Dewatering Operations

Dewatering Operations are practices that manage the discharge of pollutants when non-storm water and accumulated precipitation (storm water) must be removed from a work location so that construction work may be accomplished.

- These practices are implemented for discharges of non-storm water and storm water (accumulated rain water) from construction sites. Non-storm water includes, but is not limited to, groundwater, dewatering of piles, water from cofferdams, water diversions, and water used during construction activities that must be removed from a work area.

- Practices identified in this section are also appropriate for implementation when managing the removal of accumulated precipitation (storm water) from depressed areas at a construction site.

- Storm water mixed with non-storm water should be managed as non-storm water.

- Dewatering operations for non-storm water will require, and must comply with, applicable local permits, project-specific permits, and regulations.

- Site conditions will dictate design and use of dewatering operations.

- A dewatering plan shall be submitted as part of the SWPPP/WPCP detailing the location of dewatering activities, equipment, and discharge point.

- The controls discussed in this best management practice (BMP) address sediment only. If the presence of polluted water with hazardous substances is identified in the contract, the contractor shall implement dewatering pollution controls as required by the contract documents. If the quality of water to be removed by dewatering is not identified as polluted in the contract documents, but is later determined by observation or testing to be polluted, the contractor shall notify the Resident Engineer (RE) and comply with Standard Specifications Section 5-1.116, “Differing Site Conditions.”
Standards and Specifications

- Avoid dewatering discharges where possible by using the water for dust control, by infiltration, etc.

- Dewatering shall be conducted in accordance with the Field Guide to Construction Site Dewatering, October 2001, CTSW-RT-01-010.

- Dewatering for accumulated precipitation (storm water) shall follow this BMP and use treatment measures specified herein.

- The RWQCB may require a separate NPDES permit prior to the dewatering discharge of non-storm water. These permits will have specific testing, monitoring, and discharge requirements and can take significant time to obtain.

- Except in RWQCB Regions 1 and 2, the discharge of accumulated precipitation (storm water) to a water body or storm drain is subject to the requirements of Caltrans NPDES permit. Sediment control and other appropriate BMPs (e.g., outlet protection/energy dissipation) must be employed when this water is discharged.

- RWQCB Regions 1 and 2 require notification and approval prior to any discharge of water from construction sites.

- In RWQCB Regions 3, 5, 7, and 9 non-storm water dewatering for discharges meeting certain conditions are allowed under an RWQCB general dewatering NPDES Permit. Notification and approval from the RWQCB is required prior to conducting these operations. This includes storm water that is mixed with groundwater or other non-storm water sources. Once the discharge is allowed, appropriate BMPs must be implemented to ensure that the discharge complies with all permit requirements. Conditions for potential discharge under an RWQCB general dewatering NPDES Permit include:
  - Regions 3, 5, 7: Non-storm water discharges, free of pollutants other than sediment, <0.25 MGD, with a duration of 4 or fewer months.
  - Region 9: Groundwater, free of pollutants other than sediment, <0.10 MGD, to surface waters other than San Diego Bay.

- The flow chart shown on Page 4 shall be utilized to guide dewatering operations.

- The RE will coordinate monitoring and permit compliance.

- Discharges must comply with regional and watershed-specific discharge requirements.

- Additional permits or permissions from other agencies may be required for dewatering cofferdams or diversions.

- Dewatering discharges must not cause erosion at the discharge point.
Dewatering Operations

- Dewatering records shall be maintained for a period of 3 years.
- Inspect all BMPs implemented to comply with permit requirements frequently and repair or replace to ensure the BMPs function as designed.
- Conduct water quality monitoring pursuant to the “Storm Water Dewatering Operations BMP Discharge Monitoring Forms”.
- Accumulated sediment removed during the maintenance of a dewatering device may be incorporated in the project at locations designated by the RE or disposed of outside the right-of-way in conformance with the Standard Specifications.
- Accumulated sediment that is commingled with other pollutants must be disposed of in accordance with all applicable laws and regulations and as approved by the RE.
Dewatering Operations

