STATE OF NEVADA
Brian Sandoval, Governor
Department of Conservation & Natural Resources
Leo M. Drozdoff, P.E., Director
DIVISION OF ENVIRONMENTAL PROTECTION
Colleen Cripps, Ph.D., Administrator

FACT SHEET
(pursuant to NAC 445A.236)

Applicant: Environmental Department
Naval Air Station Fallon
4755 Pasture Road, Building 307, 3rd Deck
Fallon, NV 89496

Permit Number: NV0110001

Facility Locations: Naval Air Station(NAS) Fallon Waste Water Treatment Facility
4755 Pasture Road
Fallon, Churchill County, Nevada
Township 18N, Range 29E, Sections 2-4, 9-11, 14-15, 21-26
Latitude: 39° 23' 46" N, Longitude: 118° 41' 22" W

Discharge Outfalls: **001: unnamed ditch (E4X drain) tributary to the Lower Diagonal Drain**
Latitude 39° 24' 15" N, Longitude 118° 41' 45" W

General: The Permittee, NAS Fallon, operates a 0.750 million gallons per day (MGD) (30-day average) waste water treatment plant (WWTP), which services a daily population of 3,000 in Fallon, Nevada. The plant was constructed in 1995. Treatment processes consist of activated sludge via two parallel Sequencing Batch Reactors (SBRs), discharge chlorination, and sludge digestion and drying. A grit chamber was installed in 2004 but has not been operated due to a series of mechanical problems. Adjacent to the WWTP are a series of standby ponds used for the digesting, drying, and interim accumulation of sludge.

The SBR system integrates two alternating reactors (R1 and R2) cycled to maintain a consistent intake and discharge process flow. The SBRs receive the influent at 3-hour intervals. The SBR fills and the wastewater is mixed by the aerator until full biodegradation is achieved. After the aeration stops, the resulting sludge settles at the bottom of the SBR tank. The liquid is decanted from the SBRs to the chlorine contact chamber for chlorination treatment. The disinfected effluent is discharged to an unnamed ditch that leads to the Lower Diagonal Drain.

Wastewater sludge is transferred from the SBRs into two 1-MG aerated ponds, where it is further aerated prior to interim accumulation into two 5-MG ponds for drying and storage. There are also three 0.3-MG ponds left over from a previous plant configuration that provide additional sludge storage capacity. The ponds are all clay lined and four groundwater monitoring wells have been installed in the area.

Flow: The Permittee has applied for a 30-day average effluent discharge of 0.750 MGD. From 2007-2012, the daily maximum flows ranged between .192 MGD and .464 MGD, with a 30-day average flow rate that ranged between .173 MGD and .279 MGD.

Receiving Water Characteristics: Water quality standards for the Lower Diagonal Drain (LDD) are specified in NAC 445A.1854 for the beneficial uses designated in NAC 445A.1792. The LDD drains to the east-northeast to the Stillwater National Wildlife Refuge, where the additional water in the LDD helps support the riparian and wetland species.

Site Groundwater: In the area of the treatment facility/discharge location, the elevation of the groundwater table averages 5-10 feet below ground surface. The local groundwater flow is generally southeast towards the Carson Sink. There are no public drinking water supply wells within 6,000 feet of the WWTP or discharge outfall.

Corrective Actions Sites: There are five Bureau of Corrective Actions (BCA) remediation sites within a one-mile radius of the NASF WWTP. The case officers have indicated negative impacts to the remediation sites are not expected due to the continuing discharge from the WWTP.

