

STAFF REPORT

DATE: July 10, 2012

TO: Water/Sewer Committee

FROM: Cari Dale, Water Utilities Director

SUBJECT: **ADOPT A RESOLUTION APPROVING THE REVISION OF SEWER DISCHARGE LIMITS (LOCAL LIMITS) FOR INDUSTRIAL USERS**

SYNOPSIS

Staff recommends that the Water/Sewer Committee recommend that the Utilities Commission recommend that the City Council adopt a resolution (Exhibit A) approving revisions to sewer discharge limits (local limits) for industrial users.

BACKGROUND

The federal pretreatment regulations in 40 CFR 403.5(c) require publicly owned treatment works (wastewater treatment plants), to develop and enforce local limits for discharge and to implement the general and specific prohibitions in 40 CFR 403.5(a) and (b). The pretreatment regulations also require publicly owned treatment works to continue to develop these local limits as necessary and effectively enforce such limits.

The National Pollutant Discharge Elimination System (NPDES) regulations in 40 CFR 122.44(j)(2)(ii) require publicly owned treatment works to provide a current Technically Based Local Limits Study in conjunction with permit reissuance. The City of Oceanside's current NPDES permit was reissued on August 20, 2010.

On November 19, 2009, the California Regional Water Quality Control Board in San Diego conducted an audit of the City's pretreatment program and indicated that the City's existing local limits were not technically based from the standpoint that there is no assurance that they are protective of the City's two publicly owned treatment works (La Salina and San Luis Rey Wastewater Treatment Plants).

In response, a request for proposal (RFP) was issued for the development of technically-based local limits on September 25, 2009. The RFP was provided to five consulting firms and three responded. On February 24, 2010, Council awarded the work to RvL Associates (RvL) of Costa Mesa at a cost of \$55,400. The study was completed in February 2011 based on discharge data from 2010. In May 2012, staff requested that RvL update the study with more current data. RvL submitted a proposal (Exhibit C) to perform the update for an additional amount of \$9,800.

ANALYSIS

The local limits study consisted of an evaluation of the treatment capacities and pollutant removal efficiencies of both the San Luis Rey and La Salina plants. The regulatory discharge limits for ocean discharge, recycled water and for biosolids were reviewed and laboratory data evaluated. Maximum allowable limits for each type of pollutant were then calculated. The study was submitted to the Regional Water Quality Control Board (RWQCB) and after evaluation of the study, the RWQCB proposes to approve the study after City Council approval.

The table below lists the current and proposed local limits for all pollutants:

Pollutant	Chemical Symbol	Units	Current Limit	Proposed Limit	Comments
Arsenic	As	mg/L	0.5	0.91	
Boron	B	mg/L	1.0	2.7	SLR only
Cadmium	Cd	mg/L	0.11	0.15	
Chromium	Cr	mg/L	2.77	15	
Copper	Cu	mg/L	3.38	3.3	
Cyanide	CN	mg/L	1.2	3.9	
Grease and Oil		mg/L	100	Eliminate; covered by narrative limit in SOU	
Lead	Pb	mg/L	0.69	0.94	
Mercury	Hg	mg/L	0.05	0.057	
Molybdenum	Mo	mg/L		0.56	New limit per EPA guidelines
Nickel	Ni	mg/L	3.98	9.3	
Phenolic Compounds		mg/L	2.0		No data for local limit, eliminate as a local limit
Selenium	Se	mg/L		0.34	New limit per EPA guidelines
Silver	Ag	mg/L	0.43	3.4	
Sulfide	S ²⁻	mg/L	1.0	1.0	Retain existing local limit
Total Metals		mg/L	10.5		Eliminate; no need for (aggregate) POC limit
Total Toxic Organics	TTO	mg/L	2.13		Eliminate; covered by narrative limit in SUO
Zinc	Zn	mg/L	2.61	4.2	
BOD ₅	BOD	ppd		Individual permits MAIL for SLR 6,500 ppd; for LS 3510 ppd	Monitor IUs; track total BOD versus MAIL*; permit IUs above 200 ppd (4); eliminate limits for other IUs; pollution prevention report required for increase of 20% above current limit.