1. Contact CSWC for assistance with managing the dewatering discharge.
2. Assess water quality and estimate discharge flow rate and volume.
3. Does water have an odor, discoloration other than sediment, or an oily sheen or foam on the surface?
   - Yes: Contact CSWC regarding further testing and considerations.
   - No: Proceed to the next step.
4. Is it necessary to manage water without discharge to a storm drain or water body?
   - Yes: Retain water on site; infiltrate, evaporate, or reuse.
   - No: Discharge by agreement to a sanitary sewer.
5. Consult with the CSWC if considering one of the following options: Discharge by agreement to adjacent storm drain or transport to site for disposal.
6. Does the discharge consist solely of accumulated precipitation?
   - Yes: Accumulated precipitation in RWQCB Regions 3-9: Notify RWQCB of proposed dewatering discharge and provide any available analytical testing or quality assurance information.
   - No: Discharge to storm drain or water body under NPDES Statewide Permit for Caltrans.
7. Is the site located outside of RWQCB Regions 1 and 2 or to a non-storm water discharge?
   - Yes: Follow permit requirements.
   - No: Proceed to the next step.
8. Does the project have a dewatering permit?
   - Yes: Follow permit requirements.
   - No: Proceed to the next step.
9. Consult RWQCB for discharge requirements.
10. Discharge to storm drain or water body under NPDES Statewide Permit for Caltrans.

Qualifying Non-Storm Water Discharges under NPDES Statewide Permit for Caltrans:

- **Regions 3, 5, 7:** Non-storm water discharges, free of pollutants other than sediment, <0.25 MGD, with a duration of 4 or fewer months.

- **Region 9:** Groundwater, free of pollutants other than sediment, <0.1 MGD, to surface waters other than San Diego Bay.

Abbreviations:
- BMP: Best Management Practice
- CSWC: Construction Storm Water Coordinator
- MGD: Million gallons per day
- NPDES: National Pollutant Discharge Elimination System
- RWQCB: Regional Water Quality Control Board
- SWPPP: Storm Water Pollution Prevention Plan
- WFCP: Water Pollution Control Program

Note: This flowchart applies to dewatering of non-storm water (groundwater, water from sumps, etc.) and accumulated precipitation. Contact the CSWC for guidance on all other discharges.
A variety of methods can be used to treat water during dewatering operations from the construction site. Several devices are presented in this section that provide options to achieve sediment removal. The size of particles present in the sediment and Permit or receiving water limitations on sediment are key considerations for selecting sediment treatment option(s); in some cases, the use of multiple devices may be appropriate.

**Category 1: Constructed Settling Technologies**

The devices discussed in this category are to be used exclusively for dewatering operations only.

**Sediment/Desilting Basin (SC-2)**

*Description:*

A desilting basin is a temporary basin with a controlled release structure that is formed by excavation and/or construction of an embankment to detain sediment-laden runoff and allow sediment to settle out before discharging.

*Appropriate Applications:*

- Effective for the removal of trash, gravel, sand, and silt and some metals that settle out with the sediment.

*Implementation:*

- Excavation and construction of related facilities is required.

- Temporary desilting basins must be fenced if safety is a concern.

- Outlet protection is required to prevent erosion at the outfall location.

*Maintenance:*

- Maintenance is required for safety fencing, vegetation, embankment, inlet and outfall structures, as well as other features.

- Removal of sediment is required when the storage volume is reduced by one-third.

**Sediment Trap (SC-3)**

*Description:*

A sediment trap is a temporary basin formed by excavation and/or construction of an earthen embankment across a waterway or low drainage area to detain sediment-laden runoff and allow sediment to settle out before discharging.
Appropriate Applications:

- Effective for the removal of large and medium sized particles (sand and gravel) and some metals that settle out with the sediment.

Implementation:

- Excavation and construction of related facilities is required.
- Trap inlets shall be located to maximize the travel distance to the trap outlet.
- Use rock or vegetation to protect the trap outlets against erosion.

Maintenance:

- Maintenance is required for vegetation, embankment, inlet and outfall structures, as well as other features.
- Removal of sediment is required when the storage volume is reduced by one-third.

**Category 2: Mobile Settling Technologies**

The devices discussed in this category are typical of tanks that can be used for sediment treatment of dewatering operations. A variety of vendors are available who supply these tanks.

**Weir Tank**

Description:

A weir tank separates water and waste by using weirs. The configuration of the weirs (over and under weirs) maximizes the residence time in the tank and determines the waste to be removed from the water, such as oil, grease, and sediments.

Appropriate Applications:

- The tank removes trash, some settleable solids (gravel, sand, and silt), some visible oil and grease, and some metals (removed with sediment). To achieve high levels of flow, multiple tanks can be used in parallel. If additional treatment is desired, the tanks can be placed in series or as pre-treatment for other methods.