Discharge Characteristics: The addition of this maximum of 840 af/yr of treated effluent to the LDD does not result in significant effects to either surface or ground water. The treated effluent mixes with high levels of agricultural drain water during irrigation season, and with groundwater in the drain outside of irrigation season. The following selected discharge characteristics shown in Table 1 were reported in Discharge Monitoring Reports (DMRs):

Table 1. NASF WWTP Historical Water Quality Monitoring Data (July 2007-June 2012)

Parameters and Units		Permit Limit	Mean	Maximum	Minimum	Number of Exceedances
Discharge Rate, (MGD)	30-Day Avg	0.75	0.224	0.279	0.173	0
	Daily Max	M&R	0.279	0.464	0.192	0
TRC (mg/l)	R1	M&R	1.87	2.20	.70	0
	R2	M&R	2.10	2.22	1.16	0
Temperature (^oC)	R1	≤ 34	21	32	15	0
	R2	≤ 34	21	32	15	0
pH (S.U.)	R1	6.5-9.0	7.57	7.8	7.4	0
	R2	6.5-9.0	7.59	7.8	7.4	0
TDS (mg/l)	R1	M&R	3349	5400	2400	0
	R2	M&R	3416	5700	2500	0
TP-P (mg/l)	R1	M&R	1.16	7.7	.04	0
	R2	M&R	1.26	12.0	.02	0
Arsenic (mg/l)	R1	M&R	.25	.35	.17	0
	R2	M&R	.26	.36	.18	0
BOD_5, Influent (mg/l)	30-Day Avg	M&R	116	190	70	0
	Daily Max	M&R	161	300	100	0
BOD_5, Effluent (mg/l)	30-Day Avg	30	6	14	2	0
	Daily Max	45	8	24	2	0
	% Removal	85	94	98.9	82.9	1 (10/07)
TSS Influent (mg/l)	30-Day Avg	M&R	136	307	45	0
	Daily Max	M&R	224	690	58	0
TSS Effluent (mg/l)	30-Day Avg	30	12	29	6	0
	Daily Max	45	18	96	6	1 (4/08)
	% Removal	85	90	97.5	58.6	7 ('07-'09)

Fecal Coliform (MPN/100 ml)	30-Day Avg	200	6	65	1	0
	Daily Max	400	60	600	1	3 (5/10, 2/12, 5/12)
TKN- N (mg/l)	Daily Max	M&R	3.72	25	0.6	0
NH3- N (mg/l)	Daily Max	M&R	2.0	21	0.1	0
N03- N (mg/l)	Daily Max	M&R	2.35	7.1	0.5	0
N02- N (mg/l)	Daily Max	M&R	0.99	9.5	0.5	0
TN- N (mg/l)	Daily Max	10	6.1	25	2.8	6
TPH (mg/l)	Daily Max	1.0	ND	2.0 (ND)	ND	0
Uranium (pc/l)	Daily Max	M&R	0.18	0.29	0.084	0

The facility has been in substantial compliance with permit limitations. There have been six exceedances of Total Nitrogen as N (TN-N) limits since July 2007; the last exceedance occurred in March 2011 -25 mg/l. In January 2012, the laboratory reported a TPH concentration of 2.0 mg/l. The Permittee investigated this and discovered that the analytical lab had changed analytical method, which increased the detection limit to 2.0 mg/l. The Permittee notified the laboratory they had to use a method that would provide a detection limit of a maximum of 0.5 mg/l, and the laboratory complied with the directive immediately. The "exceedance" is viewed as a laboratory reporting error, and is not a true exceedance of the 1.0 mg/l limit.

Proposed Discharge Limitations, Sampling and Monitoring Requirements:

Discharge shall be limited and monitored by the Permittee as specified in Table 2 below. Sampling is required of the effluent from the chlorine contact chamber prior to discharge to Outfall 001, the unnamed tributary to the Lower Diagonal Drain (LDD).

