

9.0 ILLICIT DISCHARGE DETECTION AND ELIMINATION

9.1 INTRODUCTION

The Municipal Permit requires the establishment of an Illicit Discharge Detection and Elimination Program to actively seek and eliminate illicit connections and illegal discharges (IC/ID) into the MS4.

This component describes the IC/ID program developed by the City to seek and eliminate illicit connections and illegal discharges. Eliminating IC/IDs helps minimize potentially negative impacts of human activities on receiving water bodies. IC/IDs can be defined as the following:

- An *illicit connection* is a physical connection to the Storm Water Conveyance System or Receiving Waters which has not been reviewed and authorized by the City; or a permitted connection which conveys Illegal Discharges.
- An *illicit discharge* is any discharge to the Storm Water Conveyance System that is not composed entirely of Storm Water or is not discharged in compliance with the City's Storm Water Management Ordinance (Municipal Code Chapter 20.08).

The City uses its municipal personnel to assist in actively seeking, identifying and reporting IC/IDs during their daily activities. Detection and prevention of IC/IDs is achieved by

1. Operating a public hotline,
2. Inspecting local businesses, industrial and municipal facilities,
3. Conducting the Dry Weather Monitoring Program,
4. Maintaining municipal MS4 and sewer systems
5. Educating the local community.

The City investigates, inspects and appropriately follows-up on every IC/ID that is reported or detected to identify the source(s) of the discharge. Voluntary compliance and escalating enforcement mechanisms are implemented to immediately eliminate the IC/ID once the source has been identified. Education materials are distributed to help prevent future IC/ID occurrences. This program involves the City's Clean Water Program staff, two Sanitary Districts (Leucadia Wastewater District and the City of Encinitas Wastewater Division), the City's Fire Department, Public Works Department, County Hazardous Incident Response Team (HIRT) as well as the public. The City will continue to train and organize their current staff to detect and report illicit discharges. In addition, the City is in the process of developing MS4 Outfall and Source Identification Monitoring Programs as part of a regional and jurisdictional effort to aid in identifying IC/IDs.

9.2 PUBLIC REPORTING OF ILLICIT CONNECTIONS AND DISCHARGES

To further aid the process of identifying illicit discharges, the City encourages the public and City staff to report all IC/IDs. Multiple opportunities are provided to facilitate public reporting of illicit discharges and connections to the City's Clean Water Program Staff. Reporting of non-storm water discharges can be received from the public, City staff, or outside agencies. Clean Water Program staff maintains a bilingual hotline during working hours for reporting storm water discharges at (760) 633-2787 and the Public Works Wastewater Collection Division accepts calls at (760) 753-5018 for sewage related discharges. The public can also notify any City employee (the City Life Guards are often notified of spills), who will promptly notify the appropriate staff in the Clean Water Program or Public Works Department. In cases of incidents occurring after working hours, the City provides a hotline number (760) 633-2922 where citizens can call and report emergency cases of illegal discharges.

Alternatively, a regional public reporting hotline is provided by the County of San Diego at (888) 846-0800. The hotline is answered Monday through Friday, 8:00 a.m. – 5:00 p.m. and provides a voice mail message for 24-hour public access in both English and Spanish.

9.2.1 STORM WATER COMPLAINT RECEIPT PROCEDURES

All calls to the City's storm water hotline are documented and investigated. The City of Encinitas has configured its enterprise GIS system to document and track all complaints as well as complaint driven storm water inspections in a GIS based program called Cityworks. This system supports the entry of service requests for educational inquiries, citizen complaints, inspection results, ad-hoc and cyclical work orders, and report generation. All of the information stored in the system is accessible to any City user through the City's standard desktop GIS application – CityGIS. Refer to Appendix D for a copy of the "Storm Water Complaints Service Request Form." Clean Water Program staff responds immediately, investigates each case, and takes appropriate action to educate the responsible party and/or enforce the City's Storm Water Management Ordinance when applicable. When a warning, Administrative Citation, or Notice of Violation is issued, a case file is automatically created in Cityworks. This new GIS system is a useful tool for tracking all complaints, follow-ups, enforcement and education efforts.

For each complaint investigation, Clean Water staff is prepared to run field screening analysis, sample for laboratory analysis and document the discharge for enforcement proceedings. If immediate clean up is required, the City's Public Works Department maintenance crews are equipped with absorbent materials, vacuum trucks and other equipment to contain large volumes of illegal discharge and/or cleanup of large spills. If the violation or accident involves hazardous materials, the Fire Department is informed and responds immediately. When necessary, the Fire Department calls other responsible agencies or contractors for cleanup and handling of hazardous materials.

All reported incidents are summarized in each year's JURMP Annual Report. If determined to pose a serious threat to human health or the environment, the complaint is reported to the RWQCB in accordance with Section 5.(e) of Attachment B of the Municipal Permit.

9.3 SPILL REPORTING, RESPONSE, AND PREVENTION

The City implements spill prevention, spill response, and reporting mechanisms to prevent, respond to, contain, and clean up all sewage and other spills that discharge to its MS4 from any source.

9.3.1 SEWAGE SPILL PREVENTION

Spill prevention measures outlined below are implemented to prevent overflows, spills, and infiltration of seepage from sanitary sewer systems to the MS4.

