are a source of toxic chemicals that can have adverse affects at very low concentrations. Some of these chemicals bioaccumulate in aquatic life. If your levels of TOC are high, you should evaluate all sources of natural or synthetic organics you may use at your site.

Oil and Grease (O&G) is a measure of the amount of oil and grease present in your storm water discharge. At very low concentrations, O&G can cause a sheen (that floating "rainbow") on the surface of water (1 qt. of oil can pollute 250,000 gallons of water). O&G can adversely affect aquatic life and create unsightly floating material and film on water, thus making it undrinkable. Sources of O&G include maintenance shops, vehicles, machines and roadways.

If you have any questions regarding whether or not your constituent concentrations are too high, please contact your local Regional Board office. The United States Environmental Protection Agency (USEPA) has published stormwater discharge benchmarks for a number of parameters. These benchmarks may be helpful when evaluating whether additional BMPs are appropriate. These benchmarks can be accessed at our website at <http://www.waterboards.ca.gov>. It is contained in the Sampling and Analysis Reduction Certification.

See Storm Water Contacts at

http://www.waterboards.ca.gov/water_issues/programs/stormwater/contact.shtml

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FORM 1-SAMPLING AND ANALYSIS RESULTS FOR FIRST STORM EVENT

- If analytical results are less than the detection limit (or non-detectable), show the value as less than the numerical value of the detection limit (example: <.05)
- If you did not analyze for a required parameter, do not report "0". Instead, leave the appropriate box blank

- When analysis is done using portable analysis (such as portable pH meters, SC meters, etc.), indicate "PA" in the appropriate test method used box.
- Make additional copies of this form as necessary.

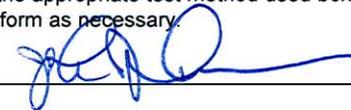
NAME OF PERSON COLLECTING SAMPLE(S):

John Jelinski

TITLE:

Quality Coordinator

SIGNATURE:



DESCRIBE DISCHARGE LOCATION	DATE / TIME OF SAMPLE LOCATION	TIME DISCHARGE STARTED	BASIC PARAMETERS				Nitrate+ Nitrite (as N)	Al Fe Zn	Cu	Pb	COD	As Cd Cn	Mg Hg Se Ag	NH ₃ (as N)
			pH	SC	TSS	O&G								
MP-1	10/31/2014 10:10 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	10/31/2014 10:00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	6.01	46	150	ND	NR	NR	NR	NR	NR	NR	NR	NR
MP-2	10/31/2014 11:00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	10/31/2014 10:00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	7.35	63	22	ND	NR	NR	NR	NR	NR	NR	NR	NR
MP-3	10/31/2014 10:30 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	10/31/2014 10:00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	7.11	45	42	ND	0.34	0.33 0.67 0.3	0.057	0.016	48	NR	NR	NR
MP-4	10/31/2014 10:40 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	10/31/2014 10:00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	7.05	18	10	ND	NR	NR	NR	ND	21	ND ND ND	0.19 ND ND ND	0.23
MP-5	10/31/2014 10:50 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	10/31/2014 10:00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	6.95	21	27	ND	NR	NR	NR	ND	22	ND ND ND	0.18 ND ND ND	0.24
MP-6	10/31/2014 10:20 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	10/31/2014 10:00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	6.91	40	34	ND	NR	NR	NR	NR	NR	NR	NR	NR
TEST REPORTING UNITS:			pH Units	µmhos/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg O/L	mg/L	mg/L	mg/L
TEST METHOD DETECTION LIMIT:			0.01	1.0	1.0	5.0	0.1	0.05	0.005	0.001	10	0.01-0.05	0.0002-0.1	0.1
TEST METHOD USED:			SM 4500 HB	USEPA 120.1 or SM 2510B	SM 2540D	USEPA 1664	USEPA 300.0 or 353.2	USEPA 200.7	USEPA 200.7	USEPA 200.7	USEPA 410.4	USEPA 200.7 335.4	USEPA 245.1 200.7	USEPA 353.2
ANALYZED BY (SELF/LAB):			SELF	LAB	LAB	LAB	LAB	LAB	LAB	LAB	LAB	LAB	LAB	LAB

Notes: TSS = Total Suspended Solids; SC = Specific Conductance; O&G = Oil & Grease; ND = Not Detected; N = Nitrogen; NR = Not Required; Al = Aluminum; Fe = Iron; Zn = Zinc; Cu = copper; Pb = Lead; COD = Chemical Oxygen Demand; As = Arsenic; Cd = Cadmium; Cn = Cyanide; Mg = Magnesium; Hg = Mercury; Se = Selenium; Ag = Silver; NH₃ = Ammonia.

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FORM 1-SAMPLING AND ANALYSIS RESULTS FOR SECOND STORM EVENT

- If analytical results are less than the detection limit (or non-detectable), show the value as less than the numerical value of the detection limit (example: <.05)
- If you did not analyze for a required parameter, do not report "0". Instead, leave the appropriate box blank

- When analysis is done using portable analysis (such as portable pH meters, SC meters, etc.), indicate "PA" in the appropriate test method used box.

NAME OF PERSON COLLECTING SAMPLE(S):

John Jelinski

TITLE:

Quality Coordinator

SIGNATURE:

DESCRIBE DISCHARGE LOCATION	DATE / TIME OF SAMPLE LOCATION	TIME DISCHARGE STARTED	BASIC PARAMETERS				Nitrate+ Nitrite (as N)	Al Fe Zn	Cu	Pb	COD	As Cd Cn	Mg Hg Se Ag	NH ₃ (as N)
			pH	SC	TSS	O&G								
MP-1	02/06/2015 10:35 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	02/06/2015 10:35 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	7.06	140	240	5.53	NR	NR	NR	NR	NR	NR	NR	NR
MP-2	02/06/2015 10:55 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	02/06/2015 10:35 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	7.65	130	47	ND	NR	NR	NR	NR	NR	NR	NR	NR
MP-3	02/06/2015 11:05 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	02/06/2015 10:35 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	7.68	100	49	ND	1.3	1.00 2.00 0.73	0.2	0.031	130	NR	NR	NR
MP-4	02/06/2015 11:15 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	02/06/2015 10:35 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	8.03	59	12	ND	NR	NR	NR	ND	140	ND ND ND	1.00 ND ND ND	0.54
MP-5	02/06/2015 11:25 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	02/06/2015 10:35 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	7.86	40	08	ND	NR	NR	NR	ND	56	ND ND ND	0.64 ND ND ND	0.59
MP-6	02/06/2015 10:45 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	02/06/2015 10:35 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	7.93	56	33	ND	NR	NR	NR	NR	NR	NR	NR	NR
TEST REPORTING UNITS:			pH Units	µmhos/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg O/L	mg/L	mg/L	mg/L
TEST METHOD DETECTION LIMIT:			0.01	1.0	1.0	5.0	0.1	0.05	0.005	0.001	10	0.01-0.05	0.0002-0.1	0.1
TEST METHOD USED:			SM 4500 HB	USEPA 120.1 or SM 2510B	SM 2540D	USEPA 1664	SM 2540D	USEPA 200.7	USEPA 200.7	USEPA 200.7	USEPA 410.4	USEPA 200.7 335.4	USEPA 245.1 200.7	USEPA 353.2
ANALYZED BY (SELF/LAB):			SELF	LAB	LAB	LAB	LAB	LAB	LAB	LAB	LAB	LAB	LAB	LAB

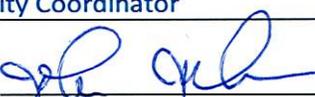
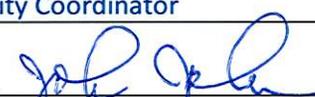
Notes: TSS = Total Suspended Solids; SC = Specific Conductance; O&G = Oil & Grease; ND = Not Detected; N = Nitrogen; NR = Not Required; Al = Aluminum; Fe = Iron; Zn = Zinc; Cu = copper; Pb = Lead; COD = Chemical Oxygen Demand; As = Arsenic; Cd = Cadmium; Cn = Cyanide; Mg = Magnesium; Hg = Mercury; Se = Selenium; Ag = Silver; NH₃ = Ammonia.

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FORM 2-QUARTERLY VISUAL OBSERVATIONS OF AUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

- * Quarterly dry weather visual observations are required of each authorized NSWD.
- Observe each authorized NSWD source, impacted drainage area, and discharge location.

- Authorized NSWDs must meet the conditions provided in Section D (pages 5-6), of the General Permit.
- Make additional copies of this form as necessary.

<p>QUARTER: JULY - SEPTEMBER</p> <p>DATE: August 12, 2014</p>	<p>Observers Name: <u>John Jelinski</u></p> <p>Title: <u>Quality Coordinator</u></p> <p>Signature: </p>	<p>WERE ANY AUTHORIZED NSWD'S DISCHARGED DURING THIS QUARTER?</p> <p><input checked="" type="checkbox"/> YES If YES, Complete the reverse side of this form</p> <p><input type="checkbox"/> NO</p> <p>The SWPPP includes a number of possible authorized NSWDs. Several were observed at this time</p>
<p>QUARTER: OCTOBER - DECEMBER</p> <p>DATE: November 03, 2014</p>	<p>Observers Name: <u>John Jelinski</u></p> <p>Title: <u>Quality Coordinator</u></p> <p>Signature: </p>	<p>WERE ANY AUTHORIZED NSWD'S DISCHARGED DURING THIS QUARTER?</p> <p><input checked="" type="checkbox"/> YES If YES, Complete the reverse side of this form</p> <p><input type="checkbox"/> NO</p> <p>The SWPPP includes a number of possible authorized NSWDs. Several were observed at this time</p>
<p>QUARTER: JANUARY - MARCH</p> <p>DATE: February 13, 2015</p>	<p>Observers Name: <u>John Jelinski</u></p> <p>Title: <u>Quality Coordinator</u></p> <p>Signature: </p>	<p>WERE ANY AUTHORIZED NSWD'S DISCHARGED DURING THIS QUARTER?</p> <p><input checked="" type="checkbox"/> YES If YES, Complete the reverse side of this form</p> <p><input type="checkbox"/> NO</p> <p>The SWPPP includes a number of possible authorized NSWDs. Several were observed at this time</p>
<p>QUARTER: APRIL - JUNE</p> <p>DATE: May 05, 2015</p>	<p>Observers Name: <u>John Jelinski</u></p> <p>Title: <u>Quality Coordinator</u></p> <p>Signature: </p>	<p>WERE ANY AUTHORIZED NSWD'S DISCHARGED DURING THIS QUARTER?</p> <p><input checked="" type="checkbox"/> YES If YES, Complete the reverse side of this form</p> <p><input type="checkbox"/> NO</p> <p>The SWPPP includes a number of possible authorized NSWDs, Several were observed at this time</p>

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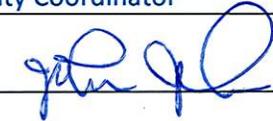
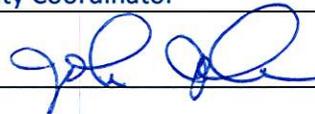
FORM 2-QUARTERLY VISUAL OBSERVATIONS OF AUTHORIZED NON-STORM WATER DISCHARGES (Continued)

DATE /TIME OF OBSERVATION	NAME OF AUTHORIZED NSWD <u>EXAMPLE:</u> AC Condensate	SOURCE AND LOCATION OF AUTHORIZED NSWD <u>EXAMPLE:</u> Groundwater	DESCRIBE AUTHORIZED NSWD CHARACTERISTICS Indicate whether unauthorized NSWD is clear, cloudy, discolored, causing stains; contains floating objects or an oil sheen, has odors, etc.		DESCRIBE ANY REVISED OR NEW BMPs AND PROVIDE THEIR IMPLEMENTATION DATE
			AT THE NSWD SOURCE	AT THE NSWD AREA & DISCHARGE LOCATION	
08/12/2014 08:55 <input checked="" type="checkbox"/> AM 10:05 <input type="checkbox"/> PM	Hydrauger discharge Hillside seepage Creek flow B75E water line break (7/8/14)	Groundwater Groundwater Groundwater Water line break	Clear, no staining, no floating objects, no oil sheen, no odor	Clear, no staining, no floating objects, no oil sheen, no odor	Note: B75E water line break repaired as of 02/15/2015.
11/10/2014 15:15 <input type="checkbox"/> AM 16:15 <input checked="" type="checkbox"/> PM	Hydrauger discharge Hillside seepage Creek flow Flexlab water line break (10/2/14) B58 Hydrant overflow (11/3/14)	Groundwater Groundwater Groundwater Water line break Fire suppression runoff	Clear, no staining, no floating objects, no oil sheen, no odor	Clear, no staining, no floating objects, no oil sheen, no odor	Flexlab irrigation line repaired 10/05/2014. B58 hydrant flushed for approx. 2 minutes after repairs were completed
02/13/2015 08:45 <input checked="" type="checkbox"/> AM 10:10 <input type="checkbox"/> PM	Hydrauger discharge Hillside seepage Creek flow B66 boiler room hose break B70 Fire suppression (01/13/15)	Groundwater Groundwater Groundwater Water line break Fire suppression runoff	Clear, no staining, no floating objects, no oil sheen, no odor	Clear, no staining, no floating objects, no oil sheen, no odor	Fire in 70-222 triggered sprinklers. Approximately 100 gallons or less of water entered storm drain system below B70/70A & discharged to N. Fork Strawberry Creek.
05/05/2015 08:45 <input checked="" type="checkbox"/> AM 10:45 <input type="checkbox"/> PM	Hydrauger discharge Hillside seepage Creek flow B54 fire suppression runoff	Groundwater Groundwater Groundwater Fire suppression runoff	Clear, no staining, no floating objects, no oil sheen, no odor	Clear, no staining, no floating objects, no oil sheen, no odor	During B54 fire suppression testing, dechlorination tablets were improperly deployed. On May 27, 2015 ESG met with Facilities personnel to review protocols and practices.
Ongoing <input type="checkbox"/> AM <input type="checkbox"/> PM	Fire suppression system runoff @ 75 water tower (observed multiple times between June-August 2014)	Fire suppression Run-off	Clear, no staining, no floating objects, no oil sheen, no odor	Clear, no staining, no floating objects, no oil sheen, no odor	B75 water tower overflow is ongoing; Facilities repairs in progress

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FORM 3-QUARTERLY VISUAL OBSERVATIONS OF UNAUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

- Unauthorized NSWDs are discharges (such as wash or rinse waters) that do not meet the conditions provided in Section D (pages 5-6) of the General Permit.
- Quarterly visual observations are required to observe current and detect prior unauthorized NSWDs.
- Quarterly visual observations are required during dry weather and at all facility drainage areas.
- Each unauthorized NSWD source, impacted drainage area, and discharge location must be identified and observed.
- Unauthorized NSWDs that cannot be eliminated within 90 days of observation must be reported to the Regional Board in accordance with Section A.10.e of the General Permit.
- Make additional copies of this form as necessary.

<p>QUARTER:</p> <p>JULY - SEPTEMBER</p> <p>Date/Time of Observations</p> <p>08/12/2014 08:55 <input checked="" type="checkbox"/> AM 10:10 <input type="checkbox"/> PM</p>	<p>Observers Name: <u>John Jelinski</u></p> <p>Title: <u>Quality Coordinator</u></p> <p>Signature: </p>	<p>WERE UNAUTHORIZED NSWD'S OBSERVED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWD'S? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If YES to either question, complete the reverse side of this form</p>
<p>QUARTER:</p> <p>OCTOBER - DECEMBER</p> <p>Date/Time of Observations</p> <p>11/10/2014 15:15 <input type="checkbox"/> AM 16:15 <input checked="" type="checkbox"/> PM</p>	<p>Observers Name: <u>John Jelinski</u></p> <p>Title: <u>Quality Coordinator</u></p> <p>Signature: </p>	<p>WERE UNAUTHORIZED NSWD'S OBSERVED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWD'S? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If YES to either question, complete the reverse side of this form</p>
<p>QUARTER:</p> <p>JANUARY - MARCH</p> <p>Date/Time of Observations</p> <p>02/13/2015 08:45 <input checked="" type="checkbox"/> AM 10:10 <input type="checkbox"/> PM</p>	<p>Observers Name: <u>John Jelinski</u></p> <p>Title: <u>Quality Coordinator</u></p> <p>Signature: </p>	<p>WERE UNAUTHORIZED NSWD'S OBSERVED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWD'S? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If YES to either question, complete the reverse side of this form</p>
<p>QUARTER:</p> <p>APRIL - JUNE</p> <p>Date/Time of Observations</p> <p>05/05/2014 08:45 <input checked="" type="checkbox"/> AM 10:45 <input type="checkbox"/> PM</p>	<p>Observers Name: <u>John Jelinski</u></p> <p>Title: <u>Quality Coordinator</u></p> <p>Signature: </p>	<p>WERE UNAUTHORIZED NSWD'S OBSERVED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWD'S? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If YES to either question, complete the reverse side of this form</p>

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FORM 3 QUARTERLY VISUAL OBSERVATIONS OF UNAUTHORIZED NON-STORM WATER DISCHARGES (Continued)

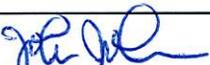
DATE /TIME OF OBSERVATION (FROM REVERSE SIDE)	NAME OF UN-AUTHORIZED NSW EXAMPLE: AC Condensate	SOURCE AND LOCATION OF UN-AUTHORIZED NSW EXAMPLE: Groundwater	DESCRIBE UN-AUTHORIZED NSW CHARACTERISTICS Indicate whether unauthorized NSW is clear, cloudy, discolored, causing stains; contains floating objects or an oil sheen, has odors, etc.		DESCRIBE CORRECTIVE ACTIONS TO ELIMINATE UNAUTHORIZED NSW AND TO CLEAN IMPACTED DRAINAGE AREAS. PROVIDE UNAUTHORIZED NSW ELIMINATION DATE.
			AT THE NSW SOURCE	AT THE NSW AREA & DISCHARGE LOCATION	
October 16, 2014 10:00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	Contaminated groundwater	B51 FTI GWTS overflow	Clear, no staining, no floating objects, no oil sheen, no odor	Clear, no staining, no floating objects, no oil sheen, no odor	Pump @ B51 Fire trail stopped working & approximately 400 gallons untreated & 1,000 gallons of treated groundwater entered storm drain. BMP's were fully implemented
February 24, 2015 All day <input checked="" type="checkbox"/> AM <input checked="" type="checkbox"/> PM	Contaminated groundwater	B46 GWTS sump overflow	Clear, no staining, no floating objects, no oil sheen, no odor	Clear, no staining, no floating objects, no oil sheen, no odor	#1 of 2 sump pumps not working properly so system switched to #2 pump. On 02/25/15 #2 sump pump failed. On 02/26/15 temporary sump pump installed ~ 08:30 & discharged stopped. BMP's fully implemented
<input type="checkbox"/> AM <input type="checkbox"/> PM					
<input type="checkbox"/> AM <input type="checkbox"/> PM					

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FORM 4-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

- Storm water discharge visual observations are required for at least one storm event per month between October 1 and May 31.
- Visual observations must be conducted during the first hour of discharge at all discharge locations.
- Discharges of temporarily stored or contained storm water must be observed at the time of discharge.

- Indicate "None" in the first column of this form if you did not conduct a monthly visual observation.
- Make additional copies of this form as necessary.
- Until a monthly visual observation is made, record any eligible storm events that do not result in a storm water discharge and note the date, time, name, and title of who observed there was no storm water discharge.

OBSERVATION DATE: October 31, 2014	Drainage Location Description	North Fork Strawberry Creek Drainage Area	Chicken Creek Drainage Area	Winter & Pineapple Creek Drainage Areas	Storm Water Sampling Sites (MP1-MP6)
Observer Name: John Jelinski	Observation Time	10/31/2014 <input checked="" type="checkbox"/> AM 10:00-11:00 <input type="checkbox"/> PM	10/31/2014 <input checked="" type="checkbox"/> AM 10:00-11:00 <input type="checkbox"/> PM	10/31/2014 <input checked="" type="checkbox"/> AM 10:00-11:00 <input type="checkbox"/> PM	10/31/2014 <input checked="" type="checkbox"/> AM 10:00-11:00 <input type="checkbox"/> PM
Title: Quality Coordinator	Time Storm Event and/or Discharge Began	10/31/2014 <input checked="" type="checkbox"/> AM 10:00 <input type="checkbox"/> PM	10/31/2014 <input checked="" type="checkbox"/> AM 10:00 <input type="checkbox"/> PM	10/31/2014 <input checked="" type="checkbox"/> AM 10:00 <input type="checkbox"/> PM	10/31/2014 <input checked="" type="checkbox"/> AM 10:00 <input type="checkbox"/> PM
Signature: 	Were Pollutants observed (if YES, complete reverse side)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
OBSERVATION DATE: November 13, 2014	Drainage Location Description	North Fork Strawberry Creek Drainage Area	Chicken Creek Drainage Area	Winter & Pineapple Creek Drainage Areas	Storm Water Sampling Sites (MP1-MP6)
Observer Name: John Jelinski	Observation Time	11/13/2014 <input checked="" type="checkbox"/> AM 05:30-08:00 <input type="checkbox"/> PM	11/13/2014 <input checked="" type="checkbox"/> AM 05:30-08:00 <input type="checkbox"/> PM	11/13/2014 <input checked="" type="checkbox"/> AM 05:30-08:00 <input type="checkbox"/> PM	11/13/2014 <input checked="" type="checkbox"/> AM 05:30-08:00 <input type="checkbox"/> PM
Title: Quality Coordinator	Time Storm Event and/or Discharge Began	11/13/2014 <input checked="" type="checkbox"/> AM 08:10-08:50 <input type="checkbox"/> PM	11/13/2014 <input checked="" type="checkbox"/> AM 08:10-08:50 <input type="checkbox"/> PM	11/13/2014 <input checked="" type="checkbox"/> AM 08:10-08:50 <input type="checkbox"/> PM	11/13/2014 <input checked="" type="checkbox"/> AM 08:10-08:50 <input type="checkbox"/> PM
Signature: 	Were Pollutants observed (if YES, complete reverse side)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
OBSERVATION DATE: December 11, 2014	Drainage Location Description	North Fork Strawberry Creek Drainage Area	Chicken Creek Drainage Area	Winter & Pineapple Creek Drainage Areas	Storm Water Sampling Sites (MP1-MP6)
Observer Name: John Jelinski	Observation Time	12/11/2014 <input checked="" type="checkbox"/> AM 07:00-07:30 <input type="checkbox"/> PM	12/11/2014 <input checked="" type="checkbox"/> AM 07:00-07:30 <input type="checkbox"/> PM	12/11/2014 <input checked="" type="checkbox"/> AM 07:00-07:30 <input type="checkbox"/> PM	12/11/2014 <input checked="" type="checkbox"/> AM 07:00-07:30 <input type="checkbox"/> PM
Title: Quality Coordinator	Time Storm Event and/or Discharge Began	12/11/2014 <input checked="" type="checkbox"/> AM 06:30 <input type="checkbox"/> PM	12/11/2014 <input checked="" type="checkbox"/> AM 06:30 <input type="checkbox"/> PM	12/11/2014 <input checked="" type="checkbox"/> AM 06:30 <input type="checkbox"/> PM	12/11/2014 <input checked="" type="checkbox"/> AM 06:30 <input type="checkbox"/> PM
Signature: 	Were Pollutants observed (if YES, complete reverse side)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
OBSERVATION DATE: January 30, 2015	Drainage Location Description	North Fork Strawberry Creek Drainage Area	Chicken Creek Drainage Area	Winter & Pineapple Creek Drainage Areas	Storm Water Sampling Sites (MP1-MP6)
Observer Name: John Jelinski	Observation Time	01/30/2015 <input checked="" type="checkbox"/> AM 09:30-10:40 <input type="checkbox"/> PM	01/30/2015 <input checked="" type="checkbox"/> AM 09:30-10:40 <input type="checkbox"/> PM	01/30/2015 <input checked="" type="checkbox"/> AM 09:30-10:40 <input type="checkbox"/> PM	01/30/2015 <input checked="" type="checkbox"/> AM 09:30-10:40 <input type="checkbox"/> PM
Title: Quality Coordinator	Time Storm Event and/or Discharge Began	No Storm Events <input type="checkbox"/> AM For January-2015 <input type="checkbox"/> PM	No Storm Events <input type="checkbox"/> AM For January-2015 <input type="checkbox"/> PM	No Storm Events <input type="checkbox"/> AM For January-2015 <input type="checkbox"/> PM	No Storm Events <input type="checkbox"/> AM For January-2015 <input type="checkbox"/> PM
Signature: 	Were Pollutants observed (if YES, complete reverse side)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			

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	(if YES, complete reverse side)			
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FORM 4-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES (Continued)

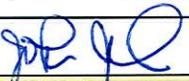
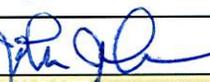
DATE/TIME OF OBSERVATION (From Reverse Side)	DRAINAGE AREA DESCRIPTION	DESCRIBE STORM WATER DISCHARGE CHARACTERISTICS	IDENTIFY AND DESCRIBE SOURCE(S) OF POLLUTANTS	DESCRIBE ANY REVISED OR NEW BMPs AND THEIR DATE OF IMPLEMENTATION
<p>10/31/2014</p> <p>10:00 <input checked="" type="checkbox"/> AM</p> <p>11:00 <input type="checkbox"/> PM</p>	<p><u>EXAMPLE:</u> Discharge from material storage Area #2</p> <p>1-MP1, NF Strawberry 2-MP1, MP2, MP3 3- All sites except influent</p>	<p>Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining; containing floating objects or an oil sheen, has odors, etc.</p> <p>1-Turbidity observed 2-Floatables observed 3-Sheen observed</p>	<p><u>EXAMPLE:</u> Oil sheen caused by oil dripped by trucks in vehicle maintenance area.</p> <p>1-Turbidity caused by hillside runoff 2-Floatables from hillside runoff 3-Oil sheen from p-lot area runoff</p>	N/A
<p>11/13/2014</p> <p>05:30 <input checked="" type="checkbox"/> AM</p> <p>08:00 <input type="checkbox"/> PM</p>	<p>1-MP1 2-MP1- MP3, MP6</p>	<p>1-Turbidity observed 2-Sheen observed</p>	<p>1-Turbidity caused by hillside runoff 2-Oil sheen from p-lot area runoff</p>	N/A
<p>12/11/2014</p> <p>07:00 <input checked="" type="checkbox"/> AM</p> <p>07:30 <input type="checkbox"/> PM</p>	<p>1-All except MP4, MP5 2-All except MP2, MP4-MP6 3-All sites 4-MP1-MP3, MP6 5-All except MP1-MP6</p>	<p>1-Turbidity observed 2-Floatables observed 3-Color observed 4-Sheen observed 5-Foam (DOM)</p>	<p>1-Turbidity caused by hillside runoff 2-Floatables from hillside runoff 3-Color from hillside runoff 4- Oil sheen from p-lot area runoff 5-Foam is dead organic matter (DOM)</p>	N/A
<p>01/30/2015</p> <p>09:30 <input checked="" type="checkbox"/> AM</p> <p>10:40 <input type="checkbox"/> PM</p>	N/A	N/A	N/A	N/A

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FORM 4-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES (Continued)

- Storm water discharge visual observations are required for at least one storm event per month between October 1 and May 31.
- Visual observations must be conducted during the first hour of discharge at all discharge locations.
- Discharges of temporarily stored or contained storm water must be observed at the time of discharge.

