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Fish and Wildlife Service

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Rio Grande Silvery Minnow Health Study – Fish Pathogen Assessment

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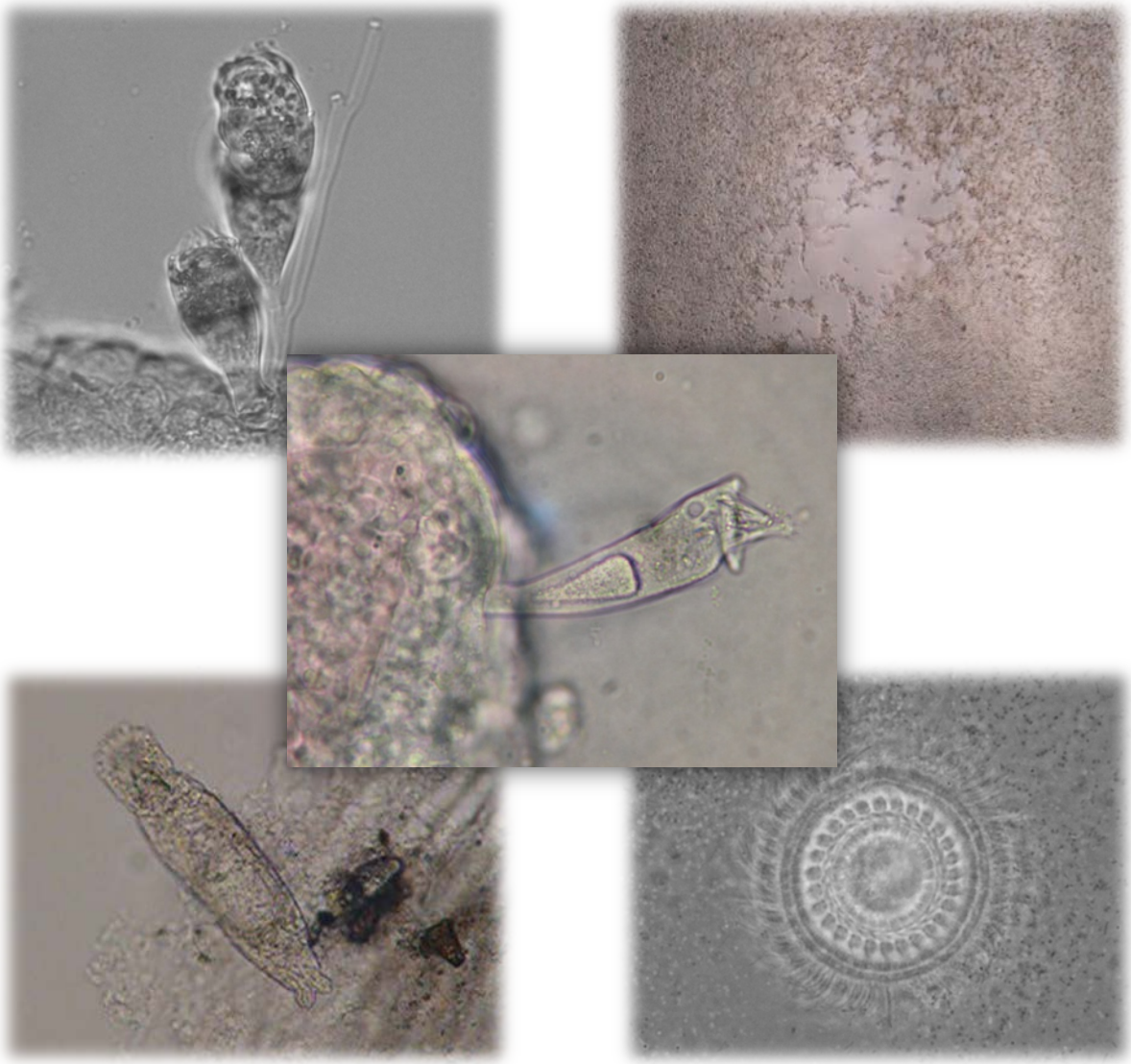
Appendix 5. Rio Grande Silvery Minnow Fish Health Study – Fish Pathogen Assessment



Cover photography (pictures listed left to right and top to bottom) by J. Woodland/USFWS: 1) *Epistylis* sp. on a fish scale, 2) viral cytopathic effect on fathead minnow cells, 3) *Apiosoma* sp. on a gill lamellae, 4) *Gyrodactylus* sp. from a skin scrape, and 5) *Trichodina* sp. from the gills.

Abstract: Assessment of pathogens affecting the Rio Grande silvery minnow *Hybognathus amarus* is crucial in understanding impacts to recovery efforts of this federally listed endangered fish. Viral, bacterial and parasite pathogen examinations were conducted on Rio Grande silvery minnow in this study to provide a comprehensive pathogen assessment. The prevalence of isolated pathogens was determined from up to 60 fish for bacteriology and virology and up to 30 fish for parasitology from each sampling. Collections occurred quarterly at six sites along the middle section of the Rio Grande between July 2006 and July 2008. The top four most prevalent parasites observed were from the family Trichodinidae and the genera *Apiosoma*, *Cryptobia*, and *Ichthyobodo*. No significant bacteria or viruses targeted nationally by the U.S. Fish and Wildlife Service were isolated. There were also no significant overall differences in the mean parasite prevalence between the sites. Correlations between types of infection indicate a majority of 'parasite only' infections (65%) compared to 'bacteria only' (19%) or 'parasites and bacteria' present (16%). The parasites observed in this study range from being normal ectocommensals to possessing potential for acute pathogenesis and are generally indicators of poor water quality. Longer term study and standardization of parasite examination protocols will provide additional information on occurrence trends and potential impacts of the parasites observed. Results of this study provide a baseline of information on the types of pathogens currently observed with Rio Grande silvery minnow in the middle reach of the Rio Grande.

Introduction/Background

Assessment of pathogen presence in the federally listed endangered Rio Grande silvery minnow *Hybognathus amarus* is important for understanding the species' current health status for conservation efforts. This comprehensive study concentrates on pathogen presence for the RGSM extant to the middle section of the Rio Grande. Traditional targeted pathogen categories used for identifying pathogen presence include viruses, bacteria, and external parasites. Depending on the host species, environmental conditions, and pathogens present, pathogen impacts on fish health varies. Many microbes are ubiquitous in nature and may not impact fish health due to natural immunity. However, if environmental conditions or other stressors compromise the fish's underlying immune function, these ubiquitous microbes can cause disease and mortality. Currently there are no known pathogens that specifically target the Rio Grande silvery minnow.

Observing disease or mortality events in the Rio Grande is difficult due to the hydrology, water operations, and turbidity of the water, obscuring monitoring efforts for these small fish. Consequently, to better understand if pathogens are impacting Rio Grande silvery minnow survival and recruitment it is best to take a proactive approach by conducting pathogen examinations on live fish. Dead fish do not generally have much utility for conducting pathogen examinations for several reasons. First, external parasites exit the host quickly after fish death. Second, viruses are obligate intracellular pathogens and may be degraded unless tissue samples are preserved properly for testing since various cellular lytic cascades are initiated postmortem. Third, bacteria multiply exponentially in dead fish that are no longer capable of mounting

protective immune responses resulting in skewed or biased colony counts using bacteria diagnostic methods.

The primary purpose of the pathogen and parasite surveys described herein is to determine the distribution pattern of specific pathogens and parasites on or in Rio Grande silvery minnows collected in the middle reach (New Mexico portion) of the Rio Grande. This research is one component of an interagency objective to establish a baseline health status of the Rio Grande silvery minnow and the Rio Grande. Additionally, relevant bacterial and viral pathogen survey results will add to the base of knowledge for the U. S. Fish and Wildlife Service's National Wild Fish Health Survey (NWFHS) and will be uploaded to the survey's database website for public access.

Parasitology Methods

Rio Grande silvery minnow, collected primarily by the U. S. Fish and Wildlife Service's New Mexico Ecological Services and New Mexico Fish and Wildlife Conservation Office, were examined for external parasites from six locations along the middle section of the Rio Grande. Collection sites were identified based on their proximity to nearby cities: Site 1, Bernalillo; Site 2, Alameda; Site 3, Los Padillas; Site 4, Los Lunas; Site 5, La Joya; and Site 6, San Antonio. The targeted sample size for external parasite examinations was 30 fish per site per time point.

Parasite examinations were conducted on fish sampled quarterly during each of two field sampling years. The sampling dates were as follows: July 2006, October 2006, January 2007, April 2007, October 2007, January 2008, April 2008, and July 2008. Generally, three sites were sampled each week over the course of two consecutive weeks during each collection month

mentioned above. Prior to parasite examination, live Rio Grande silvery minnow were euthanized by overdose with tricaine methanesulfonate (Finquel; Argent Chemical Laboratories, Inc., Redmond, WA). Examination of external parasites was conducted by microscopic examination of wet mounts from skin scrapes and gill clippings from each fish. Skin scrapes were produced by collecting mucus on a cover glass along one side of the fish and then placing the mucus on microscope slides with a drop of distilled water and coverslipping. Gill clips were collected with necropsy scissors and placed on slides similar to skin scrapes. Wet mounts of the skin scrapes and gill clippings were examined at 40x, 100x, 200x, and 400x magnifications using a compound light microscope.

Parasites were identified and enumerated for each of the samples. The number of parasites recorded varied, in part due to the lack of a standardized sampling protocol. Before April 2008 several parasite counts were estimated by collectors. A plus sign was added to indicate additional parasites present than counted and also to estimate a general number of parasites present. After April 2008 each type of parasite was counted up to one hundred. If there were more than 100 parasites present for each parasite type, it was noted with a plus sign (Appendix 5A).

Parasites examined with the compound light microscope were identified to the species level when possible. If parasites could not be identified to species level, the taxonomic family, class and/or genus was recorded. Any visual implant elastomer (VIE) tags present were also recorded based on their color and location. VIE marked fish are captive reared produced fish stocked into the river.

Bacteriology Methods

Samples for bacteriology were aseptically collected from the kidney tissue of each fish with sterile 1-µL inoculation loops (Thermo Fisher Scientific, Rochester, NY). Up to 60 fish per site were sampled for bacteria (Table 1). Tissue samples were streaked onto brain heart infusion agar (BHIA) slants (Becton Dickinson, Sparks, MD) and incubated at 20°C in an ambient air incubator. Individual bacterial colonies that grew in culture within four days were further processed for identification.

Identification of bacteria was conducted following procedures used in sampling and screening of targeted bacterial pathogens described by the Standard Procedures for Aquatic Animal Health Inspections (USFWS and AFS-FHS 2005). The bacteria information recorded follows several assumptions in determining if isolates of bacteria were different (Appendix 5B). In addition to the initial tests of cytochrome oxidase, motility and gram stain or KOH testing, biochemical identification of Gram negative bacteria was conducted using the API 20E™ identification system (bioMérieux® SA, Marcy I'Etolle, France). Bacterial identifications based upon lab results and lab codes (assigned to each culture for tracking back to the individual fish) were recorded (Appendix 5C). Isolates of bacteria identified as targeted pathogens by API, as listed by U.S. Fish and Wildlife Service's Aquatic Animal Health Policy (Part 713 FWS 1 Exhibit 2), were compared to API codes of known targeted pathogens and further tested by direct fluorescence antibody test (DFAT) following protocols listed in Standard Procedures for Aquatic Animal Health Inspections (USFWS and AFS-FHS 2005).

Virology Methods

Whole viscera samples including the kidney were sampled for viral testing. Up to 60 fish per site were sampled (Table 1). Samples of viscera were pooled into groups of five fish pools and diluted 1:10 in Hank's Balanced Salt Solution (HBSS) (Invitrogen, Carlsbad, CA). The HBSS contained the following supplements (all obtained from Invitrogen): penicillin (600 IU per mL), streptomycin (1600 µg per mL), amphotericin B (40 µg per mL) and sodium bicarbonate (375 µg per mL) (HBSS anti-inc medium). Samples were maintained at 4ºC no longer than 72 hours prior to processing *in vitro* at the Dexter Fish Health Unit.

Two methods were used to process the samples *in vitro*. Samples were diluted to a final concentration of 1:100 in HBSS anti-inc medium and either filtered through a sterile 0.45 µm membrane (Pall Corporation, Ann Arbor, MI) or centrifuged (Eppendorf Centrifuge 5810R, Brinkman Instruments Inc., Westbury, NY) to pellet sample debris at 2500 x *g* for 15 minutes. This filtration method allowed for quicker processing of the samples on the same day by physically removing non-viral particles from the sample. Centrifugation of the samples was performed after a two hour incubation at 15ºC or overnight incubation at 4ºC and this method allowed for additional antibiotic disinfection of the sample prior to inoculation of tissue cultures.

In general, sample processing and testing was conducted following procedures described by the Standard Procedures for Aquatic Animal Health Inspections (USFWS and AFS-FHS 2005). However, since the samples from this study originated from the wild, our test had some slight modifications in virology procedures. These procedures followed the USFWS National Wild Fish Health Survey laboratory manual which does not require conducting blind passes for cell culture and the observation period for virus isolation is 21 days. The other exception was the

time period between collection of the samples and processing samples *in vitro* for virology. This time period varied with the day the samples were collected from all sites for the week and return of the samples for *in vitro* processing at the end of the week.

Fat head minnow (FHM) and chinook salmon embryo (CHSE-214) cells were used for virus isolations. Cultures in 24 well cell plates (Becton Dickinson, Franklin Lakes, NJ) were inoculated in duplicate, excluding negative (no inoculum) controls, and incubated at 25ºC for FHM cultures and 15ºC for CHSE-214 cultures. After inoculation, cells were rocked at the appropriate incubation temperature (25ºC for FHM, 15ºC for CHSE-214) for 45 minutes to facilitate viral particle attachment and then overlaid with 1 mL of Eagle's Minimum Essential Medium (EMEM; Invitrogen) supplemented with 5% fetal bovine serum (Thermo Fisher Scientific, Logan, UT), penicillin 100 IU/mL, streptomycin 100 µg/mL, amphotericin B solution 2.5 µg/mL, 15 mM HEPES and sodium bicarbonate 2.2 mg /mL (pH 7.2) for each well. Samples were monitored and observations recorded at least biweekly for viral cytopathic effect (CPE) during the incubation period of the test.

Any samples with observed CPE were tested by polymerase chain reaction (PCR) assay for largemouth bass virus (LMBV) and reverse-transcriptase PCR (RT-PCR) for infectious pancreatic necrosis virus (IPNV). LMBV and IPNV were the only suspected viruses for this environment that were also considered listed pathogens as determined by U.S. Fish and Wildlife Service's Aquatic Animal Health Policy (Part 713 FWS 1 Exhibit 2). DNA extraction for LMBV was conducted using the BuccalAmp DNA extraction kit (Epicentre Biotechnologies, Madison, WI) per established laboratory procedures along with the manufacturer's directions with the kit. PCR for LMBV was conducted as described in the National Wild Fish Health Survey Laboratory Procedures Manual. Extractions of RNA for IPNV were conducted using a

QIAamp® MinuElute® Virus Spin Kit (QIAGEN Inc. - USA, Valencia, CA). The RT-PCR for IPNV was conducted as described by the Standard Procedures for Aquatic Animal Health Inspections (USFWS and AFS-FHS 2005). PCR reactions were run on 1.5% agarose gels in tris-acetate-EDTA buffer and stained with ethidium bromide and compared with a 1 Kb DNA ladder (Invitrogen) to estimate amplicon size.

Data Treatment and Statistical Analysis

Parasite prevalence was determined from the mean and median observations from all sampling periods and sites. The most dominant parasite prevalence between each site for the entire study was then compared. The mean plus and minus the standard error of the mean (± s.e.m.) was used to compare differences in the overall prevalence of infection for selected parasites between sites. The statistical analysis of differences observed between sites for each type of parasite, based on the mean ± s.e.m., was considered statistically significant by *t*-test when the P value was < 0.05.

Correlations were determined between three levels of observations, including identifying both bacteria and parasites on the same fish, identifying parasites only on a fish or bacteria only on fish. The percentage of each type of correlation mentioned above from each location and sampling period was then determined. The results of this correlative analysis are then compared to provide an overall summary.

Results

Four external parasite types (taxonomic family or genera) were dominant in the external parasite examinations (Figures 1 and 2). In order of greatest to least prevalence, these were identified as Trichodonidae, *Apiosoma* sp., *Cryptobia* sp. and *Ichthyobodo necator*. Additional parasites observed in the study and identified in order of greatest to least prevalence included: Monogenea (primarily *Gyrodactylus* spp.), *Epistylis* sp., *Ambiphrya* sp., *Lernaea cyprinacea* (anchor worm), *Icthyophthirius multifiliis* ("Ich"), *Clinostomum marginatum* (yellow grub), *Trichophrya piscium*, and *Chilodonella cyprini*.

No significant differences were observed between sample sites for the top four most prevalent parasites ($P > 0.05$). Significant differences tested were based on the observable differences between the mean ± s.e.m. (Table 2).

Comparison between bacterial and parasite isolations observed did not reveal any discernable patterns from the data collected for the individual sites at different collection time points (Table 3). Fish from Site #6 San Antonio did show consistent parasite infestations but there was no data collected from this site during October 2006 and April 2007; therefore, no statistical significance to this observation could be determined (Table 3). When considering the majority of types of infections with bacteria or pathogenic parasite isolations per sampling period, 65% of the sampling periods resulted in a majority of 'parasite only' isolations from fish while the remaining sampling periods resulted in a majority with both 'parasites and bacteria' 16% of the time and 19% of the time with 'bacteria only'. Table 4 describes the percentage observed with parasites and bacteria for each site and collection. The overall mean prevalence of pathogenic parasite infestations compared to bacterial isolations was 70% and 37%, respectively,

for the entire study when averaging each site's data. The San Antonio site had the greatest prevalence of parasite infestations at 78% followed by Los Lunas at 72%, Los Padillas and La Joya at 69%, Alameda at 67% and Bernalillo at 66%. The La Joya site had the greatest prevalence of bacterial isolations (44%), followed by Bernalillo at 41%, Los Padillas and Los Lunas at 40%, Alameda at 34% and San Antonio at 22%.

No bacteria or viruses isolated from this study were considered targeted fish pathogens per the USFWS Aquatic Animal Health Policy (Part 713 FW 1 - Exhibit 2). Of the bacteria identified by the API test, 33 different genera of Gram negative bacteria were represented. One isolate was presumptively identified by API as *Aeromonas salmonicida*, a targeted bacterial pathogen, but later determined as negative by a direct fluorescent antibody test more sensitive and specific for *A. salmonicida*. Several Gram positive bacteria, not characterized by API, were isolated from the Rio Grande silvery minnows. One unidentified virus was isolated from one pool out of twelve collected in October 2007 at the Los Lunas sampling site. This sample was confirmed negative for LMBV and IPNV when tested by PCR. A sample of this virus was identified as a putative Aquareovirus based on its cytopathic effect in culture (J. Winton, U.S. Geological Survey–Western Fisheries Research Center, Seattle, WA, USA, personal communication). Having been characterized as a non-targeted pathogen, no additional identification of the virus was attempted.

Discussion

Potential pathogen trends were examined in this study to provide a baseline of knowledge in determining possible health concerns for the Rio Grande silvery minnow. This study

examined the specific areas of parasitology, virology, and bacteriology in determining pathogenic trends. Isolation of individual parasites, viruses and/or bacteria does not always indicate a health concern as all organisms, including fish, harbor normal microflora and commensal parasites. Therefore, the significance of microbes isolated in this study are discussed in context of detailing potential impacts for causing disease or mortality and by providing possible explanations for their isolation based on their prevalence in specific sites.

Most external parasites observed in this study are ubiquitous and are expected to be found in low numbers in free ranging fish populations (Beverly-Burton 1994, Ewing 2002, Taylor and Goodwin 2002). In culture conditions these parasites can rapidly multiply and transmit to other fish with crowded conditions, causing disease. In hatchery conditions, water flow and exchange may also be reduced which can allow potential fish pathogens to persist and infect fish. In the wild, fish have greater capability to flee undesirable environments that may lead to pathogen infestation. As the health of a fish is compromised by increases in parasite burden the potential for pathogenesis is also increased. The degree of parasite infestation should then be the primary area of interest when determining whether parasites are having a negative impact on an individual fish's health (Taylor and Goodwin 2002).

However, because our data collection lacked a standardized approach for counting numbers of parasites, selection of gills for examination and the area of observation, the most accurate use of the data was to determine parasite prevalence. Although parasites observed were counted, sample collection counts of parasites may not accurately reflect the degree of infestation uniformly.

The prevalent Trichodinids, *Apiosoma* sp., *Cryptobia* sp., and *I. necator* parasites isolated from this study can all be found on the skin and gills of fish (Hoffman 1999, Mitchum 1995,

Noga 2000). *Cryptobia* completes its life cycle on the gills and is generally only found on the skin in heavier infestations (Hoffman 1999, Mitchum 1995). Of the four most prevalent parasites, *Apiosoma* and *Cryptobia* are primarily ectocommensal organisms while the Trichodinids and *I. necator* are considered ectoparasitic (Hoffman 1999, Mitchum 1995, Noga 2000).

The sessile ectocommensals isolated in this study, including *Epistylis* and *Ambiphrya*, primarily derive their nutrients from the water as bacteriovores and by filter-feeding organic debris (Noga 2000). Isolation of these ciliated parasites is typically an indicator of organically polluted waters that may also have high loads of bacteria (Noga 2000). They only become a problem for fish when their numbers increase, leading to a physical impediment to gas exchange required for respiration (Hoffman 1999, Mitchum 1995, Noga 2000). Reduced respiration then contributes to mortality of fish. Like the ectocommensal organisms, infestations with *I. necator* and *Chilodonella* are more likely when environmental conditions such as poor water quality are present (Mitchum 1995, Noga 2000).

The ectoparasites isolated from this study, including the prevalent Trichodinids and *I. necator* plus the less prevalent *Chilodonella*, Monogenea (specifically the viviporous *Gyrodactylus* spp.), *L. cyprinacea*, *I. multifiliis*, and the digenean *C. marginatum*, are primarily pathogenic in fish (Hoffman 1999, Mitchum 1995, Noga 2000). In fact *L. cyprinacea*, *I. multifiliis*, and *C. marginatum* require fish to complete their life cycle and can amplify rapidly in closed systems. Even though *Chilodonella*, Monogenea, *L. cyprinaea*, and *I. multifiliis* are very destructive fish parasites, they were not very prevalent in the sites sampled. The numbers observed in this study did not indicate these parasites were problematic for the Rio Grande silvery minnow. However, *Lernaea* does have potential to cause mortality with only one

individual if the infected fish is small (Noga 2000, Roberts 1978). Conversely fish can tolerate a high burden of metacercaria infestation, with the exception of heavy acute infections in small fish such as the *C. marginatum* (yellow grub) isolated in this study (Noga 2000).

Ichthyobodo necator, formerly classified as *Costia necatrix,* is perhaps one of the most important and most destructive external parasites identified. This parasite causes high and acute mortality due to its parasitism of epithelial cells of fish (Markevitch 1963, Noga 2000). Environmental conditions conducive to *I. necator* reproduction lead to rapid amplification that may eventually spread externally over the entire fish (Mitchum 1995, Noga 2000). While the parasite may colonize the epithelium without much visible pathogenesis in healthy fish, *I. necator* typically becomes a problem for warm water species in cooler water conditions when their immune function may be diminished (Egusa 1991, Noga 2000). The parasite cannot survive in temperatures above 30ºC and prefers water temperatures below 25ºC (Noga 2000). As Mitchum (1995) reported previously, *Cryptobia* infestations are often associated with *Ichthyobodo* infections in the same fish, contributing to increased pathogenesis.

In contrast with *Ichthyobodo*'s potential for acute mortality, the prevalent Trichodinids isolated in this study often lead to chronic mortality in fish, with a potential of 1% loss per week (Noga 2000). This percentage may increase with concomitant secondary bacterial infections (Noga 2000), something that often occurs with ectoparasite infections and further contributes to damage of the mucus and epidermal layers. Some species of Trichodinids are highly pathogenic and can rapidly cover the entire fish leading to death (Hoffman 1999). In fact Noga (2000) states that *Apiosoma* actually acts as a nidus for bacterial colonization.

The bacteria isolated in this study are likely secondary pathogens or possibly environmental bacteria that contaminated the kidney during sampling in the field. No bacteria

isolated during this study were targeted pathogens as listed by the USFWS Aquatic Animal Health Policy (Part 713 FWS 1 Exhibit 2).

The cell lines used for isolating viruses are capable of isolating more than targeted primary viral pathogens as listed by the USFWS Aquatic Animal Health Policy (Part 713 FWS 1 Exhibit 2). The selection of cells for this study were based on their ability to support the growth of viruses of concern from warm and coldwater fish species in the southwest region of the United States. The targeted viruses for this study included: LMBV, IPNV, *Oncorhynchus masou* virus, and Infectious Hematopoietic Necrosis Virus. Only one virus, a putative Aquareovirus, was isolated in this study. Unlike many bacterial pathogens that will grow in non-selective culture media, viruses are often host specific and must be cultured in permissive cell lines. The one virus isolated in this study is not considered a disease causing agent and is among many other viruses grouped into the Aquareoviridae that have been isolated from free-ranging fish.

