ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 CFR §122.48) require that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and State regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitoring discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the San Diego Water Board. Samples shall be collected at times representative of "worst case" conditions with respect to compliance with the requirement of this Order.

B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±5 percent from true discharge rates throughout the range of expected discharge volumes.

C. Monitoring must be conducted according to U.S. Environmental Protection Agency (USEPA) test procedures approved at 40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act* as amended, or unless other test procedures are specified in this Order and/or in this MRP and/or by the San Diego Water Board.

D. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Public Health (DPH) or a laboratory approved by the San Diego Water Board.

E. Records of monitoring information shall include information required under Standard Provision, Attachment D of this Order, section IV.

F. All monitoring instruments and devices used by FPUD to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices.

G. FPUD shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of 10 percent of the samples or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by USEPA or the San Diego Water Board, FPUD will participate in the NPDES discharge monitoring report QA performance study. FPUD should have a success rate equal or greater than 80 percent.

H. Analysis for toxic pollutants, including chronic toxicity, with performance goals based on water quality objectives of the 2005 California Ocean Plan (hereinafter Ocean Plan) shall be conducted in accordance with procedures described in the Ocean Plan and restated in this MRP.

I. This permit may be modified in accordance with the requirements set forth at 40 CFR Parts 122 and 124, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any USEPA approved, new, State water quality standards applicable to effluent toxicity.

II. MONITORING LOCATIONS

FPUD shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	M-INF	At a location where all influent flows to Treatment Plant No. 1 are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.
--	M-001	Downstream of any in-plant return flows and chlorine disinfection where representative samples of effluent treated solely at Treatment Plant No. 1 can be collected.
001	M-002	At a location other than M-001 where representative samples of effluent from Treatment Plant No. 1 can be collected before combining with wastewater from the City of Oceanside, US Marine Corps Base Camp Pendleton, and Genetech, Inc. Current location is near terminus of the Fallbrook Land Outfall and prior to connecting to the Oceanside Ocean Outfall
SURF ZONE STATONS		
--	S1	Surf zone, 5,500 feet south of the outfall.
--	S2	Surf zone, 2,500 feet south of the outfall.
--	S3	Surf zone; at the outfall
--	S4	Surf zone, 2,000 feet north of the outfall.
--	S5	Surf zone, 5,800 feet north of the outfall.
NEAR SHORE STATIONS		
--	N1	Opposite S1, at the 30 foot depth contour, MLLW.
--	N2	Opposite S2, at the 30 foot depth contour, MLLW.
--	N3	Opposite S3, at the 30 foot depth contour, MLLW.
--	N4	Opposite S4, at the 30 foot depth contour, MLLW.
--	N5	Opposite S5, at the 30 foot depth contour, MLLW.
OFFSHORE STATIONS		
--	A1-A4	At the corners of a 1,000 ft x 1,000 ft square having one side parallel to shore and the intersection of its diagonals at the seaward end of the outfall.
--	A5	At the seaward end of the outfall.
--	B1	One mile downcoast from the outfall, and over the same depth contour as Station A5.
--	B2	One mile upcoast from the outfall and over the same depth contour as Station A5.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
BIOLOGICAL TRANSECTS		
--	T0	At the 20, 40, 60, and 80 foot depth contours along the transect located 50 feet downcoast of and parallel to the outfall.
--	T1	At the 20, 40, 60, and 80 foot depth contours along the transect located 1 mile downcoast of and parallel to the outfall.
--	T2	At the 20, 40, 60, and 80 foot depth contours along the transect located 1.5 miles downcoast of and parallel to the outfall.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-INF

1. FPUD shall monitor the influent at M-INF, as follows.

Table E-2. Influent Monitoring at M-INF

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer	Continuous	--
Carbonaceous Biochemical Oxygen Demand (5-day @ 20°C) ($CBOD_5$)	mg/L	24-hr Composite	1/Week	[1]
Total Suspended Solids (TSS)	mg/L	24-hr Composite	1/Week	[1]

[1] As required under 40 CFR Part 136.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001

1. FPUD shall monitor the effluent at M-001 as follows.

Table E-3. Effluent Monitoring at M-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
TSS	mg/L	24-hr Composite	1/Day[2]	[1,3,4]
$CBOD_5$	mg/L	24-hr composite	1/Day[2]	[1,3,4]
Oil and Grease	mg/L	Grab	1/Month[5]	[1,3]
Settleable Solids	mL/L	Grab	1/Day[2]	[1]
Turbidity	NTU	24hr Composite	1/Week[5]	[1]
pH	pH Units	Grab	1/Day[2]	[1]

[1] As required under 40 CFR Part 136.