- Indicate "None" in the first column of this form if you did not conduct a monthly visual observation.
- Make additional copies of this form as necessary.
- Until a monthly visual observation is made, record any eligible storm events that do not result in a storm water discharge and note the date, time, name, and title of who observed there was no storm water discharge.

OBSERVATION DATE: February 06, 2015	Drainage Location Description	North Fork Strawberry Creek Drainage Area	Chicken Creek Drainage Area	Winter & Pineapple Creek Drainage Areas	Storm Water Sampling Sites (MP1-MP6)
Observer Name: John Jelinski	Observation Time	02/06/2015 <input checked="" type="checkbox"/> AM 10:30-11:35 <input type="checkbox"/> PM	02/06/2015 <input checked="" type="checkbox"/> AM 10:30-11:35 <input type="checkbox"/> PM	02/06/2015 <input checked="" type="checkbox"/> AM 10:30-11:35 <input type="checkbox"/> PM	02/06/2015 <input checked="" type="checkbox"/> AM 10:30-11:35 <input type="checkbox"/> PM
Title: Program Manager	Time Storm Event and/or Discharge Began	02/06/2015 <input checked="" type="checkbox"/> AM 10:35 <input type="checkbox"/> PM	02/06/2015 <input checked="" type="checkbox"/> AM 10:35 <input type="checkbox"/> PM	02/06/2015 <input checked="" type="checkbox"/> AM 10:35 <input type="checkbox"/> PM	02/06/2015 <input checked="" type="checkbox"/> AM 10:35 <input type="checkbox"/> PM
Signature: 	Were Pollutants observed (if YES, complete reverse side)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
OBSERVATION DATE: March 23, 2015	Drainage Location Description	North Fork Strawberry Creek Drainage Area	Chicken Creek Drainage Area	Winter & Pineapple Creek Drainage Areas	Storm Water Sampling Sites (MP1-MP6)
Observer Name: John Jelinski	Observation Time	03/23/2015 <input type="checkbox"/> AM 08:00-09:15 <input checked="" type="checkbox"/> PM	03/23/2015 <input type="checkbox"/> AM 08:00-09:15 <input checked="" type="checkbox"/> PM	03/23/2015 <input type="checkbox"/> AM 08:00-09:15 <input checked="" type="checkbox"/> PM	03/23/2015 <input type="checkbox"/> AM 08:00-09:15 <input checked="" type="checkbox"/> PM
Title: Quality Coordinator	Time Storm Event and/or Discharge Began	No Storm Events <input type="checkbox"/> AM For March-2015 <input type="checkbox"/> PM	No Storm <input type="checkbox"/> AM For March-2015 <input type="checkbox"/> PM	No Storm <input type="checkbox"/> AM For March-2015 <input type="checkbox"/> PM	No Storm <input type="checkbox"/> AM For March-2015 <input type="checkbox"/> PM
Signature: 	Were Pollutants observed (if YES, complete reverse side)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
OBSERVATION DATE: April 07, 2015	Drainage Location Description	North Fork Strawberry Creek Drainage Area	Chicken Creek Drainage Area	Winter & Pineapple Creek Drainage Areas	Storm Water Sampling Sites (MP1-MP6)
Observer Name: John Jelinski	Observation Time	04/07/2015 <input type="checkbox"/> AM 12:10-13:10 <input checked="" type="checkbox"/> PM	04/07/2015 <input type="checkbox"/> AM 12:10-13:10 <input checked="" type="checkbox"/> PM	04/07/2015 <input type="checkbox"/> AM 12:10-13:10 <input checked="" type="checkbox"/> PM	04/07/2015 <input type="checkbox"/> AM 12:10-13:10 <input checked="" type="checkbox"/> PM
Title: Quality coordinator	Time Storm Event and/or Discharge Began	04/07/2015 <input checked="" type="checkbox"/> AM 03:00 <input type="checkbox"/> PM	04/07/2015 <input checked="" type="checkbox"/> AM 03:00 <input type="checkbox"/> PM	04/07/2015 <input checked="" type="checkbox"/> AM 03:00 <input type="checkbox"/> PM	04/07/2015 <input checked="" type="checkbox"/> AM 03:00 <input type="checkbox"/> PM
Signature: 	Were Pollutants observed (if YES, complete reverse side)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
OBSERVATION DATE: May 14, 2015	Drainage Location Description	North Fork Strawberry Creek Drainage Area	Chicken Creek Drainage Area	Winter & Pineapple Creek Drainage Areas	Storm Water Sampling Sites (MP1-MP6)
Observer Name: John Jelinski	Observation Time	05/14/2015 <input type="checkbox"/> AM 15:30-16:30 <input checked="" type="checkbox"/> PM	05/14/2015 <input type="checkbox"/> AM 15:30-16:30 <input checked="" type="checkbox"/> PM	05/14/2015 <input type="checkbox"/> AM 15:30-16:30 <input checked="" type="checkbox"/> PM	05/14/2015 <input type="checkbox"/> AM 15:30-16:30 <input checked="" type="checkbox"/> PM
Title: Quality Coordinator	Time Storm Event and/or Discharge Began	No Storm Events <input type="checkbox"/> AM For May-2015 <input type="checkbox"/> PM	No Storm <input type="checkbox"/> AM For May-2015 <input type="checkbox"/> PM	No Storm <input type="checkbox"/> AM For May-2015 <input type="checkbox"/> PM	No Storm <input type="checkbox"/> AM For May-2015 <input type="checkbox"/> PM
Signature: 	Were Pollutants observed (if YES, complete reverse side)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			

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(if YES, complete reverse side)

FORM 4-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES (Continued)

DATE/TIME OF OBSERVATION (From Reverse Side)	DRAINAGE AREA DESCRIPTION <u>EXAMPLE:</u> Discharge from material storage Area #2	DESCRIBE STORM WATER DISCHARGE CHARACTERISTICS Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining; containing floating objects or an oil sheen, has odors, etc.	IDENTIFY AND DESCRIBE SOURCE(S) OF POLLUTANTS <u>EXAMPLE:</u> Oil sheen caused by oil dripped by trucks in vehicle maintenance area.	DESCRIBE ANY REVISED OR NEW BMPs AND THEIR DATE OF IMPLEMENTATION
<p>02/06/2015</p> <p>10:30 <input checked="" type="checkbox"/> AM</p> <p>11:35 <input type="checkbox"/> PM</p>	<p>1-MP1, MP3, MP6, Cafeteria</p> <p>2-MP1, MP3, Cafeteria</p> <p>3- MP1-MP3, Cafeteria</p>	<p>1-Turbidity observed</p> <p>2-Floatables observed</p> <p>3-Sheen observed</p>	<p>1-Turbidity caused by hillside runoff</p> <p>2-Floatables from hillside runoff</p> <p>3-Oil sheen from p-lot area runoff</p>	<p>N/A</p>
<p>03/23/2015</p> <p>08:00 <input checked="" type="checkbox"/> AM</p> <p>09:15 <input type="checkbox"/> PM</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>
<p>04/07/2015</p> <p>12:10 <input type="checkbox"/> AM</p> <p>13:10 <input checked="" type="checkbox"/> PM</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>
<p>05/14/2015</p> <p>15:30 <input type="checkbox"/> AM</p> <p>16:30 <input checked="" type="checkbox"/> PM</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>

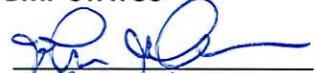
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FORM 5-ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY BMP STATUS

EVALUATION DATE: February 26, 2015

INSPECTOR NAME: John Jelinski

TITLE: Quality Coordinator

SIGNATURE: 

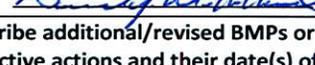
INSPECTOR NAME: Robert Fox

TITLE: Program Leader

SIGNATURE: 

INSPECTOR NAME: Brendan Mulholland

TITLE: Program Leader

SIGNATURE: 

Potential Pollutant Source/Industrial Activity Area	BMP Implementation If YES to either question, complete the next two columns of this form.				Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation	
Loading & Unloading Areas							
Industrial Activity Areas (B76, B77, B79, B85-HWHF)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	Ongoing housekeeping issues at B77-79 yard including presence of metal filings on yard & lots of exposed metal	Monthly power washing for entire yard has been implemented since August 2014.
	Are Additional/revised BMPs Necessary?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No		
Non-Industrial Activity Areas (B69, Site-wide)	Have Any BMPs not been Fully Implemented?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Open 55gal drum @ B88 loading dock. Open trash bins 70A, 71, 75 & 85B. General housekeeping issue @ B2 & B64	Email sent to all Building Managers on 03/02/15 to remind all staff to keep bins closed
	Are Additional/revised BMPs Necessary?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No		
Waste Accumulation Areas (Site-wide)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	NA	NA
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No		
Fixed Treatment Units (B70A, B77)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	NA	NA
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No		
Cafeteria (B54)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	Exposed 2 nd containment for waste vegetable oil drum.	New storm drain inlet inserts/filters installed @ CB54 Cafeteria loading dock in January 2015. Enclosed secondary containment unit for waste vegetable oil drum installed on April 9, 2015.
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No		
Material & Storage Use Areas							
Industrial Activity Areas (B76, B77, B79, B85-HWHF)	Have Any BMPs not been Fully Implemented?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Exposed metal at west end of B77. Water jet sands stored in metal hopper were leaking & filled with water.	Corrective Action- Hole in base of metal hopper marked out, hopper taken out of service.
	Are Additional/revised BMPs Necessary?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No		
Non-Industrial Activity Areas (B69, Site-wide)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	E-waste found in exposed metal bins at B64	K. Montgomery notified on 03/18/2015. ESG is implementing additional e-waste signage & instructions on bins.
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No		
WAA & DSA's (Site-wide)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	NA	Noteworthy Practice @ B75 DSA (ESG). Area significantly cleaned, properly labeled & in overall great shape.
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No		
Secondary Containment (Site-wide)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	Water was observed in several 2 nd containment pads	M. Botello Facilities PMT was contacted on 02/26/2015 to inspect & drain all 2 nd containment pads
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No		
Above Ground Storage Tanks (B25, B70A, B77)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	NA	NA
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No		
Metal & Trash Bins (Site-wide)	Have Any BMPs not been Fully Implemented?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	Site wide there are numerous trash bins with open, damaged lids which also contain accumulated water	New lids & covers have been purchased by ESG & are being installed as they return to the 77-79 area for pick-up.
	Are Additional/revised BMPs Necessary?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No		
Outdoor Equipment-GWTS,	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	NA	NA

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generators, Cooling Towers	Are Additional/revise BMPs Necessary?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
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FORM 5-ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY BMP STATUS (Continued)

Potential Pollutant Source/Industrial Activity Area	BMP Implementation If YES to either question, complete the next two columns of this form.				Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
Vehicle Washing & Parking Areas						
Fueling Station/Motor-pool (B76)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		NA	NA
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
Fire Station (48)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		NA	NA
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
Parking Areas (Site-wide)	Have Any BMPs not been Fully Implemented?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		Blackberry P-lot has several area were dirt/debris are washing into paved surfaces	Waddles placed around perimeter, entire lot street swept & all dirt removed from berm edges on 04/13/2015
	Are Additional/revised BMPs Necessary?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No			
Construction & Maintenance Areas (Under NPDES General Industrial Permit)						
Erosion Control Measures (Site Wide)	Have Any BMPs not been Fully Implemented?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		Hydroseeding needed behind B75, hillside behind B46, & area below B51	Currently no funding, however, work Request has been submitted
	Are Additional/revised BMPs Necessary?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No			
Erosion Control Measures (Site Wide)	Have Any BMPs not been Fully Implemented?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		Repair/replace waddles around B77 area	Facilities Work Order 0012068 submitted on 02/14/15
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
Spills & Leaks						
Lawrence Rd. Manhole (07/22/2014)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Makeshift dam used to collect effluent sample in sewer manhole plugged manhole	ESG Procedure 265 updated to include revised BMP's & posted October 31, 2014
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
GPL (B26) (08/05/2014)	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Cooling Tower system clogged with leaves & overflowed. BMP's implemented.	Dechlor tablets placed @ spill site & screen was put in place to prevent leaves from clogging system
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
B34 Sink Overflow (01/28/2015)	Have Any BMPs not been Fully Implemented?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		Upon 1st observations of spill, dechlorination tablets employed. Based on Ravine Crk. Cl levels BMP's were not fully implemented	Building personnel reminded to routinely check and report plumbing leaks. Faulty faucet valve was replaced in February 2015.
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
	Have Any BMPs not been Fully Implemented?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
	Are Additional/revised BMPs Necessary?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			

Appendix B

Sampling Report for October 31, 2014 Storm Event



Via email and certified mail

Receipt No. 7009 2820 0004 4438 8962

Reference No.: ES-15-023

December 12, 2014

San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, California 94612
Attn: Cecil Felix

Subject: Stormwater Sampling Report for Rain Event on October 31, 2014

Mr. Felix,

In compliance with the EPA's *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)* and California's *General Permit for Stormwater Discharges Associated with Industrial Activities*, stormwater samples were collected during a rain event on October 31, 2014. Samples were analyzed by approved methods in accordance with the current edition of *Standard Methods for the Examination of Water and Wastewater*, American Public Health Association. Analytical parameters for each regulated location are as follows:

- Blackberry Parking Lot: pH, conductivity, total suspended solids (TSS), oil and grease
- Building 76 Vehicle Fueling Station: pH, conductivity, TSS, oil and grease
- Building 77/79 Metal Fabrication, Storage and Scrap Recycling Area: pH, conductivity, TSS, oil and grease, nitrate and nitrite, aluminum, iron, zinc, copper, lead and chemical oxygen demand (COD)
- Building 85 Hazardous Waste Handling Facility, Upper Yard: pH, conductivity, TSS, oil and grease, nitrate and nitrite, lead, arsenic, cadmium, magnesium, mercury, selenium, silver, COD, and cyanide
- Building 85 Hazardous Waste Handling Facility, Lower Yard: pH, conductivity, TSS, oil and grease, nitrate and nitrite, lead, arsenic, cadmium, magnesium, mercury, selenium, silver, COD, and cyanide
- Building 64 Bus Parking Lot: pH, conductivity, TSS, oil and grease

The analytical results were below the EPA's MSGP "benchmark" values for stormwater discharges with the exception of TSS at the Blackberry Parking Lot and zinc at the Building 77/79 Metal Fabrication, Storage and Scrap Recycling Yard.

At the Blackberry Parking Lot, the measured TSS value was 150 milligrams per liter (mg/l), exceeding the EPA's benchmark value of 100 mg/l. The exceedance was attributed to an acculation of soil in the parking lot during the dry season. In order to reduce TSS levels, a street sweeper will be obtained within the next several weeks to clean the lot. In addition, a new best management practice will be added to routinely have the lot swept in late September prior to the rainy season.

At the Building 77/79 Metal Fabrication, Storage and Scrap Recycling Area, the measured zinc value was 0.30 mg/l, exceeding the benchmark value of 0.017 mg/l. There has been a reduction in zinc levels due to recent improvements in control measures including an increase in the frequency of pressure washing

and filter changeout to monthly, bi-monthly training of affected operations and maintenance staff, and the development of written storm water control measures. In order to further improve controls, stock metal will be moved below two building canopies at the west side of Building 77, and exposed metal surfaces will be painted. In addition, samples collected during the next rain event will be analyzed for total and soluble zinc in order to better understand the zinc discharges and how best to control them.

Although the magnesium levels in the yards at the Building 85 Hazardous Waste Handling Facility exceed the discharge value, it has been determined that this occurs as a result of aerial deposition of naturally occurring magnesium from surrounding soil. A study report that supports this conclusion was submitted to the Regional Water Quality Control Board with the 2009/2010 Annual Stormwater Report.

LBNL's Stormwater Pollution Prevention Plan will be revised within 90 days to reflect the changes to control measures at the Blackberry Parking Lot and the Building 77/79 Area. If you have any questions, please contact Brendan J. Mulholland (BJMulholland@lbl.gov) at 510-486-5284 or me (ROPauer@lbl.gov) at 510-486-7614.

Sincerely,



Ron Pauer
Environmental Manager

enclosures:

1. ESG (Environmental Services Group, Lawrence Berkeley National Laboratory) Sample Collection Form, Collection Number 7667
2. ESG pH Calibration & Measurement Worksheet, Collection Number 7667
3. Curtis & Tompkins Analytical Report, Job Number 262196

cc via email w/enclosures:

Kim Abbott (kvabbott@lbl.gov)
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Cesar Sanchez (ecsanchez@lbl.gov)

1. LBNL Sample Collection Form for Collection #7667

ESG Sample Collection Form

U.C. Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley CA 94720

Surface Water Monitoring
ASWMP Sampling
Collection:

Sample Data

Sample ID	Location	SampleType	QC Type	Coll Type	Lab/Analysis	Date/time	Container(s)	Presv	Amount	Depth ft	Sample Notes
74451	MP1	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	10/31/2014 10:10:00 AM	1-1 Liter PE	None	1 L		
		<input type="text" value="Sample Collected: Yes"/>									
74452	MP1	Aqueous	Sample	Grab	CURTISTOMP E1664	10/31/2014 10:10:00 AM	1-1 Liter AG	HCL	1 L		
		<input type="text" value="Sample Collected: Yes"/>									
74453	MP1	Aqueous	Sample	Grab	pH-aq:SM4500H+B	10/31/2014 10:10:00 AM	1-250 ml PE	None	0.25 L		pH = 6.01, T = 71.2 NTU
		<input type="text" value="Sample Collected: Yes"/>									
74454	MP2	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	10/31/2014 11:00:00 AM	1-1 Liter PE	None	1 L		
		<input type="text" value="Sample Collected: Yes"/>									
74455	MP2	Aqueous	Sample	Grab	CURTISTOMP E1664	10/31/2014 11:00:00 AM	1-1 Liter AG	HCL	1 L		
		<input type="text" value="Sample Collected: Yes"/>									
74456	MP2	Aqueous	Sample	Grab	pH-aq:SM4500H+B	10/31/2014 11:00:00 AM	1-250 ml PE	None	0.25 L		pH = 7.35, T = 24 NTU
		<input type="text" value="Sample Collected: Yes"/>									
74457	MP3	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D, NO3+NO2(asN):MU LT	10/31/2014 10:30:00 AM	1-1 Liter PE	None	1 L		
		<input type="text" value="Sample Collected: Yes"/>									
74458	MP3	Aqueous	Sample	Grab	CURTISTOMP E1664	10/31/2014 10:30:00 AM	1-1 Liter AG	HCL	1 L		
		<input type="text" value="Sample Collected: Yes"/>									
74459	MP3	Aqueous	Sample	Grab	CURTISTOMP E410.4	10/31/2014 10:30:00 AM	1-500 ml PE	H2SO4	0.5 L		
		<input type="text" value="Sample Collected: Yes"/>									

Sample Data

Sample ID	Location	SampleType	QC Type	Coll Type	Lab/Analysis	Date/time	Container(s)	Presv	Amount	Depth ft	Sample Notes
74460	MP3	Aqueous	Sample	Grab	CURTISTOMP STORMMET- ASWMP-77	10/31/2014 10:30:00 AM	1-500 ml PE	HNO3	0.5 L		
		Sample Collected: Yes									
74461	MP3	Aqueous	Sample	Grab	pH-aq:SM4500H+B	10/31/2014 10:30:00 AM	1-250 ml PE	None	0.25 L		pH = 7.11, T = 27.8 NTU
		Sample Collected: Yes									
74462	MP3	Aqueous	Dup	Grab	BCLABS-BAK E120.1, TSS:SM2540D	10/31/2014 10:30:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: Yes									
74463	MP3	Aqueous	Dup	Grab	BCLABS-BAK E1664	10/31/2014 10:30:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: Yes									
74464	MP3	Aqueous	Dup	Grab	BCLABS-BAK NO3+NO2(asN):MU LT, E410.4	10/31/2014 10:30:00 AM	1-500 ml PE	H2SO4	0.5 L		
		Sample Collected: Yes									
74465	MP3	Aqueous	Dup	Grab	BCLABS-BAK STORMMET- ASWMP-77	10/31/2014 10:30:00 AM	1-500 ml PE	HNO3	0.5 L		
		Sample Collected: Yes									
74466	MP3	Aqueous	Dup	Grab	pH-aq:SM4500H+B	10/31/2014 10:30:00 AM	1-250 ml PE	None	0.25 L		pH = 7.30, T = 24.9 NTU
		Sample Collected: Yes									
74467	MP4	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	10/31/2014 10:40:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: Yes									
74468	MP4	Aqueous	Sample	Grab	CURTISTOMP E1664	10/31/2014 10:40:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: Yes									
74469	MP4	Aqueous	Sample	Grab	CURTISTOMP Ammonia(asN):MUL T, E410.4	10/31/2014 10:40:00 AM	1-500 ml PE	H2SO4	0.5 L		
		Sample Collected: Yes									
74470	MP4	Aqueous	Sample	Grab	CURTISTOMP STORMMET- ASWMP-85	10/31/2014 10:40:00 AM	2-500 ml PE	HNO3 or NaOH	1 L		
		Sample Collected: Yes									

Sample Data

Sample ID	Location	SampleType	QC Type	Coll Type	Lab/Analysis	Date/time	Container(s)	Presv	Amount	Depth ft	Sample Notes
74471	MP4	Aqueous	Sample	Grab	pH-aq:SM4500H+B	10/31/2014 10:40:00 AM	1-250 ml PE	None	0.25 L		pH = 7.05, T = 8.95 NTU
		Sample Collected: Yes									
74472	MP5	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	10/31/2014 10:50:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: Yes									
74473	MP5	Aqueous	Sample	Grab	CURTISTOMP E1664	10/31/2014 10:50:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: Yes									
74474	MP5	Aqueous	Sample	Grab	CURTISTOMP Ammonia(asN):MUL T, E410.4	10/31/2014 10:50:00 AM	1-500 ml PE	H2SO4	0.5 L		
		Sample Collected: Yes									
74475	MP5	Aqueous	Sample	Grab	CURTISTOMP STORMMET- ASWMP-85	10/31/2014 10:50:00 AM	2-500 ml PE	HNO3 or NaOH	1 L		
		Sample Collected: Yes									
74476	MP5	Aqueous	Sample	Grab	pH-aq:SM4500H+B	10/31/2014 10:50:00 AM	1-250 ml PE	None	0.25 L		pH = 6.95, T = 30.4 NTU
		Sample Collected: Yes									
74477	MP6	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	10/31/2014 10:20:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: Yes									
74478	MP6	Aqueous	Sample	Grab	CURTISTOMP E1664	10/31/2014 10:20:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: Yes									
74479	MP6	Aqueous	Sample	Grab	pH-aq:SM4500H+B	10/31/2014 10:20:00 AM	1-250 ml PE	None	0.25 L		pH = 6.91, T = 27.9 NTU
		Sample Collected: Yes									
74480	TRAVEL BLANK	Aqueous	Blank	Grab	CURTISTOMP STORMMET- ASWMP-77	10/31/2014 11:30:00 AM	1-500 ml PE	HNO3	0.5 L		
		Sample Collected: Yes									
74481	TRAVEL BLANK	Aqueous	Blank	Grab	BCLABS-BAK STORMMET- ASWMP-77	10/31/2014 11:30:00 AM	1-500 ml PE	HNO3	0.5 L		
		Sample Collected: Yes									

**2. LBNL Environmental Services Group
pH & Measurement Worksheet
for Collection #7667**

**3. Curtis & Tompkins Analytical Report,
Job Number 262196**



Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 262196
ANALYTICAL REPORT

Lawrence Berkeley National Lab
1 Cyclotron Road
Berkeley, CA 94720

Project : STANDARD
Location : SWMP-ASWMP Sampling
Level : II

Table with 2 columns: Sample ID and Lab ID. Contains 19 rows of data.

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Isabelle Choy
Isabelle Choy
Project Manager
isabelle.choy@ctberk.com

Date: 11/24/2014

CASE NARRATIVE

Laboratory number: 262196
Client: Lawrence Berkeley National Lab
Location: SWMP-ASWMP Sampling
Request Date: 10/31/14
Samples Received: 10/31/14

This data package contains sample and QC results for nineteen water samples, requested for the above referenced project on 10/31/14. The samples were received cold and intact. All holding times and calibration criteria were met.

Metals (EPA 200.8 and EPA 245.1):

No analytical problems were encountered.

Ion Chromatography (EPA 300.0 and EPA 300.0):

No analytical problems were encountered.

Conductivity (SM2510B):

No analytical problems were encountered.

Total Cyanide (SM4500CN-E):

High recovery was observed for cyanide in the MSD for batch 217151; the parent sample was not a project sample, the LCS was within limits, the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples. No other analytical problems were encountered.

Ammonia Nitrogen (SM4500NH3-D):

No analytical problems were encountered.

Total Oil & Grease (HEM) (EPA 1664A):

Matrix spikes were not performed for this analysis due to insufficient sample volume. No analytical problems were encountered.

Total Suspended Solids (TSS) (SM2540D):

High RPD was observed for total suspended solids in the BS/BSD for batch 217160. High RPD was observed for total suspended solids in the MS/MSD for batch 217160; the parent sample was not a project sample. No other analytical problems were encountered.

Chemical Oxygen Demand (SM5220D):

No analytical problems were encountered.