Recommendations for Future Work

Longer term monitoring is advisable to determine trends in the overall health of the Rio Grande silvery minnow in the middle section of the Rio Grande. This current study provides a baseline of health information that can be used to compare to health and population trends for the Rio Grande silvery minnow in the future and highlights deficiencies in current sampling methods that will allow for refinement in future studies. Development of a standardized parasitology sampling protocol should provide more robust determination of the degree of infection for future studies. Enumeration of the degree of infection will provide a better determination of the impact parasites are having on the Rio Grande silvery minnows. Testing should be expanded to

incorporate methods that target specific bacterial pathogens in fish and decrease the effort and expense entailed to identify bacterial isolates that are environmental microflora and not detrimental to fish health.

Drought and environmental contamination from increasing urbanization are likely to put continued strains on Rio Grande silvery minnow populations in this region. Establishing a relevant fish health baseline and continued monitoring of fish health parameters for this species is critical to understanding impacts to recovery efforts of this federally listed endangered fish.

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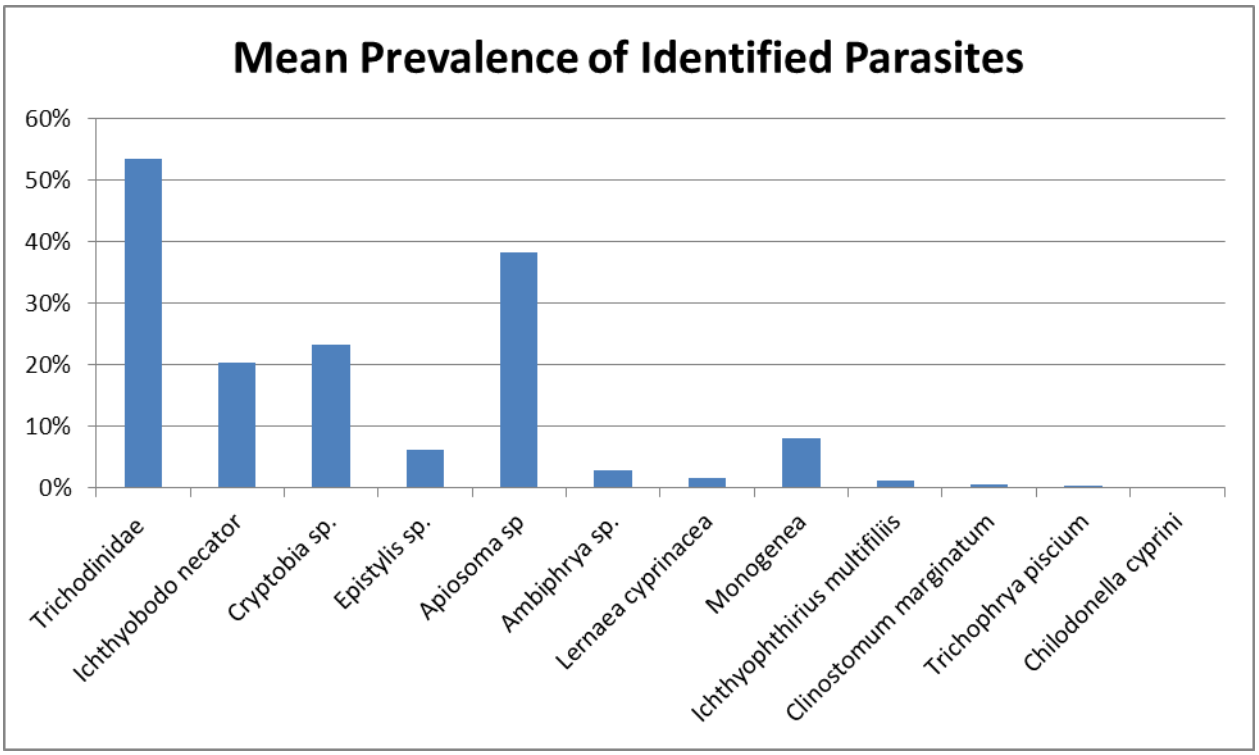

Figure 1. Mean prevalence of different parasite groups during a 2006 to 2008 baseline fish health study for the Rio Grande silvery minnow within the middle section of the Rio Grande.

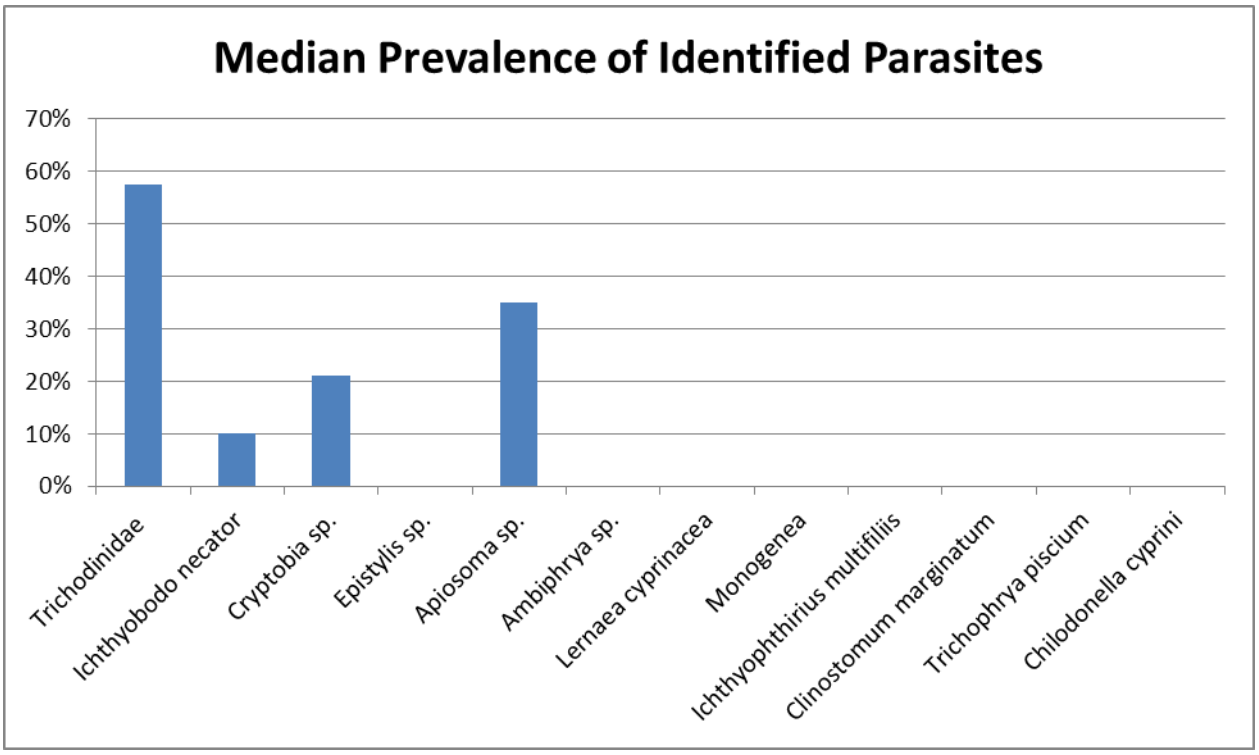

Figure 2. Median prevalence of different parasite groups during a 2006 to 2008 baseline fish health study for the Rio Grande silvery minnow within the middle section of the Rio Grande.

Table 1. Samples collected during a 2006 to 2008 baseline fish health study for the Rio Grande silvery minnow within the middle section of the Rio Grande.

			Fish sample number for each test		
Location	Site #	Collection Date	Parasitology	Bacteriology	Virology
San Antonio	6	18 July 2006	40	40	40
La Joya	5	19 July 2006	30	45	45
Los Lunas	4	20 July 2006	30	60	60
Los Padillas	3	25 July 2006	14	14	14
Alameda	2	26 July 2006	30	60	60
Bernalillo	1	27 July 2006	30	60	60
Bernalillo	1	11 Oct 2006	30	60	60
Alameda	2	12 Oct 2006	30	60	60
Los Lunas	4	16 Oct 2006	30	60	55
Los Padillas	3	17 Oct 2006	30	33	33
La Joya	5	18 Oct 2006	30	54	54
San Antonio	6	19 Oct 2006	-[a]	-[a]	-[a]
Los Padillas	3	23 Jan 2007	30	42	42
Alameda	2	24 Jan 2007	17	17	17
Bernalillo	1	25 Jan 2007	-[a]	-[a]	-[a]

(continued)

Table 1. continued

Location	Site #	Collection Date	Fish sample number for each test		
			Parasitology	Bacteriology	Virology
San Antonio	6	30 Jan 2007	30	30	30
La Joya	5	31 Jan 2007	30	60	60
Los Lunas	4	1 Feb 2007	30	60	60
San Antonio	6	17 Apr 2007	-[a]	-[a]	-[a]
La Joya	5	18 Apr 2007	18	18	18
Los Lunas	4	19 Apr 2007	18	18	18
Los Padillas	3	24 Apr 2007	17	17	17
Alameda	2	25 Apr 2007	30	31	31
Bernalillo	1	26 Apr 2007	16	16	16
San Antonio	6	23 Oct 2007	15	15	15
La Joya	5	24 Oct 2007	21	21	21
Los Lunas	4	25 Oct 2007	30	60	60
Los Padillas	3	29 Oct2007	30	30	30
Alameda	2	30 Oct 2007	30	59	59
Bernalillo	1	31 Oct 2007	30	60	60
San Antonio	6	22 Jan 2008	30	35	35

(continued)

Table 1. continued

Location	Site #	Collection Date	Fish sample number for each test		
			Parasitology	Bacteriology	Virology
La Joya	5	23 Jan 2008	30	37	37
Los Lunas	4	24 Jan 2008	25	55	55
Los Padillas	3	28 Jan 2008	30	60	60
Alameda	2	29 Jan 2008	30	60	60
Bernalillo	1	30 Jan 2008	30	60	60
Los Lunas	4	8 Apr 2008	30	60	60
San Antonio	6	9 Apr 2008	13	13	13
La Joya	5	10 Apr 2008	-[a]	-[a]	-[a]
Los Padillas	3	14 Apr 2008	30	60	60
Alameda	2	15 Apr 2008	30	60	60
Bernalillo	1	16 Apr 2008	30	52	52
San Antonio	6	8 July 2008	30	60	60
La Joya	5	9 July 2008	30	50	50
Los Lunas	4	10 July 2008	30	60	60
Los Padillas	3	14 July 2008	17	60	60
Alameda	2	15 July 2008	30	55	55
Bernalillo	1	16 July 2008	30	60	60

[a] No samples collected

Table 2. The mean prevalence ± s.e.m. of the four most common parasites for each sampling site throughout the entire study.

Sample Site	Trichodinidae	*Icthyobodo necator*	*Cryptobia* sp.	*Apiosoma* sp.
Bernalillo	51.31 ± 6.29	19.34 ± 5.31	21.20 ± 5.15	42.97 ± 5.95
Alameda	63.01 ± 3.85	13.43 ± 5.00	23.90 ± 4.70	30.60 ± 5.62
Los Padillas	61.16 ± 3.97	20.89 ± 5.72	21.29 ± 5.48	42.79 ± 7.63
Los Lunas	48.39 ± 6.43	20.44 ± 3.98	29.21 ± 4.60	42.16 ± 5.69
La Joya	48.24 ± 6.21	19.83 ± 4.08	26.88 ± 6.57	37.44 ± 5.88
San Antonio	46.57 ± 7.33	33.13 ± 8.27	15.85 ± 3.53	32.24 ± 3.96

Table 3. Correlations between parasites and bacteria observations for each sampling period and site. Rio Grande sampling site identifications are as follows: Bernalillo (Site 1), Alameda (Site 2), Los Padillas (Site 3), Los Lunas (Site 4), La Joya (Site 5), and San Antonio (Site 6).

	Site Numbers with the Highest Correlation		
Sampling Period	Bacteria & Parasites	Parasites Only	Bacteria Only
July 2006	1, 2, 4, 5	3, 6	-[a]
October 2006[b]	-[a]	2, 5	1, 3, 4
January 2007[c]	5	2, 4, 6	3
April 2007[b]	-[a]	1, 2, 3, 4, 5	-[a]
October 2007	1	2, 3, 4, 5, 6	-[a]
January 2008	-[a]	1, 2, 3, 6	4, 5
April 2008[d]	-[a]	1, 2, 3, 4, 6	-[a]
July 2008	3, 5	4, 6	1, 2

[a] No sites with a higher correlation in this category.

[b] No samples collected from San Antonio – Site 6

[c] No samples collected from Bernalillo – Site 1

[d] No samples collected from La Joya – Site 5

Table 4. Mean percentage of Rio Grande silvery minnows observed with parasites and bacteria for each site and sampling period.

	Bernalillo (Site 1)	Alameda (Site 2)	Los Padillas (Site 3)	Los Lunas (Site 4)	La Joya (Site 5)	San Antonio (Site 6)
Sampling Period	Parasites/ Bacteria	Parasites/ Bacteria	Parasites/ Bacteria	Parasites/ Bacteria	Parasites/ Bacteria	Parasites/ Bacteria
July 2006	93/72	90/71	86/36	70/87	70/69	80/40
October 2006	13/30	40/25	47/94	20/50	63/43	-[a]
January 2007	-[a]	41/24	7/29	83/18	87/40	70/10
April 2007	81/25	80/10	94/12	100/22	94/28	-[a]
October 2007	73/37	60/31	50/33	87/3	48/10	60/13
January 2008	97/17	100/8	100/7	28/64	37/49	63/31
April 2008	96/10	90/10	93/15	87/13	-[a]	92/0
July 2008	10/93	33/93	71/97	97/63	83/72	100/40

[a] No samples collected.

Appendix 5A - Parasitology Records

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-58	WJR08-818	Bernalillo	1	July 16, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1				
2				
3				
4			2 Costia 1 Crpytobia	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16			2 Apiosoma	
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29			2 Trichodinella	
30				

Notes: Coordinate=UTM/NAD83 E=358416 =3909903

Fish looked in excellent condition. Light mucous, **Parasite load extremely light.**

30 fish total for parasite search

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-58	WJR08-818	Bernalillo	1	July 16, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
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56				
57				
58				
59				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-57	WJR08-817	Alameda	2	July 15, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			2 Trichodina	
2			7 Cryptobia 5 Trichodina	
3				
4				
5				
6			5 Cryptobia	
7			2 Cryptobia	
8				
9				
10				
11			100+ Cryptobia, 10 Trichodina	10 Crytobia
12				
13				
14				
15				
16			10 Trichodina	
17				
18				
19			5 Cryptobia	
20				
21			2 Trichodina	
22				
23				
24			3 Trichodina	1 Trichodina
25				
26				
27				
28				
29			2 Trichodina, 3 Apiosoma	
30				

Notes: Coordinates UTM 135 NAD 83 E=351978 N=3897104

Gills had lite to moderate mucous. Fish parasite load lite.

Fish appeared to be in good condition.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-57	WJR08-817	Alameda	2	July 15, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
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56				
57				
58				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-56	WJR08-816	Los Padillas	3	July 14, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1				
2			4 Trichodina, 3 Cryptobia	4 Apiosoma
3			19 Apiosoma, 2 Trichodina	
4			25 Apiosoma, 2 Trichodina	2 Trichodina
5			16 Trichodina, 4 Apiosoma	
6			13 Trichodina	
7			2 Trichodinella	3 Trichodina
8				
9			20 Trichodina	
10				
11				
12			2 Apiosoma	
13				
14			8 Apiosoma	
15			4 Trichodina, 1 Apiosoma, 1 Ambiphrya	
16			41 Apiosoma, 2 Trichodina	
17			9 Apiosoma	
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Notes: Coordinates (NAD83 UTM 139) E+ 345743 N+ 3871306

Fish not surviving transport and in extremely poor condition.

17 fish total for parasite search

Gills had moderate to heavy mucous build up.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-56	WJR08-816	Los Padillas	3	July 14, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
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57				
58				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-55	WJR08-815	Los Lunas	4	July 10, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			6 trichodina, 3 cryptobia	
2			1 cryptobia, 1 trichodina	
3			1 apiosoma	1 trichodina
4			1 trichodina	
5			N/A	
6			40 trichodina, 5 apiosoma	
7			2 apiosoma	
8			13 cryptobia, 7 apiosoma	
9			15 trichodina, 5 apiosoma	
10			1 epistylis, 11 costia, 3 cryptobia, 2 trichodina, 16 apiosoma	
11			11 trichodina	
12			5 trichodina	
13			14 trichodina, 7 apiosoma, 5 costia	
14			10 trichodina	
15			14 trichodina, 1 costia	
16			1 trichodina	1 monogenetic trematode
17			3 trichodina, 1 apiosoma	
18			12 trichodina	
19			28 trichodina, 3 apiosoma	
20			16 apiosoma, 1 trichodina	
21			16 trichodina, 5 apiosoma	
22			6 trichodina, 3 apiosoma	
23			73 apiosoma, 16 epistylis	
24			4 trichodina, 3 apiosoma	
25			5 trichodina, 1 apiosoma, 1 cryptobia	
26			77 trichodina, 1 Ichthyophthirius, 2 trichodonella, 1 apiosoma	
27			21 trichodina, 11 epistylis, 2 apiosoma	
28			3 trichodina	
29			15 trichodina, 6 apiosoma	
30			1 apiosoma	

Notes:

Coordinates E=343322 N=3854354 NAD83 UTM 15S

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-55	WJR08-815	Los Lunas	4	July 10, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
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56				
57				
58				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-54	WJR08-814	La Joya/Middle Rio Grande	5	July 9, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			8 costia	
2			10 cryptobia, 1 Ichthyophthirius	
3			N/A	
4			2 Ichthyophthirius, 1 cryptobia, 1 trichodina	
5			5 trichodina, 1 trichodonella	
6			3 apiosoma, 1 cryptobia	
7			N/A	
8			1 trichodonella, 6 trichodina, 5 apiosoma, 1 cryptobia, 1 monogene	
9			2 trichodonella, 1 monogene	
10			2 trichodina	
11			20 cryptobia, 1 apiosoma, 1 trichodina	
12			4 trichodina, 1 Ichtyhophthirius, 15 cryptobia, 1 apiosoma	
13			3 trichodonella, 1 apiosoma	
14			2 trichodina, 1 apiosoma	
15			20 trichodina, 1 apiosoma	
16			2 trichodina, 2 trichodonella	1 apiosoma
17			11 trichodina, 1 apiosoma	
18			N/A	
19			1 Ichthyopthirius, 1 trichodonella	
20			N/A	
21			31 trichodina	
22			4 trichodina	
23			10 trichodina, 1 apiosoma	
24			5 trichodina, 1 apiosoma, 1 costia	2 costia
25			N/A	
26			1 cryptobia, 1 trichodina	
27			1 apiosoma	
28			100+ costia, 2 trichodina	
29			3 trichodina, 3 trichodonella, 2 cryptobia	
30			2 epistylis, 3 trichodina	

Notes: Very clubbed gills and lots of mucus.

Location = UTM 135 NAD83 E=329757 N=3797515

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-54	WJR08-814	La Joya/Middle Rio Grande	5	July 9, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-53	WJR08-813	San Antonio	6	July 8, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			1 apiosoma, 2 trichodina	
2			5 trichodina	
3			1 apiosoma, 3 trichodina	
4			12 trichodina	
5			1 monogenetic trematode, 2 trichodina	
6			26 cryptobia, 10 trichodina	
7			14 apiosoma, 1 costia	1 costia
8			40 apiosoma	
9			6 trichodina, 3 cryptobia, 2 trichodonella, 1 costia	
10			7 apiosoma, 5 trichodina, 3 trichodonella	1 apiosoma
11			2 trichodonella, 1 cryptobia, 1 costia	
12			5 epistylis	
13			1 trichodina, 1 cryptobia	
14			1 apiosoma, 2 cryptobia	
15			7 apiosoma, 1 costia, 1 trichodina	
16			3 trichodina, 2 cryptobia	
17			2 trichodina, 100+ cryptobia	
18			49 trichodina	
19			5 trichodina	
20			6 trichodina	
21			12 cryptobia, 1 apiosoma	1 costia
22			6 cryptobia, 1 Ichthyophthirius	
23			1 ambiphrya, 1 trichodina	
24			3 apiosoma, 4 trichodina	
25			1 cyryptobia	1 costia
26			1 monogenetic trematode, 2 costia	
27			5 epistylis, 5 trichodina, 1 apiosoma	
28			7 apiosoma	
29			2 cryptobia, 3 trichodina	
30			5 apiosoma, 6 trichodina, 4 cryptobia, 1 Ichthyophthirius	

Notes: Clubbed gills.

Coordinates: NAD 83 UTM E=328934 N=3750089

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-53	WJR08-813	San Antonio	6	July 8, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
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56				
57				
58				
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60				

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-41		Middle Rio Grande at Bernalillo	1	April 16, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			4 trichodinella, 1 trichodina	-
2			1 trichodinella, 5 trichodina	-
3			1 apiosoma	-
4			11 trichodinella, 3 apiosoma, 7 trichodina	3 apiosoma
5			100+ trichodinella	-
6			7 trichodinella, 5 trichodina, 1 apiosoma	-
7			7 trichodinella, 1 trichodina	1 trichodina
8			1 trichodina	1 monogenetic trematode, 1 apiosoma
9			7 epistylis, 5 trichodina	1 trichodina
10			1 trichodina	1 trichodina
11			12 trichodinella	-
12			5 trichodinella, 3 trichodina, 1 apiosoma	1 trichodina
13			6 trichodinella, 3 trichodina	2 trichodina
14			12 apiosoma, 6 trichodina, 1 Ick, 1 trichodinella	1 trichodina, 1 apiosoma
15			2 trichodina	-
16			5 trichodinella	2 apiosoma
17			7 trichodina, 1 trichodinella	-
18			6 trichodina, 1 trichodinella	-
19			2 apiosoma, 7 trichodinella	-
20			-	-
21			3 trichodina, 1 trichodinella, 41 apiosoma	-
22			21 trichodina, 5 apiosoma, 100+ trichodinella, 3 epistylis	-
23			7 trichodinella, 1 apiosoma, 3 trichodina	-
24			5 trichodinella, 3 trichodina	-
25			5 apiosoma, 3 trichodina	-
26			1 apiosoma, 47 trichodina, 37 trichodinella	1 apiosoma, 1 trichodina
27			4 apiosoma, 4 trichodinella	-
28			2 trichodinella	-
29			1 costia, 1 trichodina, 1 apiosoma	1 trichodina
30			1 trichodinella, 9 apisoma	-

Notes: Mucus and clubbed gills. 52 fish collected.

Ick = *Ichthyophthirius multifiliis*

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-41		Middle Rio Grande at Bernalillo	1	April 16, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
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52				
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56				
57				
58				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-40	07-30	Alameda	2	April 15, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			-	2 monogenetic trematode
2			3 trichodinella, 13 trichodina	1 trichodinella
3			3 trichodina, 13 trichodinella	1 trichodinella
4			1 trichodina, 1 trichodinella	1 trichodina
5			1 monogene, 15 trichodina, 15 trichodinella	2 trichodina
6			-	2 trichodina
7			17 trichodinella, 8 trichodina	-
8			8 trichodinella	-
9			5 costia, 1 trichodinella, 8 trichodina, 17 cryptobia	-
10			1 trichodina	-
11			2 trichodina	-
12			2 trichodinella	-
13			5 trichodinella, 1 trichodina	1 trichodina
14			100+ trichodinella, 1 trichodina, 1 apiosoma	1 trichodina
15			2 trichodinella	-
16			15 trichodinella	3 monogenetic trematodes
17			9 trichodinella	-
18			-	-
19			4 trichodinella	-
20			3 trichodinella	-
21			-	1 apiosoma
22			1 trichodina	-
23			-	2 monogenetic trematode
24			1 trichodina	1 trichodina
25			9 trichodina, 6 trichodinella	4 trichodina
26			-	1 monogene, 6 apiosoma, 5 trichodina
27			-	-
28			17 trichodinella, 2 apiosoma	4 monogenetic trematode
29			5 trichodina, 11 trichodinella, 11cryptobia	-
30			-	-

Notes: extremely clubbed gills, heavy mucus loads. 60 fish collected.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-40	07-30	Alameda	2	April 15, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
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53				
54				
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56				
57				
58				
59				
60				

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-39		Los Padillas	3	April 14, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			2 apiosoma	1 costia
2			-	1 ambiphrya
3			-	-
4			30 trichodinella, 3 trichodina, 1 epistylis	-
5			3 trichodina	-
6			2 costia, 33 trichodinella	-
7			8 trichodinella	-
8			1 trichodina	1 trichodina
9			1 cryptobia, 5 costia, 8 trichodinella	-
10			2 trichodinella	-
11			1 costia, 1 cryptobia	-
12			3 apiosoma, 5 trichodinella	1 costia, 1 monogenetic trematode
13			-	1 apiosoma
14			2 trichodina	4 trichodinella, 10 costia, 1 Ick, 5 cryptobia
15			-	50+ costia, 1 monogenetic trematode
16			1 trichodinella	4 costia
17			22 trichodinella, 1 chilodonilla, 8 trichodina	-
18			100+ trichodinella, 12 costia	2 costia
19			2 cryptobia, 4 costia, 3 trichodina, 8 trichodinella	-
20			5 trichodinella	2 costia
21			1 trichodina	1 trichodina
22			2 trichodina, 2 trichodinella	-
23			1cryptobia, 7 trichodinella	3 trichodina, 1 Ick, 1 costia, 1 apiosoma
24			-	-
25			2 costia	10 costia, 1 epistylis
26			2 costia	3 costia
27			2 costia, 4 cryptobia	3 costia, 1 trichodina
28			4 trichodinella, 6 apiosoma	1 apiosoma
29			1 apiosoma	-
30			1 trichodinella	2 costia

Notes: Heavy mucus, clubbed gills. 60 fish collected.