Implementation:

- Tanks are delivered to the site by the vendor, who can provide assistance with set-up and operation.
- Tank size will depend on flow volume, constituents of concern, and residency period required. Vendors shall be consulted to appropriately size tank.
Dewatering Operations

Maintenance:

- Periodic cleaning is required based on visual inspection or reduced flow.
- Oil and grease disposal must be by licensed waste disposal company.

Schematic Diagrams:

Weir Tanks

Dewatering Tank
Description:

A dewatering tank removes debris and sediment. Flow enters the tank through the top, passes through a fabric filter, and is discharged through the bottom of the tank. The filter separates the solids from the liquids.

Appropriate Applications:

- The tank removes trash, gravel, sand, and silt, some visible oil and grease, and some metals (removed with sediment). To achieve high levels of flow, multiple tanks can be used in parallel. If additional treatment is desired, the tanks can be placed in series or as pre-treatment for other methods.

Implementation:

- Tanks are delivered to the site by the vendor, who can provide assistance with set-up and operation.
- Tank size will depend on flow volume, constituents of concern, and residency period required. Vendors shall be consulted to appropriately size tank.

Maintenance:

- Periodic cleaning is required based on visual inspection or reduced flow.
- Oil and grease disposal must be by licensed waste disposal company.
Category 3: Basic Filtration Technologies

Gravity Bag Filter

Description:

A gravity bag filter, also referred to as a dewatering bag, is a square or rectangular bag made of non-woven geotextile fabric that collects sand, silt, and fines.

Appropriate Applications:

- Effective for the removal of sediments (gravel, sand, and silt). Some metals are removed with the sediment.

Implementation:

- Water is pumped into one side of the bag and seeps through the bottom and sides of the bag.
- A secondary barrier, such as a rock filter bed or straw/hay bale barrier, is placed beneath and beyond the edges of the bag to capture sediments that escape the bag.

Maintenance:

- Inspection of the flow conditions, bag condition, bag capacity, and the secondary barrier is required.
- Replace the bag when it no longer filters sediment or passes water at a reasonable rate.
- The bag is disposed off-site, or on-site as directed by the RE.
Schematic Diagrams:

Gravity Bag Filter

Category 4: Advanced Filtration Technologies

Sand Media Particulate Filter

Description:

Water is treated by passing it through canisters filled with sand media. Generally, sand filters provide a final level of treatment. They are often used as a secondary or higher level of treatment after a significant amount of sediment and other pollutants have been removed.

Appropriate Applications:

- Effective for the removal of trash, gravel, sand, and silt and some metals, as well as the reduction of biochemical oxygen demand (BOD) and turbidity.
- Sand filters can be used for standalone treatment or in conjunction with bag and cartridge filtration if further treatment is required.
- Sand filters can also be used to provide additional treatment to water treated via settling or basic filtration.

Implementation:

- The filters require delivery to the site and initial set up. The vendor can provide assistance with installation and operation.

Maintenance:

- The filters require monthly service to monitor and maintain the sand media.
Schematic Diagrams:

Pressurized Bag Filter
Description:

A pressurized bag filter is a unit composed of single filter bags made from polyester felt material. The water filters through the unit and is discharged through a header, allowing for the discharge of flow in series to an additional treatment unit. Vendors provide pressurized bag filters in a variety of configurations. Some units include a combination of bag filters and cartridge filters for enhanced contaminant removal.

Appropriate Applications:

- Effective for the removal of sediment (sand and silt) and some metals, as well as the reduction of BOD, turbidity, and hydrocarbons. Oil absorbent bags are available for hydrocarbon removal.

- Filters can be used to provide secondary treatment to water treated via settling or basic filtration.

Implementation:

- The filters require delivery to the site and initial set up. The vendor can provide assistance with installation and operation.

Maintenance:

- The filter bags require replacement when the pressure differential exceeds the manufacturer’s recommendation.
Cartridge Filter
Description:

Cartridge filters provide a high degree of pollutant removal by utilizing a number of individual cartridges as part of a larger filtering unit. They are often used as a secondary or higher (polishing) level of treatment after a significant amount of sediment and other pollutants are removed. Units come with various cartridge configurations (for use in series with pressurized bag filters) or with a larger single cartridge filtration unit (with multiple filters within).

Appropriate Applications:

- Effective for the removal of sediment (sand, silt, and some clays) and metals, as well as the reduction of BOD, turbidity, and hydrocarbons. Hydrocarbons can effectively be removed with special resin cartridges.