Pollutant	Chemical Symbol	Units	Current Limit	Proposed Limit	Comments
Ammonia	NH ₃ -N	ppd		Individual permits MAIL for SLR 1988 ppd, for LS 537 ppd. Maintain current limit for 1 IU; eliminate limits for other IUs	Monitor IUs; track total NH ₃ versus MAIL and NPDES permit changes; permit IUs above 30 ppd (1); require contingency plan for Hydranautics; pollution prevention report required for increase of 20% above current limit
Total Dissolved Solids	TDS	ppd	None	MAIL for SLR-18590 ppd	SLR only; monitor IUs; track total TDS versus MAIL; permit IUs above 300 ppd, allow IUs to expand as needed up to the MAIL; pollution prevention report required for increase of 20% above current limit

*MAIL = Maximum allowable industrial limit

The study also reviewed all of the industrial users' discharge data and determined that there are three constituents in their current discharge that can negatively impact the wastewater and recycled water systems. The constituents are ammonia, biochemical oxygen demand (BOD) and total dissolved solids (TDS). The City has four current industrial users (IUs) that discharge these constituents in sufficient volume and strength so as to have the potential to negatively impact the City's treatment systems. These IUs will be subject to the revised local limits for ammonia, BOD and TDS. The limits will be incorporated into those industries' wastewater discharge permits if applicable.

The current and proposed limits for each industrial user are listed the tables below:

AMMONIA

The only significant discharger of ammonia is Hydranautics. No changes were made to the current limit.

Industry	Pollutant	Unit	Average Discharge	Current Limit	Proposed Limit
Genentech	Ammonia	ppd	8	20	None
Hydranautics	Ammonia	ppd	400	1450	1450
Sabra	Ammonia	ppd	1	None	None
Sevro	Ammonia	ppd	3	None	None

BOD

Proposed limits are 4 times the average discharge from Jan 2010 – Apr 2012

Industry	Pollutant	Unit	Average Discharge	Current Limit	Proposed Limit
Genentech	BOD	ppd	320	1300	1300
Hydranautics	BOD	ppd	420	2000	1700
Sabra	BOD	ppd	260	None	1100
Sepro	BOD	ppd	270	None	1100

TDS

Proposed limits are 2.1 times the average discharge from Jan 2010 – Apr 2012

Industry	Pollutant	Unit	Average Discharge	Current Limit	Proposed Limit
Genentech	TDS	ppd	4200	None	9000
Hydranautics	TDS	ppd	3500	None	7500
Sabra	TDS	ppd	450	None	1000
Sepro	TDS	ppd	70	None	None

If the City Council adopts a resolution approving the revised local limits, the RWQCB will notify all interested parties and hold a 30-day public comment period on the revised local limits. The public comments will be addressed at a RWQCB public hearing. In addition to this process, City staff has met with each of the four industrial users to explain the local limits revisions and address any concerns.

FISCAL IMPACT

RvL Associates updated the technically-based local limits in FY 11-12 in an amount of \$9,800 for a total project cost of \$65,200. There are no additional costs associated with the development of the local limits.

INSURANCE REQUIREMENTS

Does not apply.

COMMISSION OR COMMITTEE REPORT

The Utilities Commission approved staff's recommendation at its scheduled meeting on July 24, 2012.

CITY ATTORNEY'S ANALYSIS

The referenced documents have been reviewed by the City Attorney and approved as to form.

RECOMMENDATION

Staff recommends that the Water/Sewer Committee recommend that the Utilities Commission recommend that the City Council adopt a resolution (Exhibit A) approving revisions to sewer discharge limits (local limits) for industrial users.

PREPARED BY:

Cari Dale
Water Utilities Director

- Exhibit A: Resolution
- Exhibit B: Technically Based Local Limits Study
- Exhibit C: RvL Associates Scope of Work

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RESOLUTION NO.

**A RESOLUTION OF THE CITY COUNCIL OF THE
CITY OF OCEANSIDE APPROVING REVISIONS
TO THE SEWER DISCHARGE LIMITS
(TECHNICALLY-BASED LOCAL LIMITS) FOR
INDUSTRIAL USERS**

WHEREAS, the City of Oceanside's current local limits for industrial users of the wastewater treatment system have not been revised since 1982;

WHEREAS, the City Council adopted Ordinance No. 11-OR0603-1 on August 17, 2011, which established new sewer discharge regulations;

WHEREAS, a technically-based local limits study was completed in February 2011 which established the revised local limits for industrial users; and

WHEREAS, industrial users shall be charged for the treatment of excessive materials in accordance with the extra strength surcharges established by City Ordinance.