Ick = *Ichthyophthyrius multifiliis*

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-39		Los Padillas	3	April 14, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-37	WJR08-727	San Antonio	#6	April 9, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			clean	1 costia
2	orange	left dorsal	100+ trichodinella, 48 costia, 53 cryptobia	2 costia
3			6 trichodinella	1 ambiphrya
4			2 cryptobia	1 trichodina
5			clean	clean
6			3 trichodinella, 82 apiosoma, 1 chilodonella	1 apiosoma
7			1 trichodinella	2 apiosoma
8			1 oodinium like parasite.	1 trichodina
9			6 apiosoma, 3 trichodinella	1 gyrodactylus
10			4 apiosoma, 3 trichodinella	1 Lernaea
11			1 apiosoma, 1 costia	1 gyrodactylus
12			long rod like bacteria clump	2 trichodina
13			1 apiosoma, 15 cryptobia, 1 costia	1 trichodina
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Notes: All fish have clubbed gills, excess mucous and shortened operculums unless stated otherwise.
13 fish received.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-36	WJR08-726	Los Lunas	4	April 8, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			1 apiosoma, 1 trichodinella	1 Trichodina
2			clean	clean
3			7 trichodinella	clean
4			1 trichodinella	clean
5			2 trichodinella	5 apiosoma, 5 trichodina
6			9 cryptobia	1 trichodina, 2 gyrodactylus
7			1 trichodinella, 2 apiosoma	4 trichodina
8			clean	1 trichodinella
9			6 apiosoma	clean
10			clean	clean
11			clean	3 trichodina, 2 gyrodactylus
12			100+ cryptobia	1 trichodina
13			clean	3 costia
14			4 apiosoma, 21 cryptobia, 2 costia	2 apiosoma, 11 trichodina
15			clean	2 gyrodactylus, 1 apiosoma
16			5 cryptobia	8 trichodina, 1 apiosoma, 2gyrodactylus
17			1 apiosoma	clean
18			clean	4 trichodina, 1 costia
19			1 trichodina	11 trichodina, 1 gyrodactylus
20			clean	5 apiosoma
21			2 cryptobia	1 gyrodactylus, 2 apiosoma
22			2 cryptobia	3 trichodina, 1 gyrodactylus
23			clean	clean
24			1 trichodinella, 1 gyrodactylus	clean
25			2 cryptobia	6 trichodina, 4 apiosoma
26			clean	1 gyrodactylus
27			3 apiosoma	4 apiosoma, 3 gyrodactylus, 3trichodina
28			operculum OK, clean	clean
29			1 *Ichthyophthirius multifiliis*	clean
30			1 trichodina	1 trichodina, 1 apiosoma

Notes: Unless stated otherwise, all fish have shortened operculums, clubbed gills and excess mucous.
60 fish collected.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-36	WJR08-726	Los Lunas	4	April 8, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-27	WJR08-715	Bernalillo	1	January 30, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			81 apiosoma	1 apiosoma
2			1 trichodina, 25 apiosoma	2 trichodina, 4 costia
3			16 apiosoma	1 apiosoma
4			3 trichodina,	clean
5			no parasites	2 apiosoma, 1 gyrodactylus
6			2 ambiphrya, 3 apiosoma	1 trichodina, 1 apiosoma
7			5 apiosoma, 1 trichodina	clean
8			15 trichodina, 51 apiosoma	2 apiosoma
9			13 apiosoma, 2 ambiphrya	1 apiosoma
10			clean	1 gyrodactylus
11			4 trichodina	7 apiosoma
12			24 apiosoma, 2 trichodina, 10 trichodinella	10 apiosoma
13			4 trichodina, 1 trichodinella, 1 apiosoma	clean
14			9 apiosoma, 1 trichodina, 2 trichodinella	clean
15			2 trichophrya	1 trichodina
16			14 trichodina	1 apiosoma
17			4 apiosoma, 1 trichodinella	1 apiosoma
18			clean	3 apiosoma
19			3 trichodina, 1 apiosoma	1 trichodina
20			4 apiosoma	1 gyrodactylus
21			no parasites	clean
22			2 trichodina, 3 apiosoma	clean
23			9 apiosoma, 6 trichodina, 1 gyrodactylus	2 apiosoma
24			1 trichodina	1 colony of epistylis
25			3 apiosoma, 1 trichodina	clean
26			1 chilodonella, 1 apiosoma	clean
27			17 apiosoma, 1 trichodinella, 2 trichodina	clean
28			8 apiosoma	clean
29			60 apiosoma,	clean
30			1 trichodina, 2 apiosoma	clean

Notes: All sixty fish from case #s 25, 26, 27 had shortened operculums. All sixty fish collected in this case had clubbed gills and excess mucous.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-27	WJR08-715	Bernalillo	1	January 30, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
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51				
52				
53				
54				
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57				
58				
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60				

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-26	WJR08-714	Alameda	2	January 29, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			1 trichodina, excess mucous	1 epistylis colony, 2 costia
2			10 trichodina	clean
3			1 gyrodactylus	10 trichodina
4			1 trichodina, 6 apiosoma	1 gyrodactylus, 1 apiosoma,1 trichodina
5			no parasites	1 colony of epistylis
6			1 trichodina	clean
7			13 apiosoma,	clean
8			5 apiosoma	clean
9			6 trichodinella	clean
10			3 trichodina, 1 apiosoma	1 apiosoma
11			1 trichodina 3 apiosoma	clean
12			1 apiosoma	clean
13			1 *Ichthyophthirius multifiliis* , 2 trichodina	1 gyrodactylus
14			1 trichodina, 17 apiosoma, 2 ambiphrya	clean
15			1 apiosoma, 2 trichodina	clean
16			8 apiosoma	1 gyrodactylus
17			2 trichodina	clean
18			2 trichodina, 1 apiosoma	clean
19			6 apiosoma, 1 trichodina	clean
20			6 trichodina, 1 ambiphrya, 57 apiosoma	clean
21			13 apiosoma,	clean
22			3 apiosoma	clean
23			13 apiosoma	clean
24			2 apiosoma, 1 trichodina	clean
25			2 apiosoma	clean
26			5 trichodinella, 13 apiosoma, 1 trichodina	1 apiosoma
27			2 trichodinella, 3 apiosoma	clean
28			1 trichodina, 1 apiosoma, clubbed, mucous ok	2 trichodina, 1 apiosoma
29			1 trichodina	clean
30			2 apiosoma	4 trichodina

Notes: All fish had clubbed gills and excess mucous unless otherwise noted. 60 fish total collected all had shortened operculums.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-26	WJR08-714	Alameda	2	January 29, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-25	WJR08-710	Los Padillas	3	January 28, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			21 apiosoma, 5 trichodinella	clean
2			2 trichodina	clean
3			54 apiosoma, 1 trichodina	clean
4			150+ apiosoma	1 gyrodactylus
5			5 apiosoma	6 apiosoma
6			76 apiosoma, 1 trichophrya	clean
7			12 apiosoma, 3 trichodina	1 gyrodactylus, 2 apiosoma
8			16 apiosoma, 2 trichodina	8 apiosoma, 2 trichodinella
9			5 apiosoma,	clean
10			7 trichodina, 15 apiosoma	clean
11			1 trichophrya, 1 trichodina, 1 apiosoma	clean
12			28 apiosoma	clean
13			11 trichodina, 9 apiosoma	clean
14			clean of parasites	1 gyrodactylus
15			116 apiosoma, 2 trichodina	1 trichodina, 1 gyrodactylus
16			5 apiosoma	clean
17			56 apiosoma	clean
18			18 apiosoma, 9 trichodinella/trichodina	clean
19			100 apiosoma, 1 trichodinella	clean
20			2 apiosoma	1 apiosoma
21			66 apiosoma	clean
22			55 apiosoma, 3 trichodina	1 gyrodactylus
23			1 epistylis colony, 15 apiosoma	clean
24			44 apiosoma, 2 trichodina	clean
25			clean	7 apiosoma
26			3 colonies of epistylis, 2 trichodina, 52 apiosoma	3 trichodina
27			4 apiosoma	1 trichodina
28			5 apiosoma,	clean
29			5 apiosoma, 2 trichodina	1 apiosoma
30			23 apiosoma, 3 trichodina	clean

Notes:

All of the first 30 fish had clubbed gills and excess mucous Fish #30-liver bright orange.

60 fish sampled, no fish were tagged.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-25	WJR08-710	Los Padillas	3	January 28, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
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51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-24	WJR 08-705	Los Lunas	4	January 24, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			clean	
2			Costia (5)	
3			clean	
4			clean	
5			clean	
6			clean	
7			Apiosoma (3)	
8			Trichodina (4)	
9			clean	
10			clean	
11			Apiosoma (5)	
12			clean	
13			Apiosoma (4)	
14			clean	
15			clean	
16			Apiosoma (5)	
17			clean	
18			clean	
19			clean	
20			Trichodina (3)	
21			clean	
22			clean	
23			clean	
24			clean	
25			clean	
26				
27				
28				
29				
30				

55 fish total. (Due to miscount in field initial count was thought to be 93 for both histo and fish health)
Virology and Bacteriology were taken first for a total of 55 fish. Only 25 fish were examined for parasites.
Gills appeared to be in over all good condition. Light to moderate mucous.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-24	WJR 08-705	Los Lunas	4	January 24, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
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52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-23	WJR 08-704-08-23	La Joya	5	January 23, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			Apiosoma, Costia, Gyrodactylus	
2			Costia	
3			Trichodina (1), Apiosoma (2), Costia	
4			Costia (5)	
5			Costia (5)	
6			clean	Gyrodactylus (2)
7			clean	
8	pink	left dorsal	clean	Gyrodactylus (1)
9			clean	
10			Apiosoma (8)	
11			clean	
12	pink	left dorsal	clean	
13			clean	
14			clean	
15	pink	left dorsal	clean	
16			clean	
17			clean	
18			clean	
19			clean	
20			clean	
21			Apiosoma (5)	
22			clean	
23			Apiosoma (10)	
24			clean	
25			clean	
26			Trichodina (3) Apiosoma (5)	
27			clean	
28			clean	
29			clean	
30			clean	

Notes: 37 fish total. Site #5 gills clubbed, light to moderate mucous.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-23	WJR 08-704-08-23	La Joya	5	January 23, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
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51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-22	08-22-01-32	San Antonio	6	January 22, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1	pink	left dorsal	Trichodina (3) Costia (5)	
2			Trichodina (2) Costia (10)	
3			Trichodina (5) Costia (10)	
4				
5			Costia (10)	
6	pink	left dorsal	clean	
7			Trichodinella (3) Costia(4)	
8	pink	left dorsal	Apiosoma (5)	
9			Apiosoma (6)	
10			Apiosoma (5) Trichodina (2)	
11			clean	Trichodina (2)
12	pink	left dorsal	clean	
13			Costia(5)	
14			Apiosoma (2)	
15			Trichodina (5)	Trichodina (2)
16			clean	
17			Trichodina (3)	
18			clean	
19			clean	
20	pink	left dorsal	Trichodina (4) Costia	
21	pink	left dorsal	Apiosoma (10)	
22			clean	
23			clean	
24			Trichodina (3)	
25	pink	left dorsal	Apiosoma (5)	
26			Apiosoma (3)	
27			clean	
28	pink	left dorsal	clean	
29			Trichodina(3) Costia(5)	
30			clean	

Notes: 35 Fish total collected, 30 checked for parasites. Gill on site 6 clubbed, mucous on gills was moderate to heavy.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-22		San Antonio	6	January 22, 2008

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33	Pink	Left dorsal		
34				
35				
36			clean	
37				
38				
39				
40				
41			clean	
42			clean	
43				
44				
45				
46			clean	
47				
48			clean	
49			clean	
50				
51				
52			clean	
53			clean	
54				
55				
56				
57			clean	
58			clean	
59				
60			clean	

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-10	WJR07-890	Bernillio	1	October 31, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			Neg	1 Apiosoma
2			1 Cryptobia	Neg
3			Neg	Neg
4			Neg	Neg
5			Neg	Neg
6			Neg	1 Apiosoma
7			Neg	1 Apiosoma
8			4 Trich	1 Apiosoma
9			4 Trich, 11 Cryptobia	Neg
10			Neg	Neg
11			1 Trich	1 Trich
12			6 Trich, 5 Cryp	Neg
13			2 Trich	Neg
14			1 Trich	Neg
15			Neg	Neg
16			Neg	Neg
17			6 Trich, 3 Cryp	Neg
18			1 Trich	Neg
19			6 Cryptobia	Neg
20			3 Trich	2 Apiosoma
21			2 Trich, 1 Cryp	5 Trich
22			1 Trich, 1 Apiosoma	1 Trich
23			1 Trich	Neg
24			3 Trich	1 Trich
25			Neg	Neg
26			2 Cryp	Neg
27			Neg	1 Apiosoma
28			5 Trich	1 Trich
29			4 Trich	Neg
30			Neg	Neg

Notes: 30 fish external parasites, 58 fish total for viral and bacteria samples

Trich = Trichodinidae, Cryp = Cryptobia

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-10	WJR07-890	Bernillio	1	October 31, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-09	SMC07-88	Alameda	2	October 30, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			2 Trich, 3 Apiosoma, Gyro, 27 Cryp	1 Apiosoma
2			1 Trich , 6 Cryp	Neg
3			Neg	Neg
4			1 Apiosoma	Neg
5			Neg	Neg
6			26 Trich, 2 Apiosoma	Neg
7			6 Trich	Neg
8			Neg	1 Trich
9			5 Trich, 5 Cryp	Neg
10			5 Trich, 5 Cryp	Neg
11			17 Cryp	3 Apiosoma
12			16 Trich	Neg
13			3 Cryp, 1 apiosoma	Neg
14			1 Ich	1 trich
15			8 Trich, 4 Cryp	1 Trich
16			2 Trich	Neg
17			3 Trich	Neg
18			1 Trich	1 Trich
19			Neg	7 Apiosoma
20			2 Trich	Neg
21			5 Trich, 8 Cryp, 2 Apio	3 Apiosoma
22			1 Trich	1 Apiosoma
23			Neg	Neg
24			490 Cryp, 1 Apio	1 Apiosoma
25			Neg	Neg
26			10 Trich, 2 Apio, 3 Cryp	1 Trich, 4 Apiosoma
27			Neg	Neg
28			Neg	2 Trich
29			Neg	2 Trich
30			Neg	Neg

Notes: 30 fish parasites, 59 fish viral and bacteria

Trich = Trichodinidae, Cryp = Cryptobia, Apio = Apiosoma, Gyro = Gyrodactylus.

59 fish total, short one fish

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-09	SMC07-88	Alameda	2	October 30, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes:

Fish #31 had a bent spine - side to side

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-08	WJR07-1029	Los Padillas	3	October 29, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			Neg	1 Yellow grub
2			1 Trichodinidae	4 Apiosoma
3			1 Apiosoma	Neg
4			Neg	1 Apiosoma
5			1 Trichodinidae, 1 Apiosoma	Neg
6			5 Cryptobia, 1 Costia	10 Apiosoma
7			Neg	Neg
8			Neg	Neg
9			Neg	3 Apiosoma
10			Neg	1 Yellow grub, 1 Apiosoma
11			Neg	5 Apiosoma
12			Neg	8 Apiosoma
13			Neg	Neg
14			Neg	Neg
15			Neg	Neg
16			24 Cryptobia	Neg
17			1 Trichodinidae	Neg
18			Neg	1 Trichodinidae
19			Neg	Neg
20			Neg	Neg
21			Neg	Neg
22			Neg	Neg
23			Neg	1 Lernaea
24			Neg	Neg
25			Neg	Neg
26			Neg	Neg
27			8 Cryptobia	1 Lernaea
28			Neg	Neg
29			Neg	Neg
30			Neg	Neg

Notes: 30 fish total all samples -parasites, bacteria, viral

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-07	SRD07-89	Los Lunas	4	October 25, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			120+ cryptobia	clean
2			95 trichodinidae, 20 costia	1 apiosoma
3			78 cryptobia	1 non fish pathogen protozoan
4			1 costia, 1 trichodiniadae	7 non fish pathogen protozoan - picture
5			74 trichodonidae	clean
6*			1 costia	clean
7*			4 trichodonidae, 1 crytpobia	clean
8*			1 trichodina, 11 cryptobia	clean
9*				clean
10*				clean
11*			unk. parasite, 4 trichodinidae	clean
12*			7 trichodinidae	clean
13*				clean
14*			1 trichodinidae	clean
15*			3 parameciums, 13 trichodinidae	clean
16*			9 cryptobia, 3 trichodinidae	clean
17*			227+ trichodinidae	trichodina
18*			3 trichodinidae	clean
19*			1 trichodinidae	clean
20*			3 trichodinidae	clean
21*			3 trichodinidae	clean
22*			7 trichodinidae	clean
23*			1 costia, 1 trichodinidae,1 apiosoma	clean
24*			4 trichodinidae	clean
25*				clean
26*			8 apiosoma, 5 trichodinidae	3 apiosoma
27*			3 trichodinidae	clean
28*			155+ trichodinidae	clean
29*			75 costia, 1 cryptobia,12 trichodinidae	clean
30*			1 trichodina, 1 apiosoma, 2 trichodinidae	Clean

Notes: * = shortened operculum #8 dorso-ventral curved spine. 60 total fish collected.
Started noting operculum deformaties at fish #5. All of the fish gills above had excess of mucous.
All fish above had clubbed gills except fish #s 24 and 26.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-07	SRD07-89	Los Lunas	4	October 25, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes: #s 31-53 & 55-60 all have shortened operculum. #54 had severe spinal deformation (left to right)
No fish were tagged. #54 had normal operculums.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-06	SRD07-88	La Joya	5	October 24, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			4 apiosoma, clubbed, excess mucous	clean
2			clubbed, excess mucous	clean
3			9 cryptobia, clubbed, excess mucous	clean
4			clean	clean
5			clubbed, excess mucous	clean
6			clean	clean
7			clean	clean
8			4 trichodinidae, clubbed, excess mucous	clean
9			2 trichodinidae, 1 apiosoma, clubbed, excess mucous	clean
10			clubbed, excess mucous	clean
11			1 apiosoma, clubbed, excess mucous	clean
12			25 trichodinidae, excess mucous	clean
13			76 trichodinidae, 18 apiosoma, clubbed, excess mucous	clean
14			clubbed, excess mucous	clean
15			clubbed, excess mucous	clean
16			clean	3 yellow grubs
17			excess mucous	clean
18	?sp		clean	clean
19			clubbed, excess mucous	clean
20			67 trichodinidae, 28 costia, excess mucous	clean
21			1 cryptobia, clubbed, excess mucous	clean
22				
23				
24				
25				
26				
27				
28				
29				
30				

Notes: #17 shortened head, 21 fish sampled

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
08-05	SRD-07-87	San Antonio	6	October 23, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			68 cryptobia, clubbed, excess mucous	clean
2			2 apiosoma, clubbed, excess mucous	clean
3	pink	left dorsal	clubbed	clean
4			1 trichodinidae, clubbed, excess mucous	clean
5			excess mucous	clean
6			51 trichodinidae, clubbed, excess mucous	clean
7			clean	clean
8			2 apiosoma, excess mucous	clean
9	pink	left dorsal	clubbed, excess mucous	clean
10			clubbed, excess mucous	clean
11			10 trichodinidae, clubbed, excess mucous	clean
12			1 cryptobia, clubbed, excess mucous	clean
13			6 trichodinidae, 3 apiosoma, clubbed, excess mucous	clean
14			1 trichodinidae, 1 apiosoma, excess mucous, pale	clean
15			clubbed, excess mucous	clean
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Notes: 15 fish

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-36	WJR07-577	Bernalillo	#1	April 26, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1	Green	mid dorsal	100+ apiosoma	2 trichodina, 1 costia
* 2			1 apiosoma and a protozoan with three flagella	* 1 gyrodactylus
3			clean	1 costia
4			clean	1 trichodina
5			3 apiosoma	clean
6			40+ apiosoma, 3 trichodina, 20+ cryptobia	1 costia
7	Green	left dorsal	1 ich, 100+ apiosoma	1 costia
8			clean	clean
9			1 apiosoma	1 gyrodactylus
10			1 apiosoma	clean
11			clean	clean
12			1 gyrodactylus	1 gyrodactylus
*(*) 13			(*) 100+ cryptobia	* 100+ myxobolus like spores
* 14	Green	left dorsal	50+ apiosoma, 1 trichodina	1 trichodina
15			clean	clean
(*) 16			(*) 3 ambiphrya, 50+ apiosoma	1 trichodina
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Notes: 16 fish collected. All fish collected, except #11 and 12, had excess mucous on the gills and they were clubbed. Fish # 12 had clubbed gill but no excess of mucous and # 11 looked normal.
* = picture taken, (*) = video taken. Fish #s 1,2 and 5-9 were gravid.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-35	WJR07-576	Alameda	#2	April 25, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
* 1			* myxobolus like spore	clean
* 2	Green	Left Dorsal	13 apiosoma, 7 trichodina	2 trichodina
3			3 apiosoma	clean
4	Green	Left Dorsal	23 apiosoma, 2 trichodina	clean
5			clean	clean
6			3 apiosoma	clean
7			clean	1 apiosoma
8			clean	1 trichodina
9			clean	1 trichodina
10			1 apiosoma	clean
11			2 epistylis, long rod bacteria, 31+ apiosoma, 11 trichodina	clean
12			3 apiosoma	clean
13	Green	Left Dorsal	1 ambiphrya, 5 apiosoma, 3 trichodina	1 gyrodactylus
14	Green	Left Dorsal	40+ apiosoma, 10+ trichodina	4 trichodina, 1 apiosoma
15	Green	Left Dorsal	1 cryptobia, 3 trichodina, 5 apiosoma	clean
* 16			4 apiosoma, 1 trichodina	30 trichodina, 3 gyrodactylus, *strange trichodina like parasite
17			5 apiosoma	1 gyrodactylus, 1 trichodina
18			1 trichodina	clean
19			3 trichodina	1 trichodina
20			clean	clean
21			3 trichodina	clean
22	Green	Left Dorsal	100+ apiosoma	clean
23			clean	clean
* 24	Green	Left Dorsal	35 apiosoma, * 1 trichodina	2 trichodina
25			1 trichodina, 3 apiosoma	clean
26	Green	Left Dorsal	60+ apiosoma. 20+ trichodina	clean
27			clean	clean
28			clean	clean
29			2 apiosoma	clean
30			clean	clean

Notes: 31 fish collected. 1-16 collected in side channels, 17-30 collected in main channel.
All fish collected had excess mucous on the gills and clubbed gills.
** = picture taken, (*) = video taken.
All fish collected, except 5, 6, 8, 9, 13, 14, 18, 23, and 26-31 were gravid.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-35	WJR07-576	Alameda	#2	April 25, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31	Green	Left Dorsal		
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-34	WJR07-575	Los Padillas	#3	April 24, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1	Orange	Left Dorsal	18 apiosoma, 1 trichodina	40+ costia
2			Clean	1 Trichodina
**3	Orange	Left Dorsal	7 apiosoma	1 apiosoma, 1 cryptobia
(*)4			1 ambiphrya, 10+ apiosoma, 10+ trichodina	clean
5	Orange	Left Dorsal	20+ apiosoma, 100+ trichodina	clean
6			4 trichodina, 1 apiosoma	1 costia
7	Orange	Left Dorsal	50+ apiosoma, 1 trichodina	clean
8	Orange	Left Dorsal	100+ trichodina, 20+ apiosoma	20+ costia, 2 Trichodina
9	Orange	Left Dorsal	6 ambiphrya, 5 trichodina, 8 apiosoma	clean
10	Orange	Left Dorsal	1 chilodonella, 20 trichodina, 2 ambiphrya	1 apiosoma
11	Green	Left Dorsal	20+ apiosoma	petechial hemorrhaging on belly
12			20+ apiosoma, 3 ambiphrya	clean
13	Green	Left Dorsal	20+ apiosoma	petichial hemorrhaging on left side
14	Orange	Left Dorsal	5 trichodina, 13 apiosoma	clean
15			4 trichodina, 8 apiosoma	clean
16	Orange	Left Dorsal	15 trichodina, 5 apiosoma	clean
17			clean	clean
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Notes: 17 fish collected.