- Filters can be used to provide secondary treatment to water treated via settling or basic filtration.

Implementation:

- The filters require delivery to the site and initial set up. The vendor can provide assistance.

Maintenance:

- The cartridges require replacement when the pressure differential exceeds the manufacturer’s recommendation.
Schematic Designs:

Cartridge Filter
## Storm Water Dewatering Operations BMP Discharge Monitoring Form

### General Information

- **Central Coast Region (RWQCB 3)**
- **For Inland Surface Waters**

### Water Sample Log

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
<th>Effluent</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissolved Oxygen</td>
<td>mg/L</td>
<td></td>
<td>Upstream (R-1)</td>
</tr>
<tr>
<td>pH</td>
<td>unitless</td>
<td></td>
<td>Downstream (R-2)</td>
</tr>
<tr>
<td>Turbidity</td>
<td>JTUs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Discharge Limitations

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Units</th>
<th>Effluent Daily Maximum</th>
<th>Receiving Water Daily Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissolved Oxygen</td>
<td>mg/L</td>
<td>5.0 $^i$</td>
<td>20% (Where Ambient is 0 - 50 JTUs)</td>
</tr>
<tr>
<td>pH</td>
<td>unitless</td>
<td>10% (Where Ambient is &gt; 100 JTUs)</td>
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</tr>
<tr>
<td>Turbidity</td>
<td>JTUs</td>
<td>10% (Where Ambient is &gt; 100 JTUs)</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
- **Ambient**: Upstream sample result (i.e., R-1)
- **SMAP**: Storm Water Management Practice
- **JTUs**: Jacktum turbidity units
- **mg/L**: Milligrams per liter

$^a$ This form shall be used only for dewatering of storm water/accumulated precipitation. Dewatering non-storm water shall monitor constituents required in the applicable NPDES permits or Waste Discharge Requirements.

$^b$ At inland surface waters, enclosed bays, and estuaries. Based on the 1984 RWQCB 3 Basin Plan.

$^c$ Collect monthly samples. The first sample shall be collected at the start of the discharge and the last sample shall be collected at the completion of the discharge. Use the same sample collection criteria for discharges less than one month in duration for a total of two samples per discharge event.

$^d$ Each constituent will be analyzed in the effluent and the two receiving water samples.

$^e$ Dissolved oxygen, pH, and turbidity are required to be analyzed throughout the basin.

The following constituents shall be sampled if suspected to present in the discharge: ammonia for toxicity, MBAS, PCBs, phenols, and phthalate esters are required to be analyzed throughout the basin. However, bacteria, boron, chemical oxygen demand, and total dissolved solids shall be analyzed if the project is in an area designated for a specific beneficial use, as noted in the Basin Plan.

$^f$ R-1 shall be collected 100 feet upstream from the closest point of discharge. R-2 shall be collected 100 feet downstream from the closest point of discharge.

$^g$ If the results from receiving water sample exceed any of the discharge limits then discontinue dewatering activities to surface waters.

$^h$ A discharge limitations are listed in the Water Quality Objectives Section of the Basin Plan.

Water shall not contain concentrations that cause nuisance or adversely affect beneficial uses of the following: bioaerosol substances, floating material, oil and grease, pesticides, sediment, surface water, suspended materials, suspended materials, and toxins and odors.

$^i$ In addition, dissolved oxygen and pH have specific beneficial uses discharge limitations. See basin plan for specific limitations.
Dewatering Operations

STORM WATER DEWATERING OPERATIONS BMP DISCHARGE MONITORING FORM

Los Angeles Region (RWQCB 4)
Los Angeles and Ventura Counties
For Inland Surface Waters

GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Project Name</th>
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</thead>
<tbody>
<tr>
<td>Contract No</td>
<td></td>
</tr>
<tr>
<td>Contractor</td>
<td></td>
</tr>
<tr>
<td>Sampler's Name</td>
<td></td>
</tr>
<tr>
<td>Sampler's Signature</td>
<td></td>
</tr>
<tr>
<td>Date Discharge Began</td>
<td></td>
</tr>
<tr>
<td>Date of Sampling</td>
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WATER SAMPLE LOG

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>unitless</td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
</tr>
<tr>
<td>TDS</td>
<td>mg/L</td>
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<table>
<thead>
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<th>Constituents</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>pH</td>
<td>unitless</td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
</tr>
<tr>
<td>TDS</td>
<td>mg/L</td>
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RESULTS

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<tr>
<th>Effluent</th>
<th>Receiving Water</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Upstream (R-1)</td>
</tr>
<tr>
<td></td>
<td>Downstream (R-2)</td>
</tr>
</tbody>
</table>

DISCHARGE LIMITATIONS

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Units</th>
<th>Daily Maximum</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>unitless</td>
<td>Between 0.5 - 8.5</td>
<td>NTUs - Nephelometric turbidity units</td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
<td>20% (Where Ambient is 0 - 50 NTUs)</td>
<td>RWQCB - Regional Water Quality Control Board</td>
</tr>
<tr>
<td>TDS</td>
<td>mg/L</td>
<td>10% (Where Ambient is &gt; 50 NTUs)</td>
<td>mg/L - Greater Than</td>
</tr>
</tbody>
</table>

NOTES:

- All inland surface waters, enclosed bays, and estuaries, including wetlands. Based on the 1995 RWQCB 4 Basin Plan.
- Collect monthly samples. The first sample shall be collected at the start of the discharge and the last sample shall be collected at the completion of the discharge. Use the same sample collection criteria for discharges less than one month in duration for a total of two samples per discharge event.
- Each constituent will be analyzed in the effluent and the two receiving water samples.
- pH, and turbidity are required to be analyzed throughout the basin, however, ammonia, phenols, boron, and other chemical constituents, chloride, dissolved oxygen, methylene blue activated substances, nitrogen, pesticides, polychlorinated biphenyls, radionuclides, sodium absorption ratio, sulfate, temperature, and total dissolved solids shall be analyzed if the project lies in a specific beneficial use as noted in the Basin Plan.
- R-1 shall be collected 100 feet upstream from the closest point of discharge. R-2 shall be collected 100 feet downstream from the closest point of discharge.
- If the results from receiving water sample exceed any of the discharge limits then discontinue dewatering activities to surface water.
- All discharge limitations are listed in the Water Quality Objectives Section of the Basin Plan.
- Water shall not contain concentrations that cause nuisance or adversely affect beneficial uses of the following: Bioaccumulation, biochemical oxygen demand, biostimulatory substances, color, exotic vegetation, floating material, oil and grease, solids suspended/settled materials, tastes and odors, and toxicity.
- Additional ambient pH levels shall not be changed more than 0.2 units for inland surface waters, and 0.5 for bays or estuaries from natural conditions.
- See Table 3-8 in Basin Plan for applicable waterheds.
### Dewatering Operations

#### STORM WATER DEWATERING OPERATIONS BMP DISCHARGE MONITORING FORM

Central Valley Region (RWQCB 5)
Sacramento River Basin and The San Joaquin River Basin
For Inland Surface Waters

**GENERAL INFORMATION**

<table>
<thead>
<tr>
<th>Project Name</th>
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<tbody>
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<td>Contract No.</td>
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<tr>
<td>Sampler’s Name</td>
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<tr>
<td>Sampler’s Signature</td>
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<tr>
<td>Date Discharge Began</td>
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<tr>
<td>Date of Sampling</td>
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#### WATER SAMPLE LOG

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<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
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<tbody>
<tr>
<td>pH</td>
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<tr>
<td>Turbidity</td>
<td>NTUs</td>
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<tr>
<th>Constituents</th>
<th>Units</th>
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<tbody>
<tr>
<td></td>
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<td>Upstream (R-1)</td>
<td>Downstream (R-2)</td>
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#### DISCHARGE LIMITATIONS

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Units</th>
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<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>unitless</td>
<td>Daily Maximum</td>
<td>Between 5.5 - 8.5</td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
<td>Daily Maximum</td>
<td>1 NTU increase (Where Ambient is 0 - 5 NTUs)</td>
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<td></td>
<td></td>
<td>20% increase (Where Ambient is 5 - 50 NTUs)</td>
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<td>10 NTU increase (Where Ambient is 50 - 100 NTUs)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>10% increase (Where Ambient is &gt; 100 NTUs)</td>
</tr>
</tbody>
</table>

**NOTES:**

a. This form shall be used only for dewatering of storm water/accumulated precipitation. Dewatering non-storm water shall monitor constituents required in the applicable NPOES permit or Waste Discharge Requirements.

b. All surface waters in the Sacramento and San Joaquin River Basins, including the Delta. Based on the 1998 RWQCB Sal/Sac Basin Plan.

http://www.srcc.ca.gov/wqtd/available_documents/index.html#anchor59531

Collect monthly samples. The first sample shall be collected at the start of the discharge and the last sample shall be collected at the completion of the discharge. Use the same sample collection criteria for discharges less than one month in duration for a total of two samples per discharge event.

d. Each constituent will be analyzed in the effluent and the two receiving water samples.

e. Turbidity and pH are required to be analyzed throughout the basin, however, bacteria, chemical constituents, dissolved oxygen, pesticides, radioactivity, salinity, and temperature shall be analyzed if the project site in an area designated for a specific beneficial use or along a specific waterbody, as noted in the Basin Plan.

f. R-1 shall be collected 100 feet upstream from the closest point of discharge. R-2 shall be collected 100 feet downstream from the closest point of discharge.

g. If the results from receiving water sample exceed any of the discharge limits then discontinue dewatering activities to surface water.

h. All discharge limitations are listed in the Water Quality Objectives Section of the Basin Plan.

i. Water shall not contain concentrations that cause nuisance or adversely affect beneficial uses of the following: biostimulatory substances, color, floating material, oil and grease, sediment, settleable material, suspended material, tastes and odors, and toxicity.
STORM WATER Dewatering Operations BMP DISCHARGE MONITORING FORM

Central Valley Region (RWQCB 5)
Tulare Lake Basin
For Inland Surface Waters

GENERAL INFORMATION

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<td>Sampler's Name</td>
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<tr>
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</tr>
<tr>
<td>Date Discharge Began</td>
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<tr>
<td>Date of Sampling</td>
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WATER SAMPLE LOG

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<th>Effluent</th>
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</thead>
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<td></td>
<td></td>
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<td>Downstream (R-2)</td>
</tr>
<tr>
<td>pH</td>
<td>unitless</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>mg/L</td>
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<td></td>
</tr>
<tr>
<td>Electrical Conductivity</td>
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DISCHARGE LIMITATIONS

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Units</th>
<th>Effluent Daily Maximum</th>
<th>Receiving Water Daily Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>unitless</td>
<td>0.3 unit change for background</td>
<td>Between 6.5 - 8.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 (Where Ambient is 0 - 5 NTUs)</td>
<td>20% (Where Ambient is 5 - 50 NTUs)</td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
<td>10% (Where Ambient is &gt; 50 NTUs)</td>
<td>10% (Where Ambient is &gt; 100 NTUs)</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>mg/L</td>
<td>See Table III-1 in Basin Plan</td>
<td>See Table III-2 in Basin Plan</td>
</tr>
<tr>
<td>Electrical Conductivity</td>
<td>umhos/cm</td>
<td>See Table III-3 in Basin Plan</td>
<td>See Table III-4 in Basin Plan</td>
</tr>
</tbody>
</table>

NOTES:
- This form shall be used only for dewatering of storm water/accumulated precipitation. Dewatering non-storm water shall monitor constituents required in the applicable NPDES permit or Waste Discharge Requirements.

- Collect monthly samples. The first sample shall be collected at the start of the discharge and the last sample shall be collected at the completion of the discharge. Use the same sample collection criteria for discharges less than one month in duration for a total of two samples per discharge event.
- Each constituent will be analyzed in the effluent and the two receiving water samples.
- Bacteria, chemical constituents, pesticides, radioactivity, salinity, and temperature shall be analyzed for a specific beneficial use as noted in the Basin Plan. Ammonia is suspected at elevated levels.
- R-1 shall be collected 100 feet upstream from the closest point of discharge. R-2 shall be collected 100 feet downstream from the closest point of discharge.
- If the results from receiving water sample exceed any of the discharge limits then discontinue dewatering activities to surface water.
- All discharge limitations are listed in the Water Quality Objectives Section of the Basin Plan.
- Water shall not contain concentrations that cause nuisance or adversely affect beneficial uses of the following: Bioaccumulative substances, color, floating material, oil and grease, sediment, settleable material, suspended material, tastes and odors, and toxicity.
### STORM WATER DEWATERING OPERATIONS BMP DISCHARGE MONITORING FORM

Lahontan Region (RWQCB 6)

For Surface Waters

#### GENERAL INFORMATION

- **Project Name**
- **Contract No**
- **Contractor**
- **Sampler’s Name**
- **Sampler’s Signature**
- **Date Discharge Began**
- **Date of Sampling**

#### WATER SAMPLE LOG

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
<th>Effluent</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Upstream (R-1)</td>
</tr>
<tr>
<td>pH</td>
<td>unitless</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### DISCHARGE LIMITATIONS

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Units</th>
<th>Effluent</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Daily</td>
<td>Daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum</td>
<td>Maximum</td>
</tr>
<tr>
<td>pH</td>
<td>unitless</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### NOTES:
- Ambient = Upstream sample result (i.e., R-1)
- BMP = Best Management Practice
- NTUs = nephelometric turbidity units
- mg/L = milligrams per liter

- This form shall be used only for dewatering of storm water/accumulated precipitation. Dewatering non-storm water shall monitor constituents required in the applicable NPDES permit or Waste Discharge Requirements.
- All surface waters including wetlands. Based on the 1994 RWQCB 6 Basin Plan. [http://www.rwqcb.ca.gov/RWQCB/EPPlan/EPPlan_index.html](http://www.rwqcb.ca.gov/RWQCB/EPPlan/EPPlan_index.html)
- Collect monthly samples. The first sample shall be collected at the start of the discharge and the last sample shall be collected at the completion of the discharge. Use the same sample collection for discharges less than one month in duration for a total of two samples per discharge event.
- Each constituent will be analyzed in the effluent and the receiving water samples.
- pH and turbidity are required to be analyzed throughout the basin. However, adjusted sodium adsorption ratio, algal growth potential, biological indicators, bioluminescent substances, benzo(a)pyrene, trace elements, dissolved inorganic nitrogen, dissolved orthophosphate, dissolved oxygen, electrical conductivity, fluoride, iron, nitrogen as nitrate, pesticides, peroxynitrate, radioactivity, sodium adsorption ratio, soluble reactive iron, soluble reactive phosphorous, species composition, sulfates, suspended sediment, tastes & odors, temperatures, total dissolved solids, total alkalinity as carbonate, total kjeldahl nitrogen, total nitrogen, total phosphorus, total reactive iron, toxicity, transparency, un-ionized ammonia shall be analyzed if the project lies in an area designated for a specific beneficial use, as noted in the Basin Plan.
- Bacteria/Coliform if high levels are suspected. Residual chlorine if suspected to be present.
- R-1 shall be collected 100 feet upstream from the closest point of discharge. R-2 shall be collected 100 feet downstream from the closest point of discharge.
- If the results from receiving water sample exceed any of the discharge limits then discontinue dewatering activities in surface waters.
- All discharge limitations are listed in the Water Quality Objectives Section of the Basin Plan.
- Water shall not contain concentrations that cause nuisance or adversely affect beneficial uses of the following: Floating material, nondegradation of aquatic communities and populations, oil and grease, sediment, settleable materials, and suspended materials.
- In addition, bacterial coliform, pH, dissolved residual chlorine, and turbidity have specific beneficial uses and location specific discharge limitations. See basin plan for specific limitations.
### STORM WATER DEWATERING OPERATIONS BMP DISCHARGE MONITORING FORM

- **Project Name:**
- **Contract No.:**
- **Contractor:**
- **Sampler’s Name:**
- **Sampler’s Signature:**
- **Date Discharge Began:**
- **Date of Sampling:**

### GENERAL INFORMATION

#### WATER SAMPLE LOG

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
<th>Effluent</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>unitless</td>
<td></td>
<td>Upstream (R-1)</td>
</tr>
<tr>
<td>TDS</td>
<td>mg/L</td>
<td></td>
<td>Downstream (R-2)</td>
</tr>
</tbody>
</table>

#### DISCHARGE LIMITATIONS

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Units</th>
<th>Effluent</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>unitless</td>
<td>Daily Maximum</td>
<td>Between 6.0 - 9.0</td>
</tr>
<tr>
<td>TDS</td>
<td>mg/L</td>
<td>Daily Maximum</td>
<td>See Basin Plan</td>
</tr>
</tbody>
</table>

### NOTES:

- **BMP:** Best Management Practice
- **RWQCB:** Regional Water Quality Control Board
- **NS-2:** Dewatering Operations
  - “Not Required”
  - “Greater Than”

**a** This form shall be used only for dewatering of storm water and accumulated precipitation. Dewatering non-storm water shall monitor constituents required in the applicable NPDES permit or Waste Discharge Requirements.

**b** Based on the 2002 RWQCB T Water Quality Plan.

**c** Collect monthly samples. The first sample shall be collected at the start of the discharge and the last sample shall be collected at the completion of the discharge. Use the same sample collection criteria for discharges less than one month in duration for a total of two samples per discharge event.