Sampling Locations:

a. **Influent to WWTP, prior to treatment**
b. **R-1 SBR Reactor liquid decant, effluent discharge from chlorine contact chamber**
c. **R-2 SBR Reactor liquid decant, effluent discharge from chlorine contact chamber**
d. **Effluent discharge (composite of R-1 and R-2) from chlorine contact chamber prior to discharge at Outfall 001**

Table 2. Discharge Limitations, Sampling and Monitoring Requirements

Parameters	Units	Discharge Limitations		Monitoring Requirements		
		30-Day Average	Daily Max	Sampling Locations	Monitoring Frequency	Monitoring Type
Discharge Rate	MGD	0.75	M&R	d	Continuous	Flow meter
pH -SV	S.U.	---	6.0-9.0	b, c	Daily	Discrete
Temperature	^{o} C	---	34	b, c	Daily	Meter
BOD_5 influent	mg/l	---	M&R	a	Weekly	Composite
BOD_5 effluent	mg/l	30	45	d	Weekly	Composite
BOD_5 removal eff	%	---	85	a, d	Weekly	Calculation
TSS influent	mg/l	---	M&R	a	Weekly	Composite
TSS effluent	mg/l	30	45	d	Weekly	Composite
TSS removal eff	%	---	85	a, d	Weekly	Calculation
Fecal Coliform	MPN/ 100ml	200 [1]	400 [2]	d	Weekly	Composite

TRC	mg/l	---	M&R	b, c	Monthly	Discrete
TDS	mg/l	---	M&R	b, c	Monthly	Discrete
TP-P	mg/l	---	M&R	b, c	Monthly	Discrete
TN-N	mg/l	---	10.0	a, d	Monthly	Composite
Arsenic	mg/l	---	M&R	b, c	Quarterly	Discrete
TPH [3]	mg/l	---	1.0	b, c	Annually	Discrete
Priority Pollutants [3]	μg/l	---	M&R	d	Annually	Composite

Groundwater monitoring and reporting are required by the permit for 3 monitoring wells.

Groundwater Monitoring Wells:

a. **WWTP-1**
b. **WWTP-2**
c. **MW-32**

Table 3. Groundwater Well Limitations, Sampling and Monitoring Requirements

Parameters	Units	Discharge Limitations		Monitoring Requirements		
		30-Day Average	Daily Max	Sampling Locations	Monitoring Frequency	Monitoring Type
Depth to Groundwater	ft	---	M&R	a, b, c	Quarterly	Meter
TDS	mg/l	---	M&R	a, b, c	Quarterly	Discrete
Chloride	mg/l	---	M&R	a, b, c	Quarterly	Discrete
TN-N	mg/l	---	10.0	a, b, c	Quarterly	Discrete

Table 4. Table Definitions and Footnote Explanations

Term/ Footnote	Definitions and Footnote Explanations
MGD	Million gallons per day
M&R	Monitor and report
SV	Single value
S.U.	Standard pH units
BOD_5	5-day biological oxygen demand
influent	Influent to treatment facility, prior to any treatment
mg/l	Milligrams per liter
effluent	Discharge from chlorine contact chamber, prior to discharge at Outfall 001
Removal eff	Removal efficiency is based on the difference between influent and effluent maximum concentrations
TSS	Total suspended solids
TRC	Total residual chlorine
TDS	Total dissolved solids
TP-P	Total Phosphorus as phosphorus
MPN	Most probable number (or CFU, colony forming units)
TN-N	Total Nitrogen as nitrogen
TPH	Total petroleum hydrocarbons
μg/l	Micrograms per liter
Footnote 1	The fecal coliform level **may not** exceed a geometric mean of 200 MPN per 100 ml.
Footnote 2	A maximum of 10% of the total fecal coliform samples **may** exceed 400 MPN per 100 ml during any 30-day period, **without permit violation**.

Footnote 3	TPH and Priority Pollutants -sample and analyze annually; report on 4th quarter DMR.

Rationale for Permit Requirements: The Division's rationale for the proposed permit limitations and monitoring requirements is discussed below:

Discharge Rate: 0.75 MGD -30-day average; M&R -daily maximum.

BOD_5: 30 mg/l -30-day average; 45 mg/l –daily maximum; 85% reduction. These are the secondary treatment standard effluent limits. Permit limits are retained from the previous permit.

TSS: 30 mg/l -30-day average; 45 mg/l –daily maximum; 85% reduction. These are the secondary treatment standard effluent limits. Permit limits are retained from the previous permit.