*=picture (*)=video

All fish examined had excess mucous on the gill and they were also clubbed. All fish except #1, 4, 9, and 13 were gravid.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-33	WJR07-5574	Los Lunas	#4	April 19, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			1 trichodinidae	Neg
2			1 apiosoma	27 trichodinidae, 1 gyrodactylus
3			1 trichodinidae	24 trichodinidae, 2 gyrodactylus, left pelvic gone
4			30+ cryptobia	Neg
5			3 apiosoma, 1 cryptobia	12 trichodinidae
6			9 trichodinidae, 50+ cryptobia	1 costia
7			1 trichodinidae, 18 cryptobia	Neg
8			Neg	1 Trich
9			3 cryptobia	Neg
10			1 trichodinidae	2 trichodinidae,1 gyrodactylus, 1 apiosoma
11			Neg	1 trichodinidae, 1 gyrodactylus
12			Neg	3 trichodinidae, 2 gyrodactylus, fins red
13			Neg	1 gyrodactylus, fins red
14			7 trichodinidae	Neg
15			3 trichodinidae, 5 apiosoma, 6 cryptobia	Neg
16			Neg	7 trichodinidae, 2 gyrodactylus
17			3 apiosoma, 5 cryptobia	3 apiosoma, fins red
18			12 trichodinidae, 9 apiosoma	1 trichodinidae
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
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Notes: the # 3 fish - left pelvic had deep red lesion, only a few fin rays left

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-33	WJR07-5574	Los Lunas	#4	April 19, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-32	WJR07-573	La Joya	#5	April 18, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			1 costia, 5 trichodinidae	2 costia
2	yellow	left of dorsal fin	5 apiosoma, 2 trichodinidae	Neg
3	yellow	left of dorsal fin	12 trichodinidae	1 apiosoma
4	yellow	left of dorsal fin	6 trichodinidae, 2 apiosoma	Neg
5			14 trichodinidae, 29 apiosoma	Neg
6	yellow	left of dorsal fin	29 trichodinidae, 16 apiosoma, 1 ambiphrya	Neg
7			7 trichodinidae, 8 apiosoma	Neg
8	yellow	left of dorsal fin	5 trichodinidae,26 apiosoma	1 apiosoma
9	yellow	left of dorsal fin	50 apiosoma	1 apiosoma
10	yellow	left of dorsal fin	5 trichodinidae, 10 apiosoma, 1 ambiphrya	Neg
11			Neg	Neg
12	yellow	left of dorsal fin	18 apiosoma	1 apiosoma
13			4 trichodinidae, 53 apiosoma	2 apiosoma
14			50 trichodinidae, 22 apiosoma, 1 gyrodactylus	Neg
15			75+ trichodinidae	Neg
16			1 monogene,4 eye spots and 4 hooks	Neg
17			7 trichodinidae, 28 apiosoma	Neg
18			9 trichodinidae, 6 apiosoma	Neg, base of fins red
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-32	WJR07-573	La Joya	#5	April 18, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
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41				
42				
43				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-21	WJR07-550	Los Lunas	4	February 1, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			clubbed	clean
2			clubbed, 1 apiosoma	clean
3			clubbed, 1 apiosoma	20+ costia
4			clubbed, 4 apiosoma	1 trichodina, 1 gyrodactylus
5			clubbed	clean
6			6 Heteropolaria/epistylis, 5 apiosoma	1 gyrodactylus
7			long rod bacteria, clubbed	clean
8			clubbed, 3 ambiphrya/apiosoma	clean
9			clubbed, 30+ apiosoma	clean
10			4 apiosoma, clubbed	2 cryptobia
11			clubbed, longrod bacteria	clean
12			clubbed, 5 apiosoma	clean
13			4 apiosoma	clean
14			clubbed, 1 trichodina, 10+ apiosoma	1 costia
15			clubbed, 35+ trichodina, 4 apiosoma	clean
16	Red	upper left dorsal	4 apiosoma, 2 trichodina	1 apiosoma, 1 costia
17			40+ apiosoma	clean
18			clubbed, 20+ trichodina, 30 apiosoma	12+ ~~costia~~ or cryptobia - 2 eye spots
19			clubbed, 16 apiosoma	1 apiosoma, 1 trichodina - 2 eye spots
20			3 apiosoma, clubbed	clean
21			clubbed	clean
22			clubbed, 8 apisoma, 1 trichodina	2 ~~costia~~ or cryptobia - 2 eye spots
23			clubbed	clean
24			10 trichodina, 4 apiosoma	80+ cryptobia or ~~costia~~ - 2 eye spots
25			clubbed, 20+ trichodinella, 10 apiosoma	clean
26			clubbed, 1 apiosoma	1 cryptobia or ~~costia~~ - 2 eye spots
27			Clean	10 trichodina, 1 gyrodactylus, 2 epistylis, 100+ costia
28			clubbed, 1 apiosoma	clean
29			34 apiosoma, clubbed	clean
30			clubbed, 1 apiosoma	8 cryptobia or ~~costia~~ - eyespots

Notes: Pictures taken of: #6 Heteropolaria, 2 pictures of apiosoma on #9, picture of apiosoma (on skin scrape), 2 pictures of what I definitely believe as trichodina on #19, 1 picture of epistylis and 1 picture of trichodina on #27.

Total of 60 fish collected.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-21	WJR07-550	Los Lunas	4	February 1, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
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Notes: No tags on the last 30 fish. Total of 60 fish collected.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-20	WJR07-549	MRG @ La Joya	5	January 31, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			50+ apiosoma	100+ cryptobia
2	yellow	upper left dorsal	50 + trichodinella, clubbed, 25 apiosoma	2 gryodactylus
3			1 monogene	1 monogene
4	yellow	upper left dorsal	5 apiosoma	1 diatom
5			clean	6 diatoms
6			20+ apiosoma	clean
7	yellow	upper left dorsal	30+ trichodinella, 10+ apiosoma	clean
8	yellow	upper left dorsal	60+ trichodinella, 10+ apiosoma	clean
9	yellow	upper left dorsal	clubbed, 15 trichodinella, 1 costia	clean
10	yellow	upper left dorsal	clean	clean
11	yellow	upper left dorsal	10+ apiosoma, clubbed, interesting diatom	Clean
12	yellow	upper left dorsal	clubbed, 3 apiosoma, 50+ trichodinella	2 trichodinella
13	yellow	upper left dorsal	clubbed, 2 diatoms	clean
14	yellow	upper left dorsal	20+ apiosoma, 10+ trichodinella	clean
15			4 apiosoma, clubbed, interesting diatom	clean
16	yellow	upper left dorsal	clubbed, long rod bacteria, 2 apiosoma	many small bacteria
17	yellow	upper left dorsal	clubbed	clean
18	yellow	upper left dorsal	3 trichodinella, 2 apiosoma	clean
19	yellow	upper left dorsal	10+ apiosoma, clubbed, 1 trichodinella	clean
20	yellow	upper left dorsal	1 trichodinella	clean
21	yellow	upper left dorsal	clubbed, 30+ apiosoma	22 apiosoma
22	yellow	upper left dorsal	clubbed, 3 trichodinella	clean
23	yellow	upper left dorsal	clubbed, 7 trichodinella	8 apiosoma
24	yellow	upper left dorsal	clubbed, 30+ trichodinella, 10+ apiosoma	clean
25			50+ apiosoma, clubbed	1 apiosoma
26	yellow	upper left dorsal	clubbed, 30+ apiosoma, 10+ trichodinella	1 apiosoma
27	yellow	upper left dorsal	4 epistylis/ apiosoma, long rod bacteria, trichodinella	clean
28	yellow	upper left dorsal	clubbed, long rod bacteria, 7 trichodinella	clean
29	yellow	upper left dorsal	clubbed, 25+ trichodinella, 8 apiosoma	clean
30	yellow	upper left dorsal	clubbed, 6 apiosoma, 1 ambiphrya	7 diatoms

Notes: Total of 60 fish collected. Picture of apiosoma on skin #1, Picture of trichodinella on skin #2 Picture of diatom on #11, Picture of epistylis on #27.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-20	WJR07-549	MRG @ La Joya	5	January 31, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32	yellow	upper left dorsal		
33	yellow	upper left dorsal		
34				
35	yellow	upper left dorsal		
36				
37				
38	yellow	upper left dorsal		
39				
40	yellow	upper left dorsal		
41				
42	yellow	upper left dorsal		
43				
44				
45	yellow	upper left dorsal		
46	yellow	upper left dorsal		
47				
48	yellow	upper left dorsal		
49				
50	yellow	upper left dorsal		
51	yellow	upper left dorsal		
52				
53	yellow	upper left dorsal		
54	yellow	upper left dorsal		
55	yellow	upper left dorsal		
56	yellow	upper left dorsal		
57	yellow	upper left dorsal		
58	yellow	upper left dorsal		
59	yellow	upper left dorsal		
60	yellow	upper left dorsal		

Notes: Total of 60 fish collected.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-19	WJR07-548	San Antonio	6	January 30, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			9 epistylis	cryptobia
2			clubbed, diatom	clean
3			2 trichodina, clubbed, 1 apiosoma, 4 ambiphrya	clean
4			epistylis	trichodinella, epistylis
5			clean	epistylis
6			diatom, clubbed	diatom
7			3 epistylis, clubbed, diatoms	10+ cryptobia
8			5 epistylis	clean
9			epistylis, clubbed	diatoms
10			epistylis, clubbed	diatoms
11			diatom, clubbed	diatoms
12			clubbed	diatoms
13			clubbed	1 costia, epistylis
14			epistylis, clubbed	clean
15			epistylis, clubbed	diatoms
16			clubbed, 10+ ambiphrya	diatoms
17			clubbed	clean
18			30+ trichodinella or trichodina	diatoms
19			clubbed, 30+ ambiphrya	clean
20			40+ ambiphrya	diatoms
21			5 ambiphrya	clean
22			clubbed	clean
23			clubbed, 1 ambiphrya	1 ambiphrya, 1 crytobia, 1 epistylis
24			clubbed, 1 ambiphrya, 5 apiosoma	diatoms
25			clubbed	diatoms
26			clubbed	clean
27			clubbed, diatom, 5 apiosoma	clean
28			clubbed	clean
29			1 trichodinella, 20+ apiosoma, < 5 ambiphrya	diatoms
30			40+ apiosoma	clean

Notes: Only 30 fish collected, No tagged fish.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-18	WJR07-542	Alameda	2	January 24, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1	N/A	N/A	10 Epistylis, 5 trichodina	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	Green	left dorsal	*	N/A
5	Green	left dorsal	*	N/A
6	N/A	N/A	10 Epistylis	N/A
7	N/A	N/A	10 Epistylis, 6 trichodina	N/A
8	N/A	N/A	N/A	N/A
9	Green	left dorsal	N/A	N/A
10	Green	left dorsal	4 trichodina	N/A
11	Green	left dorsal	N/A	N/A
12	Green	left dorsal	N/A	N/A
13	Green	left dorsal	7 trichodina	N/A
14	Green	left dorsal	N/A	N/A
15	Green	left dorsal	6 Costia, 3 trichodina	N/A
16	N/A	N/A	5 trichodina	N/A
17	N/A	N/A	N/A	N/A
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Notes: * indicates bacterial gill disease. Gills were full of mucus.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-17	WJR07-541	Los Padillas, NM	3	January 23, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	Orange	left dorsal	N/A	N/A
4	N/A	N/A	trichodinidae -3 trichodenella poss.	N/A
5	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A
7	N/A	N/A	10 Epistylis	N/A
8	N/A	N/A	N/A	N/A
9	Red	left dorsal	N/A	N/A
10	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A
13	Red	left dorsal	N/A	N/A
14	Red	left dorsal	N/A	N/A
15	N/A	N/A	N/A	N/A
16	N/A	N/A	N/A	N/A
17	N/A	N/A	N/A	N/A
18	N/A	N/A	N/A	N/A
19	Red	left dorsal	N/A	N/A
20	Red	left dorsal	N/A	N/A
21	N/A	N/A	N/A	N/A
22	N/A	N/A	N/A	N/A
23	Red	left dorsal	N/A	N/A
24	Red	left dorsal	N/A	N/A
25	N/A	N/A	N/A	N/A
26	Red	left dorsal	N/A	N/A
27	Red	left dorsal	N/A	N/A
28	Red	left dorsal	N/A	N/A
29	Red	left dorsal	N/A	N/A
30	Red	left dorsal	N/A	N/A

Notes: Gills were full of mucus.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-17	WJR07-541	Los Padillas, NM	3	January 23, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31	N/A	N/A	N/A	N/A
32	N/A	N/A	N/A	N/A
33	N/A	N/A	N/A	N/A
34	N/A	N/A	N/A	N/A
35	N/A	N/A	N/A	N/A
36	N/A	N/A	N/A	N/A
37	N/A	N/A	N/A	N/A
38	N/A	N/A	N/A	N/A
39	N/A	N/A	N/A	N/A
40	N/A	N/A	N/A	N/A
41	N/A	N/A	N/A	N/A
42	N/A	N/A	N/A	N/A
43				
44				
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Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-05	WJR06-496	La Joya	5	October 18, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			3 cryptobia	Negative for external parasites
2			6 cryptobia	Neg
3			3 cryptobia	Neg
4	yellow	left side of dorsal fin	Neg	Neg
5			9 cryptobia	Neg
6			1 cryptobia	Neg, red color on fin bases/caudal fin
7			6 cryptobia, 1 Trichodinidae	Neg
8			Neg	Neg, red skin/fins
9			2 cryptobia	Neg
10			14 cryptobia	Neg
11			DOA, 10 Trichodinidae	Neg
12			14 cryptobia	Neg
13			6 cryptobia	Neg
14			3 cryptobia	Neg
15			2 cryptobia, 2 Trichodinidae	Neg
16			Neg	Neg
17			2 cryptobia, 1 Trichodinidae	Neg
18			Neg	Neg, red spots on skin
19			Neg	Neg, red on fin bases
20			Neg	Neg
21	yellow	left side of dorsal fin	DOA, 1 cryptobia, 1Trichodinidae	Neg
22			Neg	Neg
23			Neg	Neg
24			Neg	Neg
25			Neg	Neg
26			1 Trichodinidae	Neg, red on skin/fins
27			3 cryptobia, 1 Trichodinidae	Neg
28			2 cryptobia	Neg
29			8 cryptobia	Neg
30			Neg	Neg

Notes: Total fish sampled = 54, Parasites = 30 fish, Viral = 54 fish

DOA = dead on arrival

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-05	WJR06-496	La Joya	5	October 18, 2007

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				Skin/fins red colored
32				Base of fins red
33				
34				
35				
36				
37				
38				
39				
40	yellow	left side of dorsal fin		
41				
42			DOA	Skin red
43			DOA	Nose/skin red
44				
45				
46	yellow	left side of dorsal fin		
47	yellow	left side of dorsal fin		
48	yellow	left side of dorsal fin		
49			DOA	
50			DOA	
51			DOA	
52			DOA	
53	yellow	left side of dorsal fin	DOA	
54			DOA, Last fish examined	
55				
56				
57				
58				
59				
60				

Notes: Total fish sampled = 54, Parasites = 30 fish, Viral = 54 fish

DOA = dead on arrival

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-04	WJR06-495	Los Padillas	3	October 17, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			Negative (Neg)	Negative (Neg)
2			DOA, 5 apiosoma, 2 cryptobia	Neg, head/nose red colored
3			DOA, Neg	Neg, red nose/fin bases
4			DOA	Neg, red nose/fin bases
5			DOA, 1 Trichodinidae	Neg.
6			DOA, 1 Trichodinidae	Neg
7			DOA, 10 cryptobia, 7 Tichodinidae	Neg
8			DOA, Neg	Neg
9			50+ cryptobia	5 costia
10			Neg	Neg
11			DOA, Neg	Neg, very red body
12			DOA, Neg	Neg, very red body
13	orange	Left side of dorsal fin	DOA, Neg	Neg, fin bases red
14			Neg	Neg
15			25 cryptobia	Neg
16	orange	Left side of dorsal fin	DOA, Neg	Neg
17			Neg	Neg
18			1 cryptobia	Neg
19			Neg	Neg
20			1 cryptobia	Neg
21			DOA, 6Trichodinidae, 3cryptobia	Neg, base of fins red
22			DOA, 25 cryptobia	Neg, base of fins red
23			Neg	Neg, red all over body
24	orange	Left side of dorsal fin	Neg	Neg
25			Neg	Neg
26	orange	Left side of dorsal fin	1 cryptobia	Neg
27			3 cryptobia, 3 Trichodinidae	Neg
28			20+cryptobia,7Trichodinidae, 1epistylis	Neg
29			Neg	Neg
30			6 cryptobia	Neg

Notes: Total fish sampled = 33, Parasites = 30, Viral = 33

DOA = dead on arrival

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-04	WJR06-495	Los Padillas	3	October 17, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31			DOA	Red on right side and mouth
32			DOA	
33			last fish	
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes: Total fish sampled = 33, Parasites = 30, Viral = 33

DOA = dead on arrival

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-03	WJR06-494	Los Lunas	4	October 16, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1				Negative, red spots on skin
2			Negative	Negative, red spots on skin
3			Negative	Negative, red spots on skin
4			Negative	Negative, red spots on skin
5			Negative	Negative, red spots on skin
6			5 cryptobia	Negative, red spots on skin
7			Negative	Negative
8			Negative	Negative
9			Negative	Negative
10			Negative	Negative, red spots on skin
11			Negative	Negative
12			Negative	Negative
13			Negative	Negative
14			Negative	Negative
15			Negative	Negative, red spots on skin
16			Negative	Negative
17			50 cryptobia	Neg, red spots on skin, dorsal fin open lesion
18			Negative	Negative
19			Negative	Neg, right eye missing, healed over
20			Negative	Negative
21			3 cryptobia	Negative
22			Negative	Negative
23			Negative	Negative, nose and skin red
24			3 cryptobia, 2 costia	Negative
25			Negative	Negative
26			Negative	Negative
27			Negative	Negative
28			1 cryptobia	Negative, red spots on skin
29			Negative	Negative
30			Negative	Negative

Notes: First 30 fish examined for parasites, all 60 fish for bacteria and viruses.
DOA = dead on arrival

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-03	WJR06-494	Los Lunas	4	October 16, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				Red spots on skin
35				Red at base of fins
36			DOA	Red spots on skin
37				Red spots on skin
38				
39				
40				
41			DOA	
42				Red spots on skin
43				
44				Red spots on skin
45				
46			DOA	Very red skin
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				Red spots on skin

Notes: First 30 fish examined for parasites, all 60 fish for bacteria and viruses.
DOA = dead on arrival

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-02		Middle Rio Grande - Alameda	2	October 12, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			clean	clean
2			3 apiosoma, clubbed	clean
3			clubbed	clean
4			clubbed	clean
5			clubbed, excess mucus	clean
6			clubbed, 2 costia	clean
7			clubbed	clean
8			clubbed, excess mucus	clean
9			clubbed, excess mucus	2 gyrodactylus
10			clubbed, excess mucus	clean
11			clubbed, excess mucus	clean
12			clubbed	clean
13			clubbed	clean
14			clubbed, excess mucus, 3 cryptobia, 1 trichodina	clean
15			clubbed, 1 trichodina	clean
16			clubbed, 1 trichodina, 1 apiosoma	stack of long rod bacteria
17			clubbed, 3 apiosoma, mass of long rod bacteria	clean
18			clubbed, mass of long rod bacteria	clean
19			clubbed, 1 trichodina	clean
20			clubbed, excess mucus, mass of long rod bacteria	clean
21			2 cryptobia, 1 apiosoma, clubbed	clean
22			clubbed, 2 cryptobia, 1 trichodina, excess mucus	clean
23			clubbed, excess mucus	many bacteria (more than normal)
24			clubbed, excess mucus	some bacteria
25			clubbed, excess mucus	clean
26			clubbed	clean
27			clubbed	clean
28			clubbed	clean
29			1 ambiphrya, clubbed, excess mucus	clean
30			clubbed, 1 trichodina, mass of long rod bact., excess mucus	clean

Notes: No tagged fish. After researching some of the parasite observed some of the trichodina reported may have actually been trichodinella and all the trichophrya were actually apiosoma.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-02		middle Rio Grande - Alameda	2	October 12, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes: No fish were tagged

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-01		Middle Rio Grande - Bernalillo	1	October 11, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1	Green	upper left dorsal	clean	clean
2	Green	upper left dorsal	excess mucus	1 monogene
3	Green	upper left dorsal	clean	~~100 + diatoms~~
4	Green	upper left dorsal	excess mucus, clubbing	~~100 + diatoms~~
5	Green	upper left dorsal	clean	~~diatoms~~ many bacteria
6			clean	clean
7	Green	upper left dorsal	clubbed	monogene (12 hook, no eye spots)
8	Green	upper left dorsal	excess mucus, clubbing	clean
9	Green	upper left dorsal	clubbed	clean
10	Green	upper left dorsal	clubbed	clean
11	Green	upper left dorsal	clubbed	many bacteria
12	Green	upper left dorsal	clean	clean
13	Green	upper left dorsal	excess mucus, clubbing	diatoms
14	Green	upper left dorsal	clean	clean
15	Green	upper left dorsal	clubbed	clean
16	Green	upper left dorsal	clubbed and pale	clean
17	Green	upper left dorsal	clean	some bacteria
18	Green	upper left dorsal	clean	clean
19	Green	upper left dorsal	clean	1 apiosoma, 1 diatom, some bacteria
20			clubbed, excess mucus	clean
21	Green	upper left dorsal	~~hennyguya sp.~~ masses of long rod bacteri	1 gyrodactylus
22	Green	upper left dorsal	clubbed	many long rod and short rod bacteria
23	Green	upper left dorsal	clubbed	many bacteria
24	Green	upper left dorsal	clubbed, mass of long rod bacteria	clean
25			clubbed, mass of long rod bacteria	clean
26	Green	upper left dorsal	clubbed	masses of long rod bacteria
27	Green	upper left dorsal	clubbed	many bacteria
28	Green	upper left dorsal	clubbed	many bacteria
29	Green	upper left dorsal	clubbed, excess mucus	clean
30	Green	upper left dorsal	clean	clean

Notes: When I reported bacteria, not specifically to shape, it means many smaller bacteria short rod or cocci. I only mentioned bacteria when I felt more than normal numbers were present. Additionally after refreshing my knowledge on some of the parasites observed I changed trichophrya to apiosoma.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
07-01		Middle Rio Grande - Bernalillo	1	October 11, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32	Green	upper left dorsal		
33	Green	upper left dorsal		
34	Green	upper left dorsal		
35	Green	upper left dorsal		
36				
37				
38	Green	upper left dorsal		
39	Green	upper left dorsal		
40	Green	upper left dorsal		
41		upper left dorsal		
42	Green	upper left dorsal		
43	Green	upper left dorsal		
44	Green	upper left dorsal		
45	Green	upper left dorsal		
46				
47				
48	Green	upper left dorsal		
49	Green	upper left dorsal		
50	Green	upper left dorsal		
51				
52	Green	upper left dorsal		
53				
54	Green	upper left dorsal		
55	Green	upper left dorsal		
56	Green	upper left dorsal		
57	Green	upper left dorsal		
58	Green	upper left dorsal		
59	Green	upper right dorsal		
60	Green	upper left dorsal		

Notes:

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-36	WJR06-468	Bernalillo	1	July 27, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			8 cryptobia, 13 Trichodinidae	Negative for external parasites
2			1 cryptobia, 3 Trichodinidae	Negative
3	green	right side of body	1 cryptobia, 2 costia	Negative
4			Negative	Negative
5			5 Trichodinidae, 4 cryptobia, costia	Negative
6			18 costia, 8 cryptobia	Negative
7			11 cryptobia	Negative
8			5 cryptobia	Negative
9			5 Trichodinidae, 1 costia	Negative
10			3 costia, 2 Trichodinidae	Negative
11			6 costia, 1 cryptobia	Red spot between pectorals & on body
12			5 Trichodinidae	Negative
13			1 Trichodinidae, **not a RGSM**	Negative
14			7 Trichodinidae, 4 costia, 8 cryptobia	Negative
15			18 costia, 1 epistylus, 20 cryptobia	Negative
16			Negative	Negative
17			1 Trichodinidae, 7 cryptobia	Negative
18			1 costia, 1 cryptobia	Negative
19			9 Trichodinidae, 2 costia, 2 cryptobia	Negative
20			Negative	Negative
21			2 Trichodinidae, 7 costia	Negative
22			11 Trichodinidae	Negative
23			300 costia	Negative
24			14 Trichodinidae, 3 cryptobia	Negative
25			1 Trichodinidae, 5 cryptobia, 9 costia	Negative
26			15 Trichodinidae, 100 cryptobia, 25 costia	7 costia
27			9 costia	Negative
28			3 costia, 7 cryptobia	Negative
29			70 costia	Negative
30			3 costia, 1 cryptobia	Negative

Notes: # 13 was not a RGSM, it was a flat head chub

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-36	WJR06-468	Bernalillo	1	July 27, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31	green	right side	17 Trichodinidae, 28cryptobia, 1 costia	1 epistylus, lot of red spots
32				
33				
34				
35				
36				
37				
38	green	right side		
39	green	right side		
40	green	right side		
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51	green	right side		
52				
53				
54				
55				
56				red spots caudal area
57				
58				
59				
60				