U.C. Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley CA 94720

262196

LBNL ENVIRONMENTAL SERVICES GROUP
Chain of Custody

Send final reports to: **Suying Xu, Mailstop 75B0101**
For questions contact John Jelinski, e-mail: **JAJelinski@lbl.gov**
Phone: **510-486-7616** Fax: **510-486-7034**
Purpose: **Surface Water Monitoring Program - ASWMP Sampling**

COC No.: 08267 Page 1 of 3
Release Number / Document Control No.: ESG-08267
Collection(s): 7667

1	74451	10/31/2014 10:10	10/31/2014 10:10	Grab	Aqueous	1 Liter PE	1	None	E120.1		
		10/31/2014 10:10	10/31/2014 10:10	Grab	Aqueous	1 Liter PE	1	None	TSS:SM2540D		
2	74452	10/31/2014 10:10	10/31/2014 10:10	Grab	Aqueous	1 Liter AG	1	HCL	E1664		
3	74454	10/31/2014 11:00	10/31/2014 11:00	Grab	Aqueous	1 Liter PE	1	None	E120.1		
		10/31/2014 11:00	10/31/2014 11:00	Grab	Aqueous	1 Liter PE	1	None	TSS:SM2540D		
4	74455	10/31/2014 11:00	10/31/2014 11:00	Grab	Aqueous	1 Liter AG	1	HCL	E1664		
5	74457	10/31/2014 10:30	10/31/2014 10:30	Grab	Aqueous	1 Liter PE	1	None	E120.1		
		10/31/2014 10:30	10/31/2014 10:30	Grab	Aqueous	1 Liter PE	1	None	NO3+NO2(asN):MULT		
		10/31/2014 10:30	10/31/2014 10:30	Grab	Aqueous	1 Liter PE	1	None	TSS:SM2540D		
6	74458	10/31/2014 10:30	10/31/2014 10:30	Grab	Aqueous	1 Liter AG	1	HCL	E1664		
7	74459	10/31/2014 10:30	10/31/2014 10:30	Grab	Aqueous	500 ml PE	1	H2SO4	E410.4		
8	74460	10/31/2014 10:30	10/31/2014 10:30	Grab	Aqueous	500 ml PE	1	HNO3	STORMMET-ASWMP-77		

Total No. of Containers: 21
Shipping Document ID: hand carry
Turnaround Time**:** 20 days
Lab Name: CURTISTOMP
Sampled by: JJ
Special Instructions/Comments:
ON
recd pure ice

Relinquished By (Sampler)
Signature: [Signature] Time: 13:30
Printed Name: J. Jelinski Date: 10/31/14
Company: LBNL
Received By
Signature: [Signature] Time: 1330
Printed Name: [Signature] Date: 10/31/14
Company: [Signature]

Relinquished By
Signature _____ Time _____
Printed Name _____ Date _____
Company _____
Received By
Signature _____ Time _____
Printed Name _____ Date _____
Company _____

Relinquished By
Signature _____ Time _____
Printed Name _____ Date _____
Company _____
Received By
Signature _____ Time _____
Printed Name _____ Date _____
Company _____

*REFERENCE DATE/TIME: Use this value for decay calculations in radiological analyses when applicable **Container Codes: AG = amber glass CG = clear glass PE = polyethylene VV = VOA vial
*** Field Sample ID: If present, use this information as the sample identifier in hard-copy reports (please include Sample Location information in the notes). If blank, and in electronic deliverable files, use Sample Location as the identifier. ****Listed turnaround time is for reporting and is in work days, as defined in the Joint LBNL/LLNL Analytical Services blanket order.

262 196

U.C. Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley CA 94720

LBNL ENVIRONMENTAL SERVICES GROUP
Chain of Custody

Send final reports to: **Suying Xu, Mailstop 75B0101**
For questions contact John Jelinski, e-mail: **JAJelinski@lbl.gov**
Phone: **510-486-7616** Fax: **510-486-7034**
Purpose: **Surface Water Monitoring Program - ASWMP Sampling**

COC No.: 08267 Page 2 of 3
Release Number / Document Control No.: ESG-08267
Collection(s): **7667**

9	74467	10/31/2014 10:40	10/31/2014 10:40	Grab	Aqueous	1 Liter PE	1	None	E120.1	
		10/31/2014 10:40	10/31/2014 10:40	Grab	Aqueous	1 Liter PE	1	None	TSS:SM2540D	
10	74468	10/31/2014 10:40	10/31/2014 10:40	Grab	Aqueous	1 Liter AG	1	HCL	E1664	
11	74469	10/31/2014 10:40	10/31/2014 10:40	Grab	Aqueous	500 ml PE	1	H2SO4	Ammonia(asN):MULT	
		10/31/2014 10:40	10/31/2014 10:40	Grab	Aqueous	500 ml PE	1	H2SO4	E410.4	
12	74470	10/31/2014 10:40	10/31/2014 10:40	Grab	Aqueous	500 ml PE	2	HNO3 or NaOH	STORMMET-ASWMP-85	
13	74472	10/31/2014 10:50	10/31/2014 10:50	Grab	Aqueous	1 Liter PE	1	None	E120.1	
		10/31/2014 10:50	10/31/2014 10:50	Grab	Aqueous	1 Liter PE	1	None	TSS:SM2540D	
14	74473	10/31/2014 10:50	10/31/2014 10:50	Grab	Aqueous	1 Liter AG	1	HCL	E1664	
15	74474	10/31/2014 10:50	10/31/2014 10:50	Grab	Aqueous	500 ml PE	1	H2SO4	Ammonia(asN):MULT	
		10/31/2014 10:50	10/31/2014 10:50	Grab	Aqueous	500 ml PE	1	H2SO4	E410.4	
16	74475	10/31/2014 10:50	10/31/2014 10:50	Grab	Aqueous	500 ml PE	2	HNO3 or NaOH	STORMMET-ASWMP-85	

Total No. of Containers: 21
Shipping Document ID: hand carry
Turnaround Time**:** 20 days
Lab Name: CURTISTOMP
Sampled by: *JD*
Special Instructions/Comments:
rec'd on blue ice

Relinquished By (Sampler)
[Signature] 13:30
Signature Time
J. Jelinski 10/31/14
Printed Name Date
LBNL
Company
Received By
[Signature] 1330
Signature Time
BARBARA CHOY 10/31/14
Printed Name Date
CBT
Company

Relinquished By
Signature Time
Printed Name Date
Company
Received By
Signature Time
Printed Name Date
Company

Relinquished By
Signature Time
Printed Name Date
Company
Received By
Signature Time
Printed Name Date
Company

*REFERENCE DATE/TIME: Use this value for decay calculations in radiological analyses when applicable **Container Codes: AG = amber glass CG = clear glass PE = polyethylene VV = VOA vial
*** Field Sample ID: If present, use this information as the sample identifier in hard-copy reports (please include Sample Location information in the notes). If blank, and in electronic deliverable files, use Sample Location as the identifier. ****Listed turnaround time is for reporting and is in work days, as defined in the Joint LBNL/LLNL Analytical Services blanket order.

U.C. Lawrence Berkeley National Laboratory
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Berkeley CA 94720

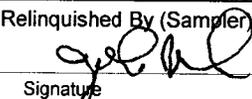
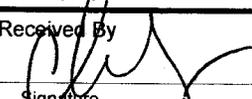
262196

LBNL ENVIRONMENTAL SERVICES GROUP
Chain of Custody

Send final reports to: **Suying Xu, Mailstop 75B0101**
For questions contact John Jelinski, e-mail: **JAJelinski@lbl.gov**
Phone: **510-486-7616** Fax: **510-486-7034**
Purpose: **Surface Water Monitoring Program - ASWMP Sampling**

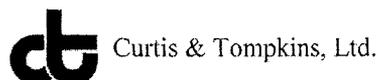
COC No.: 08267 Page 3 of 3
Release Number / Document Control No.: ESG-08267
Collection(s): **7667**

17	74477	10/31/2014 10:20	10/31/2014 10:20	Grab	Aqueous	1 Liter PE	1	None	E120.1	
		10/31/2014 10:20	10/31/2014 10:20	Grab	Aqueous	1 Liter PE	1	None	TSS:SM2540D	
18	74478	10/31/2014 10:20	10/31/2014 10:20	Grab	Aqueous	1 Liter AG	1	HCL	E1664	
19	74480	10/31/2014 11:30	10/31/2014 11:30	Grab	Aqueous	500 ml PE	1	HNO3	STORMMET-ASWMP-77	

Total No. of Containers: 21 Shipping Document ID: hand carry Turnaround Time****: 20 days Lab Name: CURTISTOMP Sampled by: 	Relinquished By (Sampler)  13:30 Signature Time J. Jelinski 10/31/14 Printed Name Date Company CBNL	Relinquished By  Signature Time Printed Name Date Company	Relinquished By Signature Time Printed Name Date Company	
	Received By  1330 Signature Time Isabelle Choy 10/31/14 Printed Name Date Company O&T	Received By Signature Time Printed Name Date Company	Received By Signature Time Printed Name Date Company	Received By Signature Time Printed Name Date Company
	Special Instructions/Comments: recd on BLUE ice			

*REFERENCE DATE/TIME: Use this value for decay calculations in radiological analyses when applicable **Container Codes: AG = amber glass CG = clear glass PE = polyethylene VV = VOA vial
 *** Field Sample ID: If present, use this information as the sample identifier in hard-copy reports (please include Sample Location information in the notes). If blank, and in electronic deliverable files, use Sample Location as the identifier. ****Listed turnaround time is for reporting and is in work days, as defined in the Joint LBNL/LLNL Analytical Services blanket order.

COOLER RECEIPT CHECKLIST



Login # 262196 Date Received 10/31/14 Number of coolers 1
 Client LBNL Project ASWMP Sampling

Date Opened 10/31 By (print) SL (sign) [Signature]
 Date Logged in 11/01 By (print) MC (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO

Shipping info _____

2A. Were custody seals present? YES (circle) on cooler on samples NO
 How many 20 Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO N/A

3. Were custody papers dry and intact when received? YES NO

4. Were custody papers filled out properly (ink, signed, etc)? YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO

6. Indicate the packing in cooler: (if other, describe) _____

- Bubble Wrap Foam blocks Bags None
- Cloth material Cardboard Styrofoam Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C) 5.6°

Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO
 If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? YES NO

10. Are there any missing / extra samples? _____ YES NO

11. Are samples in the appropriate containers for indicated tests? _____ YES NO

12. Are sample labels present, in good condition and complete? _____ YES NO

13. Do the sample labels agree with custody papers? _____ YES NO

14. Was sufficient amount of sample sent for tests requested? _____ YES NO

15. Are the samples appropriately preserved? _____ YES NO N/A

16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A

17. Did you document your preservative check? _____ YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A

21. Was the client contacted concerning this sample delivery? _____ YES NO
 If YES, Who was called? _____ By _____ Date: _____

COMMENTS

#15) -012 & -016: (cyanide) received w/ pH < 12
added NaOH (lot # 310917) on 11/01/14 @ 1000
to pH > 12

Curtis & Tompkins Sample Preservation for 262196

Sample	pH: <2	>9	>12	Other
-001a	[]	[]	[]	_____
-002a	[]	[]	[]	_____
-003a	[]	[]	[]	_____
-004a	[]	[]	[]	_____
-005a	[]	[]	[]	_____
-006a	[]	[]	[]	_____
-007a	<input checked="" type="checkbox"/>	[]	[]	_____
-008a	<input checked="" type="checkbox"/>	[]	[]	_____
-009a	[]	[]	[]	_____
-010a	[]	[]	[]	_____
-011a	<input checked="" type="checkbox"/>	[]	[]	_____
-012a	<input checked="" type="checkbox"/>	[]	[]	_____
b	[]	[]	<input checked="" type="checkbox"/>	_____
-013a	[]	[]	[]	_____
-014a	[]	[]	[]	_____
-015a	<input checked="" type="checkbox"/>	[]	[]	_____
-016a	<input checked="" type="checkbox"/>	[]	[]	_____
b	[]	[]	<input checked="" type="checkbox"/>	_____
-017a	[]	[]	[]	_____
-018a	[]	[]	[]	_____
-019a	<input checked="" type="checkbox"/>	[]	[]	_____

Analyst: ME
 Date: 11/01/17

Client Sample ID : 74460

Laboratory Sample ID :

262196-008

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Aluminum	0.33		0.050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8
Copper	0.057		0.0050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8
Iron	0.67		0.11	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8
Lead	0.016		0.0050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8
Zinc	0.30		0.050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8

Client Sample ID : 74467

Laboratory Sample ID :

262196-009

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Specific Conductance	18		1.0	umhos/cm	TOTAL	1.000	SM2510B	METHOD
Total Suspended Solids	10		1	mg/L	TOTAL	0.2000	SM2540D	METHOD

Client Sample ID : 74468

Laboratory Sample ID :

262196-010

No Detections

Client Sample ID : 74469

Laboratory Sample ID :

262196-011

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Ammonia-N	0.23		0.10	mg/L	TOTAL	1.000	SM4500NH3-D	SM4500NH3-B
Chemical Oxygen Demand	21		10	mg/L	TOTAL	1.000	SM5220D	METHOD

Client Sample ID : 74470

Laboratory Sample ID :

262196-012

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Magnesium	0.19		0.050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8

Client Sample ID : 74472

Laboratory Sample ID :

262196-013

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Specific Conductance	21		1.0	umhos/cm	TOTAL	1.000	SM2510B	METHOD
Total Suspended Solids	27		1	mg/L	TOTAL	0.2000	SM2540D	METHOD

Client Sample ID : 74473

Laboratory Sample ID :

262196-014

No Detections

Client Sample ID : 74474

Laboratory Sample ID :

262196-015

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Ammonia-N	0.24		0.12	mg/L	TOTAL	1.200	SM4500NH3-D	SM4500NH3-B
Chemical Oxygen Demand	22		10	mg/L	TOTAL	1.000	SM5220D	METHOD

Client Sample ID : 74475

Laboratory Sample ID :

262196-016

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Magnesium	0.18		0.050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8

Client Sample ID : 74477

Laboratory Sample ID :

262196-017

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Specific Conductance	40		1.0	umhos/cm	TOTAL	1.000	SM2510B	METHOD
Total Suspended Solids	34		1	mg/L	TOTAL	0.2000	SM2540D	METHOD

Client Sample ID : 74478

Laboratory Sample ID :

262196-018

No Detections

Client Sample ID : 74480

Laboratory Sample ID :

262196-019

No Detections

Metals Analytical Report

Lab #: 262196	Cert #: CA ELAP# 2896, NELAP# 4044-001
Client: Lawrence Berkeley National Lab	Prep: EPA 200.8
Project#: STANDARD	Analysis: EPA 200.8
Location: SWMP-ASWMP Sampling	
COC #: 08267	Batch#: 217215
Requested: STORMMET-ASWMP-77	Instrument: MET16
Matrix: Water	Chemist: CRT
Units: mg/L	Received: 10/31/14
Diln Fac: 5.000	Prepared: 11/07/14 10:45

Field ID: 74460	Sampled: 10/31/14 10:30
Type: SAMPLE	Analyzed: 11/11/14 13:15
Lab ID: 262196-008	

Analyte	Code	Result	RL
Aluminum	0313	0.33	0.050
Copper	2800	0.057	0.0050
Iron	5350	0.67	0.11
Lead	5450	0.016	0.0050
Zinc	9050	0.30	0.050

Field ID: 74480	Sampled: 10/31/14 11:30
Type: SAMPLE	Analyzed: 11/11/14 13:34
Lab ID: 262196-019	

Analyte	Code	Result	RL
Aluminum	0313	ND	0.050
Copper	2800	ND	0.0050
Iron	5350	ND	0.11
Lead	5450	ND	0.0050
Zinc	9050	ND	0.050

Type: BLANK	Lab ID: QC764776
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Analyte	Code	Result	RL	Analyzed
Aluminum	0313	ND	0.050	11/10/14 11:15
Copper	2800	ND	0.0050	11/10/14 11:15
Iron	5350	ND	0.11	11/10/14 11:15
Lead	5450	ND	0.0050	11/10/14 11:15
Zinc	9050	ND	0.050	11/12/14 15:37

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Metals Analytical Report			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 245.1
Location:	SWMP-ASWMP Sampling		
Analyte:	Mercury	Diln Fac:	1.000
Code:	5600	Batch#:	217154
Requested:	STORMMET-ASWMP-85	Instrument:	MET54
Type:	LCS	Chemist:	NCD
Lab ID:	QC764534	Prepared:	11/05/14 16:34
Matrix:	Water	Analyzed:	11/06/14 11:10
Units:	mg/L		

Spiked	Result	%REC	Limits
0.002500	0.002939	118	80-120

Batch QC Report

Metals Analytical Report			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 245.1
Location:	SWMP-ASWMP Sampling		
Analyte:	Mercury	Diln Fac:	1.000
Code:	5600	Batch#:	217154
Requested:	STORMMET-ASWMP-85	Instrument:	MET54
Field ID:	ZZZZZZZZZZ	Chemist:	NCD
MSS Lab ID:	262247-001	Sampled:	11/03/14
Matrix:	Water	Received:	11/04/14
Units:	mg/L	Prepared:	11/05/14 16:34

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Analyzed
MS	QC764535	<0.00002080	0.002500	0.002939	118	57-127			11/06/14 11:12
MSD	QC764536		0.002500	0.002858	114	57-127	3	42	11/06/14 11:14

RPD= Relative Percent Difference

Batch QC Report

Metals Analytical Report			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 200.8
Project#:	STANDARD	Analysis:	EPA 200.8
Location:	SWMP-ASWMP Sampling		
Requested:	STORMMET-ASWMP-77	Batch#:	217215
Type:	LCS	Instrument:	MET16
Lab ID:	QC764777	Chemist:	CRT
Matrix:	Water	Prepared:	11/07/14 10:45
Units:	mg/L	Analyzed:	11/10/14 11:21
Diln Fac:	5.000		

Analyte	Code	Spiked	Result	%REC	Limits
Aluminum	0313	10.00	10.56	106	72-122
Copper	2800	0.1000	0.09800	98	72-120
Iron	5350	10.00	10.96	110	72-123
Lead	5450	0.1000	0.1028	103	78-120
Zinc	9050	0.1000	0.1029	103	74-124

Batch QC Report

Metals Analytical Report			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 200.8
Project#:	STANDARD	Analysis:	EPA 200.8
Location:	SWMP-ASWMP Sampling		
Requested:	STORMMET-ASWMP-85	Batch#:	217215
Type:	LCS	Instrument:	MET16
Lab ID:	QC764777	Chemist:	CRT
Matrix:	Water	Prepared:	11/07/14 10:45
Units:	mg/L	Analyzed:	11/10/14 11:21
Diln Fac:	5.000		

Analyte	Code	Spiked	Result	%REC	Limits
Arsenic	0450	0.1000	0.09830	98	78-120
Cadmium	1650	0.1000	0.09775	98	76-120
Lead	5450	0.1000	0.1028	103	78-120
Magnesium	5500	10.00	10.68	107	68-123
Selenium	7600	0.1000	0.1030	103	79-120
Silver	7800	0.1000	0.08810	88	80-120

Batch QC Report

Metals Analytical Report			
Lab #: 262196	Cert #: CA ELAP# 2896, NELAP# 4044-001	Client: Lawrence Berkeley National Lab	Prep: EPA 200.8
Project#: STANDARD	Analysis: EPA 200.8	Location: SWMP-ASWMP Sampling	
Requested: STORMMET-ASWMP-77	Batch#: 217215	Field ID: ZZZZZZZZZZ	Instrument: MET16
MSS Lab ID: 262186-001	Chemist: CRT	Matrix: Water	Sampled: 10/27/14 11:50
Units: mg/L	Received: 10/30/14	Diln Fac: 5.000	Prepared: 11/07/14 10:45

Type: MS Analyzed: 11/10/14 11:53
 Lab ID: QC764778

Analyte	Code	MSS Result	Spiked	Result	%REC	Limits
Aluminum	0313	<0.009723	10.00	10.81	108	66-123
Copper	2800	<0.0002604	0.1000	0.09480	95	63-120
Iron	5350	<0.03768	10.00	10.90	109	66-123
Lead	5450	<0.00007454	0.1000	0.1047	105	73-120
Zinc	9050	0.009920	0.1000	0.1082	98	61-125

Type: MSD Analyzed: 11/10/14 12:00
 Lab ID: QC764779

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Aluminum	0313	10.00	10.81	108	66-123	0	23
Copper	2800	0.1000	0.09515	95	63-120	0	31
Iron	5350	10.00	10.92	109	66-123	0	35
Lead	5450	0.1000	0.1043	104	73-120	0	23
Zinc	9050	0.1000	0.1092	99	61-125	1	37

RPD= Relative Percent Difference

Batch QC Report

Metals Analytical Report			
Lab #: 262196	Cert #: CA ELAP# 2896, NELAP# 4044-001	Client: Lawrence Berkeley National Lab	Prep: EPA 200.8
Project#: STANDARD	Analysis: EPA 200.8	Location: SWMP-ASWMP Sampling	
Requested: STORMMET-ASWMP-85	Batch#: 217215	Field ID: ZZZZZZZZZZ	Instrument: MET16
MSS Lab ID: 262186-001	Chemist: CRT	Matrix: Water	Sampled: 10/27/14 11:50
Units: mg/L	Received: 10/30/14	Diln Fac: 5.000	Prepared: 11/07/14 10:45

Type: MS Analyzed: 11/10/14 11:53
 Lab ID: QC764778

Analyte	Code	MSS Result	Spiked	Result	%REC	Limits
Arsenic	0450	<0.0001773	0.1000	0.09875	99	72-120
Cadmium	1650	<0.0001171	0.1000	0.09965	100	71-120
Lead	5450	<0.00007454	0.1000	0.1047	105	73-120
Magnesium	5500	2.075	10.00	12.81	107	54-132
Selenium	7600	0.0002220	0.1000	0.1021	102	70-120
Silver	7800	<0.00009399	0.1000	0.08815	88	73-120

Type: MSD Analyzed: 11/10/14 12:00
 Lab ID: QC764779

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Arsenic	0450	0.1000	0.09760	98	72-120	1	29
Cadmium	1650	0.1000	0.09970	100	71-120	0	32
Lead	5450	0.1000	0.1043	104	73-120	0	23
Magnesium	5500	10.00	12.81	107	54-132	0	34
Selenium	7600	0.1000	0.1008	101	70-120	1	27
Silver	7800	0.1000	0.08950	90	73-120	2	22

RPD= Relative Percent Difference

Nitrate/Nitrite Nitrogen			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Location:	SWMP-ASWMP Sampling		
COC #:	08267	Batch#:	216985
Requested:	NO3+NO2(asN):MULT	Instrument:	IC03
Field ID:	74457	Chemist:	NJT
Matrix:	Water	Sampled:	10/31/14 10:30
Units:	mg/L	Received:	10/31/14
Diln Fac:	1.000		

Type: SAMPLE Analyzed: 10/31/14 17:06
 Lab ID: 262196-005

Analyte	Code	Result	RL
Nitrite as Nitrite	5960	ND	0.33
Nitrogen, Nitrate	5945	0.34	0.10
Nitrogen, Nitrate/Nitrite	5950	0.34	0.10

Type: BLANK Analyzed: 10/31/14 10:31
 Lab ID: QC763872

Analyte	Code	Result	RL
Nitrite as Nitrite	5960	ND	0.33
Nitrogen, Nitrate	5945	ND	0.10
Nitrogen, Nitrate/Nitrite	5950	ND	0.10

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Nitrate/Nitrite Nitrogen			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Location:	SWMP-ASWMP Sampling		
Requested:	NO3+NO2(asN):MULT	Diln Fac:	1.000
Type:	LCS	Batch#:	216985
Lab ID:	QC763873	Instrument:	IC03
Matrix:	Water	Chemist:	NJT
Units:	mg/L	Analyzed:	10/31/14 10:48

Analyte	Code	Spiked	Result	%REC	Limits
Nitrite as Nitrite	5960	3.285	3.245	99	80-120
Nitrogen, Nitrate	5945	1.000	1.009	101	80-120

Batch QC Report

Nitrate/Nitrite Nitrogen			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Location:	SWMP-ASWMP Sampling		
Requested:	NO3+NO2(asN):MULT	Diln Fac:	5.000
Field ID:	ZZZZZZZZZZ	Batch#:	216985
Type:	SSPIKE	Instrument:	IC03
MSS Lab ID:	262192-001	Chemist:	NJT
Lab ID:	QC763943	Sampled:	10/31/14 09:40
Matrix:	Water	Received:	10/31/14
Units:	mg/L	Analyzed:	11/01/14 05:34

Analyte	Code	MSS Result	Spiked	Result	%REC	Limits
Nitrite as Nitrite	5960	<0.04226	8.212	7.609	93	80-120
Nitrogen, Nitrate	5945	0.2330	2.500	2.616	95	80-120

Batch QC Report

Nitrate/Nitrite Nitrogen			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Location:	SWMP-ASWMP Sampling		
Requested:	NO3+NO2(asN):MULT	Batch#:	216985
Field ID:	ZZZZZZZZZZ	Instrument:	IC03
MSS Lab ID:	262192-001	Chemist:	NJT
Matrix:	Water	Sampled:	10/31/14 09:40
Units:	mg/L	Received:	10/31/14
Diln Fac:	5.000		

Type: MS Analyzed: 11/01/14 05:52
 Lab ID: QC763944

Analyte	Code	MSS Result	Spiked	Result	%REC	Limits
Nitrite as Nitrite	5960	<0.04226	8.212	7.723	94	80-120
Nitrogen, Nitrate	5945	0.2330	2.500	2.596	95	80-120

Type: MSD Analyzed: 11/01/14 06:09
 Lab ID: QC763945

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Nitrite as Nitrite	5960	8.212	7.788	95	80-120	1	23
Nitrogen, Nitrate	5945	2.500	2.734	100	80-120	5	20

RPD= Relative Percent Difference

Total Oil & Grease (HEM)			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 1664A
Location:	SWMP-ASWMP Sampling		
Analyte:	Oil & Grease (HEM)	Diln Fac:	1.000
Code:	6325	Batch#:	217653
COC #:	08267	Instrument:	H3000
Requested:	E1664	Chemist:	DMB
Matrix:	Water	Received:	10/31/14
Units:	mg/L	Analyzed:	11/20/14 10:00

Field ID	Type	Lab ID	Result	RL	Sampled
74452	SAMPLE	262196-002	ND	4.98	10/31/14 10:10
74455	SAMPLE	262196-004	ND	4.98	10/31/14 11:00
74458	SAMPLE	262196-006	ND	5.03	10/31/14 10:30
74468	SAMPLE	262196-010	ND	4.98	10/31/14 10:40
74473	SAMPLE	262196-014	ND	4.98	10/31/14 10:50
74478	SAMPLE	262196-018	ND	4.98	10/31/14 10:20
	BLANK	QC766504	ND	5.00	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Total Oil & Grease (HEM)			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 1664A
Location:	SWMP-ASWMP Sampling		
Analyte:	Oil & Grease (HEM)	Diln Fac:	1.000
Code:	6325	Batch#:	217653
Requested:	E1664	Instrument:	H3000
Matrix:	Water	Chemist:	DMB
Units:	mg/L	Analyzed:	11/20/14 10:00

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC766505	40.00	37.70	94	78-114		
BSD	QC766506	40.00	37.20	93	78-114	1	18

RPD= Relative Percent Difference

Ammonia Nitrogen			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	SM4500NH3-B
Project#:	STANDARD	Analysis:	SM4500NH3-D
Location:	SWMP-ASWMP Sampling		
Analyte:	Ammonia-N	Batch#:	217316
Code:	0325	Instrument:	OR_NH3
COC #:	08267	Chemist:	MB3
Requested:	Ammonia(asN):MULT	Received:	10/31/14
Matrix:	Water	Prepared:	11/11/14 17:30
Units:	mg/L	Analyzed:	11/12/14 13:00