[2] Applies 5 days per week, except 7 days per week for at least 1 week in July or August of each year.
[3] FPUD shall calculate and report the mass emission rate (MER) of the constituent for each sample taken. The MER shall be calculated in accordance with section VII.I.2.d of this Order.
[4] FPUD shall calculate the monthly average percent removal for these constituents.
[5] The minimum frequency of monitoring for this constituent is automatically increased to twice the minimum frequency specified, if any analysis for this constituent yields a result higher than the applicable effluent limitation or performance goal specified in this Order. The increased minimum frequency of monitoring shall remain in effect until the results of a minimum of four consecutive analyses for this constituent are below all applicable effluent limitations or performance goals specified in this Order.

2. FPUD shall monitor the effluent from M-001 or M-002 (Discharge Point No. 001) as follows.

Table E-4. Effluent Monitoring at M-001 or M-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Temperature	°F	Grab	1/Week	[1]
Dissolved Oxygen	mg/L	Grab	1/Week	[1]
Flow	MGD	Recorder/Totalizer	Continuous	--
TABLE B PARAMETERS FOR PROTECTION OF MARINE AQUATIC LIFE				
Arsenic, Total Recoverable	µg/L	24-hr Composite	2/Year[2,3]	[1]
Cadmium, Total Recoverable	µg/L	24-hr Composite	2/Year[2,3]	[1]
Chromium (VI), Total Recoverable[4]	µg/L	24-hr Composite	2/Year[2,3,4]	[1]
Copper, Total Recoverable	µg/L	24-hr Composite	2/Year[2,3]	[1]
Lead, Total Recoverable	µg/L	24-hr Composite	2/Year[2,3]	[1]
Mercury, Total Recoverable	µg/L	24-hr Composite	2/Year[2,3]	[1]
Nickel, Total Recoverable	µg/L	24-hr Composite	2/Year[2,3]	[1]
Selenium, Total Recoverable	µg/L	24-hr Composite	2/Year[2,3]	[1]
Silver, Total Recoverable	µg/L	24-hr Composite	2/Year[2,3]	[1]
Zinc, Total Recoverable	µg/L	24-hr Composite	2/Year[2,3]	[1]
Cyanide, Total Recoverable[5]	µg/L	24-hr Composite	2/Year[2,3]	[1,6]
Chlorine, Total Residual	µg/L	Grab	1/Week[2,6]	[1]
Ammonia Nitrogen, Total (as N)	mg/L	24-hr Composite	1/Month[2,3]	[1]
Phenolic Compounds (nonchlorinated)[7]	µg/L	24-hr Composite	2/Year[2,3]	[1]
Phenolic Compounds (chlorinated)[8]	µg/L	24-hr Composite	2/Year[2,3]	[1]
Endosulfan[9]	µg/L	24-hr Composite	2/Year[2,3]	[1]
Endrin	µg/L	24-hr Composite	2/Year[2,3]	[1]
HCH[10]	µg/L	24-hr Composite	2/Year[2,3]	[1]
Radioactivity	pCi/L	24-hr Composite	2/Year[2,3]	[1]
TABLE B PARAMETERS FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS				
Acrolein	µg/L	Grab	1/Year[2,3]	[1]
Antimony, Total Recoverable	µg/L	24-hr Composite	1/Year[2,3]	[1]
Bis (2-chloroethoxy) Methane	µg/L	Grab	1/Year[2,3]	[1]
Bis (2-chloroisopropyl) Ether	µg/L	Grab	1/Year[2,3]	[1]
Chlorobenzene	µg/L	Grab	1/Year[2,3]	[1]
Chromium (III), Total Recoverable	µg/L	24-hr Composite	1/Year[2,3]	[1]

Di-n-butyl Phthalate	µg/L	Grab	1/Year[2,3]	[1]
Dichlorobenzenes[11]	µg/L	Grab	1/Year[2,3]	[1]
Diethyl Phthalate	µg/L	Grab	1/Year[2,3]	[1]
Dimethyl Phthalate	µg/L	Grab	1/Year[2,3]	[1]
4,6-dinitro-2-methylphenol	µg/L	Grab	1/Year[2,3]	[1]
2,4-dinitrophenol	µg/L	Grab	1/Year[2,3]	[1]
Ethylbenzene	µg/L	Grab	1/Year[2,3]	[1]
Fluoranthene	µg/L	Grab	1/Year[2,3]	[1]
Hexachlorocyclopentadiene	µg/L	Grab	1/Year[2,3]	[1]
Nitrobenzene	µg/L	Grab	1/Year[2,3]	[1]
Thallium, Total Recoverable	µg/L	24-hr Composite	1/Year[2,3]	[1]
Toluene	µg/L	Grab	1/Year[2,3]	[1]
Tributyltin	µg/L	24-hr Composite	1/Year[2,3]	[1]
1,1,1-trichloroethane	µg/L	Grab	1/Year[2,3]	[1]
TABLE B PARAMETERS FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS				
Acrylonitrile	µg/L	Grab	1/Year[2,3]	[1]
Aldrin	µg/L	Grab	1/Year[2,3]	[1]
Benzene	µg/L	Grab	1/Year[2,3]	[1]
Benzidine	µg/L	Grab	1/Year[2,3]	[1]
Beryllium, Total Recoverable	µg/L	24-hr composite	1/Year[2,3]	[1]
Bis (2-chloroethyl) Ether	µg/L	Grab	1/Year[2,3]	[1]
Bis (2-ethlyhexyl) Phthalate	µg/L	Grab	1/Year[2,3]	[1]
Carbon Tetrachloride	µg/L	Grab	1/Year[2,3]	[1]
Chlordane	µg/L	Grab	1/Year[2,3]	[1]
Chlorodibromomethane	µg/L	Grab	1/Year[2,3]	[1]
Chloroform	µg/L	Grab	1/Year[2,3]	[1]
DDT[12]	µg/L	Grab	1/Year[2,3]	[1]
1,4-dichlorobenzene	µg/L	Grab	1/Year[2,3]	[1]
3,3'-dichlorobenzidine	µg/L	Grab	1/Year[2,3]	[1]
1,2-dichloroethane	µg/L	Grab	1/Year[2,3]	[1]
1,1-dichloroethylene	µg/L	Grab	1/Year[2,3]	[1]
Dichlorobromomethane	µg/L	Grab	1/Year[2,3]	[1]
Dichloromethane	µg/L	Grab	1/Year[2,3]	[1]
1,3-dichloropropene	µg/L	Grab	1/Year[2,3]	[1]
Dieldrin	µg/L	Grab	1/Year[2,3]	[1]
2,4-dinitrotoluene	µg/L	Grab	1/Year[2,3]	[1]
1,2-diphenylhydrazine	µg/L	Grab	1/Year[2,3]	[1]
Halomethanes[13]	µg/L	Grab	1/Year[2,3]	[1]
Heptachlor	µg/L	Grab	1/Year[2,3]	[1]
Heptachlor Epoxide	µg/L	Grab	1/Year[2,3]	[1]
Hexachlorobenzene	µg/L	Grab	1/Year[2,3]	[1]
Hexachlorobutadiene	µg/L	Grab	1/Year[2,3]	[1]
Hexachloroethane	µg/L	Grab	1/Year[2,3]	[1]
Isophorone	µg/L	Grab	1/Year[2,3]	[1]
N-nitrosodimethylamine	µg/L	Grab	1/Year[2,3]	[1]

N-nitrosodi-N-propylamine	µg/L	Grab	1/Year[2,3]	[1]
N-nitrosodiphenylamine	µg/L	Grab	1/Year[2,3]	[1]
PAHs[14]	µg/L	Grab	1/Year[2,3]	[1]
PCBs[15]	µg/L	Grab	1/Year[2,3]	[1]
TCDD equivalents[16]	µg/L	Grab	2/Year[2,3]	[1]
1,1,2,2-tetrachloroethane	µg/L	Grab	1/Year[2,3]	[1]
Tetrachloroethylene	µg/L	Grab	1/Year[2,3]	[1]
Toxaphene	µg/L	Grab	1/Year[2,3]	[1]
Trichloroethylene	µg/L	Grab	1/Year[2,3]	[1]
1,1,2-trichloroethane	µg/L	Grab	1/Year[2,3]	[1]
2,4,6-trichlorophenol	µg/L	Grab	1/Year[2,3]	[1]
Vinyl Chloride	µg/L	Grab	1/Year[2,3]	[1]

[1] As required under 40 CFR Part 136.

[2] FPUD shall calculate and report the mass emission rate (MER) of the constituent for each sample taken. The MER shall be calculated in accordance with section VII.I.2.d of this Order.

[3] The minimum frequency of monitoring for this constituent is automatically increased to twice the minimum frequency specified, if any analysis for this constituent yields a result higher than the applicable effluent limitation or performance goal specified in this Order. The increased minimum frequency of monitoring shall remain in effect until the results of a minimum of four consecutive analyses for this constituent are below all applicable effluent limitations or performance goals specified in this Order.

[4] Dischargers may, at their option, apply this performance goal as a total chromium performance goal.

[5] If a Discharger can demonstrate to the satisfaction of the San Diego Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, performance goals for cyanide may be met by the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR Part 136, as revised May 14, 1999.

[6] Monitoring of total chlorine residual is not required on days when none of the treatment units that are subject to this Order use chlorine for disinfection. If only one sample is collected for total chlorine residual analysis on a particular day, that sample must be collected at the time when the concentration of total chlorine residual in the discharge would be expected to be greatest. The times of chlorine discharges on the days that samples are collected, and the time at which samples are collected, shall be reported.

[7] Non-chlorinated phenolic compounds represent the sum of 2,4-dimethylphenol, 4,6-Dinitro-2-methylphenol, 2,4-dinitrophenol, 2-methylphenol, 4-methylphenol, 2-Nitrophenol, 4-nitrophenol, and phenol.

[8] Chlorinated phenolic compounds represent the sum of 4-chloro-3-methylphenol, 2-chlorophenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol.

[9] Endosulfan represents the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.

[10] HCH (hexachlorocyclohexane) represents the sum of the alpha, beta, gamma (Lindane), and delta isomers of hexachlorocyclohexane.

[11] Dichlorobenzenes represent the sum of 1,2- and 1,3-dichlorobenzene.

[12] DDT represents the sum of 4,4'DDT; 2,4'DDT; 4,4'DDE; 2,4'DDE; 4,4'DDD; and 2,4'DDD.

[13] Halomethanes represent the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

[14] PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenaphthalene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[a,h]anthracene; fluorene; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

[15] PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.

[16] TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 8280 may be used to analyze TCDD equivalents.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8 – tetra CDD	1.0
2,3,7,8 – penta CDD	0.5
2,3,7,8 – hexa CDD	0.1
2,3,7,8 – hepta CDD	0.01
octa CDD	0.001
2,3,7,8 – tetra CDF	0.1
1,2,3,7,8 – penta CDF	0.05
2,3,4,7,8 – penta CDF	0.5
2,3,7,8 – hexa CDFs	0.1
2,3,7,8 – hepta CDFs	0.01
Octa CDF	0.001

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

FPUD shall conduct chronic toxicity testing on effluent samples collected at Effluent Monitoring Station M-002 in accordance with the following schedule and requirements:

Table E-5. Whole Effluent Toxicity Testing

Test	Unit	Sample Type	Minimum Test Frequency
Screening period for chronic toxicity	TU_c	24-hr Composite	Every other year for 3 consecutive months, beginning with the calendar year 2011
Chronic Toxicity	TU_c	24-hr Composite	1/Quarter

Marine Organisms, 5th Edition, October 2002 (EPA-821-R-02-012).

Critical life stage toxicity tests shall be performed to measure chronic toxicity (TUc). Testing shall be performed using methods outlined in *Short-Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine Estuarine Organisms (*Chapman, G.A., D.L. Denton, and J.M. Lazorchak, 1995) or *Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project* (State Water Board, 1996).

A screening period for chronic toxicity shall be conducted every other year beginning with the calendar year 2011. Each screening period shall consist of 3 consecutive months of WET tests, using a minimum of three test species with approved test protocols, from the following list (from the Ocean Plan). Repeat screening periods may be terminated after the first month if the most sensitive species is the same as the species previously found to be most sensitive. Other tests may be used, if they have been approved for such testing by the State Water Board. The test species shall include a fish, an invertebrate, and an aquatic plant. After the screening period, the most sensitive test species shall be used for the quarterly testing. Control and dilution water should be obtained from an unaffected area of the receiving water or should use lab water as appropriate. If the dilution water is different from the culture water, then culture water should be used in a second control. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay test and reported with test results.

Table E-6. Approved Test for Chronic Toxicity

Species	Test	Tier [1]	Reference [2]
giant kelp, *Macrocystis pyrifera*	percent germination; germ tube length	1	a, c
red abalone, *Haliotis rufescens*	abnormal shell development	1	a, c
oyster, *Crassostrea gigas*; mussels, *Mytilus spp.*	abnormal shell development; percent survival	1	a, c
urchin, *Strongylocentrotus purpuratus*; sand dollar, *Dendraster excentricus*	percent normal development	1	a, c
urchin, *Strongylocentrotus purpuratus*; sand dollar, *Dendraster excentricus*	percent fertilization	1	a, c
shrimp, *Homesimysis costata*	percent survival; growth	1	a, c
shrimp, *Mysidopsis bahia*	percent survival; fecundity	2	b, d
topsmelt, *Atherinops affinis*	larval growth rate; percent survival	1	a, c
Silversides, *Menidia beryllina*	larval growth rate; percent survival	2	b, d

[1] First tier methods are preferred for compliance monitoring. If first tier organisms are not available, FPUD can use a second tier test method following approval by the San Diego Water Board.

[2] Protocol References:

a. Chapman, G.A., D.L. Denton, and J.M. Lazorchak. 1995. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. USEPA Report No. EPA/600/R-95/136.

b. Klemm, D.J., G.E. Morrison, T.J. Norberg-King, W.J. Peltier, and M.A. Heber. 1994. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms. USEPA Report No. EPA-600-4-91-003.

c. SWRCB 1996. Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project. 96-1WQ.

d. Weber, C.I., W.B. Horning, I.I., D.J. Klemm, T.W. Nieheisel, P.A. Lewis, E.L. Robinson, J. Menkedick and F. Kessler 9eds). 1998. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-87/028. National Information Service, Springfield, VA.

If the performance goal for chronic toxicity is exceeded in any one test, then within 15 days of the exceedance, FPUD shall begin conducting six additional tests, bi-weekly, over a 12 week period. If the toxicity effluent limitation is exceeded in any of these six additional tests, then FPUD shall notify the San Diego Water Board. If the San Diego Water Board determines that the discharge consistently exceeds a toxicity performance goal, then FPUD shall initiate a TRE/TIE in accordance with the TRE workplan, Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants (USEPA 833-B-99-002, 1999), and USEPA TIE guidance documents (Phase I, EPA/600/6-91/005F, 1992; Phase II, EPA/600/R-92/080, 1993; and Phase III, EPA/600/R-92/081, 1993). Once the source of toxicity is identified, FPUD shall take all reasonable steps to reduce the toxicity to meet the chronic toxicity performance goal identified in section IV.A.2 of this Order.

Within 30 days of completion of the TRE/TIE, FPUD shall submit the results of the TRE/TIE, including a summary of the findings, data generated, a list of corrective actions necessary to achieve consistent compliance with all the toxicity limitations/performance goals of this Order and prevent recurrence of exceedances of those limitations/performance goals, and a time schedule for implementation of such corrective actions. The corrective actions and time schedule shall be modified at the direction of the San Diego Water Board.

If no toxicity is detected in any of these additional six tests, then FPUD may return to the testing frequency specified in the MRP.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

The receiving water monitoring program required herein is also required by San Diego Water Board Order No. R9-2011-0016, which establishes limitations and conditions for discharges from the City of Oceanside, Oceansdie OO. FPUD may conduct the required receiving water monitoring together with the City of Oceanside, US Marine Corps Base Camp Pendleton, and Genentech, as these entities discharge through the Oceanside OO.

Receiving water and sediment monitoring in the vicinity of the Oceanside OO shall be conducted as specified below. Station location, sampling, sampling preservation and analyses, when not specified, shall be by methods approved by the San Diego Water Board. The monitoring program may be modified by the San Diego Water Board at any time.

The receiving water and sediment monitoring program for the Oceanside OO may be conducted jointly with other dischargers to the Oceanside OO.

During monitoring events, if possible, sample stations shall be located using a land-based microwave positioning system or a satellite positioning system such as GPS. If an alternate navigation system is proposed, its accuracy should be compared to that of microwave and satellite based systems, and any compromises in accuracy shall be justified.

A. Surf Zone Water Quality Monitoring

All surf zone stations shall be monitored as follows.

1. Grab samples shall be collected and analyzed for total and fecal coliform and enterococcus bacteria at a minimum frequency of one time per week. As required by implementation procedures at section III.D of the Ocean Plan, measurement of enterococcus density shall be conducted at all stations where measurement of total and fecal coliform bacteria is required.

   If a single sample exceeds any of the single sample bacterial standards, repeat sampling at that location shall be conducted to determine the extent and persistence of the exceedance. Repeat sampling shall be conducted within 24 hours of receiving analytical results and continued until the sample result is less than the single sample bacterial standards or until a sanitary survey is conducted to determine the source of the high bacterial densities.

   Single sample bacterial standards include:

   i. Total coliform density will not exceed 10,000 per 100 ml; or

   ii. Fecal coliform density will not exceed 400 per 100 ml; or

iii. Total coliform density will not exceed 1,000 per 100 ml when the ratio of fecal/total coliform exceeds 0.1;

iv. Enterococcus density will not exceed 104 per 100 ml.

2. At the same time Samples are collected from surf zone stations, the following information shall be recorded: observation of wind direction and speed; weather (cloudy, sunny, or rainy); current direction; tidal conditions; and observations of water color, discoloration, oil and grease; turbidity, odor, and materials of sewage origin in the water or on the beach; water temperature (°F); and status of the mouth of the Buena Vista Lagoon (open, closed, flow, etc.).

B. Near Shore Water Quality Monitoring

All near shore stations shall be monitored as follows.

1. Reduced Monitoring

If the San Diego Water Board determines that the effluent complies with the effluent limitations and performance goals at section IV.A of this Order and the receiving water limitations at section V.A of this Order at all times, only reduced near shore water quality monitoring specified below is required.

Table E-7. Near Shore Water Quality Reduced Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	--	--	1/Month
Total Coliform Organisms	Number / 100 mL	Grab[1]	1/Month
Fecal Coliform Organisms	Number / 100 mL	Grab[1]	1/Month
Enterococcus	Number / 100 mL	Grab[1]	1/Month

[1] At the surface.

2. Intensive Monitoring

The intensive near shore water quality monitoring specified below is required during the 12-month period beginning November 1, 2013 through October 31, 2014, and must be submitted by December 1, 2014. This monitoring data will assist the San Diego Water Board in the evaluation of the Report of Waste Discharge. The intensive near shore water quality monitoring specified below may also be required if the San Diego Water Board determines that 1) the effluent does not at all times comply with the effluent limitations and performance goals of this Order; or 2) FPUD's discharge is causing or contributing to the receiving water limitations of this Order not being consistently achieved.

Table E-8. Near Shore Water Quality Intensive Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	--	--	1/Month
Total Coliform Organisms	Number / 100 mL	Grab[1]	1/Month
Fecal Coliform Organisms	Number / 100 mL	Grab[1]	1/Month
Enterococcus	Number / 100 mL	Grab[1]	1/Month

[1] At the surface and mid-depth.

C. Off Shore Water Quality Monitoring

All off shore stations shall be monitored as follows.

1. Reduced Monitoring

If the San Diego Water Board determines that the effluent at all times complies with the effluent limitations and performance goals at section IV.A of this Order and the receiving water limitations at section V.A of this Order, only reduced off shore water quality monitoring specified below is required.

Table E-9. Off Shore Water Quality Reduced Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	--	--	1/Month
Total Coliform Organisms	Number / 100 mL	Grab[1]	1/Month
Fecal Coliform Organisms	Number / 100 mL	Grab[1]	1/Month
Enterococcus	Number / 100 mL	Grab[1]	1/Month

[1] At surface and mid-depth.

2. Intensive Monitoring

The intensive off shore water quality monitoring specified below is required during the 12-month period beginning November 1, 2013 through October 31, 2014, and must be submitted by December 1, 2014. This monitoring data will assist the San Diego Water Board in the evaluation of the Report of Waste Discharge. The intensive off shore water quality monitoring specified below may also be required if the San Diego Water Board determines that 1) the effluent does not at all times comply with the effluent limitations and performance goals of this Order, or 2) the receiving water limitations of this Order are not being consistently achieved.

Table E-10. Off Shore Water Quality Intensive Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	--	--	1/Month
Total Coliform Organisms	Number / 100 mL	Grab[1]	1/Month
Fecal Coliform Organisms	Number / 100 mL	Grab[1]	1/Month
Enterococcus	Number / 100 mL	Grab[1]	1/Month
Conductivity, Temperature, and Depth	Practical Salinity Units,°F, feet	Grab[2]	1/Month
Dissolved Oxygen	mg/L	Grab[2]	1/Month
Light Transmittance	percent	Instrument[2]	1/Month
pH	standard units	Grab[3]	1/Month

[1] At the surface and mid-depth.
[2] At the surface, mid-depth, and bottom.
[3] At the surface.

D. Benthic Monitoring

The intensive monitoring specified below is required during the 12-month period beginning November 1, 2013 through October 31, 2014, and must be submitted by December 1, 2014. This monitoring data will assist the San Diego Water Board in the evaluation of the Report of Waste Discharge. The sediment monitoring specified below may also be required if the San Diego Water Board determines that 1) the effluent does not at all times comply with Effluent Limitations and Performance Goals of this Order or 2) FPUD's discharge is causing or contributing to the receiving water limitations of this Order not being consistently achieved. Benthic monitoring shall be conducted at all off shore monitoring stations.

1. **Sediment Characteristics**. Analyses shall be performed on the upper 2 inches of core.

Table E-11.Sediment Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Sulfides	mg/kg	Core	2/Year
Total Chlorinated Hydrocarbons	mg/kg	Core	2/Year
Biochemical Oxygen Demand (5-day @ 20°C)	mg/kg	Core	2/Year
Chemical Oxygen Demand	mg/kg	Core	2/Year
Particle Size Distribution	mg/kg	Core	2/Year
Arsenic	mg/kg	Core	1/Year
Cadmium	mg/kg	Core	1/Year
Total Chromium	mg/kg	Core	1/Year
Copper	mg/kg	Core	1/Year
Lead	mg/kg	Core	1/Year
Mercury	mg/kg	Core	1/Year
Nickel	mg/kg	Core	1/Year
Silver	mg/kg	Core	1/Year
Zinc	mg/kg	Core	1/Year
Cyanide	mg/kg	Core	1/Year
Phenolic Compounds	mg/kg	Core	1/Year
Radioactivity	pCi/kg	Core	1/Year

2. **Infauna.** Samples shall be collected with a Paterson, Smith-McIntyre, or orange-peel type dredge, having an open sampling area of not less than 124 square inches and a sediment capacity of not less than 210 cubic inches. The sediment shall be sifted through a 1-millimeter mesh screen and all organisms shall be identified to as low a taxon as possible.

Table E-12. Infauna Monitoring Requirements

Determination	Units	Sample Type	Minimum Frequency
Benthic Biota	Identification and enumeration	3 Grabs	2/Year

E. Additional Biological Monitoring – Demersal Fish and Macroinvertebrates

The intensive monitoring specified below is required during the 12-month period beginning November 1, 2013 through October 31, 2014, and must be submitted by December 1, 2014. This monitoring data will assist the San Diego Water Board in the evaluation of the Report of Waste Discharge, which is required to be submitted by FPUD within 180 days prior to the Order's expiration date of September 27, 2017.

Table E-13. Demersal Fish and Macroinvertebrates Monitoring Requirements

Determination	Units	Minimum Frequency
Biological Transects	Identification and enumeration	Year 4

In rocky or cobble areas, a 30-meter band transect, 1 meter wide, shall be established on the ocean bottom. Operations at each underwater station shall include: (1) recording of water temperature (may be measured from a boat) and estimated visibility and pelagic macrobiota at each 10-foot depth increment throughout the water column and at the bottom; (2) recording of general bottom description; (3) enumeration by estimate of the larger plants and animals in the band transect area; (4) development of a representative photographic record of the sample area; and (5) within each band, three ¼-meter square areas shall be randomly selected, and all macroscopic plant and animal life shall be identified within each square to as low a taxon as possible, and measured. Sampling techniques will follow those employed by biologist divers of the California State Department of Fish and Game.

In sandy areas, a 30-meter band transect, 1 meter wide, shall be established on the ocean bottom. Operations at each underwater station shall include: (1) recording of water temperature (may be measured from a boat), and estimated visibility and pelagic macrobiota at each 10-foot depth increment throughout the water column and at the bottom; (2) recording of general bottom description; (3) recording of height, period, and crest direction of ripple marks; (4) recording of amount, description, and location of detritus on bottom; (5) creation of a representative photographic record of the area sampled; and (6) within each band, three cores of at least 42.5 cm^2 in area shall be randomly taken to a depth of 15 cm where possible, (the three cores may be taken from a boat) and the material removed sifted through at least a 1 mm mesh screen, and all organisms identified to as low a taxon as possible, enumerated, measured, and reproductive conditions assessed where feasible. Sampling techniques will follow those employed by biologist divers of the California State Department of Fish and Game.

For each epifauna and infauna, size frequency and distribution shall be shown for at least the three numerically largest populations identified to the lowest possible taxon and appropriate graphs showing the relationship between species frequency and population shall be plotted from each sample.

IX. OTHER MONITORING REQUIREMENTS

A. Kelp Bed Canopy

FPUD shall participate with other ocean dischargers in the San Diego Region in an annual regional kelp bed photographic survey. Kelp beds shall be monitored annually by means of vertical aerial infrared photography to determine the maximum aerial extent of the region's coastal kelp beds within the calendar year. Surveys shall be conducted as close as possible to the time when kelp bed canopies cover the greatest area. The entire San Diego Region coastline, from the international boundary to the San Diego Region/Santa Ana Region boundary shall be photographed on the same day.

The images produced by the surveys shall be presented in the form of 1:24,000 scale photo-mosaic of the entire San Diego Region coastline. Onshore reference points, locations of all

ocean outfalls and diffusers, and the 30-foot mean lower low water (MLLW) and 60-foot (MLLW) depth contours shall be shown.

The aerial extent of the various kelp beds photographed in each survey shall be compared to that noted in surveys of previous years. Any significant losses which persist for more than one year shall be investigated by divers to determine the probable reason for the loss.

B. Regional Monitoring

The Discharger shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development, refinement, implementation, and coordination of regional monitoring and assessment programs to:

1. Determine the status and trends of conditions in ocean waters with regard to beneficial uses, e.g.
   a. Are fish and shellfish safe to eat?
   b. Is water quality safe for swimming?
   c. Are ecosystems healthy?
2. Identify the stressors causing / contributing to conditions of concern;
3. Identify the sources of the stressors causing / contributing to conditions of concern; and
4. Evaluate the effectiveness (i.e., environmental outcomes) of actions taken to address such stressors and sources.

C. Solids Monitoring

FPUD shall report, annually, the volume of screenings, sludge [biosolids], grit, and other solids generated and/or removed during wastewater treatment and the locations where these waste materials are placed for disposal. Copies of all annual reports required by 40 CFR Part 503 shall be submitted to the San Diego Water Board at the same time they are submitted to the USEPA.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. FPUD shall comply with all Standard Provisions (Attachment D of this Order) related to monitoring, reporting, and recordkeeping.