Notes: Fish 1 to 31 examined for parasites, bacteria and virus testing on all 60 fish.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-35	WJR06-466	Alameda	2	July 26, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			3 costia	Negative for external parasites
2			3 costia, 4 cryptobia	Negative
3			2 costia	Negative
4			3 cryptobia, 5 Trichodinidae	Negative
5			1 cryptobia, 8 costia	Negative
6			18 costia, 1 cryptobia	Negative
7			6 costia	Negative
8			5 costia, 3 cryptobia	Negative
9			100+ costia, 150+ cryptobia	1 Lernaea caudal fin area, red active site & s
10			25+ costia	Negative
11			100+ costia, 1 cryptobia	Negative
12			1 costia, 1 cryptobia, 3 trichodinidae	Negative
13			4 cryptobia	Negative
14			3 costia, 1 cryptobia	Negative
15			20+ cryptobia	Negative
16			50+ cryptobia, 100+ costia	Negative
17			9 cryptobia	Negative
18			1epistylis, 100+ costia, 6 Trichodinidae	25+ costia
19			50+ cryptobia	Negative
20			100+ costia	Negative
21			Negative	6 costia
22			Negative	Negative
23			300+ costia	Negative
24			150+Trichodinidae, 1costia, 1cryptobia	Negative
25			Negative	Negative
26			12 Trichodinidae	Negative
27			8 Trichodinidae, 3 costia, 1 cryptobia	Negative
28			3 costia, 7 cryptobia	Negative
29			7 costia	Negative
30			2 costia	Negative

Notes: First 30 fish examined for external parasites, all 60 for bacteria and viruses.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-35	WJR06-466	Alameda	2	July 26, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				Red spots on back half of fish
38				
39				
40				
41				
42				
43				
44				
45	green	right side		
46				
47				
48				
49				
50				
51				Red spots on back part of body
52				
53				1 Lernaea near left pelvic fin
54				
55				
56				
57				
58				
59				
60				Base of pelvic and pectoral fins red

Notes: First 30 fish examined for external parasites, all 60 for bacteria and viruses.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-34	WJR06-464	Los Padillas	3	July 25, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			10 costia, 20+ Trichodinidae	Negative for external parasites
2			7 costia, 5 Trichodinidae, 12 cryptobia	Negative
3			100+ Trichodinidae, 75+ costia	1 Lernaea
4			50+ Trichodinidae, 100+ costia	Negative
5			50+ Trichodinidae, 100+ costia, 50+ cryptob	Negative, red spot at base of dorsal fin
6			20+ Trichodinidae	Negative
7			5 Trichodinidae, 1 costia	Negative
8			1 Trichodinidae	Negative
9			100+ costia	Negative
10	red	Right side of dorsal fin	200+ costia, 25+ Trichodinidae	Negative
11			50+ costia, 75+ Trichodinidae	1 lernaea at base of left pectoral fin, 12crypto
12			Negative	1 Lernaea at base of dorsal fin
13			Negative	1 Lernaea base left pectoral fin, 1base of ana
14			12+c ryptobia, 10+Trichodinidae, 15+ costia	1 cryptobia
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Notes: Only 14 fish could be collected and examined for fish pathogens at this site.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-28	WJR06-462	Los Lunas	4	July 20, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			1Trichodinidae, 50+ apiosoma, 9 costia	Negative for external parasites
2			1 costia	Negative
3			Negative	Negative
4			5 costia,100+ apiosoma, 30+ cryptobia	Negative
5			Negative	Negative
6			12 costia	Negative
7			Negative	Negative
8			Negative	Negative
9			Negative	Negative
10			6 costia, 1 cryptobia	Negative
11			1 costia	Negative
12			1 apiosoma	Negative
13			12 apiosoma, 1 epistylus	Negative
14			6 costia	Negative
15			Negative	1 lernaea at base of left perctoral fin
16			Negative	Negative
17			Negative	Negative
18			3 costia	Negative
19			Negative	Negative
20			10 costia	Negative
21			1 costia	Negative
22			2 cryptobia	Negative
23			3 cryptobia, 1 apisoma	Negative
24			1 costia	Negative
25			Negative	Negative
26			5 costia	Negative
27			2 costia	Negative
28			20+ costia	Negative
29			1 costia	Negative
30			1 cryptobia	Negative

Notes: 30 fish examined for external parasites on gills and skin, 60 fish for bacteria and piruses.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-28 B	WJR06-462	Los Lunas	4	July 20, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				1 Lernaea on left pectoral fin
47				
48				
49				
50				
51				1 Lernaea on dorsal fin, red colored
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes: First 30 fish examined for external parasites on gill & skin, all 60 fish for bacteria and viruses.

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-27	WJR06-461	La Joya	5	July 19, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			2 apiosoma, 2 costia	Negative for parasites
2			3 cryptobia, 9 apiosoma, 1 tichodina	Negative, dorsal (back) red colored
3			Negative	Negative
4			1 apiosoma	Negative, vent area red
5			Negative	Negative, vent area red
6			1 costia	Negative
7			1 costia	Negative
8			Negative	Negative
9			1 costia	Negative
10			Negative	Negative
11			2 apiosoma, 1 costia	Negative
12			1 cryptobia	Negative
13			1 cryptobia	Negative
14			2 apiosoma, 1 costia	Negative
15			20+ cryptobia, 20+ costia	Negative
16			2 apiosoma	Negative
17			2 cryptobia, 1 costia	Negative
18			Negative	Negative
19			20 epistylis	Negative
20			1 cryptobia	Negative
21			1 cryptobia	Negative
22			6 cryptobia	Negative
23			12 costia	Negative
24			Negative	Negative
25			Negative	Negative
26			Negative	Negative for parasites, red spots
27			1 costia	Negative for parasites, red near vent
28			35+ apiosoma, 1 costia	50+ costia, red near base pectoral fins
29			Negative	Negative
30			Negative	Negative

Notes: # 17 bottom of caudal fin missing, red and active tissue damage.
First 30 fish examined for external parasites, 45 fish for bacteria and viruses.
DOA= Dead on arrival

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-27	WJR06-461	La Joya	5	July 19, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31			DOA	
32			DOA	
33			DOA	
34			DOA	1 Lernaea on left pectoral fin
35			DOA	
36			Live	
37			Live	
38			Live	
39			Live	
40			Live	
41			Live	
42			Live	
43			Live	
44			Live	
45			Live	
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes: First 20 fish collected fin clips and gill tissues for genetics work. Labeled as WJR06-462, should have been 461. First 30 fish examined for external parasites, 45 fish for bacteria and viruses.
DOA= dead on arrival

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-26	SRD06-454	San Antonio	6	July 18, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
1			Negative for parasites	Negative for Parasites
2			Negative	Negative
3			Negative	Negative
4			Negative	Negative
5			100+ costia, 1 apiosoma	Negative
6			100+ costia	Negative
7			50+ costia	Negative
8			Negative	Negative
9			Negative	Negative
10			100+ costia	Negative
11			50+ costia	Negative
12			100+ costia	Negative
13			100+ costia	Negative
14			1 costia	Negative
15			Negative	Negative
16			50+ costia	Negative
17			100+ costia	Negative
18			25 costia	Negative
19			7 costia	Negative
20			21 costia	Negative
21			100+ costia	Negative
22			100+ costia	3 costia
23			3 costia	Negative
24			75+ costia	Negative
25			75+ costia	Negative
26			25+ costia	Negative
27			30+ costia	Negative
28			9 costia	Negative
29			20+ costia, 1 Trichodinidae	Negative
30			11 costia	Negative

Notes: Fish #s 1 to 40 sampled for external parasites, bacteria, viruses.
DOA= dead on arrival

Rio Grande Silvery Minnow Data Sheet

CHN	Ecological Services CHN	Name of Location	Site #	Collection Date
06-26	SRD06-454	San Antonio	6	July 18, 2006

Sample No.	Tag (color) if present	Location of Tag if present	Gills	Skin
31			20+ costia	1 monogenetic trematode
32			100+ costia	1 costia
33			3 costia	Negative
34			100+ costia	Negative
35			20+ costia	Negative
36			9 costia	Negative
37			75+ costia	Negative
38			13 costia	Negative
39			75+ costia, 4 cryptobia	Negative
40			DOA, gills pale	Negative
41			DOA, gills pale	Ventral side ruptured. **Sample not good**
42			DOA, no good	**Sample not good**
43			DOA, no parasites	lernaea near vent, **sample not good**
44			DOA, gills pale	**Sample nto good**
45			DOA, gills pale	Ventral side ruptured, **Sample not good**
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				

Notes: Monogenetic trematode, 2 hooks, no eye spots visible.

Fish #41 to 45 no good, not used for viral or bacterial samples, or parasites except the one Lernaea.

Fish 1 to 40 sampled for external parasites, bacteria, viruses.

DOA = dead on arrival.

Appendix 5B. Assumptions for Determining Bacterial Identification when Several Isolates of Bacteria were Isolated from the Same Fish.

A) If different isolates from the same fish had identical motilities, CO test results and the bacteria were gram positive, it was assumed that they were identical bacteria without further testing.

Reason: There were no other tests performed for identifying gram positive bacteria to the genus or species level.

B) If isolates from the same fish were identical in CO, motility, and API results, these bacteria were considered the same.

Reason: No other tests were performed to make a valid argument that the bacteria were different. It is possible to pick bacteria growing on agar in Petri dishes that look different but are really the same bacteria. Sometimes colonies may appear different due to the amount of growth variance between colonies.

C) If the API codes were not exactly identical, even in cases where the API codes were off by one number, the bacteria were considered different.

D) If CO and motility were the same and later the bacteria were lost (died) or the growth was very slow (3–4 days before seeing any appreciable growth) and no API tests were performed from several isolates on the same fish, these bacteria isolates were considered different bacteria.

Reason: Samples may appear to be the same based on CO and motility, but several bacteria can share these same results and be different bacteria. Without further testing, it is not possible to determine if these bacteria were the same or identical. The assumption is to fall back on the identification of the bacteria as different based on the morphology of the bacterial colonies on the BHI agar plates.

E) If API codes were identical but the motility was different, these bacteria were considered the same.

Reason: Observations of motility can be dependent on how old the bacteria were when examined. Sometimes you may only observe motility in small numbers; therefore, it is possible to miss it at times due to human error. The API codes are not always as subjective as the motility tests.

F) If isolates from the same fish included bacteria with the same CO, motility and gram stain test results and no API was performed, then it was determined that not enough information was available to report the number of different isolates. These samples were not taken into consideration for statistics. Statistics not reported in the body of this paper included the average number of different bacteria, minimum number of different bacteria, and maximum number of different bacteria on the fish per sampling event. A sampling event is defined by the site location and the date it is sampled.

Appendix 5C – Bacterial Records

BACTERIOLOGY IDENTIFICATION

CHN: 08-58 **COLLECTION DATE** July 16, 2008

Lot # **Location** Rio Grande - Bernalillo (Site #1)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1A		-	+		+		gram positive bacteria
1B		+	+		-	0402004	*Shewanella putrefaciens 99%*
2A		-	+		+		gram positive bacteria
2B		+	+		-	3047104	*A. hydrophila/caviae/sobria 2 82%*
3		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
4A		-	-		+		gram positive bacteria
4B		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
5		+	+		-	3147165	*A. hydrophila/caviae/sobria 1 56.4%*
6		+	+		-	7047527	*A. hydrophila/caviae/sobria 1 66.2%*
7		+	+		-	0001004	*Bordatella/Alcaligenes/Moraxella spp 43.1%*
8A		+	-	-	-	6004004	*Photobacterium damselae 95.8%*
8B		+	+		-	0005004	Non-fermenter spp 65.7%
10		+	+		-	7047126	*A. hydrophila/caviae/sobria 1 85.9%*
11		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
13		-	-		+		gram positive bacteria
14		-	-		-	0000000	Can't ID with API
15A		-	-	-	-	5105112	*Hafnia alvei 1 99.9%*
15B		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
16		+	+		-	3047106	*A. hydrophila/caviae/sobria 1 86.6%*
18		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
19		+	-	+	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
21		+	+		-	7247125	*A. hydrophila/caviae/sobria 2 99%*
22		+	-	+	-	3046127	*A. hydrophila/caviae/sobria 1 67%*
23		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
24		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
25		+	-	-	-	3044127	*Vibrio fluvialis 58%*
26A		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
26B		+	+		-	7045165	*A. hydrophila/caviae/sobria 2 75%*
27A		+	+		-	7045125	*A. hydrophila/caviae/sobria 2 74.9%*
27B		+	+		-	7047127	*A. hydrophila/caviae/sobria 1 85.9%*

COMMENTS: Completed 8-6-08. Identification made under the genus Vibrio were considered not acceptable ID based on expected bacteria.

BACTERIOLOGY IDENTIFICATION

CHN: 08-58 **COLLECTION DATE** July 16, 2008

Lot # **Location** Rio Grande - Bernalillo (Site #1)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
28		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
29		+	+		-	7245124	*A. hydrophila/caviae/sobria 2 96.6%*
30		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
31a		+	-	-	-	7144324	*Plesiomonas shigelloides no% given*
31b		+	-	-	-	1004104	*Pasteurella pneumotropica/Mannheimia haemolytica 89.2%*
32	light growth		-	-			to slow
33a		+	-	-	-	1044004	*Pasteurella pneumotropica/Mannheimia haemolytica 66%*
33b		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
34a		+	+		-	7047126	*A. hydrophila/caviae/sobria 1 85.9%*
34b		+	+		-	7144204	*Plesiomonas shigelloides 99.9%*
35a	light growth		-				too slow
35b	light growth		-				too slow
36a		+	-	+	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
36b		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
37		+	+		-	7045124	*A. hydrophila/caviae/sobria 2 74.6%*
38		+	+		-	3047104	*A. hydrophila/caviae/sobria 2 82%*
39		+	+		-	3047106	*A. hydrophila/caviae/sobria 1 86.6%*
40a		-	-	-	-	5105112	*Hafnia alvei 1 99.9%*
40b		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
41a		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
41b		+	+		-	7045125	*A. hydrophila/caviae/sobria 2 74.9%*
42a		+	+		-	5147125	*Vibrio cholerae 98.6%*
42b		+	+		-	3047126	*A. hydrophila/caviae/sobria 1 97.8%*
43a		+	-	-	-	5044064	*Pasteurella pneumotropica/Mannheimia haemolytica no % given*
43b		+	-		+		gram positive bacteria
44		+	-	-	-	6004004	*Photobacterium damselae 95.8%*
45		+	-	-	-	3047104	*A. hydrophila/caviae/sobria 2 - 82%*
46a		+	-	-	-	7144204	*Plesiomonas shigelloides 99.9%*
46b		+	-	+	-	3047104	*A. hydrophila/caviae/sobria 2 - 82%*
47		+	-	+	-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*

COMMENTS: Completed 8-6-08. Identification made under the genus Vibrio were considered not acceptable ID based on expected bacteria.

BACTERIOLOGY IDENTIFICATION

CHN: 08-58 **COLLECTION DATE** July 16, 2008
Lot # **Location** Rio Grande - Bernalillo (Site #1)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
48A		+	+		-	5004064	*Pasteurella pneumotropica/Mannheimia haemolytica no % given*
48B		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
49A		+	+		-	7045124	*A. hydrophila/caviae/sobria 2 74.6%*
49B		+	+		-	3046127	*A. hydrophila/caviae/sobria 1 67%*
50A		+	+		-	7045127	*A. hydrophila/caviae/sobria 1 94.7%*
50B		+	+		-	7047125	*A. hydrophila/caviae/sobria 2 89.8%*
51		+	-	-	-	1007004	*Burkholderia cepacia 54.5%*
52A		+	+		-	0004004	Non-fermenter spp 31.8%
52B		+	+		-	5047304	*A. hydrophila/caviae/sobria 2 no % given*
53		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
54		+	-	+	-	7047127	*A. hydrophila/caviae/sobria 1 85.9%*
55		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
56		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
57		+	+		-	3047106	*A. hydrophila/caviae/sobria 1 86.6%*
59		+	-	+	-	7047125	*A. hydrophila/caviae/sobria 2 89.8%*
60A		+	+		-	6004004	*Photobacterium damselae 95.8%*
60B		+	+		-	7045125	*A. hydrophila/caviae/sobria 2 74.9%*

COMMENTS: Completed 8-6-08. Identification made under the genus Vibrio were considered not acceptable ID based on expected bacteria.

BACTERIOLOGY IDENTIFICATION

CHN: 08-57 **COLLECTION DATE** July 15, 2008
Lot # **Location** Rio Grande - Alameda (Site#2)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
3a		+	+		-	0005004	Non-Fermenter spp 65.7%
3b		+	+		-	0000004	Non-Fermenter spp 32.1%
4a		+	+		-	3046127	*A. hydrophila/caviae/sobria 1 67%*
4b		+	+		-	3046127	*A. hydrophila/caviae/sobria 1 67%*
5a		+	+		-	0000004	Non-Fermenter spp 32.1%
5b		+	+		-	7144204	*Plesiomonas shigelloides 99.9%*
6a		+	+		-	0000004	Non-Fermenter spp 32.1%
6b		+	+		-	7247164	*A. hydrophila/caviae/sobria 2 99%*
6c		-	+		+		gram positive bacteria
7a		+	+		-	3042127	*Vibrio fluvialis 89.2%*
7b		+	+		-	3042027	*Vibrio fluvialis 99%*
7c		+	+		-	3046127	*A. hydrophila/caviae/sobria 1 67%*
8		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
9a		+	+		-	7147105	*A. hydrophila/caviae/sobria 2 92.2%*
9b		+	+		-	7144204	*Plesiomonas shigelloides 99.9%*
10		+	+		-	7044064	*A. hydrophila/caviae/sobria 1 no % given*
11		+	+		-	7047064	*A. hydrophila/caviae/sobria 2 89.8%*
12		-	+		-	7207120	*A. hydrophila/caviae/sobria 2 99%*
13		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
14a		+	+		-	3026127	*A. hydrophila/caviae/sobria 1 59.3%*
14b		+	+		-	0502004	*Shewanella putrefaciens* group 99.9%
15		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
16a		+	+		-	6005004	*Photobacterium damselae 99.7%*
16b		+	+		-	3047106	*A. hydrophila/caviae/sobria 1 86.6%*
17		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
18a		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
18b		+	+		-	3047106	*A. hydrophila/caviae/sobria 1 86.6%*
20a		+	+		-	6047105	*A. hydrophila/caviae/sobria 2 97.3%*
20b		+	+		-	7007124	*A. hydrophila/caviae/sobria 2 89.8%*

COMMENTS: Completed 7-31-08. Identification made under the genus *Vibrio* were considered not acceptable ID based on expected bacteria.

BACTERIOLOGY IDENTIFICATION

CHN: 08-57 **COLLECTION DATE** July 15, 2008
Lot # **Location** Rio Grande - Alameda (Site#2)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
21a		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
21b		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
22a		+	+		-	7144204	*Plesiomonas shigelloides 99.9%*
22b		+	+		-	3047106	*A. hydrophila/caviae/sobria 1 86.6%*
23a		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
23b		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
24a		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
24b		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
25		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
26a		+	+		-	7047125	*A. hydrophila/caviae/sobria 2 89.8%*
26b		+	+		-	3007104	*A. hydrophila/caviae/sobria 2 81.2%*
27a		+	+		-	7147024	*Vibrio cholerae 89.7%*
27b		+	+		-	7247164	*A. hydrophila/caviae/sobria 2 99%*
28a		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
28b		+	+		-	1004022	*Pantoea* spp 1 84.6%
29a		+	+		-	7047126	*A. hydrophila/caviae/sobria 1 85.9%*
29b		+	+		-	6104004	*Plesiomonas shigelloides 50%*
29c		+	+		-	7247126	*A. hydrophila/caviae/sobria 2 65.3%*
30a		+	+		-	7247125	*A. hydrophila/caviae/sobria 2 99%*
30b		+	+		-	3047104	*A. hydrophila/caviae/sobria 2 82%*
31a		-	+		-	4104112	*Salmonella* ser.*Pullorum 66.3%*
31b		+	+		-	7047127	*A. hydrophila/caviae/sobria 1 85.9%*
32a		+	+		-	7047125	*A. hydrophila/caviae/sobria 2 89.8%*
32b		+	+		-	3046127	*A. hydrophila/caviae/sobria 1 67%*
33		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
34a		+	+		-	3046127	*A. hydrophila/caviae/sobria 1 67%*
34b		+	+		-	1047124	*A. hydrophila/caviae/sobria 1 57.4%*
36a		+	+		-	7144204	*Plesiomonas shigelloides 99.9%*
36b		+	+		-	7144204	*Plesiomonas shigelloides 99.9%*
37		+	+		-	7247125	*A. hydrophila/caviae/sobria 2 99%*

COMMENTS: Completed 7-31-08. Identification made under the genus Vibrio were considered not acceptable ID based on expected bacteria.

BACTERIOLOGY IDENTIFICATION

CHN: 08-57 **COLLECTION DATE** July 15, 2008
Lot # **Location** Rio Grande - Alameda (Site#2)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
38a		-	+		-	3301573	*Enterobacter cloacae 97.5%*
38b		+	+		-	7247125	*A. hydrophila/caviae/sobria 2 99%*
39		-	+		-	3305573	*Enterobacter cloacae 95.1%*
40a		+	+		-	7144204	*Plesiomonas shigelloides 99.9%*
40b		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
41a		-	-		+		gram positive bacteria
41b		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
42a		+	+		-	7047537	*A. hydrophila/caviae/sobria 1 90.4%*
42b		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
43a		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
43b		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
44a		+	+		-	0000004	Non-Fermenter spp 32.1%
44b		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
45		-	-		+		gram positive bacteria
46		+	+		-	3046127	*A. hydrophila/caviae/sobria 1 67%*
47a		+	+		-	7144204	*Plesiomonas shigelloides 99.9%*
47b		+	+		-	5347125	*Vibrio cholerae 99.3%*
49a		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
49b		+	+		-	6104004	*Plesiomonas shigelloides 50%*
50a		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
50b		+	+		-	3047104	*A. hydrophila/caviae/sobria 2 82%*
51		+	+		-	7047505	*A. hydrophila/caviae/sobria 2 99.4%*
52a		+	-	-	-	0004026	*Burkholderia cepacia 73.3%*
52b		+	+		-	0004026	*Burkholderia cepacia 73.3%*
53		+	+		-	3046127	*A. hydrophila/caviae/sobria 1 67%*
54		+	+		-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
55a		+	+		-	7144204	*Plesiomonas shigelloides 99.9%*
55b		+	+		-	7247125	*A. hydrophila/caviae/sobria 2 99%*
55c		+	+		-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*

COMMENTS: Completed 7-31-08. Identification made under the genus Vibrio were considered not acceptable ID based on expected bacteria.

BACTERIOLOGY IDENTIFICATION

CHN: 08-56 **COLLECTION DATE** July 14, 2008
Lot # **Location** Rio Grande - Los Padillas (Site#3)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1		+	+	+	-	3047507	*A. hydrophila/caviae/sobria 1 77.8%*
2		-	+	+	+		gram positive bacteria
3		+	+	+	-	7144204	*Plesiomonas shigelloides 99.9%*
4		-	-	-	+		gram positive bacteria
5		+	+	+	+	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
6A	light growth	-	+	+	-	1006000	*Burkholderia cepacia 58%*
6B		+	+	+	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
7		+	-	-	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
8		+	+	+	-	0005004	*Non-Fermenter spp 65.7%*
9		+	+	+	-	7247125	*A. hydrophila/caviae/sobria 2 99%*
10		+	+	+	-	3046127	*A. hydrophila/caviae/sobria 1 67%*
11A		+	-	-	-	7046127	*A. hydrophila/caviae/sobria 1 98.4%*
11B		+	+	+	+		gram positive bacteria
12		-	+	+	-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
13		+	+	+	-	2006004	*Chromobacterium violaceum 61%*
14		+	+	+	-	7047127	*A. hydrophila/caviae/sobria 1 85.9%*
15		+	+	+	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
16		-	+	+	+		gram positive bacteria
17		+	+	+	-	7067124	*A. hydrophila/caviae/sobria 2 89.6%*
18		-	+	+	+		gram positive bacteria
19A		-	+	+	+		gram positive bacteria
19B		+	+	+	-	3046127	*A. hydrophila/caviae/sobria 1 67%*
20		-	-	-	-	0001000	*Pseudomonas oryzihabitans 40%*
21		+	+	+	-	1046127	*A. hydrophila/caviae/sobria 1 92.4%*
22		+	+	+	-	3046027	*A. hydrophila/caviae/sobria 1 86.2%*
23		+	+	+	-	2000004	*Pseudomonas flourescens/putida 54%*
24		+	-	-	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
25		+	+	+	-	7047125	*A. hydrophila/caviae/sobria 2 89.8%*
26		+	+	+	-	7047164	*A. hydrophila/caviae/sobria 2 89.8%*
27		+	+	+	-	7047117	*A. hydrophila/caviae/sobria 1 82.3%*

COMMENTS: Completed 8-6-8.