Preventive Maintenance Activities

Many spills can be avoided by putting effective preventative measures in place. The sewage collection system consists of over 120 miles of pipeline. The City actively maintains its sewer collection system and MS4 as described in Section 6 of this document and ensures that the following measures are implemented:

- Sanitary sewer surveys
- MS4 surveys
- Thorough, routine preventive maintenance of both systems (annual cleaning of entire sanitary sewer system, and “high priority” sewer lines cleaned at least every two months)
- Dry Weather Monitoring
- Recording of and response to public and City staff violations
- Video inspection of underground systems (televise sewer mains to visually detect any potential problems)
- Replacement and upgrade of sewer pipes as needed
- GIS mapping of sewer and MS4 intersects
- Alarm system at sewage pump stations

Sewer System Management Plan (SSMP)

An effort has been underway since November 2, 2006 to bring our City sewer regulations in compliance with new SWRCB Order No. 2006-003-DWQ. The new permit describes the applicable set of regulations for sewer system maintenance and reporting with respect to Sanitary Sewer Overflows (SSOs). These regulations are met mainly through the development and implementation of a Sewer System Management Plan (SSMP). Many of the program requirements of the SSMP are currently being met or exceeded by the City, and the City will ensure that it implements its SSMP by May 1, 2009, as required by SWRCB Order No. 2006-003-DWQ.

The City will continue to maintain a Sanitary Sewer Overflow Prevention Plan (SSOPP), as required by RWQCB Order No. 96-04, and a Capacity, Management, Operations, and Maintenance (CMOM) program, which will be included as sections within the SSMP. The SSOPP has been designed to prevent or minimize the potential for SSOs. The CMOM describes how the City maintains and operates its sanitary sewer system, as follows:

ILLCIT DISCHARGE DETECTION AND ELIMINATION

- Manage, operate, and maintain at all times the parts of the collection system that the City owns or over which it has operational control
- Provide adequate capacity using citywide sewage flow monitoring programs to convey base flows and peak flows
- Take all feasible steps to stop and mitigate the impact of SSOs
- Provide notification to parties with a reasonable potential to exposure to pollutants associated with the overflow event through the County of San Diego
- Keep records of all maintenance activities

The City is in the process of developing a more comprehensive Fats, Oil, and Grease (FOG) monitoring program. The primary purpose of this program is to reduce the amount of FOG introduced into the sanitary sewer system by consumers and businesses. The City's Municipal Code states that all Food Service Establishments (FSE) which discharge fats, greases and waxes to the sewer system are required to install a grease pre-treatment device on the sewer lateral, which connects their facility to the City's wastewater collection system. The City plans to implement the FOG Program through a multi-phased process of information gathering, education, and targeted code enforcement.

The Municipal Permit also requires that sewage discharges that are caused by blockages or other problems within a privately owned lateral or failing septic systems are dealt with appropriately. If a spill from a private sewer lateral is not being contained and the responsible party fails to take action to repair the lateral, the City can take necessary action to contain the spill, make necessary repairs to the lateral and/or contact a contractor for appropriate maintenance and bill the responsible party. The City's Clean Water Program Staff is tasked with handling all IC/ID citations. If there are sewage spills due to failing septic systems at private residences, the County Department of Environmental Health (DEH) is responsible for responding to these complaints.

9.3.2 SEWAGE SPILL RESPONSE

Spills from the sanitary sewer entering the MS4 may be discovered during routine maintenance activities or observed and reported to the City by the public. All Municipal personnel field crews are equipped with cell phones and can call the Clean Water Hotline at (760) 633-2787 or report sewage spills to the Public Works Wastewater Collection Division at (760) 753-5018. Appropriate agencies (as described in Table 9-1 below) will be informed of all apparent sewage spills which are reported, and these agencies will be responsible for control, containment, and clean up of reported discharges.

Depending on the nature of the spill, either the City of Encinitas or the County DEH takes action to control, contain and clean-up the discharged materials.

ILLICIT DISCHARGE DETECTION AND ELIMINATION

Table 9-1

Responsible Agency for Sewage Spills

Source	Responsible Agency
Leaks and spills from publicly owned collection system	City of Encinitas
Private residence (failing septic systems)	County DEH
Any spill reaching MS4	City of Encinitas

In accordance with RWQCB Order 96-04, the City has developed and implemented a Sanitary Sewer Overflow Response Plan (SSORP) to respond to SSOs and minimize the sewer overflow volume which enters surface waters, and may result in adverse effects on receiving water quality.

Emergency Response Programs for Sewage Spills

There is a 24- hour, on-call, City staff member with the ability to call additional resources, and may call other appropriate agencies if necessary.

Non-Residential (Commercial) Laterals

The City’s Public Works Wastewater Collection Division can be notified of spills at (760) 753-5018. Additionally, the City’s Clean Water Program accepts complaint calls for commercial lateral discharges at (760) 633-2787. For any incidents that may occur after hours, callers will be directed to contact the City’s answering service at (760) 633-2922. Based on the urgency, City crews are dispatched immediately, work orders are prepared, and each case is tracked in the City’s GIS based system.

Wastewater Collection Agencies

The City has implemented the following remedial actions to the extent that they are applicable to the discharge:

- Interception and rerouting of sewage flows around the sewage line failure
- Vacuum truck recovery of SSOs and wash down water
- Cleanup of debris of sewage origin at the overflow site
- Inform the responsible party to cease and desist, clean and abate, and repair the problem to ensure that the incident will not occur again.

9.3.3 OTHER SPILL PREVENTION AND MITIGATION PROCEDURES

The City coordinates spill prevention, containment, and response activities throughout all appropriate departments, programs, and agencies so that maximum water quality protection is available at all times.

Spills are prevented and mitigated through the implementation and enforcement of BMPs, which are described for the Development Planning, Municipal, Construction, Industrial and Commercial, and Residential components in sections 4, 5, 6, 7 and 8 respectively.

Municipal personnel receive training regarding SSOs, as described in Section 10. The City has experienced a general downward trend in the number of SSOs reported, which has been facilitated by the City's well-managed wastewater collection system.

9.3.4 HAZARDOUS WASTE DISPOSAL

The City of Encinitas facilitates the proper disposal of used oil, toxic materials, and other HHW through education and providing a HHW collection program to residents. The current program consists of agreements with the cities of Poway and Vista that allow Encinitas residents to dispose of their HHW at permanent collection facilities in their cities. The program includes residential door-to-door HHW pickup for a nominal collection fee. Further information can be found in Section 8.4. and Section 10 of this document.