NOW, THEREFORE, the City Council of the City of Oceanside does resolve as follows:

SECTION 1. The following revised sewer discharge limits (technically-based local limits) for the City of Oceanside are hereby adopted and approved

Pollutant	Chemical Symbol	Units	Current Limit	Proposed Limit	Comments
Arsenic	As	mg/L	0.5	0.91	
Boron	B	mg/L	1.0	2.7	SLR only
Cadmium	Cd	mg/L	0.11	0.15	
Chromium	Cr	mg/L	2.77	15	
Copper	Cu	mg/L	3.38	3.3	
Cyanide	CN	mg/L	1.2	3.9	
Grease and Oil		mg/L	100	Eliminate; covered by narrative limit in SOU	
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Molybdenum	Mo	mg/L		0.56	New limit per EPA guidelines
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Phenolic Compounds		mg/L	2.0		No data for local limit, eliminate as a local limit

Pollutant	Chemical Symbol	Units	Current Limit	Proposed Limit	Comments
Selenium	Se	mg/L		0.34	New limit per EPA guidelines
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Sulfide	S ²⁻	mg/L	1.0	1.0	Retain existing local limit
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Total Toxic Organics	TTO	mg/L	2.13		Eliminate; covered by narrative limit in SUO
Zinc	Zn	mg/L	2.61	4.2	
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Total Dissolved Solids	TDS	ppd	None	MAIL for SLR-18590 ppd	SLR only; monitor IUs; track total TDS versus MAIL; allow IUs to expand as needed up to the MAIL; pollution prevention report required for increase of 20% above current limit

*MAIL = Maximum allowable industrial limit

1 PASSED AND ADOPTED by the City Council of the City of Oceanside, California,
2 this _____ day of _____, 2012, by the following vote:

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- 4 AYES:
- 5 NAYES:
- 6 ABSENT:
- 7 ABSTAIN:

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Mayor of the City of Oceanside

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11 ATTEST:

APPROVED AS TO FORM:

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13 City Clerk

City Attorney

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STAFF REPORT

DATE: July 10, 2012

TO: Water/Sewer Committee

FROM: Cari Dale, Water Utilities Director

SUBJECT: **AWARD OF A CONTRACT FOR THE CONSTRUCTION OF THE LA SALINA WASTEWATER TREATMENT PLANT COGENERATION FACILITY PROJECT**

SYNOPSIS

Staff recommends that the Water/Sewer Committee recommend that the Utilities Commission recommend that the City Council award a contract to CHP Clean Energy, LLC, of Boston, Massachusetts, for construction of the La Salina Wastewater Treatment Plant Cogeneration Facility project, and authorize the City Manager to execute the agreement.

BACKGROUND

A recently completed cogeneration facility at the San Luis Rey Wastewater Treatment Plant (SLRWWTP) has proven to be beneficial and an overall cost savings for the plant in the reduction of electrical and natural gas costs. The facility uses biogas, generated as a byproduct of the wastewater treatment process, and produces electricity which is sold back to the City at a savings versus electrical purchases from San Diego Gas & Electric. CHP Clean Energy, LLC acquired the San Luis Rey Wastewater Treatment Cogeneration Facility in 2011 and began discussing with Staff their interest in a similar project for the La Salina Wastewater Treatment Facility.

The La Salina Wastewater Treatment Plant (LSWWTP), located at 1330 S. Tait Street (Exhibit A), provides wastewater treatment and disposal for approximately 20 percent of the City. The LSWWTP sewage process is similar to the SLRWWTP and is therefore a prime candidate for cogeneration.

ANALYSIS

The LSWWTP currently has two anaerobic digesters each with a diameter of 45 feet. The excess gas produced by the digesters is currently flared and not beneficially used. Both digesters are also heated with an existing gas boiler that uses natural gas as a fuel source. This project will consist of financing, construction, operation and maintenance of a cogeneration facility on-site at the LSWWTP by CHP Clean Energy, LLC. The cogeneration facility will be fueled by digester gas produced by the plant facility for use by the contractor. All power produced by the contractor will be sold to the City at a lower rate than what SDG&E is currently charging. The cogeneration facility will also provide supplemental heat for the digesters offsetting the use of the onsite boiler and

ultimately reducing the need to purchase as much natural gas. The cogeneration facility shall include gas treatment, heat recovery, and connections to the digester gas, natural gas, hot water, and electrical systems. Repair and reconstruction of any existing facilities affected by the work including pavement will be made by CHP Clean Energy, LLC. at no cost to the City.

Section 4217.12 of the California Government Code authorizes public agencies to enter into energy service contracts on such terms as their governing bodies determine are in the best interests of the agency. To do so, a determination must be made after a public hearing that the anticipated cost to the agency for energy conservation services under the energy services contract would be less than the anticipated marginal cost to the agency of electrical energy that would have been consumed by the agency in the absence of those purchases. In lieu of utilizing a competitive hard bid process to select the contractor to perform the energy services, Government Code section 4217.10 *et seq.* authorizes the use of an informal request for proposals process. A power purchase agreement is a form of "energy services contract" eligible for the alternative, informal Government Code procurement process.

This action is consistent with the Council goal of developing plans to promote alternative energy use and also meets the Water Utility Department's strategic goal to explore and expand renewables use.