BACTERIOLOGY IDENTIFICATION

CHN: 08-56 **COLLECTION DATE** July 14, 2008
Lot # **Location** Rio Grande - Los Padillas (Site#3)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
28		+		+	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
29A		+		+	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
29B		+		+	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
30		+		+	-	7247165	*A. hydrophila/caviae/sobria 2 99%*
31A		-		-	+		gram positive bacteria
31B		+		+	-	0206044	*Pseudomonas flourescens/putida 50.4%*
32A		-		-	+		gram positive bacteria
32B		-		-	+		gram positive bacteria
33		+		+	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
34		+		+	-	3047127	*A. hydrophila/caviae/sobria 1 98.4%*
35		-		-	+		gram positive bacteria
36		-		-	-	3305533	*Enterobacter cloacae 98.9%*
37		+		+	-	3067106	*A. hydrophila/caviae/sobria 1 no % given*
38		+		+	-	3047104	*A. hydrophila/caviae/sobria 2 82%*
39A		+		+	-	1504576	*Citrobacter freundii no % given*
39B		+		+	-	3046137	*A. hydrophila/caviae/sobria 1 99%*
41		-		-	+		gram positive bacteria
42	no growth						
43		-		-	+		gram positive bacteria
44		-		-	+		gram positive bacteria
45		+		+	-	7047126	*A. hydrophila/caviae/sobria 1 85.9%*
46		+		+	-	7047125	*A. hydrophila/caviae/sobria 2 89.8%*
47		+		+	-	7247124	*A. hydrophila/caviae/sobria 2 98.8%*
48		+		+	-	6006124	*A. hydrophila/caviae/sobria 1 62.7%*
49		+		+	-	7047124	*A. hydrophila/caviae/sobria 2 89.6%*
50		+		+	-	7047125	*A. hydrophila/caviae/sobria 2 89.8%*
51		+		+	-	2200044	*Pseudomonas flourescens/putida 90.5%*
52		+		+	-	3046127	*A. hydrophila/caviae/sobria 1 67%*
53		+		+	-	7047105	*A. hydrophila/caviae/sobria 2 98.2%*
54		+		+	-	7144204	*Plesiomonas shigelloides 99.9%*

COMMENTS: Completed 8-6-8.

BACTERIOLOGY IDENTIFICATION

CHN: 08-56 **COLLECTION DATE** July 14, 2008
Lot # **Location** Rio Grande - Los Padillas (Site#3)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
55a		+	+	+	-	7045124	*A. hydrophila/caviae/sobria 2 74.6%*
55b	light growth	-	+	+	-	1003000	*Pasteurella pneumotropica/Mannheimia haemolytica 37.9%*
56		+	+	+	-	3046127	*A. hydrophila/caviae/sobria 2 92%*
57		+	+	+	-	3046127	*A. hydrophila/caviae/sobria 2 92%*
58		-	-	-	+		gram positive bacteria
59		+	+	+	-	7047115	*A. hydrophila/caviae/sobria 1 67%*
60		+	+	+	-	7047164	*A. hydrophila/caviae/sobria 2 89.8%*

COMMENTS: Completed 8-6-8.

BACTERIOLOGY IDENTIFICATION

CHN: 08-55 **COLLECTION DATE** July 10, 2008
Lot # **Location** Site #4 - Los Lunas

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
7		-	-	-	-	0004000	Shigella spp 81.6%
12		+	+		-	7247165	A. hydrophila/caviae/sobria 2 99.0%
13		+	+		-	7266125	A. hydrophila/caviae/sobria 2 89.8%
14a		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
14b		+	+		-	3047123	A. hydrophila/caviae/sobria 2 98.4%
15		+	+		-	7047127	A. hydrophila/caviae/sobria 2 85.9%
18		+	+		+		gram positive bacteria
26a		-	+		-	1044553	Pantoea spp4 76.0%
26b		+	+		-	7147577	A. hydrophila/caviae/sobria 1(no%)
27		+	+		-	2207044	Pseudomonas fluorescens/putida 80.4%
28a		+	-		-	0042004	Chryseobacterium meningosepticum 71.6%
28b		-	+		-	0002000	Stenotrophomonas maltophilla 65.6%
29a		+	+		-	7047126	A. hydrophila/caviae/sobria 1 85.9%
29b		+	-		-	0402004	A. hydrophila/caviae/sobria 2 99.0%
30		+	+		-	7144204	Plesiomonas shigelloides 99.9%
32		+	+		-	0206044	Pseudomonas fluorescens/putida 50.4%
33		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
34		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
35a		+	+		-	1004104	Pasteurella pneumotropica/Mannheimia/haemolytic a 89.2%
35b		+	-	-	-	3046127	A. hydrophila/caviae/sobria 1 67.0%
36		+	+		-	7047127	A. hydrophila/caviae/sobria 1 85.9%
37		+	+		-	7047104	A. hydrophila/caviae/sobria 2 98.1%
38		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
39		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
40a		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
40b		+	+		-	0000004	Non fermenter spp 32.1%
41		+	-	-	-	2004104	A. salmonicida ssp salmonicida 99.7
43a		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
43b		+	+		-	7146127	A. hydrophila/caviae/sobria 2 88.6%
44a		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%

Comments: Sample number 41 negitive for A. sal. by DFAT. Bacteria identified under the genus *Vibrio* were not considered an acceptable ID for the expected bacteria. Completed 8-1-08.

BACTERIOLOGY IDENTIFICATION

CHN: 08-55 **COLLECTION DATE** July 10, 2008
Lot # **Location** Site #4 - Los Lunas

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
44b	light growth	+			-	0000004	non fermenter spp 32.1%
45		+	-	+	-	3046027	Vibrio fluvialis 86.2%
46		+	-	-	-	0200004	Bordetella/Alcalligenes/Moraxella spp 38.7%
47		+	+		-	7046124	A. hydrophila/caviae/sobria 1 56.1%
48		+	+		-	3046127	A. hydrophila/caviae/sobria 1 67.0%
49a		+	+		-	7144204	Plesiomonas shigelloides 99.9%
49b		+	+		-	6046127	A. hydrophila/caviae/sobria 1 98.7%
50a		+	+		-	7047144	A. hydrophila/caviae/sobria 2 98.2%
50b		+	+		-	0001004	Bordetella/Alcalligenes/Moraxella spp 43.1%
51a		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.2%
51b		+	+		-	7047125	A. hydrophila/caviae/sobria 2 89.8%
52a		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
52b		-	+		+		gram positive bacteria
54		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
55a		+	+		-	7147304	A. hydrophila/caviae/sobria 2 97.8%
55b		+	+		-	6047124	A. hydrophila/caviae/sobria 2 83.6%
56a		+	+		-	1004026	Burkholderia cepacia 59.1%
56b		-	-	-	-	1044553	Pantoea spp 4 76.0%
57a		+	+		-	3047127	A. hydrophila/caviae/sobria 1 98.4%
57b		+	+		-	6047104	A. hydrophila/caviae/sobria 2 97.1%
58a		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
58b		+	+		-	7144204	Plesiomonas shigelloides 99.9%
59a		+	+		-	1004022	Pantoea spp 4 84.6%
59b		+	-	-	-	7144204	Plesiomonas shigelloides 99.9%
59c		+	+		-	7006345	A. hydrophila/caviae/sobria 2
60a		+	+		-	7046124	A. hydrophila/caviae/sobria 1 56.1%
60b		+	+		-	5047124	Vibrio cholerae 82.7%
60c		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
53a		+	+		-	7047104	A. hydrophila/caviae/sobria 2 98.1%
53b		-	-	-	-	1004122	Pantoea spp 4 98.3%

Comments: Sample number 41 negitive for A sal by DFAT. Bacteria identified under the genus *Vibrio* were not considered an acceptable ID for the expected bacteria. Completed 8-1-08.

BACTERIOLOGY IDENTIFICATION

CHN: 08-54 **COLLECTION DATE** July 9, 2008
Lot # **Location** La Joya - Site 5

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1		+	+		-	0004004	Non fermenter spp 31.8%
2	light growth	-	-	-	-		no id
5		+	+		-	2046127	Vibrio fluvialis 50.1%
8a		+	-	-	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
8b		+	+		-	6047124	A. hydrophila/caviae/sobria 2 83.6%
9		+	+		-	7045124	A. hydrophila/caviae/sobria 2 83.6%
11		+	-	-	-	0005004	Non fermenter spp 65.7%
12a		+	+		-	7047125	A. hydrophila/caviae/sobria 2 89.8%
12b		+	+		-	3046127	A. hydrophila/caviae/sobria1 67.0%
19a		+	-	-	+		gram positive bacteria
19b		+	+		-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%l
20		+	-	-	-	0004004	Non fermenter spp 31.8%
21a		+	+		-	7047125	A. hydrophila/caviae/sobria 2 89.8%
21b		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
23		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
24		+	-	-	-	0004004	Non fermenter spp 31.8%
25a		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
25b		+	+		-	7044204	Plesiomonas shigelloides 99.9%
26A		-	+		+		gram positive bacteria
26B		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
26C		-	+		+		gram positive bacteria
27A		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
27B		+	+		-	3046127	A. hydrophila/caviae/sobria1 67.0%
28		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
29a		+	+		-	5347165	*Vibrio cholerae* 94.3%
29b		+	+		-	7147165	A. hydrophila/caviae/sobria 2 89.0%
31a		+	+		-	7047164	A. hydrophila/caviae/sobria 2 89.0%
31b		+	+		-	7047107	A. hydrophila/caviae/sobria 2 50.8%
32		+	+		-	3046127	A. hydrophila/caviae/sobria1 67.7%
33A		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%

COMMENTS: Bacteria identified with the genus *Vibrio* were determined not as an acceptable ID for the expected bacteria. Completed 8-1-08.

BACTERIOLOGY IDENTIFICATION

CHN: 08-54 **COLLECTION DATE** July 9, 2008
Lot # **Location** La Joya Site #5

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
33B		+	+		-	7046135	A. hydrophila/caviae/sobria 1 86.2%
35a		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
35b		+	+		-	0201004	Bordetella/Alcaligenes/Moraxella spp 59.8%
36		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
37a		+	+		-	6047124	A. hydrophila/caviae/sobria 2 83.6%
37b		+	+		-	7046167	A. hydrophila/caviae/sobria 1 98.5%
38		+	+		-	7144204	Plesiomonas shigelloides 99.9%
39a		+	+		-	7047125	A. hydrophila/caviae/sobria 2 89.8%
39b		+	+		-	2202004	Pseudomonas aeruginosa 67.1%
40a		+	+		-	0004004	Non fermenter spp 31.8%
40b		+	+		-	0205004	Non fermenter spp 56.0%
41a		+	+		-	7247125	A. hydrophila/caviae/sobria 2 99.0%
41b		+	+		-	1207123	Serratia rubidaea 63.0%
42		+	+		-	7046167	A. hydrophila/caviae/sobria 1 98.5%
43a		+	+		-	7144204	Plesiomonas shigelloides 99.9%
43b		+	+		-	7045124	A. hydrophila/caviae/sobria 2 83.6%
44		+	+		-	7045204	Plesiomonas shigelloides 96.4%
45a		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
45b		+	+		-	7044026	A. hydrophila/caviae/sobria 1 77.9%
46a		+	+		-	1000004	Pasteurella pneumotropica.Mannheimia 46.2%
46b		+	+		+		gram positive bacteria
46c		-	+		-	7144244	Plesiomonas shigelloides 99.9%
47		+	+		-	7047125	A. hydrophila/caviae/sobria 2 89.8%
48		+	+		-	1005127	A. hydrophila/caviae/sobria 1 85.8%
49a		+	+		-	5147125	Vibrio cholerae 98.6%
49b		+	+		-	7144204	Plesiomonas shigelloides 99.9%
50a		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
50b		+	+		-	1047177	A. hydrophila/caviae/sobria 1 95.8%

COMMENTS: Bacteria identified with the genus Vibrio were determined not as an acceptable ID for the expected bacteria. Completed 8-1-08.

BACTERIOLOGY IDENTIFICATION

CHN: 08-53 **COLLECTION DATE** July 8, 2008
Lot # **Location** San Antonio Site #6

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
5a		+	+		-	7047164	A. hydrophila/caviae/sobria 2 89.8%
5b		+	+		-	7007125	A. hydrophila/caviae/sobria 2 89.8%
6	not enough growth						
7a		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
7b		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
13a		+	+		-	7047127	A. hydrophila/caviae/sobria 2 85.9%
13b		+	+		-	6104004	Plesiomonas shigellodies 50.0%
16a		+	+		-	7247125	A. hydrophila/caviae/sobria 2 99.0%
16b		+	+		-	7144204	Plesiomonas shigelloides 99.9%
17		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
18a		+	+		-	7247125	A. hydrophila/caviae/sobria 2 99.0%
18b		+	+		-	6104004	Plesiomonas shigellodies 50.0%
19		+	+		-	7047105	A. hydrophila/caviae/sobria 2 98.2%
20		+	+		-	7047125	A. hydrophila/caviae/sobria 2 89.8%
33a		+	+		-	7047127	A. hydrophila/caviae/sobria 2 85.9%
33b		+	+		-	7047127	A. hydrophila/caviae/sobria 2 85.9%
34		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
35a		+	+		-	6347126	A. hydrophila/caviae/sobria 2
35b		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
38		-	-		+		Gram positive bacteria
39		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
40		+	+		-	7247524	A. hydrophila/caviae/sobria 2 99.6%
44		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
45		+	+		-	7047124	A. hydrophila/caviae/sobria 2 89.6%
46		+	+		+		Gram positive bacteria
47		+	+		-	7247124	A. hydrophila/caviae/sobria 2 98.8%
48a		+	+		-	7147125	A. hydrophila/caviae/sobria 2 81.1%
48b		+	+		-	7144204	Plesiomonas shigelloides 99.9%
50		+	+		-	7047127	A. hydrophila/caviae/sobria 2 85.9%
53a		+	+		-	7057124	A. hydrophila/caviae/sobria 2 89.6%

Completed 8-1-08

BACTERIOLOGY IDENTIFICATION

CHN: 08-53 **COLLECTION DATE** July 8, 2008
Lot # site #6 **Location** San Antonio (Site #6)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
53b		+	+		-	7145204	Plesiomonas shigelloides 99.9%
54		+	+		-	7144205	Plesiomonas shigelloides 99.9%
57		+	+		-	7144204	Plesiomonas shigelloides 99.9%
59		+	+		-	7144204	Plesiomonas shigelloides 99.9%

COMMENTS: Completed 8-1-08.

BACTERIOLOGY IDENTIFICATION

CHN: 08-41 **COLLECTION DATE** 4/16/2008 **LOCATION** Rio Grande Site #1
Lot# _____ Bernalillo site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
6			-		+		Gram positive bacteria
9		+	+		-	2201004	Pseudomonas fluorescens/putida 94.1%
12a		+	-	+	-	2203004	Pseudomonas fluorescens/putida 79.9%
12b		+	-	+	-	2203004	Pseudomonas fluorescens/putida 79.9%
17a			-		+		Gram positive bacteria
17b			+		+		Gram positive bacteria
18			-		+		Gram positive bacteria
19		+	+		-	7047105	A. hydrophila/cavia/sobria 2 98.2%
30		+	-	-	-	0005024	Pasteurella pneumotropica/Mannheimia 90.7%
37a		-	+		-	1155773	Raoultella ornithinolytica 85.3%
37b		-	+		-	1155773	Raoultella ornithinolytica 85.3%
42a		+	+		-	2206004	Chromobacterium violaceum 76.8%
42b		+	-	+	-	2202004	Pseudomonas aeruginosa 67.1%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 08-40 **COLLECTION DATE** 4/15/2008 **LOCATION** Rio Grande (Site #2) Alameda site

Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
8		+	+		-	0047104	*Vibrio alginolyticus* 27.9%
12		+	-	-	-	0005024	Pasteurella pneumotropica/Mannheimia 90.7%
31a		+	+		-	7067145	A. hydrophila/caviae/sobria 2
31b		+	+		-	2000004	Pseudomonas fluorescens/putida 54.0%
35a		+	+		-	4347325	*Vibrio alginolyticus* 83%
35b		+	+		-	2201004	Pseudomonas fluorescens/putida 94.1.0%
37a		+	+		-	3047104	A. hydrophila/caviae/sobria 2 82.0%
37b		-	+		-	3344513	Citrobacter koseri/amalonaticus 99.9%
50		-	+		+		Gram positive bacteria

COMMENTS: Bacteria identified under the genus *Vibrio* were not considered acceptable for expected IDs.

BACTERIOLOGY IDENTIFICATION

CHN: 08-39 **COLLECTION DATE** 4/14/2008 **LOCATION** Rio Grande (Site #3)
Lot# Los Padillas site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1		-	-	-	+		Gram positive bacteria
5		-	-	-	-	1001000	Pasteurella pneumotropica/Mamnmheimia 49.7%
10	no growth						
12		+	-	-	-	0005024	Pasteurella pneumotropica/Mamnmheimia 90.7%
16		+	-	-	-	0005024	Pasteurella pneumotropica/Mamnmheimia 49.7%
19a		-	+		-	1155773	Raoultella ornithinolytic 85.3%
19b		-	+		-	1155773	Raoultella ornithinolytic 85.3%
21		+	+		-	6047104	A. hydrophila/caviae/sobria 2 97.1%
23	no growth						
24		+	-	-	-	2000004	Pseudomonas fluorescens/putida 54 %
27		+	+		-	7267004	A. hydrophila/caviae/sobria 2
28		+	+		-	7267004	A. hydrophila/caviae/sobria 2
36		-	+		-	1155773	Raoultella ornithinolytic 85.3%

COMMENTS: Bacteria identified under the genus Vibrio were not considered acceptable for expected IDs.

BACTERIOLOGY IDENTIFICATION

CHN: 08-37 **COLLECTION DATE** 4/9/2008 **LOCATION** Rio Grande (Site #6)
Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY	GRAM +/-	API CODE	IDENTIFICATION
No bacteria isolated.						

COMMENTS: NO GROWTH

BACTERIOLOGY IDENTIFICATION

CHN: 08-36 **COLLECTION DATE** 4/8/2008 **LOCATION** Rio Grande (Site #4)
Lot# Los Lunas site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
7		-	+	+	+		Gram + NO ID
9		+	-	+	-	0005004	Non Fermenter spp 65.7%
13		+	+	+	-	0005004	Non Fermenter spp 65.7%
14		-	-	+	+		Gram + NO ID
18		-	-	+	-	1155573	Yersinia frederiksenii/intermedia 79.8%
32		+	-	-	-	0004024	Pasteurella pneumotropica/Mannheimia 70.1%
57		+	+	+	-	7047107	A. hydrophila/caviae/sobria 2 50.8%
58		-	-	+	-	1155573	Yersinia frederiksenii/intermedia 79.8%

COMMENTS: Completed 4/25/08 MR

BACTERIOLOGY IDENTIFICATION

CHN: 08-27 **COLLECTION DATE** 1/30/2008 **LOCATION** Rio Grande (Site #1) Bernalillo site

Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1a		-	-	-	+		Gram + No ID
1b		-	-	-	+		Gram + No ID
5a		+	-	-	-	0040004	Grimontia hollisae 83.2%
5b		+	-	-	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
7		+	-	-	-	0040004	Grimontia hollisae 83.2%
10		+	-	-	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
32		+	-	-	-	6047105	A. hydrophila/caviae/sobria 2 97.3%
34		+	-	-	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
38a		-	-	-	-	0001000	Pseudomonas orzyihabitans 40.0%
38b		-	-	-	-	0040000	Grimontia hollisae 57.1%
39a		-	-	-	-	0001000	Pseudomonas orzyihabitans 40.0%
39b		-	-	-	-	0000000	no id
43a		+	-	-	-	0001024	Pasteurella pneumontopica/Mannheimia 67.1%
43b		-	-	-	+		Gram + (no id)
60		+	+	+	-		A. hydrophila/caviae/sobria 2 82.7%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 08-26 **COLLECTION DATE** 1/29/2008 **LOCATION** Rio Grande (Site #2) Alameda site

Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1		-	+	+	-	100300	Pasteurella pneumotropica/Mannheimia haemolytica 37.9%
2		-	-	-	+		Gram positive bacteria
15a		-	-	-	+		Gram positive bacteria
15b		-	-	-	+		Gram positive bacteria
26a		-	+	+	-	0001020	Pasteurella pneumotropica/Mannheimia haemolytica 84.2%
26b		-	-	-	-	0006000	Burkholderia cepacia 41.9%
33		+	+	+	-	6047565	A. hydrophila/caviae/sobria 2 (no %)

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 08-25 **COLLECTION DATE** 1/28/2008 **LOCATION** Rio Grande (Site #3)
Lot# Los Padillas site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
5a	NG						
5b		-	-	-	+		Gram + (No ID)
15		+	+	+	-	0005004	Non fermenter spp 31.8%
19a		+	+	+	-	0004004	Non fermenter spp 31.8%
19b		-	-	-	-	0004000	Non fermenter spp 31.8%
39		-	+	+	-	1155573	Yersinia frederiksenii/intermedia 79.8%

COMMENTS: NG = No Growth

BACTERIOLOGY IDENTIFICATION

CHN: 08-24 **COLLECTION DATE** 1/24/2008 **LOCATION** Rio Grande (Site #4)
Lot# SITE 4 PAGE 1of 2 Los Lunas site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
3		+	+		-	2206004	Chromobacterium violaceum 76.8%
6		+	+		-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
9		-	-	-	-	0005000	Pseudomonas oryzihabitans 50.3%
10a		+	+		-	2202004	Pseudomonas aeruginosa 67.1 %
10b		-	+		-	2003000	Pseudomonas fluorescens/putida 70.3 %
11		+	+		-	6007104	A. hydrophila/caviae/sobria2 90.0%
12a		+	+		-	3044127	Pasteurella pneumotropica 40.7%
12b		-	+		-	1001000	Pasteurella pneumotropica/Mannheimia 49.7%
13a		+	+		-	0000000	Non fermenter spp. 32.1%
13b		-	+		-	0001000	Pseudomonas oryzihabitans 40.0
14a		-	-	-	-	2002000	A. salmonicida/ssp/salmonicida 46.7
14b		+	+		-	2047104	A. hydrophila/caviae/sobria2 70.7%
15		+	+		-	2204044	Pseudomonas fluorescens/putida 76.3%
16		+	+		-	0004004	Non fermenter spp. 31.8%
18A		+	+		-	1047106	A. hydrophila/caviae/sobria2 95.9%
18b		+	+		-	6047167	A. hydrophila/caviae/sobria2 90.2%
18c		+	+		-	1047106	A. hydrophila/caviae/sobria2 95.9%
19		+	+		-	3047104	A. hydrophila/caviae/sobria2 82.0 %
19		+	+		-	2047104	A. hydrophila/caviae/sobria2 70 .7 %
21		+	+		-	2206004	Chromobacterium violaceum 95.9%
22		+	+		-	1047106	Pseudomonas fluorescens/putida 75.2%
23		+	+		-	1047106	A. hydrophila/caviae/sobria2 95.9%
24a		+	+		-	7047144	A. hydrophila/caviae/sobria2 98.2%
24b		+	+		-	7047144	A. hydrophila/caviae/sobria2 98.2%
24c		+	+		-	7047144	A. hydrophila/caviae/sobria2 98.2%
26a		+	+		-	7045127	A. hydrophila/caviae/sobria2 94.7%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 08-24 **COLLECTION DATE** 1/24/2008 **LOCATION** Rio Grande (Site #4)
Lot# Los Lunas site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
26b		+	+		-	7045127	A. hydrophila/caviae/sobria 1 94.7%
28		+	+		-	2047104	A. hydrophila/caviae/sobria 2 70.7%
29		+	+		-	2206044	Chromobacterium violaceum 76.8%
29		+	+		-	2206044	Chromobacterium violaceum 76.8%
30a		+	+		-	2201004	Pseudomonas fluorescens/putida 94.1%
30b		+	+		-	6047124	A. hydrophila/caviae/sobria 2 83.6%
31		-	+		-	5107160	Serratia marcescens 81.5%
32		-	+		-	0003000	Non fermenter spp. 64.5 %
33a		+	+		-	3047104	A. hydrophila/caviae/sobria 2 82.0%
33b		+	+		-	3047106	A. hydrophila/caviae/sobria 1 86.6%
35a		+	-	-	-	0000004	Non fermenter spp. 32.2 %
35b		+	+		-	2001004	Pseudomonas fluorescens/putida 82.2%
36a		+	+		-	2247104	A. hydrophila/caviae/sobria 2 97.2%
36b		+	+		-	2206044	Pseudomonas aeruginosa 69.2%
37		-	-	-	-	5304765	Serratia liquefaciens 75.6%
39		+	-	-	-	7045125	A. hydrophila/caviae/sobria 2 74.90%
40a		+	+		-	0003004	Non fermenter ssp 67.0%
40b		+	-	-	-	1005127	A. hydrophila/caviae/sobria 2 85.8%
40c		+	-	-	-	7045127	A. hydrophila/caviae/sobria 1 94.7%
40d		-	+		-	1003000	Pasteurella pneumotropica/ Mannheimia 37.9%
41 a		+	+		-	3047104	A. hydrophila/caviae/sobria 2 82.0%
41b		+	-	-	-	7045127	A. hydrophila/caviae/sobria 1 94.7%
43		-	+		-	1003000	Pasteurella pneumotropica/ Mannheimia 37.9%
44a		+	+		-	6006006	Pseudomonas aeruginosa 52.4%
44b		-	-	-	-	5307561	Serratia marcescens 95.9%
45		+	+		-	6047547	A. hydrophila/caviae/sobria 2 (no %)
47a		+	-	-	-	7045127	A. hydrophila/caviae/sobria 2 94.7%
47b		+	-	-	-	7045127	A. hydrophila/caviae/sobria 2 94.7%
48a		-	-	-	-	1205573	Rahnella aquatilis 78.4%
48b		+	+		-	1047104	A. hydrophila/caviae/sobria 2 41.8%