Total Nitrogen: 10 mg/l -7-day average; M&R –daily maximum. Permit limits are retained from the previous permit.

Fecal Coliform: 200 MPN per 100 ml -30-day average; 400 MPN per 100 ml –daily maximum. These are the effluent limits for surface water discharge of a disinfected effluent. Permit limits are retained from the previous permit.

pH: 6.0-9.0 S.U. for protection of the beneficial uses designated for the LDD.

TPH and Attachment A Priority Pollutant Parameters: M&R. Sampling and analysis is required annually in the 4th quarter.

Groundwater Monitoring: To date, four monitoring wells have been installed to monitor potential discharge through the sludge ponds' clay liners. Of these, one has been historically dry, and three wells are monitored quarterly and the data is reported for the following parameters: TDS, chloride, TN, and depth to groundwater. Depth to groundwater averages 5.48 to 9.69 feet below ground surface. TN concentrations have averaged 3.06-3.90 mg/l over the past five years. On one occasion for each of the three monitoring wells, TN has exceeded the 7.0 mg/l trigger threshold established in previous permits quarterly monitoring requirements. The >7.0 mg/l reported concentrations were actually variances in method detection limits, and were not actual exceedances. The 7.0 mg/l trigger requirement states that the Permittee shall begin plans for a new WWTP. The new WWTP plans are in currently in process, and there are several Schedule of Compliance requirements related to the construction of the new WWTP. Additional triggers that remain in the permit are: at 9.0 mg/l TN, construction of the approved alternative facility must commence; and at 10.0 mg/l TN, discharge to groundwater must cease.

Changes from Previous Permit:

Nitrogen species monitoring: All nitrogen species monitoring requirements except Total Nitrogen are removed from this renewal permit. Total Nitrogen is the only nitrogen parameter that has associated water quality limits for the LDD, or for groundwater. If the Permittee chooses to continue monitoring for NH3, TKN, NO2 and NO3, they are required to

continue to report that data, although the permit will not require that monitoring.

Reduction in frequency of TPH monitoring: All samples for TPH during the past 5 years have yielded non-detect results. Therefore the TPH quarterly monitoring requirement is reduced to annual monitoring.

Uranium monitoring: Uranium has been monitored in the effluent and at the Lower Diagonal Drain, both up and downstream of the Outfall. The data indicates no significant change in concentration in the effluent or the receiving water body. Uranium concentrations have been monitored and reported by the Permittee since 2007, although this has not been required by the permit. The monitoring is being discontinued.

Groundwater monitoring: Groundwater monitoring and reporting has been required by the permit, and the results have been reported on DMR forms. The only change for this renewal is to include the groundwater monitoring in a table format, rather than in a narrative.

Schedule of Compliance: The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance:

- The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- By August 4, 2013, the Permittee shall begin design of the new WWTP.
- By February 4, 2015, the Permittee shall submit to the Division, for review and approval, two copies of the 100% design plans for the new WWTP.
- By October 4, 2015, the Permittee shall commence construction of the new WWTP.
- By October 4, 2016, the Permittee shall complete construction of the new WWTP.
- By November 4, 2016, the Permittee shall submit to the Division, for review and approval, two copies of an updated Operations and Maintenance (O&M) Manual prepared in accordance with applicable sections of WTS-2 *Minimum Information Required for an Operation and Maintenance Manual for a Wastewater Treatment Plant*.
- By November 4, 2016, the Permittee shall submit to the Division, for review and approval, two copies of the engineering as-built plans for the new WWTP.

Proposed Determination: The Division has made the tentative determination to issue the renewal permit for a period of five (5) years.

Procedures for Public Comment: The Notice of the Division's intent to renew a NPDES permit authorizing the Permittee to discharge to the Lower Diagonal Drain, for a five-year period, subject to the conditions contained within the permit, is being sent to the **Reno Gazette**

Journal for publication. The Notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division is **December 2, 2012 by 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Prepared by: Jeryl R. Gardner, P.E.
Date: October 2012

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