The City also has a used oil recycling program which consists of a network of certified automotive waste recycling centers throughout the city. These facilities accept a range of used products including oil, oil filters, batteries and antifreeze. A major part of this program is the dissemination of educational information regarding the benefits of, and opportunities for pollution prevention.

9.3.5 SPILL REPORTING

The City reports all SSOs online using the California Integrated Water Quality Management System (CIWQS) database, as required by SWRCB Order No. 2006-003-DWQ. Initial reports are sent to the CIWQS within three days, and final, certified reports are sent within 15 days. The City will report all SSOs that are at least 1,000 gallons, and SSOs that cause a beach closure (regardless of volume) to the CIWQS no later than 2 hours. All IC/IDs will be reported annually in the City of Encinitas JURMP Annual Report, which will include specific IC/IDs and their resolution, inspections conducted, and enforcement actions taken. If a Notice of Violation is issued by the Clean Water Program, copies of all NOV's will be sent to the Regional Board. The City follows additional reporting requirements specific to sewage spills which are described below:

County of San Diego Department of Environmental Health (DEH)

California Health and Safety Code Section 5411.5 require sewage spills to be immediately reported to the DEH 24 hours a day. Reports can be called in to the County's Environmental Health Specialist at (858) 495-5579. After hours, reports will be directed to the County Communications office at (858) 565-5255, and an on-call Environmental Health Specialist will be paged immediately.

County of San Diego Parks Department

For discharges which immediately threaten the San Elijo Lagoon, reports can be called into

ILLICIT DISCHARGE DETECTION AND ELIMINATION

the County’s Parks Department at (858) 495-5162.

State Office of Emergency Services (OES)

California Water Code Section 13271 and the California Code of Regulations Section 2250 require that the OES be notified of sewage spills of 1,000 gallons or more by telephone at (800) 852-7550.

Regional Water Quality Control Board (RWQCB)

As required in the Permit, the City of Encinitas will provide oral notification to the RWQCB of all IC/IDs within its jurisdiction that are determined to pose a threat to human or environmental health within 24 hours of the discovery of non-compliance. Oral notification will be followed up by a written report to the RWQCB within five days of the incidence of non-compliance. Order No. 96-50 requires that dischargers report to the RWQCB all sewage spills of at least 1,000 gallons, or any spills to surface waters, within 24 hours by fax at (858) 571-6972 or telephone at (858) 467-2952. Surface waters include rivers, streams, ephemeral streams, lagoons, the ocean, dry arroyos, and storm drains. In all instances, the discharger must fax a Sanitary Sewer Overflow (SSO) Report Form to the RWQCB within five days of the spill. The completed SSO form must also be faxed to the DEH. A quarterly report of all sewage spills, including those not meeting the criteria stated above, must also be submitted electronically to the RWQCB.

The City will comply with the sewage spill reporting requirements outlined in Table 9-2 below:

Table 9-2

Summary of Sewage Spill Reporting Requirements

Spill Volume	Criteria	Agency Receiving Report	Reporting Timeframes
Any	Spills to waters of the State	SWRCB online RWQCB DEH	Immediate, but no later than 2 hours after becoming aware of the discharge
Any	Municipal Permit non-compliance threatening human or environmental health	RWQCB SWCRB	24 hours verbal and 5 days written 3 days (initial)
Any	Mitigated spills (absorbed, cleaned up, or captured)	DEH	24 hours

Table 9-2

Summary of Sewage Spill Reporting Requirements

Spill Volume	Criteria	Agency Receiving Report	Reporting Timeframes
Any	Unmitigated spills to areas with potential public contact	DEH	Immediate, but no more than 2 hours after becoming aware of the discharge
Any	Unmitigated spills to areas without potential public contact	DEH	24 hours
>1000 gallons	Anywhere	OES RWQCB DEH SWRCB online	2 hours 2 hours 2 hours 3 days (initial)

9.4 URBAN RUNOFF MONITORING

The Urban Runoff Monitoring Program will incorporate MS4 outfall monitoring, source identification monitoring, and the Dry Weather Monitoring Program.

The Copermittees are in the process of developing regional guidance for the MS4 outfall monitoring and source identification monitoring programs. Once the regional guidance is prepared, the City will work with other jurisdictions in its watershed to develop tailored programs for its jurisdiction. Details of these programs are to be submitted to the RWQCB by July 1, 2008.

9.4.1 MS4 OUTFALL MONITORING

Regional guidance for the MS4 outfall monitoring program is being developed by the Copermittees, which will characterize pollutant discharges from MS4 outfalls in each watershed during wet and dry weather. The program will include the following:

- Rationale and criteria for selection of outfalls
- Type of samples collected, including pollutants causing or contributing to violations of water quality standards within the watershed

Once the MS4 outfall monitoring program has been developed, the City will commence MS4 outfall monitoring during the 2007-2008 monitoring year.

9.4.2 SOURCE IDENTIFICATION MONITORING

Regional guidance for the source identification monitoring programs is being developed by the Copermittees, which will aim to identify sources of discharges of pollutants causing the priority water quality problems within each watershed. This program will include the following:

- Focused monitoring which moves upstream into each watershed as necessary to identify sources.
- Use of source inventories and “Threat to Water Quality” analysis to guide monitoring efforts

Once the source identification monitoring program has been developed, the City will commence monitoring no later than the 2008-2009 monitoring year.

9.4.3 DRY WEATHER FIELD SCREENING AND ANALYTICAL MONITORING

The Dry Weather Field Screening and Analytical Monitoring Program is a crucial part of the City’s Urban Runoff Monitoring Program (Dry Weather Monitoring Program). The City has been conducting dry weather monitoring each year since 1996. The updated requirements of the Dry Weather Monitoring Program component in the Municipal Permit are very similar to those in the previous Municipal Permit (Order 2001-01). New requirements included in the new Municipal Permit include a more detailed trash assessment component and requires follow-up investigations to be conducted within two business days of receiving results.