FISCAL IMPACT

The construction value of the project is \$929,500; the cost of which will also be entirely borne by CHP Clean Energy, LLC. The contractor will also be funding the ongoing operation and maintenance of the cogeneration facility. Currently, the City uses approximately 867,000 kilowatt hours of power per year at a cost of approximately \$643,000. The contractor will be able to produce an average of 25% of this power (216,750 kilowatt hours) per year. CHP Clean Energy, LLC will sell that electrical power back to the LSWWTP at \$7.50 per kilowatt hour, which is a cost lower than the average cost of 12.5 cents per kilowatt hour charged by San Diego Gas & Electric. Entering into a power purchase agreement will result in a total annual savings to the City of approximately \$21,000 in electrical savings and \$315,000 for the contract term of 15 years. At the end of the 15 year contract term the City has an option to extend the contract for an additional 10 years or negotiate for the purchase of the cogeneration facility. If at the end of 10 years, the City does not want to exercise the option to buy out the facility, the contractor is responsible for removing the facility at their expense.

As part of the operation of the cogeneration facility, heat will be produced, which will result in the cogeneration facility being able to heat the digesters part of the time. This will result in an additional cost savings on the purchase of natural gas. Due to ambient temperatures, the savings is anticipated to be larger in the summer than in the winter. The total savings to the City for natural gas is estimated to be approximately \$310,000 over the term of the contract, or approximately \$20,666 annually.

With the cogeneration facility in operation, the cumulative electrical and gas cost savings is approximately \$625,000 over the life of the project and approximately \$41,666 annually.

INSURANCE REQUIREMENTS

The City's standard insurance requirements will be met.

CITY ATTORNEY'S ANALYSIS

The referenced documents have been reviewed by the City Attorney and approved as to form.

RECOMMENDATIONS

Staff recommends that the Water/Sewer Committee recommend that the Utilities Commission recommend that the City Council award a contract to CHP Clean Energy, LLC, of Boston, Massachusetts, for construction of the La Salina Wastewater Treatment Plant Cogeneration Facility project, and authorize the City Manager to execute the agreement.

PREPARED BY:

Jason Dafforn
Acting Water Utilities Division Manager

STAFF REPORT

DATE: July 10, 2012
TO: Water/Sewer Committee
FROM: Cari Dale, Water Utilities Director
SUBJECT: **AUTHORIZE CITY ENGINEER TO CALL FOR BIDS FOR THE SAN LUIS REY WASTEWATER TREATMENT PLANT DIGESTER CLEANING AND REPAIR PROJECT**

SYNOPSIS

Staff recommends that the Water/Sewer Committee recommend that the Utilities Commission recommend that the City Council authorize the City Engineer to call for bids for the San Luis Rey Wastewater Treatment Plant Digester Cleaning and Repair Project located at the San Luis Rey Wastewater Treatment Plant (SLRWWTP).

BACKGROUND

The San Luis Rey Wastewater Treatment Plant (SLRWWTP) was initially constructed in the early 1970s. There have been several expansions and upgrades to the plant over the past 35 years.

Wastewater treatment plant digesters require periodic cleaning to maintain proper treatment levels. Digester 1 at the San Luis Rey Wastewater Treatment Plant has not been cleaned for over 15 years. It is estimated that 10 feet of grit and other materials have settled in the bottom of the digester which must be removed and the digester must be cleaned. There are also a small amount of ancillary piping modifications and repairs required to the digester in order to maintain its treatment effectiveness.

ANALYSIS

On November 30, 2011 the City Council approved the contract with Carollo Engineers to prepare the plans and specification for the San Luis Rey Wastewater Treatment Plant Digester Cleaning and Repair Project. This project will clean approximately 50,000 gallon from Digester 1 and replace key valving and ensure the digester operates efficiently.

Staff estimates that construction of the project will take approximately four months.

The project is exempt from the California Environmental Quality Act requirements. The plans and specifications for the project are available for review in the offices of the City Manager and the City Engineer.

FISCAL IMPACT

The Fiscal Year 12-13 adopted budget for the San Luis Rey Digester Rehabilitation fund (909123100722.5307.10600) has an available balance of \$275,000.

The engineer's estimate for construction of this project is \$216,000. Therefore, there are sufficient funds available to complete this project.

INSURANCE REQUIREMENTS

The City's standard insurance requirements will be met.

CITY ATTORNEY'S ANALYSIS

The referenced documents have been reviewed by the City Attorney's office and approved as to form.

RECOMMENDATIONS

Staff recommends that the Water/Sewer Committee recommend that the Utilities Commission recommend that the City Council authorize the City Engineer to call for bids for the San Luis Rey Wastewater Treatment Plant Digester Cleaning and Repair Project located at the San Luis Rey Wastewater Treatment Plant (SLRWWTP).

PREPARED BY:

Jason Dafforn
Acting Water Utilities Division Manager