Field ID	Type	Lab ID	Result	RL	Diln Fac	Sampled
74469	SAMPLE	262196-011	0.23	0.10	1.000	10/31/14 10:40
74474	SAMPLE	262196-015	0.24	0.12	1.200	10/31/14 10:50
	BLANK	QC765185	ND	0.10	1.000	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Ammonia Nitrogen			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	SM4500NH3-B
Project#:	STANDARD	Analysis:	SM4500NH3-D
Location:	SWMP-ASWMP Sampling		
Analyte:	Ammonia-N	Batch#:	217316
Code:	0325	Instrument:	OR_NH3
Requested:	Ammonia(asN):MULT	Chemist:	MB3
Field ID:	ZZZZZZZZZZ	Sampled:	10/31/14 10:15
MSS Lab ID:	262203-005	Received:	10/31/14
Matrix:	Water	Prepared:	11/11/14 17:30
Units:	mg/L	Analyzed:	11/12/14 13:00
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
LCS	QC765186		5.000	5.000	100	80-120		
MS	QC765187	0.1500	5.000	5.000	97	71-123		
MSD	QC765188		5.000	4.700	91	71-123	6	20

RPD= Relative Percent Difference

Chemical Oxygen Demand			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM5220D
Location:	SWMP-ASWMP Sampling		
Analyte:	Chemical Oxygen Demand	Batch#:	217237
Code:	1875	Instrument:	DR2800
COC #:	08267	Chemist:	MB3
Requested:	E410.4	Received:	10/31/14
Matrix:	Water	Prepared:	11/07/14 14:49
Units:	mg/L	Analyzed:	11/07/14 18:00
Diln Fac:	1.000		

Field ID	Type	Lab ID	Result	RL	Sampled
74459	SAMPLE	262196-007	48	10	10/31/14 10:30
74469	SAMPLE	262196-011	21	10	10/31/14 10:40
74474	SAMPLE	262196-015	22	10	10/31/14 10:50
	BLANK	QC764867	ND	10	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Chemical Oxygen Demand			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM5220D
Location:	SWMP-ASWMP Sampling		
Analyte:	Chemical Oxygen Demand	Batch#:	217237
Code:	1875	Instrument:	DR2800
Requested:	E410.4	Chemist:	MB3
Field ID:	74459	Sampled:	10/31/14 10:30
MSS Lab ID:	262196-007	Received:	10/31/14
Matrix:	Water	Prepared:	11/07/14 14:49
Units:	mg/L	Analyzed:	11/07/14 18:00

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Diln	Fac
LCS	QC764868		75.00	70.49	94	90-110				1.000
MS	QC764869	48.46	300.0	350.4	101	78-120				2.000
MSD	QC764870		300.0	338.2	97	78-120	4	20		2.000

RPD= Relative Percent Difference

Total Cyanide			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM4500CN-E
Location:	SWMP-ASWMP Sampling		
Analyte:	Cyanide	Diln Fac:	1.000
Code:	2850	Batch#:	217151
COC #:	08267	Instrument:	LAMBDA
Requested:	STORMMET-ASWMP-85	Chemist:	HDD
Matrix:	Water	Received:	10/31/14
Units:	mg/L		

Field ID	Type	Lab ID	Result	RL	Sampled	Prepared	Analyzed
74470	SAMPLE	262196-012	ND	0.02	10/31/14 10:40	11/06/14 08:00	11/06/14 10:49
74475	SAMPLE	262196-016	ND	0.02	10/31/14 10:50	11/06/14 08:00	11/06/14 10:49
	BLANK	QC764516	ND	0.01		11/05/14 00:00	11/06/14 00:00

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Total Cyanide			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM4500CN-E
Location:	SWMP-ASWMP Sampling		
Analyte:	Cyanide	Batch#:	217151
Code:	2850	Instrument:	LAMBDA
Requested:	STORMMET-ASWMP-85	Chemist:	HDD
Field ID:	ZZZZZZZZZZ	Sampled:	11/03/14 11:45
MSS Lab ID:	262231-001	Received:	11/03/14
Matrix:	Water	Prepared:	11/05/14 00:00
Units:	mg/L	Analyzed:	11/06/14 00:00
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
LCS	QC764517		0.2000	0.2054	103	75-120		
MS	QC764518	0.008700	0.2000	0.2140	107	68-120		
MSD	QC764519		0.2000	0.2480	124 *	68-120	15	40

*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

Conductivity			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM2510B
Location:	SWMP-ASWMP Sampling		
Analyte:	Specific Conductance	Diln Fac:	1.000
Code:	8000	Batch#:	217289
COC #:	08267	Instrument:	VWR_EC
Requested:	E120.1	Chemist:	KR
Matrix:	Water	Received:	10/31/14
Units:	umhos/cm	Analyzed:	11/10/14 11:37

Field ID	Type	Lab ID	Result	RL	Sampled
74451	SAMPLE	262196-001	46	1.0	10/31/14 10:10
74454	SAMPLE	262196-003	63	1.0	10/31/14 11:00
74457	SAMPLE	262196-005	45	1.0	10/31/14 10:30
74467	SAMPLE	262196-009	18	1.0	10/31/14 10:40
74472	SAMPLE	262196-013	21	1.0	10/31/14 10:50
74477	SAMPLE	262196-017	40	1.0	10/31/14 10:20
	BLANK	QC765084	ND	1.0	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Conductivity			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM2510B
Location:	SWMP-ASWMP Sampling		
Analyte:	Specific Conductance	Diln Fac:	1.000
Code:	8000	Batch#:	217289
Requested:	E120.1	Instrument:	VWR_EC
Field ID:	74451	Chemist:	KR
MSS Lab ID:	262196-001	Sampled:	10/31/14 10:10
Matrix:	Water	Received:	10/31/14
Units:	umhos/cm	Analyzed:	11/10/14 11:37

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim
LCS	QC765085		1,000	959.0		96	90-110		
SDUP	QC765086	46.10		46.40	1.000			1	20

RL= Reporting Limit

RPD= Relative Percent Difference

Total Suspended Solids (TSS)			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM2540D
Location:	SWMP-ASWMP Sampling		
Analyte:	Total Suspended Solids	Batch#:	217160
Code:	7450	Instrument:	SCALE
COC #:	08267	Chemist:	KR
Requested:	TSS:SM2540D	Received:	10/31/14
Matrix:	Water	Prepared:	11/05/14 00:00
Units:	mg/L	Analyzed:	11/07/14 00:00
Diln Fac:	0.2000		

Field ID	Type	Lab ID	Result	RL	Sampled
74451	SAMPLE	262196-001	150	1	10/31/14 10:10
74454	SAMPLE	262196-003	22	1	10/31/14 11:00
74457	SAMPLE	262196-005	42	1	10/31/14 10:30
74467	SAMPLE	262196-009	10	1	10/31/14 10:40
74472	SAMPLE	262196-013	27	1	10/31/14 10:50
74477	SAMPLE	262196-017	34	1	10/31/14 10:20
	BLANK	QC764558	ND	0.2	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Total Suspended Solids (TSS)			
Lab #:	262196	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM2540D
Location:	SWMP-ASWMP Sampling		
Analyte:	Total Suspended Solids	Batch#:	217160
Code:	7450	Instrument:	SCALE
Requested:	TSS:SM2540D	Chemist:	KR
Field ID:	ZZZZZZZZZZ	Sampled:	10/31/14 10:15
MSS Lab ID:	262203-005	Received:	10/31/14
Matrix:	Water	Prepared:	11/05/14 00:00
Units:	mg/L	Analyzed:	11/07/14 00:00
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC764559		50.00	57.00	114	80-120		
BSD	QC764560		50.00	46.00	92	80-120	21 *	5
MS	QC764561	63.00	50.00	107.0	88	52-132		
MSD	QC764562		50.00	114.0	102	52-132	6 *	5

*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

Appendix C

Sampling Report for February 6, 2015 Storm Event



Via email and certified mail

Receipt No. 7009 2820 0004 4632 8652

Reference No.: ES-15-048

March 25, 2015

San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, California 94612
Attn: Cecil Felix

Subject: Stormwater Sampling Report for Rain Event on February 6, 2015

Mr. Felix,

In compliance with California's *General National Pollutant Discharge Elimination System (NPDES) Permit for Stormwater Discharges Associated with Industrial Activities*, stormwater samples were collected during a rain event on February 6, 2015. Samples were analyzed by approved methods in accordance with the current edition of *Standard Methods for the Examination of Water and Wastewater*, American Public Health Association or Environmental Protection Agency (EPA) methods. The analytical parameters for each regulated location are:

- Blackberry Parking Lot: pH, conductivity, total suspended solids (TSS), oil and grease
- Building 76 Vehicle Fueling Station: pH, conductivity, TSS, oil and grease
- Building 77/79 Metal Fabrication, Storage and Scrap Recycling Area: pH, conductivity, TSS, oil and grease, nitrate and nitrite, aluminum, iron, zinc, copper, lead, and chemical oxygen demand (COD)
- Building 85 Hazardous Waste Handling Facility, Upper Yard: pH, conductivity, TSS, oil and grease, nitrate and nitrite, lead, arsenic, cadmium, magnesium, mercury, selenium, silver, COD, and cyanide
- Building 85 Hazardous Waste Handling Facility, Lower Yard: pH, conductivity, TSS, oil and grease, nitrate and nitrite, lead, arsenic, cadmium, magnesium, mercury, selenium, silver, COD, and cyanide
- Building 64 Bus Parking Lot: pH, conductivity, TSS, oil and grease

Analytical results were below the EPA's *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)* benchmark values for stormwater discharges except for the values listed in the table below.

Sampling Location	Analyte	Result	MSGP Benchmark Value
		milligrams per liter (mg/l)	mg/l
Blackberry Parking Lot	TSS	240	100
Building 77/79 Metal Fabrication, Storage, and Scrap Recycling Yard	Nitrate and Nitrite (as Total N)	1.30	0.68
	COD	130	120
	Aluminum	1.00	0.75
	Copper	0.200	0.0636
	Iron	2.00	1.00
Building 85 Lower Yard	Zinc	0.73	0.117
	COD	140	120

At the Blackberry Parking Lot the stormwater control maintenance in January included perimeter cleaning, straw wattle placement, and maintenance of the drain inlet insert. Despite these efforts the measured TSS value of 240 mg/l exceeded the EPA's benchmark value of 100 mg/l. Contributing factors to this exceedance include dry conditions for the 43 days preceding the sampling event (December 25, 2014 to February 5, 2015) in combination with several episodes of high winds during the same period. Such conditions typically result in increased surface deposition of particulate and organic debris, which are associated with first flush conditions when elevated TSS values are normally detected. In order to reduce TSS levels, a comprehensive cleaning and maintenance program is in place for the Blackberry Parking Lot and continues to be implemented. The program includes:

- Removal of all organic debris, litter, and sediment from the parking lot
- Grading of landscape materials away from the parking lot's perimeter berm
- Installation of straw wattle around the parking lot perimeter
- Continuation of routine cleaning and maintenance of stormdrain inlets, and
- Annual cleaning of the parking lot surface prior to commencement of the rainy season

At the Building 77/79 Metal Fabrication, Storage, and Scrap Recycling Yard, the COD and the nitrate and nitrite exceedances were related to the extremely dry climatic conditions referenced above and the presence of wildlife droppings observed in the area (*e.g.* turkeys). Exceedances for metal were due to leakage from a waste bin that contained hydrojet sands. In October 2014 a similar batch of hydrojet sand was characterized for waste disposal purposes, and analytical data from this characterization reported elevated concentrations of metals – including copper and zinc – at concentrations similar to those detected in the results of the February 6, 2015 stormwater sampling event. The waste bin is now empty and a water tight cover has been installed.

At the Building 85 Lower Yard the COD value of 140 mg/l is due to the generally extremely dry climatic conditions resulting in an unusually large amount of organic debris and the observed presence of wildlife droppings. This exceedance is only the second in the past six years over the course of 15 sampling events.

Although the magnesium levels in the yards at the Building 85 Hazardous Waste Handling Facility exceed the benchmark value, it has been determined that this occurs as a result of aerial deposition of naturally occurring magnesium from surrounding soil. A study report that supports this conclusion was submitted to the Regional Water Quality Control Board with the 2009/2010 Annual Stormwater Report.

LBNL's Stormwater Pollution Prevention Plan will be revised within 90 days to reflect the changes to control measures at the Blackberry Parking Lot. If you have any questions, please contact Brendan Mulholland (BJMulholland@lbl.gov) at 510-486-5284 or me (ROPauer@lbl.gov) at 510-486-7614.

Sincerely,



Ron Pauer
Environmental Manager

enclosures:

1. ESG (Environmental Services Group, Lawrence Berkeley National Laboratory) Sample Collection Form, Collection Number 7697

2. ESG pH Calibration & Measurement Worksheet, Collection Number 7697
3. Curtis & Tompkins Analytical Report, Job Number 264467

cc via email w/enclosures:

Kim Abbott (kvabbott@lbl.gov)
Jim Floyd (JGFloyd@lbl.gov)
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**1. ESG Sample Collection Form, Collection Number
7697**

ESG Sample Collection Form

U.C. Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley CA 94720

Surface Water Monitoring
ASWMP Sampling
Collection:

Sample Data

Sample ID	Location	SampleType	QC Type	Coll Type	Lab/Analysis	Date/time	Container(s)	Presv	Amount	Depth ft	Sample Notes
75151	MP1	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	2/6/2015 10:35:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: <input checked="" type="checkbox"/>									
75152	MP1	Aqueous	Sample	Grab	CURTISTOMP E1664	2/6/2015 10:35:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: <input checked="" type="checkbox"/>									
75153	MP1	Aqueous	Sample	Grab	pH-aq:SM4500H+B	2/6/2015 10:35:00 AM	1-250 ml PE	None	0.25 L		pH = 7.06, T = 282 NTU
		Sample Collected: <input checked="" type="checkbox"/>									
75154	MP2	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	2/6/2015 10:55:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: <input checked="" type="checkbox"/>									
75155	MP2	Aqueous	Sample	Grab	CURTISTOMP E1664	2/6/2015 10:55:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: <input checked="" type="checkbox"/>									
75156	MP2	Aqueous	Sample	Grab	pH-aq:SM4500H+B	2/6/2015 10:55:00 AM	1-250 ml PE	None	0.25 L		pH = 7.65, T = 30.8 NTU
		Sample Collected: <input checked="" type="checkbox"/>									
75157	MP3	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D, NO3+NO2(asN):MU LT	2/6/2015 11:05:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: <input checked="" type="checkbox"/>									
75158	MP3	Aqueous	Sample	Grab	CURTISTOMP E1664	2/6/2015 11:05:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: <input checked="" type="checkbox"/>									
75159	MP3	Aqueous	Sample	Grab	CURTISTOMP E410.4	2/6/2015 11:05:00 AM	1-500 ml PE	H2SO 4	0.5 L		
		Sample Collected: <input checked="" type="checkbox"/>									

Sample Data

Sample ID	Location	SampleType	QC Type	Coll Type	Lab/Analysis	Date/time	Container(s)	Presv	Amount	Depth ft	Sample Notes
75160	MP3	Aqueous	Sample	Grab	CURTISTOMP STORMMET- ASWMP-77	2/6/2015 11:05:00 AM	1-500 ml PE	HNO3	0.5 L		
		Sample Collected: Yes									
75161	MP3	Aqueous	Sample	Grab	pH-aq:SM4500H+B	2/6/2015 11:05:00 AM	1-250 ml PE	None	0.25 L		pH = 7.68, T = 47.3 NTU
		Sample Collected: Yes									
75166	MP3	Aqueous	Dup	Grab	pH-aq:SM4500H+B		1-250 ml PE	None	0.25 L		Field duplicate not required
		Sample Collected: No									
75167	MP4	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	2/6/2015 11:15:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: Yes									
75168	MP4	Aqueous	Sample	Grab	CURTISTOMP E1664	2/6/2015 11:15:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: Yes									
75169	MP4	Aqueous	Sample	Grab	CURTISTOMP Ammonia(asN):MUL T, E410.4	2/6/2015 11:15:00 AM	1-500 ml PE	H2SO 4	0.5 L		
		Sample Collected: Yes									
75170	MP4	Aqueous	Sample	Grab	CURTISTOMP STORMMET- ASWMP-85	2/6/2015 11:15:00 AM	2-500 ml PE	HNO3 or NaOH	1 L		
		Sample Collected: Yes									
75171	MP4	Aqueous	Sample	Grab	pH-aq:SM4500H+B	2/6/2015 11:15:00 AM	1-250 ml PE	None	0.25 L		pH = 8.03, T = 34.1 NTU
		Sample Collected: Yes									
75172	MP5	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	2/6/2015 11:25:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: Yes									
75173	MP5	Aqueous	Sample	Grab	CURTISTOMP E1664	2/6/2015 11:25:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: Yes									
75174	MP5	Aqueous	Sample	Grab	CURTISTOMP Ammonia(asN):MUL T, E410.4	2/6/2015 11:25:00 AM	1-500 ml PE	H2SO 4	0.5 L		
		Sample Collected: Yes									

Sample Data

Sample ID	Location	SampleType	QC Type	Coll Type	Lab/Analysis	Date/time	Container(s)	Presv	Amount	Depth ft	Sample Notes
75175	MP5	Aqueous	Sample	Grab	CURTISTOMP STORMMET- ASWMP-85	2/6/2015 11:25:00 AM	2-500 ml PE	HNO3 or NaOH	1 L		
		Sample Collected: Yes									
75176	MP5	Aqueous	Sample	Grab	pH-aq:SM4500H+B	2/6/2015 11:25:00 AM	1-250 ml PE	None	0.25 L		pH = 7.86, T = 30.6 NTU
		Sample Collected: Yes									
75177	MP6	Aqueous	Sample	Grab	CURTISTOMP E120.1, TSS:SM2540D	2/6/2015 10:45:00 AM	1-1 Liter PE	None	1 L		
		Sample Collected: Yes									
75178	MP6	Aqueous	Sample	Grab	CURTISTOMP E1664	2/6/2015 10:45:00 AM	1-1 Liter AG	HCL	1 L		
		Sample Collected: Yes									
75179	MP6	Aqueous	Sample	Grab	pH-aq:SM4500H+B	2/6/2015 10:45:00 AM	1-250 ml PE	None	0.25 L		pH = 7.93, T = 47.4 NTU
		Sample Collected: Yes									

**2. ESG pH Calibration and Measurement Worksheet,
Collection Number 7697**

**3. Curtis & Tompkins Analytical Report,
Job Number 264467**



Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 264467
ANALYTICAL REPORT

Lawrence Berkeley National Lab
1 Cyclotron Road
Berkeley, CA 94720

Project : STANDARD
Location : SWMP - ASWMP Sampling
Level : II

Table with 2 columns: Sample ID and Lab ID. Lists sample IDs from 75151 to 75178 and corresponding Lab IDs from 264467-001 to 264467-018.

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Isabelle Choy
Isabelle Choy
Project Manager
isabelle.choy@ctberk.com

Date: 02/25/2015

CASE NARRATIVE

Laboratory number: 264467
Client: Lawrence Berkeley National Lab
Location: SWMP - ASWMP Sampling
Request Date: 02/06/15
Samples Received: 02/06/15

This data package contains sample and QC results for eighteen water samples, requested for the above referenced project on 02/06/15. The samples were received on ice and intact, directly from the field. All holding times and calibration criteria were met.

Metals (EPA 200.8 and EPA 245.1):

High recovery was observed for iron in the MSD for batch 220299; the parent sample was not a project sample, the BS/BSD were within limits, and the associated RPD was within limits. No other analytical problems were encountered.

Ion Chromatography (EPA 300.0 and EPA 300.0):

No analytical problems were encountered.

Conductivity (SM2510B):

No analytical problems were encountered.

Total Cyanide (SM4500CN-E):

No analytical problems were encountered.

Ammonia Nitrogen (SM4500NH3-D):

No analytical problems were encountered.

Total Oil & Grease (HEM) (EPA 1664A):

Matrix spikes were not performed for this analysis due to insufficient sample volume. No analytical problems were encountered.

Total Suspended Solids (TSS) (SM2540D):

High RPD was observed for total suspended solids in the BS/BSD for batch 220447. High RPD was observed for total suspended solids in the MS/MSD for batch 220447; the parent sample was not a project sample. No other analytical problems were encountered.

Chemical Oxygen Demand (SM5220D):

No analytical problems were encountered.

264467

U.C. Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley CA 94720

LBNL ENVIRONMENTAL SERVICES GROUP
Chain of Custody

Send final reports to: Suying Xu, Mailstop 75B0101
For questions contact John Jelinski, e-mail: JAJelinski@lbl.gov
Phone: 510-486-7616 Fax: 510-486-7034
Purpose: Surface Water Monitoring Program - ASWMP Sampling

COC No.: 08335

Page 1 of 3

Collection(s): 7697

Sample Location	Date & Time Sampled	Reference Date/Time*	Collection Method	Sample Type	Container Volume & Code**	#	Preservative	Analysis Code	Field Sample ID***	Notes to Lab
1	75151	2/6/2015 10:35	2/6/2015 10:35	Grab	Aqueous	1 Liter PE	1	None	E120.1	
		2/6/2015 10:35	2/6/2015 10:35	Grab	Aqueous	1 Liter PE	1	None	TSS:SM2540D	
2	75152	2/6/2015 10:35	2/6/2015 10:35	Grab	Aqueous	1 Liter AG	1	HCL	E1664	
3	75154	2/6/2015 10:55	2/6/2015 10:55	Grab	Aqueous	1 Liter PE	1	None	E120.1	
		2/6/2015 10:55	2/6/2015 10:55	Grab	Aqueous	1 Liter PE	1	None	TSS:SM2540D	
4	75155	2/6/2015 10:55	2/6/2015 10:55	Grab	Aqueous	1 Liter AG	1	HCL	E1664	
5	75157	2/6/2015 11:05	2/6/2015 11:05	Grab	Aqueous	1 Liter PE	1	None	E120.1	
		2/6/2015 11:05	2/6/2015 11:05	Grab	Aqueous	1 Liter PE	1	None	NO3+NO2(asN):MULT	
		2/6/2015 11:05	2/6/2015 11:05	Grab	Aqueous	1 Liter PE	1	None	TSS:SM2540D	
6	75158	2/6/2015 11:05	2/6/2015 11:05	Grab	Aqueous	1 Liter AG	1	HCL	E1664	
7	75159	2/6/2015 11:05	2/6/2015 11:05	Grab	Aqueous	500 ml PE	1	H2SO4	E410.4	
8	75160	2/6/2015 11:05	2/6/2015 11:05	Grab	Aqueous	500 ml PE	1	HNO3	STORMMET-ASWMP-77	

Total No. of Containers: 20

Shipping Document ID: hand carry

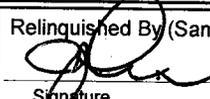
Turnaround Time**:** 20 days

Lab Name: CURTISTOMP

Sampled by: 

Special Instructions/Comments:

Relinquished By (Sampler)

 1350
Signature Time

Jelinski 2/6/15
Printed Name Date

LBNL
Company

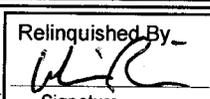
Received By

Signature Time

Printed Name Date

Company

Relinquished By

 13190
Signature Time

Will Rice 2/6/15
Printed Name Date


Company

Received By

Signature Time

Printed Name Date

Company

Relinquished By

Signature Time

Printed Name Date

Company

Received By

Signature Time

Printed Name Date

Company

*REFERENCE DATE/TIME: Use this value for decay calculations in radiological analyses when applicable **Container Codes: AG = amber glass CG = clear glass PE = polyethylene VV = VOA vial
*** Field Sample ID: If present, use this information as the sample identifier in hard-copy reports (please include Sample Location information in the notes). If blank, and in electronic deliverable files, use Sample Location as the identifier. ****Listed turnaround time is for reporting and is in work days, as defined in the Joint LBNL/LLNL Analytical Services blanket order.

264467

U.C. Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley CA 94720

LBNL ENVIRONMENTAL SERVICES GROUP
Chain of Custody

Send final reports to: Suying Xu, Mailstop 75B0101
For questions contact John Jelinski, e-mail: JAJelinski@lbl.gov
Phone: 510-486-7616 Fax: 510-486-7034

COC No.: 08335 Page 2 of 3

Collection(s): 7697

Purpose: Surface Water Monitoring Program - ASWMP Sampling

Sample Location	Date & Time Sampled	Reference Date/Time	Collection Method	Sample Type	Container Volume & Code	Preservative	Analysis Code	Field Sample ID**	Notes to Lab
9 75167	2/6/2015 11:15	2/6/2015 11:15	Grab	Aqueous	1 Liter PE	None	E120.1		
	2/6/2015 11:15	2/6/2015 11:15	Grab	Aqueous	1 Liter PE	None	TSS:SM2540D		
10 75168	2/6/2015 11:15	2/6/2015 11:15	Grab	Aqueous	1 Liter AG	HCL	E1664		
11 75169	2/6/2015 11:15	2/6/2015 11:15	Grab	Aqueous	500 ml PE	H2SO4	Ammonia(asN):MULT		
	2/6/2015 11:15	2/6/2015 11:15	Grab	Aqueous	500 ml PE	H2SO4	E410.4		
12 75170	2/6/2015 11:15	2/6/2015 11:15	Grab	Aqueous	500 ml PE	HNO3 or NaOH	STORMMET-ASWMP-85		
13 75172	2/6/2015 11:25	2/6/2015 11:25	Grab	Aqueous	1 Liter PE	None	E120.1		
	2/6/2015 11:25	2/6/2015 11:25	Grab	Aqueous	1 Liter PE	None	TSS:SM2540D		
14 75173	2/6/2015 11:25	2/6/2015 11:25	Grab	Aqueous	1 Liter AG	HCL	E1664		
15 75174	2/6/2015 11:25	2/6/2015 11:25	Grab	Aqueous	500 ml PE	H2SO4	Ammonia(asN):MULT		
	2/6/2015 11:25	2/6/2015 11:25	Grab	Aqueous	500 ml PE	H2SO4	E410.4		
16 75175	2/6/2015 11:25	2/6/2015 11:25	Grab	Aqueous	500 ml PE	HNO3 or NaOH	STORMMET-ASWMP-85		

Total No. of Containers: 20	Relinquished By (Sampler) Signature: [Signature] Time: 1:50 Printed Name: Jelinski Date: 2/6/15 Company: LBNL	Relinquished By Signature: [Signature] Time: 1:50 Printed Name: Will Rice Date: 2/6/15 Company: CDT
Shipping Document ID: hand carry	Received By Signature: [Signature] Time: [] Printed Name: [] Date: [] Company: []	Received By Signature: [Signature] Time: [] Printed Name: [] Date: [] Company: []
Turnaround Time****: 20 days	Special Instructions/Comments:	
Lab Name: CURTISTOMP		
Sampled by: [Signature]		

*REFERENCE DATE/TIME: Use this value for decay calculations in radiological analyses when applicable **Container Codes: AG = amber glass CG = clear glass PE = polyethylene VW = VOA vial
 *** Field Sample ID: If present, use this information as the sample identifier in hard-copy reports (please include Sample Location information in the notes). If blank, and in electronic deliverable files, use Sample Location as the identifier. ****Listed turnaround time is for reporting and is in work days, as defined in the Joint LBNL/LLNL Analytical Services blanket order.