There are three components to the Dry Weather Monitoring Program:

- Field observations (site description and qualitative observations)
- Field screening monitoring (testing of sample while at site and flow estimation)
- Analytical monitoring (performing further tests of sample later at a laboratory)

The City has previously developed a program to detect and eliminate IC/IDs to the MS4 using frequent, geographically widespread dry weather discharge monitoring and follow-up investigations, which includes the following:

- Selecting monitoring stations
- Obtaining an MS4 map
- Developing Dry Weather Monitoring Program procedures
- Conducting field sampling, testing, and further investigations

The City updated its program to reflect the changes in the Municipal Permit, and these changes are discussed in the following sub-sections. Results of the Dry Weather Monitoring Program are included in the JURMP Annual Reports submitted to the RWQCB.

9.4.3.1 DRY WEATHER FIELD SCREENING AND ANALYTICAL MONITORING STATIONS

During the past permit cycle, the City has conducted dry weather field screening at an average of 37 sites per year. On average, the City has also visited another 13 dry sites per year, with the total number of sites visiting varying from 48 to 52 per year. To make more efficient use of its

resources, the City has adjusted its Dry Weather Monitoring Program such that continually dry sites do not need to be visited each year. Sites that have never had ponded or flowing water have been removed from the site list. Sites that have been regularly dry but had have had ponded or flowing water at least once have been changed to alternate sites.

The City has also assessed whether any existing sites should be relocated and whether any new sites are necessary to provide better coverage of key areas of the MS4. This process relied on review of historical data from past monitoring programs and review of MS4 and land use data. GIS data files of the City's drainage system, watersheds, major water bodies, current dry weather monitoring locations, and approximate locations of potential sources of pollutants evaluated to assist in this process. City Clean Water Program staff, accompanied by Public Works maintenance staff familiar with the storm drain conveyance system, made field visits to assess the suitability of 29 potential new sites. This process included locating relevant access points and then checking for the presence of ponded or flowing water, assessing accessibility, and recording GPS coordinates or the GIS ID of the relevant storm water facility. As a result of this process, 12 suitable locations have been identified and added to the City's lists of dry weather monitoring sites. Tables 9-3 and 9-4 present the final lists of primary and alternate monitoring locations, respectively. Table 9-5 lists the modifications made to the City's dry weather sites, both changes to previously existing sites and additions of new sites.

Overall, the selected stations meet the following criteria:

- Downstream of any sources of suspected illicit discharge or illicit activity
- Located at the farthest manhole possible or other accessible location downstream in the portion of the MS4 about which the site is intended to provide data
- Selected based on an assessment of hydrological conditions, total drainage area of the site, traffic density, age of the structures or buildings in the area, history of the area, and upstream land use types

9.4.3.2 MS4 MAP

The City has developed a labeled map of its entire MS4 that includes MS4 facilities, dry weather monitoring stations, and drainage basins (Appendix E). When field staff finds inaccuracies in the map during dry weather monitoring, the inaccuracies will be reported to the City's GIS Department so that updates can be made. The need for updates to the map will be assessed at least annually, and at that time updates will be made where necessary.

9.4.3.3 SAMPLING FREQUENCIES

Dry weather monitoring is conducted at least once at each primary station where flowing or ponded water is observed during the dry season (May 1 – September 30). An alternate station is visited instead when no flow is observed at the primary stations. Dry weather monitoring is only conducted when there has been at least 72 hours of dry weather prior to the time of the sampling. Grab samples are collected for laboratory analysis at a minimum of 25 percent of the stations where water is present.

9.4.3.4 SAMPLING PROCEDURES

Field screening and analytical sampling is conducted according to the procedures outlined in Appendix E (Dry Weather Monitoring Sampling Manual). When primary sites are dry and cannot be monitored, alternate sites are substituted to replace them. Additional field reference materials are available at all times including MS4 maps, contact numbers, and field equipment operating manuals and procedures. All field screening and laboratory analytical monitoring results are recorded on a Dry Weather Monitoring Field Datasheet (Appendix E). This datasheet is based on a standard form developed by the Dry Weather Monitoring Workgroup, and it may be modified in the future if directed by the workgroup.

Field screening includes the following major components:

Qualitative Observations

Qualitative observations at the site are recorded on the Dry Weather Monitoring Field Data Sheet.

Trash Assessment

Visual estimates of the amount of trash present at the site are recorded on the Trash Assessment Form, which is attached in Appendix E. The form will be completed in accordance with the regional standards for trash assessment submitted to the RWQCB by the Regional Monitoring Workgroup in the fall of 2007.

Flow Estimation

At sites where flowing water is observed, an estimate of the flow rate is recorded on the Dry Weather Monitoring Field Data Sheet.

Field Water Quality Analyses

Grab samples are collected if flowing or ponded runoff is observed. The collected water is analyzed in the field for the following constituents:

- Specific conductance (calculate estimated Total Dissolved Solids)
- Turbidity
- pH
- Reactive Phosphorus (Orthophosphate phosphorus)
- Nitrate Nitrogen
- Ammonia Nitrogen
- Surfactants (MBAS)*
- Temperature**

*Surfactant concentration is measured as Methylene Blue Active Substances (MBAS).

**Although the Municipal Permit does not require temperature to be recorded, the City will continue to record this parameter for consistency.

Field analytical methods are described further in Appendix E.