COMMENTS

BACTERIOLOGY IDENTIFICATION

CHN: 08-23 **COLLECTION DATE** 1/23/2008 **LOCATION** Rio Grande (Site #5)
Lot# La Joya site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
10		+	-		-	2206044	Pseudomonas aeruginosa 69.2%
11	no growth						
12a					-	3045127	A. hydrophilia/caviae/sobria 99.1%
12b		-	-		-	1001000	Pasteurella pneumotropica/Mannheimia 49.7%
13		+	+		-	2247044	Pseudomonas fluorescens/putida (no %)
16a		-	-		-	0005042	Acinetobacter baumannii/calcoaceticus 99.0%
16b		-	+		-	0005042	Acinetobacter baumannii/calcoaceticus 99.0%
17a		-	+		-	0000000	no id
17b		+	-		-	5104557	Serratia fonticola 73.6%
18a		+	+		-	5104557	Serratia fonticola 73.6%
18b		-	-		-	6067120	A. hydrophilia/caviae/sobria 99.1%
18c		+	+		-	3047106	A. hydrophilia/caviae/sobria 88.6%9.1%
20a		+	-		-	2003000	Pseudomonas fluorescens/putida 70.3
20b		-	-		-	1003000	Pasteurella pneumotropica/Mannheimia 37.9%
21a		+	-		-	2206046	Pseudomonas aeruginosa 76.4%
21b		+	+		-	2206004	Chromobacterium violaceum 76.8%
22		+	-		-	2206004	Chromobacterium violaceum 76.8%
23		+	-		-	2206004	Chromobacterium violaceum 76.8%
25A		+	+		-	2206044	Chromobacterium violaceum 76.8%
25B		+	+		-	2206046	Pseudomonas aeruginosa 76.4%
26		+	+		-	2206046	Pseudomonas aeruginosa 76.4%
28		+	-		-	2206046	Pseudomonas aeruginosa 76.4%
30		+	+		-	7347365	A. hydrophilia/caviae/sobria 2 99.8%
32		+	+		-	2201004	Pseudomonas fluorescens/putida 94.1%
33	slow grower	-	+		-	1005020	Pasteurella pneumotropica/Mannheimia 62.6%
37		+	+		-	220646	Pseudomonas aeruginosa 76.4%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 08-22 **COLLECTION DATE** 1/22/2008 **LOCATION** Rio Grande (Site #6)
Lot# San Antonio site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1		+	+		-	2206044	Pseudomonas aeruginosa 69.2 %
2a		+	+		-	2206004	Chromobacterium violaceum 76.8%
2b		-	+		-	2201000	Pseudomonas luteola 48%
6a		-	+		-	1003000	Pasteurlla pneumotropica/Mannheimia 37.9%
6b		+	+		-	0005004	Pasteurlla pneumotropica/Mannheimia 39.4 %
8a		+	+		-	0004004	Non-fermenter spp 65.7
8b		+	-		-	2201044	Non-fermenter spp 31.8%
12a		+	+		-	0402006	Pseudomonas fluorescens/putida 98.8%
12b		+	+		-	7047523	Shewanella putrefaciens gp. 99.1%
17		-	+		-	1000004	A. hydrophila/caviae/sobria 66.2%
20		+	-		-	2003042	Pasteurella pneumotropica/ Mannheimia haemolytica 46.2%
23		+	-		-	0602004	Pseudomonas fluorescens/putida 62.6%
24		-	-		-	0002000	Pseudomonas luteola 55.4%
25		+	+		-	0602004	Shewanella putrefaciens gp. 99.7%
31		-	-		-	0002000	Stenotrophomonas maltophilia 65.6%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 08-10 **COLLECTION DATE** October 31, 2007
Lot # **Location** Bernalillo (site #1)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
2a		+	-	-	-	0004004	non fermenter spp 31.8%
2b		+	-	-	-	0005004	non fermenter spp 65.7%
8a		+	+	+	-	7047125	A. hydrophila/caviae/sobria 2 89.8%
8b		+	-	-	-	3247104	A. hydrophila/caviae/sobria 2 98.2%
12a		+	-	-	-	2005004	P. fluorescens/putida 79.6%
12b		-	-	-	-	4147141	NO ID
12c		+	-	+	-	7047125	A. hydrophila/caviae/sobria 2 89.8%
13a		-	-	+	-	4301112	Hafnia spp 99.9%
13b		-	-	+	-	4301112	Hafnia alvei 99.9%
15a		+	-	-	-	0400004	Shewanella putrefaciens gp. 89%
15b		+	-	-	-	0004004	non fermenter spp 31.8%
15C		+	-	-	-	0400004	Shewanella putrefaciens gp. 89%
17		+	-	-	-	0000004	non fermenter spp 32.1 %
19A		+	-	+	-	3047106	A. hydrophila/caviae/sobria 2 86.6%
19B		+	+	+	-	3047106	A. hydrophila/caviae/sobria 2 86.6%
21A		+	+	+	-	3047104	A. hydrophila/caviae/sobria 2 82%
21B		+	+	+	-	3047104	A. hydrophila/caviae/sobria 2 82%
26		+	+	+	-	0003004	non fermenter spp. 67.0%
27		+	-	-	-	1005024	Pasteurella pneumoropica/Mannheimia 98.3%
29A		+	+	+	-	7247125	A hydrophila/caviae/sobria 2 99.9%
29B		+	-	+	-	7247125	A hydrophila/caviae/sobria 2 89.8%
30		+	+	+	-	7247125	A hydrophila/caviae/sobria 2 99%
43A		+	+	+	-	3247104	A hydrophila/caviae/sobria 2 98.2%
43B		+	+	+	-	3247104	A hydrophila/caviae/sobria 2 98.2%
11		+	-	-	-	0001000	Bordetella/Alcaligenes/Moraxella spp 43.1%
14		-	-	-	-	0000004	Non fermenter spp 32.1%
33		+	+	+	-	0003000	Non fermenter spp 64.5%
34		+	+	+	-	0030004	Non fermenter spp 67.0 %

Comments:

BACTERIOLOGY IDENTIFICATION

CHN: 08-10 **COLLECTION DATE** October 31, 2007

Lot # **Location** Site # 1 Bernalillo page 2 of 2

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
41a		+	-	-	-	0003004	Non fermenter spp 67%
41b		+	-	-	-	0003004	Non fermenter spp 67%
47		+	-	-	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
54		-	-	-	-	0004000	Shigella spp 81.6%
56		+	-	-	-	0000000	NO ID
57a		+	-	-	-	0010004	Bordetella/Alcaligenes/Moraxella spp 43.1%
57b		+	-	-	-	0010004	Bordetella/Alcaligenes/Moraxella spp 43.1%
57c		-	-	-	-	0010004	Bordetella/Alcaligenes/Moraxella spp 43.1%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 08-09 **COLLECTION DATE** 10/30/2007 **LOCATION** Rio Grande (Site #2)
Lot# _____ Alameda Site

SAMPLE NUMBER	COLONY MORPHOL	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
4	light growth	-	-		+		Gram positive NO ID
5	light growth	-	-	-	-	0000000	NO ID
6A		+	+	+	-	1040064	Pasteurella pneumotropica/Mannheimia 81.2%
6b		+	-	-	-	0004004	Non fermenter spp 31.8%
8A		-	-	-	-	3247000	Pseudomonas luteola 71.4%
8b	light growth	-	+	+	-	0001000	Pseudomonas orzyihabitans 40%
8c		+	+	+	-	3247104	A. hydrophila/caviae/sobria2 98.2%
11		+	+	+	-	7247124	A. hydrophila/caviae/sobria2 98.8%
12A		-	+	+	+		Gram Positive No ID
12b		+	+	+	-	3046127	A. hydrophila/caviae/sobria2 67.0%
12c		+	-	-	-	7247124	A. hydrophila/caviae/sobria2 98.8%
12d		+	-	-	-	0001004	Bordetella/Allcalilgenes/Moraxella spp 43.1%
17a		+	-	-	-	5001004	Pasteurella pneumotropica/Mannheimia 55.5%
17b		+	-	-	-	7000400	Escherichia coli 2 53.6%
18a		+	-	-	-	1000004	Pasteurella pneumotropica/Mannheimia 46.2%
18B		-	-	-	-	1000004	Pasteurella pneumotropica/Mannheimia 31.8%
18C		+	-	-	-	1000004	Pasteurella pneumotropica/Mannheimia 46.2%
32A		+	-	-	-		Non fermenter spp 31.8%
32B		+	-	-	-	0004004	Non fermenter spp 31.8%
36		+	-	-	-	0005004	Non fermenter spp 65.7%
40		+	-	-	-	1047104	A. hydrophila/caviae/sobria2 41.8%
48		+	-	-	-	0000004	Non fermenter spp 32.1%
50A	light growth	+	-	-	-	1000004	Pasteurella pneumotropica/Mannheimia 46.2%
50B	no growth						NO GROWTH
53		+	+	+	-	1247104	A. hydrophila/caviae/sobria2 67.8%
54		+	-	-	-	0003004	Non fermenter spp 67.0%
15		-	-	-	-	0001000	Pseudomonas orzyihabitans 40%
20		+	-	-	-	0010004	Bordetella/Allcalilgenes/Moraxella spp 43.1%
43		-	-	-	-	0001000	Pseudomonas orzyihabitans 40%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 08-08 **COLLECTION DATE** 10/29/2007 **LOCATION** Rio Grande (Site#3) Bernalillo site

Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
7		-	+	+	-	3304553	Enterobacter amnigenus 2 83.3%
9a		-	+	+	-	0000000	No ID
9b		-	+	+	-	0000000	No ID
9c		-	+	+	-	0000000	No ID
13		-	-	-	-	0001000	Pseudomonas oryzihabitans 40%
16		-	-	-	-	0004000	Shigella spp 86.1%
19		+	+	+	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
20a		+	-	+	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
20b		-	+	+	-	0001000	Pseudomonas oryzihabitans 40%
20c		+	-	-	-	0001004	Bordetella/Alcaligenes/Moraxella 43.1%
21		+	+	+	-	3046106	A. hydrophila/caviae/sobria 1 95.4%
25		+	+	+	-	0001004	Bordetella/Alcaligenes/Moraxella 43.1%
28a		+	+	+	-	3046127	A. hydrophila/caviae/sobria 1 67.0%
28b		+	+	+	-	3046127	A. hydrophila/caviae/sobria 1 67.0%
29a		+	-	-	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
29b		+	-	-	-	005004	non-fermenter spp 65.7%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 08-07 **COLLECTION DATE** 10/25/2007 **LOCATION** Rio Grande (Site #4) Los Lunas

Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
21a		+	+	+	-	7257126	A. hydrophila/caviae/sobria2 65.3%
21b		+	+	+	-	7576987	Serratia odorifera 2
57a		+	+	+	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
57b		+	+	+	-	0000004	Non fermenter spp 32.1%

COMMENTS: ID ALL BACTERIA

BACTERIOLOGY IDENTIFICATION

CHN: 08-06 **COLLECTION DATE** 10/24/2007 **LOCATION** Rio Grande (Site #5)
Lot# La Joya

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
13		+	+		-	7047524	A. hydrophilia/caviae/sobria 2 96.5%
20		-	-	-	-	1005702	Serratia plymuthica 35.4%

COMMENTS: ID ALL BACTERIA

BACTERIOLOGY IDENTIFICATION

CHN: 08-05 **COLLECTION DATE** 10/23/2007 **LOCATION** Rio Grande (Site #6)
Lot# San Antonio Site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
2a		-	+		-	1003000	Pasteurella pneumotropica/Mannheimia/haemolytica 37.9%
2b		-	+		-	1003000	Pasteurella pneumotropica/Mannheimia/haemolytica 37.9%
5		+	+		-	7046123	Aermonas hydrophila/caviad/sobria 1 98.4 %

COMMENTS: ID ALL BACTERIA

BACTERIOLOGY IDENTIFICATION

CHN: 07-36 **COLLECTION DATE** 4/26/2007 **LOCATION** Rio Grande (Site #1) Bernalillo site

Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
7		+	+	+	-	0004000	Shigella spp 81.6%
9		+	+	+	-	3047104	A. hydrophila/caviae/sobria 2 82%
10		-	-	-	-	3047104	A. hydrophila/caviae/sobria 2 82%
14		+	+	+	-	3047104	A. hydrophila/caviae/sobria 2 82%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 07-35 **COLLECTION DATE** 4/24/2007 **LOCATION** Rio Grande (Site #2) Alameda site

Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
9a		-	-	-	-	1155773	Raoultella ornithinolytica 85.3%
9b		-	-	-	-	1003000	Pasteurella pneumotropica/Mannheimia haemolytica 37.9%
15a		-	-	-	-	1155773	Raoultella ornithinolytica 85.3%
15b		+	+	+	-	6047105	A. hydrophila/caviae/sobria 2 97.3%
29		+	+	+	-	6047105	A. hydrophila/caviae/sobria 2 97.3%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 07-34 **COLLECTION DATE** 4/24/2007 **LOCATION** Rio Grande (Site #3)
Lot# _____ Los Padilles

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
4		+	+	+	-	4147544	Vibrio alginolyticus 10%
13		+	+	+	-	4146544	Vibrio parahaemolyticus

COMMENTS: Bacteria above identified as Vibrio are likely not Vibrio sp.

BACTERIOLOGY IDENTIFICATION

CHN: 07-33 **COLLECTION DATE** 4/19/2007 **LOCATION** Rio Grande (Site #4)
Lot# Los Lunas site

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
4		+	+		-	3047125	A. hydrophila/caviae/sobria 1 98.4%
7		+	+		-	5147164	Doubtful ID
13		+	+		-	7047127	A. hydrophila/caviae/sobria 1 85.9%
14		+	+		-	6047125	A. hydrophila/caviae/sobria 1 85.3%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 07-32 **COLLECTION DATE** 4/18/2007 **LOCATION** Rio Grande (Site #5)
Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1		+	-	+	-	7047525	A. hydrophila/caviae/sobria 2 96.5%
9		+	-	+	-	7247105	A. hydrophila/caviae/sobria 2 98.8%
11		+	+	+	-	3047125	A. hydrophila/caviae/sobria 1 98.4%
15a		-	-	-	-	0203000	Pseudomonas oryzihabitans 64.1%
15b		+	+	+	-	7007127	A. hydrophila/caviae/sobria 1 85.9%
16		+	-	-	-	0203004	Non fermenter spp 43.6%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 07-21 **COLLECTION DATE** 2/1/2007 **LOCATION** Los Lunas
Lot# Site #4

SAMPLE NUMBER	COLONY	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
11		+	+		-	0203004	Non-fermenter spp 43.6%
16		-	-	-	-	1355773	Raoultella ornithinolytica 98.9%
38a		+	-	-	-	0403004	Shewanella putrefaciens gp 73.7%
38b		+	-	-	-	0502004	Shewanella putrefaciens 99.9%
39		+	+		-	0502004	Shewanella putrefaciens 99.9%
41		+	-	+	-	0502004	Shewanella putrefaciens 99.9%
42		+	-	+	-	0502004	Shewanella putrefaciens 99.9%
43		+	+		-	0502004	Shewanella putrefaciens 99.9%
46		+	-	+	-	0502004	Shewanella putrefaciens 99.9%
47		+	-	+	-	0502004	Shewanella putrefaciens 99.9%
51a		+	+		-	0503006	Shewanella putrefaciens gp 99.9%
51b		+	-	+	-	0502004	Shewanella putrefaciens gp 99.9%
52		+	-	+	-	0506004	Shewanella putrefaciens gp 99.8%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 07-20 **COLLECTION DATE** 1/31/2007 **LOCATION** La Joya
Lot# site # 5

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
8		-	+		-	1155673	Raoultella ornithinolytica 98.9%
9		-	-	+	-	1155573	Yersinia frederiksenii/intermedia 79.8%
14			-	-	-	0001000	Pseudomonas oryzihabitians 40%
15		-	+		-	1155573	Yersinia frederiksenii/intermedia 79.8%
16		-	+		-	1155573	Yersinia frederiksenii/intermedia 79.8%
17		-	+		-	1155573	Yersinia frederiksenii/intermedia 79.8%
20a		-	+		-	1155573	Yersinia frederiksenii/intermedia 79.8%
21		-	-	-	-	1155573	Yersinia frederiksenii/intermedia 79.8%
22a		-	-	+	-	1155573	Yersinia frederiksenii/intermedia 79.8%
22b		-	-	-	-	1155573	Yersinia frederiksenii/intermedia 79.8%
23		-	-	-	-	1155573	Yersinia frederiksenii/intermedia 79.8%
29a		-	-	-	-	3046123	Aeromonas hydrophilia/caviae/ 67%
29b		-	-	-	-	1155573	Yersinia frederiksenii/intermedia 79.8%
25a		+	+		-	1155777	Raoultella ornithinolytica 98.9%
25b		-	-	-	-	1175773	Raoultella ornithinolytica 98.9%
26		-	-	-	-	1155573	Yersinia frederiksenii/intermedia 79.8%
27a		-	-	+	-	1155773	Raoultella ornithinolytica 98.9%
27b		+	-	-	-	7047025	Aeromonas hydrophilia/cabiae/ 89.9%
28		-	-	-	-	1155573	Yersinia frederiksenii/intermedia 79.8%
34		+	-	-	-	1155577	Yersinia frederiksenii/intermedia
38a		+	+		-	7047124	Aeromonas hydrophilia/caviae/ 89.9%
38b		+	-	-	-	7047124	Aeromonas hydrophilia/caviae/ 89.6%
40		+	+		-	4347124	Vibrio alginolyticus
46a		+	+		-	7247777	Raoultella ornithinolytica 98.9%
46b		-	+		-	1355773	Raoultella ornithinolytica 98.9%
49		+	-	-	-	0041004	Grimontia hollisae 45.3%
53		-	-	-	-	1355773	Raoultella ornithinolytica 98.9%
56		-	-	-	-	1355773	Raoultella ornithinolytica 98.9%
57a		-	-	-	-	1155573	Yersinia frederiksenii/intermedia 79.8%
57b		-	+		-	1175776	Raoultella ornithinolytica
59a		-	-	-	-	1357776	Serratia odorifera 1 67.4%
59b		-	+		-	3357773	Enterobacter sakazakii 99.6%
60a		+	+		-	7047137	Aeromonas hydrophila/caviae 96.7%
60b		-	-	-	-	1155573	Yersinia frederiksenii/intermedia 79.8%

COMMENTS: 07-20

BACTERIOLOGY IDENTIFICATION

CHN: 07-19 **COLLECTION DATE** 1/30/2007 **LOCATION** San Antonio - site 6

Lot# _____

SAMPLE NUMBER	COLONY MORPHO	C/O	MOTILITY		GRAM +/-	API CODE	IDENTIFICATION
1		-	+		-	1355573	Raoultella ornithinolytica 94.4%
18		+	+		-	0402004	Shewanella putrefaciens gp. 99.0%
20a		+	+		-	7157537	Aermonas hydrophila/caviae/sobria
20b		+	+		-	0402004	Shewanella putrefaciens gp 99.0%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 07-18 **COLLECTION DATE** 1/24/2007 **LOCATION** Rio Grande (Site #2)
Alameda Site

SAMPLE NUMBER	COLONY MORPH	C/O	MOTILITY	GRAM +/-	API CODE	IDENTIFICATION
11		-	+	-	1155573	*Yersinia frederiksenii/intermedia 79.8%*
12		-	+	-	1155573	*Yersinia frederiksenii/intermedia 79.8%*
13a		-	+	-	1155573	*Yersinia frederiksenii/intermedia 79.8%*
13b		-	+	-	1155577	*Yersinia frederiksenii/intermedia*
16		-	+	-	0005000	*Pseudomonas oryzihabitans 50.3%*

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 07-17 **COLLECTION DATE** 1/23/2007 **LOCATION** Rio Grande (Site #3)
Los Padillas site

SAMPLE NUMBER	COLONY MORPH	C/O	MOTILITY	GRAM +/-	API CODE	IDENTIFICATION
1		-	+	-	1555373	*Enterobacter gergoviae 82.1%*
3		+	+	-	3247104	Aeromonas hydrophila/caviae/sobria 92.8%
4a		+	+	-	0203004	API could not ID
4b		+	+	-	0203004	API could not ID
8		-	+	-	1055573	Klebsiella oxytoca 84.2%
12		+	+	-	0503006	Shewanella putrefaciens group 99.8%
13		+	+	-	7267124	Aeromonas hydrophila/sobria 2 98.8%
14		+	+	-	2247104	Aeromonas hydrophila/sobria 2 97.2%
19		-	+	-	10555735	Klebsiella oxytoca 84.2%
23		+	+	-	0001004	Bordetella/Alcaligenes/Moraxella spp 43.1%
29		+	+	-	2206044	Pseudomonas aeruginosa 69.2%
33		+	+	-	0005024	Pasteuerella pneumotropica 90.7%
27		-	+	-	1355573	Raoultella ornithinolytica 94.4%

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 07-05 **COLLECTION DATE** October 18, 2006 **LOCATION** La Joya - Site #5

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
48		-		+			Gram positive bacteria
24		-	-	-	0001000		40.0% Pseudomonas oryzihabitans
47		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
44a		-	-	-	0001000		40.0% Pseudomonas oryzihabitans
44b		-	-	-	0001000		40.0% Pseudomonas oryzihabitans
43		-	+	-	5305112		99.9% Hafnia alvei 1
27		+	+	-	5305116		99.9% Hafnia alvei 1
33		+		+			Gram positive bacteria
28		-	-	-	0001000		40.0% Pseudomonas oryzihabitans
10a		-	+	-	7647120		Unacceptable profile
10b		-	+	-	0001000		40.0% Pseudomonas oryzihabitans
34		-		+			Gram positive bacteria
20		+	+	-	7007127		85.9% Aeromonas hydrophila/caviae/sobria 1
5		-	-	-	0001000		40.0% Pseudomonas oryzihabitans
30a		+	+	-	3004024		96.8% Vibrio fluvialis
30b		+	+	-	3046167		95.6% Aeromonas hydrophila/caviae/sobria 1
31		-	-	-	0001000		40.0% Pseudomonas oryzihabitans
46a		+	+	-	7247145		99.8% Aeromonas hydrophila/caviae/sobria 2
46b		+	+	-	7247145		99.8% Aeromonas hydrophila/caviae/sobria 2
45		+	-	-	0703026		Unacceptable profile
40		-	+	-	1003000		37.9% Pasteurella pneumotropica/Mannheimia haemolytica
55		+	+	-	2206044		69.2% Pseudomonas aeruginosa
35		-	+	-	0001000		40.0% Pseudomonas oryzihabitans
4		+	-	-	0001004		43.1% Bordetella/Alcaligenes/Moraxella spp
42		+	-	-	0001004		43.1% Bordetella/Alcaligenes/Moraxella spp
23		-	-	-	0001000		40.0% Pseudomonas oryzihabitans
1		-	+	-	1005133		99.3% Pantoea spp 3
41		-	+	-	1004022		84.6% Pantoea spp 1

COMMENTS: Plated 10/20/06, picked 10/23/06, CO 10/24/06, motility 10/31/06.