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COC No.: 08335 Page 3 of 3

Collection(s): 7697

Purpose: Surface Water Monitoring Program - ASWMP Sampling

Sample Location	Date & Time Sampled	Reference Date/Time	Collection Method	Sample Type	Container Volume & Code	Preservative	Analysis Code	Field Sample ID	Notes to Lab
75177	2/6/2015 10:45	2/6/2015 10:45	Grab	Aqueous	1 Liter PE	None	E120.1		
	2/6/2015 10:45	2/6/2015 10:45	Grab	Aqueous	1 Liter PE	None	TSS:SM2540D		
75178	2/6/2015 10:45	2/6/2015 10:45	Grab	Aqueous	1 Liter AG	HCL	E1664		

17

18

Total No. of Containers: 20

Shipping Document ID: hand carry

Turnaround Time**:** 20 days

Lab Name: CURTISTOMP

Sampled by: 

Special Instructions/Comments:

Relinquished By (Sampler)

Signature:  Time: 12:50

Printed Name: Jelinski, John Date: 2/6/15

Company: CURT

Received By

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Relinquished By

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Received By

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

*REFERENCE DATE/TIME: Use this value for decay calculations in radiological analyses when applicable **Container Codes: AG = amber glass CG = clear glass PE = polyethylene VV = VOA vial
 **** Field Sample ID: if present, use this information as the sample identifier in hard-copy reports (please include Sample Location information in the notes). If blank, and in electronic deliverable files, use Sample Location as the identifier. ***** Listed turnaround time is for reporting and is in work days, as defined in the Joint LBNL/LLNL Analytical Services blanket order.

COOLER RECEIPT CHECKLIST



Login # 264467 Date Received 2/6/14 Number of coolers 1
 Client Lawrence Berkeley Project Surface water Monitoring Program
 Date Opened 2/6 By (print) SL (sign) [Signature]
 Date Logged in 2/6 By (print) BL (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO
- Shipping info _____
- 2A. Were custody seals present? YES (circle) on cooler on samples NO
 How many 20 Name _____ Date _____
- 2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe) _____

- Bubble Wrap Foam blocks Bags None
 Cloth material Cardboard Styrofoam Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C
- Type of ice used: Wet Blue/Gel None Temp(°C) _____
- Samples Received on ice & cold without a temperature blank; temp. taken with IR gun
- Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO
 If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ YES NO
10. Are there any missing / extra samples? _____ YES NO
11. Are samples in the appropriate containers for indicated tests? _____ YES NO
12. Are sample labels present, in good condition and complete? _____ YES NO
13. Do the sample labels agree with custody papers? _____ YES NO
14. Was sufficient amount of sample sent for tests requested? _____ YES NO
15. Are the samples appropriately preserved? _____ YES NO N/A
16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A
17. Did you document your preservative check? _____ YES NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A
21. Was the client contacted concerning this sample delivery? _____ YES NO
 If YES, Who was called? _____ By _____ Date: _____

COMMENTS

Curtis & Tompkins Sample Preservation for 264467

Sample	pH: <2	>9	>12	Other
-001a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-002a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-003a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-004a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-005a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-006a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-007a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-008a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-009a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-010a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-011a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-012a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
b	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
-013a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-014a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-015a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-016a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
b	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
-017a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
-018a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Analyst: BL

Date: 2/6/15

Client Sample ID : 75160

Laboratory Sample ID :

264467-008

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Aluminum	1.0		0.050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8
Copper	0.20		0.0050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8
Iron	2.0		0.050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8
Lead	0.031		0.0050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8
Zinc	0.73		0.050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8

Client Sample ID : 75167

Laboratory Sample ID :

264467-009

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Specific Conductance	59		1.0	umhos/cm	TOTAL	1.000	SM2510B	METHOD
Total Suspended Solids	12		1	mg/L	TOTAL	0.2000	SM2540D	METHOD

Client Sample ID : 75168

Laboratory Sample ID :

264467-010

No Detections

Client Sample ID : 75169

Laboratory Sample ID :

264467-011

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Ammonia-N	0.54		0.10	mg/L	TOTAL	1.000	SM4500NH3-D	SM4500NH3-B
Chemical Oxygen Demand	140		10	mg/L	TOTAL	1.000	SM5220D	METHOD

Client Sample ID : 75170

Laboratory Sample ID :

264467-012

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Magnesium	1.0		0.050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8

Client Sample ID : 75172

Laboratory Sample ID :

264467-013

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Specific Conductance	40		1.0	umhos/cm	TOTAL	1.000	SM2510B	METHOD
Total Suspended Solids	8		1	mg/L	TOTAL	0.2000	SM2540D	METHOD

Client Sample ID : 75173

Laboratory Sample ID :

264467-014

No Detections

Client Sample ID : 75174

Laboratory Sample ID :

264467-015

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Ammonia-N	0.59		0.10	mg/L	TOTAL	1.000	SM4500NH3-D	SM4500NH3-B
Chemical Oxygen Demand	56		10	mg/L	TOTAL	1.000	SM5220D	METHOD

Client Sample ID : 75175

Laboratory Sample ID :

264467-016

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Magnesium	0.64		0.050	mg/L	TOTAL	5.000	EPA 200.8	EPA 200.8

Client Sample ID : 75177

Laboratory Sample ID :

264467-017

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Specific Conductance	56		1.0	umhos/cm	TOTAL	1.000	SM2510B	METHOD
Total Suspended Solids	33		1	mg/L	TOTAL	0.2000	SM2540D	METHOD

Client Sample ID : 75178

Laboratory Sample ID :

264467-018

No Detections

Batch QC Report

Metals Analytical Report			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 200.8
Project#:	STANDARD	Analysis:	EPA 200.8
Location:	SWMP - ASWMP Sampling		
Requested:	STORMMET-ASWMP-77	Batch#:	220299
Matrix:	Water	Instrument:	MET16
Units:	mg/L	Chemist:	NT
Diln Fac:	5.000	Prepared:	02/11/15 09:00

Type: BS Analyzed: 02/12/15 19:39
 Lab ID: QC776702

Analyte	Code	Spiked	Result	%REC	Limits
Aluminum	0313	10.00	10.35	104	80-124
Copper	2800	0.1000	0.1044	104	80-130
Iron	5350	10.00	11.60	116	80-133
Lead	5450	0.1000	0.1007	101	80-122
Zinc	9050	0.1000	0.1082	108	80-130

Type: BSD Analyzed: 02/12/15 19:45
 Lab ID: QC776703

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Aluminum	0313	10.00	10.48	105	80-124	1	20
Copper	2800	0.1000	0.09880	99	80-130	6	20
Iron	5350	10.00	10.89	109	80-133	6	20
Lead	5450	0.1000	0.09865	99	80-122	2	20
Zinc	9050	0.1000	0.1049	105	80-130	3	20

RPD= Relative Percent Difference

Batch QC Report

Metals Analytical Report			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 200.8
Project#:	STANDARD	Analysis:	EPA 200.8
Location:	SWMP - ASWMP Sampling		
Requested:	STORMMET-ASWMP-85	Batch#:	220299
Matrix:	Water	Instrument:	MET16
Units:	mg/L	Chemist:	NT
Diln Fac:	5.000	Prepared:	02/11/15 09:00

Type: BS Analyzed: 02/12/15 19:39
 Lab ID: QC776702

Analyte	Code	Spiked	Result	%REC	Limits
Arsenic	0450	0.1000	0.1040	104	80-120
Cadmium	1650	0.1000	0.1024	102	80-120
Lead	5450	0.1000	0.1007	101	80-122
Magnesium	5500	10.00	10.32	103	80-123
Selenium	7600	0.1000	0.1049	105	80-126
Silver	7800	0.1000	0.09925	99	79-120

Type: BSD Analyzed: 02/12/15 19:45
 Lab ID: QC776703

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Arsenic	0450	0.1000	0.09860	99	80-120	5	20
Cadmium	1650	0.1000	0.1007	101	80-120	2	20
Lead	5450	0.1000	0.09865	99	80-122	2	20
Magnesium	5500	10.00	10.42	104	80-123	1	20
Selenium	7600	0.1000	0.1001	100	80-126	5	20
Silver	7800	0.1000	0.09790	98	79-120	1	20

RPD= Relative Percent Difference

Batch QC Report

Metals Analytical Report			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 200.8
Project#:	STANDARD	Analysis:	EPA 200.8
Location:	SWMP - ASWMP Sampling		
Requested:	STORMMET-ASWMP-77	Batch#:	220299
Field ID:	ZZZZZZZZZZ	Instrument:	MET16
MSS Lab ID:	264351-002	Chemist:	NT
Matrix:	Water	Sampled:	02/02/15 10:01
Units:	mg/L	Received:	02/02/15
Diln Fac:	5.000	Prepared:	02/11/15 09:00

Type: MS Analyzed: 02/12/15 19:58
 Lab ID: QC776704

Analyte	Code	MSS Result	Spiked	Result	%REC	Limits
Aluminum	0313	0.02982	10.00	11.12	111	80-123
Copper	2800	<0.001236	0.1000	0.1045	105	76-124
Iron	5350	12.18	10.00	24.52	123	80-132
Lead	5450	<0.00007454	0.1000	0.1037	104	80-120
Zinc	9050	1.152	0.1000	1.298 >LR	146 NM	75-126

Type: MSD Analyzed: 02/12/15 20:04
 Lab ID: QC776705

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Aluminum	0313	10.00	11.10	111	80-123	0	22
Copper	2800	0.1000	0.1046	105	76-124	0	29
Iron	5350	10.00	26.54	144 *	80-132	8	27
Lead	5450	0.1000	0.1038	104	80-120	0	20
Zinc	9050	0.1000	1.342 >LR	190 NM	75-126	NC	27

*= Value outside of QC limits; see narrative
 NC= Not Calculated
 NM= Not Meaningful: Sample concentration > 4X spike concentration
 >LR= Response exceeds instrument's linear range
 RPD= Relative Percent Difference

Batch QC Report

Metals Analytical Report			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 200.8
Project#:	STANDARD	Analysis:	EPA 200.8
Location:	SWMP - ASWMP Sampling		
Requested:	STORMMET-ASWMP-85	Batch#:	220299
Field ID:	ZZZZZZZZZZ	Instrument:	MET16
MSS Lab ID:	264351-002	Chemist:	NT
Matrix:	Water	Sampled:	02/02/15 10:01
Units:	mg/L	Received:	02/02/15
Diln Fac:	5.000	Prepared:	02/11/15 09:00

Type: MS Analyzed: 02/12/15 19:58
 Lab ID: QC776704

Analyte	Code	MSS Result	Spiked	Result	%REC	Limits
Arsenic	0450	0.0006275	0.1000	0.1178	117	80-120
Cadmium	1650	0.002526	0.1000	0.1121	110	80-120
Lead	5450	<0.00007454	0.1000	0.1037	104	80-120
Magnesium	5500	340.4	10.00	352.3 >LR	119 NM	74-129
Selenium	7600	0.0006245	0.1000	0.1173	117	77-125
Silver	7800	<0.00009399	0.1000	0.1035	103	66-120

Type: MSD Analyzed: 02/12/15 20:04
 Lab ID: QC776705

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Arsenic	0450	0.1000	0.1191	118	80-120	1	26
Cadmium	1650	0.1000	0.1106	108	80-120	1	21
Lead	5450	0.1000	0.1038	104	80-120	0	20
Magnesium	5500	10.00	362.1 >LR	218 NM	74-129	NC	27
Selenium	7600	0.1000	0.1188	118	77-125	1	28
Silver	7800	0.1000	0.1038	104	66-120	0	29

NC= Not Calculated

NM= Not Meaningful: Sample concentration > 4X spike concentration

>LR= Response exceeds instrument's linear range

RPD= Relative Percent Difference

Batch QC Report

Metals Analytical Report			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 245.1
Location:	SWMP - ASWMP Sampling		
Analyte:	Mercury	Diln Fac:	1.000
Code:	5600	Batch#:	220496
Requested:	STORMMET-ASWMP-85	Instrument:	MET44
Type:	LCS	Chemist:	NCD
Lab ID:	QC777487	Prepared:	02/17/15 08:05
Matrix:	Water	Analyzed:	02/17/15 13:58
Units:	mg/L		

Spiked	Result	%REC	Limits
0.002500	0.002511	100	80-120

Batch QC Report

Metals Analytical Report			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 245.1
Location:	SWMP - ASWMP Sampling		
Analyte:	Mercury	Diln Fac:	1.000
Code:	5600	Batch#:	220496
Requested:	STORMMET-ASWMP-85	Instrument:	MET44
Field ID:	75175	Chemist:	NCD
MSS Lab ID:	264467-016	Sampled:	02/06/15 11:25
Matrix:	Water	Received:	02/06/15
Units:	mg/L	Prepared:	02/17/15 08:05

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Analyzed
MS	QC777488	<0.00004000	0.002500	0.002701	108	60-130			02/17/15 14:01
MSD	QC777489		0.002500	0.002701	108	60-130	0	34	02/17/15 14:02

RPD= Relative Percent Difference

Nitrate/Nitrite Nitrogen			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Location:	SWMP - ASWMP Sampling		
COC #:	08335	Batch#:	220175
Requested:	NO3+NO2(asN):MULT	Instrument:	IC01
Field ID:	75157	Chemist:	NJT
Matrix:	Water	Sampled:	02/06/15 11:05
Units:	mg/L	Received:	02/06/15
Diln Fac:	1.000		

Type: SAMPLE Analyzed: 02/06/15 14:13
 Lab ID: 264467-005

Analyte	Code	Result	RL
Nitrite as Nitrite	5960	ND	0.33
Nitrogen, Nitrate	5945	1.3	0.10
Nitrogen, Nitrate/Nitrite	5950	1.3	0.10

Type: BLANK Analyzed: 02/06/15 10:30
 Lab ID: QC776218

Analyte	Code	Result	RL
Nitrite as Nitrite	5960	ND	0.33
Nitrogen, Nitrate	5945	ND	0.10
Nitrogen, Nitrate/Nitrite	5950	ND	0.10

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Nitrate/Nitrite Nitrogen			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Location:	SWMP - ASWMP Sampling		
Requested:	NO3+NO2(asN):MULT	Diln Fac:	1.000
Type:	LCS	Batch#:	220175
Lab ID:	QC776219	Instrument:	IC01
Matrix:	Water	Chemist:	NJT
Units:	mg/L	Analyzed:	02/06/15 12:06

Analyte	Code	Spiked	Result	%REC	Limits
Nitrite as Nitrite	5960	3.285	3.214	98	80-120
Nitrogen, Nitrate	5945	1.000	1.027	103	80-120

Batch QC Report

Nitrate/Nitrite Nitrogen			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Location:	SWMP - ASWMP Sampling		
Requested:	NO3+NO2(asN):MULT	Diln Fac:	5.000
Field ID:	ZZZZZZZZZZ	Batch#:	220175
Type:	SSPIKE	Instrument:	IC01
MSS Lab ID:	264499-004	Chemist:	NJT
Lab ID:	QC776280	Sampled:	02/06/15 11:00
Matrix:	Water	Received:	02/06/15
Units:	mg/L	Analyzed:	02/07/15 03:05

Analyte	Code	MSS Result	Spiked	Result	%REC	Limits
Nitrite as Nitrite	5960	0.1073	8.212	7.796	94	80-120
Nitrogen, Nitrate	5945	3.722	2.500	6.156	97	80-120

Batch QC Report

Nitrate/Nitrite Nitrogen			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Location:	SWMP - ASWMP Sampling		
Requested:	NO3+NO2(asN):MULT	Batch#:	220175
Field ID:	ZZZZZZZZZZ	Instrument:	IC01
MSS Lab ID:	264499-004	Chemist:	NJT
Matrix:	Water	Sampled:	02/06/15 11:00
Units:	mg/L	Received:	02/06/15
Diln Fac:	5.000		

Type: MS Analyzed: 02/07/15 03:32
 Lab ID: QC776281

Analyte	Code	MSS Result	Spiked	Result	%REC	Limits
Nitrite as Nitrite	5960	0.1073	8.212	7.748	93	80-120
Nitrogen, Nitrate	5945	3.722	2.500	6.171	98	80-120

Type: MSD Analyzed: 02/07/15 04:00
 Lab ID: QC776282

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Nitrite as Nitrite	5960	8.212	7.868	95	80-120	2	20
Nitrogen, Nitrate	5945	2.500	6.162	98	80-120	0	20

RPD= Relative Percent Difference

Total Oil & Grease (HEM)			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 1664A
Location:	SWMP - ASWMP Sampling		
Analyte:	Oil & Grease (HEM)	Diln Fac:	1.000
Code:	6325	Batch#:	220364
COC #:	08335	Instrument:	H3000
Requested:	E1664	Chemist:	BCH
Matrix:	Water	Received:	02/06/15
Units:	mg/L	Analyzed:	02/12/15 11:00

Field ID	Type	Lab ID	Result	RL	Sampled
75152	SAMPLE	264467-002	5.53	4.85	02/06/15 10:35
75155	SAMPLE	264467-004	ND	4.76	02/06/15 10:55
75158	SAMPLE	264467-006	ND	4.76	02/06/15 11:05
75168	SAMPLE	264467-010	ND	4.76	02/06/15 11:15
75173	SAMPLE	264467-014	ND	4.76	02/06/15 11:25
75178	SAMPLE	264467-018	ND	4.76	02/06/15 10:45
	BLANK	QC776962	ND	5.00	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Total Oil & Grease (HEM)			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 1664A
Location:	SWMP - ASWMP Sampling		
Analyte:	Oil & Grease (HEM)	Units:	mg/L
Code:	6325	Diln Fac:	1.000
Requested:	E1664	Batch#:	220364
Type:	LCS	Instrument:	H3000
Lab ID:	QC776963	Chemist:	BCH
Matrix:	Water	Analyzed:	02/12/15 11:00

Spiked	Result	%REC	Limits
40.00	31.60	79	78-114

Ammonia Nitrogen			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	SM4500NH3-B
Project#:	STANDARD	Analysis:	SM4500NH3-D
Location:	SWMP - ASWMP Sampling		
Analyte:	Ammonia-N	Diln Fac:	1.000
Code:	0325	Batch#:	220742
COC #:	08335	Instrument:	OR_NH3
Requested:	Ammonia(asN):MULT	Chemist:	BCH
Matrix:	Water	Received:	02/06/15
Units:	mg/L	Analyzed:	02/24/15 10:00

Field ID	Type	Lab ID	Result	RL	Sampled
75169	SAMPLE	264467-011	0.54	0.10	02/06/15 11:15
75174	SAMPLE	264467-015	0.59	0.10	02/06/15 11:25
	BLANK	QC778446	ND	0.10	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Ammonia Nitrogen			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	SM4500NH3-B
Project#:	STANDARD	Analysis:	SM4500NH3-D
Location:	SWMP - ASWMP Sampling		
Analyte:	Ammonia-N	Diln Fac:	1.000
Code:	0325	Batch#:	220742
Requested:	Ammonia(asN):MULT	Instrument:	OR_NH3
Field ID:	ZZZZZZZZZZ	Chemist:	BCH
MSS Lab ID:	264636-001	Sampled:	02/11/15 11:49
Matrix:	Water	Received:	02/12/15
Units:	mg/L	Analyzed:	02/24/15 10:00

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
LCS	QC778447		1.000	4.000	80	80-120		
MS	QC778448	0.1400	1.000	4.500	87	80-122		
MSD	QC778449		1.000	4.600	89	80-122	2	20

RPD= Relative Percent Difference

Chemical Oxygen Demand			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM5220D
Location:	SWMP - ASWMP Sampling		
Analyte:	Chemical Oxygen Demand	Batch#:	220322
Code:	1875	Instrument:	DR2800
COC #:	08335	Chemist:	BCH
Requested:	E410.4	Received:	02/06/15
Matrix:	Water	Prepared:	02/11/15 11:00
Units:	mg/L	Analyzed:	02/11/15 13:00
Diln Fac:	1.000		

Field ID	Type	Lab ID	Result	RL	Sampled
75159	SAMPLE	264467-007	130	10	02/06/15 11:05
75169	SAMPLE	264467-011	140	10	02/06/15 11:15
75174	SAMPLE	264467-015	56	10	02/06/15 11:25
	BLANK	QC776806	ND	10	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Chemical Oxygen Demand			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM5220D
Location:	SWMP - ASWMP Sampling		
Analyte:	Chemical Oxygen Demand	Batch#:	220322
Code:	1875	Instrument:	DR2800
Requested:	E410.4	Chemist:	BCH
Field ID:	ZZZZZZZZZZ	Sampled:	02/06/15 10:30
MSS Lab ID:	264474-013	Received:	02/06/15
Matrix:	Water	Prepared:	02/11/15 11:00
Units:	mg/L	Analyzed:	02/11/15 13:00
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
LCS	QC776807		300.0	71.81	96	90-110		
MS	QC776808	82.42	300.0	449.2	122	57-126		
MSD	QC776809		300.0	457.6	125	57-126	2	20

RPD= Relative Percent Difference

Total Cyanide			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM4500CN-E
Location:	SWMP - ASWMP Sampling		
Analyte:	Cyanide	Diln Fac:	1.000
Code:	2850	Batch#:	220405
COC #:	08335	Instrument:	LAMBDA
Requested:	STORMMET-ASWMP-85	Chemist:	DM
Matrix:	Water	Received:	02/06/15
Units:	mg/L	Analyzed:	02/13/15 00:00

Field ID	Type	Lab ID	Result	RL	Sampled
75170	SAMPLE	264467-012	ND	0.02	02/06/15 11:15
75175	SAMPLE	264467-016	ND	0.02	02/06/15 11:25
	BLANK	QC777125	ND	0.02	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Total Cyanide			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM4500CN-E
Location:	SWMP - ASWMP Sampling		
Analyte:	Cyanide	Diln Fac:	1.000
Code:	2850	Batch#:	220405
Requested:	STORMMET-ASWMP-85	Instrument:	LAMBDA
Field ID:	75170	Chemist:	DM
MSS Lab ID:	264467-012	Sampled:	02/06/15 11:15
Matrix:	Water	Received:	02/06/15
Units:	mg/L	Analyzed:	02/13/15 00:00

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC777126	<0.02000	0.2000	0.1438	72	56-129		
MSD	QC777127		0.2000	0.1415	71	56-129	2	37
LCS	QC777128		0.2000	0.1673	84	73-123		

RPD= Relative Percent Difference

Conductivity			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM2510B
Location:	SWMP - ASWMP Sampling		
Analyte:	Specific Conductance	Diln Fac:	1.000
Code:	8000	Batch#:	220460
COC #:	08335	Instrument:	VWR_EC
Requested:	E120.1	Chemist:	KR
Matrix:	Water	Received:	02/06/15
Units:	umhos/cm	Analyzed:	02/15/15 11:17

Field ID	Type	Lab ID	Result	RL	Sampled
75151	SAMPLE	264467-001	140	1.0	02/06/15 10:35
75154	SAMPLE	264467-003	130	1.0	02/06/15 10:55
75157	SAMPLE	264467-005	100	1.0	02/06/15 11:05
75167	SAMPLE	264467-009	59	1.0	02/06/15 11:15
75172	SAMPLE	264467-013	40	1.0	02/06/15 11:25
75177	SAMPLE	264467-017	56	1.0	02/06/15 10:45
	BLANK	QC777344	ND	1.0	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Conductivity			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM2510B
Location:	SWMP - ASWMP Sampling		
Analyte:	Specific Conductance	Diln Fac:	1.000
Code:	8000	Batch#:	220460
Requested:	E120.1	Instrument:	VWR_EC
Field ID:	ZZZZZZZZZZ	Chemist:	KR
MSS Lab ID:	264646-001	Sampled:	02/12/15 13:15
Matrix:	Water	Received:	02/12/15
Units:	umhos/cm	Analyzed:	02/15/15 11:17

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim
LCS	QC777345		1,000	957.0		96	90-110		
SDUP	QC777346	2,146		2,179	1.000			2	20

RL= Reporting Limit

RPD= Relative Percent Difference

Total Suspended Solids (TSS)

Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM2540D
Location:	SWMP - ASWMP Sampling		
Analyte:	Total Suspended Solids	Batch#:	220447
Code:	7450	Instrument:	SCALE
COC #:	08335	Chemist:	KR
Requested:	TSS:SM2540D	Received:	02/06/15
Matrix:	Water	Prepared:	02/13/15 00:00
Units:	mg/L	Analyzed:	02/14/15 00:00

Field ID	Type	Lab ID	Result	RL	Diln Fac	Sampled
75151	SAMPLE	264467-001	240	2	0.4000	02/06/15 10:35
75154	SAMPLE	264467-003	47	1	0.2000	02/06/15 10:55
75157	SAMPLE	264467-005	49	1	0.2090	02/06/15 11:05
75167	SAMPLE	264467-009	12	1	0.2000	02/06/15 11:15
75172	SAMPLE	264467-013	8	1	0.2000	02/06/15 11:25
75177	SAMPLE	264467-017	33	1	0.2000	02/06/15 10:45
	BLANK	QC777293	ND	1	1.000	

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Total Suspended Solids (TSS)			
Lab #:	264467	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	METHOD
Project#:	STANDARD	Analysis:	SM2540D
Location:	SWMP - ASWMP Sampling		
Analyte:	Total Suspended Solids	Batch#:	220447
Code:	7450	Instrument:	SCALE
Requested:	TSS:SM2540D	Chemist:	KR
Field ID:	ZZZZZZZZZZ	Sampled:	02/09/15 09:20
MSS Lab ID:	264515-001	Received:	02/09/15
Matrix:	Water	Prepared:	02/13/15 00:00
Units:	mg/L	Analyzed:	02/14/15 00:00
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC777294		50.00	45.00	90	77-121		
BSD	QC777295		50.00	50.00	100	77-121	11 *	5
MS	QC777296	37.00	50.00	85.00	96	65-127		
MSD	QC777297		50.00	91.00	108	65-127	7 *	5

*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

Appendix D

Technical Memorandum: Hazardous Waste Handling Facility Investigative Studies



Environment, Safety, and Health Division
Environmental Services Group

Technical Memorandum

Date: 4/30/2010

To: San Francisco Regional Water Control Board

From: Tim Bauters, Stormwater Program Manager

Subject: Technical Memorandum Lawrence Berkeley National Laboratory Hazardous Waste Handling Facility Investigative Studies

Introduction

In 2009, Lawrence Berkeley National Laboratory (LBNL) implemented an *Alternative Stormwater Monitoring Plan* (“ASWMP”). The ASWMP fulfills the monitoring requirements and monitoring program objectives of California State Water Resources Control Board (SWRCB) Order No. 97-03-DWQ *National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 (General Permit), Waste Discharge Requirements (WDRs) for the Discharge of Stormwater Associated with Industrial Activities Excluding Construction Activities* (“General Permit”).