**d** Each constituent will be analyzed in the effluent and the two receiving water samples.

**e** Bacteria, biochemical oxygen demand, chemical constituents, chemical oxygen demand, dissolved oxygen, radioactivity, and selenium shall be analyzed for specific beneficial uses as noted in the Basin Plan.

**f** It shall be collected 100 feet upstream from the closest point of discharge. R-2 shall be collected 100 feet downstream from the closest point of discharge.

**g** Total Dissolved Solids (TDS) has specific location discharge limitations. See basin plan for specific limitations.

**h** If the results from receiving water sample exceed any of the discharge limits then discontinue dewatering activities to surface waters.

**i** Discharge limitations are listed in the Water Quality Objectives Section of the Basin Plan.

**j** Water shall not contain concentrations that cause nuisance or adversely affect beneficial uses of the following: Bioaccumulative substances, color, floating material, herbicides, oil and grease, pesticides, sediment, settleable and suspended solids, tainting substances, tastes and odors, temperature, toxicity, and turbidity.
## Storm Water Dewatering Operations BMP Discharge Monitoring Form

### Santa Ana Region (RWQCB 8)

**For Inland Surface Waters**

### General Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name</td>
<td></td>
</tr>
<tr>
<td>Contract No</td>
<td></td>
</tr>
<tr>
<td>Contractor</td>
<td></td>
</tr>
<tr>
<td>Sampler's Name</td>
<td></td>
</tr>
<tr>
<td>Sampler's Signature</td>
<td></td>
</tr>
<tr>
<td>Date Discharge Began</td>
<td></td>
</tr>
<tr>
<td>Date of Sampling</td>
<td></td>
</tr>
</tbody>
</table>

### Water Sample Log

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
<th>Effluent</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>unitless</td>
<td></td>
<td>Upstream (R-1)</td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
<td></td>
<td>Downstream (R-2)</td>
</tr>
<tr>
<td>TDS</td>
<td>mg/L</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Discharge Limitations

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Effluent</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>Daily Maximum</td>
<td>Daily Maximum</td>
</tr>
<tr>
<td>Turbidity</td>
<td>--</td>
<td>Between 0 - 0.0 (lakes and estuaries)</td>
</tr>
<tr>
<td>TDS</td>
<td>mg/L</td>
<td>Between 6.5 - 8.5 (inland surface waters)</td>
</tr>
</tbody>
</table>

### Notes:

- Ambient - Upstream sample result (i.e., R-1)
- BMP - Best Management Practice
- NTUs - nephelometric turbidity units
- mg/L - milligrams per liter

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**Caltrans Storm Water Quality Handbooks**

**Construction Site Best Management Practices Manual**

**March 19, 2004 Update**

**Section 7**

**Dewatering Operations NS-2**

19 of 20
### STORM WATER DEWATERING OPERATIONS BMP DISCHARGE MONITORING FORM

San Diego Region (RWQCB 9)
For Inland Surface Waters

#### GENERAL INFORMATION
- **Project Name**
- **Contract No.**
- **Contractor**
- **Sampler’s Name**
- **Sampler’s Signature**
- **Date Discharge Began**
- **Date of Sampling**

#### WATER SAMPLE LOG

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
<th>Effluent</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Upstream (R-1)</td>
</tr>
<tr>
<td>pH</td>
<td>unitless</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDS</td>
<td>mg/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>mg/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### DISCHARGE LIMITATIONS

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Units</th>
<th>Effluent Daily Maximum</th>
<th>Receiving Water Daily Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>unitless</td>
<td>--</td>
<td>Between 6.5 - 8.5</td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTUs</td>
<td>--</td>
<td>20% (Where Ambient is 0 - 50 NTUs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% (Where Ambient is 50 - 100 NTUs)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% (Where Ambient is &gt; 100 NTUs)</td>
<td></td>
</tr>
<tr>
<td>TDS</td>
<td>mg/L</td>
<td>--</td>
<td>0.2 NTUs (ocean waters)</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>mg/L</td>
<td>--</td>
<td>5.0 mg/L in inland surface waters</td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>--</td>
<td>6.0 mg/L in waters with designated COLD beneficial uses</td>
</tr>
</tbody>
</table>

#### NOTES:
- Ambient - Upstream samples result (i.e., R-1)
- BMP - Best Management Practice
- NTUs - nephelometric turbidity units
- mg/L - milligrams per liter

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Caltrans Storm Water Quality Handbooks
March 19, 2004 Update