BACTERIOLOGY IDENTIFICATION

CHN: 07-04 **COLLECTION DATE** October 17, 2006 **LOCATION** Los Padillas - Site #3

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
22		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
23		+	-	+			Gram positive bacteria
20		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
21		+	+	-	3046127		67.0% Aeromonas hydrophila/caviae/sobria 1
17		+	+	-	7047527		66.2% Aeromonas hydrophila/caviae/sobria 1
19		-	-	+			Gram positive bacteria
33		+	+	-	7047124		89.6% Aeromonas hydrophila/caviae/sobria 2
15		+	+	-	0702024		99.9% Shewanella putrefaciens grp
16		-	-	+			Gram positive bacteria
18		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
29		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
31		+	+	-	3047127		98.4% Aeromonas hydrophila/caviae/sobria 1
32		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
25		+	+	-	7047124		89.6% Aeromonas hydrophila/caviae/sobria 2
26		+	+	-	3047106		86.6% Aeromonas hydrophila/caviae/sobria 1
28		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
24	too light to id						Too lite to ID
12		+	+	-	3045527		98.3% Aeromonas hydrophila/caviae/sobria 1
13		+	+	-	7047124		89.6% Aeromonas hydrophila/caviae/sobria 2
14		-	-	-	0001000		40% Pseudomonas oryzihabitans
6		+	+	-	7247125		99.0% Aeromonas hydrophila/caviae/sobria 2
7		+	+	-	3047137		99.7% Aeromonas hydrophila/caviae/sobria 1
8		+	+	-	7047127		85.9% Aeromonas hydrophila/caviae/sobria 1
9		+	+	-	7246125		89.8% Aeromonas hydrophila/caviae/sobria 2
10		-	+	-	1005533		87.9% Rahnella aquatilis
11		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
1		+	+	-	0402004		99.0% Shewanella putrefaciens grp
2		+	+	-	7047127		85.9% Aeromonas hydrophila/caviae/sobria 1
3		+	+	-	7247127		65.3% Aeromonas hydrophila/caviae/sobria 2
4		+	+	-	0402004		99.0% Shewanella putrefaciens grp

COMMENTS: plated 10/20/06, picked 10/23/06

BACTERIOLOGY IDENTIFICATION

CHN: 07-03 **COLLECTION DATE** October 16, 2006 **LOCATION** Los Lunas Site #4

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
23		+	+	-	7202042		99.9% Pseudomonas luteola
59		+	+	-	3047127		98.4% Aeromonas/hydrophila/caviae/sobria 2
21		+	+	-	5347125		99.3% Vibrio cholerae
56		+	-	-	1042004		99.2% Chryseobacterium meningosepticum
7a		+	+	-	0201004		59.8% Bordetella/Alcaligenes/Moraxella spp
7b		+	+	-	0201004		59.8% Bordetella/Alcaligenes/Moraxella spp
46a		+	+	-	7047125		89.8% Aeromonas/hydrophila/caviae/sobria 2
46b		+	+	-	7047125		89.8% Aeromonas/hydrophila/caviae/sobria 2
1		-	-	-	0001000		40% Pseudomonas oryzihabitans
27		+	+	-	7247124		98.8% Aeromonas/hydrophila/caviae/sobria 2
45		+	+	-	0001004		43.1% Bordetella/Alcaligenes/Moraxella spp
16		+	+	-	3047127		98.4% Aeromonas/hydrophila/caviae/sobria 1
55		+	+	-	3047504		93.7% Aeromonas/hydrophila/caviae/sobria 2
43	light growth	-	-	+			Gram positive bacteria
8		+	+	-	7047527		66.2% Aeromonas/hydrophila/caviae/sobria 1
34a		+	+	-	2202004		67.1% Pseudomonas aeruginosa
34b		+	+	-	2206004		76.8% Chromobacterium violaceum
57		-	-	+			Gram positive bacteria
41		-	-	-	0003000		64.5% Non-fermenter spp
44		+	+	-	7047527		66.2% Aeromonas/hydrophila/caviae/sobria 1
37		+	+	-	7447527		Unacceptable profile
18		+	+	-	7047127		85.9% Aeromonas/hydrophila/caviae/sobria 1
15		-	-	-	2005042		86.8% Pseudomonas luteola
11	light growth	+	-	+			Gram positive bacteria
33	light growth	-	-	+			Gram positive bacteria
32		-	-	-	0005020		87.3% Pasteurella pneumotropica/Mannheimia haemolytica
19		+	+	-	7247124		98.8% Aeromonas/hydrophila/caviae/sobria 2
31		+	-	-	1001004		60.5% Ochrobactrum anthropi
54	light growth	+	-	-	1044044		94.3% Pasteurella pneumotropica/Mannheimia haemolytica
43	light growth	-	-	+			Gram positive bacteria

COMMENTS: Plated 10/20/06, picked 10/23/06

BACTERIOLOGY IDENTIFICATION

CHN: 07-03 **COLLECTION DATE** October 16, 2006 **LOCATION** Los Lunas Site #4

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
10		+	+	-	0502004		99.9% Shewanella putrefaciens group
20		-	-	-	0001004		43.1% Bordetella/Alcaligenes/Moraxella spp
17		+	+	-	2206044		69.2% Pseudomonas aeruginosa
36		+	+	-	3047127		98.4% Aeromonas hydrophila/caviae/sobria 1
13a		-	+	+			Gram positive bacteria
13b	light growth	-	-	+			Gram positive bacteria
49	light growth	+	+	+			Gram positive bacteria
3		+	+	-	050204		99.9% Shewanella putrefaciens group

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 07-02 **COLLECTION DATE** October 12, 2006 **LOCATION** MRG- Alameda (Site#2)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
8A		+	+	-	3247104		98.2% Aeromonas hydrophila/caviae/sobria 2
8B		+	+	-	7247125		99.0% Aeromonas hydrophila/caviae/sobria 2
10		+	+	-	7247125		99.0% Aeromonas hydrophila/caviae/sobria 2
11		+	+	-	7247525		99.6% Aeromonas hydrophila/caviae/sobria 2
13		-	-	-	1105153		69.2% Enterobacter amnigenus 1
24A		+	-	-	0005014		76.7% Non-fermenter spp
24B	No growth						No growth
25		-		+			Gram positive bacteria
29A		+	+	-	7207124		99.0% Aeromonas hydrophila/caviae/sobria 2
29B		+	+	-	0005004		65.7% Non-fermenter spp
30A		+	+	-	7207124		99.0% Aeromonas hydrophila/caviae/sobria 2
30B		+	+	-	7207125		99.0% Aeromonas hydrophila/caviae/sobria 2
31		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
36		-		+			Gram positive bacteria
38		-		+			Gram positive bacteria
40		+	+	-	0005004		65.7% Non-fermenter spp
49		+	+	-	0005004		65.7% Non-fermenter spp
50		+	+	-	0005004		65.7% Non-fermenter spp
54		+	+	-	3047106		86.6% Aeromonas hydrophila/caviae/sobria 1

COMMENTS: Rio Grande silvery minnow. CO, & KOH test on 10-19-6 from 24hr old growth.

BACTERIOLOGY IDENTIFICATION

CHN: 07-01 **COLLECTION DATE** October 11, 2006 **LOCATION** MRG- Bernalillo (Site#1)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
1		+		+			Gram positive bacteria
2		-	+	-	1004022		84.6% Pantoea spp 1
4A		+	+	-	0005004		65.7% Non-fermenter spp
4B		-	-	-	1004022		84.6% Pantoea spp 1
14		+	+	-	3047304		97.7% Aeromonas hydrophila/caviae/sobria 2
15A		+	+	-	3047304		97.7% Aeromonas hydrophila/caviae/sobria 2
15B		-	-	-	1004022		84.6% Pantoea spp 1
21		+	-	-	0002004		34.1% Myroides spp/Chryseobacterium indologenes (24.5% Aeromonas salmonicida ssp salmonicida) ***
23		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
26		+	-	-	0004004_4		31.8% Non-fermenter spp (19.4% A. sal.) ***
29		+	+	-	0005004		65.7% Non-fermenter spp
30		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
35		+	+	-	0502004		99.9% Shewanella putrefaciens grp
37		-	-	-	1004022		84.6% Pantoea spp 1
43		+	-	-	004004_4		31.8% Non-fermenter spp (19.4% A. sal.) ***
44		+	+	-	0005004		65.7% Non-fermenter spp
49		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
51		+	+	-	7247124		98.8% Aeromonas hydrophila/caviae/sobria 2
58		-	-	-	1004022		84.6% Pantoea spp 1
60		-	-	-	1004022		84.6% Pantoea spp 1

COMMENTS: Rio Grande silvery minnow. CO, & KOH test on 10-19-6 from 24hr old growth. TSB on 10/26/06. ***API suggested small possibility that bacteria may be Aeromonas salmonicida ssp salmonicida, but further testing ruled out possibility.

BACTERIOLOGY IDENTIFICATION

CHN: 06-36 **COLLECTION DATE** July 28, 2006 **LOCATION** Bernalillo - Site #1

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
1		+	-	-			Too light to identify
2a		-	+	+			Nontarget Pathogen
2b		+	-	-			Too light to identify
2c		-	-	-	0021000/ 0001000		45.2% Ochrobactrum anthropi or 40.0% Pseudomonas oryzihabitans
3a		+	+	-	2225004/ 2205004		90.7% Pseudomonas fluorescens
3b		+	+	-	7247125		99.0% Aeromonas hydrophila grp 2
5		+	-	-	0021004/ 0001004		61.6% Bordetella
7		+	-	-			Too light to identify
9		+	+	-	0021004/ 0001004		61.6% Bordetella
10		-	-	-	2226000		59.5% Chromobacterium violaceum
11a		+	+	-	7067125		89.8% Aeromonas hydrophila grp 2
11b		+	+	-	7067124		89.6% Aeromonas hydrophila grp 2
12			-	-			Too light to identify
15		+	+	-			Too light to identify
16		-	+	-	3321573		97.5% Enterobacter cloacae
17		+	-	-			Too light to identify
20		+	-	-	0021004/ 0001004		61.6% Bordetella
22		+	-	-	1002004		87.5% Chryseobacterium meningosepticum
24		-	-	-	0021000/ 0001000		45.2% Ochrobactrum anthropi or 40.0% Pseudomonas oryzihabitans
25		-	-	+			Nontarget Pathogen
28		-	-	-	1202000		96.7% Stenotrophomonas maltophilia
29		+	+	+			Nontarget Pathogen
30		+	+	-	0011004		48.3% Ochrobactrum anthropi
31		-	+	-	0022000/ 1002000		92.2% Stenotrophomonas maltophilia
32		-	+	-	3305573		95.1% Enterobacter cloacae
33		+	+	+			Nontarget Pathogen
34		-	-	+			Nontarget Pathogen
35		+	+	-			Too light to identify
39a		+	+	-			Too light to identify
39b		+	+	+			Nontarget Pathogen

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-36 **COLLECTION DATE** July 28, 2006 **LOCATION** Bernalillo - Site #1

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
40		+	+	-	0000004		32.1% Non-fermenter spp
41		+	+	-			Too light to identify
42		+	+	+			Nontarget Pathogen
44		-	+	+			Nontarget Pathogen
45		+	+	-			Too light to identify
46		+	+	-			Too light to identify
47		+	-	-	3305577		95.1% Enterobacter cloacae
48		+	-	-			Too light to identify
49		+	+	+			Nontarget Pathogen
50		+	-	+			Nontarget Pathogen
51		+	-	-			Too light to identify
52a		+	-	-			Too light to identify
52b		+	-	-			Too light to identify
53a		+	+	-			Too light to identify
53b			-	-			Too light to identify
55		-	+	+			Nontarget Pathogen
56		+	+	-			Too light to identify
58a		+	+	-			Too light to identify
58b		+	-	-			Too light to identify
60a		+	+	+			Nontarget Pathogen
60b		+	+	-			Too light to identify
21		-	-	+			Nontarget Pathogen
27		-	-	-	1001000		49.7% Pasteurella pneumotropica

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-35 **COLLECTION DATE** July 28, 2006 **LOCATION** Rio Grande (Alameda - Site #2)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
2a		+	+	-	7267124		98.8% Aeromonas hydrophila grp 2
2b		+	+	-			Too light to identify
3a		+	+	-	0013004		86.7% Myroides spp/Chryseobacterium indologenes
3b		+	+	-	7246124		89.3% Aeromonas hydrophila grp 2
4a		+	-	-	6220044		Unacceptable profile
4b		+	+	+			Nontarget pathogen
6		-	+	-	7125200		Unacceptable profile
11a		+	+	+			Nontarget pathogen
11b		+	+	-			Too light to identify
12a		+	+	-	7067124		89.6% Aeromonas hydrophila grp 2
12b		+	+	-	0044156		51.2% Shigella spp
17		-	-	-	0004000		81.6% Shigella spp
18		-	+	+			Nontarget pathogen
20		+	+	-	7067127		85.9% Aeromonas hydrophila grp 1
21		+	+	-	3067167		Unacceptable profile
23a		+	+	-	1003004		39.4% Pasterurella pneumotropica
23b		+	+	-	7067104		98.1% Aeromonas hydrophila grp 2
26		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
27		+	+	-	3067127		98.4% Aeromonas hydrophila grp 1
28		+	+	-			Too light to identify
29a		+	+	+			Nontarget pathogen
29b		+	+	-	7007127		85.9% Aeromonas hydrophila grp 1
30a		+	+	-	2221044		98.8% Pseudomonas fluorescens/putida
30b		+	+	-	2221044		98.8% Pseudomonas fluorescens/putida
32a		+	+	-	7267125		99.0% Aeromonas hydrophila grp 2
33		+	+	+			Nontarget pathogen
35a		+	+	-			Too light to identify
35b		+	+	-	1001004		60.5% Ochrobactrum anthropi
36		+	+	-	3066127		67.0% Aeromonas hydrophila grp 1
37		+	+	-	2066577		Unacceptable profile

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-35 **COLLECTION DATE** July 28, 2006 **LOCATION** Rio Grande (Alameda - Site #2)

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
38		+	+	-			Slow grower, could not identify
39a		+	+	+			Nontarget pathogen
39b		-	-	-			Too light to identify
40a		+	+	-			Fungal Contamination
40b		+	+	+			Nontarget pathogen
41a		+	+	-	1166327		Unacceptable profile
41b		+	+	-	3046127		67.0% Aeromonas hydrophila grp 1
42		+	+	-			Too light to identify
43a		+	+	-	3066054		Unacceptable profile
43b		+	+	-	3321117		Unacceptable profile
44		-	+	+			Nontarget pathogen
45a		+	+	-	7066127		98.4% Aeromonas hydrophila grp 1
45b		+	+	-	3046127		67.0% Aeromonas hydrophila grp 1
46		+	+	+			Nontarget pathogen
47a		+	+	+			Nontarget pathogen
47b		+	+	-			Nothing recovered
48a		+	+	-			Too light to identify
48b		+	+	-	1204153		63.0% Buttiauxella agrestis
49a		+	+	-	7267124		98.8% Aeromonas hydrophila grp 2
49b		+	+	-			Slow grower, could not identify
50a		-	+	+			Nontarget pathogen
50b		+	+	+			Nontarget pathogen
52		+	+	-	7066127		98.4% Aeromonas hydrophila grp 1
57a		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
57b		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
58a		+	+	-	7247125		99.0% Aeromonas hydrophila grp 2
58b		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
58c		+	+	-	0000004		32.1% Non-fermenter spp
59		+	+	-	7067127		85.9% Aeromonas hydrophila grp 1
53a		+	+	+			Nontarget pathogen

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-35 **COLLECTION DATE** July 28, 2006 **LOCATION** Rio Grande - Site #2
Alameda site

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
53b		+	+	-			Too light to identify
54a		+	+	-	1704557		99.9% Citrobacter braakii
54b		-	+	+			Nontarget Pathogen
55a		+	+	-			Too light to identify
55b		+	+	-			Too light to identify
56		+	+	-			Too light to identify
1		-	+	+			Nontarget Pathogen

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-34 **COLLECTION DATE** July 28, 2006 **LOCATION** Los Padillas - Site #3

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
2		+	+	+			Nontarget Pathogen
3a		+	+	+			Nontarget Pathogen
3b		+	+	-	3046127		67.0% Aeromonas hydrophila grp 1
11a		+	+	-	7267124		98.8% Aeromonas hydrophila grp 2
11b		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
12a		-	+	-	1204552		58.7% Citrobacter freundii
12b		-	+	+			Nontarget Pathogen
13a		+	+	-			Too light to identify
13b		-	+	-	7144200		99.9% Plesiomonas shigelloides
13c		+	+	-	7144204		99.9% Plesiomonas shigelloides

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-28 **COLLECTION DATE** July 21, 2006 **LOCATION** Los Lunas - Site #4

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
1a		+	+	-			Too light to identify
1b		-	+	-			Too light to identify
3a		-	-	-	2023000		Pseudomonas fluorescens/putida
3b		-	-	-	2023000/ 2003000		70.3% Pseudomonas fluorescens
3c		+	+	-			Too light to identify
5a		-	+	+			Nontarget Pathogen
6a		+	+	-			Too light to identify
6b		-	+	-	1023000/ 1003000		37.9% Pasteurella pheumotropica
6c		+	+	-			Too light to identify
7a		+	+	-			Too light to identify
7b		-	+	-			Too light to identify
7c		-	-	-	0020000		49.9% Ochrobactrum anthropi
7d		+	+	-	2201004		94.1% Pseudomonas fluorescens
8a		+	+	-			Too light to identify
9a		+	+	-			Too light to identify
9b		-	+	-	0023000/ 0003000		Bordetella/Alcaligenes/Moraxella spp or Non-fermenter spp
9c		-	+	-			Too light to identify
9d		+	+	-	2270044		Pseudomonas aeruginosa
10a		-	+	+			Nontarget Pathogen
10b		+	+	-			Too light to identify
11a		+	+	-			Too light to identify
11b		+	+	+			Nontarget Pathogen
12a		+	+	-			Too light to identify
12b		+	+	-	1020004/ 1000004		85.9% Ochrobactrum anthropi or 46.2% Pasteurella pneumotropica
13a		-	+	-			Too light to identify
15a		+	+	-			Too light to identify
15b		+	+	-			Too light to identify
17a		+	+	+			Nontarget Pathogen

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-28 **COLLECTION DATE** page 2 **LOCATION** Los Lunas - Site #4

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
18a		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
18b		+	+	-			Too light to identify
18c		+	+	-			Too light to identify
19a		+	+	-	7047137		96.7% Aeromonas hydrophila grp 1
19b		+	+	-			Too light to identify
21a		+	+	-			Too light to identify
21b		+	+	-			Too light to identify
23a		+	+	-			Too light to identify
23b		+	+	-			Too light to identify
24a		+	+	-			Too light to identify
24b		+	+	+			Nontarget Pathogen
25a		+	+	-			Too light to identify
25b		+	+	-			Too light to identify
25c		+	+	-			Too light to identify
26a		+	+	-			Too light to identify
26b		+	+	-			No growth
27a		+	-	-			No growth
27b		+	+	-	7067127		85.9% Aeromonas hydrophila grp 1
28a		+	+	-			Too light to identify
28b		+	+	-			Too light to identify
29a		+	-	+			Nontarget Pathogen
29b		+	+	-			Too light to identify
29c		+	+	-			Too light to identify
29d		+	+	-			Too light to identify
29e				+			Nontarget Pathogen
29f		+	+	-			Too light to identify
30a			+	-			Too light to identify

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-28 **COLLECTION DATE** page 3 **LOCATION** Los Lunas - Site #4

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
31a		+	+	-	7047127		85.9% *Aeromonas hydrophila* grp 1
32a		+	+	-			Too light to identify
33a		+	+	-			No growth
34a		+	+	-			Too light to identify
34b		+	+	-			No growth
35a		+	+	-			Too light to identify
36a		+	+	-			Too light to identify
36b		+	+	-			Too light to identify
37a		+	+	-			Too light to identify
37b		+	+	+			Nontarget Pathogen
39a		+	+	-			Too light to identify
39b		+	+	-			Too light to identify
40a		+	+	-			Too light to identify
41a		+	+	-			No growth
42a		+	+	-			No growth
42b		+	+	-			Too light to identify
43a		+	+	-			Too light to identify
44a		+	+	-			Too light to identify
47a		+	+	-			Slow grower, unable to ID
48a		+	+	-			Slow grower, unable to ID
49a		+	+	-			No growth
50a		+	+	-			No growth
50b		+	+	-			No growth
51a		+	+	+			Nontarget Pathogen
52a		+	+	-			Too light to identify
53a		+	+	-			Too light to identify
54a		+	+	-			Too light to identify
56a		+	+	-			Too light to identify
56b		+	+	-			Too light to identify
58a		+	+	-			Too light to identify

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-28 **COLLECTION DATE** page 4 **LOCATION** Los Lunas - Site #4

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
58b		+	+	-	3047127		98.4% Aeromonas hydrophila grp 1
45		+	+	-			Too light to identify
46		+	+	-			Too light to identify
55		+	+	-			Too light to identify
59		+	+	-			Too light to identify
60		+	+	-			Too light to identify

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-27 **COLLECTION DATE** July 21, 2006 **LOCATION** La Joya - Site #5

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
1a		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
1b		+	+	-	7207124		99.0% Aeromonas hydrophila grp 2
3		-	+	-	5005041		Unacceptable Profile
7a		+	+	-	3046127		67.0% Aeromonas hydrophila grp 1
7b		+	+	-	3047126		97.8% Aeromonas hydrophila grp 1
8a		+	+	-	7046123		98.4% Aeromonas hydrophila grp 1
8b		+	+	-	7046126		97.8% Aeromonas hydrophila grp 1
11		+	+	-	7047124		89.6% Aeromonas hydrophila grp 1
13		+	-	-	000300		64.5% Non-fermenter spp
14		-	+	+			Nontarget Pathogen
15		+	+	-	7247125		99.0% Aeromonas hydrophila grp 2
17		+	+	-	7047527		66.2% Aeromonas hydrophila grp 1
18a		-	+	-	1605572		95.0% Citrobacter freundii
18b		+	+	-	7247125		99.0% Aeromonas hydrophila grp 2
19a		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
19b		-	+	-	7144200		99.9% Plesiomonas shigelloides
20		-	+	-	7047121		89.8% Aeromonas hydrophila grp 2
21		+	+	-	6047124		83.6% Aeromonas hydrophila grp 2
23		+	+	-	7047127		85.9% Aeromonas hydrophila grp 1
24a		+	+	-	7247125		99.0% Aeromonas hydrophila grp 2
24b		too light	too light	+			Nontarget Pathogen
25		+	+	-	7247125		99.0% Aeromonas hydrophila grp 2
26		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
27a		+	+	-	7047124		89.6% Aeromonas hydrophila grp 2
27b		+	+	-	7047525		96.5% Aeromonas hydrophila grp 2
29		+	+	-	7047103		50.8% Aeromonas hydrophila grp 2
31		+	+	-	0001000		40.0% Flavimonas oryzihabitans
32a		-	-	-	0005042		99.0% Acinetobacter baumannii
32b		-	+	-	7047123		85.9% Aeromonas hydrophila grp 1
33a		-	+	-	0000000		Unidentified

COMMENTS: Plated 7/25/06

BACTERIOLOGY IDENTIFICATION

CHN: 06-27 **COLLECTION DATE** July 21, 2006 **LOCATION**

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
33b		+	+	-	3047127		98.4% Aeromonas hydrophila grp 1
34		+	-	+			Nontarget Pathogen
35a		-	+	-	0001000		40.0% Flavimonas orzyihabitans
35b		+	+	-	7047124		89.6% Aeromonas hydrophila grp 2
36a		+	+	+			Nontarget Pathogen
36b		+	+	-	3047123		98.4% Aeromonas hydrophila grp 1
37a		+	+	-	7047164		89.8% Aeromonas hydrophila grp 2
37b		+	+	-	7047164		89.8% Aeromonas hydrophila grp 2
40a		+	-	-	0001000		40.0% Flavimonas orzyihabitans
40b		-	+	-	0001000, 0021000		45.2% Ochrobactrum anthropi
41		+	+	-	7067127		85.9% Aeromonas hydrophila grp 1
43		too light	too light	-			Too light, couldn't ID
44		+	+	-			Could not recover
45a		+	+	-	7267124		98.8% Aeromonas hydrophila grp 2
45b		+	+	-	3066127		67.0% Aeromonas hydrophila grp 1

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-26 **COLLECTION DATE** July 21, 2006 **LOCATION** Site #6 San Antonio

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
2a		-	+	-	1001000		49.7% Pasterurella pneumotropica
2b		+	+	+			Gram positive bacteria
12a		+	+	-	7144204		99.9% Plesiomonas shigelloides
12b		+	+	-	7144204		99.9% Plesiomonas shigelloides
13a		+	+	-	7144204		99.9% Plesiomonas shigelloides
14a		-	+	-	1001000		49.7% Pasterurella pneumotropica
14b		+	+	+			Gram positive bacteria
15a		+	+	-	7144204		99.9% Plesiomonas shigelloides
17a		-	+	+			Gram positive bacteria
21a		+	+	+			Gram positive bacteria
21b		-	+	-	7046120		56.1% Aeromonas hydrophila grp 1
24a		-	+	-	7257120		Unacceptable Profile
26a		-	+	-	7147200		Unacceptable Profile
26b		-	+	-	7147200		Unacceptable Profile
28a		-	+	-	1004022		84.6% Pantoea spp 1
28b		-	+	-	1004020		59.6% Moellerella wisconsenis
29a		+	+	+			Gram positive bacteria
29b		+	+	-	3046123		67.0% Aeromonas hydrophila grp 1
32a		+	+	-	7144204		99.9% Plesiomonas shigelloides
32b		+	+	-	7144204		99.9% Plesiomonas shigelloides
33a		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
33b		+	+	-	7247124		98.8% Aeromonas hydrophila grp 2
34a		+	+	-	7047527		66.2% Aeromonas hydrophila grp 1
37a		+	+	+			Gram positive bacteria
37b		+	+	-	7144204		99.9% Plesiomonas shigelloides
38a		+	+	-	3046127		67.0% Aeromonas hydrophila grp 1
39a		+	+	-	7044066		Unacceptable Profile
40a		+	+	-	7144204		99.9% Plesiomonas shigelloides
40b		+	+	-	7144204		99.9% Plesiomonas shigelloides
41a		+	+	-	7144204		99.9% Plesiomonas shigelloides

COMMENTS:

BACTERIOLOGY IDENTIFICATION

CHN: 06-26 **COLLECTION DATE** July 21, 2006 **LOCATION** Site #6 - San Antonio

SAMPLE NUMBER	COLONY MORPHOLOGY	C/O	MOTILITY	GRAM +/-	API CODE	OTHER	IDENTIFICATION
41b		+	+	-	7144204		99.9% Plesiomonas shigelloides
41c		+	+	-	7144204		99.9% Plesiomonas shigelloides
42a		+	+	-	7144204		99.9% Plesiomonas shigelloides
42b		+	+	-	7047125		89.8% Aeromonas hydrophila grp 2
42c		+	+	-	3047123		98.4% Aeromonas hydrophila grp 1
43a		-	+	-	1000000		56.9% Pasterurella pneumotropica
43b		+	+	-	3046127		67.0% Aeromonas hydrophila grp 1
44a		+	+	+			Gram positive bacteria
44b		+	+	-	7144204		99.9% Plesiomonas shigelloides

COMMENTS: