

December 10, 2008. Item 13. Supporting Document 6.

**From:** <Judy\_Gibson@fws.gov>  
**To:** "Joann Cofrancesco" <JCofrancesco@waterboards.ca.gov>  
**CC:** <Sharon\_Taylor@fws.gov>, <Ken\_Corey@fws.gov>, <Jonathan\_D\_Snyder@fws.gov...>  
**Date:** 11/19/2008 7:07 PM  
**Subject:** Re: Fwd: Response to Complaint R9-2008-0057, sewage spill  
**Attachments:** Scanned Response to R9-2008-0057.pdf; Dudek Response to ACL Complaint R9-2008-0057\_101408.pdf; IMG1725.JPG; IMG1727.JPG; IMG1729.JPG; IMG1731.JPG; IMG1737.JPG; 600k gal spill-Santa Margarita WD.doc

Joann,

Thank you for the opportunity to consider our input regarding the subject Compliant R9-2008-0057. The U.S. Fish and Wildlife Service (USFWS) appreciates your coordination and keeping us apprised of the subject sewage spill.

We remain firm and consistent in our responses that we previously provided by electronic mail of 05/31/2007, 06/14/2007, 08/02/2007, and 09/27/2007 that we do not support the conclusion that there was no impact to federal trust resources including the endangered arroyo toad and their habitats from the discharges of raw sewage into San Juan and Cristianitos Creeks.

Below is a summary of raw sewage releases by the San Margarita Water District (SMWD) into occupied habitat of the arroyo toad:

San Juan Creek - (April 5-8, 2007, OES No. 07-2199 ) - approximately 392,000 gallons

Cristianitos Creek - San Margarita Water District (SMWD) discharged raw sewage in the same vicinity of arroyo toad habitat on three subsequent dates from different sections of the same force main pipeline:

Cristianitos Creek – (July 3-4, 2007, OES No. 07-4003 ) - approximately 600,000 gallons [Note: The updated estimated volume reported by SMWD was 495,934 gallons];

Cristianitos Creek – (August 20, 2007, OES No. 07-4994) - 20,000-40,000 gallons(updated 20,700 gallons),approximately one-fourth mile from the July 3-4 2007 spill; and

Cristianitos Creek – (September 14, 2007, OES No. 07-5598) approximately 10,000 gallons, approximately 50 yards north of the August 20, 2007 spill.

Regarding the San Juan Creek spill, we do not agree with the statement in the Technical Report dated May 31, 2007 on page 6 that there are no negative short or long-term impacts on arroyo toads or other species. Results of the wastewater samples presented in the Technical Report showed high levels of Total coliform, Escherichia coli, and enterococcus bacteria present in the habitat of the arroyo toad. Elevated fecal coliform and enterococcus counts are shown to persist for several weeks after sewage spills in the environment (Mallin et al. 2007). In addition enteric enterococci are shown to have an enhanced survival in desiccated sediments (Yucheng et al. 2007). The USFWS recommended that soil/sediment samples be analyzed and monitored during and following the incident. Due to the high

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levels of the enteric bacteria in the wastewater, and the absence of sediment bacteria data, we can not substantiate and agree with SMWD's conclusion in the Technical Report.

Based on our evaluation of the SMWD's Technical Reports, maps, and our arroyo toad survey records for the spill site, it is likely that there are impacts to the arroyo toad likely present in the impact area. This could include impacts to the adult and/or one or more stages of the life cycle. At the time of the incident, even if the creek bed was dry, the metamorphs, juveniles, and adults would have likely been buried in the substrate and potentially exposed to the spill during this time based on existing survey data. Furthermore, this is supported site investigation report of a Department of Fish and Game Biologist who observed and photo documented likely arroyo toad burrows in the stream bed following the spill on July 5, 2007 (see attached memo and photos).

Regarding the Dudek 2007 report, Exhibit B of the Technical Report dated September 11, 2007 for the Cristianitos Creek spill, we acknowledge the arroyo toad survey experience of Dudek staff biologist(s). However, we note in the incident report that the site visit was made approximately 30 days after the sewage discharge. On page 4 of the Dudek 2007 report, they point out that the sewage flow entered the creek at a point with low suitability for arroyo toad habitat. Our survey reports show that arroyo toads inhabit the area all along the Cristianitos Creek in the vicinity of the 3 sewage spills in Cristianitos Creek including the areas above and below the weir and the pool area described in the report for the incident occurring on July 3-4, 2007. At the time of the incident, even if the creek were dry it is likely that toads could have been buried in the substrate. Evidence of the dried sewage residue in Cristianitos Creek was reported in the Dudek 2007 report remaining 30 days following the incident. Sewage entering the Cristianitos Creek and remaining residue could likely cause injury to the arroyo toad and the habitat.

Bacteriological analyses for the San Juan Creek sampling locations confirm that there were high levels of total fecal and enterococcus bacteria present in the wastewater discharge. It is uncertain if any bacteriological analyses of the pooled areas or sediment were collected from the Cristianitos Creek sewage discharges. If samples were collected, the USFWS does not have a copy of these results. As we have previously advised in our earlier emails, Raw human sewage contains a mixture of contaminants including a variety of bacteria, protozoans, viruses, and numerous toxic chemicals, as well as high concentrations of nitrogen and phosphorus (Mallin et al. 2007). Amphibians are sensitive to elevated levels of nitrate. The discharge of untreated sewage would release high levels of nitrate that could cause amphibian toxicity (Rouse et al. 1999). Sewage-contaminated water contains viruses and bacteria that are a potential vehicle for disease transmission to ecological receptors (Botero et al. 1996, Kinde et al. 1996, Hamilton 2007, and Friend 1985). Amphibians are known to be susceptible to infection from a number of bacteria, including those that potentially could be found in human sewage (Taylor et al. 2001). In addition, high concentrations of fecal indicator bacteria are persistent in the sediment and remain in the sediment for several weeks following a major spill event (Mallin et al. 2007). Wildlife concerns from exposure and/or infection from untreated sewage also include suppression of the immune response system, alterations in the defense

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mechanisms, and depression of essential biological activity that can lead to susceptibility to disease and latent infections (Friend 1985).

Not only do biological impacts occur as a result of sewage releases, but the presence of total nitrogen and phosphorus released into the dry sediment and/or surface water induces eutrophication and subsequently reduces water quality of the stream. Combined economic losses, including costs for recovery on threatened and endangered species, have been calculated at a cost of \$2.2 billion annually as a result of eutrophication in U.S. freshwaters (Dodds et al.) Aquatic eutrophication has been shown to promote pathogenic infection in amphibians. Accelerated eutrophication of aquatic ecosystems due to nitrogen and phosphorus enrichment has been implicated in the emergence of diseases in amphibians through direct and indirect pathways. Eutrophication has been linked to the parasitic trematode, *Ribeiroia ondatra* which causes severe limb deformities and mortality in amphibian larvae.

Evidence shows that effects of eutrophication in the ecosystem cascades through the parasitic life cycle by promoting algal growth, density of the snail population, which is the intermediate host for the trematode, and ultimately the intensity of amphibian infections (Johnson et al. 2007).

Declines in the amphibian populations have been reported during the recent years and disease has been reported as a contributing factor to the decline. SMWD has been in contact with our office regarding some of the proposed projects that we submitted to RWQCB to offset impacts as a result of the sewage spills. USFWS welcomes the opportunity to work with RWQCB and SMWD on projects to conserve the federally listed arroyo toad and its habitat. Because amphibian populations are declining and this is a federally listed species, we believe that it is essential to implement mitigation measures, restoration and subsequent monitoring to offset these impacts. As a Co-Trustee of natural resources in this area, USFWS desires to be present in any possible natural resource damage settlement or discussions resulting from impacts of the sewage spills (OES - 07-2199, OES 07-4003, OES 07-4003, and OES 07-5598) on our trust resources. Our Agency looks forward to cooperatively working with you and SMWD as we move forward to settle the subject Complaint.

#### References:

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[http://www.nwhc.usgs.gov/our\\_research/amphibian\\_research\\_and\\_monitoring\\_initiative.jsp](http://www.nwhc.usgs.gov/our_research/amphibian_research_and_monitoring_initiative.jsp)

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[http://www.nwhc.usgs.gov/disease\\_information/amphibian\\_malformation\\_and\\_decline/index.jsp](http://www.nwhc.usgs.gov/disease_information/amphibian_malformation_and_decline/index.jsp)

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v/r Judy

Judy Ann Gibson  
Environmental Contaminants Biologist  
Field Spill Response Coordinator  
U.S. Fish & Wildlife Service  
6010 Hidden Valley Rd.  
Carlsbad, CA 92011  
Phone: 760-431-9440 (ext. 260)  
Cellular: 760-271-6934  
Fax: 760-431-9170  
email: Judy\_Gibson@fws.gov

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"Joann  
Cofrancesco"  
<JCofrancesco@waterboards.ca.gov> To  
"Sharon Taylor"  
<Sharon\_Taylor@fws.gov>  
11/07/2008 02:34 PM cc  
"Judy Gibson" <Judy\_Gibson@fws.gov>  
Subject  
Fwd: Response to Complaint  
R9-2008-0057, sewage spill

Sharon,

On September 22, 2008, the Regional Board issued Administrative Civil Complaint No. R9-2008-0057 to Santa Margarita Water District, for the Sanitary Sewer Overflows in April and July 2007, into Ortega Creek and Christianitos Creek. An electronic copy was sent to you via email on September 23, 2008.

I have attached Santa Margarita Water District's response to the Complaint. The response includes the arroyo toad, on page 3 and 5. Can you please comment on Santa Margarita Water District's and Dudek's arguments that the arroyo toad was not affected?

We need to have the comments by Wednesday, November 19.

Thanks,  
Joann

On 11/3/2008 at 2:01 PM, in message  
<CF18FEA0544D214DADDC7802931C18FB01D68DF7@EXGSMWD3.smwd.local>, "Feron, Dan"

<DANF@smwd.com> wrote:

> Hi Joann-

>

> The originals are in the mail today, please give me a call to go over  
> the next steps after you review the attached response. The scanned  
> response is the District's response and it references the technical  
> analysis in the Dudek response. I have also been working with USFWS on a  
> potential project for Arundo removal that the City of San Juan  
> Capistrano and County of Orange are getting started, so I will need to  
> go over with you the steps to utilize a portion of the penalty, if any,  
> on the project.

>

> Thanks

>

> Dan

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 > Daniel R. Ferons  
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 > Chief Engineer  
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 > Santa Margarita Water District  
 >  
 > 949-459-6590 Direct Phone  
 >  
 > 949-459-6463 Fax  
 >  
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Water Resource Control Engineer  
 Regional Water Quality Control Board - San Diego Region  
 Compliance Assurance Unit  
 9174 Sky Park Court, Suite 100  
 San Diego, CA 92123  
 858-637-5589 (direct line)  
 858-571-6972 (fax)  
 jcofrancesco@waterboards.ca.gov

(See attached file: Scanned Response to R9-2008-0057.pdf)(See attached file: Dudek Response to ACL Complaint R9-2008-0057\_101408.pdf)

"Joann  
 Cofrancesco"  
 <JCofrancesco@waterboards.ca.gov> To  
 <Judy\_Gibson@fws.gov>  
 cc  
 04/12/2007 04:30  
 PM Subject  
 pictures of spill site

The first picture (1725) shows the location of the overflow (manhole) with cleanup crew and San Juan Creek in the background.  
 Pictures 1727 and 1731 are looking downstream from where the spill entered the creek.  
 Picture 1729 are looking downstream from where the spill entered the creek.

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Picture 1737 is 400 feet upstream from where spill entered the creek.

(See attached file: IMG1725.JPG)(See attached file: IMG1727.JPG)(See attached file: IMG1729.JPG)(See attached file: IMG1731.JPG)(See attached file: IMG1737.JPG)(See attached file: 600k gal spill-Santa Margarita WD.doc)