The ASWMP was prepared to provide a more industrial activity-specific indicator of pollutant contributions from regulated industrial activities at LBNL and thus a more reliable basis for evaluating the performance and effectiveness of Best Management Practices (BMPs) as described in the *Stormwater Pollution Prevention Plan* for the Facility (SWPPP; ESG, 2009). The specific industrial sites targeted in the ASWMP are shown on the following Figure 1 and include:

1. Storage at the Blackberry Canyon parking lot (stormwater sample location MP-1);
2. Fueling area at Building 76 (stormwater sample location MP-2);
3. Metal fabrication, storage, and recycling at Building 77 and 79 (stormwater sample location MP-3);
4. Hazardous waste storage and handling at Building 85 (stormwater sample locations MP-4 and MP-5); and,
5. Bus transportation and parking in front of Building 64 (stormwater sample location MP-6).

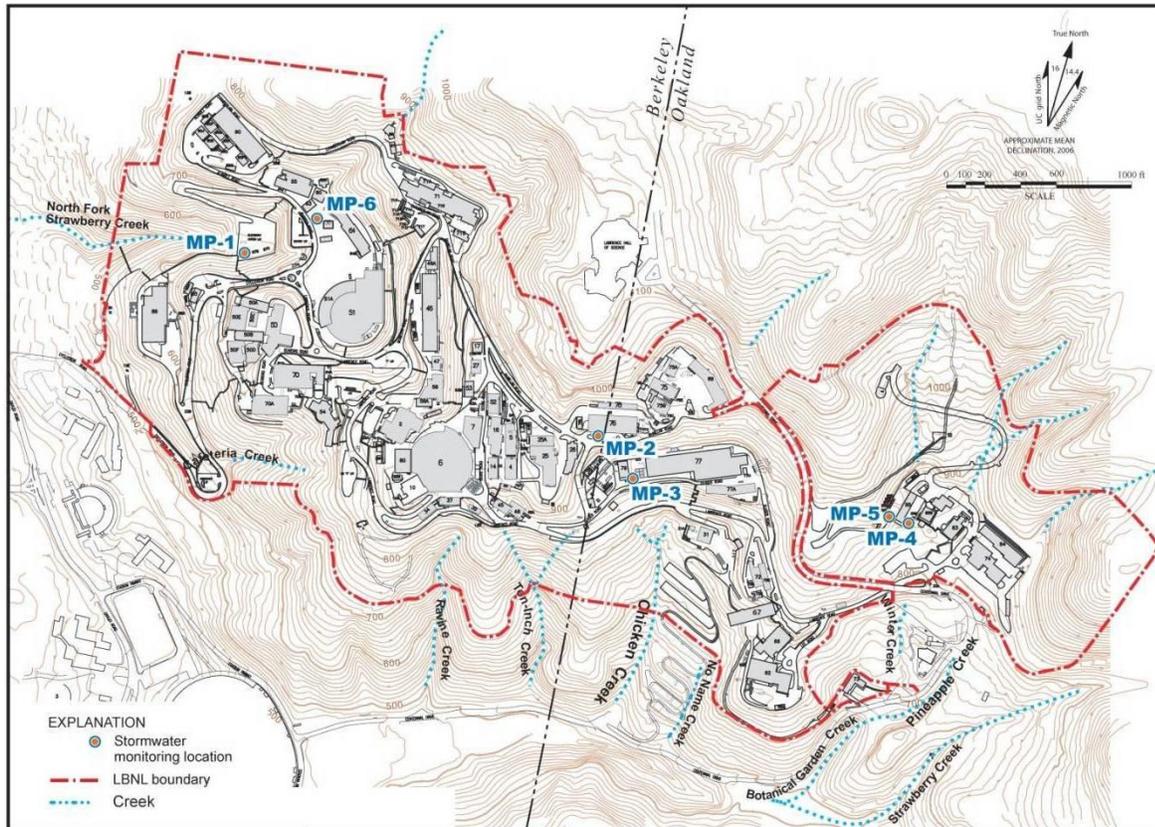


Figure 1. LBNL Facility Plan with Buildings, Topography, and Stormwater Monitoring Locations

During the 2009/2010 storm season, stormwater samples MP-4 and MP-5 collected at the hazardous waste storage and handling area (Building 85 or B85) exceeded the bench mark values included in the ASWMP for chemical oxygen demand (COD) and Magnesium (Mg). In response, LBNL conducted an investigative study to identify the potential sources of these constituents in the B85 upper and lower yard. The 2009/2010 stormwater sample results are summarized in Table 1 along with the ASWMP benchmarks for these constituents. A schematic overview for the B85 area is shown on [Figure 2](#).

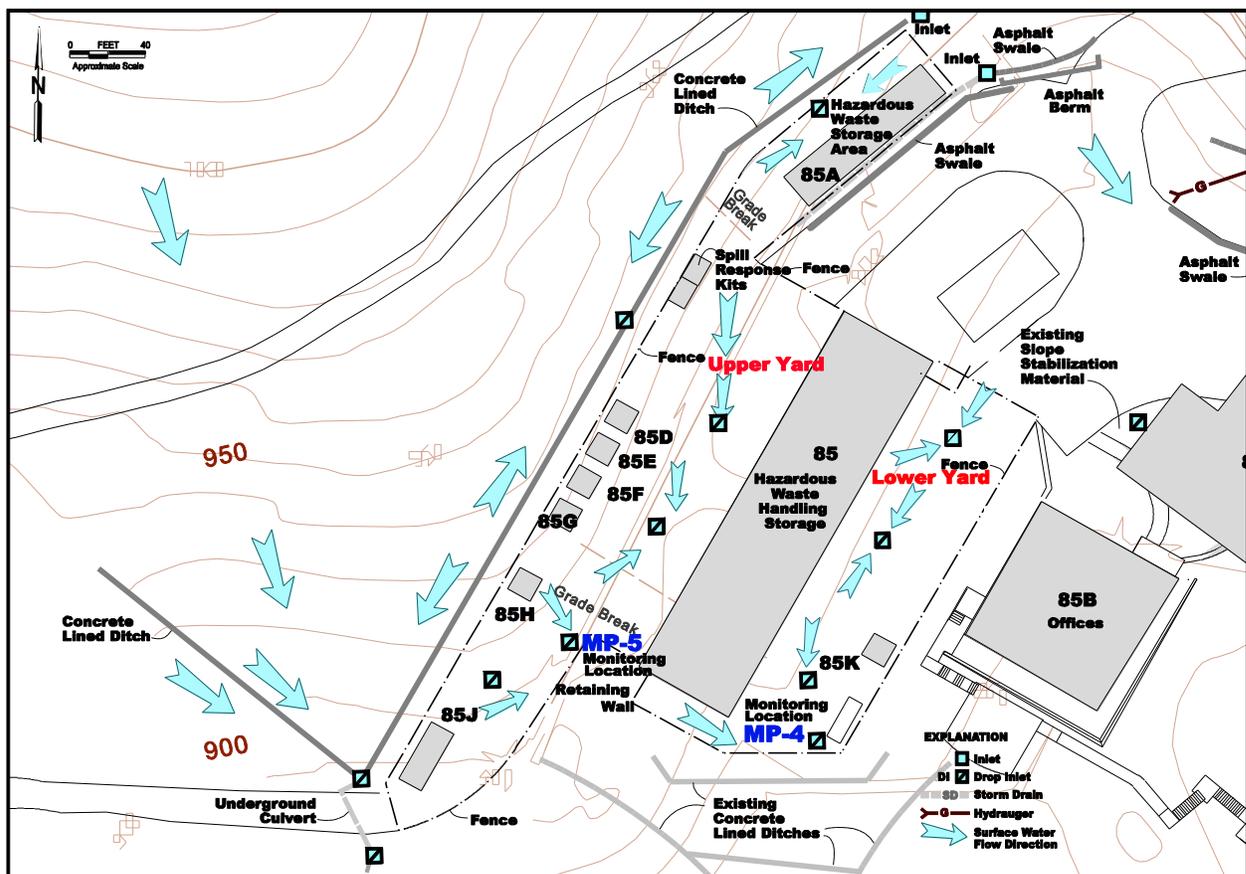


Figure 2. Schematic Overview of the Hazardous Waste Handling Facility, Building 85

The investigative studies are described in the following sections and the results are then compared and evaluated to generate proposed new benchmarks for these constituents.

Investigative Studies

In August through October 2009, LBNL performed three investigative studies to identify potential sources of COD and Mg at B85. The investigative studies targeted three potential sources of COD and Mg; 1) coated concrete surfaces, 2) the underground drainage system and 3) atmospheric deposition. The following sections include descriptions of the procedures used in performing the studies, the results of the studies, and conclusions based on the study results.

Concrete Surface and Underground Drainage System Investigation

LBNL performed this study on August 5, 2009. The B85 area is shown on Figure 2. LBNL selected the lower yard for this study since there is less motor vehicle traffic compared to the upper yard (safety concerns) and the stormwater monitoring in the upper and lower yards yielded similar results (Table 1).

In addition to the coated concrete surfaces and the underground drainage system, stormwater run-on and spills from the hazardous waste storage and handling activities conducted at B85 are also potential stormwater pollutant sources. LBNL eliminated these two potential sources from consideration for the following reasons:

- LBNL did not consider stormwater run-on as a potential source during this investigation because the potential for stormwater run-on to be the source was previously eliminated from consideration. Between the February 6 and May 1, 2009 stormwater sampling events LBNL eliminated stormwater run-on at B85 through the implementation of BMPs. As shown in Table 1, by comparison, the COD and Mg concentrations actually increased during the May 2009 stormwater monitoring event indicating that stormwater run-on was not the source of COD or Mg at B85.
- LBNL did not consider accidental spills as a potential pollutant source since the hazardous waste handling facility at B85 keeps very detailed records of any potential spills, and no spills were recorded during the entire time period of this investigation.

Therefore, during this investigation, LBNL specifically targeted the coated concrete surface of the B85 yards and the underground drainage system beneath the B85 yards. The procedures employed by LBNL during this study include: target constituents, quality assurance, target locations, water used during the tests, and procedural details.

Procedures

The first study included using deionized (DI) water as a surrogate for rainwater to assess which portion of the drainage system might be contributing COD or Mg to the stormwater. LBNL acquired the DI from Curtis & Tompkins Laboratories of Berkeley, California (C&T).

LBNL performed the following activities and sample collection:

- LBNL sampled with a pre-cleaned bailer the accumulated waters in the MP-4 drain inlet sump before the study. The sump is an approximately 5-foot deep concrete structure measuring about 3 feet wide and 6 ft long. The sump contained about 6 inches of standing water with no visible sediments. Using these dimensions, LBNL estimates approximately 67 gallons of water was present in the sump prior to the study. This sample is referred to as “Sump Before Study”.
- LBNL poured approximately 5 gallons of DI water into the easternmost drain inlet of the lower yard (Figure 2). LBNL contained the water within the next drain inlet by temporarily plugging the downstream pipe using an acid-washed, modified 5 gallon bucket and collected a sample of this retained water using a pre-cleaned, acid-washed scoop. This sample is referred to as “Drain Pipe”.
- LBNL poured approximately 5 gallons of DI water onto the surface of the concrete yard allowing the DI water to travel over the concrete coating. LBNL then collected a sample of this water at the entrance of the middle yard drain inlet (Figure 2) using a pre-cleaned, acid-washed scoop. This sample is referred to as “Concrete Surface”.
- LBNL sampled the accumulated waters in the MP-4 drain inlet sump at the end of the study that included the water initially present plus approximately 10 gallons of DI water that LBNL added to the drainage system during the study. This sample is referred to as “Sump After Study”.

LBNL submitted the water samples to C&T for the following analyses:

- COD by United States Environmental Agency (USEPA) Method 410.4; and,
- Mg by USEPA Method 200.7;

LBNL collected an equipment blank to assure the pre-cleaned, acid-washed sampling equipment was not contributing COD or Mg to the samples.

Results and Discussion

Analytical results from the samples collected during this study are summarized in Table 2. The Drain Pipe sample contained 220 mg/ L of COD and 2.6 mg/L of Mg. The Concrete Surface sample contained 290 mg/L COD and 2.6 mg/L Mg. During this study, COD and Mg were detected in the Concrete Surface and Drain Pipe samples at similar concentrations to what were detected as what we had measured during the prior stormwater sampling event on May 1 2009 (250 mg/ L COD and 2.2 mg/L Mg, (Table 1)). It should be noted that the equipment method blank for this investigative study was non-detect for Mg (<0.05 mg/L).

The MP-4 Sump Before Study sample contained 54 mg/L COD and 2.3 mg/L Mg. After the study, the Sump After Study sample contained a slightly higher concentration of COD consistent with what would be expected but Mg decreased. We are uncertain as to why the Mg concentration decreased.

These results indicate that the concrete surface and the drain pipe could be potential sources of the COD and Mg; however, it is also possible that COD and Mg accumulating on the concrete surface end up in the subsurface drainage system. In addition, since the Drain Pipe and Concrete Surface samples collected during the study contained concentrations of COD and Mg similar to the storm water samples collected during storm water sampling, it appears that the deionized (DI) water was an effective surrogate for rainwater.

If the concrete surface sample did not contain COD or Mg that would indicate that the drain pipe was the source. The similarities between the concrete surface, drain pipe, and May 1, 2009 stormwater samples indicates that the COD and Mg in the drain pipe could likely be from water contacting the concrete surface and flowing into the drain pipe. These results created the aerial deposition hypothesis, in summary the hypothesis assumes that COD and Mg are potentially "aerially" deposited via soil or dust particles deposited over surfaces at the facility. Hence aerial deposition on a variety of surfaces and locations were evaluated as described in the following sections.

Assessing Aerial Deposition Investigative studies

LBNL conducted two more investigative studies to assess whether or not the COD and Mg are aerially deposited on the coated concrete surface at B85. Given that the aerial deposition of those constituents should show similar COD and magnesium levels at non-industrial areas at the facility; another location beyond the B85 yards was also selected to verify the aerial deposition hypothesis. The soils in the Eastern portions of LBNL have Mg concentrations ranging from 7,400 to 12,000 mg/kg based on the last 5 years of annual soil data (available upon request).

The lower yard of B85 was again selected for the Aerial Deposition investigative study and the asphalt pad near the upper water tower was selected as a non-industrial location. The rationale for the other location or control location was to verify the aerial deposition hypothesis. In other words, if the COD and Mg are potentially aerially deposited at the facility, it should be deposited everywhere.

The asphalt pad near the upper water tower has similar topography (nearby steep hillsides) to the B85 lower

yard and can be easily blocked from traffic that could potentially disturb the ongoing study. Unfortunately, at the upper water reservoir, the asphalt pad could cause interference, thus a brand new sheet of 15' x 25' plastic (held down with traffic cones, see photo 1 below) was deployed and left exposed for a time period of about 14 day (dust/ soil aerial deposition period). Information and analytical data gathered at the upper water tower could be used to support the aerial deposition hypothesis for those 2 constituents at the facility.

Procedures

The September Aerial Deposition study used again deionized (DI) water as a surrogate for rainwater to assess if surface/dust particles might be contributing COD or Mg to the stormwater. LBNL acquired the DI from C&T.

LBNL performed the following activities and sample collection methods:

- LBNL poured approximately 5 gallons of DI water onto the surface of the concrete yard allowing the DI water to travel over the concrete coating. LBNL then collected a sample of this water at the entrance of the eastern most yard drain inlet (Figure 2) using a pre-cleaned, acid-washed scoop. This sample is referred to as “Before Cleaning Concrete Surface”.
- Next step was to clean the tested area above; in addition 2 ft surrounding each side was cleaned as well with DI water and a "clean" scrub brush to remove potential surface contamination. Once the surface was deemed "clean" (by visual observation of the rinse waters), the area was rinsed with DI water again, scrubbed some more, rinsed again and again for a total of 3 rinses. During the last rinse, rinse waters were collected to check for any remaining COD and Mg. This sample is referred to as “After Cleaning Concrete Surface”.
- At the upper water tower, 14 days prior to sample collection a brand new sheet of 15' x 25' plastic held down with traffic cones was deployed and left exposed for a time period of about 14 days. LBNL poured approximately 5 gallons of DI water onto the surface of the plastic sheet allowing the DI water to travel over the plastic sheet. LBNL then collected a sample of this water by lifting the plastic sheet off the ground and collecting rinse waters using a pre-cleaned, acid-washed scoop. This sample is referred to as “Plastic Sheet at Upper Water Tower”.

LBNL submitted the water samples to C&T for the same above referenced analyses.

LBNL collected an equipment blank to assure the pre-cleaned, acid-washed sampling equipment was not contributing COD or Mg to the samples.



Photo 1. Deployed plastic at the upper water tower

The Repeat Aerial Deposition study (October) was very similar in procedural setup to the September Aerial Deposition study. The Repeat Aerial Deposition study differs in the following aspects:

- It was cut one day short because of an anticipated rain event on October 13, 2009. The dust/ soil aerial deposition period was 13 days instead of 14 days.
- Another area at the B85 lower yard was selected to prevent interference caused by the previous investigative studies.
- The plastic used at the upper tower area was replaced with a brand new piece of plastic for this Repeat Aerial Deposition study.

Discussion of the Aerial Deposition Investigative Study Results:

Analytical results from samples collected are summarized in Table 2. For the aerial deposition investigative study, the “before cleaning concrete surface” sample collected before cleaning contained 150 mg/L COD and 2.9 mg/L Mg. The “After Cleaning Concrete Surface” sample did not contain detectable COD or Mg. During the Repeat Aerial Deposition Study (October), the concrete surface sample contained 45 mg/L COD and 1.6 mg/L Mg. Again the “After Cleaning Concrete Surface” rinse water sample did not contain any detectable COD or Mg (<25 mg/L COD and <0.05 mg/L Mg).

The plastic liner results for COD at the upper water tower were 230 mg/L during the Aerial Deposition Investigative Study and a non-detect value (a value less than the laboratory reporting limit or method detection

limit) in the Repeat Aerial Deposition Study. For Magnesium at the upper water tower we achieved 2.1 mg/L and 0.46 mg/L, respectively for the Aerial Deposition Study in September and the Repeat Aerial Deposition Study in October. It should be noted that results during the Aerial Deposition Study in September study were very similar to the values that were monitored on the surface at the B85 yards during the last stormwater monitoring performed on May 1, 2009 (Table 1).

For the Repeat Aerial Deposition Study in October it is noted that aerial deposits on the concrete surface and plastic liner were less than that during the prior investigative studies as shown in the results. It should be noted that a different drain inlet was selected during the October Repeat Aerial Deposition investigative study than the one selected during the September study to exclude any prior cleaning history; thus by the best of our knowledge that area did not receive any washing or cleaning in between the 2 studies. Given that a brand new plastic was put out each time at the upper water tower for the Aerial Deposition Studies, and we measured reductions in concentration there as well; lesser aerial deposition during that time period could be possible. Specifically COD in the Before Cleaning Concrete Surface sample resulted in 45 mg/L which is significantly less than in prior studies, and could potentially explain why COD was not detected on top of the plastic surface (<25 mg/L, see Table 2) .

It should also be noted that all equipment method blanks were non-detect for Mg (<0.05 mg/L) for all three of the investigative studies.

Upper Confidence Limit Calculation

Table 3 presents the results from the B85 surface samples before any cleaning took place, the single-sided 95% upper confidence limit (95% UCL) was determined per Student T-test for those three samples, analysis was completed for COD and Mg.

- COD concentrations ranged from 45 to 290 mg/L, with an average of 161.7 mg/L and a calculated 95% UCL of **415 mg/L**.
- Mg concentrations ranged from 1.6 to 2.9 mg/L, with an average of 2.4 mg/L and a calculated 95% UCL of **3.8 mg/L**.

All COD and Mg concentrations measured during stormwater monitoring were below the calculated 95% UCL concentrations for the respective constituents as determined during the above described investigative studies. The UCL concentrations of 415 mg/L and 3.8 mg/L for COD and Mg; respectively, will be the UCL of the baseline or background concentrations for those constituents for future stormwater monitoring at the B85 yards.

Conclusion

A series of investigative studies were completed at the Building 85, Hazardous Waste Handling Facility (HWHF), outdoor yards to identify key sources of elevated COD and Mg, measured during the bi-annual stormwater monitoring events. Setup of the three investigative studies and their analytical results are described in detail in this Technical Memorandum.

Based on the results achieved in the August investigative study, a hypothesis was created in which we assumed that COD and Mg are "aerially" deposited with small soil particles over surfaces at the facility. To test this hypothesis, scrubbing/cleaning of the B85 surface yard and another location was added to the investigative study setup. The selection of another location was also added to the study in order to understand further if non-

industrial areas at the facility also showed similar COD and Mg concentrations as what was witnessed at the B85 yards.

Results from the September investigative study did support an aerial deposition hypothesis for those 2 analytes at the facility. To verify this hypothesis, the September investigative study was repeated in October, with similar results but with lower concentrations in general.

Finally upper level confidence limits (UCL) were calculated from the sampling results for COD and Mg from the surface collections using statistical calculations (Student's t-test as shown in Table 3). The resulting UCLs will serve as the baseline or background concentration levels for future stormwater monitoring. In other words, if during future stormwater monitoring sampling those Upper Confidence Limits were exceeded, additional investigative studies will be performed; thus the UCL basically serves as a proposed new benchmark for that stormwater sampling location and those constituents.

Tables

Table 1: Summary of the B85 Stormwater Monitoring Data

Table 2: Summary of the B85 Investigative Studies

Table 3: Student's T-Test Calculation

References

U.S. EPA. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, third edition.

Lawrence Berkeley National Laboratory

Table 1

Summary of the B85 Stormwater Monitoring Data

Constituent	Units	Lab Primary/QAQC	Reporting Limit	Benchmark (2000 MSGP)	MP4 (B85 Lower Yard)			MP5 (B85 Upper Yard)		
					1st Storm	2nd Storm	3rd storm	1st Storm	2nd Storm	3rd Storm
					2/6/2009	5/1/2009	10/13/2009	2/6/2009	5/1/2009	10/13/2009
pH	pH	in house	0.01	6.00-9.00	7.75	6.74	8.65	7.63	6.89	9.39
Conductivity	umhos/cm	BC/C-T	1	NA	23	131	13.5	31.2	88.3	14.6
TSS	mg/l	BC/C-T	1	100	3	70	14	30	54	45
Oil & Grease	mg/l	BC/C-T	5	15	ND	ND	ND	ND	ND	ND
Ammonia (NH3)	mg/l	BC/C-T	0.05	19.00	0.13	1.6	ND	0.11	1.3	0.13
COD	mg/l	BC/C-T	25	120	ND	250	25	ND	190	46
Arsenic	mg/l	BC/C-T	0.05	0.1685	ND	ND	ND	ND	ND	ND
Cadmium	mg/l	BC/C-T	0.01	0.0159	ND	ND	ND	ND	ND	ND
Cyanide	mg/l	BC/C-T	0.005	0.0636	ND	ND	ND	ND	ND	ND
Lead	mg/l	BC/C-T	0.05	0.0816	ND	ND	0.0032	ND	ND	0.0077
Magnesium	mg/l	BC/C-T	0.05	0.0636	0.084	2.2	0.21	0.25	1.9	0.49
Mercury	mg/l	BC/C-T	0.0002	0.0024	ND	ND	ND	ND	ND	ND
Selenium	mg/l	BC/C-T	0.10	0.2385	ND	ND	ND	ND	ND	ND
Silver	mg/l	BC/C-T	0.01	0.0318	ND	ND	ND	ND	ND	ND

Notes:

- MSGP Results shown in red exceed benchmark values
Multi-sector General Permit, United States Environmental Protection Agency (USEPA), Final Modification of the National Pollutant Discharge Elimination Systems (NDPES) Storm Water Multi-Sector General Permit for Industrial Activities; Termination of the EPA NPDES Storm Water Baseline Industrial General Permit, Washington D.C Federal Register, September 30, 1998 (USEPA, 1998).
- umhos/cm micro mhos per centimeter
- mg/l milligrams per liter
- NA not available

Lawrence Berkeley National Laboratory

Table 2

Summary of the B85 Investigative Studies

Constituent	Units	Lab Primary/QAAC	Reporting Limit	Benchmark (2000 MSGP)	Concrete Surface and Underground Drainage System Investigation (August 2009) ¹				Aerial Deposition Investigative Study (September 2009) ²			Repeat Aerial Deposition Investigative Study (October 2009) ³		
					Sump Before Study	Drain Pipe	Concrete Surface	Sump After Study	Before Cleaning Concrete Surface	After Cleaning Concrete Surface	Plastic Sheet at Upper Water Tower	Before Cleaning Concrete Surface	After Cleaning Concrete Surface	Plastic Sheet at Upper Water Tower
					August 5 2009				September 8 2009			October 12 2009		
COD	mg/l	BC/C-T	25	120	54	220	290	76	150	ND	230	45	ND	ND
Magnesium	mg/l	BC/C-T	0.05	0.0636	2.3	2.6	2.6	2.1	2.9	ND	2.1	1.6	ND	0.46

Notes:

- 1 For the Concrete Surface and Underground Drainage System Investigation in August 2009 we poured laboratory DI water onto the yard to mimic rainwater at strategic locations on the yard.
- 2 For the Aerial Deposition investigative study, we used the same concept as in August study but focused specifically on the surfaces. Cleaning of the coated concrete yard was done with Laboratory DI water. Plastic was put out on August 24 and left exposed at the upper water tower for about 14 days.
- 3 For the Repeat Aerial Deposition Investigative study in October we used the same concept as in September. Plastic was put out on September 30 and left exposed at the upper water tower for about 13 days.

Lawrence Berkeley National Laboratory

Table 3

Student's T-test Calculation

Constituent	Units	Lab Primary/QAQC	Concrete Surface and Underground Drainage System Investigation (August 2009)	Aerial Deposition Investigative Study (September 2009)	Aerial Deposition Investigative Study (October 2009)	Upper 95% Confidence Limit Calculation ¹		
			Concrete Surface	Before Cleaning Concrete Surface	Before Cleaning Concrete Surface	Average	Standard Deviation	UCL
			August 5 2009	September 8 2009	October 12 2009			
COD	mg/l	BC/C-T	290	150	45	161.7	122.9	415
Magnesium	mg/l	BC/C-T	2.6	2.9	1.6	2.4	0.7	3.8

Note

- Upper 95% Confidence Limit (UCL) as determined in U.S. EPA. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, third edition

Appendix E

Monthly and Quarterly Observations and Annual Inspection Forms

Quarterly Visual Observations of AUTHORIZED Non-Storm Water Discharges (NSWD) - Detailed Form

Date (See general form for time)	Name of Authorized NSWD (see note below table)	Source and Location Of Authorized NSWD (use extra rows if necessary)	Specific Visual Observations (enter Y or N for each; use notes to explain)						Notes, Including Corrective actions Taken		
			Color	Floatables	Odor	Sheen	Stain	Turbidity		Other	
August 12, 2014 08:55 to 10:05	Hydraugers Hillside Seepage	Groundwater Buildings 31 37 55 55A 64 74 77 84	Source	N	N	N	N	N	N	NA	NA
			Area	N	N	N	N	N	N	NA	
August 12, 2014 08:55 to 10:05	Creek Flow	Groundwater NF Strawberry & Chicken Creeks	Source	N	N	N	N	N	N	NA	NA
			Area	N	N	N	N	N	N	NA	
August 12, 2014 Ongoing since June-2014	B75 Water Tower Fire Suppression Runoff	Fire Suppression System Run-off Behind B75B	Source	N	N	N	N	N	N	NA	Note: Ongoing leaks from the B75 Water tower. Dechlor tablets are in place
			Area	N	N	N	N	N	N	NA	
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								

8/20/2014 8/20/2014

Additional Comments

X *Brendan J. Mulholland*

 Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

 John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Currently Authorized NSWDs: Atmospheric condensates, fire hydrant and sprinkler flushing, fire suppression runoff, groundwater reaching the surface, landscape watering, low conductivity cooling water, safety shower/eyewash testing and operation, utility vault pump-outs, and water line breaks.

Quarterly Visual Observations of AUTHORIZED Non-Storm Water Discharges (NSWD) - Detailed Form

Date (See general form for time)	Name of Authorized NSWD (see note below table)	Source and Location Of Authorized NSWD (use extra rows if necessary)	Specific Visual Observations (enter Y or N for each; use notes to explain)								Notes, Including Corrective actions Taken
			Color	Floatables	Odor	Sheen	Stain	Turbidity	Other		
October 2, 2014	Water Line Break	Flexlab irrigation line break	Source	N	N	N	N	N	N	NA	
			Area	N	N	N	N	V	V	V	
November 3, 2014 9 00	Fire Suppression Runoff	B58 Hydrant HY010	Source	N	N	N	N	N	N	NA	
			Area	N	N	N	N	N	V	NA	
November 10, 2014 15:15 to 16:15	Hydraugers Hillside Seepage	Groundwater Buildings 31 55A 74 77 84	Source	N	N	N	N	N	N	NA	NA
			Area	N	N	N	N	N	N	NA	
November 10, 2014 15:15 to 16:15	Creek Flow	Groundwater NF Strawberry & Chicken Creeks	Source	N	N	N	N	N	N	NA	NA
			Area	N	N	N	N	N	N	NA	
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								

11/14/2014

11/11/2014

Additional Comments

.....

X *Brendan J. Mulholland*

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Currently Authorized NSWDs : Atmospheric condensates, fire hydrant and sprinkler flushing, fire suppression runoff, groundwater reaching the surface, landscape watering, low conductivity cooling water, safety shower/eyewash testing and operation, utility vault pump-outs, and water line breaks.

Quarterly Visual Observations of AUTHORIZED Non-Storm Water Discharges (NSWD) - Detailed Form

Date (See general form for time)	Name of Authorized NSWD (see note below table)	Source and Location Of Authorized NSWD (use extra rows if necessary)	Specific Visual Observations (enter Y or N for each; use notes to explain)								Notes, Including Corrective actions Taken
				Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
January 13, 2015 14:30	Fire Suppression Runoff	B70A--Fire in room 222 tripped sprinkler systems in B70A	Source	N	N	N	N	N	N	N	Approximately 100 gallons of fire suppression water entered storm drain. No further corective actions required.
			Area	N	N	N	N	N	N	NA	
February 13, 2015 08:45 to 10:10	Hydraugers Hillside Seepage	Groundwater Buildings 31 37 55A 64 74 77 84	Source	N	N	N	N	N	N	NA	NA
			Area	N	N	N	N	N	N	NA	
February 13, 2015 08:45 to 10:10	Creek Flow	Groundwater NF Strawberry, Chicken & Winters Creeks	Source	N	N	N	N	N	N	NA	NA
			Area	N	N	N	N	N	N	NA	
February 13, 2015 8:50	Water Line Break	B66 Boiler Room Potable Water	Source	N	N	N	N	N	N	NA	B66 boiler room water leaking onto pad, into road and into storm drain. Dechlor tablets placed @ storm drain inlet. Leak was dry & gone by 11:30am.
			Area	N	N	N	N	N	N	NA	
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								

2/17/2015 2/13/2015

Additional Comments

X *Brendan J. Mulholland*

 Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

 John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Currently Authorized NSWDs : Atmospheric condensates, fire hydrant and sprinkler flushing, fire suppression runoff, groundwater reaching the surface, landscape watering, low conductivity cooling water, safety shower/eyewash testing and operation, utility vault pump-outs, and water line breaks.

Quarterly Visual Observations of AUTHORIZED Non-Storm Water Discharges (NSWD) - Detailed Form

Date (See general form for time)	Name of Authorized NSWD (see note below table)	Source and Location Of Authorized NSWD (use extra rows if necessary)	Specific Visual Observations (enter Y or N for each; use notes to explain)						Notes, Including Corrective actions Taken	
			Color	Floatables	Odor	Sheen	Stain	Turbidity		Other
May 5, 2015 08:45-10:45	Fire Suppression Testing	B54 Cafeteris Loading dock	Source	N	N	N	N	N	N	At least 100 gallons of fire suppression water entered storm drain. Dechlorination tablets were improperly implemented.
			Area	N	N	N	N	N	N	
May 5, 2015 08:45-10:45	Hydraugers Hillside Seepage	Groundwater Buildings 31 37 55A 64 74 77 84	Source	N	N	N	N	N	N	NA
			Area	N	N	N	N	N	N	
May 5, 2015 08:45-10:45	Creek Flow	Groundwater NF Strawberry, Chicken & Winters Creeks	Source	N	N	N	N	N	N	NA
			Area	N	N	N	N	N	N	
			Source							
			Area							
			Source							
			Area							
			Source							
			Area							
			Source							
			Area							
			Source							
			Area							
			Source							
			Area							

5/5/2015

5/5/2015

Additional Comments

Placement of dechlorination tablets during B54 fire suppression testing did not adequately cover actual discharge area. Re-training with use of 1) dechlorination mats which cover entire storm drain inlet or 2) dechlorination diffusers attached to pipe are recommended

X *Brendan J. Mulholland* X *John Jelinski*

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

John Jelinski
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 Signed by: John A. Jelinski

Currently Authorized NSWDs: Atmospheric condensates, fire hydrant and sprinkler flushing, fire suppression runoff, groundwater reaching the surface, landscape watering, low conductivity cooling water, safety shower/eyewash testing and operation, utility vault pump-outs, and water line breaks.

Quarterly Visual Observations of UNAUTHORIZED Non-Storm Water Discharges (NSWD) - Detailed Form

Date (See general form for time)	Name of Unauthorized NSWD (see note below table)	Source and Location Of Unauthorized NSWD (use extra rows if necessary)	Specific Visual Observations (enter Y or N for each; use notes to explain)							Notes, Including Corrective actions Taken	
			Color	Floatables	Odor	Sheen	Stain	Turbidity	Other		
August 12, 2014 08:55 to 10:10	NA	NA	Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
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			Area								
			Source								
			Area								
			Source								
			Area								

No UNAUTHORIZED NSWDs were observed

Additional Comments

8/20/2014

8/20/2014

X *Brendan J. Mulholland*

 Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

 John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Examples of *Unauthorized NSWDs* : Cooling tower spray, sanitary sewer breaks, vehicle washing, and small maintenance and repair work cleanup.

Quarterly Visual Observations of UNAUTHORIZED Non-Storm Water Discharges (NSWD) - Detailed Form

Date (See general form for time)	Name of Unauthorized NSWD (see note below table)	Source and Location Of Unauthorized NSWD (use extra rows if necessary)	Specific Visual Observations (enter Y or N for each; use notes to explain)							Notes, Including Corrective actions Taken	
			Color	Floatables	Odor	Sheen	Stain	Turbidity	Other		
November 10, 2014 15:15 to 16:15	NA	NA	Source								
			Area								
October 16, 2014 10:00	Groundwater from Treatment Systems	B51 Firetrail Grounwater Treatment System	Source	N	N	N	N	N	N	NA	Pump @ B51 Firetrail stopped working & approximately 400 gallons untreated & 1,000 gallons of treated groundwater entered storm drain. Sandbags were placed around storm drain inlet & pump was replaced with 26 hours. Analytical results 4.4 ug/L for TICH
			Area	N	N	N	N	N	N	NA	
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								

Additional Comments

11/1

11/11/2014

X *Brendan J. Mulholland* X *John Jelinski*

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Examples of Unauthorized NSWDs : Cooling tower spray, sanitary sewer breaks, vehicle washing, and small maintenance and repair work cleanup.

Quarterly Visual Observations of **UNAUTHORIZED** Non-Storm Water Discharges (NSWD) - Detailed Form

Date (See general form for time)	Name of Unauthorized NSWD (see note below table)	Source and Location Of Unauthorized NSWD (use extra rows if necessary)	Specific Visual Observations (enter Y or N for each; use notes to explain)							Notes, Including Corrective actions Taken
			Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
February 13, 2015 08:45 to 10:10	NA	NA	Source							NA
			Area							
			Source							
			Area							
			Source							
			Area							
			Source							
			Area							
			Source							
			Area							
			Source							
			Area							
			Source							
			Area							
			Source							
			Area							

Additional Comments

X *Brendan J. Mulholland* X *John Jelinski*

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Examples of **Unauthorized NSWDs** : Cooling tower spray, sanitary sewer breaks, vehicle washing, and small maintenance and repair work cleanup.

Quarterly Visual Observations of UNAUTHORIZED Non-Storm Water Discharges (NSWD) - Detailed Form

Date (See general form for time)	Name of Unauthorized NSWD (see note below table)	Source and Location Of Unauthorized NSWD (use extra rows if necessary)	Specific Visual Observations (enter Y or N for each; use notes to explain)						Notes, Including Corrective actions Taken		
			Color	Floatables	Odor	Sheen	Stain	Turbidity		Other	
February 24, 2015 (carryover from last Quarter)	Contaminated GWTS Discharge	B46 GWTS Sump	Source	N	N	N	N	NA	N	NA	Temporary pump installed 02/26/15. Permanent pumps replaced 03/03/2015.
			Area	N	N	N	N	NA	N	NA	
May 5, 2015 08:45-10:45	No Unauthorized NSWD's observed	NA	Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								
			Source								
			Area								

Additional Comments _____ 5/5/ _____ 5/5/2015

_____ X *Brendan J. Mulholland* X *John Jelinski*

Brendan Mulholland John Jelinski
 LBNL Stormwater Program Manager LBNL Stormwater Inspection Technician
 Signed by: Brendan James Mulholland Signed by: John A. Jelinski

Examples of Unauthorized NSWDs : Cooling tower spray, sanitary sewer breaks, vehicle washing, and small maintenance and repair work cleanup.

Monthly Visual Observations of Storm Water Discharges (SWD) - Monthly Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	Specific Visual Observations (enter Yes or No for each; use notes to explain)								Comments
			Runoff	Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
October 31, 2014 10:00	N.F. Strawberry Crk Drainage Area	Cloudy, light rain. BMP's in good condition.	Yes	No	No	No	Yes	NA	Yes	NA	Low flow @ creek.
October 31, 2014 10:55	Chicken Crk Drainage Area	Cloudy, light rain. BMP's in good condition.	Yes	No	No	No	Yes	NA	No	NA	Trickle flow @ creek.
October 31, 2014 10:35	Winter & Pineapple Crk Discharge Areas	Cloudy, light rain. BMP's in good condition.	Yes	No	No	No	Yes	NA	No	NA	Trickle flow @ creek.
October 31, 2014 10:45	Winter & Pineapple Crk Influent Areas	Cloudy, light rain. BMP's in good condition.	No	NA	NA	No	NO	No	NA	NA	No flow @ creek.
October 31, 2014 10:10	MP 1 Sampling Sites	Cloudy, light rain. BMP's in good condition.	Yes	No	Yes	No	Yes	NA	Yes	NA	
October 31, 2014 11:00	MP 2 Sampling Sites	Cloudy, light rain. BMP's in good condition.	Yes	No	Yes	No	Yes	NA	No	NA	
October 31, 2014 10:30	MP 3 Sampling Sites	Cloudy, light rain. BMP's in good condition.	Yes	No	Yes	No	Yes	NA	No	NA	
October 31, 2014 10:40	MP 4 Sampling Sites	Cloudy, light rain. BMP's in good condition.	Yes	No	No	No	Yes	NA	No	NA	
October 31, 2014 10:50	MP 5 Sampling Sites	Cloudy, light rain. BMP's in good condition.	Yes	No	No	No	Yes	NA	No	NA	
October 31, 2014 10:20	MP 6 Sampling Sites	Cloudy, light rain. BMP's in good condition.	Yes	No	No	No	Yes	NA	No	NA	

* = Little but not significant amount observed

11/3/2014

10/31/2014

Approximate Start of Rain Event
 Approximate Start of Significant Discharge

October 31, 2014 8:45 AM
October 31, 2014 10:00 AM

X *Brendan J. Mulholland*

 Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

 John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Additional Comments

Permit applicable storm water event.

Monthly Visual Observations of Storm Water Discharges (SWD) - Monthly Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	Specific Visual Observations (enter Yes or No for each; use notes to explain)								Comments
			Runoff	Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
November 13, 2014 08:50	N.F. Strawberry Crk Drainage Area	Cloudy, light rain/drizzle. BMP's in good condition.	Yes	No	No	No	No	NA	No	NA	Light Creek flow. No turbidity, sheen or Dead Organic Matter (DOM) observed.
November 13, 2014 08:25	Chicken Crk Drainage Area	Cloudy, light rain/drizzle. BMP's in good condition.	Yes	No	No	No	No	NA	No	NA	Light Creek flow. No turbidity, sheen or Dead Organic Matter (DOM) observed.
November 13, 2014 08:10	Winter & Pineapple Crk Disharge Areas	Cloudy, light rain/drizzle. BMP's in good condition.	Yes	No	No	No	No	NA	No	NA	Trickle Creek flow. No turbidity, sheen or Dead Organic Matter (DOM) observed.
November 13, 2014 08:20	Winter & Pineapple Crk Influent Areas	Cloudy, light rain/drizzle. BMP's in good condition.	No	No	NA	No	NA	No	Na	Na	No Creek flow
November 13, 2014 08:45	MP 1 Sampling Sites	Cloudy, light rain/drizzle. BMP's in good condition.	Yes	No	No	No	Yes	NA	Yes	NA	* = storm water discharge was slightly turbid, sheen was present
November 13, 2014 08:30	MP 2 Sampling Sites	Cloudy, light rain/drizzle. BMP's in good condition.	Yes	No	No	No	Yes	NA	No	NA	Sheen was present
November 13, 2014 08:35	MP 3 Sampling Sites	Cloudy, light rain/drizzle. BMP's in good condition.	Yes	No	No	No	Yes	NA	No	NA	Sheen was present
November 13, 2014 08:15	MP 4 Sampling Sites	Cloudy, light rain/drizzle. BMP's in good condition.	Yes	No	No	No	No	NA	No	NA	
November 13, 2014 08:15	MP 5 Sampling Sites	Cloudy, light rain/drizzle. BMP's in good condition.	Yes	No	No	No	No	NA	No	NA	
November 13, 2014 08:40	MP 6 Sampling Sites	Cloudy, light rain/drizzle. BMP's in good condition.	Yes	No	No	No	Yes	NA	No	NA	Sheen was present

* = Little but not significant amount observed

11/17/2014

11/13/2014

Approximate Start of Rain Event
 Approximate Start of Significant Discharge

November 12, 2014 11:45 PM
November 13, 2014 (05:30 - 08:00)

X *Brendan J. Mulholland*

 Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

 John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Additional Comments

This qualifies as a NPDES Industrial Permit applicable storm water event.

Monthly Visual Observations of Storm Water Discharges (SWD) - Monthly Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	Specific Visual Observations (enter Yes or No for each; use notes to explain)								Comments
			Runoff	Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
December 11, 2014 07:30	N.F. Strawberry Crk Drainage Area	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	Yes	No	No	NA	Yes	Yes	High Creek flow. Turbidity/color, floatables & foam/Dead Organic Matter (DOM) observed.
December 11, 2014 07:15	Chicken Crk Drainage Area	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	Yes	No	No	NA	Yes	Yes	High Creek flow. Turbidity/color, floatables & foam/Dead Organic Matter (DOM) observed.
December 11, 2014 07:00	Winter & Pineapple Crk Discharge Areas	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	Yes	No	No	NA	Yes	Yes	High Creek flow. Turbidity/color, floatables & foam/Dead Organic Matter (DOM) observed.
December 11, 2014 07:10	Winter & Pineapple Crk Influent Areas	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	Yes	No	No	NA	Yes	NA	Moderate Creek flow. Turbidity, floatables & foam/ Dead Organic Matter (DOM) observed.
December 11, 2014 07:30	MP 1 Sampling Sites	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	Yes	No	Yes	NA	Yes	NA	High flow. Turbidity/color, floatables & sheen observed.
December 11, 2014 07:22	MP 2 Sampling Sites	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	No	No	Yes	NA	Yes	NA	High flow. Turbidity/color & sheen observed.
December 11, 2014 07:20	MP 3 Sampling Sites	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	Yes	No	Yes	NA	Yes	NA	High flow. Turbidity/color, floatables & sheen observed.
December 11, 2014 07:05	MP 4 Sampling Sites	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	No	No	No	NA	No	NA	High flow. Some color observed.
December 11, 2014 07:05	MP 5 Sampling Sites	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	No	No	No	NA	No	NA	High flow. Some color observed.
December 11, 2014 07:25	MP 6 Sampling Sites	Heavy precipitation & wind. BMP's in ok condition.	Yes	Yes	No	No	Yes	NA	Yes	NA	High flow. Turbidity/color & sheen observed.

* = Little but not significant amount observed

12/11/2014

12/11/2014

Approximate Start of Rain Event
 Approximate Start of Significant Discharge

December 11, 2014 6:00 AM

December 11, 2014 6:30 AM

X *Brendan J. Mulholland*

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Additional Comments

Qualifies as a NPDES Industrial Permit applicable storm water event.

Monthly Visual Observations of Storm Water Discharges (SWD) - Monthly Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	Specific Visual Observations (enter Yes or No for each; use notes to explain)								Comments
			Runoff	Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
January 30, 2015 10:30	N.F. Strawberry Crk Drainage Area	Clear, sunny, BMP's in good condition	Yes	No	No	NO	No	No	No	NA	Low flow in creek
January 30, 2015 09:55	Chicken Crk Drainage Area	Clear, sunny, BMP's in good condition	Yes	No	No	NO	No	No	No	NA	Trickle flow in creek
January 30, 2015 09:30	Winter & Pineapple Crk Discharge Areas	Clear, sunny, BMP's in good condition	Yes	No	No	NO	No	No	No	NA	Trickle flow in creek
January 30, 2015 09:45	Winter & Pineapple Crk Influent Areas	Clear, sunny, BMP's in good condition	No	NA	NA	NA	NA	No	NA	NA	No flow in creek
January 30, 2015 10:20	MP 1 Sampling Sites	Clear, sunny, BMP's in fair/poor condition. Southwest end of P-lot cleaned with good BMP's.	No	NA	NA	NA	NA	No	NA	NA	North, & east end of P-lot still has lots of debris & requires clean-up
January 30, 2015 10:40	MP 2 Sampling Sites	Clear, sunny, BMP's in ok condition	No	NA	NA	NA	NA	No	NA	NA	Filter fabric & absorbant in seperator requires cleaning
January 30, 2015 10:00	MP 3 Sampling Sites	Clear, sunny, BMP's in good condition	No	NA	NA	NA	NA	No	NA	NA	BMP's in excellent condition. 77-79 trench thoroughly clean with new filter fabric
January 30, 2015 09:35	MP 4 Sampling Sites	Clear, sunny, BMP's in good condition	No	NA	NA	NA	NA	No	NA	NA	
January 30, 2015 09:40	MP 5 Sampling Sites	Clear, sunny, BMP's in good condition	No	NA	NA	NA	NA	No	NA	NA	
January 30, 2015 10:15	MP 6 Sampling Sites	Clear, sunny, BMP's in good condition	No	NA	NA	NA	NA	No	NA	NA	
January 30, 2015 10:10	B54 Cafeteria	Clear, sunny, BMP's in good condition	No	NA	NA	NA	NA	No	NA	NA	Good condition. New filter system installed in storm drain inlet

* = Little but not significant amount observed

2/8/2015

1/30/2015

Approximate Start of Rain Event
 Approximate Start of Significant Discharge

Approximate Start of Rain Event	NA
Approximate Start of Significant Discharge	NA

X *Brendan J. Mulholland*

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Additional Comments

No permit applicable storm water events occurred in January-2015. There was 0.00 inches of rainfall for the entire month

Monthly Visual Observations of Storm Water Discharges (SWD) - Monthly Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	Specific Visual Observations (enter Yes or No for each; use notes to explain)								Comments
			Runoff	Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
February 6, 2015 10:30	N.F. Strawberry Crk Drainage Area	Cloudy, raining, & windy. BMP's in good condition.	Yes	No	No	No	No	NA	No	Na	Low flow in creek
February 6, 2015 11:35	Chicken Crk Drainage Area	Cloudy, raining, & windy. BMP's in good condition.	Yes	No	No	No	No	NA	No	Na	Trickle flow in creek
February 6, 2015 11:10	Winter & Pineapple Crk Discharge Areas	Cloudy, raining, & windy. BMP's in good condition.	Yes	No	No	No	No	NA	No	Na	Trickle flow in creek
February 6, 2015 11:30	Winter & Pineapple Crk Influent Areas	Cloudy, raining, & windy. BMP's in good condition.	No	NA	NA	NA	NA	No	NA	NA	No flow in creek
February 6, 2015 10:35	MP 1 Sampling Sites	Cloudy, raining, & windy. BMP's in ok condition.	Yes	No	Yes	No	Yes	NA	Yes	Na	Leaves, Debris & mud present on north, northeast corner of lot
February 6, 2015 10:55	MP 2 Sampling Sites	Cloudy, raining, & windy. BMP's in good condition.	Yes	No	No	No	Yes	NA	No	Na	Site looks good, filter fabric recently changed
February 6, 2015 11:05	MP 3 Sampling Sites	Cloudy, raining, & windy. BMP's in good condition.	Yes	No	Yes	No	Yes	NA	Yes	Na	Site looks good.
February 6, 2015 11:15	MP 4 Sampling Sites	Cloudy, raining, & windy. BMP's in good condition.	Yes	No	No	No	No	NA	No	Na	
February 6, 2015 11:25	MP 5 Sampling Sites	Cloudy, raining, & windy. BMP's in good condition.	Yes	No	No	No	No	NA	No	Na	
February 6, 2015 10:45	MP 6 Sampling Sites	Cloudy, raining, & windy. BMP's in good condition.	Yes	No	No	No	No	NA	Yes	Na	
February 6, 2015 10:40	B54 Cafeteria	Cloudy, raining, & windy. BMP's in fair-poor condition.	Yes	No	Yes	No	Yes	NA	Yes	Na	Lots of sheen present along with turbidity & floatables. 1 trash bin overfilled.

* = Little but not significant amount observed

2/8/2015

2/6/2015

Approximate Start of Rain Event

February 06, 2015 10:00 AM

Approximate Start of Significant Discharge

February 06, 2015 10:35 AM

X *Brendan J. Mulholland*

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Additional Comments

Permit applicable storm event

Monthly Visual Observations of Storm Water Discharges (SWD) - Monthly Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	Specific Visual Observations (enter Yes or No for each; use notes to explain)								Comments
			Runoff	Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
March 23, 2015 08:00	N.F. Strawberry Crk Drainage Area	Cloudy & drizzling. BMP's in good condition.	Yes	No	No	No	No	NA	No	Na	Low flow in creek
March 23, 2015 09:00	Chicken Crk Drainage Area	Cloudy & drizzling. BMP's in good condition.	Yes	No	No	No	No	NA	No	Na	Trickle flow in creek
March 23, 2015 08:35	Winter & Pineapple Crk Discharge Areas	Cloudy & drizzling. BMP's in good condition.	Yes	No	No	No	No	NA	No	Na	Trickle flow in creek
March 23, 2015 08:50	Winter & Pineapple Crk Influent Areas	Cloudy & drizzling. BMP's in good condition.	No	NA	NA	NA	NA	No	NA	NA	No flow in creek
March 23, 2015 08:05	MP 1 Sampling Sites	Cloudy & drizzling. BMP's in good condition.	No	NA	NA	NA	NA	No	NA	NA	Leaves, Debris & mud present on north, northeast corner of lot
March 23, 2015 09:15	MP 2 Sampling Sites	Cloudy & drizzling. BMP's in good condition.	No	NA	NA	NA	NA	No	NA	NA	
March 23, 2015 08:30	MP 3 Sampling Sites	Cloudy & drizzling. BMP's in good condition.	No	NA	NA	NA	NA	No	NA	NA	
March 23, 2015 08:40	MP 4 Sampling Sites	Cloudy & drizzling. BMP's in good condition.	No	NA	NA	NA	NA	No	NA	NA	
March 23, 2015 08:45	MP 5 Sampling Sites	Cloudy & drizzling. BMP's in good condition.	No	NA	NA	NA	NA	No	NA	NA	
March 23, 2015 08:10	MP 6 Sampling Sites	Cloudy & drizzling. BMP's in good condition.	No	NA	NA	NA	NA	No	NA	NA	
March 23, 2015 08:20	B54 Cafeteria	Cloudy & drizzling. BMP's in good condition.	No	NA	NA	NA	NA	No	NA	NA	

* = Little but not significant amount observed

3/25/2015

3/25/2015

Approximate Start of Rain Event **March 23, 2015 6:20 AM**
 Approximate Start of Significant Discharge **NA**

X *Brendan J. Mulholland*

 Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

 John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Additional Comments

Not a permit applicable storm water event as there was no significant discharge & rain event occurred during non-business hours. There were no other rain events during the month of March 2015.

Monthly Visual Observations of Storm Water Discharges (SWD) - Monthly Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	Specific Visual Observations (enter Yes or No for each; use notes to explain)								Comments
			Runoff	Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
April 7, 2015 13:00	N.F. Strawberry Crk Drainage Area	Partly cloudy, wet. BMP's in good condition	Yes	No	No	No	No	NA	No	NA	
April 7, 2015 12:30	Chicken Crk Drainage Area	Partly cloudy, wet. BMP's in good condition	Yes	No	No	No	No	NA	No	NA	
April 7, 2015 12:10	Winter & Pineapple Crk Discharge Areas	Partly cloudy, wet. BMP's in good condition	Yes	No	No	No	No	NA	No	NA	
April 7, 2015 12:25	Winter & Pineapple Crk Influent Areas	Partly cloudy, wet. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
April 7, 2015 12:55	MP 1 Sampling Sites	Partly cloudy, wet. BMP's in ok condition-lots of dirt/debris in P-Lot	No	NA	NA	NA	No	No	NA	NA	Northeast perimeter of Parking lot had lots of dirt & debris.
April 7, 2015 13:10	MP 2 Sampling Sites	Partly cloudy, wet. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
April 7, 2015 12:40	MP 3 Sampling Sites	Partly cloudy, wet. BMP's in ok condition-- open metal bins in yard	No	NA	NA	NA	No	No	NA	NA	Main metal & wood bins were open upon inspection. There were 2 pieces of electrical equipment exposed in yard
April 7, 2015 12:15	MP 4 Sampling Sites	Partly cloudy, wet. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
April 7, 2015 12:20	MP 5 Sampling Sites	Partly cloudy, wet. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
April 7, 2015 12:50	MP 6 Sampling Sites	Partly cloudy, wet. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
April 7, 2015 12:45	B54 Cafeteria	Partly cloudy, wet. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	Cafeteria P-lot in good condition

* = Little but not significant amount observed

4/8/2015

4/7/2015

Approximate Start of Rain Event

April 07, 2015 2:00 AM

Approximate Start of Significant Discharge

April 07, 2015 3:00 AM

X

Brendan J. Mulholland

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X

John Jelinski

John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Additional Comments

Not a permit applicable stormwater event as significant discharge occurred 3-4 hours prior to Facility operating hours.

Note: Water flowing out of pipe on McMillan Rd (just above Lawrence Rd). Upon further investigation it was determined to be clean, uncontaminated groundwater from northern side of B46 (Authorized Discharge)

Monthly Visual Observations of Storm Water Discharges (SWD) - Monthly Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	Specific Visual Observations (enter Yes or No for each; use notes to explain)								Comments
			Runoff	Color	Floatables	Odor	Sheen	Stain	Turbidity	Other	
May 14, 2015 16:30	N.F. Strawberry Crk Drainage Area	Partly cloudy, intermittent sprinkles. BMP's in good condition	Yes	No	No	No	No	NA	No	NA	
May 14, 2015 15:45	Chicken Crk Drainage Area	Partly cloudy, intermittent sprinkles. BMP's in good condition	Yes	No	No	No	No	NA	No	NA	
May 14, 2015 15:45	Winter & Pineapple Crk Discharge Areas	Partly cloudy, intermittent sprinkles. BMP's in good condition	Yes	No	No	No	No	NA	No	NA	
May 14, 2015 16:05	Winter & Pineapple Crk Influent Areas	Partly cloudy, intermittent sprinkles. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
May 14, 2015 16:25	MP 1 Sampling Sites	Partly cloudy, intermittent sprinkles. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
May 14, 2015 15:30	MP 2 Sampling Sites	Partly cloudy, intermittent sprinkles. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
May 14, 2015 15:40	MP 3 Sampling Sites	Partly cloudy, intermittent sprinkles. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
May 14, 2015 15:50	MP 4 Sampling Sites	Partly cloudy, intermittent sprinkles. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
May 14, 2015 16:00	MP 5 Sampling Sites	Partly cloudy, intermittent sprinkles. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
May 14, 2015 16:20	MP 6 Sampling Sites	Partly cloudy, intermittent sprinkles. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	
May 14, 2015 16:10	B54 Cafeteria	Partly cloudy, intermittent sprinkles. BMP's in good condition	No	NA	NA	NA	No	No	NA	NA	

* = Little but not significant amount observed

5/18/2015

5/15/2015

Approximate Start of Rain Event
 Approximate Start of Significant Discharge

05/14/2015 15:00 (intermittant sprinkles)

NA

X *Brendan J. Mulholland*

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Additional Comments

Not a permit applicable stormwater event as no significant discharge occurred during event.

Note: There were intermittent sprinkles between 15:00 to 17:00, however, no measurable rainfall.

Annual Comprehensive Site Compliance Evaluation Log

Inspection Date	Location	Inspection Criteria		Comments	Follow-Up Required
February 26, 2015 16:20	Area I (Blds 65 88) Separate Construction Permit for CRT	General area (trash & metal bins)	X	Water in metal hoppper, open 55gal drum with gloves/debris	New lids/covers being installed as bins return to 77-79 area Verified disscarge was drained to slope 09/11/14
		Cooling towers (88 roof)	X	Good	
		AST (88 roof-generator)	X	Good	
		B88 Bank (2nd containment)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	Oil/water seperator below B88 did not have tube extension	
February 26, 2015 16:30	Area II (Blds 50 54 70 70A)	General area (trash & metal bins)	X	Open cardboard bin at 70/70A loading dock	3/2/15 Email sent to Building Managers Completed 02/26/2015
		Cooling towers (70, 50A-B)	X	70A CT 2nd containment needs to be drained	
		AST (50 gen, 50-70-70A AST)	X	Good	
		FTU (70A)	X	Good	
		B50, B70, B70A Banks (2nd containment)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	Good	
		Cafeteria loading dock	X	Good. Note New storm drain inlet insert with filter installed January 2015	
February 26, 2015 16:10	Area III (Blds 51 55 64 90) Separate Construction Permit for FlexLab @ B90	General area (trash & metal bins)	X	Generl housekeeping issues behind B64, unlabeled drums, ewaste in hopper	Completed 3/2/15 & K. Montgomery notified 03/18/15 Yes-Completed 04/13/2015
		Cooling towers (64)	X	Good	
		AST (64-AST, 90-gen)	X	Good	
		WAA (51)	X	Good	
		GWTS (51FT-51MGR-51L)	X	Good	
		B90 Bank (2nd containment)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	MP1 P-Lot needs waddles around perimeter & along retaining wall	
February 26, 2015 15:50	Area IV (Bld 71)	General area (trash & metal bins)	X	Open trash bin (closed by ESG Staff)	3/2/15 Email sent to Building Managers
		Cooling towers (71)	X	Good	
		AST (71WT, 71)	X	Good	
		WAA (next to water tower)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	Erosion controls (waddles) behind B71 in excellent condition	
February 26, 2015 15:30	Area V (Blds 2 46 58)	General area (trash & metal bins)	X	General housekeeping issues, overfilled bins & hoppers, broken lids, exposed metal	3/2/15 Email sent to Building Managers Pumps repaired 03/02/2015 Yes--Funding requested, not yet available
		AST (2, 58)	X	Good	
		GWTS (46, 58)	X	B46 GWTS sump pumps not working properly	
		B46 & B58 Banks (2nd containment)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	Need to hydroseed hillside slide behind B46	
February 26, 2015 15:10	Area VI (Blds 6 7 10 17 37 80)	General area (trash & metal bins)	X	Water in metal hopper @ B17	New lids/covers being installed as bins return to 77-79 area
		Cooling tower (37)	X	Good	
		AST (37)	X	Good	
		GWTS (6, 7)	X	Good	
		B6L, B6U, B37 Banks (2nd containment)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	Good	

Annual Comprehensive Site Compliance Report Inspection (continued)

Inspection Date	Location	Inspection Criteria		Comments	Follow-Up Required
February 26, 2015 15:20	Area VII (Blds 45) Separate Construction Permit for SERC/GPL	General area (trash & metal bins)	X	Good	
		GWTS (25, 25A)		NA-under separate Construction Permit	
		Vehicle Washing (48)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	Good	
February 26, 2015 13:40	Area VIII (Blds 69 75 76)	General area (trash & metal bins)	X	Open trash bin (closed by ESG Staff)	3/2/15 Email sent to Building Managers
		DSA-AST (75WT, 75gen, 76AST, 75A-76 DSA)	X	ESG/ERP Drum Storage Area in excellent condition	Noteworthy Practice
		FTU (76 oil-water separator)	X	Good	
		WAA (76)	X	Good	
		B69 Sub (2nd containment)	X	Good	
		Vehicle Washing (76)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	B75 soil Pile requires clean-up & hydroseeding	Yes--Funding requested, not yet available
February 26, 2015 14:00	Area IX (Bld 77 79)	General area (trash & metal bins)	X	Water in metal hoppers @ B77, exposed metal in yard	3/2/15 Email sent to Building Managers
		Cooling towers (77)	X	Good	
		DSA & AST (77-79)	X	Good	
		WAA (77 & 77A)	X	Good	
		FTU (77)	X	Good	
		Bank 77 Transformer Pad	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	Area behind B77 (east side) needs waddle protection, SDI Behind B77 requires cleaning Note: Monthly power washing , filter media replacement, filter fabric replacement implemented August 2014	Yes-Completed 04/13/2015
February 26, 2015 14:45	Area X (Blds 31 62 66 67 72)	General area (trash & metal bins)	X	Water in metal hoppers @ B62	New lids/covers being installed as bins return to 77-79 area
		Cooling tower (62 & 67)	X	Good	
		AST (31, 62, 66)	X	Good	
		WAA (62)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	Temporary construction job @ B66 in excellent conditon, debris piles tarped.	
February 26, 2015 14:20	Area XI (Blds 74 83 84 85)	General area (trash & metal bins)	X	open trash bin @ B85B	3/2/15 Email sent to Building Managers
		Cooling towers (74, 84, 85)	X	Good	
		DSA & AST (83, 84, 85-AST, 85-gen, 85-DSA)	X	Good	
		WAA (85)	X	Good	
		Parking area	X	Good	
		Erosion control measures	X	Good	
	Construction Sites	SERC/GPL	X	Under separate Construction Permit	
		CRT	X	Under separate Construction Permit	
		FlexLab	X	Under separate Construction Permit	

Corrective Actions:

Issue	Corrective Action	Completion Date
1 Water in metal hoppers Sitewide	Newly designed covers for hoppers & new lids on order. Any collected water in bins will be disposed of accordingly.	New lids/covers being installed as bins return to 77-79 area
2 Open Trash bins, cardboard bins, drums	Contact Building Managers @ B70/70A, B85B, B2, & B71 to notify all personnel in Building to close bins	3/2/15 Email sent to Building Managers
3 BMP Implementation for soil erosion	Place new wattles around perimeter of Blackberry P-lot & along retaining wall & behind B77 (WO 0012068 02/14/15)	Completed 04/13/2015
4 Hydroseeding @ B75, B46 & B51	Hydroseed staging area behind B75, hillside behind B46, & area below B51 (Place Work request with Facilities)	Pending Funding
5 B46 GWTS sump pump repairs	Repair/replace sump pumps for B46 GWTS (WO placed 02/26/15). Investigate cause of pump failure	Completed 03/03/2015
6 Draining 2nd containment Sitewide	Notify Facilities PM's (Mike Bottelo) to inspect & drain all 2nd containment pads	Mike Bottello contacted 02/26/2015
7 Oil/water seperator below B88	Contact Mike Elizalde to determine status of extension pipe for oil/water seperator below B88	Verified drainage to slope 09/11/2014
8 eWaste in metal hoppers @ B64	Determine owner of metal hopper @ B64 which contains eWaste. Implement additional Sitewide signage	Kelly Montgomery notified 03/18/2015

Quarterly Visual Observations of Non-Storm Water Discharges (NSWD) - General Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	NSWD Observed (Y or N)*	Authorized Type (Y, N, or NA)	Notes, Including Indications of Prior <i>Unauthorized NSWD</i> and Any Actions Taken
August 12, 2014 9:00	North Fork Strawberry Creek Drainage Area	Partly cloudy. BMP's in good condition.	YES	Authorized	NF Strawberry Creek flow (light)
August 12, 2014 9:50	Chicken Creek Drainage Area	Partly cloudy. BMP's in good condition.	YES	Authorized	Chicken Creek flow (trickle)
August 12, 2014 9:55	East Canyon & Winters Crk Drainage Areas	Partly cloudy. BMP's in good condition.	NO	NA	NA
August 12, 2014 08:55 to 10:05	MP1-MP6 Sampling Sites	Partly cloudy. BMP's in good condition.	NO	NA	
August 12, 2014 8:55	Area I (Blds 65, 88)	Partly cloudy. BMP's in good condition.	NO	NA	
August 12, 2014 9:15	Area II (Blds 50, 54, 70, 70A)	Partly cloudy. BMP's in good condition.	NO	NA	
August 12, 2014 9:10	Area III (Blds 51, 55, 64, 90)	Partly cloudy. BMP's in good condition.	YES	Authorized	B55, B55A & B64 hydraugers
August 12, 2014 9:30	Area IV (Bld 71)	Partly cloudy. BMP's in good condition.	NO	NA	
August 12, 2014 9:25	Area V (Blds 2, 46, 58)	Partly cloudy. BMP's in good condition.	NO	NA	
August 12, 2014 9:50	Area VI (Blds 6, 7, 10, 17, 37, 80)	Partly cloudy. BMP's in good condition.	YES	Authorized	B37 hydrauger
August 12, 2014 9:35	Area VII (Blds 4, 5, 14, 16, 45, 48, 52)	Partly cloudy. BMP's in good condition.	NO	NA	
August 12, 2014 10:05	Area VIII (Blds 69, 75, 76)	Partly cloudy. BMP's in good condition.	YES	Authorized	B75 Water Tower (fire suppression)
August 12, 2014 9:40	Area IX (Bld 77-79)	Partly cloudy. BMP's in ok condition . Some of metal chips on road and open metal bins.	YES	Authorized	B77 hydrauger
August 12, 2014 9:45	Area X (Blds 31, 62, 66, 67, 72)	Partly cloudy. BMP's in good condition.	YES	Authorized	B31 hydrauger
August 12, 2014 10:00	Area XI (Blds 74, 83, 84, 85)	Partly cloudy. BMP's in good condition.	YES	Authorized	B84 roadside hydrauger

Additional Comments

8/20/2014

8/20/2014

X *Brendan J. Mulholland*

Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*

John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

Currently Authorized NSWDs : Atmospheric condensates, fire hydrant and sprinkler flushing, fire suppression runoff, groundwater reaching the surface, landscape watering, low conductivity cooling water, safety shower/eyewash testing and operation, utility vault pump-outs, and water line breaks.

*If NSWD was observed, complete appropriate *Authorized* or *Unauthorized* details form.

Quarterly Visual Observations of Non-Storm Water Discharges (NSWD) - General Form

Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	NSWD Observed (Y or N)*	Authorized Type (Y, N, or NA)	Notes, Including Indications of Prior <i>Unauthorized NSWD</i> and Any Actions Taken
November 10, 2014 16:10	North Fork Strawberry Creek Drainage Area	Cloudy. BMP's in good condition	YES	Authorized	NF Strawberry Creek, trickle/low flow
November 10, 2014 15:30	Chicken Creek Drainage Area	Cloudy. BMP's in good condition	YES	Authorized	Chicken Crk trickle flow
November 10, 2014 15:25	East Canyon & Winters Crk Drainage Areas	Cloudy. BMP's in good condition	NO	NA	No creek flow
November 10, 2014 15:15 to 16:15	MP1-MP6 Sampling Sites	Cloudy. BMP's in good condition	NO	NA	
November 10, 2014 15:55	Area I (Blds 65, 88)	Cloudy. BMP's in good condition	NO	NA	
November 10, 2014 15:50	Area II (Blds 50, 54, 70, 70A)	Cloudy. BMP's in good condition. Trash bins in cafeteria loading dock closed	NO	NA	
November 10, 2014 15:45	Area III (Blds 51, 55, 64, 90)	Cloudy. BMP's in good condition	YES	Authorized	B55A AC condensate B55A Hydraulers flowing. Note: B64 hydraulers not flowing
November 10, 2014 15:40	Area IV (Bld 71)	Cloudy. BMP's in good condition	NO	NA	
November 10, 2014 15:35	Area V (Blds 2, 46, 58)	Cloudy. BMP's in good condition	YES	Authorized	B2 AC Condensate
November 10, 2014 16:00	Area VI (Blds 6, 7, 10, 17, 37, 80)	Cloudy. BMP's in good condition	NO	NA	Note: B37 hydrauger not flowing
November 10, 2014 16:10	Area VII (Blds 4, 5, 14, 16, 45, 48, 52)	Cloudy. BMP's in good condition	NO	NA	
November 10, 2014 15:15	Area VIII (Blds 69, 75, 76)	Cloudy. BMP's in good condition	NO	NA	
November 10, 2014 15:20	Area IX (Bld 77-79)	Cloudy. BMP's in good condition (all metal bins closed)	YES	Authorized	B77 hydraulers flowing
November 10, 2014 15:30	Area X (Blds 31, 62, 66, 67, 72)	Cloudy. BMP's in good condition	YES	Authorized	B31 hydraulers flowing, Chicken Creek
November 10, 2014 15:25	Area XI (Blds 74, 83, 84, 85)	Cloudy. BMP's in good condition	YES	Authorized	B74 & B84 roadside hydrauger flowing

Additional Comments

Sitewide BMP's are in good shape. Lots of new waddles & no major housekeeping issues

11/12/2014

11/11/2014

X 
 Brendan Mutholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mutholland

X 
 John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

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Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	NSWD Observed (Y or N)*	Authorized Type (Y, N, or NA)	Notes, Including Indications of Prior <i>Unauthorized NSWD</i> and Any Actions Taken
February 13, 2015 10:00	North Fork Strawberry Creek Drainage Area	Sunny. BMP's in good condition	YES	Authorized	NF Strawberry Creek low flow
February 13, 2015 9:05	Chicken Creek Drainage Area	Sunny. BMP's in good condition	YES	Authorized	Chicken Creek trickle flow
February 13, 2015 8:50	East Canyon & Winters Crk Drainage Areas	Sunny. BMP's in good condition	YES	Authorized	Trickle flow @ East Canyon, no flow @ Winters Creek influent
February 13, 2015 08:45 to 10:10	MP1-MP6 Sampling Sites	Sunny. BMP's in fair to good condition	NO	NA	BMP's in good condition @ MP2, MP4, MP5, & MP6 Metal bins open @ MP3, however, all other BMP's look good. MP1 debris in road
February 13, 2015 10:10	Area I (Blds 65, 88)	Sunny. BMP's in good condition	NO	NA	
February 13, 2015 9:30	Area II (Blds 50, 54, 70, 70A)	Sunny. BMP's in ok to good condition	NO	NA	BMP's @ Cafeteria improved, however, oil/grease 2nd containment is filling up
February 13, 2015 9:55	Area III (Blds 51, 55, 64, 90)	Sunny. BMP's in good condition	YES	Authorized	B55 & B64 hydraugers flowing
February 13, 2015 9:45	Area IV (Bld 71)	Sunny. BMP's in good condition	NO	NA	
February 13, 2015 9:35	Area V (Blds 2, 46, 58)	Sunny. BMP's in good condition	NO	NA	
February 13, 2015 9:20	Area VI (Blds 6, 7, 10, 17, 37, 80)	Sunny. BMP's in good condition	NO	NA	B37 hydrauger flowing
February 13, 2015 9:15	Area VII (Blds 4, 5, 14, 16, 45, 48, 52)	Sunny. BMP's in good condition	NO	NA	
February 13, 2015 9:10	Area VIII (Blds 69, 75, 76)	Sunny. BMP's in good condition	NO	NA	
February 13, 2015 9:00	Area IX (Bld 77-79)	Sunny. BMP's in good condition	YES	Authorized	B77 hydraugers flowing
February 13, 2015 8:50	Area X (Blds 31, 62, 66, 67, 72)	Sunny. BMP's in poor to good condition	YES	Authorized	B31 hydraugers flowing, Chicken Creek, B66 Boiler room overflow (02-13-15) Note: B72 Cooling Towers leaking but no discharge entered storm drain
February 13, 2015 8:45	Area XI (Blds 74, 83, 84, 85)	Sunny. BMP's in good condition	YES	Authorized	B74 & B84 roadside hydrauger flowing

Additional Comments

Oil/grease 2nd containment @ B54 needs to bwe covered
 Cooling Towers leaking @ B72, however, no discharge entered any storm drain inlet

2/17/2015

2/13/2015

X *Brendan J. Mulholland*
 Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John A. Jelinski*
 John Jelinski
 LBNL Stormwater Inspection Technician
 Signed by: John A. Jelinski

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Date & Time	Site visited	General Conditions & Observations (e.g. weather, housecleaning)	NSWD Observed (Y or N)*	Authorized Type (Y, N, or NA)	Notes, Including Indications of Prior <i>Unauthorized NSWD</i> and Any Actions Taken
May 5, 2015 10:25	North Fork Strawberry Creek Drainage Area	Sunny. BMP's in good condition	YES	Authorized	NF Strawberry Creek low flow
May 5, 2015 9:15	Chicken Creek Drainage Area	Sunny. BMP's in good condition	YES	Authorized	Chicken Creek trickle flow
May 5, 2015 8:45	East Canyon & Winters Crk Drainage Areas	Sunny. BMP's in good condition	YES	Authorized	Trickle flow @ East Canyon, no flow @ Winters Creek influent
May 5, 2015 08:45 to 10:45	MP1-MP6 Sampling Sites	Sunny. BMP's in fair to good condition.	NO	NA	Metal bins open but in use @ MP3. Issues with Drum labelling (see below)
May 5, 2015 10:15	Area I (Blds 65, 88)	Sunny. BMP's in good condition	NO	NA	
May 5, 2015 9:55	Area II (Blds 50, 54, 70, 70A)	Sunny. BMP's in good condition	YES	Authorized	Observed fire suppression system testing (see below)
May 5, 2015 10:10	Area III (Blds 51, 55, 64, 90)	Sunny. BMP's in good condition	YES	Authorized	B55 & B64 hydraugers flowing
May 5, 2015 10:30	Area IV (Bld 71)	Sunny. BMP's in good condition	NO	NA	
May 5, 2015 10:20	Area V (Blds 2, 46, 58)	Sunny. BMP's in good condition	NO	NA	
May 5, 2015 9:45	Area VI (Blds 6, 7, 10, 17, 37, 80)	Sunny. BMP's in good condition	NO	NA	B37 hydrauger flowing
May 5, 2015 9:40	Area VII (Blds 4, 5, 14, 16, 45, 48, 52)	Sunny. BMP's in good condition	NO	NA	
May 5, 2015 10:45	Area VIII (Blds 69, 75, 76)	Sunny. BMP's in good condition	NO	NA	
May 5, 2015 9:20	Area IX (Bld 77-79)	Sunny. BMP's in good condition	YES	Authorized	B77 hydraugers flowing
May 5, 2015 9:10	Area X (Blds 31, 62, 66, 67, 72)	Sunny. BMP's in poor to good condition	YES	Authorized	B31 hydraugers & Mcmillan Rd Hydraugers flowing, Chicken Creek,
May 5, 2015 9:00	Area XI (Blds 74, 83, 84, 85)	Sunny. BMP's in good condition	YES	Authorized	B74 & B84 roadside hydrauger flowing

Additional Comments

3 of 4 drums @ B79 yard improperly labeled 91 contains hazardous waste). Notified by WM @ ~14:40 issue resolved
 Improper use of dechlorination tablets during B54 fire suppression testing

5/5/2015

5/5/2015

X *Brendan J. Mulholland*
 Brendan Mulholland
 LBNL Stormwater Program Manager
 Signed by: Brendan James Mulholland

X *John Jelinski*
 John Jelinski
 LBNL Stormwater Inspection Technician
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Lawrence Berkeley National Laboratory
Environmental Services Group , Storm Water Monitoring Program

Reportable Spills and Related Issues Summary Worksheet

Spill Location	Date	Time	Did Spill Enter Storm Drain?	NPDES Permit Reportable	Estimated Volume to SDI's	BMP's Deployed	Describe deficiencies in BMPs or BMP implementation	Describe additional/ revised BMPs or corrective actions and their date(s) of implementation	Follow-up Complete	Details
Lawrence Rd (SMH3S30E) manhole	July 22, 2014	15:00-17:00	Yes	Yes	50-100 gallons	?	Makeshift dam used to collect effluent sample in sewer manhole plugged manhole. De-Chlor tablets were placed at effected storm drain inlets.	Revise ESG sampling procedure to include sampling sewer manholes. Do not leave sampling apparatus unattended. Notify Facilities when sewer manhole sampling is to be performed.	YES	ESG Procedure 265 updated to include revised BMP's & posted October 31, 2014
GPL (B26)	August 5, 2014	~13:30	YES	YES	<50 gallons	YES	Dechlor tablets placed @ spill site & next to storm drain inlets (which where diked with waddles.	Mike Dong investigating cause of spill. Trees were cut back as much as possible & screen was put in place to prevent leaves from clogging system	YES	Cooling Tower system clogged with leaves & overflowed. BMP's implemented.
Electrical manhole TMH510	September 22, 2014	~7:30	NO	NO	NA	YES	electrical manhole filling with water & draining onto hillside. Facilities responded at 7:45 9/21/2014	Water chemistry measurements were made to try to identify source. pH was 8.45 & there was trace amount of total chlorine	YES	
Flexlab	October 2, 2014	~14:20	Yes	Yes	?	?	Reported as Authorized Discharge	Reported as Authorized Discharge	YES	Reported as Authorized Discharge
B34 Sink Overflow	January 28, 2015	~18:30	Yes	Yes	200-600 gallons	YES	Upon 1st observations of spill Dechlor tablets employed. Based on Ravine Crk. Cl levels BMP's were not fully implemented	Inform people using sink to ensure better safeguards? Date when faucet valve was fixed?	NO	All water quality parameters in Ravine/Strawberry Creek acceptable (pH, SC, T, DO). Total CL measured 0.05 ppm on 1/28/15 & below detection limit on 1/29/15.
B88 Cutting saw spill	April 21, 2015	8:00	NO	NO	<1 gal	NO	Working using wet cutting saw dumped reservoir onto parking lot which flowed to s a storm drain inlet. Discharge did not flow past inlet (<1 gallon)	Building Manager was notified. Facilities (Miuke elizalde) will clean up pavement.	YES	Spill cleaned up by Facilities, 04/21/2015 ~15:45
GPL Cooling Tower leak	May 8, 2015	10:00	NO	NO	50 gallons	YES	Water entered catch basin but did not go down SDI. Sand bags & Dechlorination tablets placed at SDI & spill	NA	YES	NA
Sheen @ SDI-Blackberry P-Lot	May 16, 2015	No Spill (observation)	YES	NO	25-50 gallons	NO	Observed sheen in SDI-pending analysis	Sent samples in for analysis (O&G, TPH Diesel, metals, pcbs). With the exception of metals all results ND	NO	Sheen most likely orginated from vegetative source such as leaves. No further actions needed

** = Reportable on the Annual Comprehensive Site Compliance Evaluation (ACSCE) Form