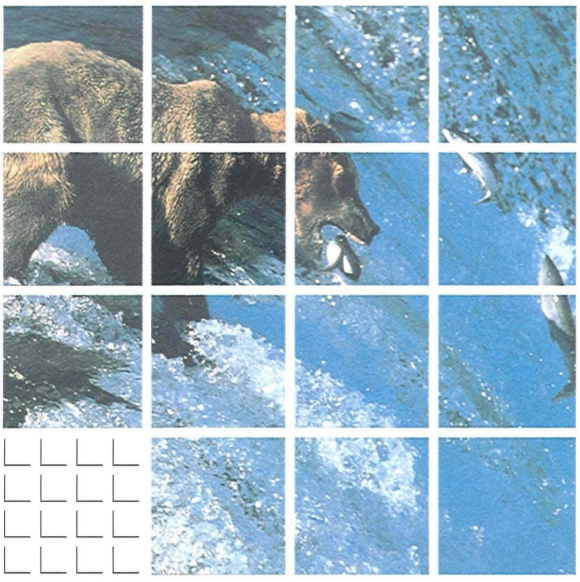
E N T R I X

METALS TRANSLATOR STUDY
SANTA CLARA RIVER ESTUARY

VENTURA WATER RECLAMATION FACILITY
NPDES PERMIT NO. CA0053651, CI-1822

Prepared for:

CITY OF SAN BUENAVENTURA
Ventura, CA



Prepared by:

ENTRIX, INC.
Ventura, CA

Project No. 325402

June 27, 2002

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The City of San Buenaventura's Ventura Water Reclamation Facility (VWRF) operates under waste discharge requirements contained in Order No. 00-143, which also serves as the National Pollutant Discharge Elimination System (NPDES) permit (CA0053651).

The Order provided effluent limits based upon levels protective of saltwater aquatic life. The California Toxics Rule (CTR) (40 CFR Part 131) specifies that freshwater criteria apply at locations where salinities of one part per thousand (ppt) and below exist 95% or more of the time, and marine water criteria apply at locations where salinities of ten ppt and above exist 95% or more of the time. At locations where salinities fall between one and ten ppt, such as the Santa Clara River Estuary, the more stringent of fresh and marine water criteria apply, unless the Environmental Protection Agency (EPA) approves the application of the freshwater or saltwater criteria based on an appropriate biological assessment. In describing the application of a biological assessment, the CTR states that "in evaluating appropriate data supporting the alternative set of criteria, EPA will focus on the species composition as its preferred method".

On November 12, 1999, the City submitted Phase 3 of the NPDES Limit Achievability Study, which addressed the applicability of freshwater aquatic standards for the VWRF discharge. The Los Angeles Regional Water Quality Control Board (Regional Board) found that Phase 3 of the City's study was incomplete. The characterization of the estuary was utilized to determine the applicability of freshwater or saltwater criteria was based on sampling the biotic community and salinity data taken from two sampling stations. Further, although the majority of organisms found were freshwater, a marine fish species was present. Finally, discussion between the Regional Board and U. S. Fish and Wildlife staff indicated that the species composition may be more heterogeneous than the Phase 3 study findings imply. The Regional Board desired a better-developed and in-depth salinity profile of the estuary which included documentation of the discharge plume and data from multiple sampling points to monitor salinity over time which would account for seasonal and yearly variations.

Accordingly, the Regional Board proposed a more thorough study, conducted under the guidance of the Regional Board's staff, to address the applicability of the freshwater standards, as follows:

- Bioassessment, including an analysis of the community structure of the instream macroinvertebrate assemblages at a minimum of two sites;
- Salinity Profile Study, including multiple sampling points representative of the entire estuary, and diurnal fluctuations;
- Metals Translator Study, to develop translators for copper, nickel, lead, and zinc; and

- Water Effects Ratio Study, to develop factors addressing site-specific receiving water characteristics.

The objective of this document is to report the findings of the first study: the Metals Translator Study.

1.1 APPROACH OVERVIEW

The principal objective of the Metals Translator Study for the Santa Clara River Estuary is to determine the metals translators for copper, nickel, zinc, and lead following guidance from *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion* (US EPA 1996). Additionally, other water quality and physical parameters were collected to aid in a fuller characterization of the estuary.

According to federal regulation (40 CFR 122.45(c)), NPDES permit limits must be expressed as total recoverable metal. Because there are chemical differences between the discharged effluent and the receiving water, there are expected to be changes in partitioning between the total and dissolved forms. In addition, the presence of suspended solids reduces the amount of dissolved metals, compared to the total amount present. A metals translator answers the question " what fraction of metal in the effluent will be dissolved in the receiving water body, and therefore bioavailable?" According to the metals translator guidance, the translator is the fraction of total recoverable metal in the downstream water that is dissolved; that is, the dissolved metal concentration divided by the total recoverable metal concentration. The translator can be determined by three methods:

1. Assumed to be equivalent to the default criteria conversion factors provided in the metals translator guidance;

2. Developed directly as the ratio of dissolved to total recoverable metal; or

3. Developed through the use of a partition coefficient that is functionally related to the number of metal binding sites on the adsorbent in the water column (that is, concentrations of TSS, TOC, or humic substances).

Method 2, direct measurement, is favored by EPA and is appropriate for the VWRF discharge to the Santa Clara River Estuary. As such, this study develops metals translators for copper, nickel, zinc, and lead using the method of directly measuring the ratio of dissolved to total metals.

1.2 REPORT ORGANIZATION

This report is organized in the following way:

Section 1 – Introduction

Section 2 – Methods

Section 3 – Results

Section 4- Characterization of the Estuary

Section 5 – Development of Metals Translators

Section 6 – Conclusions

Section 7 - References

Tables and Figures are included in Appendix A.

Monthly monitoring and sampling summaries can be found in Appendix B.

Laboratory analytical reports are in Appendix C.

The methods used to develop metal translators for the Santa Clara River Estuary follow those described in the Revised Work Plan for Compliance with California Regional Water Quality Control Board, Los Angeles Region Time Schedule Order (Order 00-144) (NPDES Permit CA0053651) (ENTRIX 2001) and are summarized in this section. Special attention will be made to any variances from the Work Plan.

2.1 METALS TRANSLATOR STUDY SAMPLING DESIGN

In the simplest of conditions, understanding metal partitioning in receiving body waters is complicated. The highly variable Santa Clara River system adds additional levels of complexity and requires a robust sampling design in order to evaluate how this variability may affect metal partitioning in the estuary. Hydraulic conditions in the Santa Clara River Estuary depend upon a combination of:

1) flow in the river upstream of the estuary;
2) whether the sandspit is open or closed;
3) tidal stage; and
4) effluent flow rate from the VWRF.

Because of the variable hydraulic conditions found in the Santa Clara River Estuary, sampling was conducted monthly over the course of a year (Table 2-1). Additionally, daily records of whether the sandspit was open or closed and the estimated level of inundation (spatial extent of estuary inudated as percentage) of the estuary were taken to develop a "picture" of hydrographic conditions in the estuary over the course of a year.

In order to develop a translator for the metals of interest, the objective was to collect samples from at or near the beginning of the mixing zone over the course of the study. Samples were also collected that represent both (1) background concentrations upstream from the influence of the tidal prism and VWRF discharge to the Santa Clara River, (2) far-field concentrations related to non-point source runoff to the upper estuary, and (3) effluent concentrations from the discharge channel. General water quality parameters were collected in the field and water samples collected for laboratory analysis.

The following sections will describe in more detail the sampling protocol.

2.2 SAMPLING STATION LOCATIONS

Figure 2-1 presents the locations of the stations sampled over the study period. A hand-held Global Positioning System (GPS) unit was used to record the coordinates of all sampling or water quality parameter monitoring locations (see Tables 2-2 and 2-3). All sample locations were stationary over the period of the study except for the mixing zone station (MTS-2). Upstream background conditions were represented by sampling station MTS-1. In periods of high inundation in the estuary (after November of 2001), MTS-1A

was added farther upstream to ensure sampling of water outside of the influence of the VWRF. Far field and upper estuary conditions were represented by MTS-3. The mixing zone was represented by MTS-2, and the effluent in the discharge channel as MTS-R. In order to monitor water quality in the river mouth, stations MTS-M and MTS–M-O were added in December of 2001. MTS-M represented conditions at the mouth within the estuary, and MS-M-O conditions in the mouth when the eastuary was open. As a result, MS-M-O was only sampled when the estuary was in an open phase.

During low flow conditions in the Santa Clara River, the VWRF discharge constitutes most of the flow into the estuary. In this situation, MTS-2 was collected either from the location where the discharge first encountered ambient water, or in cases where the discharge constituted the only flow in the estuary, samples were collected from the discharge channel. During high flow, or when the sand spit was open, it was difficult to visually identify the mixing zone. In these conditions, the mixing zone was determined in the field using a portable electrical conductivity (EC) meter. The meter was used to characterize EC conditions at Mixing Zone Parameter Monitoring Stations (MZ-1 through MZ-8, see Figure 2-1). The mixing zone sampling station (MTS-2) was then established at an intermediate EC or where in the area of the steepest EC gradient.

Variances to the Work Plan included the addition of one Mixing Zone parameter monitoring station (MZ-8) and the river mouth sampling stations MTS-M and MTS-M-O, approved by the Los Angeles Regional Water Quality Control Board (LARWQCB) on August 8, 2001 (LARWQCB 2001).

2.3 SAMPLING PROTOCOL

During each sampling event, samples were collected from MTS-1 (or MTS-1A), MTS-2, MTS-3, MTS-R, MTS-M and MTS-MO (when the estuary was open to the ocean). When more than one sample was obtained at a single site, the samples were composited in the laboratory. During each sample round, a duplicate was sampled at one of the sampling locations and was analyzed to evaluate data quality. Sampling protocol followed that described in the Work Plan.

To avoid sample contamination, the following guidelines were implemented:

1. Given the low metals concentrations expected, extreme care was taken to ensure that samples were not contaminated during sample collection. Smoking or eating was not permitted while on station, at any time when sample bottles were being handed, or during filtration in the laboratory.

2. Each person on the field crew wore clean clothing, i.e., free of dirt, grease, etc. that could contaminate sampling apparatus or sample bottles.

3. Sampling gloves were worn by the field technician dedicated to collecting and handling each sample. The second field technician located each sampling location, took notes and photographs, and obtained physical water parameters at one foot intervals. When the water depth was one foot or less, physical water parameters were obtained at mid-depth. The second field technician did not

handle the sample bottles eliminating the chance of cross contamination. All samples bottles were opened and closed under water to further reduce contamination.

In the field, typical steps included:

1. Before embarking, number and type of sample bottles was confirmed, and checklist of equipment/supplies reviewed.

2. Before sampling was initated, chain-of-custody forms and bottle labels with all information except time were filled out. Chain-of-custody forms were pre-prepared with everything but the sampling date and time.

3. At each station, the date, sampling time, location ID, and sampler name was labeled on each sample bottle. Samples were collected following the procedure outlined above. GPS coordinates, weather, hydrologic conditions, plant operating status (if known), sample bottle numbers and collection time, and unusual observations or circumstances were noted in the field notebook or log form.

4. The chain-of-custody was then completed and the bottle carrier checked to ensure bottles were upright and well packed.

5. The bottles were delivered to the VWRF laboratory immediately after collection. Samples were then delivered to the laboratory. The sample custodian then signed the chain-of-custody for receipt of samples, and a copy of the chain-of-custody was obtained.

2.4 ANALYTICAL PARAMETERS.

When multiple samples were collected at each station, they were composited in the laboratory and split. After the first two sampling events were complete, the laboratory requested that ENTRIX collect samples filling a single 4-liter cubitanor to eliminate the need to composite samples from a single site. Analyses of total recoverable and dissolved metals were conducted on each split composite. For the dissolved analyses, the composited split was filtered in the VWRF laboratory. Table 2-4 summarizes the analytical parameters, method and detection limits obtained. Samples were analyzed at the City's contract laboratory, American Scientific Laboratories (ASL), certified by the State of California and the California Department of Health Services to perform these analyses. Additionally, one discrete sample was collected and analyzed for total dissolved solids (TDS) and total suspended solids (TSS) representing each sample station.

Water quality parameters were also measured in the field using a Horiba U10 water quality meter (Table 2-5).

As described in Section 2.0, twelve sampling events were conducted from May 2001 through April 2002.

A summary of the analytical results can be found in Appendix B for each of the 12 sampling events. Copies of the laboratory analytical results can be found in Appendix C. The following sections will discuss the water quality data and the analytical metals data.

3.1 WATER QUALITY DATA

Water quality data results are presented for each sampling event in Appendix B and summarized in Tables 3-1 and 3-2. Throughout the estuary, pH varied from a minimum of 7.04 at the mixing zone station (MTS-2) to a maximum of 10.65 at the mouth of the estuary (MTS-M). Conductivity ranged from 1.93 ms/mc to 45.20 ms/mc and turbidity from 0 to 130 NTU. Dissolved oxygen was measured from 1.22 mg/L to a maximum of 14.30 mg/L, while temperature varied from 10.60° C to 26.80° C.

Of particular interest to this study was the spatial and temporal variability of salinity in the Estuary. As can be seen in Table 3-2 and Figures 3-1 and 3-2, no station in the estuary, including the upstream background station (MTS-1) and the effluent station (MTS-R) can be defined as strictly freshwater. Conversely, no station within the Estuary can be described as strictly saltwater (MTS-M-O is not considered an Estuary station since it was sampled at the ocean side of the Estuary mouth when the mouth was opened). Figure 3-1 summarizes the salinity data graphically for the metals translator stations (all MTS stations). Stations sampled for the establishment of the mixing zone (all MZ stations) are graphically summarized in Figure 3-2. A more specific discussion on salinity and other water quality parameters in the Estuary can be found in Section 4.0.

3.2 METALS DATA

Summaries of the analytical data collected from the Estuary can be found in Tables 3-3 through 3-7. Data are also visually presented in Figures 3-3 through 3-7. Copper was frequently detected in the Estuary and concentrations exceeded both the Daily and Monthly Maximum Permit Limits at all stations except MTS-MO (Table 3-3). Copper concentrations among stations tended to show similar patterns with very low concentrations detected in the summer months (July through October) when the sand spit was closed and the Estuary was inundated at its highest level (Figure 3-3a through c). Copper concentrations tended to increase in the latter months of sampling (January through April 2002). This is also the period when the Estuary was at its most dynamic (as discussed in more detail in Section 4.0).

Lead was never detected at any station in the Estuary (Table 3-4). The lead detection limit was adequately sensitive at 0.5 ug/L, an order of magnitude less than the Monthly

Permit Limit at 7 ug/L (Figures 3-4a through c). Thus, lead is not assumed to be a metal of concern for the Estuary or the VWRF.

Nickel was frequently detected at all stations in the Estuary (Table 3-5). In the first half of the sampling year (through October 2001), nickel did not exceed either the daily or monthly Permit Limits in the Estuary (Figures 3-5a through c). As with copper, the highest concentrations of nickel were detected in the second half of the sampling year throughout the Estuary. In the latter half of the year, nickel concentrations exceeded the Daily Maximum Permit Limit throughout the estuary. Only once, however, (November 2001 at MTS-R) did nickel ever exceed the Monthly Maximum Permit Limit.

Zinc was frequently detected in the Estuary (Table 3-6). However, unlike the other metals, zinc concentrations showed a different pattern in the effluent station (MTS-R) than the other stations (Figures 3-6a through c). Elsewhere in the Estuary zinc concentrations were low throughout the year and rarely exceed the Daily Maximum Permit Limit and never the Monthly Average Permit Limit. However, at MTS-R, zinc concentrations were low in the first part of the sampling year and increased toward the latter part. The one high dissolved concentration detected in MTS-R in March 2002 seems to be an outlier since there is a large discrepancy between the total and dissolved concentrations measured that sampling period.

TSS and TDS is summarized in Table 3-7 and depicted graphically in Figure 3-7a through c. TSS and TDS seemed to vary most in the middle portion of the estuary (MTS-2, MTS-3 and MTS-M) and least at the upstream station MTS-1 and the effluent station MTS-R. Since TSS has been shown to have an important impact on partitioning in other receiving water bodies, it will be evaluated with the analytical metals data further in Section 5.0 to develop the metals translator.

During the course of this study, several environmental parameters were monitored in the interest of characterizing the physical and chemical nature of the Santa Clara River Estuary. The Estuary is, by its nature, a very dynamic environment where hydrologic parameters can vary greatly over the course of any given year. The Estuary is influenced by three primary hydrologic factors: 1) the Santa Clara River inflow; 2) Pacific Ocean tides; and 3) the VWRF discharge. The Santa Clara River inflow varies in quantity, duration, frequency, and intensity from year to year, depending on rainfall and upstream diversions. The Santa Clara River also delivers varying quantities of sediment to the Estuary which factors into sandspit formation at the mouth. Tidal influence from the Pacific Ocean is more consistent; however, regional weather patterns, such as El Nino and La Nina, can dramatically influence tidal intensity and local near-shore currents. The Pacific Ocean and its tides also play a major role in forming the sand bar that seasonally impounds the Estuary, as well as causing wave action and degradation of the sandspit. The VWRF discharge is relatively constant, delivering between 7 and 10 million gallons of treated effluent per day. During the dry season, the VWRF discharge may contribute as much as 100 percent of the non-tidal inflow to the Estuary. There is also runoff contribution from non-point sources, such as nearby agricultural fields.

The composition of waters contributing to the Santa Clara River Estuary is quite variable. During the wet season Santa Clara River flows can easily exceed 5,000 cfs during intense storm events. Winter near-shore ocean conditions can also contribute storm-induced tidal flooding and overwash. The Estuary is most dynamic under winter and spring conditions because river and ocean influences are quite strong. Frequent flushing and inundation occurs due to breaching of the sand spit, promoting increased tidal connectivity. Summer river inflow is diverted upstream of the Estuary and typically drops and becomes intermittent. The summer and fall inflow is typically limited to the VWRF discharge, and the large sand spit impoundment formed at the mouth causes constant inundation. In the dry months, the only sand spit breaching factor is the shear volume of water impounded in the Estuary.

4.1 OBSERVED ESTUARY CONDITIONS

Daily observations of hydrologic conditions were conducted over the course of this study to temporally document the "state" of the Estuary. The date, mouth phase (open vs. closed), and relative inundation were recorded on a map sheet to document daily variation. Figure 4-1 depicts these data, including the sampling event dates.

The Santa Clara River Estuary undergoes periodic and alternating filling and draining. In some cases, inundation or open drained conditions may persist over several months. Over the course of this study, two distinct patterns have emerged. During the first six months of the study (May to November 2001) the Estuary was impounded (closed phase) for between 25 and 100 days before breaching. This condition is likely due to lower

inflow from the Santa Clara River during the drying summer and fall seasons. The dry season (summer/fall) is when sand spit formation typically occurs due to beach sand deposition. In November 2001, the first rains fell in the Ventura area and runoff from the Santa Clara River increased. From November 2001 to May 2002, the Estuary was generally more open and inundation levels varied frequently. This variability is likely due to increased river inflow, wave action, and tidal interaction. The increased wave action and sand spit scour typically occurs during the November to May (winter to spring) season. Figures 4-2 and 4-3 depict the Estuary in typical closed and open phases.

4.2 NATURAL HYDROLOGIC INFLUENCES

Natural hydrologic data, such as Santa Clara River streamflow and local precipitation, were collected for the study period. Daily Santa Clara River streamflow data were obtained from the Montalvo (USGS) gaging station for the study period. In addition, monthly precipitation totals were obtained from Santa Paula (NWS) rainfall station. Figure 4-4 depicts the streamflow hydrograph and monthly precipitation for the May 2001 through April 2002 study period. The 7.69 inches of total rainfall recorded at the Santa Paula station during the 12 month study represents roughly half of the 14.33 inches of normal Ventura area rainfall. The streamflow conditions observed during the study period correspond with a dry rainfall and runoff year. Generally, lower precipitation and subsequent runoff results in a diminished influence of streamflow on sand spit breaching and lagoon flushing, as well as limited influence of freshwater inflow by volume.

4.3 SALINITY MONITORING OBSERVATIONS

During each monthly sampling events, salinity was measured a various pre-established monitoring stations throughout the Estuary (Figure 2-1). The salinity monitoring results for each station are summarized in Section 3.0. Freshwater, marine, and brackish, estuarine waters are defined by the pre-dominant salinity regime, occurring more than 95 percent of the time. Freshwater is characterized as being 1 ppt or less, marine being greater than 10 ppt, and brackish falling in between (>1<10).

Salinity measurements, using a handheld water quality meter, were collected at each station by 1 ft. intervals to develop a salinity profile for each station. In addition, the salinity data statistics were calculated for each station over the course of the study. Overall, lower salinities (1 to 4 ppt) were observed in the northern portion of the Estuary in proximity to the discharge channel, and in the eastern, upper Estuary where the Santa Clara River flows in. The middle area of the Estuary, where the lagoon tends to persist, was more brackish (5 to 10 ppt). More marine-like (>10 ppt) conditions were generally isolated to a small area near the mouth and the far southwestern portion of the Estuary. Generally, the only freshwater (<1 ppt) conditions were observed at MTS-R, where VWRF inflow is discharged. The upstream Santa Clara River inflow (MTS-1) was brackish (>1<10 ppt), however the mean and maximum salinities measured at MTS-1 were 1.36 and 2.00 ppt, respectively. Salinity profiles (Figures 3-1 and 3-2) developed from the monitoring and sampling station data indicate that under inundated conditions (open or closed) a "salt wedge" forms along the western and southern periphery of the

Estuary. The salt wedge characterizes salinity statification, where surface salinity can be nearly fresh (~ 1 ppt) and bottom salinity can be marine (~ 30 ppt).

For this study, the most straightforward method for calculating the metals translators has been chosen: direct measurement. Direct measurement is the method preferred by EPA for metals translator calculations. In this approach, the ratio of the dissolved and total recoverable fractions in a water sample is used to translate from a dissolved water quality criterion to a total recoverable effluent concentration. The translator is then applied by dividing the dissolved criterion by the translator to produce a total recoverable permit limit.

The translator is meant to show the relationship between dissolved and total recoverable metal concentrations in the mixing zone in the receiving body water. Thus the development of translators will focus on data collected from MTS-2.

Translators were calculated for each of the data pairs (e.g., total and dissolved concentrations) for the metals of interest at MTS-2. Values below the detection limit were treated as equal to one-half the detection limit, as recommended in *The Metals Translator Guidance* (US EPA 1996). For those data pairs where both the dissolved and the total recoverable concentration were non-detect, the data pairs were eliminated from the calculation as outlined in the Guidance. In situations where the dissolved concentration exceeded the total recoverable concentration, the ratio was set at the default of 1 (US EPA 1996). Tables 5-1 through 5-3 present the translator (defined as fD or the dissolved fraction) for copper, nickel and zinc respectively in the mixing zone in the Santa Clara River Estuary sampled at MTS-2. A translator was not developed for lead because it was never detected above the detection limit at MTS-2.

In some receiving water bodies, factors such as TSS, pH and salinity have been found to affect partitioning. TSS in particular has been found to have a significant affect. To evaluate whether such a relationship exists in the Santa Clara River Estuary, TSS measurements at MTS-2 were regressed against fD to determine whether the translators are a function of TSS. As can be seen in Figure 5-1, fD is not related to TSS, thus the translator was defined directly as the ratio of dissolved to total recoverable. The translator for each metal (copper, nickel and zinc) was then calculated as the geometric mean of the ratios of dissolved metal to total recoverable metal for all sample pairs (Tables 5-1 through 5-3). The geometric mean is proposed as the translator, as it best describes central tendency in these types of datasets (US EPA 1996).

The translators, based on the geometric mean, varied little between metals, 0.86 for copper, 0.81 for nickel; and 0.84 for zinc. The impact of these translators on the total recoverable permit limit for each metal of interest is dependent on whether the translator is going from a dissolved freshwater or a saltwater criterion. Thus the results of the Metals Translator Study must be interpreted in coordination with the results of the Resident Species Study currently being conducted in the Estuary. To provide a

preliminary assessment, the impact of the translator on both marine and freshwater criteria is presented in Table 5-4.

As can be seen from Table 5-4, because the translators vary from 0.81 to 0.86, their impact on the VWRF's Permit Limits (as defined in the RWQCB's order from 2000) are small (between 19% and 14%). The largest impact is related to whether the dissolved criteria should be based on freshwater or marine protection. To visually illustrate this, total recoverable criteria as translated using Santa Clara River Estuary translators were compared to the metals concentration data sampled over the twelve month period in this study at the station closest to the point of compliance – MTS-R (Figures 5-2 through 5-4). For all metals with detected concentrations (copper, nickel and zinc), translating the 2000 Permit Limits (which are based on protection of marine organisms) did not reduce the number of exceedances. The biggest reduction in exceedances occurred when the sampling data over the twelve month period were compared to translated criteria protective of freshwater organisms (assuming a hardness of 100). Thus the ability of the VWRF to be in compliance with the permit limits is not significantly improved by the addition of a site-specific translator when using the 2000 Permit Limits. However, within the effluent channel as defined by MTS-R, the VWRF has been in compliance if the Permit Limits are based on dissolved criteria protective of freshwater life rather than marine life. This comparison highlights the importance of the Resident Species Study currently being conducted in the Estuary as it will help to define what are the appropriate water quality criteria from which to set permit limits.

The City of San Buenaventura's Ventura Water Reclamation Facility (VWRF) discharges to the Santa Clara River Estuary under NPDES Permit No. CA0053651. Regional Board Order No. 00-143 required the City to conduct a study to develop metals translators for four inorganic constituents in support of developing alternative permit limits. The objective of this study was to develop metals translators for copper, nickel, lead, and zinc. The study was initiated in May 2001, in accordance with the Regional Board-approved Work Plan. In general, water quality monitoring and sampling was conducted once per month over the course of twelve months to capture natural hydrologic variability. Eight water quality parameter monitoring and four surface water sampling stations were established within the Santa Clara River estuary.

Copper, nickel and zinc were detected frequently within the estuary, while lead was never detected. Copper, nickel and zinc concentrations had a similar pattern among stations with concentrations being lowest during the summer months (July through October 2001) when the sand spit was closed and the estuary was fully inundated. Concentrations tended to increase during the winter months (December through April 2002) when the estuary was most dynamic, experiencing frequent runoff and tidal flushing. Copper concentrations exceeded both the Daily and Monthly Maximum permit limits at all stations except MTS-MO. The other metals infrequently exceeded permit limits.

Three primary waters contribute to the Estuary, including the Santa Clara River inflow, Pacific Ocean tides, and the VWRF discharge. The Santa Clara River Estuary experienced two distinctly different conditions over the course of this study. During the summer and fall (dry season), the sand spit impounded the Estuary inflow from the VWRF with prolonged, extensive inundation. The winter and spring (wet season) condition was highly dynamic; winter runoff breached the sand spit where strong river and ocean flushing occurred frequently. The wet season was below average compared to average Ventura area precipitation and runoff. Monitoring during the study indicated that upstream and near the discharge channel salinities were relatively low, between 1 and 5 ppt. The central portion of the Estuary, where the lagoon persists, was more brackish with salinities between 5 and 10 ppt. An isolated area near the mouth comprised the only marine-like conditions where salinities exceeded 10 ppt. The higher salinities were measured during the winter, when runoff was far below normal.

The metals translator was calculated using direct measurement from MTS-2 data. The translators were calculated as follows: copper (0.86); nickel (0.81); zinc (0.84); no translator was calculated for lead since it was not detected in any of the samples. Application of these translators is dependent on whether freshwater or marine water quality criteria are applied. EPA guidance focuses on using species composition as the preferred method to support selection of alternative water quality criteria. Therefore, the Resident Species Study, being conducted concurrently, will help define the appropriate water quality criteria.

Although not conclusive, some insight to conditions in the Santa Clara River Estuary tidal prism and the origins and the fate of the four metals as they pass through the tidal prism is offered by the data collected in this study:

- Metal concentrations entering the study area from upstream closely approximate those found in the VWRF reclaimed water flow also reaching the estuary. Nickel levels are slightly lower in the reclaimed water, zinc appears to be slightly higher (though generally within any potential limits) and copper appears to be approximately the same.

- Salinity measurements within the tidal prism are predominantly below the saltwater threshold of 10 parts per thousand.

- At sample point MTS-MO, the point of discharge to the Pacific Ocean when the river mouth is open and where saltwater conditions do clearly dominate, all four metal concentrations are well within saltwater criteria.

In conclusion, the ability of the City to be in compliance with the Board's permit limits is not significantly improved by the addition of a site-specific translator when applying the current marine water quality criteria. The more appropriate approach to understanding how metals may impact the habitats of the Santa Clara River Estuary appears to be the Resident Species Study, being conducted in parallel with the now complete Metals Translator. EPA guidance focuses on using species composition as the preferred method to support selection of alternative water quality criteria.

DWR. 2002. Santa Paula Rainfall Data for July 2000 through May 2002. California Dept. of Water Resources (cdec.water.ca.gov). Preliminary data of Santa Puala (station PAL) provided by National Weather Service.

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US EPA. 1996. The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion. EPA 823-B-96-007.

USGS 2002. Montalvo Santa Clara River Streamflow discharge gaging data for April 2001 through May 2002. (www.usgs.gov)

APPENDIX A

TABLES AND FIGURES

TABLES

TABLES

Table 2-1: Summary of Metals Translator Study Sampling Events

Sampling Round	Date	Hydrologic Condition	Comments
1	5/5/01	Estuary mouth open with ocean interchange. Santa Clara river flowing to estuary.	Mixing zone established primarily on visual observation of discharge flow into the pooled estuary. Validated with water quality parameter measurement to establish sampling point.
2	6/26/01	Estuary impounded.	Mixing zone established primarily on visual observation of discharge flow into the pooled estuary. Validated with water quality parameter measurement to establish sampling point. MZ-1 not sampled due to mixing zone location between MZ-6 and MZ-6b (MZ-6b located between MZ-1 and MZ-6)
3	7/25/01	Estuary impounded	Mixing zone established primarily on visual observation of discharge flow into the pooled estuary. Validated with water quality parameter measurement to establish sampling point.
4	8/28/01	Estuary impounded. Water levels rising.	Mixing zone established primarily on visual observation of discharge flow into the pooled estuary. Validated with water quality parameter measurement to establish sampling point.
5	9/26/01	Estuary impounded. Water levels rising.	Mixing zone established primarily on visual observation of discharge flow into the pooled estuary. Validated with water quality parameter measurement to establish sampling point.
6	10/29/01	Estuary impounded. Water levels rising.	Mixing zone established primarily on visual observation of discharge flow into the pooled estuary. Validated with water quality parameter measurement to establish sampling point.
7	11/20/01	Estuary impounded. Water levels rising.	Mixing zone established primarily on visual observation of discharge flow into the pooled estuary. Validated with water quality parameter measurement to establish sampling point.
8	12/5/01	Estuary open. Rising tide.	Mixing zone established primarily on visual observation of discharge flow into the pooled estuary. Validated with water quality parameter measurement to establish sampling point.
9	1/8/02	Estuary 75% inundated. Estuary has been impounded for approximately 2 weeks. Campground is open and dry.	Mixing zone established primarily on salinity levels and visual relationships between outfall flow and tidal inflow. Validated with water quality parameter measurement to establish sampling point.
10	2/12/02	Open conditions. Tidal outflow during sampling event. Hot and still.	Mixing zone established primarily on salinity levels, and visual relationships between outfall flow and tidal inflow. Validated with water quality parameter measurement to establish sampling point.
11	3/26/02	Estuary 80-90% inundated. Backwater fingers adjacent to sandspit filling at a rapid rate. No tidal influence.	Mixing zone established primarily on salinity levels, and visual relationships between outfall flow and tidal inflow. Validated with water quality parameter measurement to establish sampling point.
12	4/25/02	Estuary is impounded. The sand spit prevents outflow, yet peak tides flow over the sandbar, and inundate the estuary. Sandbar is low and quite compacted.	Mixing zone established primarily on salinity levels, and visual relationships between outfall flow and tidal inflow. Validated with water quality parameter measurement to establish sampling point. Water is very red-brown. Lots of fish jumping and many birds. Two dead pelicans sighted, and one comatose pelican.

Table 2-2: Metal Translator Study Sampling Station GPS Locations

Metal Translator Sampling Station	GPS Coordinates
MTS-1 (upstream background sampled from 5/01 through 10/01)	N 34 14.194 W 119 14.875
MTS-1A (upstream background sampled from 11/01 to 4/02)	N 34 14.201 W 119 14.658
MTS-2 (mixing zone location dependent based on measured salinity)	
May-01	N 34 14.099 W 119 15.793
Jun-01	N 34 14.060 W 119 15.832
Jul-01	N 34 14.060 W 119 15.832
Aug-01	N 34 13.993 W 119.15.878
Sep-01	N 34 14.099 W 119 15.7993
Oct-01	N 34 14.099 W 119 15.793
Nov-01	N 34 14.073 W 119 15.864
Dec-01	N 34.13.966 W 119 15.892
Jan-02	N 34 14.101 W 119 15.788
Feb-02	N 34 13.954 W 119 15.887
Mar-02	N 34 14.560 W 119 15.459
Apr-02	N 34 14.099 W 119 15.793
MTS-3 (upper estuary/far field sample)	N 34 13.952 W 119 15.397
MTS-R (effluent)	N 34 14.178 W 119 15.581
MTS-M (mouth within estuary)	N 34 13.707 W 119 15.884
MTS-M-O (mouth during open phase)	N 34 13.762 W 119 15.875

Table 2-3: Mixing Zone Parameter Monitoring Station GPS Locations

Mixing Zone Parameter Monitoring Station	GPS Coordinates
MZ-1	N 34 14.060 W 119 15.832
MZ-2	N 34 14.064 W 119 15.815
MZ-3	N 34 13.910 W 119 15.655
MZ-4	N 34 13.873 W 119 15.751
MZ-5	N 34 13.780 W 119 15.881
MZ-6	N 34 14.050 W 119 15.898
MZ-7	N 34 13.952 W 119 15.397
MZ-8	N 34 13.795 W 119 15.722

Table 2-4: Analytical Parameters

Parameter	EPA Method	Technique	Detection Limit (ug/L)
Copper	200.8	ICPMS	0.5
Lead	200.8	ICPMS	0.5
Nickel	200.8	ICPMS	0.5
Zinc	200.8	ICPMS	0.5
TDS	160.1	Gravimetric	1
TSS	160.2	Gravimetric	1

Table 2-5: Field Water Quality Measures

Parameter	Technique
Depth	Measuring cable
pH	Horiba U10
Conductivity	Horiba U10
Dissolved Oxygen	Horiba U10
Turbidity	Horiba U10
Temperature	Horiba U10
Salinity	Horiba U10

Table 3-1. Summary of Water Quality Parameters for the Metal Translator Stations Over the Twelve Month Sampling Period

Mid-Level Water Quality Parameters

	pH			Conductivity (ms/mc)			Turbidity (NTU)			Dissolved Oxygen (mg/l)			Temperature (C)		
Sampling Station	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
MTS-1 or 1A	7.53	8.69	8.14	1.93	8.90	3.34	0.00	10.00	4.00	1.22	8.95	6.51	12.20	20.00	16.38
MTS-2	7.04	10.24	8.44	2.65	28.40	9.52	2.00	47.00	17.55	2.64	14.30	7.49	14.80	26.80	20.26
MTS-3	7.65	10.55	8.78	2.12	13.30	6.09	1.00	130.00	27.08	3.42	14.17	8.15	10.60	24.00	17.81
MTS-R	7.05	8.77	7.77	2.04	2.30	2.18	0.00	22.00	9.27	1.74	8.76	5.19	15.70	25.20	20.63
MTS-M	8.34	10.65	9.48	9.10	45.20	19.58	12.00	47.00	24.00	2.66	5.93	4.78	13.50	19.50	15.64
MTS-MO	8.74	9.00	8.87	39.50	45.20	43.20	13.00	39.00	26.00	5.04	6.58	5.81	13.90	14.20	14.05
Total Estuary	7.04	10.65	8.58	1.93	45.20	13.98	0.00	130.00	17.98	1.22	14.30	6.32	10.60	26.80	17.46

Table 3-2: Summary of Salinity Measurements Over the Twelve Month Sampling Period

Mid-Level Salinities (ppt)

Sampling Station	Water Level	Min	Max	Mean	% Freshwater (≤ 1)	% Brackish (>1; <10)	% Marine (≥10)
MTS-1 or 1A	Mid	0.90	2.00	1.36	17%	83%	0%
MTS-2	Mid	1.20	18.10	6.13	0%	75%	25%
MTS-3	Mid	1.20	12.30	3.97	0%	92%	8%
MTS-R	Mid	1.00	1.10	1.01	83%	17%	0%
MTS-M	Mid	5.00	28.80	11.52	0%	60%	40%
MTS-MO	Mid	26.40	30.20	28.30	0%	0%	100%
MZ-1	Mid	1.00	14.10	3.53	18%	73%	9%
MZ-2	Mid	1.00	8.80	3.65	30%	70%	0%
MZ-3	Mid	1.30	25.60	7.08	0%	82%	18%
MZ-4	Mid	1.30	25.50	8.64	0%	67%	33%
MZ-5	Mid	1.30	29.40	11.63	0%	50%	50%
MZ-6	Mid	1.00	10.10	3.28	17%	75%	8%
MZ-8	Mid	1.30	26.80	9.875	0%	62%	38%
Total Estuary		0.90	30.20	7.69	13%	62%	25%

* Surface salinities used when no mid level salinity. Mid level salinities were taken when depth > 2 ft.

Table 3-3 Summary of Copper Concentrations Detected at Metal Translator Study Stations Over the Twelve Month Sampling Period

Copper (ug/L)

Sampling Station	Parameter	% Detect	Min	Max	Mean	Daily Max Limit (ug/L)	% Exceedance Daily Max Limit	Monthly Average Limit (ug/L)	% Exceedance Monthly Limit
MTS-1 or 1A	Total	75%	0.50	9.30	3.11	2.9	42%	2	58%
	Dissolved	75%	0.50	13.10	4.33	2.9	50%	2	50%
MTS-2	Total	75%	0.50	12.40	4.48	2.9	58%	2	67%
	Dissolved	75%	0.50	9.90	4.10	2.9	58%	2	67%
MTS-3	Total	83%	0.50	9.00	3.90	2.9	67%	2	67%
	Dissolved	75%	0.50	8.50	3.03	2.9	50%	2	67%
MTS-R	Total	83%	0.50	11.10	4.81	2.9	58%	2	75%
	Dissolved	83%	0.50	8.80	4.57	2.9	67%	2	75%
MTS-M	Total	80%	0.50	6.40	3.44	2.9	60%	2	80%
	Dissolved	100%	2.40	10.04	4.50	2.9	40%	2	100%
MTS-MO	Total	0%	0.50	0.50	0.50	2.9	0%	2	0%
	Dissolved	0%	0.50	0.50	0.50	2.9	0%	2	0%
Total Estuary	Total	66%	0.50	12.40	3.37	2.9	48%	2	58%
	Dissolved	68%	0.50	13.10	3.50	2.9	44%	2	60%

Table 3-4 Summary of Lead Concentrations Detected at Metal Translator Study Stations Over the Twelve Month Sampling Period

Lead (ug/L)

Sampling Station	Parameter	% Detect	Min	Max	Mean	Daily Max Limit (ug/L)	% Exceedance Daily Max Limit	Monthly Average Limit (ug/L)	% Exceedance Monthly Limit
MTS-1 or 1A	Total	0	0.50	0.50	0.50	14.00	0	7.00	0
	Dissolved	0	0.50	0.50	0.50	14.00	0	7.00	0
MTS-2	Total	0	0.50	0.50	0.50	14.00	0	7.00	0
	Dissolved	0	0.50	0.50	0.50	14.00	0	7.00	0
MTS-3	Total	0	0.50	0.50	0.50	14.00	0	7.00	0
	Dissolved	0	0.50	0.50	0.50	14.00	0	7.00	0
MTS-R	Total	0	0.50	0.50	0.50	14.00	0	7.00	0
	Dissolved	0	0.50	0.50	0.50	14.00	0	7.00	0
MTS-M	Total	0	0.50	0.50	0.50	14.00	0	7.00	0
	Dissolved	0	0.50	0.50	0.50	14.00	0	7.00	0
MTS-MO	Total	0	0.50	0.50	0.50	14.00	0	7.00	0
	Dissolved	0	0.50	0.50	0.50	14.00	0	7.00	0
Total Estuary	Total	0	0.50	0.50	0.50	14.00	0	7.00	0
	Dissolved	0	0.50	0.50	0.50	14.00	0	7.00	0

Table 3-5 Summary of Nickel Concentrations Detected at Metal Translator Study Stations Over the Twelve Month Sampling Period

Nickel (ug/L)

Sampling Station	Parameter	% Detect	Min	Max	Mean	Daily Max Limit (ug/L)	% Exceedance Daily Max Limit	Monthly Average Limit (ug/L)	% Exceedance Monthly Limit
MTS-1 or 1A	Total	75%	0.50	10.00	5.14	15.20	0%	5.30	42%
	Dissolved	75%	0.50	10.00	5.04	15.20	0%	5.30	42%
MTS-2	Total	75%	0.50	8.00	3.68	15.20	0%	5.30	33%
	Dissolved	75%	0.50	6.90	3.36	15.20	0%	5.30	25%
MTS-3	Total	75%	0.50	7.70	4.18	15.20	0%	5.30	33%
	Dissolved	75%	0.50	7.40	4.06	15.20	0%	5.30	42%
MTS-R	Total	75%	0.50	20.00	4.38	15.20	0%	5.30	25%
	Dissolved	75%	0.50	20.00	4.28	15.20	8%	5.30	25%
MTS-M	Total	100%	2.70	6.70	4.52	15.20	0%	5.30	40%
	Dissolved	100%	2.00	6.80	4.46	15.20	0%	5.30	40%
MTS-MO	Total	100%	1.10	1.80	1.45	15.20	0%	5.30	0%
	Dissolved	100%	0.80	2.30	1.55	15.20	0%	5.30	0%
Total Estuary	Total	83%	0.50	20.00	3.89	15.20	0%	5.30	29%
	Dissolved	83%	0.50	20.00	3.79	15.20	1%	5.30	29%

Table 3-6 Summary of Zinc Concentrations Detected at Metal Translator Study Stations Over the Twelve Month Sampling Period

Zinc (ug/L)

Sampling Station	Parameter	% Detect	Min	Max	Mean	Daily Max Limit (ug/L)	% Exceedance Daily Max Limit	Monthly Average Limit (ug/L)	% Exceedance Monthly Limit
MTS-1 or 1A	Total	58%	0.50	26.30	6.18	95.00	0%	38.00	0%
	Dissolved	67%	0.50	20.90	5.73	95.00	0%	38.00	0%
MTS-2	Total	100%	11.00	42.00	21.96	95.00	0%	38.00	0%
	Dissolved	100%	9.70	32.30	19.06	95.00	0%	38.00	0%
MTS-3	Total	100%	0.50	16.90	9.35	95.00	0%	38.00	0%
	Dissolved	100%	1.00	19.50	8.81	95.00	0%	38.00	0%
MTS-R	Total	100%	11.00	59.70	30.53	95.00	0%	38.00	17%
	Dissolved	100%	10.00	95.40	32.91	95.00	8%	38.00	17%
MTS-M	Total	92%	0.50	13.60	8.68	95.00	0%	38.00	0%
	Dissolved	100%	2.40	61.60	25.36	95.00	0%	38.00	20%
MTS-MO	Total	92%	0.50	6.00	3.25	95.00	0%	38.00	0%
	Dissolved	100%	1.80	3.90	2.85	95.00	0%	38.00	0%
Total Estuary	Total	90%	0.50	59.70	13.32	95.00	0%	38.00	3%
	Dissolved	95%	0.50	95.40	15.79	95.00	1%	38.00	6%

Table 3-7: Summary of TSS and TDS Concentrations Detected at Metal Translator Stations Over the Twelve Month Sampling Period

TSS (mg/l)

Sampling Station	Min	Max	Mean
MTS-1 or 1A	0.05	36	5.644167
MTS-2	1.43	26.16	11.365
MTS-3	2.28	87	19.62273
MTS-R	1.3	16.17	7.292727
MTS-M	8.91	59.5	26.374
MTS-MO	17.58	36.4	26.99
Total Estuary	0.05	87	16.21477

TDS (mg/l)

Sampling Station	Min	Max	Mean
MTS-1 or 1A	1430	2632	2165.5
MTS-2	1540	14432	3984.167
MTS-3	1738	14294	4578.182
MTS-R	1240	2664	1558.182
MTS-M	4434	33472	12708.8
MTS-MO	32452	35138	33795
Total Estuary	1240	35138	9798.305

Table 5-1: Translators (fD) for Copper at the Mixing Zone Station MTS-2

	TSS	Copper				
Date	(mg/l)	Qualifier	Total (ug/L)	Qualifier	Dissolved (ug/L)	fD
May-01	26.16	J	4.7	J	3.7	0.79
Jun-01	16.26	J	6.8	J	5.7	0.84
Jul-01	5.07	<	0.5	<	0.5	N/A
Aug-01	14.02	<	0.5	<	0.5	N/A
Sep-01	1.88	<	0.5	<	0.5	N/A
Oct-01	6.2	J	1	J	1	1.00
Nov-01	1.8	J	5	J	4	0.80
Dec-01	24.39	J	2.7	J	2.1	0.78
Jan-02	11.29	J	7.8	J	7.6	0.97
Feb-02	14.98	J	6.7	J	9.9	**1.00**
Mar-02	12.9	J	5.2	J	4.3	0.83
Apr-02	1.43		12.4	J	9.4	0.76
Mean			4.48		4.10	0.86
St Dev			3.66		3.43	0.10
90%			7.80		9.40	1.00
25%			1.00		1.00	0.79
Geomean			2.74		2.53	0.86

N/A - Not applicable, both total and dissolved concentrations are non-detect
Bolded value - fD set to 1 because dissolved concentration exceeded total

Table 5-2: Translators (fD) for Nickel at the Mixing Zone Station MTS-2

	Nickel				
Date	Qualifier	Total (ug/L)	Qualifier	Dissolved (ug/L)	fD
May-01	J	3.1	J	2.3	0.74
Jun-01	J	5.4	J	2.6	0.48
Jul-01	<	0.5	<	0.5	N/A
Aug-01	<	0.5	<	0.5	N/A
Sep-01	<	0.5	<	0.5	N/A
Oct-01	J	3	J	3	1.00
Nov-01	J	8	J	6	0.75
Dec-01	J	2.8	J	1.6	0.57
Jan-02	J	4.7	J	5.9	**1.00**
Feb-02	J	3.5	J	4.5	**1.00**
Mar-02	J	6.2	J	6	0.97
Apr-02	J	5.9	J	6.9	**1.00**
Mean		3.68		3.36	0.83
St Dev		2.45		2.41	0.21
90%		6.20		6.00	1.00
25%		2.80		1.60	0.74
Geomean		2.57		2.31	0.81

N/A - Not applicable, both total and dissolved concentrations are non-detect
Bolded value - fD set to 1 because dissolved concentration exceeded total

Table 5-3: Translators (fD) for Zinc at the Mixing Zone Station MTS-2

	Zinc				
Date	Qualifier	Total (ug/L)	Qualifier	Dissolved (ug/L)	fD
May-01		20.4		17.3	0.85
Jun-01		12.6	J	9.7	0.77
Jul-01		23		20	0.87
Aug-01		16		11	0.69
Sep-01		12		10	0.83
Oct-01		11		11	1.00
Nov-01		42		22	0.52
Dec-01		13.7		12	0.88
Jan-02		36.5		29.4	0.81
Feb-02		22		26.6	**1.00**
Mar-02		24.1		27.4	**1.00**
Apr-02		30.2		32.3	**1.00**
Mean		21.96		19.06	0.85
St Dev		10.00		8.37	0.15
90%		36.50		29.40	1.00
25%		13.70		11.00	0.81
Geomean		20.04		17.35	0.84

N/A - Not applicable, both total and dissolved concentrations are non-detect
Bolded value - fD set to 1 because dissolved concentration exceeded total

Table 5-4: Dissolved Criteria Translated into Total Recoverable Concentrations Based on Santa Clara River Estuary Translators

Metal	fD	Water Criteria	Freshwater Monthly Max (ug/L)	Marine Monthly Max (ug/L)	Freshwater Daily Max (ug/L)	Marine Daily Max (ug/L)
Cu		Dissolved Criteria	13*	2**	9*	2.9**
	0.86	Total Recoverable Criteria***	15.16	2.33	10.50	3.38
Pb		Dissolved Criteria	65*	7**	2.5*	14**
	1	Total Recoverable Criteria***	65.00	7.00	2.50	14.00
Ni		Dissolved Criteria	470*	5.3**	52*	15.2**
	0.81	Total Recoverable Criteria***	580.25	6.54	64.20	18.77
Zn		Dissolved Criteria	120*	38**	90*	95**
	0.84	Total Recoverable Criteria***	142.86	45.24	107.14	113.10

*dissolved criteria from California Toxics Rule (Federal Register 2000) assuming hardness of 100 mg/L and default conversion factors

**interim permit limits (Regional Board Order No. 00-143)

***total recoverable = dissolved criteria/fD

FIGURES

FIGURES

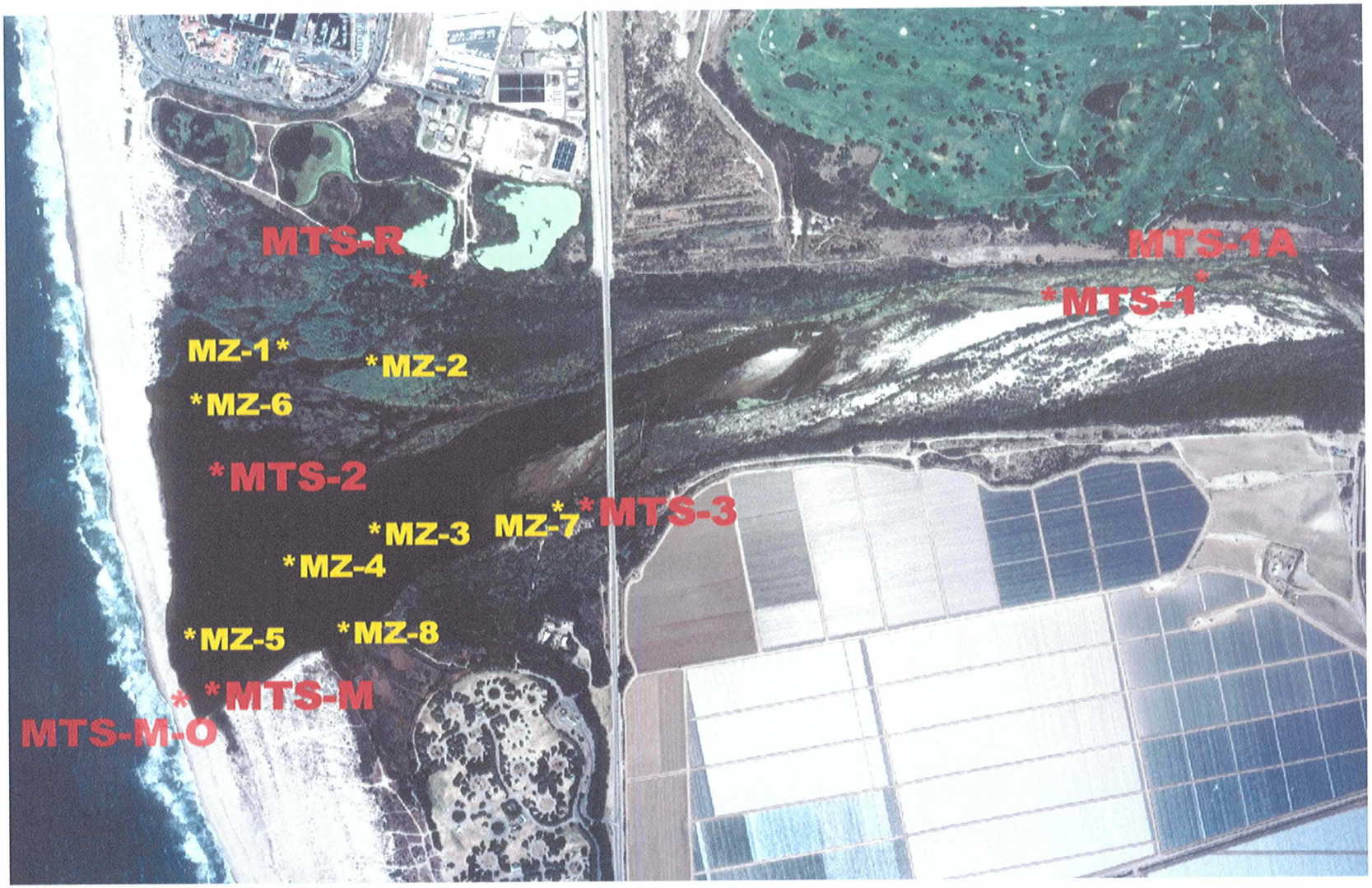
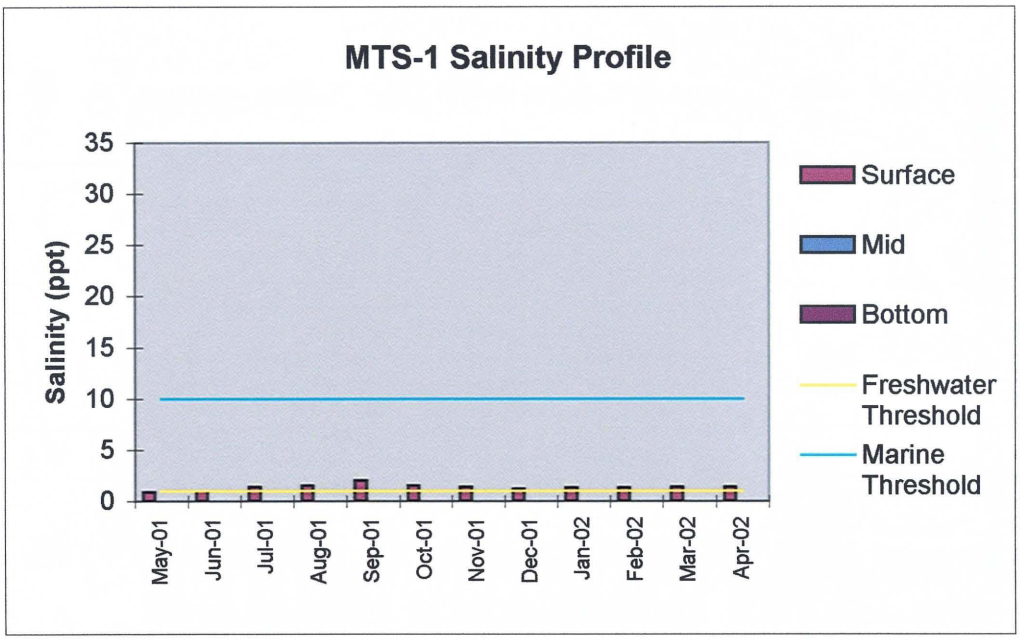


Figure 2-1. Metals Translator Study Station Map – Santa Clara River Estuary
Red-colored Stations - Metal Translator Sampling Stations (MTS)
Yellow-colored Stations - Mixing Zone Sampling Stations (MZ)



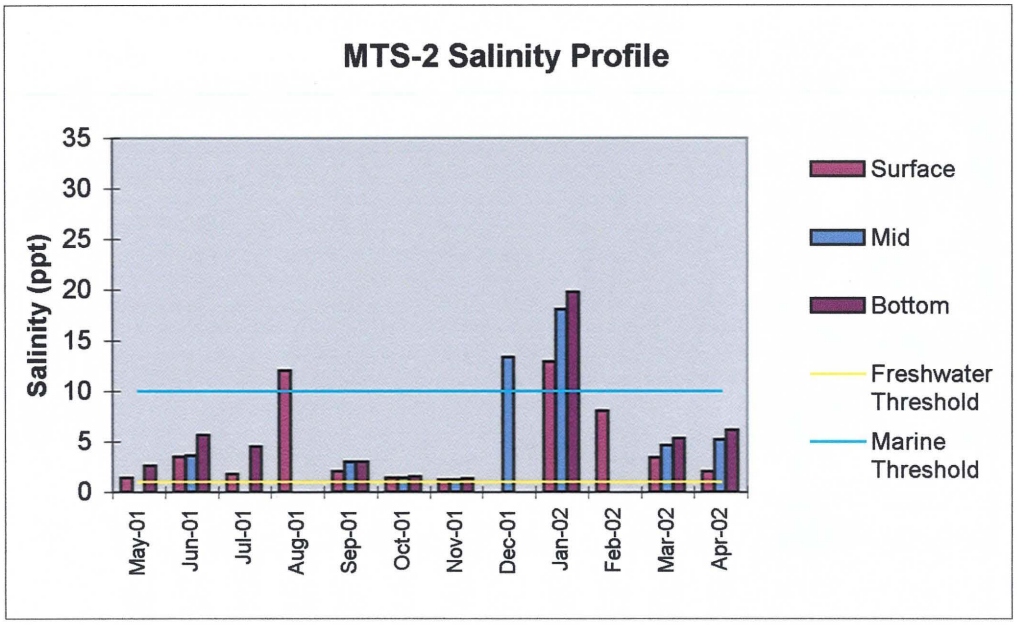
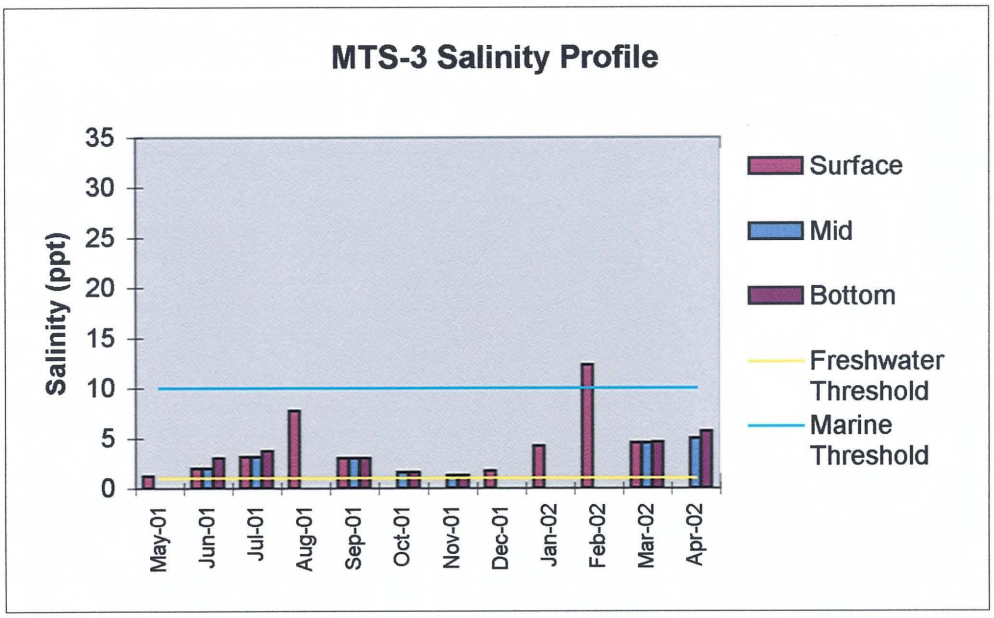


Figure 3-1a: Salinity Profiles at Different Depths at Metals Translator Stations MTS-1 and MTS-2



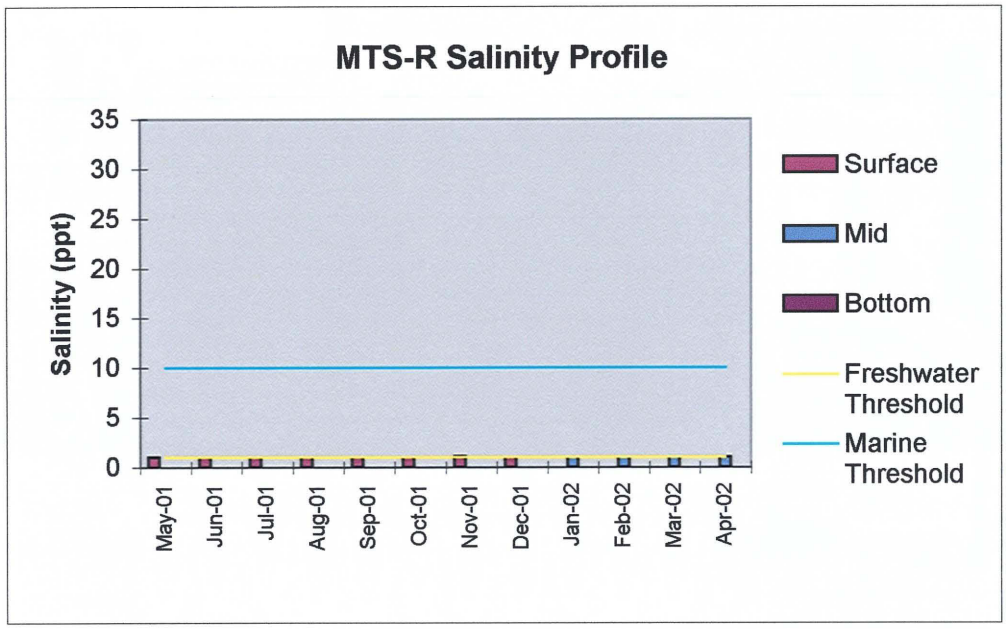
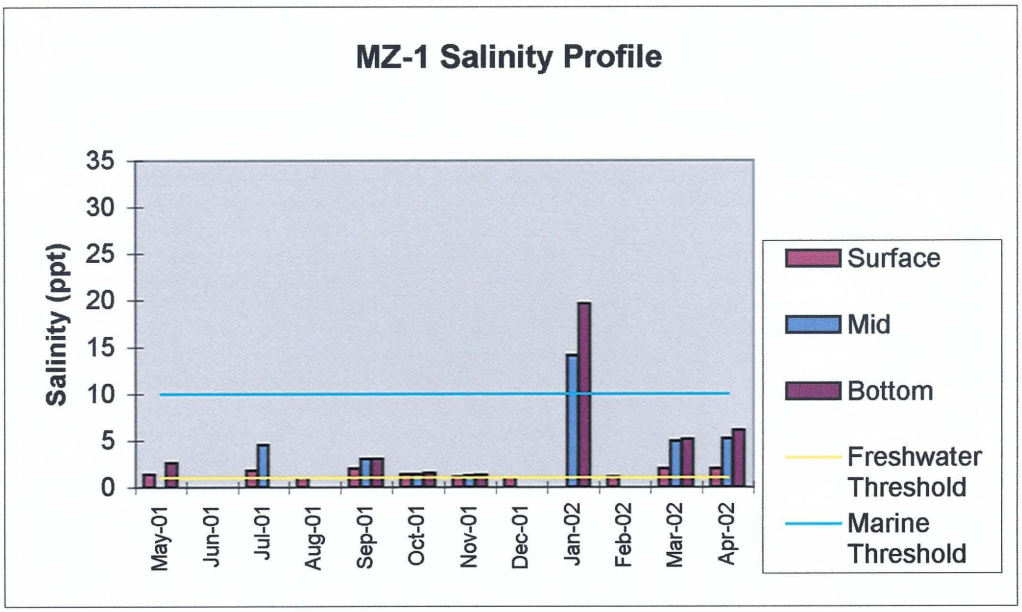


Figure 3-1b: Salinity Profiles at Different Depths at Metals Translator Stations MTS-3 and MTS-R



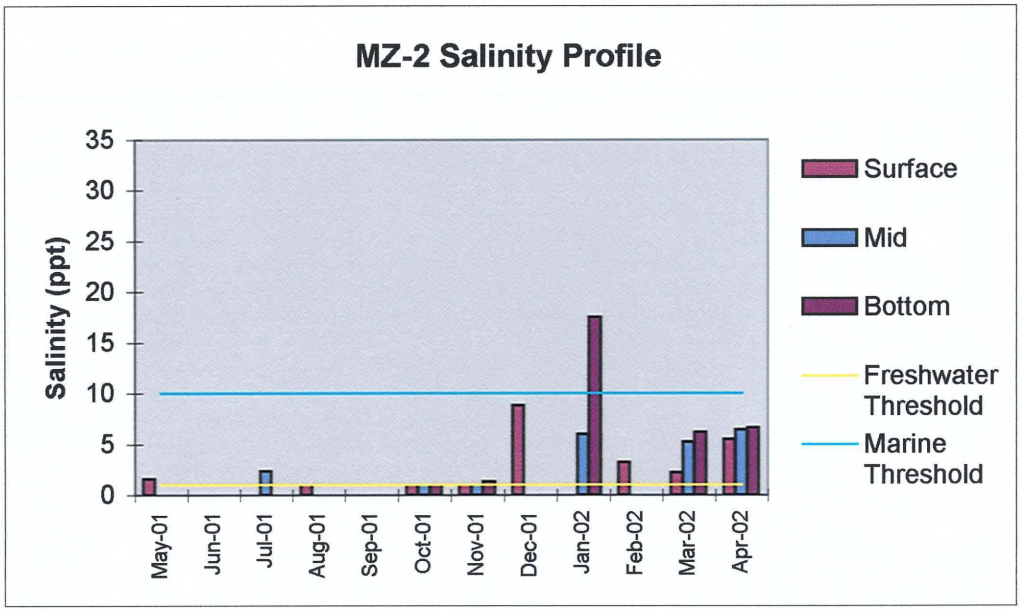
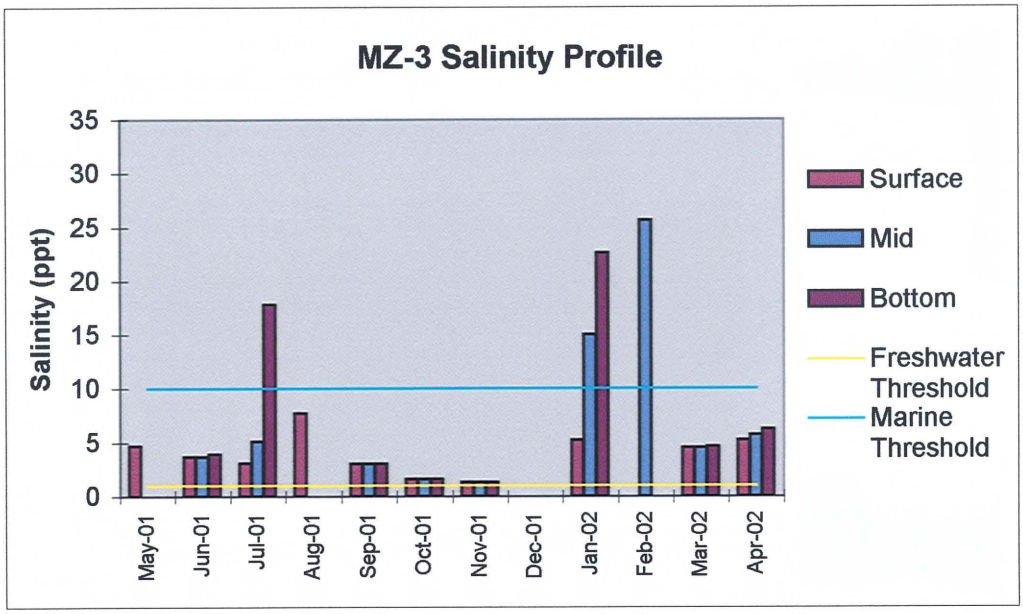


Figure 3-2a: Salinity Profiles at Different Depths at Mixing Zone Stations MZ-1 and MZ-2



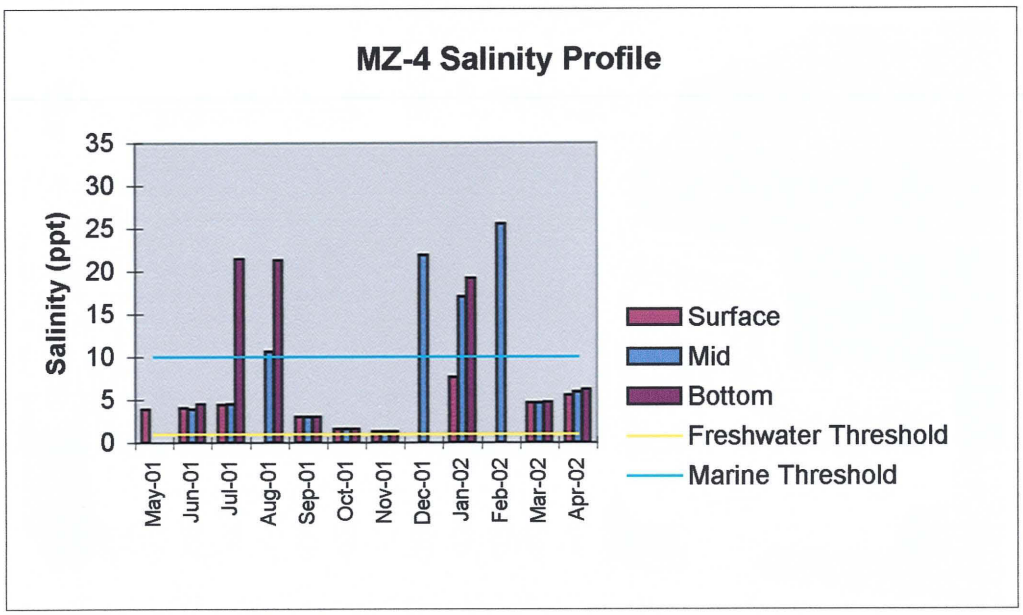
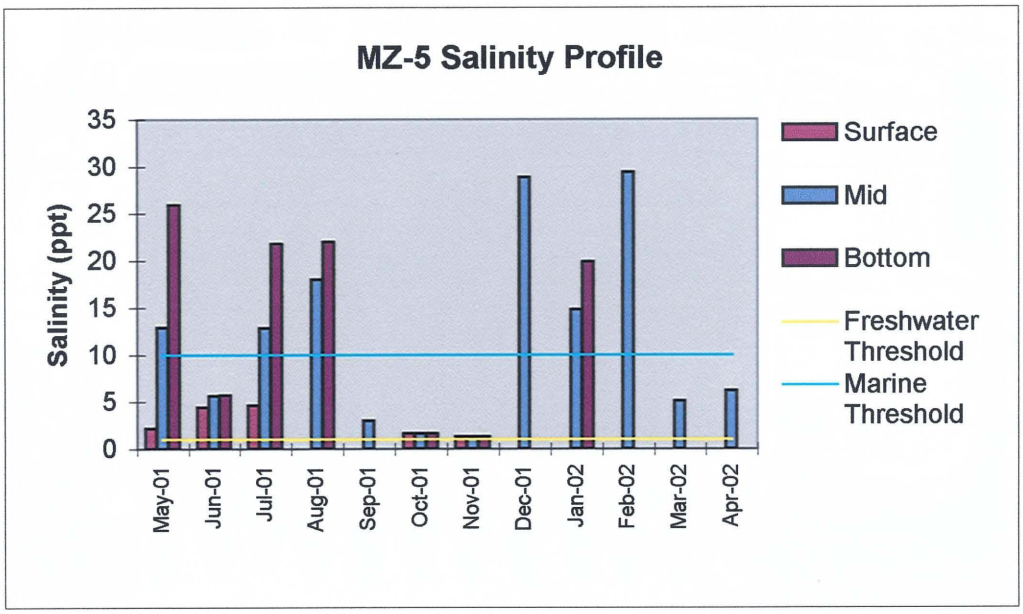


Figure 3-2b: Salinity Profiles at Different Depths at Mixing Zone Stations MZ-3 and MZ-4



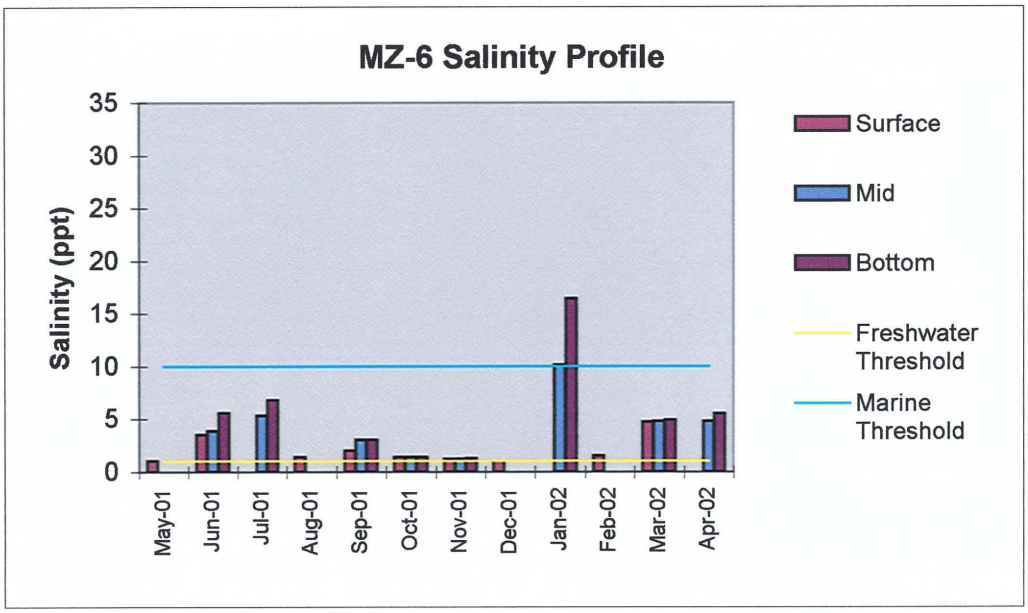


Figure 3-2c: Salinity Profiles at Different Depths at Mixing Zone Stations MZ-5 and MZ-6

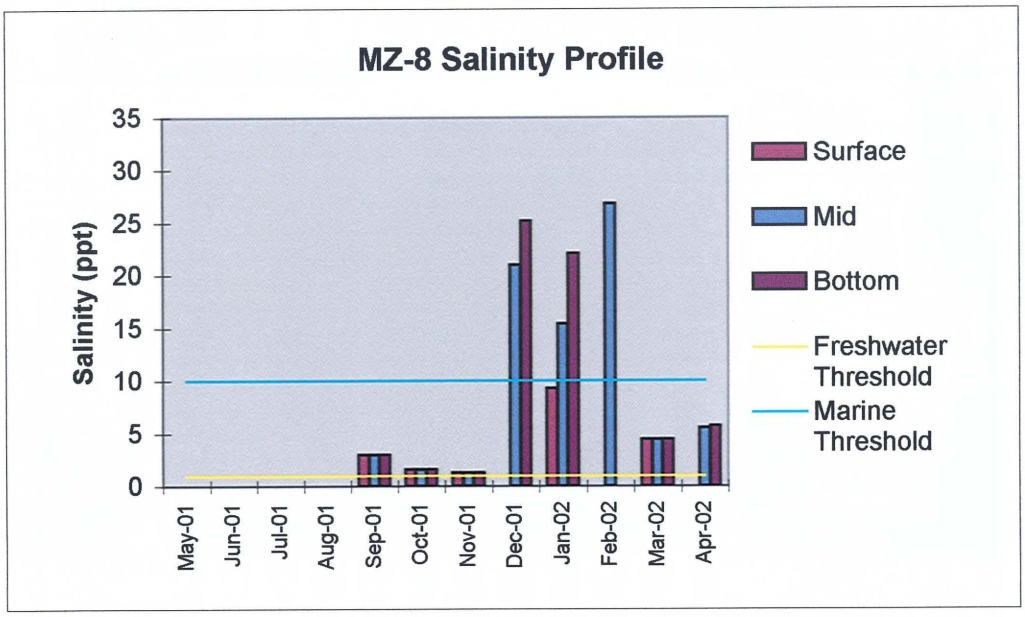
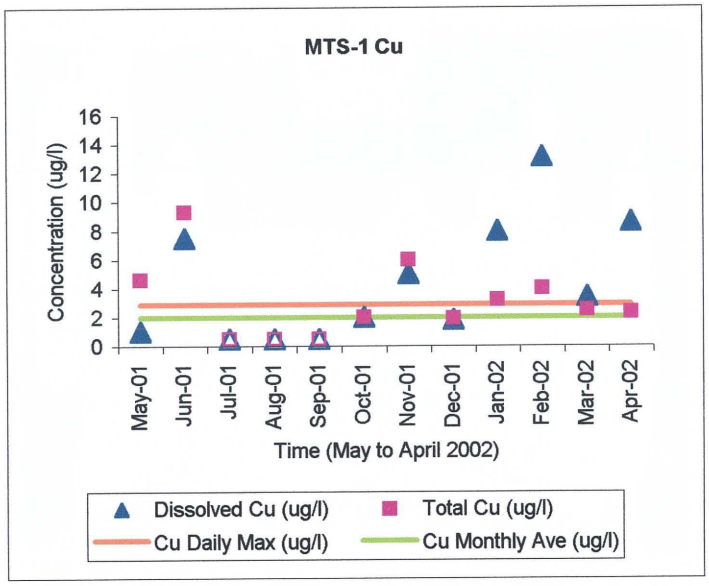


Figure 3-2d: Salinity Profiles at Different Depths at Mixing Zone Stations MZ-8



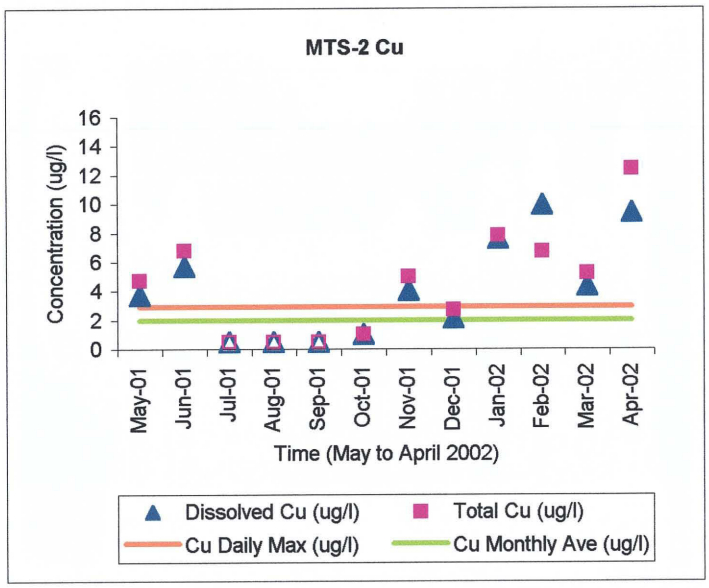
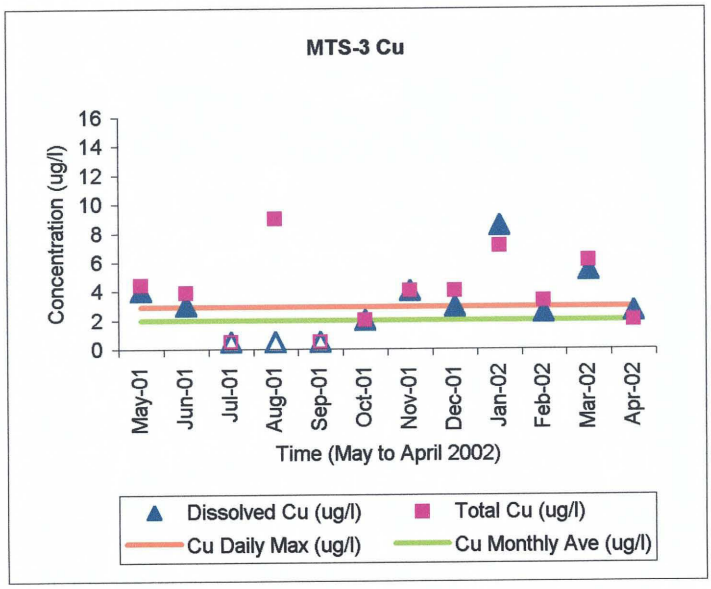


Figure 3-3a: Summary of Copper Concentrations at Metals Translator Station MTS-1 and MTS-2



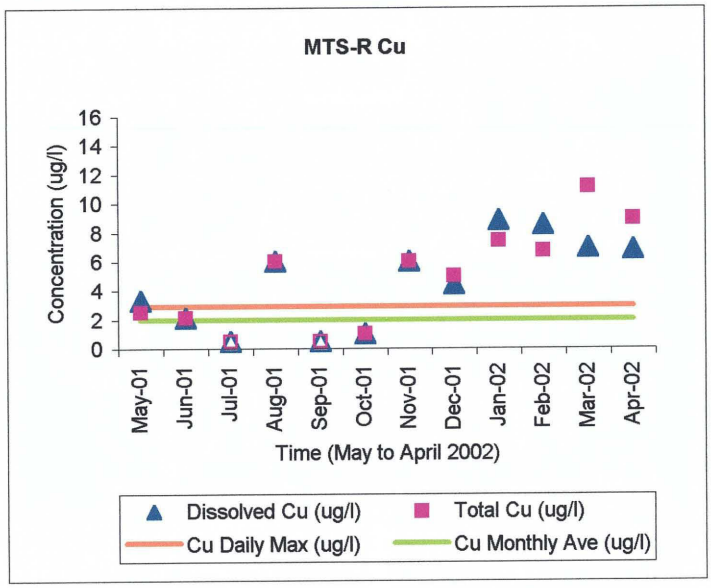


Figure 3-3b: Summary of Copper Concentrations at Metals Translator Station MTS-3 and MTS-R

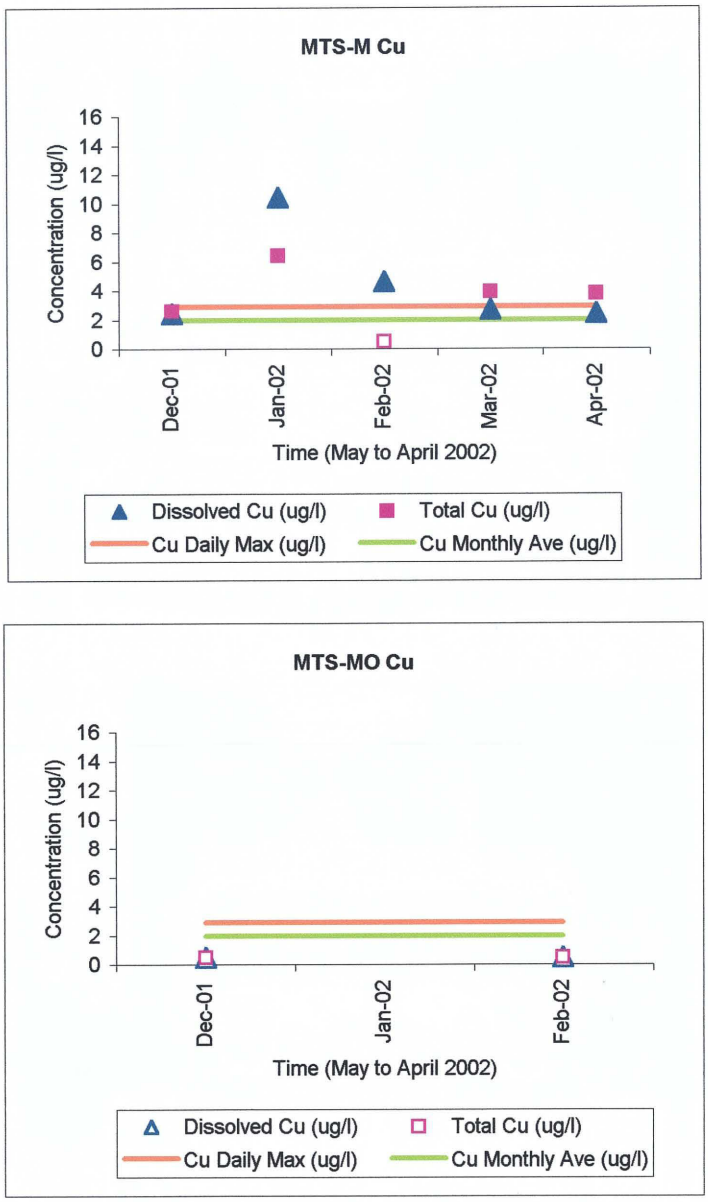
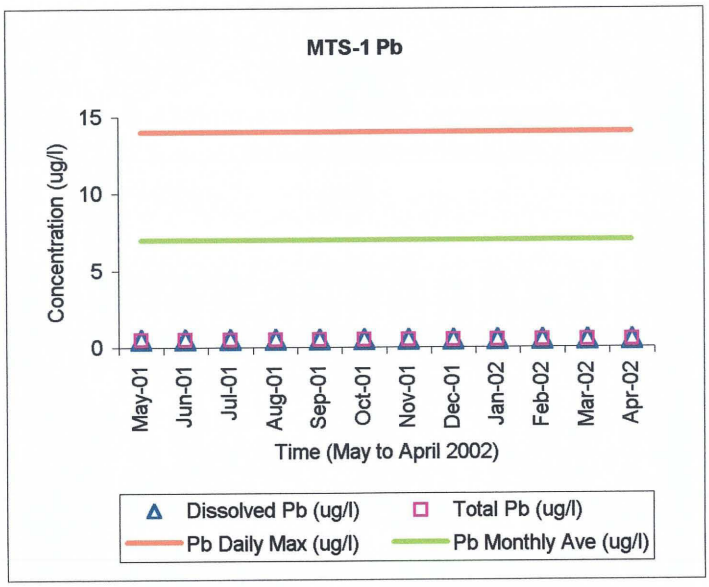


Figure 3-3c: Summary of Copper Concentrations at Metals Translator Station MTS-M and MTS-MO



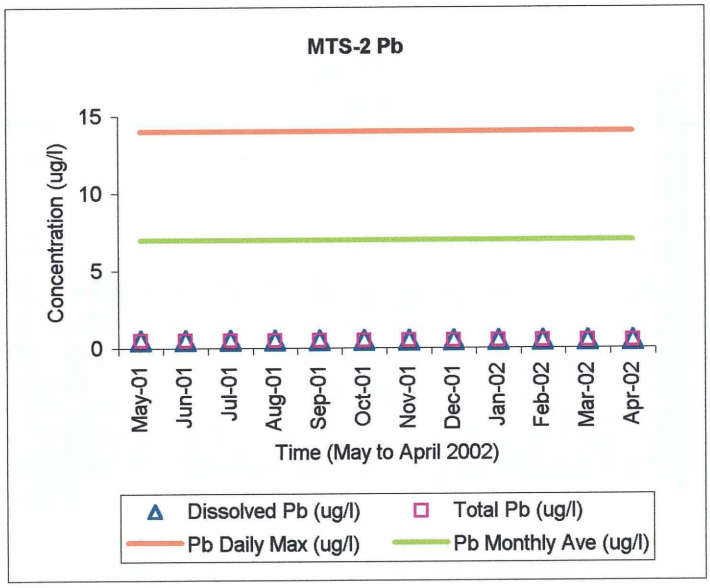
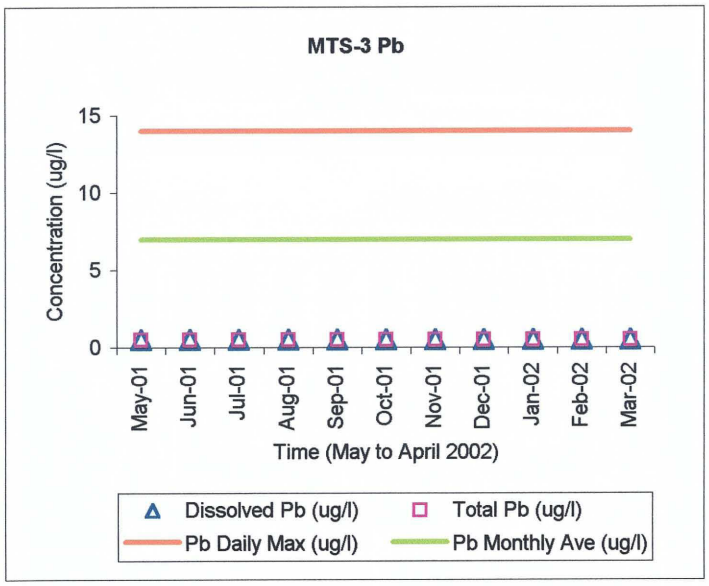


Figure 3-4a: Summary of Lead Concentrations at Metals Translator Station MTS-1 and MTS-2



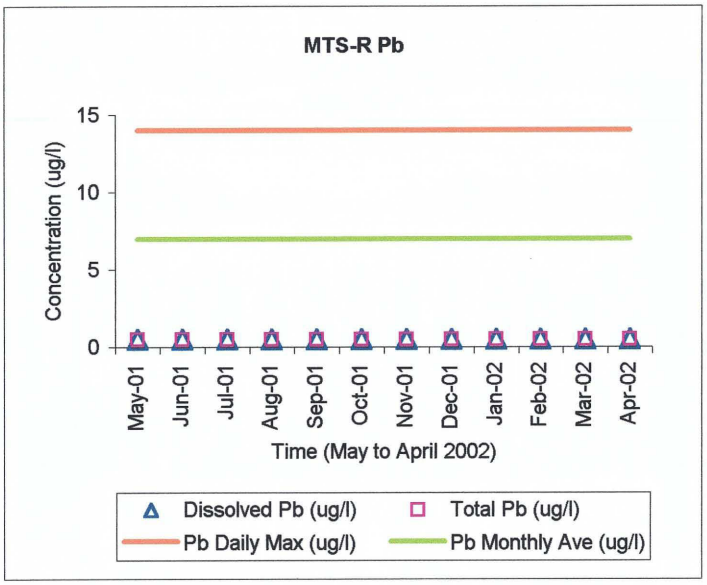
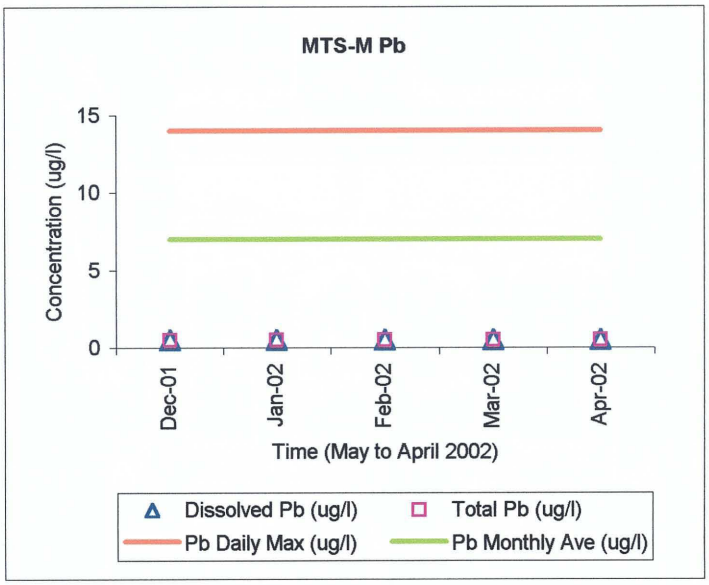


Figure 3-4b: Summary of Lead Concentrations at Metals Translator Station MTS-3 and MTS-R



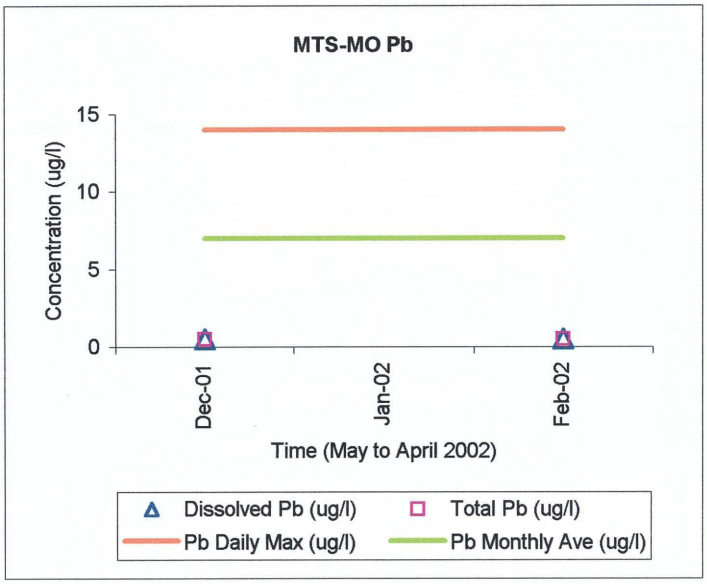
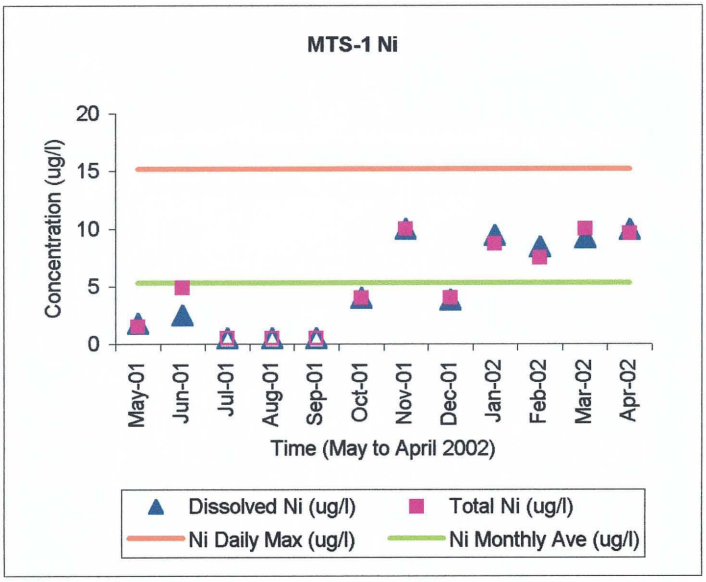


Figure 3-4c: Summary of Lead Concentrations at Metals Translator Station MTS-M and MTS-MO



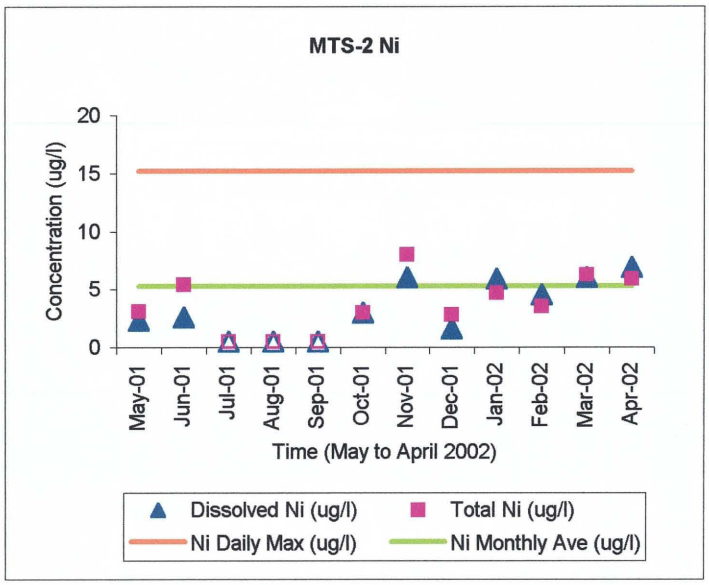
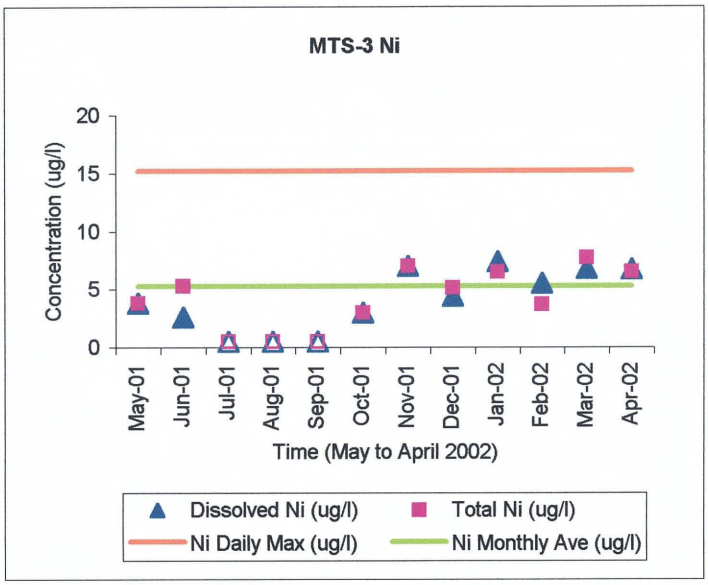


Figure 3-5a: Summary of Nickel Concentrations at Metals Translator Station MTS-1 and MTS-2



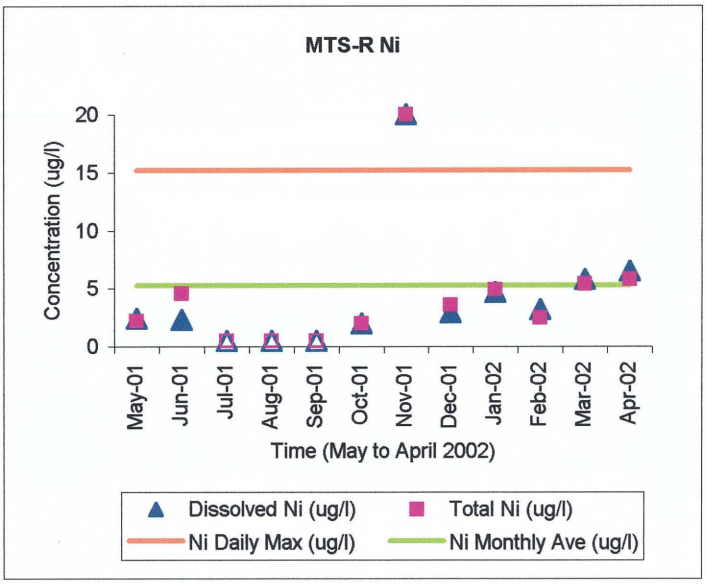
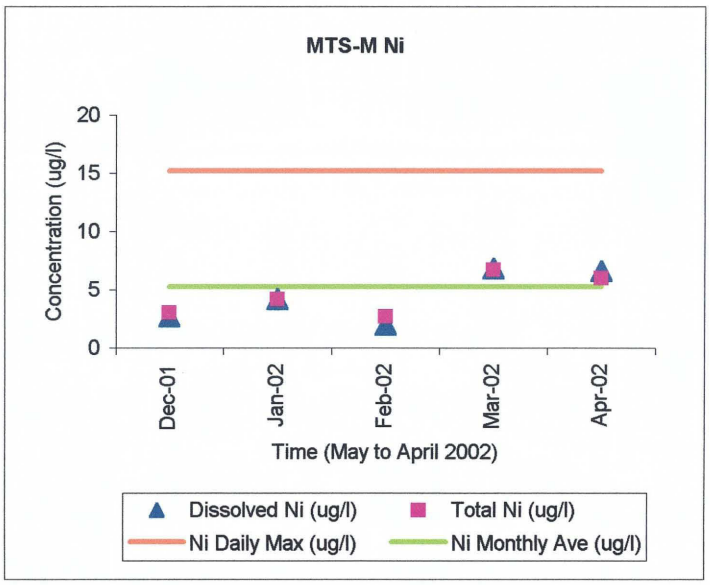


Figure 3-5b: Summary of Nickel Concentrations at Metals Translator Station MTS-3 and MTS-R



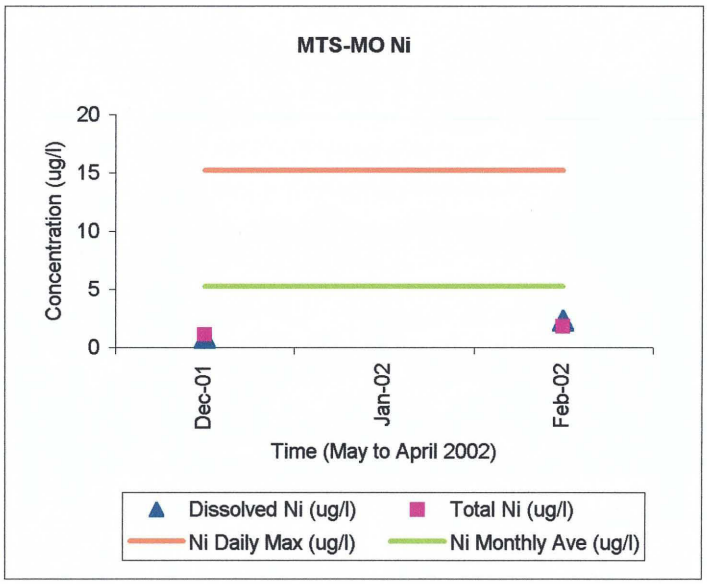
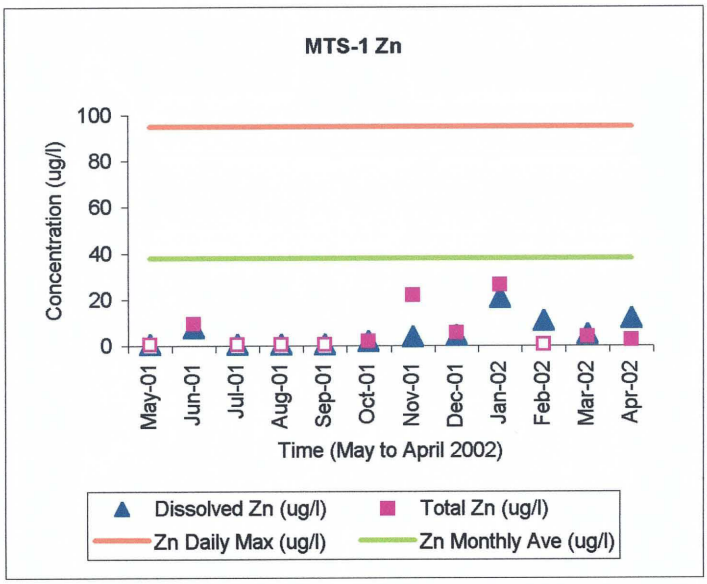


Figure 3-5c: Summary of Nickel Concentrations at Metals Translator Station MTS-M and MTS-MO



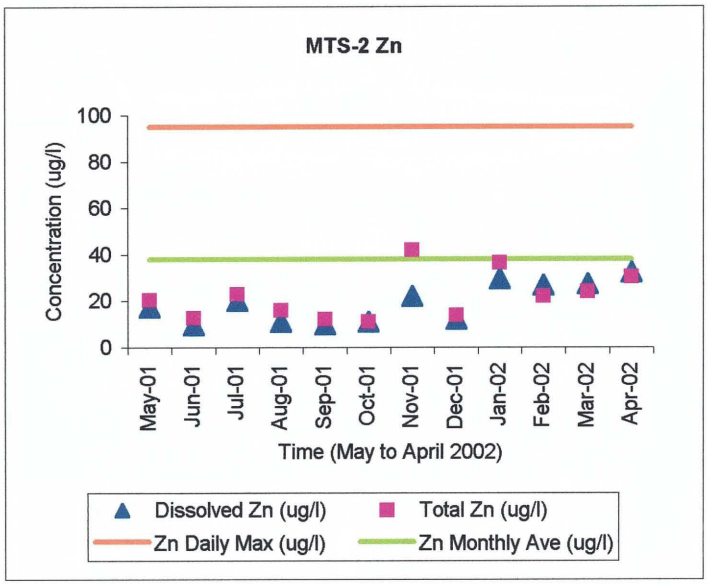
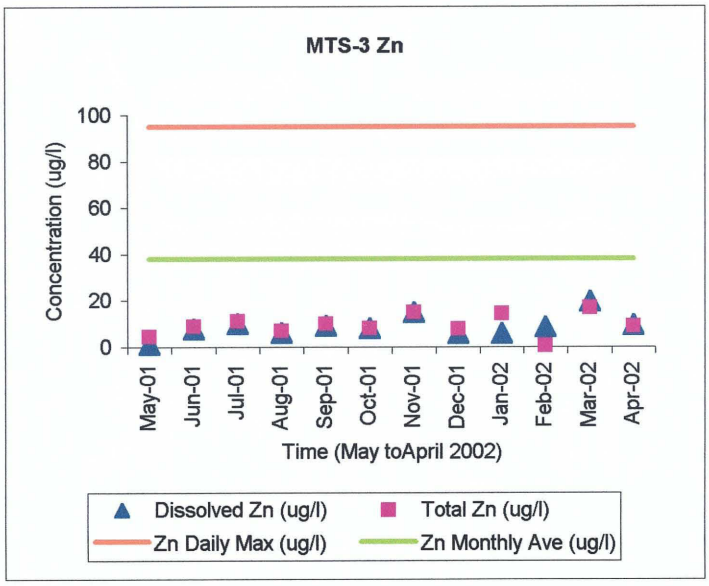


Figure 3-6a: Summary of Zinc Concentrations at Metals Translator Station MTS-1 and MTS-2



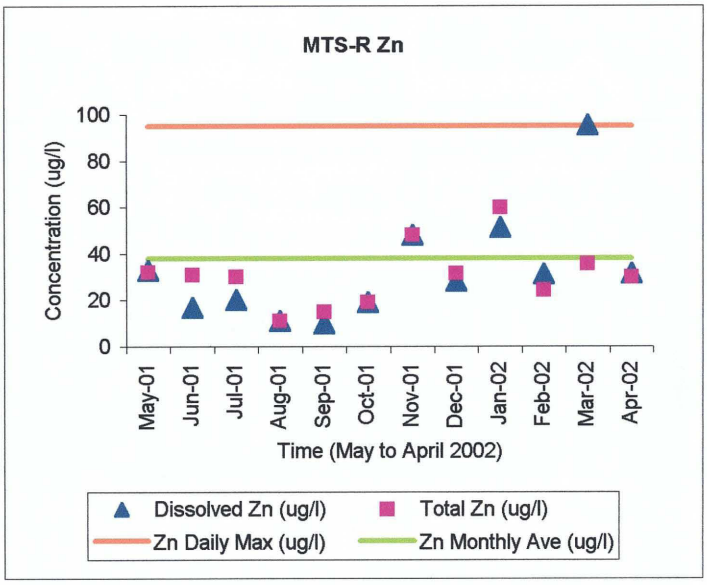
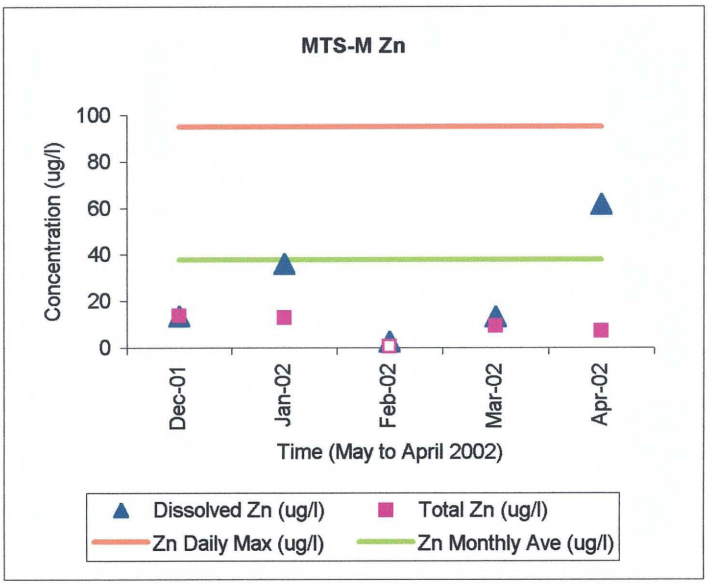


Figure 3-6b: Summary of Zinc Concentrations at Metals Translator Station MTS-3 and MTS-R



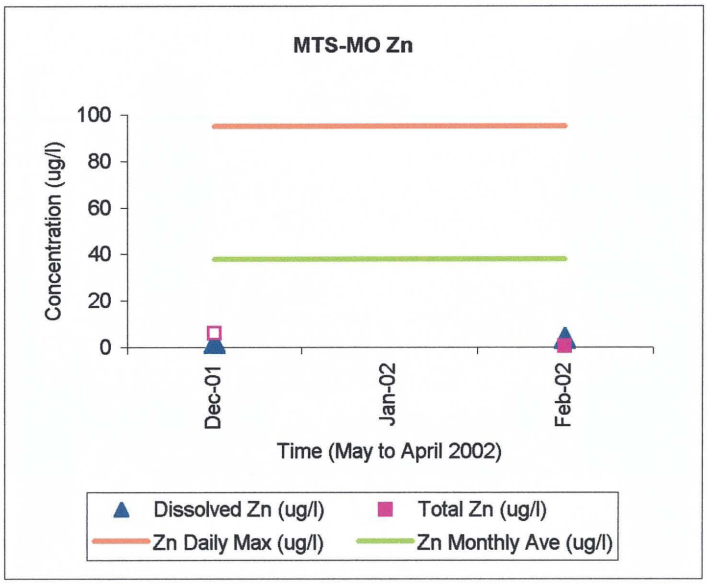
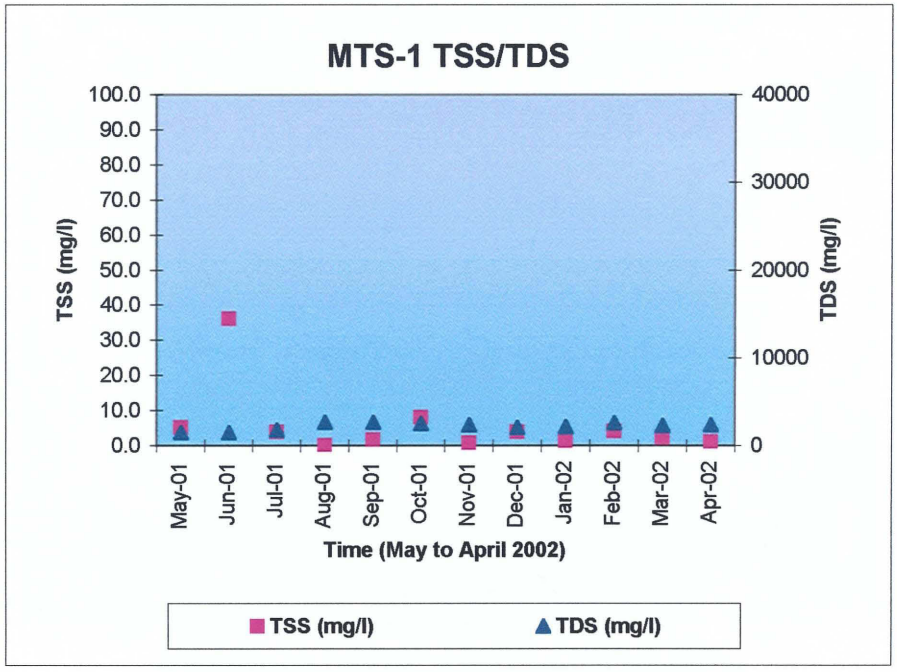


Figure 3-6c: Summary of Zinc Concentrations at Metals Translator Station MTS-M and MTS-MO



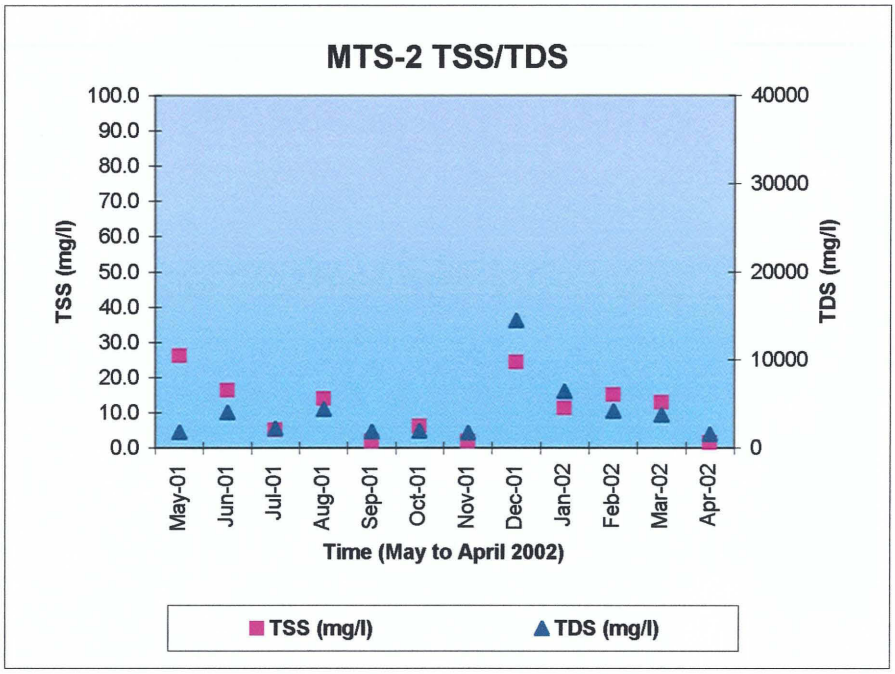
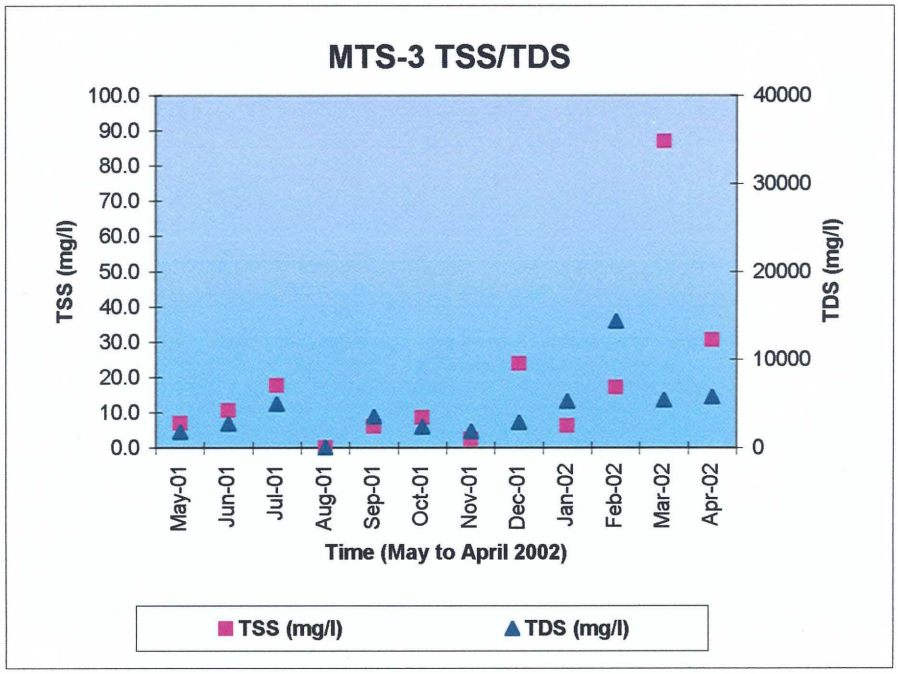


Figure 3-7a: Summary of TSS & TDS Concentrations at Metals Translator Station MTS-1 & MTS-2



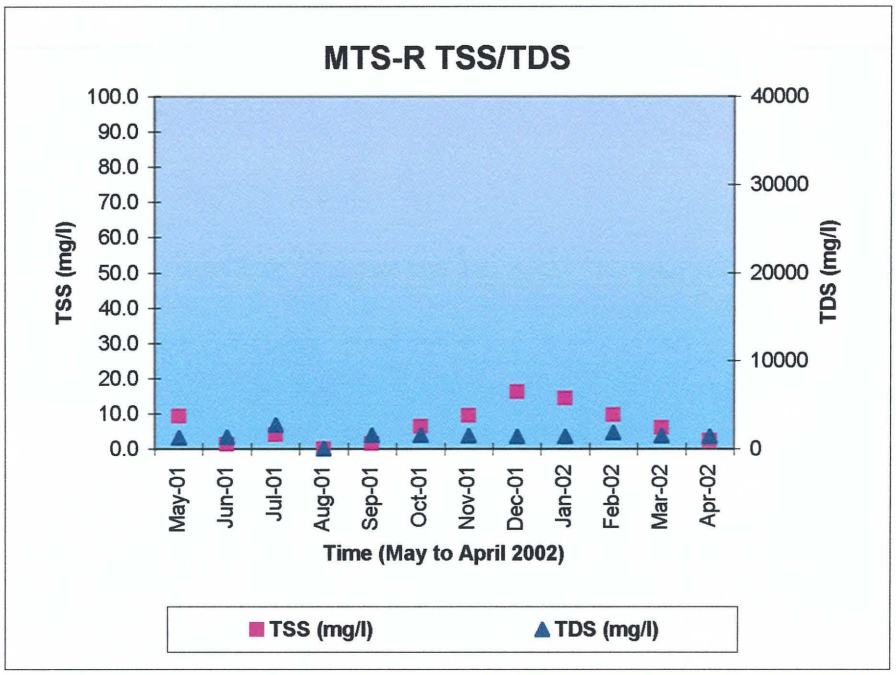
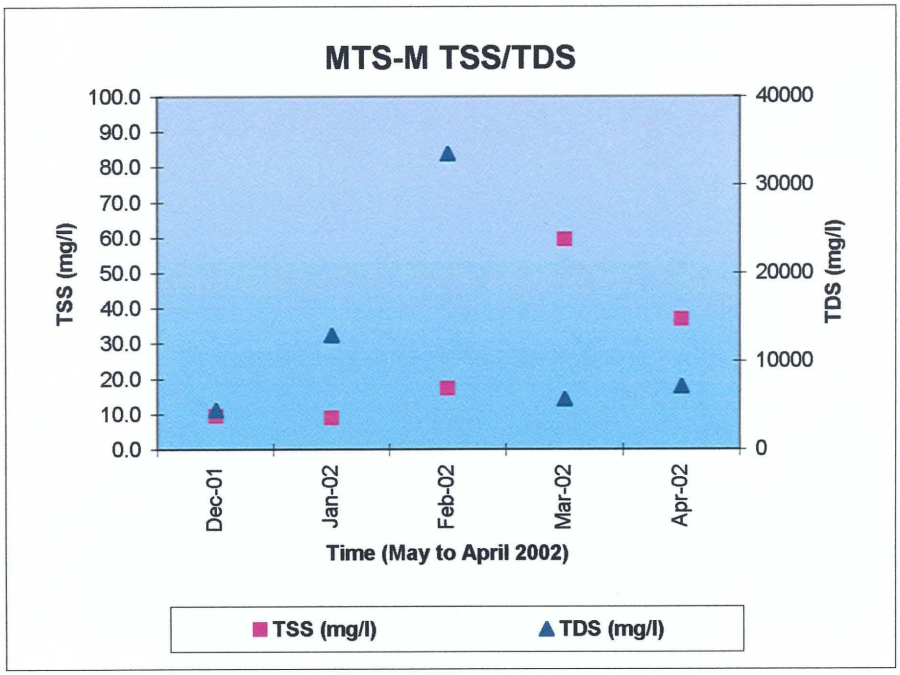


Figure 3-7b: Summary of TSS & TDS Concentrations at Metals Translator Station MTS-3 & MTS-R



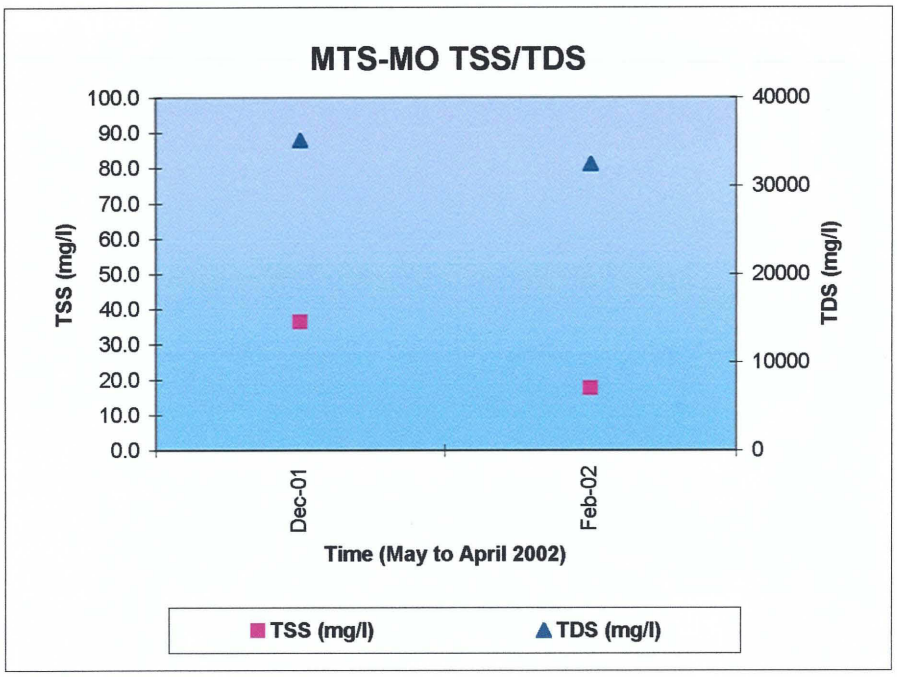


Figure 3-7c: Summary of TSS & TDS Concentrations at Metals Translator Station MTS-M & MTS-M

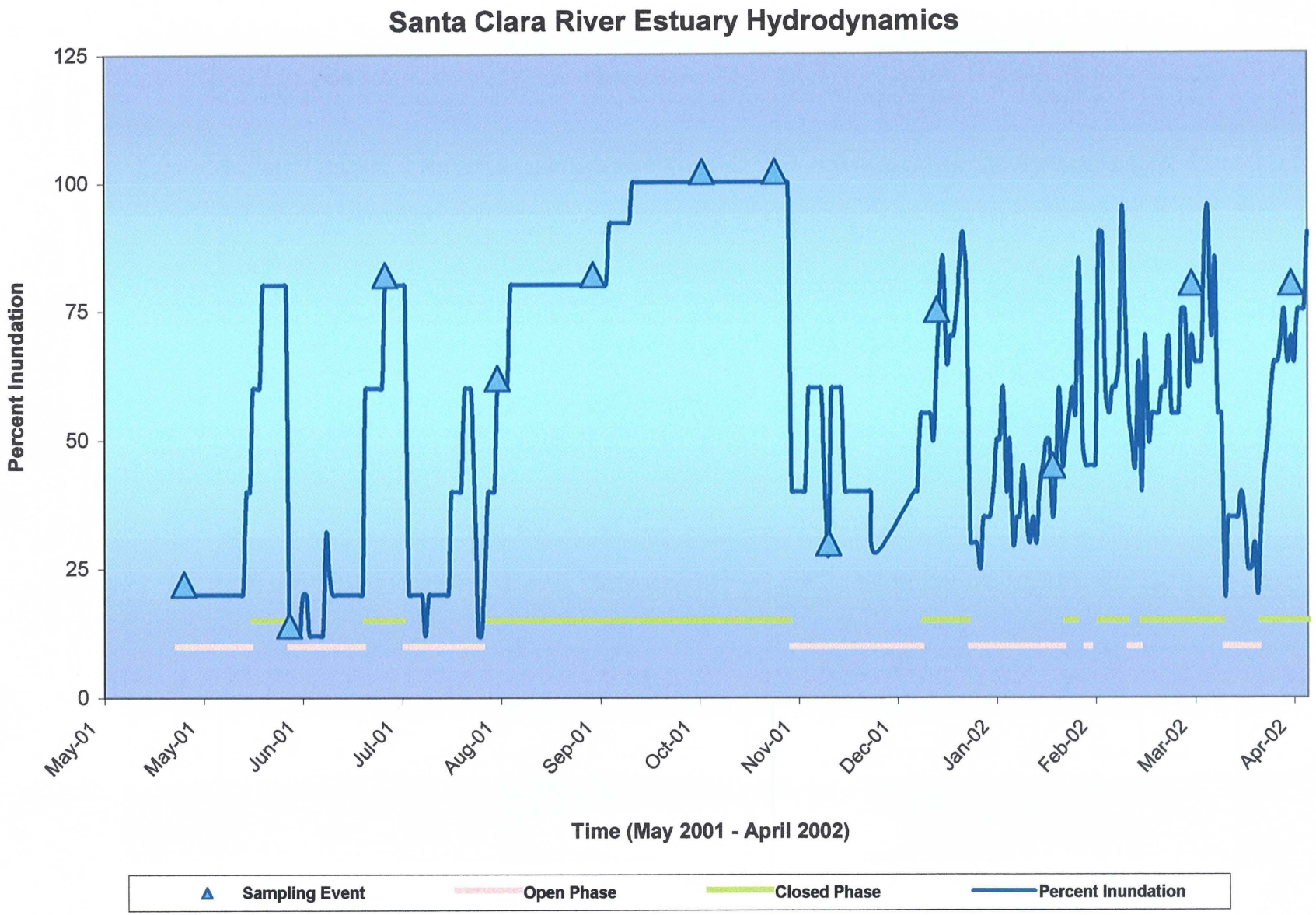


Figure 4-1. Santa Clara River Estuary Hydrodynamics (4/01-5/02)

Figure 4-2. Closed Phase Aerial

Figure 4-3. Open Phase Aerial

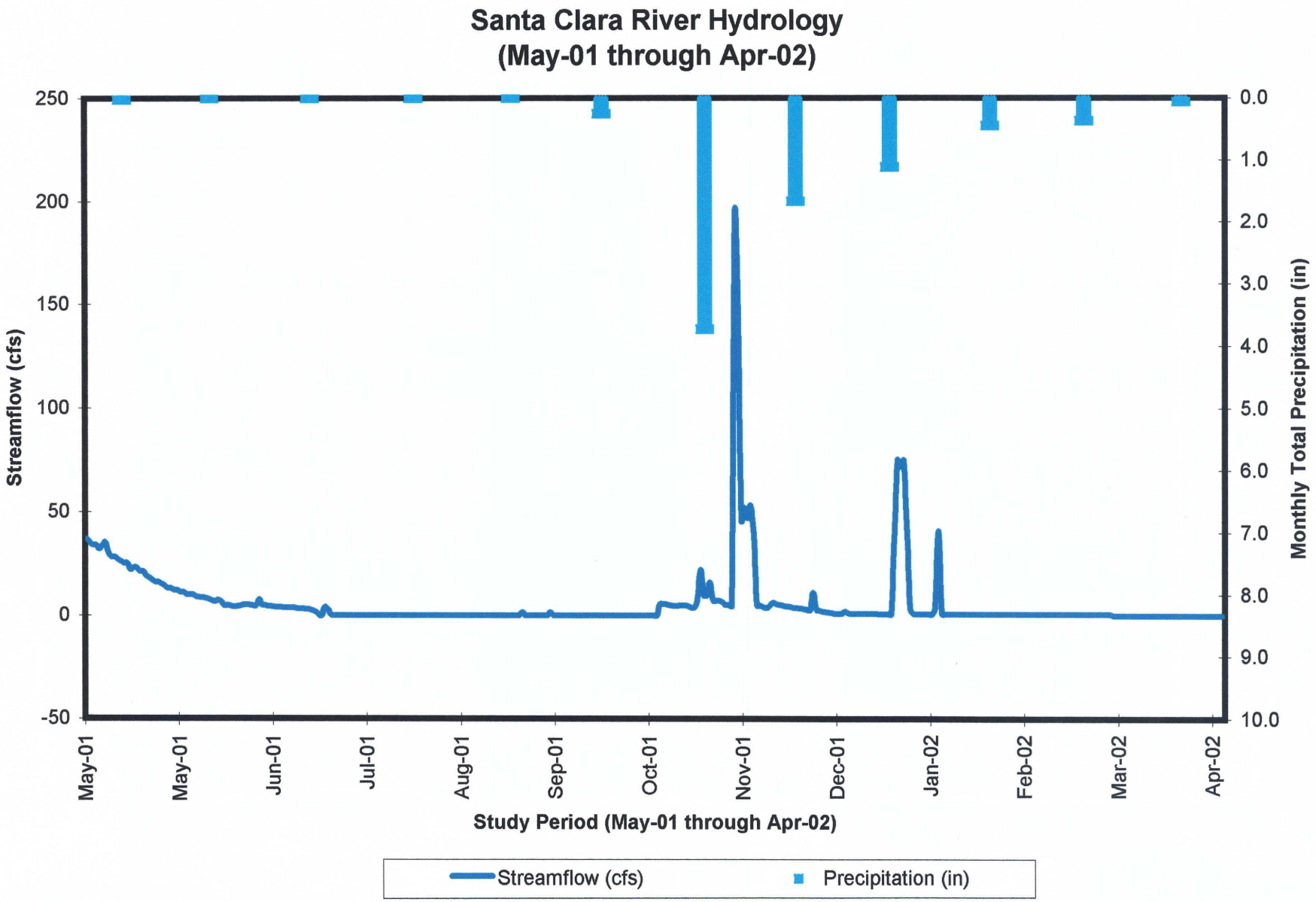
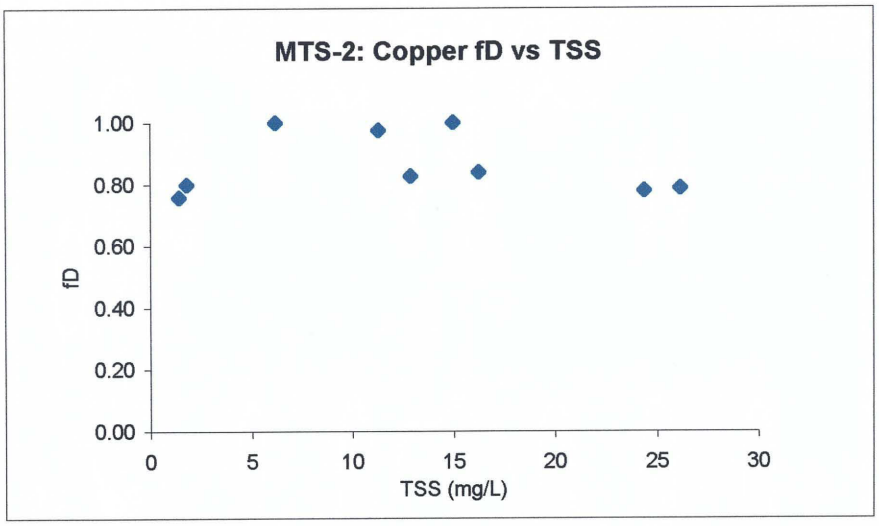
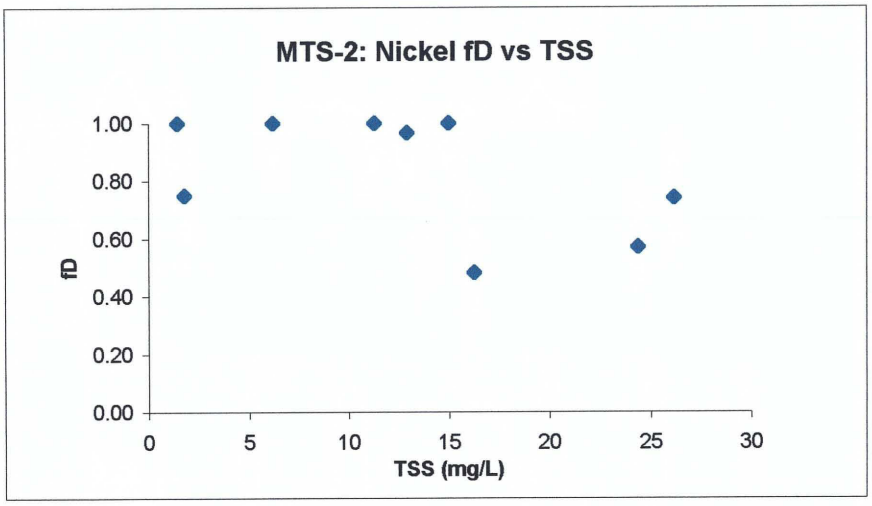


Figure 4-4. Santa Clara River Daily Streamflow and Monthly Precipitation (4/01-5/02)





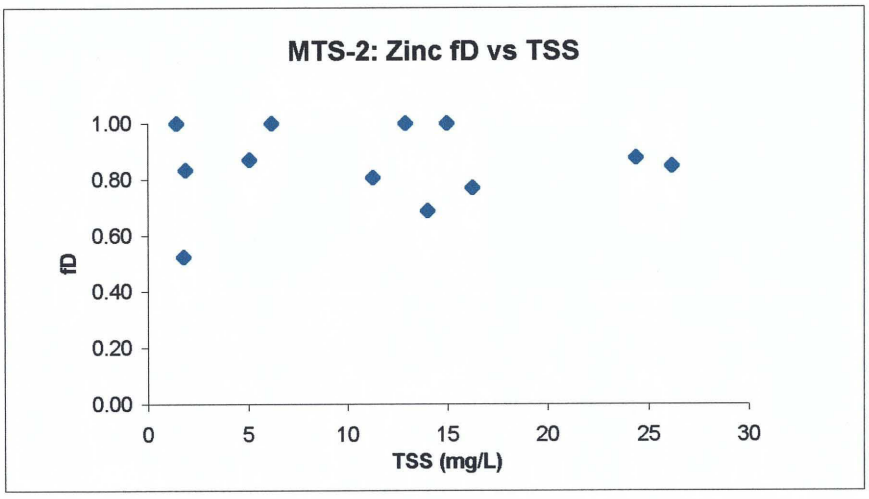
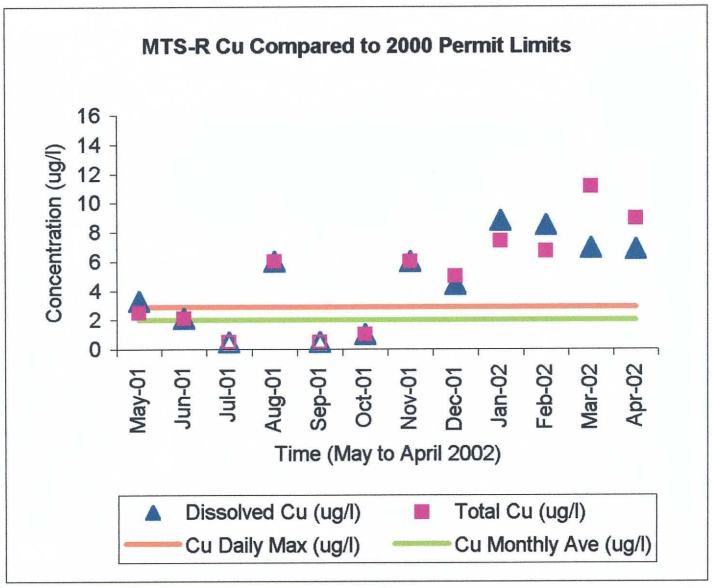
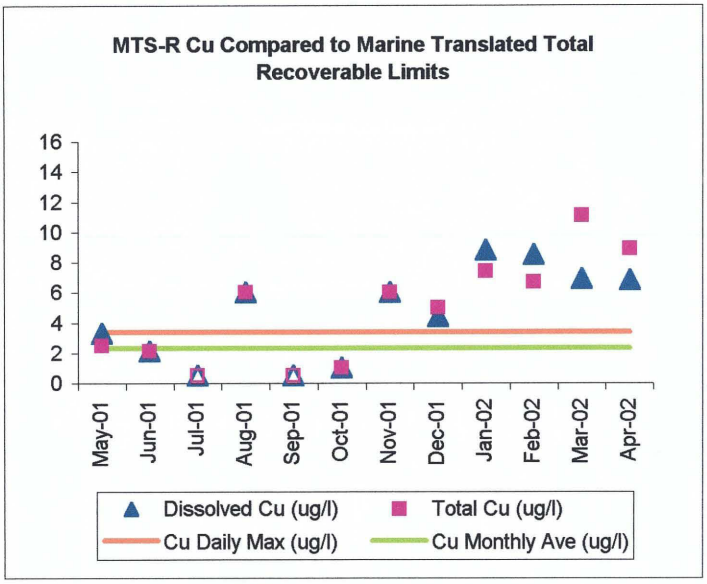


Figure 5-1: Translators (fD) for Cu, Ni, and Zn vs TSS at MTS-2





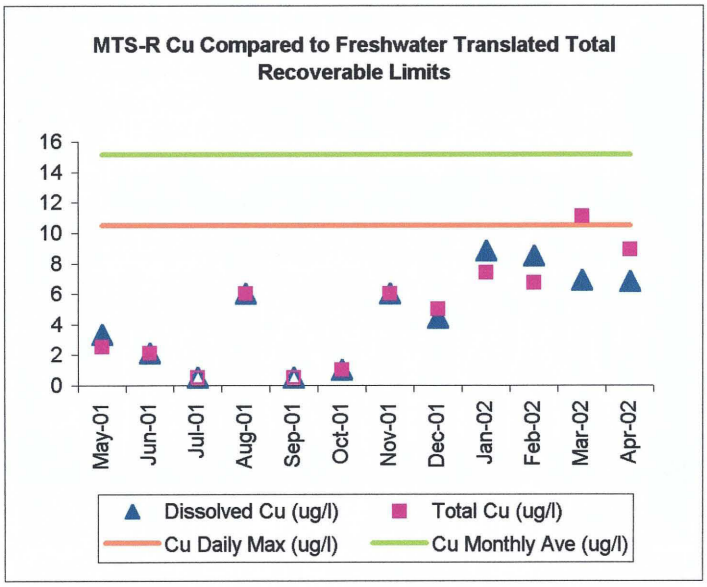
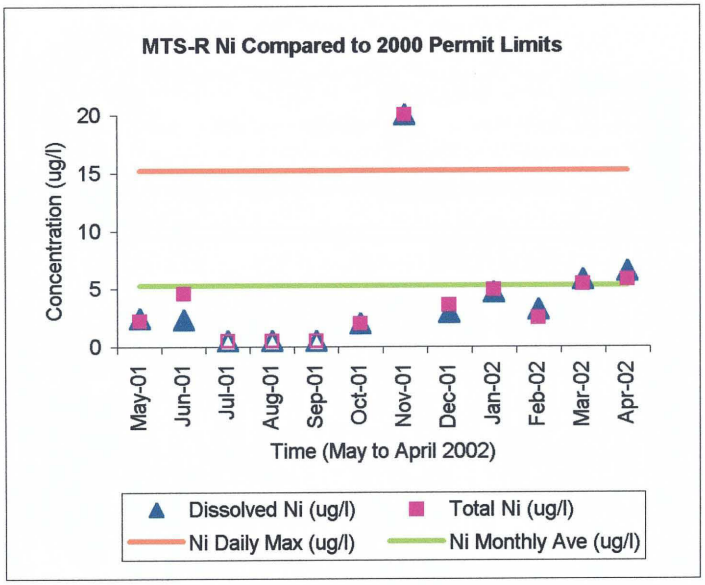
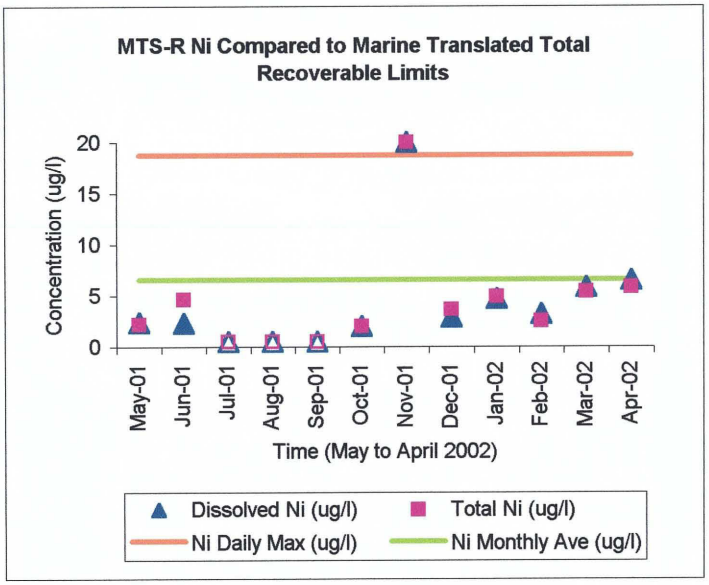


Figure 5-2: Copper Concentrations Compared to 2000 Permit Limits, Translated Marine Limits, and Translated Freshwater Limits





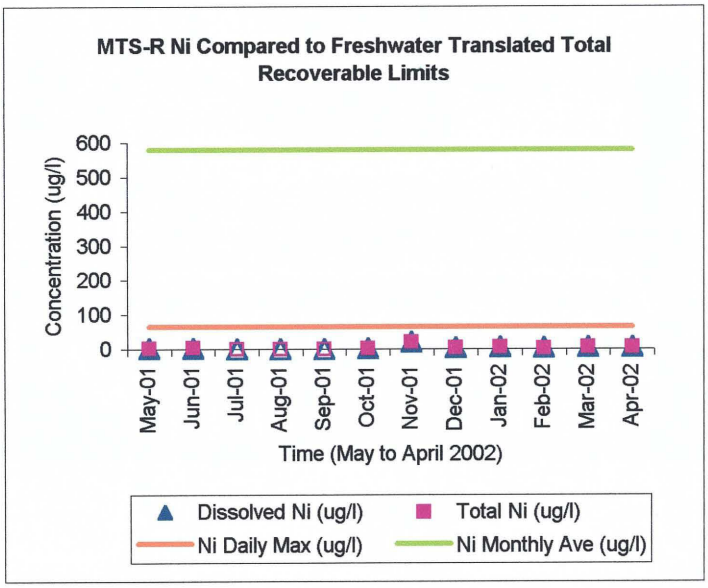
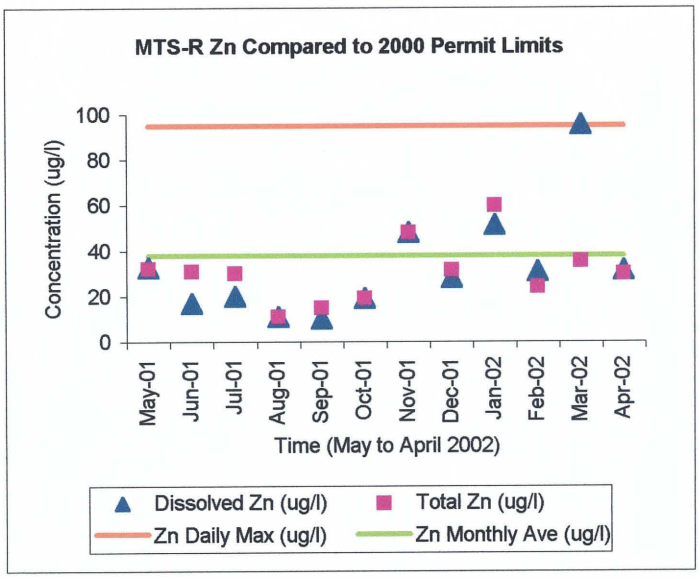
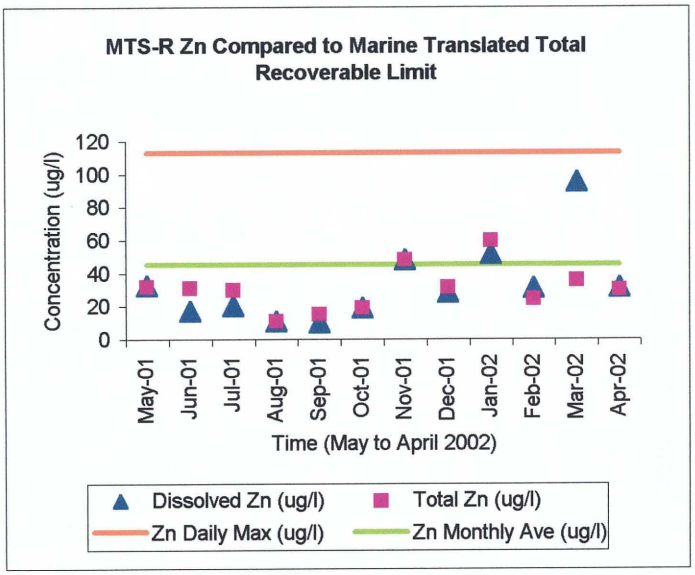


Figure 5-3: Nickel Concentrations Compared to 2000 Permit Limits, Translated Marine Limits, and Translated Freshwater Limits





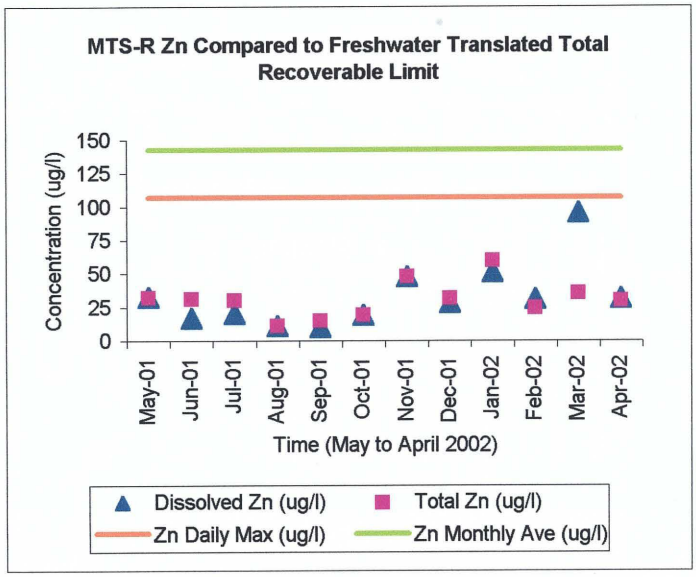


Figure 5-4: Zinc Concentrations Compared to 2000 Permit Limits, Translated Marine Limits, and Translated Freshwater Limits

APPENDIX B

MONTHLY MONITORING & SAMPLING SUMMARIES

May Sampling Event (5/25/01)

Analytical Data

Sample ID	Locale	TSS	TDS	Copper (mg/l)				Lead (mg/l)				Nickel (mg/l)				Zinc (ug/l)			
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1	U/S	5.12	1430	J	0.0046	J	0.0010	<	0.0005	<	0.0005	J	0.0015	J	0.0018	<	0.0005	<	0.0005
MTS-2	Mixing Zone	26.16	1744	J	0.0047	J	0.0037	<	0.0005	<	0.0005	J	0.0031	J	0.0023		0.0204		0.0173
MTS-3	Upper Estuary	6.92	1738	J	0.0044	J	0.0040	<	0.0005	<	0.0005	J	0.0038	J	0.0038	J	0.0044	J	0.0010
MTS-R	Discharge	9.32	1240	J	0.0025	J	0.0033	<	0.0005	<	0.0005	J	0.0022	J	0.0024		0.0319		0.0327
MTS-DUP	Dup MTS-R	6.76	1244	J	0.0010	J	0.0010	<	0.0005	<	0.0005	J	0.0023	J	0.0032		0.0320		0.0810

Water Quality Parameters

Sample ID	Locale	Time	pH	Qualifier	Cond. (ms/cm)	Qualifier	Turbidity (NTU)	Qualifier	DO (mg/l)	Qualifier	Temp. (C)	Qualifier	Sal. (ppt)	Qualifier	Tot. Depth (ft.)
MTS-1	Surface	0852	8.03		1.93	<	10		8.95		18.2		0.9		0.60
MTS-2 (MZ-1)	Surface	1400	7.91		2.92	<	10		11.55		24.3		1.4		1.0
	1 ft.	1400	7.99		4.50	<	10		13.50		23.5		2.6		1.0
MTS-3 (MZ-7)	Surface	1030	7.65		2.50	<	10		10.95		18.5		1.2		0.4
MTS-R (MZ-R)	Surface	1535	7.61		2.09	<	10		8.76		23.1		1.0		1.0
MZ-3	Surface	1113	8.47		8.50	<	10		16.47		20.2		4.7		0.5
MZ-4	Surface	1137	8.25		7.28	<	10		16.75		21.7		3.9		0.4
	Surface	1200	8.17		4.01	<	10		10.26		19.2		2.2		3.0
MZ-5	1 ft.	1200	8.02		10.00	<	10		8.13		19.2		12.9		3.0
	2 ft.	1200	7.91		39.5	<	10		5.74		18.7		25.9		3.0
MZ-6	Surface	1250	7.60		2.10	<	10		8.16		23		1		1.0
MZ-2	Surface	1300	8.96		3.37	<	10	>	19.99		22.6		1.6		0.5

Notes:
The Mixing Zone (MTS-2) was sampled at MZ-1.
Mixing zone established primarily on visual observation of discharge flow into the pooled estuary.
Validated with water quality parameter measurement to establish sampling point.

Conditions:
Estuary mouth open with ocean interchange. Santa Clara river flowing to estuary

Tides:
High 3.4 ft. at 1316, 6.0 at 1140
Low -1.1 ft at 0626, 2.4 ft. at 1720

Qualifiers:
J : estimated value
<: non-detect

June Sampling Event (6/26/01)

Analytical Data

Sample ID	Locale	TSS	TDS	Copper (mg/l)				Lead (ug/l)				Nickel (ug/l)				Zinc (ug/l)			
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1	U/S	36.00	1467	J	0.0093	J	0.0075	<	0.0005	<	0.0005	J	0.0049	J	0.0025	J	0.0094	J	0.0078
MTS-2	Mixing Zone	16.26	4015	J	0.0068	J	0.0057	<	0.0005	<	0.0005	J	0.0054	J	0.0026		0.0126	J	0.0097
MTS-3	Upper Estuary	10.44	2701	J	0.0039	J	0.0030	<	0.0005	<	0.0005	J	0.0053	J	0.0026	J	0.0087	J	0.0077
MTS-R	Discharge	1.30	1326	J	0.0021	J	0.0021	<	0.0005	<	0.0005	J	0.0046	J	0.0023		0.0309		0.0169
MTS-DUP	Dup MTS-R	1.06	1303	J	0.0064	J	0.0021	<	0.0005	<	0.0005	J	0.0041	J	0.0021		0.0335		0.0204

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	850	8.1	8.9	2	8.6	20.0	1	0.1
MTS-2 (MZ-6)	Surface	1710	---	6.51	---	14.25	26.7	3.5	4.0
	2ft.	1710	---	6.62	---	14.3	26.8	3.6	4.0
	3ft.	1710	---	7.43	---	13.63	26.8	3.9	4.0
	4ft.	1710	---	10.01	---	14.63	27.6	5.6	4.0
MTS-3 (MZ-7)	Surface	1000	8.6	4.5	1	8.2	23.0	2	3.0
	1ft.	1000	8.6	4.6	1	8	23.0	2	3.0
	2ft.	1000	8.6	4.9	1	8.1	24.0	2	3.0
	3ft.	1000	8.8	6.8	1	8.7	25.0	3	3.0
MTS-R(MZ-R)	Surface	1230	---	2040us	---	6.82	25.2	1	1.0
MZ-3	Surface	1425	---	6.89	---	12.34	25.5	3.7	3.0
	1ft.	1425	---	6.89	---	12.58	25.5	3.7	3.0
	2ft.	1425	---	6.83	---	12.44	25.5	3.7	3.0
	3ft.	1425	---	7.06	---	12.44	25.4	3.9	3.0
MZ-4	Surface	1440	---	7.43	---	12.71	25.8	4	2.0
	1ft.	1440	---	7.42	---	12.15	25.6	3.9	2.0
	2ft.	1440	---	7.8	---	17.13	25.9	4.5	2.0
MZ-5	1ft.	1600	---	8.16	---	11.74	26.0	4.4	3.0
	2ft.	1600	---	10.07	---	13.67	26.1	5.6	3.0
	3ft.	1600	---	10.27	---	14.39	26.1	5.7	3.0

Notes:
The Mixing Zone (MTS-2) was sampled between MZ-6 and MZ-6b.
Mixing zone established primarily on visual observation of discharge flow into the pooled estuary.
Validated with water quality parameter measurement to establish sampling point.
During sampling ENTRIX's Horiba water sampler malfunctioned and a YSI-85 water meter was borrowed from the City of Ventura and used to complete the sampling event. The YSI-85 does not measure pH and Turbidity.
MZ-1 not sampled due to mixing zone location between MZ-6 and MZ-6b (MZ-6b located between MZ-1 and MZ-6)

Conditions:
The Estuary was impounded during this Metals Translator sampling event.

Tides:
High 5.3 ft. at 0127, 4.4 at 1553
Low -0.5 ft at 0848, 2.4 ft. at 2110

Qualifiers:
J : estimated value
<: non-detect

July Sampling Event (7/25/01)

Analytical Data

Sample ID	Locale	TSS	TDS	Copper (mg/l)				Lead (mg/l)				Nickel (mg/l)				Zinc (mg/l)			
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1	U/S	3.77	1733	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005
MTS-2	Mixing Zone	5.07	2176	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005		0.023		0.020
MTS-3	Upper Estuary	17.54	4917	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005		0.011		0.010
MTS-R	Discharge	4.05	2664	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005		0.030		0.020
MTS-DUP	Dup MTS-3	25.94	4950	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)		Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	0905	7.66	2.86	<	5	8.78	18.3	1.4	0.5
MTS-2 (MZ-1)	Surface	1200	7.06	2.79	<	10	2.7	22.7	1.8	2.0
	1ft.	1200	7.04	4.4	<	10	7.63	22.9	4.5	2.0
MTS-3 (MZ-7)	Surface	1030	8.66	5.91	<	10	11.28	20.4	3.1	2.5
	1ft.	1030	8.66	5.92	<	10	10.72	20.5	3.1	2.5
	2ft.	1030	8.77	6.69	<	10	9.97	20.9	3.7	2.5
MTS-R (MZ-R)	Surface	0830	7.05	2.14	<	10	6.71	22.4	1.0	1.0
MZ-3	Surface	1045	9.09	7.38	<	10	16.09	21.1	3.9	5.0
	1ft.	1045	9.1	7.31	<	10	16.10	21.1	3.9	5.0
	2ft.	1045	9.5	8.8	<	10	16.69	21.6	5.1	5.0
	3ft.	1045	9.39	12	<	10	16.85	21.9	10.6	5.0
	4ft.	1045	7.75	30.3	<	10	7.0	22.6	17.8	5.0
MZ-4	Surface	1115	9.4	8.1	<	10	18.15	21.3	4.4	5.0
	1ft.	1115	9.39	8.13	<	10	18.19	21.3	4.4	5.0
	2ft.	1115	9.51	8.75	<	10	18.34	21.3	4.5	5.0
	3ft.	1115	8.65	23.7	<	10	18.5	22.3	14.9	5.0
	4ft.	1115	7.65	34.1	<	10	9.95	22.1	21.4	5.0
MZ-5	Surface	1130	9.5	8.65	<	10	18.22	21	4.6	5.0
	1ft.	1130	9.37	8.33	<	10	18.84	21.1	4.7	5.0
	2ft.	1130	8.91	16.9	<	10	15.92	23	12.8	5.0
	3ft.	1130	8.33	27	<	10	15.13	22.7	18.8	5.0
	4ft.	1130	7.56	36.6	<	10	3.31	21.9	21.8	5.0
MZ-5b	Surface	1145	9.34	8.26	<	10	16.95	21.8	4.6	3.0
	1ft.	1145	9.65	9.38	<	10	17.21	21.8	5.3	3.0
	2ft.	1145	9.16	11.6	<	10	15.25	22	6.5	3.0
MZ-6	1ft.	1215	8.91	8.92	<	10	8.35	22.5	5.3	2.5
	2ft.	1215	8.78	13	<	10	11.75	23.5	6.8	2.5
MZ-2	1ft.	1720	7.2	4.01	<	10	3.14	20.8	2.3	2.0

Notes:
The Mixing Zone (MTS-2) was sampled at MZ-1.
Mixing zone established primarily on visual observation of discharge flow into the pooled estuary.
Validated with water quality parameter measurement to establish sampling point.

Conditions:
The Estuary was impounded during this Metals Translator sampling event.

Tides:
High 5.1 ft. at 0119, 4.8 at 1457
Low 0.1 ft at 0809, 1.9 ft. at 2053

Qualifiers:
J : estimated value
<: non-detect

August Sampling Event (8/28/01)

Analytical Data

Sample ID	Locale	TSS	TDS	Copper (mg/l)				Lead (mg/l)				Nickel (mg/l)				Zinc (mg/l)			
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1	U/S	0.05	2628	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005
MTS-2	Mixing Zone	14.02	4326	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005		0.016		0.011
MTS-3	Upper Estuary	31.09	8413	J	0.0090	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	J	0.007	J	0.006
MTS-R	Discharge	0.55	5572	J	0.0060	J	0.006	<	0.0005	<	0.0005	<	0.0005	<	0.0005		0.011		0.011
MTS-DUP	Dup MTS-3	40.46	8477	J	0.0060	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	J	0.006	J	0.006

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	0910	7.85	3.17	0.0	8.16	19.2	1.5	0.5
MTS-2	Surface	1300	8.10	6.50	3.0	8.60	24.0	12.0	1.0
MTS-3 (MZ-3)	Surface	1015	8.39	13.30	23.0	14.17	19.9	7.7	0.10
MTS-R	Surface	1500	7.20	2.20	0.0	5.70	24.0	1.0	1.0
MZ-4	1ft.	1100	8.29	19.40	7.0	15.17	21.2	10.6	2.5
	2ft.	1100	8.26	31.50	11.0	15.72	22.0	21.3	2.5
MZ-5	1ft.	1115	8.45	25.50	27.0	19.12	22.4	18.0	2.5
	2ft.	1115	8.38	35.20	15.0	16.03	22.2	22.0	2.5
MZ-6	Surface	1135	7.40	2.94	52.0	5.23	23.5	1.4	1.0
MZ-1	Surface	1200	7.21	2.18	7.0	3.51	23.5	1.0	2.0
MZ-2	Surface	1215	7.21	2.18	2.0	4.18	23.5	1.0	1.0

Notes:
The Mixing Zone (MTS-2) was sampled near MZ-1
Mixing zone established primarily on visual observation of discharge flow into the pooled estuary.
Validated with water quality parameter measurement to establish sampling point.

Conditions:
The Estuary was impounded with water level rising during this Metals Translator sampling event

Tides:
High 3.8 ft. at 0831, 5.4 at 1906
Low 0.2 ft at 0140, 2.7 ft. at 1300

Qualifiers:
J : estimated value
<: non-detect

September Sampling Event (9/26/01)

Analytical Data

Sample ID	Locale	TSS	TDS	Copper (mg/l)			Lead (mg/l)			Nickel (mg/l)			Zinc (mg/l)		
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1	U/S	1.62	2632	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005
MTS-2	Mixing Zone	1.88	1818	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005		0.012		0.010
MTS-3	Upper Estuary	6.03	3504	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005		0.010		0.009
MTS-R	Discharge	1.46	1502	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005		0.015		0.010
MTS-DUP	Dup MTS-2	1.46	1714	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.0005		0.014		0.010

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	0830	8.0	3.2	0.0	8.0	16.0	2.0	0.5
	1ft.	1300	7.2	5.5	1.0	2.1	22.0	2.0	5.0
MTS-2 (MZ-1)	2ft.	1300	8.2	5.5	1.0	11.1	22.0	3.0	5.0
	3ft.	1300	8.3	6.1	2.0	12.5	23.0	3.0	5.0
	4ft.	1300	8.6	6.2	3.0	11.6	23.0	3.0	5.0
	1ft.	1021	8.5	5.2	2.0	11.0	22.0	3.0	3.5
MTS-3 (MZ-7)	2ft.	1021	8.4	5.2	1.0	10.7	21.0	3.0	3.5
	3ft.	1021	8.4	5.3	1.0	9.8	21.0	3.0	3.5
MTS-R(MZ-R)	Surface	0900	7.1	2.2	0.0	5.3	22.0	1.0	1.0
	1ft.	1030	8.6	5.8	1.0	12.0	22.0	3.0	6.0
	2ft.	1030	8.5	5.9	1.0	12.2	22.0	3.0	6.0
MZ-3	3ft.	1030	8.6	5.9	1.0	12.3	21.0	3.0	6.0
	4ft.	1030	8.5	5.9	1.0	12.1	21.0	3.0	6.0
	5ft.	1030	8.5	6.0	1.0	11.8	21.0	3.0	6.0
	1ft.	1038	8.6	5.7	1.0	11.9	22.0	3.0	6.0
	2ft.	1038	8.5	5.8	1.0	11.9	22.0	3.0	6.0
MZ-4	3ft.	1038	8.5	5.8	2.0	11.8	22.0	3.0	6.0
	4ft.	1038	8.5	5.8	2.0	12.2	22.0	3.0	6.0
	5ft.	1038	8.5	5.9	1.0	12.2	21.0	3.0	6.0
MZ-5	1ft.	1111	8.6	5.8	1.0	11.8	22.0	3.0	1.8
	1ft.	1125	7.8	4.8	1.0	8.2	22.0	2.0	4.0
MZ-6	2ft.	1125	8.0	5.2	1.0	10.2	22.0	3.0	4.0
	3ft.	1125	8.6	6.0	2.0	12.3	22.0	3.0	4.0
	1ft.	1055	8.5	5.5	1.0	11.3	22.0	3.0	4.0
MZ-8	2ft.	1055	8.4	5.5	1.0	11.3	21.0	3.0	4.0
	3ft.	1055	8.4	5.5	1.0	11.2	21.0	3.0	4.0

Notes:
The Mixing Zone (MTS-2) was sampled near MZ-1.
Mixing zone established primarily on visual observation of discharge flow into the pooled estuary.
Validated with water quality parameter measurement to establish sampling point.
MZ-8 is a new mixing zone test point near the salt marsh

Conditions:
The Estuary was impounded with water level rising during this Metals Translator sampling event

Tides:
High 4.1 ft. at 0805, 4.9 at 1844
Low 0.2 ft at 0105, 2.8 ft. at 1301

Qualifiers:
J : estimated value
<: non-detect

October Sampling Event (10/29/01)

Analytical Data

Sample ID	Locale	TSS	TDS	Copper (mg/l)				Lead (mg/l)				Nickel (mg/l)				Zinc (mg/l)		
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1	U/S	8.10	2512	J	0.002	J	0.002	<	0.0005	<	0.0005	J	0.004	J	0.004	J	0.002	J	0.002
MTS-2	Mixing Zone	6.20	1914	J	0.001	J	0.001	<	0.0005	<	0.0005	J	0.003	J	0.003		0.011		0.011
MTS-3	Upper Estuary	8.50	2314	J	0.002	J	0.002	<	0.0005	<	0.0005	J	0.003	J	0.003	J	0.008	J	0.008
MTS-R	Discharge	6.30	1558	J	0.001	J	0.001	<	0.0005	<	0.0005	J	0.002	J	0.002		0.019		0.019
MTS-DUP	Dup MTS-2	6.10	1960	J	0.002	J	0.002	<	0.0005	<	0.0005	J	0.002	J	0.002	J	0.008	J	0.008

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	0925	8.19	3.13	4.0	8.34	16.7	1.5	0.5
	1ft.	1320	7.51	2.90	5.0	4.11	19.3	1.4	6.0
	2ft.	1320	7.44	2.92	5.0	4.11	19.0	1.4	6.0
MTS-2 (MZ-1)	3ft.	1320	7.44	2.93	5.0	3.94	18.9	1.4	6.0
	4ft.	1320	7.48	2.95	4.0	4.10	18.9	1.4	6.0
	5ft.	1320	7.5	3.06	5.0	4.22	19.0	1.5	6.0
MTS-3 (MZ-7)	1ft.	1120	8.05	3.24	4.0	5.04	18.6	1.6	2.0
	1.5ft	1120	7.97	3.24	4.0	5.20	18.6	1.6	2.0
MTS-R(MZ-R)	Surface	1505	7.26	2.24	6.0	5.21	20.7	1.0	0.5
	1ft.	1130	8.06	3.24	4.0	5.81	18.6	1.6	6.0
	2ft.	1130	8	3.23	4.0	5.98	18.6	1.6	6.0
MZ-3	3ft.	1130	7.93	3.23	4.0	6.22	18.5	1.6	6.0
	4ft.	1130	7.94	3.23	4.0	6.21	18.5	1.6	6.0
	5ft.	1130	7.94	3.23	4.0	7.50	18.3	1.6	6.0
	1ft.	1152	8.1	3.27	4.0	6.04	18.70	1.6	7.0
	2ft.	1152	7.91	3.27	4.0	6.11	18.70	1.6	7.0
MZ-4	3ft.	1152	7.91	3.27	4.0	6.11	18.60	1.6	7.0
	4ft.	1152	7.91	3.27	4.0	6.17	18.60	1.6	7.0
	5ft.	1152	7.89	3.27	3.0	6.01	18.40	1.6	7.0
	1ft.	1222	7.98	3.25	4.0	6.23	18.4	1.6	3.5
MZ-5	2ft.	1222	8.06	3.25	5.0	6.28	18.5	1.6	3.5
	3ft.	1222	8.07	3.25	5.0	6.16	18.5	1.6	3.5
	1ft.	1240	7.69	2.92	4.0	3.82	18.9	1.4	4.5
MZ-6	2ft.	1240	7.58	2.92	4.0	3.93	18.8	1.4	4.5
	3ft.	1240	7.48	2.94	5.0	3.86	18.8	1.4	4.5
	4ft.	1240	7.55	3.00	6.0	3.59	18.8	1.4	4.5
	1ft.	1210	8.10	3.24	4.0	6.26	18.7	1.6	5.0
MZ-8	2ft.	1210	8.05	3.24	4.0	6.45	18.7	1.6	5.0
	3ft.	1210	7.96	3.24	4.0	6.33	18.7	1.6	5.0
	4ft.	1210	7.89	3.24	3.0	6.12	18.5	1.6	5.0
	1ft.	1305	7.24	2.25	5.0	1.47	18.0	1.0	4.5
MZ-2	2ft.	1305	7.10	2.23	4.0	1.00	17.6	1.0	4.5
	3ft.	1305	7.02	2.22	3.0	0.00	16.7	1.0	4.5
	4ft.	1305	7.03	2.24	3.0	0.30	16.5	1.0	4.5

Notes:
The Mixing Zone (MTS-2) was sampled near MZ-1.
Mixing zone established primarily on visual observation of discharge flow into the pooled estuary.
Validated with water quality parameter measurement to establish sampling point.

Conditions:
The Estuary was impounded with water level rising during this Metals Translator sampling event.

Tides:
High 5.1 ft. at 0748, 4.5 at 2001
Low 0.8 ft at 0129, 1.0 ft. at 1403

Qualifiers:
J : estimated value
<: non-detect

November Sampling Event (11/20/01)

Analytical Data

Sample ID	Locale	TSS	TDS		Copper (mg/l)			Lead (mg/l)			Nickel (mg/l)			Zinc (mg/l)		
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1	U/S	0.64	2312	J	0.006	J	0.005	<	0.0005	<	0.0005		0.010		0.010		0.022	J	0.004
MTS-2	Mixing Zone	1.80	1686	J	0.005	J	0.004	<	0.0005	<	0.0005	J	0.008	J	0.006		0.042		0.022
MTS-3	Upper Estuary	2.28	1796	J	0.004	J	0.004	<	0.0005	<	0.0005	J	0.007	J	0.007		0.015		0.015
MTS-R	Discharge	9.39	1470	J	0.006	J	0.006	<	0.0005	<	0.0005		0.020		0.020		0.048		0.048
MTS-DUP	Dup MTS-2	1.87	1692	J	0.005	J	0.005	<	0.0005	<	0.0005		0.040		0.040		0.022		0.022

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	0900	8.37	2.92	3.0	6.43	16.6	1.4	0.6
	1ft.	1300	7.95	2.65	4.0	3.51	16.8	1.2	6.0
	2ft.	1300	7.93	2.65	4.0	3.55	16.8	1.2	6.0
MTS-2 (MZ-6)	3ft.	1300	7.81	2.65	4.0	3.62	16.8	1.2	6.0
	4ft.	1300	7.83	2.65	4.0	3.64	16.8	1.3	6.0
	5ft.	1300	7.83	2.65	5.0	3.63	16.8	1.3	6.0
	1ft.	1100	8.50	2.71	8.0	6.05	16.9	1.3	6.0
	2ft.	1100	8.38	2.71	10.0	5.91	16.8	1.3	6.0
MTS-3 (MZ-7)	3ft.	1100	8.33	2.71	10.0	5.66	16.8	1.3	6.0
	4ft.	1100	8.29	2.71	8.0	5.74	16.7	1.3	6.0
	5ft.	1100	8.26	2.71	6.0	5.87	16.7	1.3	6.0
MTS-R(MZ-R)	Surface	1430	7.76	2.3	12.0	4.91	19.6	1.1	1.0
	1ft.	1130	8.42	2.75	6.0	6.12	16.9	1.3	7.0
	2ft.	1130	8.33	2.76	5.0	6.24	16.9	1.3	7.0
MZ-3	3ft.	1130	8.28	2.77	4.0	6.29	16.8	1.3	7.0
	4ft.	1130	8.30	2.77	4.0	6.34	16.8	1.3	7.0
	5ft.	1130	8.35	2.78	4.0	6.37	16.8	1.3	7.0
	1ft.	1200	8.34	2.75	5.0	6.22	17.00	1.3	7.0
	2ft.	1200	8.32	2.76	5.0	6.35	17.00	1.3	7.0
MZ-4	3ft.	1200	8.31	2.77	5.0	6.47	16.90	1.3	7.0
	4ft.	1200	8.30	2.78	4.0	6.10	16.80	1.3	7.0
	5ft.	1200	8.28	2.79	4.0	6.05	16.70	1.3	7.0
	1ft.	1245	8.22	2.82	7.0	5.71	16.8	1.3	4.0
MZ-5	2ft.	1245	8.22	2.83	7.0	5.64	16.7	1.3	4.0
	3ft.	1245	8.22	2.83	7.0	5.50	16.7	1.3	4.0
	1ft.	1230	8.31	2.81	5.0	6.24	17.0	1.3	5.0
	2ft.	1230	8.34	2.82	5.0	6.35	17.0	1.3	5.0
MZ-8	3ft.	1230	8.34	2.81	4.0	6.37	16.9	1.3	5.0
	4ft.	1230	8.27	2.82	4.0	6.35	16.9	1.3	5.0
	5ft.	1230	8.23	2.82	4.0	6.14	16.9	1.3	5.0
	1ft.	1330	7.80	2.47	2.0	1.90	16.8	1.1	6.0
	2ft.	1330	7.68	2.46	2.0	1.85	16.8	1.1	6.0
MZ-1	3ft.	1330	7.63	2.51	2.0	2.10	16.8	1.2	6.0
	4ft.	1330	7.63	2.53	2.0	1.96	16.7	1.2	6.0
	5ft.	1330	7.63	2.83	2.0	2.16	17	1.3	6.0
	1ft.	1400	7.68	2.28	2.0	0.62	16.7	1.0	6.0
	2ft.	1400	7.50	2.27	2.0	0.03	16.5	1.0	6.0
MZ-2	3ft.	1400	7.44	2.26	2.0	0.41	16.3	1.0	6.0
	4ft.	1400	7.44	2.35	2.0	0.07	16.3	1.1	6.0
	5ft.	1400	7.49	2.92	3.0	0.45	16.9	1.3	6.0

Notes:
The Mixing Zone (MTS-2) was sampled near MZ-6.
Mixing zone established primarily on visual observation of discharge flow into the pooled estuary.
Validated with water quality parameter measurement to establish sampling point.

Conditions:
The Estuary was impounded with water level rising during this Metals Translator sampling event.

Tides:
High 3.47 ft. at 02:24; 4.78 ft. at 11:46
Low 3.29 at 05:44; 0.4 ft. at 20:00

Qualifiers:
J : estimated value
<: non-detect

December Sampling Event (12/05/01)

Analytical Data

Sample ID	Locale	TSS	TDS		Copper (mg/l)				Lead (mg/l)				Nickel (mg/l)				Zinc (mg/l)		
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1 (A)	U/S	3.88	2062	J	0.0019	J	0.0018	<	0.0005	<	0.0005	J	0.0040	J	0.0038	J	0.0056	J	0.0043
MTS-2	Mixing Zone	24.39	14432	J	0.0027	J	0.0021	<	0.0005	<	0.0005	J	0.0028	J	0.0016		0.0137		0.0120
MTS-3	Upper Estuary	23.69	2820	J	0.0040	J	0.0029	<	0.0005	<	0.0005	J	0.0051	J	0.0044	J	0.0077	J	0.0059
MTS-R	Discharge	16.17	1346	J	0.0050	J	0.0044	<	0.0005	<	0.0005	J	0.0036	J	0.0029		0.0315		0.0281
MTS-DUP	Duplicate	20.71	3394	J	0.0040	J	0.0037	<	0.0005	<	0.0005	J	0.0038	J	0.0030		0.0216		0.0207
MTS-M	Near Mouth	9.4	4434	J	0.0026	J	0.0024	<	0.0005	<	0.0005	J	0.0030	J	0.0027		0.0136		0.0135
MTS-MO	In Mouth (Outlet)	36.4	35138	J	0.0005	J	0.0005	<	0.0005	<	0.0005	J	0.0011	J	0.0008	J	0.0060	J	0.0018

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	920	8.24	2.60	5.0	5.23	12.2	1.20	0.5
MTS-2(MZ-7)	1ft.	1230	8.22	28.40	27.0	5.77	14.8	13.30	1.5
MTS-3	Surface	1250	8.3	3.41	9.0	5.18	16.1	1.70	0.25
MTS-R(MZ-R)	Surface	1400	7.87	2.1	22.0	5.01	16.7	1.00	1.0
MTS-M	1ft.	930	8.34	11.0	24.0	5.12	13.5	5.3	2.5
	2ft.	930	8.47	34.8	21.0	5.32	14.0	21.9	2.5
MTS-M-O	1ft.	1015	8.74	46.9	39.0	6.58	13.9	30.2	1.75
MZ-1	1ft.	1110	7.95	2.14	22.0	4.88	16.2	1.0	1.0
MZ-2	1ft.	1100	7.92	12.3	70.0	1.74	14.7	8.8	1.0
MZ-4	1ft.	1030	8.52	36.4	46.0	5.96	13.6	21.9	1.0
MZ-5	1ft.	1040	8.65	42.2	46.0	6.58	13.9	28.8	1.0
MZ-6	Surface	1055	8.03	2.25	26.0	4.92	16.2	1.0	0.5
MZ-8	1ft.	1020	8.44	34.00	28.0	5.70	13.6	21.0	3.0
	2ft.	1020	8.51	40.20	33.0	5.96	14.3	25.2	3.0

Notes:
The Mixing Zone (MTS-2) was sampled near MZ-6
Mixing zone established primarily on salinity levels, and visual relationships between outfall flow and tidal inflow.
Validated with water quality parameter measurement to establish sampling point.
MTS-M is a new sampling location developed in order to characterize the estuary environment near the outlet
MTS-MO is a sampling location directly within the tidal outlet of the estuary. This point is sampled during OPEN conditions
MZ-2 was a backwater pond, cut off from flow.

Conditions:
The Estuary was open, with a rising tide during this Metals Translator sampling event.

Tides:
High 3.63 ft. at 01:35; 5.35 ft. at 11:42
Low 2.99 at 05:40; -0.27 ft. at 19:34

Qualifiers:
J : estimated value
<: non-detect

January Sampling Event (01/08/02)

Analytical Data

Sample ID	Locale	TSS	TDS		Copper (mg/l)			Lead (mg/l)				Nickel (mg/l)				Zinc (mg/l)		
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1	U/S	1.32	2124	J	0.0032	J	0.0080	<	0.0005	<	0.0005	J	0.0087	J	0.0094		0.0263		0.0209
MTS-2	Mixing Zone	11.29	6379	J	0.0078	J	0.0076	<	0.0005	<	0.0005	J	0.0047	J	0.0059		0.0365		0.0294
MTS-3	Upper Estuary	6.08	5200	J	0.0071	J	0.0085	<	0.0005	<	0.0005	J	0.0065	J	0.0074		0.0143	J	0.0057
MTS-R	Discharge	14.31	1400	J	0.0074	J	0.0088	<	0.0005	<	0.0005	J	0.0049	J	0.0047		0.0597		0.0513
MTS-DUP	Duplicate	9.49	3372	J	0.0124	J	0.0042	<	0.0005	<	0.0005	J	0.0046	J	0.0045		0.0319		0.0125
MTS-M	Near Mouth	8.91	12932	J	0.0064		0.0104	<	0.0005	<	0.0005	J	0.0042	J	0.0042		0.0128		0.0360

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	0930	8.69	2.76	5.0	6.00	13.3	1.30	0.8
	1ft.	1300	9.05	26.00	16.0	6.39	15.6	12.90	3.0
MTS-2	2ft.	1300	8.91	26.10	34.0	5.98	15.4	18.10	3.0
	3ft.	1300	9.00	29.90	32.0	6.71	15.6	19.80	3.0
MTS-3	1ft.	1115	9.16	7.88	20.0	8.73	12.1	4.20	2.0
MTS-R(MZ-R)	1ft.	1015	8.12	2.18	19.0	4.40	17.2	1.00	1.0
MTS-M	1ft.	1340	9.01	21.6	14.0	5.93	14.9	12.30	2.3
	2ft.	1340	9.01	26.2	23.0	5.94	14.8	17.70	2.3
MZ-1	1ft.	1235	8.97	24.1	14.0	5.67	15.8	14.10	2.5
	2ft.	1235	9.01	31.9	35.0	7.01	15.5	19.60	2.5
MZ-2	1ft.	1250	8.65	10.8	24.0	6.01	15.8	6.00	2.5
	2ft.	1250	8.77	26.8	31.0	5.58	15.7	17.50	2.5
	1ft.	1255	8.05	3.27	12.0	4.07	17.0	1.50	3.0
MZ-1A	2ft.	1255	9.03	30.3	36.0	6.89	15.5	18.00	3.0
	3ft.	1255	9.08	33.3	34.0	7.47	15.7	20.70	3.0
	1ft.	1135	9.21	9.5	7.0	6.58	13.3	5.20	3.5
MZ-3	2ft.	1135	9.06	25.5	13.0	6.83	14.6	15.00	3.5
	3ft.	1135	9.00	32.2	21.0	6.34	14.9	22.60	3.5
	1ft.	1200	9.03	13.8	8.0	5.81	14.1	7.60	4.0
MZ-4	2ft.	1200	8.99	20.1	9.0	6.11	14.3	17.00	4.0
	3ft.	1200	8.99	32.8	22.0	6.09	14.2	19.20	4.0
MZ-5	1ft.	1325	9.07	23.30	16.0	6.02	14.70	14.80	2.5
	2ft.	1325	9.03	26.90	24.0	5.98	14.70	19.90	2.5
MZ-6	1ft.	1215	9.05	18.00	13.0	6.30	15.40	10.10	2.5
	2ft.	1215	9.12	26.50	31.0	7.83	15.30	16.40	2.5
	1ft.	1400	9.10	16.20	16.0	5.94	14.9	9.30	3.2
MZ-8	2ft.	1400	9.13	24.30	12.0	6.63	14.7	15.40	3.2
	3ft.	1400	9.03	34.40	16.0	7.10	15.0	22.10	3.2

Notes:
The Mixing Zone (MTS-2) was sampled near MZ-2
Mixing zone established primarily on salinity levels, and visual relationships between outfall flow and tidal inflow.
Validated with water quality parameter measurement to establish sampling point.
MTS-MO was not sampled because the mouth is not open.

Conditions:
75% innundated. Estuary has been impounded for approximately 2 weeks. Campground is open and dry.

Tides:
High 5.64 ft. at 05:19; 3.34 ft. at 18:46
Low 0.14 ft. at 12:40; 1.9 ft. at 23:37

Qualifiers:
J : estimated value
<: non-detect

February Sampling Event (02/12/02)

Analytical Data

Sample ID	Locale	TSS (mg/l)	TDS (mg/l)	Qualifier	Copper (mg/l) Total	Qualifier	Copper (mg/l) Dissolved	Qualifier	Lead (mg/l) Total	Qualifier	Lead (mg/l) Dissolved	Qualifier	Nickel (mg/l) Total	Qualifier	Nickel (mg/l) Dissolved	Qualifier	Zinc (mg/l) Total	Qualifier	Zinc (mg/l) Dissolved
MTS-1	U/S	3.94	2516	J	0.0040		0.0131	<	0.0005	<	0.0005	J	0.0075	J	0.0084	<	0.0005		0.0108
MTS-2	Mixing Zone	14.98	4102	J	0.0067	J	0.0099	<	0.0005	<	0.0005	J	0.0035	J	0.0045		0.0220		0.0266
MTS-3	Upper Estuary	16.97	14294	J	0.0033	J	0.0025	<	0.0005	<	0.0005	J	0.0037	J	0.0055	<	0.0005	J	0.0085
MTS-R	Discharge	9.56	1848	J	0.0067	J	0.0085	<	0.0005	<	0.0005	J	0.0025	J	0.0032		0.0242		0.0310
MTS-DUP	Duplicate	15.74	33480	J	0.0007	J	0.0008	<	0.0005	<	0.0005	J	0.0014	J	0.0019	<	0.0005	J	0.0021
MTS-M	Near Mouth	17.22	33472	<	0.0005	J	0.0046	<	0.0005	<	0.0005	J	0.0027	J	0.0020	<	0.0005	J	0.0024
MTS-MO	In Mouth (Outlet)	17.58	32452	<	0.0005	<	0.0005	<	0.0005	<	0.0005	J	0.0018	J	0.0023	<	0.0005	J	0.0039

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	900	8.41	2.79	4.0	5.55	13.5	1.30	0.6
MTS-2	Surface	1530	8.66	10.50	23.0	5.61	18.0	8.00	0.7
MTS-3	Surface	1115	8.90	2.12	130.0	5.85	10.6	12.30	0.5
MTS-R(MZ-R)	1ft.	1000	8.21	2.27	9.0	4.56	15.7	1.00	1.0
MTS-M	1ft.	1345	9.06	45.2	12.0	5.06	13.7	28.80	2.0
MTS-MO	1ft.	1330	9	39.5	13.0	5.04	14.2	26.40	1.5
MZ-1	Surface	1430	8.3	2.31	7.0	4.36	16.3	1.10	0.7
MZ-2	Surface	1445	8.52	7.72	9.0	4.79	16.1	3.20	1.0
MZ-3	1ft.	1200	8.94	40.8	13.0	5.25	14.4	25.60	2.0
MZ-4	1ft.	1215	8.97	41.9	16.0	4.76	14.4	25.50	2.0
MZ-5	1ft.	1300	9.07	45.70	18.0	4.26	13.60	29.40	2.0
MZ-6	Surface	1400	8.57	3.51	8.0	4.93	16.70	1.50	0.5
MZ-8	1ft.	1230	8.99	42.40	10.0	4.82	13.6	26.80	2.0

Notes:
The Mixing Zone (MTS-2) was sampled near MZ-2
Mixing zone established primarily on salinity levels, and visual relationships between outfall flow and tidal inflow.
Validated with water quality parameter measurement to establish sampling point.

Conditions:
Open conditions. Tidal outflow during sampling event. Hot and still.

Tides:
High 5.74 ft at 09:02; 4 ft. at 22:22
Low 1.78 at 3:03; -0.61 at 16:07

Qualifiers:
J : estimated value
<: non-detect

March Sampling Event (03/26/02)

Analytical Data

Sample ID	Locale	TSS	TDS		Copper (mg/l)			Lead (mg/l)			Nickel (mg/l)			Zinc (mg/l)		
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1	U/S	2.22	2264	J	0.0025	J	0.0034	<	0.0005	<	0.0005		0.0100	J	0.0092	J	0.0039	J	0.0049
MTS-2	Mixing Zone	12.90	3678	J	0.0052	J	0.0043	<	0.0005	<	0.0005	J	0.0062	J	0.0060		0.0241		0 0274
MTS-3	Upper Estuary	87.00	5364	J	0.0061	J	0.0054	<	0.0005	<	0.0005	J	0.0077	J	0.0068		0.0169		0.0195
MTS-R(MZ-R)	Near Mouth	6.03	1428		0.0111	J	0.0069	<	0.0005	<	0.0005	J	0.0054	J	0.0058		0.0355		0.0954
MTS-DUP	Discharge	13.6	3396	J	0.0045	J	0.0037	<	0.0005	<	0.0005	J	0.0062	J	0.0059		0.0227		0.0308
MTS-M	Duplicate	59.50	5624	J	0.0039	J	0.0027	<	0.0005	<	0.0005	J	0.0067	J	0.0068	J	0.0093		0.0133

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	955	7.53	2.88	7.0	2.86	16.4	1.40	0.8
	1ft.	1400	10.04	5.81	51.0	6.48	18.0	3.40	6.0
	2ft.	1400	10.23	7.48	31.0	7.45	18.5	3.50	6.0
MTS-2	3ft.	1400	10.21	8.16	47.0	7.74	18.0	4.60	6.0
	4ft.	1400	10.32	8.77	11.0	6.02	17.0	5.00	6.0
	5ft.	1400	10.06	9.63	12.0	2.34	16.8	5.30	6.0
	1ft.	1040	10.37	8.34	71.0	8.75	17.1	4.50	3.5
MTS-3	2ft.	1040	10.39	8.33	63.0	9.27	16.9	4.50	3.5
	3ft.	1040	10.38	8.4	57.0	7.60	16.3	4.60	3.5
MTS-R(MZ-R)	1ft.	1500	8.55	2.24	13.0	3.14	19.8	1.00	1.5
MTS-M	1ft.	1220	10.34	9.1	23.0	5.11	16.6	5.00	2.5
	2ft.	1220	10.34	9.1	22.0	5.08	16.5	5.00	2.5
	1ft.	1345	9.56	3.98	15.0	3.24	18.4	2.00	5.0
MZ-1	2ft.	1345	10.28	6.72	72.0	9.43	18.2	4.40	5.0
	3ft.	1345	10.15	8.31	17.0	4.27	17.1	4.90	5.0
	4ft.	1345	10.03	9.17	15.0	2.22	16.8	5.10	5.0
	1ft.	1315	9.72	4.26	12.0	2.79	18.4	2.20	5.0
MZ-2	2ft.	1315	10.11	8.07	14.0	3.46	17.0	4.80	5.0
	3ft.	1315	10.05	9.38	8.0	1.94	16.7	5.20	5.0
	4ft.	1315	9.68	10.9	13.0	0.58	16.8	6.20	5.0
	1ft.	1104	10.41	8.4	60.0	7.96	16.5	4.50	6.0
	2ft.	1104	10.42	8.38	59.0	8.39	16.5	4.50	6.0
MZ-3	3ft.	1104	10.43	8.38	56.0	8.33	16.5	4.50	6.0
	4ft.	1104	10.44	8.41	61.0	8.32	16.5	4.50	6.0
	5ft.	1104	10.41	8.45	57.0	8.35	16.5	4.60	6.0
	1ft.	1115	10.41	8.49	43.0	7.38	16.6	4.60	6.0
	2ft.	1115	10.42	8.48	44.0	7.51	16.6	4.60	6.0
MZ-4	3ft.	1115	10.42	8.47	44.0	7.62	16.5	4.60	6.0
	4ft.	1115	10.43	8.48	41.0	7.55	16.5	4.60	6.0
	5ft.	1115	10.41	8.51	43.0	7.48	16.5	4.60	6.0
	6ft.	1115	10.35	8.73	41.0	6.44	16.4	4.70	6.0
MZ-5	1ft.	1245	10.28	9.20	25.0	4.65	16.50	5.10	1.5
	1ft.	1420	10.37	8.83	37.0	6.17	18.10	4.70	6.0
	2ft.	1420	10.39	8.56	41.0	6.94	18.20	4.70	6.0
MZ-6	3ft.	1420	10.36	8.66	35.0	6.86	17.80	4.80	6.0
	4ft.	1420	10.27	8.81	34.0	5.49	17.40	4.90	6.0
	5ft.	1420	10.20	9.02	58.0	4.44	17.40	4.90	6.0
	1ft.	1145	10.43	8.17	54.0	8.14	16.7	4.40	3.0
MZ-8	2ft.	1145	10.44	8.16	55.0	8.66	16.8	4.40	3.0
	3ft.	1145	10.46	8.16	57.0	9.01	16.7	4.40	3.0

Notes:
The Mixing Zone (MTS-2) was sampled near MZ-6
Mixing zone established primarily on salinity levels, and visual relationships between outfall flow and tidal inflow.
Validated with water quality parameter measurement to establish sampling point.

Conditions:
80-90% impounded. Backwater fingers adjacent to sandspit filling at a rapid rate. No tidal influence.

Tides:
High 5.83 ft at 07:15; 4.82 ft at 20:18
Low 1.19 ft at 01:19; -1.08 at 14:05

Qualifiers:
J : estimated value
<: non-detect

April Sampling Event (04/25/02)

Analytical Data

Sample ID	Locale	TSS	TDS		Copper (mg/l)			Lead (mg/l)			Nickel (mg/l)			Zinc (mg/l)		
		(mg/l)	(mg/l)	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved	Qualifier	Total	Qualifier	Dissolved
MTS-1 (A)	U/S	1.07	2306	J	0.0023	J	0.0086	<	0.0005	<	0.0005	J	0.0096	J	0.0099	J	0.0024		0.0120
MTS-2	Mixing Zone	1.43	1540		0.0124	J	0.0094	<	0.0005	<	0.0005	J	0.0059	J	0.0069		0.0302		0.0323
MTS-3	Upper Estuary	30.40	5712	J	0.0020	J	0.0026	<	0.0005	<	0.0005	J	0.0065	J	0.0067	J	0.0087	J	0.0094
MTS-R	Discharge	2.33	1358	J	0.0089	J	0.0068	<	0.0005	<	0.0005	J	0.0058	J	0.0065		0.0297		0.0315
MTS-DUP	Duplicate	42.68	7164	J	0.0041	J	0.0025	<	0.0005	<	0.0005	J	0.0055	J	0.0070		0.0110		0.0202
MTS-M	Near Mouth	36.84	7082	J	0.0038	J	0.0024	<	0.0005	<	0.0005	J	0.0060	J	0.0066	J	0.0072		0.0616

Water Quality Parameters

Sample ID	Locale	Time	pH	Cond. (ms/cm)	Turbidity (NTU)	DO (mg/l)	Temp. (C)	Sal. (ppt)	Tot. Depth (ft.)
MTS-1	Surface	825	8.62	2.92	3.00	1.22	16.20	1.40	1.00
	1ft.	130	9.30	3.62	2.00	1.34	21.20	2.00	3.50
MTS-2 (MZ-1)	2ft.	130	10.24	8.98	28.00	2.64	20.20	5.20	3.50
	3ft.	130	10.50	10.70	25.00	2.83	20.20	6.10	3.50
MTS-3	1ft.	1000	10.53	9.09	29.00	3.92	19.40	5.00	2.20
	2ft.	1000	10.55	9.95	44.00	3.42	18.70	5.70	2.20
MTS-R(MZ-R)	1ft.	900	8.77	2.13	1.00	1.74	21.10	1.00	1.30
MTS-M (MZ-5)	1ft.	1100	10.65	11.00	47.00	2.66	19.50	6.20	1.80
	1ft.	1245	10.40	8.81	28.00	3.06	20.40	5.50	3.20
MZ-2	2ft.	1245	10.45	10.90	27.00	2.58	20.00	6.40	3.20
	3ft.	1245	10.39	11.60	22.00	2.16	19.90	6.60	3.20
	1ft.	1020	10.53	9.62	42.00	4.11	20.00	5.20	4.50
MZ-3	2ft.	1020	10.61	10.10	41.00	4.29	19.80	5.70	4.50
	3ft.	1020	10.63	10.60	34.00	3.61	19.50	6.10	4.50
	4ft.	1020	10.66	11.10	25.00	3.23	19.40	6.20	4.50
	1ft.	1040	10.62	9.90	43.00	4.07	20.00	5.50	4.50
MZ-4	2ft.	1040	10.62	10.20	36.00	4.36	19.90	5.60	4.50
	3ft.	1040	10.65	10.80	39.00	4.35	19.70	5.90	4.50
	4ft.	1040	10.68	11.10	33.00	3.77	19.40	6.20	4.50
MZ-6	1ft.	1230	10.88	8.88	23.00	3.15	21.20	4.80	2.80
	2ft.	1230	10.66	9.99	40.00	4.22	21.40	5.50	2.80
MZ-8	1ft.	1050	10.66	9.90	36.00	3.86	19.80	5.50	2.50
	2ft.	1050	10.67	10.00	41.00	3.98	19.70	5.70	2.50

Notes:
The Mixing Zone (MTS-2) was sampled near MZ-1
Mixing zone established primarily on salinity levels, and visual relationships between outfall flow and tidal inflow.
Validated with water quality parameter measurement to establish sampling point.

Conditions:
Estuary is physically impounded, I.e. the sand spit prevents outflow, yet peak tides flow over the sandbar, and innundate the estuary. Sandbar is low and quite compacted. Water is very red-brown. Lots of fish jumping, tons of birds (terns and pelicans). Two dead pelicans sighted, and one comatosed pelican.

Tides:
High 5.05 ft at 08:55; 5.87 ft. at 21:10
Low -0.15 ft. at 02:58; -0.11 ft at 15:02

Qualifiers:
J : estimated value
<: non-detect

APPENDIX C

LABORATORY ANALYTICAL REPORTS

CITY OF SAN BUENAVENTURA

MAY 2001 MTS RESULTS

June 22, 2001

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter,

Enclosed are the results from the Metal Translator Study samples delivered to our laboratory on May 25, 2001.

Please contact me at 805-677-4134, if you require additional information on the data of May 25, 2001.

Sincerely,

Florence B. Jay

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

AMERICAN SCIENTIFIC LABORATORIES, LLC

Environmental Testing Services

)rdered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Number of Pages 3
Date Received 05/31/2001
Date Reported 06/12/2001

Telephone (805) 677-4134
ttn Florence B. Jay

Job Number	Ordered	Client
11137	05/31/2001	CITYSB

Project ID: DPO# D014769
'roject Name:

RECEIVED
JUN 2 0 2001
Wastewater Div.

Enclosed are the results of analyses on 10 samples analyzed as specified on attached chain of custody.

Arnolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID: DPO# D014769
Project Name:

Job Number	Order Date	Client
11137	05/31/2001	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.			69586	69587	69588	69589	69590
Sample ID			MTS-3D	MTS-R	MTS-RD	MTS-DUP	MTS-DUPD
Date Sampled			05/25/2001	05/25/2001	05/25/2001	05/25/2001	05/25/2001
Date Extracted			06/06/2001	06/06/2001	06/06/2001	06/06/2001	06/06/2001
Preparation Method							
Date Analyzed			06/06/2001	06/06/2001	06/06/2001	06/06/2001	06/06/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	0.0040J	0.0025J	0.0033J	0.0010J	0.0010J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	0.0038J	0.0022J	0.0024J	0.0023J	0.0032J
Zinc	0.0005	0.0100	0.0010J	0.0319	0.0327	0.032	0.081

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	100	75-125								
Lead	90	75-125								
Nickel	96	75-125								
Zinc	94	75-125								

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID: DPO# D014769
Project Name:

Job Number	Order Date	Client
11137	05/31/2001	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.			69581	69582	69583	69584	69585
Sample ID			MTS-1	MTS-1D	MTS-2	MTS-2D	MTS-3
Date Sampled			05/25/2001	05/25/2001	05/25/2001	05/25/2001	05/25/2001
Date Extracted			06/06/2001	06/06/2001	06/06/2001	06/06/2001	06/06/2001
Preparation Method							
Date Analyzed			06/06/2001	06/06/2001	06/06/2001	06/06/2001	06/06/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	0.0046J	0.0010J	0.0047J	0.0037J	0.0044J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	0.0015J	0.0018J	0.0031J	0.0023J	0.0038J
Zinc	0.0005	0.0100	ND	ND	0.0204	0.0173	0.0044J

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	100	75-125								
Lead	90	75-125								
Nickel	96	75-125								
Zinc	94	75-125								

City of San Buenaventura Sanitation Laboratory Custody Record

Sample	Type	Sample Date & Time	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
MTS - 1 69581	C	May 25, 2001 @0910 Composite: 5-29-01@ 1141	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ	May 31, 01	A. Sol 5/31/01 10.55 AM
MTS - 1D 69582	C	May 25, 2001 @ 0910 Composite: 5-29-01@ 1141	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
MTS -2 69583	C	May 25, 2001 @1412 Composite: 5-29-01@ 1230	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ		
MTS - 2D 69584	C	May 25, 2001 @1412 Composite: 5-29-01@ 1230	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
MTS - 3 69585	C	May 25, 2001 @1035 Composite: 5-29-01@ 1158	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ		
MTS - 3D 69586	C	May 25, 2001 @1035 Composite: 5-29-01@ 1158	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
MTS - R 69587	C	May 25, 2001 @1535 Composite: 5-29-01@ 1123	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ		
MTS - RD 69588	C	May 25, 2001 @1535 Composite: 5-29-01@ 1123	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
MTS - Dup 69589	C	May 25, 2001 @1540 Composite: 5-29-01@ 1210	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ		
MST - DupD 69590	C	May 25, 2001 @1540 Composite: 5-29-01@ 1210	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
EPA Method: 200.7		MDLs: All 0.5 ppb						

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

22-Jun-2001

SAMPLE IDENTIFICATION: 09129
OURCE: MTS -1
URPOSE: Metal Translator Study
TYPE: GRAB
ATE/TIME: 25-May-2001 0910
OLLECTED BY: MC
RESERVATION EMPLOYED:
REMARKS:

ONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	5.12 mg/l	160.2
0300	TDS @ 180C	1,430 mg/l	2540 C

Florence B Jay

lorence B. Jay
aboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

22-Jun-2001

SAMPLE IDENTIFICATION: 09130
OURCE: MTS -3
URPOSE: Metal Translator Study
TYPE: GRAB
ATE/TIME: 25-May-2001 1040
OLLECTED BY: MC
RESERVATION EMPLOYED:
REMARKS:

ONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	6.92 mg/l	160.2
0300	TDS @ 180C	1,738 mg/l	2540 C

Florence B Jay

lorence B. Jay
aboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

22-Jun-2001

SAMPLE IDENTIFICATION: 09131
OURCE: MTS -2
URPOSE: Metal Translator Study
YPE: GRAB
DATE/TIME: 25-May-2001 1415
OLLECTED BY: MC
RESERVATION EMPLOYED:
REMARKS:

ONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	26.16 mg/l	160.2
0300	TDS @ 180C	1,744 mg/l	2540 C

Florence B Jay

lorence B. Jay
aboratory Supervison

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

22-Jun-2001

SAMPLE IDENTIFICATION: 09132
SOURCE: MTS - R
PURPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 25-May-2001 1537
COLLECTED BY: MC
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	9.32 mg/l	160.2
70300	TDS @ 180C	1,240 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

22-Jun-2001

SAMPLE IDENTIFICATION: 09133
OURCE: MTS - Dup
URPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 25-May-2001 1542
OLLECTED BY: MC
RESERVATION EMPLOYED:
REMARKS:

ONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	6.76 mg/l	160.2
0300	TDS @ 180C	1,244 mg/l	2540 C

Florence B Jay

lorence B. Jay
aboratory Supervisor

City of San Buenaventura Sanitation Laboratory Custody Record

Sample	Type	Sample Date & Time	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
		DATE / TIME						
MTS-1	W Grab	5-25-01 0910	MC/SH	Metals 200.7 (Total & Diss) by ICP [0.5ug/l DL]	4 250ml plastic Composite		5-25-01	
MTS-1		0915		TSS/TDS Gravimetric [1.0mg/L DL]	2 250ml plastic Composite			
MTS-2		1412		Metals ICP Total&Diss 200.7	4x250ml Composite			
MTS-2		1415		TSS/TDS Grav	2x250ml Composite			
MTS-3		1035		Metals ICP 200.7 Tot&Diss	4x250ml comp			
MTS-3		1040		TSS/TDS Grav	2x250ml comp			
MTS-R		1535		Metals ICP 200.7 Tot&Diss	4x250ml comp			
MTS-R		1537		TSS/TDS Grav	2x250ml comp			
MTS-DUP		1540		Metals ICP 200.7 Tot/Diss	4x250ml comp			
MTS-DUP		1542		TSS/TDS Grav	2x250ml composite			

Report results to Matt Carpenter (ENTRIX) 805-644-5948

CITY OF SAN BUENAVENTURA

June 22, 2001

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter,

Enclosed are the results from the Metal Translator Study samples delivered to our laboratory on May 25, 2001.

Please contact me at 805-677-4134, if you require additional information on the data of May 25, 2001.

Sincerely,

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

AMERICAN SCIENTIFIC LABORATORIES, LLC

Environmental Testing Services

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone (805) 677-4134
Attn Florence B. Jay

Number of Pages 3
Date Received 05/31/2001
Date Reported 06/12/2001

Job Number	Ordered	Client
11137	05/31/2001	CITYSB

Project ID: DPO# D014769
Project Name:

RECEIVED
JUN 2 0 2001
Wastewater Div.

Enclosed are the results of analyses on 10 samples analyzed as specified on attached chain of custody.

Arnolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID: DPO# D014769
Project Name:

Job Number	Order Date	Client
11137	05/31/2001	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.			69586	69587	69588	69589	69590
Sample ID			MTS-3D	MTS-R	MTS-RD	MTS-DUP	MTS-DUPD
Date Sampled			05/25/2001	05/25/2001	05/25/2001	05/25/2001	05/25/2001
Date Extracted			06/06/2001	06/06/2001	06/06/2001	06/06/2001	06/06/2001
Preparation Method							
Date Analyzed			06/06/2001	06/06/2001	06/06/2001	06/06/2001	06/06/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	0.0040J	0.0025J	0.0033J	0.0010J	0.0010J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	0.0038J	0.0022J	0.0024J	0.0023J	0.0032J
Zinc	0.0005	0.0100	0.0010J	0.0319	0.0327	0.032	0.081

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	100	75-125								
Lead	90	75-125								
Nickel	96	75-125								
Zinc	94	75-125								

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services

ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID: DPO# D014769
Project Name:

Job Number	Order Date	Client
11137	05/31/2001	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.			69581	69582	69583	69584	69585
Sample ID			MTS-1	MTS-1D	MTS-2	MTS-2D	MTS-3
Date Sampled			05/25/2001	05/25/2001	05/25/2001	05/25/2001	05/25/2001
Date Extracted			06/06/2001	06/06/2001	06/06/2001	06/06/2001	06/06/2001
Preparation Method							
Date Analyzed			06/06/2001	06/06/2001	06/06/2001	06/06/2001	06/06/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	0.0046J	0.0010J	0.0047J	0.0037J	0.0044J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	0.0015J	0.0018J	0.0031J	0.0023J	0.0038J
Zinc	0.0005	0.0100	ND	ND	0.0204	0.0173	0.0044J

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	100	75-125								
Lead	90	75-125								
Nickel	96	75-125								
Zinc	94	75-125								

City of San Buenaventura Sanitation Laboratory Custody Record

Sample	Type	Sample Date & Time	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
MTS - 1 69581	C	May 25, 2001 @0910 Composite: 5-29-01@ 1141	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ	May 31, 01	A.S.L. F.J. R.Bell 5/31/01 10.55 AM
MTS - 1D 69582	C	May 25, 2001 @ 0910 Composite: 5-29-01@ 1141	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
MTS -2 69583	C	May 25, 2001 @1412 Composite: 5-29-01@ 1230	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ		
MTS - 2D 69584	C	May 25, 2001 @1412 Composite: 5-29-01@ 1230	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
MTS - 3 69585	C	May 25, 2001 @1035 Composite: 5-29-01@ 1158	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ		
MTS - 3D 69586	C	May 25, 2001 @1035 Composite: 5-29-01@ 1158	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
MTS - R 69587	C	May 25, 2001 @1535 Composite: 5-29-01@ 1123	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ		
MTS - RD 69588	C	May 25, 2001 @1535 Composite: 5-29-01@ 1123	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
MTS - Dup 69589	C	May 25, 2001 @1540 Composite: 5-29-01@ 1210	MC FJ	Total Metals Cu, Ni, Pb @ Zn	500 ml Plastic	FBJ		
MST - DupD 69590	C	May 25, 2001 @1540 Composite: 5-29-01@ 1210	MC FJ	Dissolved Metals Cu, Ni, Pb, Zn	500 ml Plastic	FBJ		
EPA Method: 200.7		MDLs: All 0.5 ppb						

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

22-Jun-2001

SAMPLE IDENTIFICATION: 09131
SOURCE: MTS -2
PURPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 25-May-2001 1415
COLLECTED BY: MC
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	26.16 mg/l	160.2
70300	TDS @ 180C	1,744 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

22-Jun-2001

SAMPLE IDENTIFICATION: 09129
SOURCE: MTS -1
PURPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 25-May-2001 0910
COLLECTED BY: MC
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	5.12 mg/l	160.2
70300	TDS @ 180C	1,430 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

22-Jun-2001

SAMPLE IDENTIFICATION: 09132
SOURCE: MTS - R
PURPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 25-May-2001 1537
COLLECTED BY: MC
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	9.32 mg/l	160.2
70300	TDS @ 180C	1,240 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

22-Jun-2001

SAMPLE IDENTIFICATION:	09133
SOURCE:	MTS - Dup
PURPOSE:	Metal Translator Study
TYPE:	GRAB
DATE/TIME:	25-May-2001 1542
COLLECTED BY:	MC
PRESERVATION EMPLOYED:	
REMARKS:	

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	6.76 mg/l	160.2
70300	TDS @ 180C	1,244 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

City of San Buenaventura Sanitation Laboratory Custody Record

Sample	Type	Sample Date & Time DATE	TIME	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
MTS-1	W Grab	5-25-01	0910	MC/SH	Metals 200.7 (Total & Diss) by ICP 0.5ug/l DL	4 250ml plastic composite		5-25-01	
MTS-1			0915		TSS/TDS gravimetric 1.0mg/L DL	2 250ml plastic composite			
MTS-2			1412		Metals ICP Total&Diss 200.7	4x250ml composite			
MTS-2			1415		TSS/TDS Grav	2x250ml composite			
MTS-3			1035		Metals ICP 200.7 Tot&Diss	4x250ml comp			
MTS-3			1040		TSS/TDS Grav	2x250ml comp			
MTS-R			1535		Metals ICP 200.7 Tot&Diss	4x250ml comp			
MTS-R			1537		TSS/TDS Grav	2x250ml comp			
MTS-DUP			1540		Metals ICP 200.7 Tot/Diss	4x250ml comp			
MTS-DUP			1542		TSS/TDS Grav	2x250ml composite			

Report results to Matt Carpenter (ENTRIX) 805-644-5948

CITY OF SAN BUENAVENTURA

August 22, 2001

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on June 26, 2001.

Please contact me at 805-677-4134, if you require additional information on the data of June 26, 2001.

Sincerely,

Florence B. Jay

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

21-Aug-2001

SAMPLE IDENTIFICATION: 09152
SOURCE: MTS-1
PURPOSE: METALS TRANSLATOR STUDY
TYPE: GRAB
DATE/TIME: 26-Jun-2001 0850
COLLECTED BY: ENTRIX (C.T. AND S.H.)
PRESERVATION EMPLOYED:
REMARKS: COMPOSITED FOR ANALYSIS

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	36.00 mg/l	160.2
70300	TDS @ 180C	1,467 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

21-Aug-2001

SAMPLE IDENTIFICATION:	09154
SOURCE:	MTS-3
PURPOSE:	METALS TRANSLATOR STUDY
TYPE:	GRAB
DATE/TIME:	26-Jun-2001 10:0
COLLECTED BY:	ENTRIX (C.H. AND S.H.)
PRESERVATION EMPLOYED:	
REMARKS:	COMPOSITED FOR ANALYSIS

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	10.44 mg/l	160.2
70300	TDS @ 180C	2,701 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

21-Aug-2001

SAMPLE IDENTIFICATION:	09155
SOURCE:	MTS-R
PURPOSE:	METALS TRANSLATOR STUDY
TYPE:	GRAB
DATE/TIME:	26-Jun-2001 12:3
COLLECTED BY:	ENTRIX (C.T. AND S.H.)
PRESERVATION EMPLOYED:	
REMARKS:	COMPOSITED FOR ANALYSIS

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.30 mg/l	160.2
70300	TDS @ 180C	1,326 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

21-Aug-2001

SAMPLE IDENTIFICATION:	09156
SOURCE:	MTS-DUP
PURPOSE:	METALS TRANSLATOR STUDY
TYPE:	GRAB
DATE/TIME:	26-Jun-2001 1240
COLLECTED BY:	ENTRIX (C.T. AND S.H.)
PRESERVATION EMPLOYED:	
REMARKS:	COMPOSITED FOR ANALYSIS

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.06 mg/l	160.2
70300	TDS @ 180C	1,303 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Number of Pages 3
Date Received 06/27/2001
Date Reported 07/16/2001

Telephone (805) 677-4134
Attn Florence B. Jay

Job Number	Ordered	Client
11356	06/27/2001	CITYSB

Project ID: DO14769
Project Name:

RECEIVED
JUL 3 0 2001
Wastewater Div.

Enclosed are the results of analyses on 10 samples analyzed as specified on attached chain of custody.

Amolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID: DO14769
Project Name:

Job Number	Order Date	Client
11356	06/27/2001	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.			70883	70885	70887	70889	70891
Sample ID			MTS-1	MTS-2	MTS-3	MTS-R	MTS-Dup
Date Sampled			06/26/2001	06/26/2001	06/26/2001	06/26/2001	06/26/2001
Date Extracted			07/11/2001	07/11/2001	07/11/2001	07/11/2001	07/11/2001
Preparation Method							
Date Analyzed			07/11/2001	07/11/2001	07/11/2001	07/11/2001	07/11/2001
Matrix			Liquid	Liquid	Liquid	Liquid	Liquid
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	0.0093J	0.0068J	0.0039J	0.0021J	0.0064J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	0.0049J	0.0054J	0.0053J	0.0046J	0.0041J
Zinc	0.0005	0.0100	0.0094J	0.0126	0.0087J	0.0309	0.0335

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	96	75-125								
Lead	91	75-125								
Nickel	104	75-125								
Zinc	96	75-125								

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
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ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID: DO14769
Project Name:

Job Number	Order Date	Client
11356	06/27/2001	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.			70884	70886	70888	70890	70892
Sample ID			MTS-1D	MTS-2D	MTS-3D	MTS-RD	MTS-DupD
Date Sampled			06/26/2001	06/26/2001	06/26/2001	06/26/2001	06/26/2001
Date Extracted			07/11/2001	07/11/2001	07/11/2001	07/11/2001	07/11/2001
Preparation Method							
Date Analyzed			07/11/2001	07/11/2001	07/11/2001	07/11/2001	07/11/2001
Matrix			Liquid	Liquid	Liquid	Liquid	Liquid
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	0.0075J	0.0057J	0.0030J	0.0021J	0.0021J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	0.0025J	0.0026J	0.0026J	0.0023J	0.0021J
Zinc	0.0005	0.0100	0.0078J	0.0097J	0.0077J	0.0169	0.0204

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	96	75-125								
Lead	91	75-125								
Nickel	104	75-125								
Zinc	96	75-125								

City of San Buenaventura Sanitation Laboratory Custody Record

IV ≠

Sample	Type	Sample Date & Time	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
1) MTS - 1 70883 LID # 09152	C	6-26-01 08:50	CT SH	Total Metals Cu, Ni, Pb @ Zn	Plastic	MAT	6-27-01 11:30	ASD. 6-27-01 11:30 MAT
2) MTS - 1D 70884 MAT LID # ~~09158~~ 09152	C	6-26-01 08:50	CT SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic	MAT	6-27-01 11:30	
3) MTS -2 70885 LID # ~~09154~~ MAT 09153	C	6-26-01 17:10	CT SH	Total Metals Cu, Ni, Pb @ Zn	Plastic	MAT	6-27-01 11:30	
4) MTS - 2D 70886 LID # 09153	C	6-26-01 17:10	CT SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic	MAT	6-27-01 11:30	
5) MTS - 3 70887 LID # 09154	C	6-26-01 10:00	CT SH	Total Metals Cu, Ni, Pb @ Zn	Plastic	MAT	6-27-01 11:30	
6) MTS - 3D 70888 LID # 09154	C	6-26-01 10:00	CT SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic	MAT	6-27-01 11:30	
7) MTS - R 70889 LID # 09155	C	6-26-01 12:30	CT SH	Total Metals Cu, Ni, Pb @ Zn	Plastic	MAT	6-27-01 11:30	
8) MTS - RD 70890 LID # 09155	C	6-26-01 12:30	CT SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic	MAT	6-27-01 11:30	
9) MTS - Dup 70891 LID # 09156	C	6-26-01 12:40	CT SH	Total Metals Cu, Ni, Pb @ Zn	Plastic	MAT	6-27-01 11:30	
10) MST - DupD 70892 LID # 09156	C	6-26-01 12:40	CT SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic	MAT	6-27-01 11:30	

EPA Method: 200.7

MDLs: All 0.5 ppb

CITY OF SAN BUENAVENTURA

August 29, 2001

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on July 25, 2001.

Please contact me at 805-677-4134, if you require additional information on the data of June 26, 2001.

Sincerely,

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

29-Aug-2001

SAMPLE IDENTIFICATION:	09247
SOURCE:	MTS-1
PURPOSE:	Metals Translator Study
TYPE:	GRAB
DATE/TIME:	25-Jul-2001 0830
COLLECTED BY:	Entrix (SH/CT)
PRESERVATION EMPLOYED:	
REMARKS:	COMPOSITED FOR ANALLYSIS

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	3.77 mg/l	160.2
70300	TDS @ 180C	1,733 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

29-Aug-2001

SAMPLE IDENTIFICATION:	09248
SOURCE:	MTS-R
PURPOSE:	Metals Translator Study
TYPE:	GRAB
DATE/TIME:	25-Jul-2001
COLLECTED BY:	ENTRIX (CT/SH)
PRESERVATION EMPLOYED:	
REMARKS:	COMPOSITED FOR ANALYSIS

	CONSTITUENT	CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	4.05 mg/l	160.2
70300	TDS @ 180C	2,664 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

29-Aug-2001

SAMPLE IDENTIFICATION:	09250
SOURCE:	MTS-3
PURPOSE:	Metals Translator Study
TYPE:	GRAB
DATE/TIME:	25-Jul-2001 1030
COLLECTED BY:	Entrix (CT/SH)
PRESERVATION EMPLOYED:	
REMARKS:	COMPOSITED FOR ANALYSIS

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	17.54 mg/l	160.2
70300	TDS @ 180C	4,917 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

29-Aug-2001

SAMPLE IDENTIFICATION: 09251
SOURCE: MTS-DUP
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 25-Jul-2001 1035
COLLECTED BY: Entrix (CT/SH)
PRESERVATION EMPLOYED:
REMARKS: COMPOSITED FOR ANALYSIS

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	25.94 mg/l	160.2
70300	TDS @ 180C	4,950 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

29-Aug-2001

SAMPLE IDENTIFICATION: 09252
SOURCE: NORTH BANK & PETIT - TRACT 4425
PURPOSE: DISINFECTION VERIFICATION
TYPE: GRAB
DATE/TIME: 31-Jul-2001 1340
COLLECTED BY: C.JONES
PRESERVATION EMPLOYED:
REMARKS: Lot #36, sample results from 7/24/01 were turbid

CONSTITUENT		CONCENTRATION:		METHOD:
99995	COLIFORM, TOTAL MPN 1X10 TUBE	<	1.1 MPN/100ml	9221 B

Florence B. Jay
Laboratory Supervisor

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone (805)677-4134
Attn Florence B. Jay

Number of Pages 3
Date Received 07/30/2001
Date Reported 08/14/2001

Job Number	Ordered	Client
11565	07/30/2001	CITYSB

Project ID:
Project Name:

RECEIVED
AUG 24 2001
Wastewater Div.

Enclosed are the results of analyses on 10 samples analyzed as specified on attached chain of custody.

Wendy Lu
Organics Supervisor

Rojert G. Araghi
Laboratory Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID:
Project Name:

Job Number	Order Date	Client
11565	07/30/2001	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.		71968	71970	71972	71974	71976
Sample ID		MTS-R	MTS-1	MTS-2	MTS-3	MTS-DUP
Date Sampled		07/23/2001	07/23/2001	07/23/2001	07/23/2001	07/23/2001
Date Extracted		08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001
Preparation Method						
Date Analyzed		08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001
Matrix		Liquid	Liquid	Liquid	Liquid	Liquid
Units		mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier		1	1	1	1	1
Analytes	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals						
Copper	0.005	ND	ND	ND	ND	ND
Lead	0.005	ND	ND	ND	ND	ND
Nickel	0.005	ND	ND	ND	ND	ND
Zinc	0.005	0.030	ND	0.023	0.011	ND

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	80	75-125								
Lead	105	75-125								
Nickel	100	75-125								
Zinc	102	75-125								

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID:
Project Name:

Job Number	Order Date	Client
11565	07/30/2001	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.		71969	71971	71973	71975	71977
Sample ID		MTS-R-D	MTS-1-D	MTS-2-D	MTS-3-D	MTS-DUP-D
Date Sampled		07/23/2001	07/23/2001	07/23/2001	07/23/2001	07/23/2001
Date Extracted		08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001
Preparation Method						
Date Analyzed		08/09/2001	08/09/2001	08/09/2001	08/09/2001	08/09/2001
Matrix		Liquid	Liquid	Liquid	Liquid	Liquid
Units		mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier		1	1	1	1	1
Analytes	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals						
Copper	0.005	ND	ND	ND	ND	ND
Lead	0.005	ND	ND	ND	ND	ND
Nickel	0.005	ND	ND	ND	ND	ND
Zinc	0.005	0.020	ND	0.020	0.010	ND

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	80	75-125								
Lead	105	75-125								
Nickel	100	75-125								
Zinc	102	75-125								

City of San Buenaventura Sanitation Laboratory Custody Record

	Sample	Type	Sample Date & Time	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
1	MTS-R 71968	C	7-23-01 08:30	CT/SH	Total Metals Cu, Ni,Pb,Zn	Plastic	(MICHAEL TORRES)	7-30-01 10:10	
2	MTS-R-D 71969	C	7-23-01 08:30	CT/SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic		7-30-01 10:10	
3	MTS-1 71970	C	7-23-01 09:05	CT/SH	Total Metals Cu, Ni,Pb,Zn	Plastic		7-30-01 10:10	
4	MTS-1-D 71971	C	7-23-01 09:05	CT/SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic		7-30-01 10:10	
5	MTS-2 71972	C	7-23-01 13:30	CT/SH	Total Metals Cu, Ni,Pb,Zn	Plastic		7-30-01 10:10	
6	MTS-2-D 71973	C	7-23-01 13:30	CT/SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic		7-30-01 10:10	
7	MTS-3 71974	C	7-23-01 10:30	CT/SH	Total Metals Cu, Ni,Pb,Zn	Plastic		7-30-01 10:10	
8	MTS-3-D 71975	C	7-23-01 10:30	CT/SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic		7-30-01 10:10	
9	MTS-DUP 71976	C	7-23-01 10:35	CT/SH	Total Metals Cu, Ni,Pb,Zn	Plastic		7-30-01 10:10	
10	MTS-DUP-D 71977	C	7-23-01 10:35	CT/SH	Dissolved Metals Cu, Ni, Pb, Zn	Plastic		7-30-01 10:10	
	EPA Method: 200.7		MDS's: All 0.5 ppb						

CITY OF SAN BUENAVENTURA

October 2, 2001

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on August 28, 2001.

Please contact me at 805-677-4134, if you require additional information on the data of August 28, 2001.

Sincerely,

Florence B. Jay

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

01-Oct-2001

SAMPLE IDENTIFICATION: 09282
SOURCE: MTS-1
PURPOSE: Metals Translator Study
TYPE: COMPOSITE
DATE/TIME: 28-Aug-2001 0910
COLLECTED BY: Entrix (SH/CT)
PRESERVATION EMPLOYED:
REMARKS: Samples composited for analyses.

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	.05 mg/l	160.2
70300	TDS @ 180C	2,628 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

01-Oct-2001

SAMPLE IDENTIFICATION: 09283
SOURCE: MTS-2
PURPOSE: Metals Translator Study
TYPE: COMPOSITE
DATE/TIME: 28-Aug-2001 1300
COLLECTED BY: Entrix (SH/CT)
PRESERVATION EMPLOYED:
REMARKS: Samples composited for analyses.

	CONSTITUENT	CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	14.02 mg/l	160.2
70300	TDS @ 180C	4,326 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

01-Oct-2001

SAMPLE IDENTIFICATION:	09285
SOURCE:	MTS-DUP
PURPOSE:	Metals Translator Study
TYPE:	COMPOSITE
DATE/TIME:	28-Aug-2001 1020
COLLECTED BY:	Entrix (SH/CT)
PRESERVATION EMPLOYED:	
REMARKS:	Samples composited for analyses.

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	40.46 mg/l	160.2
70300	TDS @ 180C	8,477 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

01-Oct-2001

SAMPLE IDENTIFICATION: 09286
SOURCE: MTS-R
PURPOSE: Metals Translator Study
TYPE: COMPOSITE
DATE/TIME: 28-Aug-2001 1500
COLLECTED BY: Entrix (SH/CT)
PRESERVATION EMPLOYED:
REMARKS: Samples composited for analyses.

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	.55 mg/l	160.2
70300	TDS @ 180C	5,572 mg/l	2540 C

Florence B. Day
Florence B. Day
Laboratory Supervisor

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone (805)677-4134
Attn Florence B. Jay

Number of Pages 3
Date Received 09/05/2001
Date Reported 09/21/2001

Job Number	Ordered	Client
11768	08/30/2001	CITYSB

Project ID:
Project Name:

RECEIVED
SEP 27 2001
Wastewater Div.

Enclosed are the results of analyses on 10 samples analyzed as specified on attached chain of custody.

Amolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

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ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
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Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID:
Project Name:

Job Number	Order Date	Client
11768	08/30/2001	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.			73221	73223	73225	73227	73229
Sample ID			MTS-R	MTS-1	MTS-2	MTS-3	MTS-DUP
Date Sampled			08/28/2001	08/28/2001	08/28/2001	08/28/2001	08/28/2001
Date Extracted			09/19/2001	09/19/2001	09/19/2001	09/19/2001	09/19/2001
Preparation Method							
Date Analyzed			09/19/2001	09/19/2001	09/19/2001	09/19/2001	09/19/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.005	0.010	0.006J	ND	ND	0.009J	0.006J
Lead	0.005	0.005	ND	ND	ND	ND	ND
Nickel	0.005	0.010	ND	ND	ND	ND	ND
Zinc	0.005	0.010	0.011	ND	0.016	0.007J	0.006J

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	80	75-125								
Lead	85	75-125								
Nickel	90	75-125								
Zinc	85	75-125								

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ANALYTICAL RESULTS

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City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID:
Project Name:

Job Number	Order Date	Client
11768	08/30/2001	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.			73222	73224	73226	73228	73230
Sample ID			MTS-R-D	MTS-1-D	MTS-2-D	MTS-3-D	MTS-DUP-D
Date Sampled			08/28/2001	08/28/2001	08/28/2001	08/28/2001	08/28/2001
Date Extracted			09/19/2001	09/19/2001	09/19/2001	09/19/2001	09/19/2001
Preparation Method							
Date Analyzed			09/19/2001	09/19/2001	09/19/2001	09/19/2001	09/19/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.005	0.010	0.006J	ND	ND	ND	ND
Lead	0.005	0.005	ND	ND	ND	ND	ND
Nickel	0.005	0.010	ND	ND	ND	ND	ND
Zinc	0.005	0.010	0.011	ND	0.011	0.006J	0.006J

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	80	75-125								
Lead	85	75-125								
Nickel	90	75-125								
Zinc	85	75-125								

CITY OF SAN BUENAVENTURA

November 13, 2001

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on September 26, 2001.

Please contact me at 805-677-4134, if you require additional information on the data of August 28, 2001.

Sincerely,

Florence B. Jay

Florence B. Jay
Laboratory Supervisor

Enclosure

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ANALYTICAL RESULTS

Ordered By

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P.O. Box 99
Ventura, CA 93002

RECEIVED
OCT 3 1 2001
Wastewater Div.

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID:
Project Name:

Job Number	Order Date	Client
12061	10/03/2001	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.		74862	74864	74866	74868	74870
Sample ID		MTS-1	MTS-2	MTS-3	MTS-R	MTS-DUP
Date Sampled		09/26/2001	09/26/2001	09/26/2001	09/26/2001	09/26/2001
Date Extracted		10/09/2001	10/09/2001	10/09/2001	10/09/2001	10/09/2001
Preparation Method						
Date Analyzed		10/10/2001	10/10/2001	10/10/2001	10/10/2001	10/10/2001
Matrix		Water	Water	Water	Water	Water
Units		mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier		1	1	1	1	1
Analytes	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals						
Copper	0.005	ND	ND	ND	ND	ND
Lead	0.005	ND	ND	ND	ND	ND
Nickel	0.005	ND	ND	ND	ND	ND
Zinc	0.005	ND	0.012	0.010	0.015	0.014

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	98	75-125								
Lead	94	75-125								
Nickel	89	75-125								
Zinc	98	75-125								

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ANALYTICAL RESULTS

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P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID:
Project Name:

Job Number	Order Date	Client
12061	10/03/2001	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.		74863	74865	74867	74869	74871
Sample ID		MTS-1-D	MTS-2-D	MTS-3-D	MTS-R-D	MTS-DUP-D
Date Sampled		09/26/2001	09/26/2001	09/26/2001	09/26/2001	09/26/2001
Date Extracted		10/18/2001	10/18/2001	10/18/2001	10/18/2001	10/18/2001
Preparation Method						
Date Analyzed		10/19/2001	10/19/2001	10/19/2001	10/19/2001	10/19/2001
Matrix		Water	Water	Water	Water	Water
Units		mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier		1	1	1	1	1
Analytes	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals						
Copper	0.005	ND	ND	ND	ND	ND
Lead	0.005	ND	ND	ND	ND	ND
Nickel	0.005	ND	ND	ND	ND	ND
Zinc	0.005	ND	0.010	0.009	0.010	0.010

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	110	75-125								
Lead	100	75-125								
Nickel	105	75-125								
Zinc	105	75-125								

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Nov-2001

SAMPLE IDENTIFICATION: 09297
SOURCE: MTS-1
PURPOSE: Metals Translator Study
TYPE: COMPOSITE
DATE/TIME: 26-Sep-2001 0830
COLLECTED BY: SH/CT (Entrix)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.62 mg/l	160.2
70300	TDS @ 180C	2,632 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Nov-2001

SAMPLE IDENTIFICATION: 09298
SOURCE: MTS-2
PURPOSE: Metals Translator Study
TYPE: COMPOSITE
DATE/TIME: 26-Sep-2001 1300
COLLECTED BY: SH/CT (Entrix)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.88 mg/l	160.2
70300	TDS @ 180C	1,818 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Nov-2001

SAMPLE IDENTIFICATION: 09299
SOURCE: MTS-3
PURPOSE: Metals Translator Study
TYPE: COMPOSITE
DATE/TIME: 26-Sep-2001 1021
COLLECTED BY: SH/CT (Entrix)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	6.03 mg/l	160.2
70300	TDS @ 180C	3,504 mg/l	2540 C

Florence B Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Nov-2001

SAMPLE IDENTIFICATION: 09300
SOURCE: MTS-R
PURPOSE: Metals Translator Study
TYPE: COMPOSITE
DATE/TIME: 26-Sep-2001 0900
COLLECTED BY: SH/CT (Entrix)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.46 mg/l	160.2
70300	TDS @ 180C	1,502 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Nov-2001

SAMPLE IDENTIFICATION: 09301
SOURCE: MTS-DUP
PURPOSE: Metals Translator Study
TYPE: COMPOSITE
DATE/TIME: 26-Sep-2001 1310
COLLECTED BY: SH/CT (Entrix)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.46 mg/l	160.2
70300	TDS @ 180C	1,714 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

CITY OF SAN BUENAVENTURA

December 24, 2001

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on November 20, 2001.

Please contact me at 805-677-4134, if you require additional information.

Sincerely,

Florence B Jay

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Dec-2001

SAMPLE IDENTIFICATION: 09544
SOURCE: MTS-1
PURPOSE: Metals Translator
TYPE: GRAB
DATE/TIME: 20-Nov-2001 0900
COLLECTED BY: Entrix (SH/CT)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	.64 mg/l	160.2
70300	TDS @ 180C	2,312 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Dec-2001

SAMPLE IDENTIFICATION: 09545
SOURCE: MTS-2
PURPOSE: Metals Translator
TYPE: GRAB
DATE/TIME: 20-Nov-2001 1300
COLLECTED BY: Entrix (SH/CT)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.80 mg/l	160.2
70300	TDS @ 180C	1,686 mg/l	2540 C

Florence B Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Dec-2001

SAMPLE IDENTIFICATION: 09546
SOURCE: MTS-3
PURPOSE: Metals Translator
TYPE: GRAB
DATE/TIME: 20-Nov-2001 1100
COLLECTED BY: Entrix (SH/CT)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	2.28 mg/l	160.2
70300	TDS @ 180C	1,796 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Dec-2001

SAMPLE IDENTIFICATION: 09547
SOURCE: MTS-R
PURPOSE: Metals Translator
TYPE: GRAB
DATE/TIME: 20-Nov-2001 1430
COLLECTED BY: Entrix (SH/CT)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	9.39 mg/l	160.2
70300	TDS @ 180C	1,470 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Dec-2001

SAMPLE IDENTIFICATION: 09548
SOURCE: MTS-DUP
PURPOSE: Metals Translator
TYPE: GRAB
DATE/TIME: 20-Nov-2001 1310
COLLECTED BY: Entrix (SH/CT)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.87 mg/l	160.2
70300	TDS @ 180C	1,692 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

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City of San Buenaventura
P.O. Box 99
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Telephone (805)677-4134
Attn Florence B. Jay

Number of Pages 3
Date Received 11/21/2001
Date Reported 12/05/2001

Job Number	Ordered	Client
12462	11/21/2001	CITYSB

Project ID:
Project Name:

RECEIVED
DEC 10 2001
Wastewater Div.

Enclosed are the results of analyses on 10 samples analyzed as specified on attached chain of custody.

Amolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
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ANALYTICAL RESULTS

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Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID:
Project Name:

Job Number	Order Date	Client
12462	11/21/2001	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.			77223	77225	77227	77229	77231
Sample ID			MTS-1A	MTS-2	MTS-3	MTS-R	MTS-DUP
Date Sampled			11/20/2001	11/20/2001	11/20/2001	11/20/2001	11/20/2001
Date Extracted			11/29/2001	11/29/2001	11/29/2001	11/29/2001	11/29/2001
Preparation Method							
Date Analyzed			11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	0.006J	0.005J	0.004J	0.006J	0.005J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	0.010	0.008J	0.007J	0.020	0.040
Zinc	0.0005	0.0100	0.022	0.042	0.0150	0.048	0.022

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	101	75-125								
Lead	101	75-125								
Nickel	98	75-125								
Zinc	94	75-125								

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ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID:
Project Name:

Job Number	Order Date	Client
12462	11/21/2001	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.			77224	77226	77228	77230	77232
Sample ID			MTS-1A-D	MTS-2-D	MTS-3-D	MTS-R-D	MTS-DUP-D
Date Sampled			11/20/2001	11/20/2001	11/20/2001	11/20/2001	11/20/2001
Date Extracted			11/29/2001	11/29/2001	11/29/2001	11/29/2001	11/29/2001
Preparation Method							
Date Analyzed			11/30/2001	11/30/2001	11/30/2001	11/30/2001	11/30/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	0.005J	0.004J	0.004J	0.006J	0.005J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	0.010	0.006J	0.007J	0.020	0.040
Zinc	0.0005	0.0100	0.004J	0.022	0.015	0.048	0.022

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS/LCSD % Limit								
ICP Metals										
Copper	101	75-125								
Lead	101	75-125								
Nickel	98	75-125								
Zinc	94	75-125								

CITY OF SAN BUENAVENTURA

January 8, 2002

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on December 5, 2001.

Please contact me at 805-677-4134, if you require additional information.

Sincerely,

Florence B. Jay
Laboratory Supervisor

Enclosure

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RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Jan-2002

SAMPLE IDENTIFICATION: 09555
SOURCE: MTS-1
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 05-Dec-2001 0920
COLLECTED BY: Entrix (CT/KC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	3.88 mg/l	160.2
70300	TDS @ 180C	2,062 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Jan-2002

SAMPLE IDENTIFICATION: 09556
SOURCE: MTS-2
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 05-Dec-2001 1250
COLLECTED BY: Entrix (CT/KC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	24.39 mg/l	160.2
70300	TDS @ 180C	14,432 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Jan-2002

SAMPLE IDENTIFICATION: 09557
SOURCE: MTS-3
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 05-Dec-2001 1250
COLLECTED BY: Entrix (CT/KC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	23.69 mg/l	160.2
70300	TDS @ 180C	2,820 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Jan-2002

SAMPLE IDENTIFICATION: 09558
SOURCE: MTS-R
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 05-Dec-2001 1230
COLLECTED BY: Entrix (CT/KC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	16.17 mg/l	160.2
70300	TDS @ 180C	1,346 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Jan-2002

SAMPLE IDENTIFICATION: 09559
SOURCE: MTS-DUP
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 05-Dec-2001 1230
COLLECTED BY: Entrix (CT/KC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	20.71 mg/l	160.2
70300	TDS @ 180C	3,394 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Jan-2002

SAMPLE IDENTIFICATION: 09560
SOURCE: MTS-M
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 06-Dec-2001 0930
COLLECTED BY: Entrix (KC/JC)
PRESERVATION EMPLOYED: HNO3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	9.40 mg/l	160.2
70300	TDS @ 180C	4,434 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

08-Jan-2002

SAMPLE IDENTIFICATION: 09561
SOURCE: MTS-M-O
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 06-Dec-2001 1015
COLLECTED BY: Entrix (KC/JC)
PRESERVATION EMPLOYED: HNO3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	36.40 mg/l	160.2
70300	TDS @ 180C	35,138 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

)rdered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

'elephone (805)677-4134
ttn Florence B. Jay

Number of Pages 5
Date Received 12/07/2001
Date Reported 12/19/2001

Job Number	Ordered	Client
12615	12/07/2001	CITYSB

'roject ID:
'roject Name:

RECEIVED
DEC 2 1 2001
Wastewater Div.

Enclosed are the results of analyses on 14 samples analyzed as specified on attached chain of custody.

Arnolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

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Environmental Testing Services
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ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
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Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID:
Project Name:

Job Number	Order Date	Client
12615	12/07/2001	CITYSB

Method: 200.7, ICP METALS

Batch No:

Our Lab I.D.				**78032**	**78034**	**78036**	**78038**
Sample ID			Method Blank	MTS-1A	MTS-2	MTS-3	MTS-R
Date Sampled			12/05/2001	12/05/2001	12/05/2001	12/05/2001	12/05/2001
Date Extracted			12/12/2001	12/12/2001	12/12/2001	12/12/2001	12/12/2001
Preparation Method							
Date Analyzed			12/14/2001	12/14/2001	12/14/2001	12/14/2001	12/14/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0019J	0.0027J	0.0040J	0.0050J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0040J	0.0028J	0.0051J	0.0036J
Zinc	0.0005	0.0100	ND	0.0056J	0.0137	0.0077J	0.0315

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	95	92		75-125						
Lead	92	97		75-125						
Nickel	94	98		75-125						
Zinc	90	97		75-125						

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ANALYTICAL RESULTS

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Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID:
Project Name:

Job Number	Order Date	Client
12615	12/07/2001	CITYSB

Method: 200.7, ICP METALS

Batch No:

Our Lab I.D.			**78040**	**78042**	**78044**		
Sample ID			MTS-Dup	MTS-M	MTS-M-O		
Date Sampled			12/05/2001	12/05/2001	12/05/2001		
Date Extracted			12/12/2001	12/12/2001	12/12/2001		
Preparation Method							
Date Analyzed			12/14/2001	12/14/2001	12/14/2001		
Matrix			Water	Water	Water		
Units			mg/L	mg/L	mg/L		
Detection Limit Multiplier			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
ICP Metals							
Copper	0.0005	0.0100	0.0040J	0.0026J	0.0005J		
Lead	0.0005	0.0050	ND	ND	ND		
Nickel	0.0005	0.0100	0.0038J	0.0030J	0.0011J		
Zinc	0.0005	0.0100	0.0216	0.0136	0.0060J		

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	95	92		75-125						
Lead	92	97		75-125						
Nickel	94	98		75-125						
Zinc	90	97		75-125						

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ANALYTICAL RESULTS

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Page: 4
Project ID:
Project Name:

Job Number	Order Date	Client
12615	12/07/2001	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.				78033	78035	78037	78039
Sample ID			Method Blank	MTS-1A-D	MTS-2D	MTS-3D	MTS-R-D
Date Sampled			12/05/2001	12/05/2001	12/05/2001	12/05/2001	12/05/2001
Date Extracted			12/12/2001	12/12/2001	12/12/2001	12/12/2001	12/12/2001
Preparation Method							
Date Analyzed			12/14/2001	12/14/2001	12/14/2001	12/14/2001	12/14/2001
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0018J	0.0021J	0.0029J	0.0044J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0038J	0.0016J	0.0044J	0.0029J
Zinc	0.0005	0.0100	ND	0.0043J	0.0120	0.0059J	0.0281

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	95	92		80-120	20					
Lead	92	97		80-120	20					
Nickel	94	98		80-120	20					
Zinc	90	97		80-120	20					

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ANALYTICAL RESULTS

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Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 5
Project ID:
Project Name:

Job Number	Order Date	Client
12615	12/07/2001	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.			78041	78043	78045		
Sample ID			MTS-Dup-D	MTS-M-D	MTS-M-O-D		
Date Sampled			12/05/2001	12/05/2001	12/05/2001		
Date Extracted			12/12/2001	12/12/2001	12/12/2001		
Preparation Method							
Date Analyzed			12/14/2001	12/14/2001	12/14/2001		
Matrix			Water	Water	Water		
Units			mg/L	mg/L	mg/L		
Detection Limit Multiplier			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
ICP Metals							
Copper	0.0005	0.0100	0.0037J	0.0024J	0.0005J		
Lead	0.0005	0.0050	ND	ND	ND		
Nickel	0.0005	0.0100	0.0030J	0.0027J	0.0008J		
Zinc	0.0005	0.0100	0.0207	0.0135	0.0018J		

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	95	92		80-120	20					
Lead	92	97		80-120	20					
Nickel	94	98		80-120	20					
Zinc	90	97		80-120	20					

CITY OF SAN BUENAVENTURA

February 6, 2002

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on January 8, 2002.

Please contact me at 805-677-4134, if you require additional information.

Sincerely,

Florence B. Jay

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

06-Feb-2002

SAMPLE IDENTIFICATION:	09579
SOURCE:	Entirx MST-1
PURPOSE:	Metal Translator Study
TYPE:	GRAB
DATE/TIME:	08-Jan-2002 0930
COLLECTED BY:	KC/SH
PRESERVATION EMPLOYED:	
REMARKS:	

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.32 mg/l	160.2
70300	TDS @ 180C	2,124 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

06-Feb-2002

SAMPLE IDENTIFICATION: 09580
SOURCE: Entirx MTS-2
PURPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 08-Jan-2002 1300
COLLECTED BY: KC/SH
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	11.29 mg/l	160.2
70300	TDS @ 180C	6,379 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

06-Feb-2002

SAMPLE IDENTIFICATION:	09581
SOURCE:	Entrix MTS-3
PURPOSE:	Metals Translator Study
TYPE:	GRAB
DATE/TIME:	08-Jan-2002 1115
COLLECTED BY:	KC/SH
PRESERVATION EMPLOYED:	
REMARKS:	

	CONSTITUENT	CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	6.08 mg/l	160.2
70300	TDS @ 180C	5,200 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

06-Feb-2002

SAMPLE IDENTIFICATION: 09582
SOURCE: Entrix MTS-M
PURPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 08-Jan-2002 1340
COLLECTED BY: KC/SH
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	8.91 mg/l	160.2
70300	TDS @ 180C	12,932 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

06-Feb-2002

SAMPLE IDENTIFICATION:	09583
SOURCE:	Entrix MTS-R
PURPOSE:	Metal Translator Study
TYPE:	GRAB
DATE/TIME:	08-Jan-2002 1015
COLLECTED BY:	KC/SH
PRESERVATION EMPLOYED:	
REMARKS:	

	CONSTITUENT	CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	14.31 mg/l	160.2
70300	TDS @ 180C	1,400 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

06-Feb-2002

SAMPLE IDENTIFICATION:	09584
SOURCE:	Entrix MTS-DUP
PURPOSE:	Metal Translator Study
TYPE:	GRAB
DATE/TIME:	08-Jan-2002 1300
COLLECTED BY:	KC/SH
PRESERVATION EMPLOYED:	
REMARKS:	

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	9.49 mg/l	160.2
70300	TDS @ 180C	3,372 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone (805)677-4134
Attn Florence B. Jay

Number of Pages 5
Date Received 01/09/2002
Date Reported 01/23/2002

Job Number	Ordered	Client
12872	01/09/2002	CITYSB

Project ID:
Project Name:

RECEIVED
JAN 3 0 2002
Wastewater Div.

Enclosed are the results of analyses on 12 samples analyzed as specified on attached chain of custody.

Amolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID:
Project Name:

Job Number	Order Date	Client
12872	01/09/2002	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.				79346	79348	79350	79352
Sample ID			Method Blank	MTS-1	MTS-2	MTS-3	MTS-R
Date Sampled			01/08/2002	01/08/2002	01/08/2002	01/08/2002	01/08/2002
Date Extracted			01/22/2002	01/22/2002	01/22/2002	01/22/2002	01/22/2002
Preparation Method							
Date Analyzed			01/22/2002	01/22/2002	01/22/2002	01/22/2002	01/22/2002
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0032J	0.0078J	0.0071J	0.0074J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0087J	0.0047J	0.0065J	0.0049J
Zinc	0.0005	0.0100	ND	0.0263	0.0365	0.0143	0.0597

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	99	103	4.0	80-120	20					
Lead	106	104	1.9	80-120	20					
Nickel	105	104	<1	80-120	20					
Zinc	99	98	1.0	80-120	20					

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ANALYTICAL RESULTS

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Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID:
Project Name:

Job Number	Order Date	Client
12872	01/09/2002	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.			79354	79356			
Sample ID			MTS-Dup	MTS-M			
Date Sampled			01/08/2002	01/08/2002			
Date Extracted			01/22/2002	01/22/2002			
Preparation Method							
Date Analyzed			01/22/2002	01/22/2002			
Matrix			Water	Water			
Units			mg/L	mg/L			
Detection Limit Multiplier			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
ICP Metals							
Copper	0.0005	0.0100	0.0124	0.0064J			
Lead	0.0005	0.0050	ND	ND			
Nickel	0.0005	0.0100	0.0046J	0.0042J			
Zinc	0.0005	0.0100	0.0319	0.0128			

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	99	103	4.0	80-120	20					
Lead	106	104	1.9	80-120	20					
Nickel	105	104	<1	80-120	20					
Zinc	99	98	1.0	80-120	20					

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ANALYTICAL RESULTS

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Page: 4
Project ID:
Project Name:

Job Number	Order Date	Client
12872	01/09/2002	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.				79347	79349	79351	79353
Sample ID			Method Blank	MTS-1D	MTS-2D	MTS-3D	MTS-RD
Date Sampled			01/08/2002	01/08/2002	01/08/2002	01/08/2002	01/08/2002
Date Extracted			01/22/2002	01/22/2002	01/22/2002	01/22/2002	01/22/2002
Preparation Method							
Date Analyzed			01/22/2002	01/22/2002	01/22/2002	01/22/2002	01/22/2002
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0080J	0.0076J	0.0085J	0.0088J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0094J	0.0059J	0.0074J	0.0047J
Zinc	0.0005	0.0100	ND	0.0209	0.0294	0.0057J	0.0513

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	99	103	4.0	80-120	20					
Lead	106	104	1.9	80-120	20					
Nickel	105	104	<1	80-120	20					
Zinc	99	98	1.0	80-120	20					

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ANALYTICAL RESULTS

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Attn: Florence B. Jay

Page: 5
Project ID:
Project Name:

Job Number	Order Date	Client
12872	01/09/2002	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.			79355	79357			
Sample ID			MTS-DupD	MTS-M D			
Date Sampled			01/08/2002	01/08/2002			
Date Extracted			01/22/2002	01/22/2002			
Preparation Method							
Date Analyzed			01/22/2002	01/22/2002			
Matrix			Water	Water			
Units			mg/L	mg/L			
Detection Limit Multiplier			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
ICP Metals							
Copper	0.0005	0.0100	0.0042J	0.0104			
Lead	0.0005	0.0050	ND	ND			
Nickel	0.0005	0.0100	0.0045J	0.0042J			
Zinc	0.0005	0.0100	0.0125	0.0360			

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	99	103	4.0	80-120	20					
Lead	106	104	1.9	80-120	20					
Nickel	105	104	<1	80-120	20					
Zinc	99	98	1.0	80-120	20					

CITY OF SAN BUENAVENTURA

March 13, 2002

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on February 12, 2002.

Please contact me at 805-677-4134, if you require additional information.

Sincerely,

Florence B Jay

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

13-Mar-2002

SAMPLE IDENTIFICATION: 09617
SOURCE: MTS-1
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 12-Feb-2002 0900
COLLECTED BY: Entrix (SH/KAC)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	3.94 mg/l	160.2
70300	TDS @ 180C	2,516 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

13-Mar-2002

SAMPLE IDENTIFICATION: 09618
SOURCE: MTS-R
PURPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 12-Feb-2002 1015
COLLECTED BY: Entrix (SH/KAC)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	9.56 mg/l	160.2
70300	TDS @ 180C	1,848 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

13-Mar-2002

SAMPLE IDENTIFICATION: 09619
SOURCE: MTS-3
PURPOSE: Metal Translator Study
TYPE: OTHER
DATE/TIME: 12-Feb-2002 1115
COLLECTED BY: Entrix (SH/KAC)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	16.97 mg/l	160.2
70300	TDS @ 180C	14,298 mg/l	2540 C

Florence B Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

13-Mar-2002

SAMPLE IDENTIFICATION:	09620
SOURCE:	MTS-MO
PURPOSE:	Metal Translator Study
TYPE:	GRAB
DATE/TIME:	12-Feb-2002 1330
COLLECTED BY:	Entrix (SH/KAC)
PRESERVATION EMPLOYED:	
REMARKS:	

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	17.58 mg/l	160.2
70300	TDS @ 180C	32,452 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

13-Mar-2002

SAMPLE IDENTIFICATION: 09621
SOURCE: MTS-M
PURPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 12-Feb-2002 1345
COLLECTED BY: Entrix (SH/KAC)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	17.22 mg/l	160.2
70300	TDS @ 180C	33,472 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

13-Mar-2002

SAMPLE IDENTIFICATION: 09622
SOURCE: MTS-DUP
PURPOSE: Metal Translator Study
TYPE: OTHER
DATE/TIME: 12-Feb-2002 1350
COLLECTED BY: Entrix (SH/KAC)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	15.74 mg/l	160.2
70300	TDS @ 180C	33,480 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

13-Mar-2002

SAMPLE IDENTIFICATION: 09623
SOURCE: MTS-2
PURPOSE: Metal Translator Study
TYPE: GRAB
DATE/TIME: 12-Feb-2002 1530
COLLECTED BY: Entrix (SH/KAC)
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	14.98 mg/l	160.2
70300	TDS @ 180C	4,102 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
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Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone (805)677-4134
Attn Florence B. Jay

Number of Pages 5
Date Received 02/14/2002
Date Reported 02/28/2002

Job Number	Ordered	Client
13149	02/14/2002	CITYSB

Project ID:
Project Name:

Enclosed are the results of analyses on 14 samples analyzed as specified on attached chain of custody.

Amolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
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ANALYTICAL RESULTS

Ordered By

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Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID:
Project Name:

Job Number	Order Date	Client
13149	02/14/2002	CITYSB

Method: 200.7, ICP METALS

Batch No:

Our Lab I.D.				80843	80845	80847	80849
Sample ID			Method Blank	MTS-1	MTS-2	MTS-3	MTS-R
Date Sampled			02/12/2002	02/12/2002	02/12/2002	02/12/2002	02/12/2002
Date Extracted			02/25/2002	02/25/2002	02/25/2002	02/25/2002	02/25/2002
Preparation Method							
Date Analyzed			02/28/2002	02/28/2002	02/28/2002	02/28/2002	02/28/2002
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0040J	0.0067J	0.0033J	0.0067J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0075J	0.0035J	0.0037J	0.0025J
Zinc	0.0005	0.0100	ND	ND	0.0220	ND	0.0242

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	95	95	<1	80-120	20					
Lead	97	114	16.1	80-120	20					
Nickel	99	108	8.7	80-120	20					
Zinc	92	97	5.3	80-120	20					

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ANALYTICAL RESULTS

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City of San Buenaventura
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Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID:
Project Name:

Job Number	Order Date	Client
13149	02/14/2002	CITYSB

Method: 200.7, ICP METALS

Batch No:

Our Lab I.D.			80851	80853	80855		
Sample ID			MTS-Dup	MTS-M	MTS-MO		
Date Sampled			02/12/2002	02/12/2002	02/12/2002		
Date Extracted			02/25/2002	02/25/2002	02/25/2002		
Preparation Method							
Date Analyzed			02/28/2002	02/28/2002	02/28/2002		
Matrix			Water	Water	Water		
Units			mg/L	mg/L	mg/L		
Detection Limit Multiplier			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
ICP Metals							
Copper	0.0005	0.0100	0.0007J	ND	ND		
Lead	0.0005	0.0050	ND	ND	ND		
Nickel	0.0005	0.0100	0.0014J	0.0027J	0.0018J		
Zinc	0.0005	0.0100	ND	ND	ND		

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	95	95	<1	80-120	20					
Lead	97	114	16.1	80-120	20					
Nickel	99	108	8.7	80-120	20					
Zinc	92	97	5.3	80-120	20					

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ANALYTICAL RESULTS

Ordered By

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Telephone: (805)677-4134
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Page: 4
Project ID:
Project Name:

Job Number	Order Date	Client
13149	02/14/2002	CITYSB

Method: 200.7, DISSOLVED METALS

Batch No:

Our Lab I.D.				80844	80846	80848	80850
Sample ID			Method Blank	MTS-1-D	MTS-2-D	MTS-3-D	MTS-R-D
Date Sampled			02/12/2002	02/12/2002	02/12/2002	02/12/2002	02/12/2002
Date Extracted			02/25/2002	02/25/2002	02/25/2002	02/25/2002	02/25/2002
Preparation Method							
Date Analyzed			02/28/2002	02/28/2002	02/28/2002	02/28/2002	02/28/2002
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0131	0.0099J	0.0025J	0.0085J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0084J	0.0045J	0.0055J	0.0032J
Zinc	0.0005	0.0100	ND	0.0108	0.0266	0.0085J	0.0310

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	95	95	<1	80-120	20					
Lead	97	114	16.1	80-120	20					
Nickel	99	108	8.7	80-120	20					
Zinc	92	97	5.3	80-120	20					

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ANALYTICAL RESULTS

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Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 5
Project ID:
Project Name:

Job Number	Order Date	Client
13149	02/14/2002	CITYSB

Method: 200.7, DISSOLVED METALS

Batch No:

Our Lab I.D.			80852	80854	80856		
Sample ID			MTS-Dup-D	MTS-M-D	MTS-MO-D		
Date Sampled			02/12/2002	02/12/2002	02/12/2002		
Date Extracted			02/25/2002	02/25/2002	02/25/2002		
Preparation Method							
Date Analyzed			02/28/2002	02/28/2002	02/28/2002		
Matrix			Water	Water	Water		
Units			mg/L	mg/L	mg/L		
Detection Limit Multiplier			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
ICP Metals							
Copper	0.0005	0.0100	0.0008J	0.0046J	ND		
Lead	0.0005	0.0050	ND	ND	ND		
Nickel	0.0005	0.0100	0.0019J	0.0020J	0.0023J		
Zinc	0.0005	0.0100	0.0021J	0.0024J	0.0039J		

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	95	95	<1	80-120	20					
Lead	97	114	16.1	80-120	20					
Nickel	99	108	8.7	80-120	20					
Zinc	92	97	5.3	80-120	20					

CITY OF SAN BUENAVENTURA

April 25, 2002

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on March 26, 2002.

Please contact me at 805-677-4134, if you require additional information.

Sincerely,

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Apr-2002

SAMPLE IDENTIFICATION: 09647
SOURCE: MTS-1
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 26-Mar-2002 0955
COLLECTED BY: Entrix(KAC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	2.22 mg/l	160.2
70300	TDS @ 180C	2,264 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Apr-2002

SAMPLE IDENTIFICATION: 09648
SOURCE: MTS-2
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 26-Mar-2002 1400
COLLECTED BY: Entrix(KAC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	12.90 mg/l	160.2
70300	TDS @ 180C	3,678 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Apr-2002

SAMPLE IDENTIFICATION: 09649
SOURCE: MTS-3
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 26-Mar-2002 1040
COLLECTED BY: Entrix(KAC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	87.00 mg/l	160.2
70300	TDS @ 180C	5,364 mg/l	2540 C

Florence B. Jay
Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Apr-2002

SAMPLE IDENTIFICATION: 09650
SOURCE: MTS-DUP
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 26-Mar-2002 1400
COLLECTED BY: Entrix(KAC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	13.60 mg/l	160.2
70300	TDS @ 180C	3,396 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Apr-2002

SAMPLE IDENTIFICATION: 09651
SOURCE: MTS-M
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 26-Mar-2002 1220
COLLECTED BY: Entrix(KAC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	59.50 mg/l	160.2
70300	TDS @ 180C	5,624 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

24-Apr-2002

SAMPLE IDENTIFICATION: 09652
SOURCE: MTS-R
PURPOSE: Metals Translator Study
TYPE: GRAB
DATE/TIME: 26-Mar-2002 1500
COLLECTED BY: Entrix(KAC)
PRESERVATION EMPLOYED: hno3-metals
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	6.03 mg/l	160.2
70300	TDS @ 180C	1,428 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
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Ordered By

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Telephone (805)677-4134
Attn Florence B. Jay

Number of Pages 5
Date Received 04/05/2002
Date Reported 04/18/2002

Job Number	Ordered	Client
13696	04/05/2002	CITYSB

Project ID:
Project Name:

RECEIVED
APR 2 4 2002
Wastewater Div.

Enclosed are the results of analyses on 12 samples analyzed as specified on attached chain of custody.

Amolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
P.O. Box 99
Ventura, CA 93002

Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID:
Project Name:

Job Number	Order Date	Client
13696	04/05/2002	CITYSB

Method: 200.7, ICP METALS

Batch No:

Our Lab I.D.				83678	83680	83682	83684
Sample ID			Method Blank	MTS-1	MTS-2	MTS-3	MTS-Dup
Date Sampled			03/26/2002	03/26/2002	03/26/2002	03/26/2002	03/26/2002
Date Extracted			04/12/2002	04/12/2002	04/12/2002	04/12/2002	04/12/2002
Preparation Method							
Date Analyzed			04/12/2002	04/12/2002	04/12/2002	04/12/2002	04/12/2002
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0025J	0.0052J	0.0061J	0.0045J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0100	0.0062J	0.0077J	0.0062J
Zinc	0.0005	0.0100	ND	0.0039J	0.0241	0.0169	0.0227

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	105	93	12.1	80-120	20					
Lead	101	107	5.8	80-120	20					
Nickel	104	113	8.3	80-120	20					
Zinc	106	105	<1	80-120	20					

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ANALYTICAL RESULTS

Ordered By

City of San Buenaventura
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Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 3
Project ID:
Project Name:

Job Number	Order Date	Client
13696	04/05/2002	CITYSB

Method: 200.7, ICP METALS

Batch No:

Our Lab I.D.			83686	83688			
Sample ID			MTS-M	MTS-R			
Date Sampled			03/26/2002	03/26/2002			
Date Extracted			04/12/2002	04/12/2002			
Preparation Method							
Date Analyzed			04/12/2002	04/12/2002			
Matrix			Water	Water			
Units			mg/L	mg/L			
Detection Limit Multiplier			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
ICP Metals							
Copper	0.0005	0.0100	0.0039J	0.0111			
Lead	0.0005	0.0050	ND	ND			
Nickel	0.0005	0.0100	0.0067J	0.0054J			
Zinc	0.0005	0.0100	0.0093J	0.0355			

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	105	93	12.1	80-120	20					
Lead	101	107	5.8	80-120	20					
Nickel	104	113	8.3	80-120	20					
Zinc	106	105	<1	80-120	20					

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ANALYTICAL RESULTS

Ordered By

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Page: 4
Project ID:
Project Name:

Job Number	Order Date	Client
13696	04/05/2002	CITYSB

Method: 200.7, DISSOLVED METALS

Batch No:

Our Lab I.D.				83679	83681	83683	83685
Sample ID			Method Blank	MTS-1-D	MTS-2-D	MTS-3-D	MTS-Dup-D
Date Sampled			03/26/2002	03/26/2002	03/26/2002	03/26/2002	03/26/2002
Date Extracted			04/12/2002	04/12/2002	04/12/2002	04/12/2002	04/12/2002
Preparation Method							
Date Analyzed			04/12/2002	04/12/2002	04/12/2002	04/12/2002	04/12/2002
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0034J	0.0043J	0.0054J	0.0037J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0092J	0.0060J	0.0068J	0.0059J
Zinc	0.0005	0.0100	ND	0.0049J	0.0274	0.0195	0.0308

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	105	93	12.1	80-120	20					
Lead	101	107	5.8	80-120	20					
Nickel	104	113	8.3	80-120	20					
Zinc	106	105	<1	80-120	20					

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ANALYTICAL RESULTS

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P.O. Box 99
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Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 5
Project ID:
Project Name:

Job Number	Order Date	Client
13696	04/05/2002	CITYSB

Method: 200.7, DISSOLVED METALS

Batch No:

Our Lab I.D.			**83687**	**83689**			
Sample ID			MTS-M-D	MTS-R-D			
Date Sampled			03/26/2002	03/26/2002			
Date Extracted			04/12/2002	04/12/2002			
Preparation Method							
Date Analyzed			04/12/2002	04/12/2002			
Matrix			Water	Water			
Units			mg/L	mg/L			
Detection Limit Multiplier			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
ICP Metals							
Copper	0.0005	0.0100	0.0027J	0.0069J			
Lead	0.0005	0.0050	ND	ND			
Nickel	0.0005	0.0100	0.0068J	0.0058J			
Zinc	0.0005	0.0100	0.0133	0.0954			

QUALITY CONTROL REPORT

Batch No:

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	105	93	12.1	80-120	20					
Lead	101	107	5.8	80-120	20					
Nickel	104	113	8.3	80-120	20					
Zinc	106	105	<1	80-120	20					

CITY OF SAN BUENAVENTURA

May 28, 2002

Matt Carpenter
Entrix, Inc.
2140 Eastman Avenue, Suite 200
Ventura, CA 93003

Dear Mr. Carpenter:

Enclosed are the results from the Metals Translator Study samples delivered to our laboratory on April 25, 2002.

Please contact me at 805-677-4134, if you require additional information.

Sincerely,

Florence B. Jay

Florence B. Jay
Laboratory Supervisor

Enclosure

501 Poli Street • P. O. Box 99 • Ventura, California • 93002-0099 • (805) 654-7800 • FAX (805) 652-0865

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

28-May-2002

SAMPLE IDENTIFICATION: 09692
SOURCE: MTS-1
PURPOSE: Metal Translator Study
TYPE: COMPOSITE
DATE/TIME: 25-Apr-2002 0825
COLLECTED BY: SH/KAC
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.07 mg/l	160.2
70300	TDS @ 180C	2,306 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

28-May-2002

SAMPLE IDENTIFICATION: 09693
SOURCE: MTS-2
PURPOSE: Metal Translator Study
TYPE: COMPOSITE
DATE/TIME: 25-Apr-2002 1330
COLLECTED BY: SH/KC
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	1.43 mg/l	160.2
70300	TDS @ 180C	1,540 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

28-May-2002

SAMPLE IDENTIFICATION: 09694
SOURCE: MTS-3
PURPOSE: Metal Translator Study
TYPE: COMPOSITE
DATE/TIME: 25-Apr-2002 1000
COLLECTED BY: SH/KC
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	30.40 mg/l	160.2
70300	TDS @ 180C	5,712 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

28-May-2002

SAMPLE IDENTIFICATION:	09695
SOURCE:	MTS-M
PURPOSE:	Metal Tanslator Study
TYPE:	COMPOSITE
DATE/TIME:	25-Apr-2002 1100
COLLECTED BY:	SH/KC
PRESERVATION EMPLOYED:	
REMARKS:	

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	36.84 mg/l	160.2
70300	TDS @ 180C	7,082 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

28-May-2002

SAMPLE IDENTIFICATION:	09696
SOURCE:	MTS-Dup
PURPOSE:	Metal Translator Study
TYPE:	COMPOSITE
DATE/TIME:	25-Apr-2002 1120
COLLECTED BY:	SH/KC
PRESERVATION EMPLOYED:	
REMARKS:	

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	42.68 mg/l	160.2
70300	TDS @ 180C	7,164 mg/l	2540 C

Florence B Jay

Florence B. Jay
Laboratory Supervisor

RESULTS OF ANALYSIS
City of San Buenaventura Sanitation Laboratory
California DOHS Certificate Number 1193

28-May-2002

SAMPLE IDENTIFICATION: 09697
SOURCE: MTS-R
PURPOSE: Metal Translator Study
TYPE: COMPOSITE
DATE/TIME: 25-Apr-2002 0900
COLLECTED BY: SH/KC
PRESERVATION EMPLOYED:
REMARKS:

CONSTITUENT		CONCENTRATION:	METHOD:
00530	Susp Solids @ 105C	2.33 mg/l	160.2
70300	TDS @ 180C	1,358 mg/l	2540 C

Florence B. Jay
Laboratory Supervisor

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Telephone (805)677-4134
Attn Florence B. Jay

Number of Pages 5
Date Received 05/08/2002
Date Reported 05/16/2002

Job Number	Ordered	Client
13999	05/08/2002	CITYSB

Project ID:
Project Name:

RECEIVED
MAY 24 2002
Wastewater Div.

Enclosed are the results of analyses on 12 samples analyzed as specified on attached chain of custody.

Amolk MOLKY Brar
Laboratory Manager

Rojert G. Araghi
Laboratory Director

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
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ANALYTICAL RESULTS

Ordered By

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Telephone: (805)677-4134
Attn: Florence B. Jay

Page: 2
Project ID:
Project Name:

Job Number	Order Date	Client
13999	05/08/2002	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.				85413	85414	85415	85416
Sample ID			Method Blank	MTS-1	MTS-2	MTS-3	MTS-Dup
Date Sampled			04/25/2002	04/25/2002	04/25/2002	04/26/2002	04/27/2002
Date Extracted			05/10/2002	05/10/2002	05/10/2002	05/10/2002	05/10/2002
Preparation Method							
Date Analyzed			05/10/2002	05/10/2002	05/10/2002	05/10/2002	05/10/2002
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0023J	0.0124	0.0020J	0.0041J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0096J	0.0059J	0.0065J	0.0055J
Zinc	0.0005	0.0100	ND	0.0024J	0.0302	0.0087J	0.0110

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	90	95	5.4	80-120	20					
Lead	89	91	2.2	80-120	20					
Nickel	96	93	3.2	80-120	20					
Zinc	92	95	3.2	80-120	20					

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ANALYTICAL RESULTS

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Page: 3
Project ID:
Project Name:

Job Number	Order Date	Client
13999	05/08/2002	CITYSB

Method: 200.7, ICP METALS

Our Lab I.D.			**85417**	**85418**			
Sample ID			MTS-M	MTS-R			
Date Sampled			04/28/2002	04/29/2002			
Date Extracted			05/10/2002	05/10/2002			
Preparation Method							
Date Analyzed			05/10/2002	05/10/2002			
Matrix			Water	Water			
Units			mg/L	mg/L			
Detection Limit Multiplier			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
ICP Metals							
Copper	0.0005	0.0100	0.0038J	0.0089J			
Lead	0.0005	0.0050	ND	ND			
Nickel	0.0005	0.0100	0.0060J	0.0058J			
Zinc	0.0005	0.0100	0.0072J	0.0297			

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	90	95	5.4	80-120	20					
Lead	89	91	2.2	80-120	20					
Nickel	96	93	3.2	80-120	20					
Zinc	92	95	3.2	80-120	20					

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ANALYTICAL RESULTS

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Page: 4
Project ID:
Project Name:

Job Number	Order Date	Client
13999	05/08/2002	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.				85419	85420	85421	85422
Sample ID			Method Blank	MTS-1-D	MTS-2-D	MTS-3-D	MTS-Dup-D
Date Sampled			04/30/2002	04/30/2002	05/01/2002	05/02/2002	05/03/2002
Date Extracted			05/10/2002	05/10/2002	05/10/2002	05/10/2002	05/10/2002
Preparation Method							
Date Analyzed			05/10/2002	05/10/2002	05/10/2002	05/10/2002	05/10/2002
Matrix			Water	Water	Water	Water	Water
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Detection Limit Multiplier			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
ICP Metals							
Copper	0.0005	0.0100	ND	0.0086J	0.0094J	0.0026J	0.0025J
Lead	0.0005	0.0050	ND	ND	ND	ND	ND
Nickel	0.0005	0.0100	ND	0.0099J	0.0069J	0.0067J	0.0070J
Zinc	0.0005	0.0100	ND	0.0120	0.0323	0.0094J	0.0202

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	90	95	5.4	80-120	20					
Lead	89	91	2.2	80-120	20					
Nickel	96	93	3.2	80-120	20					
Zinc	92	95	3.2	80-120	20					

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ANALYTICAL RESULTS

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Page: 5
Project ID:
Project Name:

Job Number	Order Date	Client
13999	05/08/2002	CITYSB

Method: 200.7, DISSOLVED METALS

Our Lab I.D.			85423	85424			
Sample ID			MTS-M-D	MTS-R-D			
Date Sampled			05/04/2002	05/05/2002			
Date Extracted			05/10/2002	05/10/2002			
Preparation Method							
Date Analyzed			05/10/2002	05/10/2002			
Matrix			Water	Water			
Units			mg/L	mg/L			
Detection Limit Multiplier			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
ICP Metals							
Copper	0.0005	0.0100	0.0024J	0.0068J			
Lead	0.0005	0.0050	ND	ND			
Nickel	0.0005	0.0100	0.0066J	0.0065J			
Zinc	0.0005	0.0100	0.0616	0.0315			

QUALITY CONTROL REPORT

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
ICP Metals										
Copper	90	95	5.4	80-120	20					
Lead	89	91	2.2	80-120	20					
Nickel	96	93	3.2	80-120	20					
Zinc	92	95	3.2	80-120	20					

City of San Buenaventura Sanitation Laboratory Custody Record

Sample	Type	Sample Date & Time	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
MTS-M	Water grab	12/06/01 0930	KAC J.C.	Metals	1 liter plastic	KA Colgate J. Cambell	12/06/01	
MTS-M-O	water grab	12/06/01 1015	JC KC	metals	↓	↓	↓	

City of San Buenaventura Sanitation Laboratory Custody Record

Sample	Type	Sample Date & Time	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
MTS-1	Water	12/05/01 9:20	C.T KAC	MTS	1 Liter Plastic	Keven Colgate Chuck Trujillo.	12/5/01	12-5-01 MAT
MTS-2		12/05/01 12:30		metals				
MTS-3		12/05/01 12:50		metals				
MTS-R		12/05/01 14:00		metals				
MTS-DUP		12/05/01 12:30		metals.				

City of San Buenaventura Sanitation Laboratory Custody Record

Sample	Type	Sample Date & Time	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
ostream MTS-1		11/20/01 0900	S.H./GT.	METALS	1 Liter Plastic	S. Howard	11/20/01	H-20-01 MAT
mixing zone MTS-2		11/20/01 1300						
ridge site MTS-3		11/20/01 1100						
OUTFALL MTS-R		11/20/01 1430						
MTS-DUP		11/20/01 1310						

DAVE HOWARD 642-5554

C[illegible] San[illegible]nave[illegible]a Sa[illegible]on L[illegible]ator[illegible]tod[illegible]ord

Sample	Type	Sample Date & Time	Sample By	Purpose	Container	Transfer By	Transfer Date	Received By
MTS-1	GRAB	3/26/02 0955	KAC JLC	METALS TRANSLATOR STUDY	1 GAL Plastic	KAC	3/26/02	3-26-02 MAT
MTS-2	↓	3/26/02 1400	↓	↓	↓	KAC	↓	↓
MTS-3	↓	3/26/02 1040	↓	↓	↓	KAC	↓	↓
MTS-DUP	↓	3/26/02 1400	↓	↓	↓	KAC	↓	↓
MTS-M	↓	3/26/02 1220	↓	↓	↓	KAC	↓	↓
MTS-R	↓	3/26/02 1500	↓	↓	↓	KAC	↓	↓

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Last Revised 6/4/02