Analytical Monitoring

At a minimum of 25 percent of the sites where ponded or flowing water is observed, grab samples are collected and submitted to a California Department of Health Services certified

ILLICIT DISCHARGE DETECTION AND ELIMINATION

laboratory for analysis of the following constituents using the standard methods presented in Appendix E, which are consistent with 40 CFR part 136:

- Total hardness
- Oil and grease
- Diazinon and Chlorpyrifos
- Cadmium (Dissolved)
- Lead (Dissolved)
- Zinc (Dissolved)
- Copper (Dissolved)
- *Enterococcus* bacteria*
- Total Coliform bacteria*
- Fecal Coliform bacteria*

*Colilert and Enterolert may be used as alternative methods, with fecal coliform determined by calculations. A conversion factor of 1.2 can be used to calculate estimates from *E. coli* to fecal coliform.

Beginning May 1, 2008, the City will begin conducting dry weather monitoring in accordance with the procedures outlined above. The City collects data during the period of May 1 – September 30 each year and reports the results of the dry weather monitoring in its JURMP Annual Report.

A follow-up investigation is conducted at sites where dry weather monitoring results indicate elevated pollutant levels and potential IC/IDs upstream. Numeric action levels and best professional judgment (described in Section 9.5) are used to interpret the field screening results.

9.5 FOLLOW-UP AND ENFORCEMENT

All potential IC/IDs are investigated and eliminated in a timely manner after the City is notified of their occurrence. IC/IDs are mainly identified through public complaints, referrals, routine inspections of municipal, industrial and commercial businesses facilities (inspection procedures are provided in Section 6 and Section 7) and the Dry Weather Monitoring Program. Procedures for follow-up investigations related to inspections and public complaints are discussed earlier in this section. Dry Weather Monitoring Program data is compared to the regionally developed actions levels, which are summarized below and listed in more detail in Appendix E. The Dry Weather Monitoring Workgroup may update these action levels in the future, and the City will follow the most current standards.

Numeric Action Levels

Numeric action levels are used as the primary approach for interpreting pH, orthophosphate, nitrate, ammonia, surfactants, oil and grease, diazinon, chlorpyrifos, total coliform, fecal coliform, and enterococcus analytical results (Appendix E).

California Toxics Rule

The California Toxics Rule (CTR) Criteria Maximum Concentration (CMC) is used as action level for dissolved trace metals, including cadmium, copper, lead, and zinc. The CTR

equations provide benchmarks based on the total hardness of the sampled water, with the action levels increasing as hardness increases.

Best Professional Judgment

Best professional judgment is used as the primary approach for interpreting turbidity, conductivity, and water temperature. Best professional judgment is also the secondary approach for interpreting the results of all other field and laboratory analyses. Best professional judgment may indicate that results which exceed certain action levels or are statistical outliers may be due to natural or background factors.

When action level exceedances are noted, the City will follow up within two business days for further investigation or provide a rationale for why the discharge does not pose a threat to water quality and does not require follow-up. Procedures for follow-up investigations are described below.

9.5.1 FIELD INVESTIGATION PROCEDURES

Field Investigation Preparation

Before leaving for an investigation, staff assembles needed information and equipment. Staff is prepared to conduct field screening analyses, sample for laboratory analysis, and document the discharge for any future enforcement. A list of required equipment is given in Appendix E.

Field Investigation Procedure

An immediate source identification investigation is initiated if visual and/or analytical evidence of gross contamination is present at a site during a routine investigation. Examples of gross contamination include substantial petroleum sheens, constituent concentrations well above action levels, abnormal colors or odors not attributable to natural site conditions, or evidence of a sewage release; such conditions would typically be considered a threat to human health or the environment.

When Dry Weather Monitoring Program results exceed action levels, the City either conducts an investigation to identify the source of the discharge or provides rationale for why the discharge does not pose a threat to water quality and does not need further investigation. When further investigation is needed, the City initially confirms the results by resampling within two business days of being informed of the exceedance. For field screening, this is within two business days of the initial test. The overall time frame for laboratory analytical results depends on the time that results are received from the lab, but investigations will be conducted within two days of receiving the data, where applicable. The results of the follow-up sampling are used to guide further upstream investigations where necessary. Sites with exceedances will continue to be screened in subsequent years.

9.5.2 SOURCE INVESTIGATION PROCEDURES

When follow-up sampling confirms continued exceedance of action levels, the City will conduct further investigation to identify the source of the exceedance. If there are no exceedances during a follow-up visit, or the exceedance is determined that it is not the result of an IC/ID, an additional investigation will not be conducted. As noted earlier, when gross contamination is

ILLICIT DISCHARGE DETECTION AND ELIMINATION

observed during a routine visit, an immediate upstream source investigation is initiated. Prior to beginning an upstream source investigation, field staff review previous dry weather monitoring reports and consult MS4 maps to plan the investigation.

Dry weather flows are generally traced from the site in an upstream direction along the conveyance system. Water samples are collected at upstream confluences for analyses of the constituent(s) being tracked. All samples are documented. If the samples are being submitted for laboratory analysis, they are delivered within the appropriate holding time, and all appropriate chain-of-custody procedures are followed. Photos and GPS coordinates are taken to aid in documentation and in potential enforcement procedures.

For dry weather flows that are traced to a specific source, a sample of water from the source is collected at the curb or public right of way and may be submitted for analysis. Investigators take care to ensure the sample includes only water from the specific source and has not commingled with other discharges. Where appropriate and feasible, field staff may also contact the party responsible for the discharge directly regarding the IC/IDs and potential BMPs. IC/IDs are required to be eliminated; relevant procedures employed by the City are listed in Section 9.5.3 and Section 9.5.4.

In some cases, in which no above ground source can be located, it may be determined that a below ground source such as an illicit connection or groundwater seepage may be the source of the water. In other cases, it may not be clear whether a potential source is connected to the downstream conveyance. The following techniques may be used by the City where appropriate:

Review of Plans

As-built drawings for the area of concern may be obtained to check how various lines were connected. Review of such plans is a useful first step, but plan review alone should usually not be relied upon to establish that an illicit connection is not present.

Dye Testing

Dye testing is useful to confirm hydraulic connections between the potential source and the location downstream. Fluorescent dye is discharged at the source of the potential IC/ID and is monitored downstream. This method is used only when necessary because the public and appropriate regulatory agencies in the surrounding area need to be informed of the cause of the water discoloration.

Smoke Testing

Smoke testing can be used only on underground storm water conveyance facilities, to determine potential hydraulic connections between the source and downstream location. Again, the public and appropriate agencies need to be informed of the cause for smoke coming from the storm drain system.

Video Monitoring

Mobile video cameras may be used to record observations in an underground storm water conveyance facility. The public and regulatory agencies generally do not need to be informed prior to initiating this kind of investigation.

Confined Space Entry

In some cases underground conveyances are large enough that a confined space trained crew may investigate the subject section of pipe or culvert instead of using video monitoring. All applicable health and safety regulations must be followed in this kind of investigation. The public and regulatory agencies generally do not need to be informed prior to initiating a confined space entry.

Potential Sewage IC/IDs

Further testing of suspected sewage-related flows is conducted when visual and odor observations do not adequately confirm the presence of sewage.

- Ammonia - Sewage frequently contains ammonia levels of 30 mg/L or greater. This can be measured with an inexpensive field screening kit.
- Bacteria - Sewage generally has high levels of total and fecal coliforms and *Enterococci*. Sewage treatment plants and many laboratories routinely conduct these indicator analyses. Water samples must be collected in sterile containers provided by the laboratory and delivered within the appropriate holding time.

9.5.3 ELIMINATION OF IC/IDs

Action is taken to eliminate all detected IC/IDs and their sources as soon as possible after detection. IC/IDs that pose a serious threat to public health or the environment are eliminated immediately. IC/IDs that are not deemed to pose serious threats to public health or the environment are eliminated through an escalating series of enforcement actions, which are described in Section 9.5.4.

Remove Illicit Connections

The City ensures that the violator takes appropriate action to disconnect, block, stop, or divert drainage facilities and pipe connections that are determined to discharge pollutants to the MS4. Appropriate actions may include the following:

- Plug sinks and drains that are discharging illicit materials to the storm drain system
- Disconnect all drainage pipes found to discharge illicit pollutants to the storm drain system
- Dispose of illicit materials via the sanitary sewer or other appropriate disposal or storage methods
- Divert illicit discharges to the sanitary sewer or treat on-site

In some cases, special permits from the local wastewater authority are needed before material can be discharged to the sanitary sewer system.

Discontinue Illicit Discharges

As applicable to each individual circumstance, the City ensures that responsible parties implement the procedures outlined below to eliminate discharges that transport pollutant materials to the MS4.

- Eliminate the source of the discharge
- Remove pollutant materials from the site

- Prevent pollutant materials from coming in contact with the discharge
- Contain potential illicit discharges on site for treatment or proper disposal

9.5.4 ENFORCEMENT

The City implements and enforces its ordinances, orders, or other legal authority to prevent illicit discharges and connections to its MS4. Many illicit connections and illegal discharges can be eliminated through voluntary compliance. Most people are readily willing to change their behaviors when they learn that their actions are detrimental to the environment. The City will utilize a variety of options under a flexible and graduated system of enforcement actions, emphasizing voluntary return to compliance when possible. Field staff will be trained to evaluate each situation and within certain statutory and departmental guidelines, choose the appropriate enforcement mechanism. Voluntary return to compliance may be used for first-time, minor violations, whereas more serious violations or continued non-compliance may warrant a more aggressive and enforcement oriented approach. Increasingly severe enforcement actions will be taken until compliance is achieved or the illicit connection or illegal discharge is otherwise eliminated.

In cases where further enforcement is needed, the typical progressive enforcement procedures that the City will implement are outlined in Section 2 of this JURMP document. The nature of the City's enforcement approach is determined on a case-by-case basis and is based on factors such as the severity of the violation, the threat to human or environmental health, site-specific circumstances, and past compliance history. If the situation is determined to pose an immediate risk to public health or the environment, the City may coordinate with other agencies or teams that are specially trained to assess and mitigate emergency situations (e.g., those involving hazardous wastes/materials, etc.). The discharge is also reported to the RWQCB as required by the Municipal Permit.

Enforcement Documentation

Investigators will carefully document non-compliant activities during every investigation in case information is needed for future administrative hearings or court cases. In preparing an appropriate file for referral to a prosecuting agency, the City will include all information from the site investigation, any analytical results, records or previous violations or complaints and overall compliance history, when available. The file should include the following, when available:

- Chronology of events
- Case summary
- Time and expense log
- Inspection reports
- Complaints
- Correspondence
- Maps and diagrams
- Reports from regulatory agencies
- Explanation of the violations
- Emergency incident reports
- Lab results
- Chain-of-custody for samples
- Permit applications
- Sampling plans

- Photographs
- Other supporting documents

9.6 ILLICIT DISCHARGE DETECTION AND ELIMINATION COMPONENT EFFECTIVENESS ASSESSMENT

Tracking of numbers of public complaints received and analysis of historical Dry Weather Monitoring Program data are among the approaches used to assess the effectiveness of the Illicit Discharge Detection and Elimination component. Further details can be found in Section 13 of this JURMP document.

9.7 PROGRAM REVIEW AND MODIFICATION

Section 14 identifies the locations of changes made to the JURMP to meet the requirements of the Municipal Permit. Any future modifications to this JURMP component will be described in JURMP Annual Reports.

TABLE 9-3
DRY WEATHER MONITORING STATIONS

Site ID	Location	Conveyance	Primary Land Use	Secondary Land Use	Hydrologic Subarea	Latitude	Longitude
CBS-1	SEJPA	Concrete Channel	Residential	Industrial	904.61	33.01361	-117.27306
CBS-2	Highway 101 Channel	Concrete Channel	Commercial	Residential	904.61	33.01667	-117.28139
CBS-4	Cardiff Cove at Cape Sebastian	Outlet	Residential	None	904.61	33.00972	-117.26722
CBS-7	Woodlake and Evergreen	Earthen Channel	Residential	Commercial	904.61	33.03111	-117.28250
CBS-8	Close to 1002 Woodgrove in HOA park. West of Big Canyon Terrace Rd.	Headwall	Residential	Parks	904.61	33.03062	-117.26909
CBS-9	North of Wales Drive, east of Lake Drive	Catch basin	Residential	None	904.61	33.08005	-117.29813
ENC-1	Moonlight Beach, Cottonwood Creek	Outlet	Commercial	Residential	904.51	33.04806	-117.29861
ENC-10	Cottonwood Creek Channel @Del Taco	Outlet	Commercial	Residential	904.51	33.04778	-117.28583
ENC-11	Requeza Channel @ Mossy Chevrolet	Natural Creek	Commercial	Residential	904.51	33.04722	-117.28583
ENC-12	Cottonwood Creek Channel @ SDUHSD	Outlet	Residential	Commercial	904.51	33.04861	-117.27778
ENC-15	Encinitas Ranch Detention Basin 2X60"	Outlet	Residential	Commercial	904.51	33.05500	-117.27833
ENC-17	Sunshine Nursery (NE corner ENC/QGD)	Outlet	Residential	Commercial	904.51	33.04778	-117.27833

TABLE 9-3
DRY WEATHER MONITORING STATIONS

Site ID	Location	Conveyance	Primary Land Use	Secondary Land Use	Hydrologic Subarea	Latitude	Longitude
ENC-18	Puebla Street and La Mirada Street intersection	Manhole	Residential	None	904.51	33.06155	-117.28860
ENC-3	Hwy 101 and B Street	Natural Creek	Commercial	Residential	904.51	33.04833	-117.29417
ENC-4	Second Street	Outlet	Commercial	Residential	904.51	33.04806	-117.29500
ENC-5	Cottonwood Creek Park South	Outlet	Commercial	Residential	904.51	33.04861	-117.29000
ENC-6	Moonlight Creek	Natural Creek	Residential	None	904.51	33.04889	-117.29000
ENC-8	Third and B Street	Natural Creek	Commercial	Residential	904.51	33.04833	-117.29611
ENC-9	Enc Blvd @ Saxony/Oggi's Pizza	Concrete Channel	Commercial	None	904.51	33.04806	-117.28583
ESC-1	Brookside Lane @ Copper Creek	Natural Creek	Residential	Open	904.61	33.05389	-117.21639
ESC-2	Lone Jack Road @ Stratford Knoll	Outlet	Residential	None	904.61	33.05139	-117.22861
ESC-5	820 Calle Santa Cruz, south of street	Outlet	Rural Residential	None	904.61	33.05334	-117.22926
LCS-1	Garden View @ El Camino Real	Natural Creek	Commercial	Residential	904.51	33.05861	-117.26306
LCS-2	Leucadia Boulevard @ El Camino Real	Natural Creek	Commercial	None	904.51	33.06806	-117.26222
LCS-4	Mountain Vista @ El Camino Real	Catch basin	Commercial	Residential	904.51	33.05194	-117.26056
LCS-5	Via Molena @ El Camino Real	Manhole	Commercial	None	904.51	33.04889	-117.26028

TABLE 9-3
DRY WEATHER MONITORING STATIONS

Site ID	Location	Conveyance	Primary Land Use	Secondary Land Use	Hydrologic Subarea	Latitude	Longitude
LCS-7	Grand Avenue @ El Camino Real	Concrete Channel	Commercial	None	904.51	33.05583	-117.26250
LCS-8	200 Turner Avenue	Manhole	Residential	Parks	904.51	33.04693	-117.25507
LUC-1	Ponto Detention Basin	Outlet	Residential	Commercial	904.51	33.08278	-117.30944
LUC-10	Highway 101 @ Avocado	Manhole	Commercial	Residential	904.51	33.07522	-117.30565
LUC-3	Normandy @Pireaus	Concrete Channel	Residential	Commercial	904.51	33.06861	-117.29389
LUC-6	Pireaus Detention Basin	Concrete Channel	Residential	Open	904.51	33.08167	-117.29667
LUC-8	Quail Hollow Drive, between Paseo Elegante and Paseo Primavera	Manhole	Residential	Parks	904.51	33.07496	-117.28397
LUX-2	Sage Canyon Drive	Natural Creek	Residential	Commercial	904.61	33.02833	-117.25528
LUX-3	In between 927 and 935 Elmview Dr.	Manhole	Residential	None	904.61	33.03404	-117.25972
RSF-1	Encinitas Blvd @ Rancho Santa Fe	Outlet	Commercial	Residential	904.61	33.03750	-117.23861
RSF-4	La Bajada Dip	Natural Creek	Rural residential	Commercial	904.61	33.03444	-117.23583
SEL-2	MacKinnon Ranch Road	Outlet	Residential	None	904.61	33.01333	-117.27167
SEL-3	Mira Costa College Detention Basin	Outlet	Residential	Parks	904.61	33.01639	-117.25694

TABLE 9-4

ALTERNATE DRY WEATHER MONITORING STATIONS

Site ID	Location	Conveyance	Primary Land Use	Secondary Land Use	Hydrologic Subarea	Latitude	Longitude
CBS-3N	Norfolk Dr. @ Glen Park (North Pipe)	Outlet	Residential	Commercial	904.61	33.01861	-117.28111
CBS-3S	Norfolk Dr. @ Glen Park (South Pipe)	Outlet	Residential	None	904.61	33.01861	-117.28111
CBS-5	Plastino Building	Outlet	Commercial	None	904.61	33.01444	-117.27972
ENC-14	Via Julita	Outlet	Residential	None	904.51	33.05194	-117.29167
ENC-16	Westlake	Catch basin	Commercial	None	904.51	33.04722	-117.27917
ENC-2	Requeza @ Rancho Coastal Humane	Outlet	Residential	Commercial	904.51	33.04278	-117.28500
ENC-7	Saxony Place	Outlet	Residential	Commercial	904.51	33.05528	-117.28889
ESC-3	Double LL Ranch Road, between Lone Jack Road and Via Monte Verde in creek at box culvert	Natural Creek	Rural residential	None	904.61	33.06547	-117.21742
ESC-4	Private road, south of Bella Colina and east of Lone Jack Road, in portion of undergrounded stream (pipe)	Catch basin	Rural residential	None	904.61	33.05873	-117.21570
LCS-3	Calle Acervo	Natural Creek	Residential	None	904.51	33.06111	-117.24056
LCS-9	Western intersection of Orchard Wood Road and Orchard Glen Circle	Manhole	Residential	None	904.51	33.06486	-117.25260
LUC-4	Fox Point Detention Basin	Outlet	Residential	Agricultural	904.51	33.07000	-117.28306
LUC-7	Quail Hollow @ Saxony	Natural Creek	Residential	Open	904.51	33.07556	-117.28472

TABLE 9-4**ALTERNATE DRY WEATHER MONITORING STATIONS**

Site ID	Location	Conveyance	Primary Land Use	Secondary Land Use	Hydrologic Subarea	Latitude	Longitude
LUC-9	Leucadia Village, between Rockport Court and Nantucket Court	Manhole	Residential	None	904.51	33.08005	-117.29814
LUX-1	East Manchester @ El Camino Real	Natural Creek	Residential	Commercial	904.61	33.02167	-117.25361
SEL-5	Manchester Avenue at Strawberry Fields	Earthen Channel	Agricultural	None	904.61	33.01407	-117.25964

TABLE 9-5

SUMMARY OF DRY WEATHER SITE LOCATION MODIFICATIONS

Site ID	Action Taken	Comment
ESC-3	Added as new alternate site	Added to provide additional coverage of the area upstream of ESC-1; development in this area is low density, so added as alternate.
ESC-4	Added as new alternate site	Added to provide additional coverage of the area upstream of ESC-1; development in this area is low density, so added as alternate.
LCS-9	Added as new alternate site	Added to provide additional coverage of area of LCS-2, designated alternate because water is often ponded in this area.
LUC-9	Added as new alternate site	Added to provide additional coverage of MS4 in Leucadia Basin; has relatively small drainage area so designated as alternate.
CBS-8	Added as new primary site	Added to provide additional coverage of the area upstream of CBS-1
CBS-9	Added as new primary site	Added to provide additional coverage of the area upstream of CBS-4
ENC-18	Added as new primary site	Added to replace dry site ENC-13
ESC-5	Added as new primary site	Added to provide better coverage of the area upstream of ESC-2
LCS-8	Added as new primary site	Moved site LCS-6 east to this location to isolate flows from upstream residential areas more effectively. Renamed site to clarify that a change in location occurred.
LUC-8	Added as new primary site	Replacement for dry site LUC-7
LUC-10	Added as new primary site	Replacement for dry site LUC-5
LUX-3	Added as new primary site	Added to provide additional coverage of the area upstream of LUX-2
CBS-3N	Designated as alternate site	Ponded or dry most years, and Site CBS-2 is located just downstream of this site
CBS-3S	Designated as alternate site	Ponded or dry most years, and Site CBS-2 is located just downstream of this site
CBS-5	Designated as alternate site	Dry during most of the visits in the past five years, but may have some potential to have ponded water or small flows of water

TABLE 9-5**SUMMARY OF DRY WEATHER SITE LOCATION MODIFICATIONS**

Site ID	Action Taken	Comment
ENC-14	Designated as alternate site	Dry during most of the visits in the past five years, but may have some potential to have ponded water or small flows of water
ENC-16	Designated as alternate site	Dry during most of the visits in the past five years, but may have some potential to have ponded water or small flows of water
ENC-2	Designated as alternate site	Dry during most of the visits in the past five years, but may have some potential to have ponded water or small flows of water
ENC-7	Designated as alternate site	Dry during most of the visits in the past five years, but may have some potential to have ponded water or small flows of water
LCS-3	Designated as alternate site	Small drainage area, ponded each of the last four years
LUC-4	Designated as alternate site	Small drainage area, ponded each of the last four years
LUC-7	Designated as alternate site	Dry during most of the visits in the past five years, but may have some potential to have ponded water or small flows of water
LUX-1	Designated as alternate site	Dry during most of the visits in the past five years, but may have some potential to have ponded water or small flows of water
SEL-5	Designated as alternate site	Dry during most of the visits in the past five years, but may have some potential to have ponded water or small flows of water
CBS-6	Removed from site list	Dry every visit since 2003
ENC-13	Removed from site list	Dry every visit since 2003
LOR	Removed from site list	Outside City jurisdiction, County of San Diego maintains a dry weather site at this same location (County Site CAR09)
LCS-6	Removed from site list	Moved site to east and renamed as LCS-8

TABLE 9-5**SUMMARY OF DRY WEATHER SITE LOCATION MODIFICATIONS**

Site ID	Action Taken	Comment
LUC-2	Removed from site list	Dry every visit since 2003
LUC-5	Removed from site list	Dry every visit since 2003
RSF-2	Removed from site list	Dry every visit since 2003
RSF-3	Removed from site list	Outside City jurisdiction, County of San Diego maintains a dry weather site at this same location (County Site CAR03)
SEL-1	Removed from site list	Dry every visit since 2003