2. Reports of marine monitoring surveys conducted to meet receiving water monitoring requirements of this MRP shall include, as a minimum, the following information:

a. A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling, tide height, etc.).

b. A description of sampling stations, including differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.).

c. A description of the sample collection and preservation procedures used in the survey.

d. A description of the specific method used for laboratory analysis.

e. An in-depth discussion of the results of the survey. All tabulations and computations shall be explained.

f. Annual reports will include detailed statistical analyses of all data. Methods may include, but are not limited to, various multivariate analyses such as cluster analysis, ordination, and regression. FPUD should also conduct additional analyses, as appropriate, to elucidate temporal and spatial trends in the data.

3. By March 1 of each year, FPUD shall submit an annual report to the San Diego Water Board and USEPA Region 9 that contains tabular and graphical summaries of the monitoring data obtained during the previous year. FPUD shall discuss the compliance record and corrective actions taken, or which may be taken, or which may be needed to bring the discharge into full compliance with the requirements of this Order and this MRP.

B. Self Monitoring Reports (SMRs)

1. The State Water Board and San Diego Water Board has notified FPUD to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). FPUD shall also submit hard copy SMRs, until notified otherwise. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. FPUD shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. FPUD shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If FPUD monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

3. Unless otherwise noted in the MRP, monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-14. Monitoring Periods and Reporting Schedule

Sampling Frequency/ Report Type	Monitoring Period Begins	Monitoring Period	SMR Due Date
Continuous	First day of the calendar month following the permit effective date or on permit effective date if that date is first day of the month.	All	First day of second calendar month following month of sampling.
1/Day	First day of the calendar month following the permit effective date or on permit effective date if that date is first day of the month.	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling.

Sampling Frequency/ Report Type	Monitoring Period Begins	Monitoring Period	SMR Due Date
1/Week	First Sunday of the calendar month following the permit effective date or on permit effective date if on a Sunday.	Sunday through Saturday	First day of second calendar month following month of sampling.
1/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month.	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling.
1/Quarter	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date.	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
2/Year	Closest of January 1 or July 1 following (or on) permit effective date.	January 1 through June 30 July 1 through December 31	August 1 March 1
Significant Industrial User Compliance Status Report	Closest of January 1 or July 1 following (or on) permit effective date.	January 1 through June 30 July 1 through December 31	September 1 March 1
1/Year Pretreatment Program Compliance Schedule – progress report	January 1 following (or on) permit effective date.	January 1 through December 31	March 1
Biosolids Report	January 1 following (or on) permit effective date.	January 1 through December 31	February 19
Intensive Monitoring	November 1, 2013	November 1, 2013 through October 31, 2014	December 1, 2014

4. **Reporting Protocols.** FPUD shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136. For each numeric effluent limitation or performance goal for a parameter identified in Table B of the Ocean Plan, FPUD shall not use a ML greater than that specified in Appendix II of the Ocean Plan.

   FPUD shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

b. Sample results less than the minimum level (ML), but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is FPUD to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Compliance Determination.** Compliance with effluent limitations for reportable pollutants shall be determined using sample reporting protocols defined above and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, FPUD shall be deemed out of compliance with effluent limitations if the concentration of the reportable pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML.

6. **Multiple Sample Data.** When determining compliance with a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses and the data set contains one or more reported determinations of DNQ or ND, FPUD shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

7. FPUD shall submit SMRs in accordance with the following requirements:

   a. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, FPUD shall electronically submit the data in a tabular format as an attachment.

   b. Clearly identify violations of the waste discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions.

Identified violations must include a description of the requirement that was violated and a description of the violation.

c. When hard copies are required, SMRs must be submitted to the San Diego Water Board, signed and certified as required by the Standard Provisions (Attachment D of this Order), to the address listed below:

9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

C. Discharge Monitoring Reports (DMRs)

1. At any time during the term of this permit, the State or San Diego Water Board may notify FPUD to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, FPUD shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D of this Order). FPUD shall submit the original DMR and one copy of the DMR to the address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated will not be accepted unless they follow the exact same format of USEPA Form 3320-1.

D. Other Reports

1. FPUD shall report the results of any chronic toxicity testing, TRE/TIE, FPUD Treatment Plant No. 1 Capacity Study, Sludge Disposal Report, and Pretreatment Report, as required by Special Provisions – VI.C. of this Order. FPUD shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

Attachment F – Fact Sheet

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ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	9 000000115
Discharger	Fallbrook Public Utility District
Name of Facility	Fallbrook Public Utility District Treatment Plant No. 1
Facility Address	1425 South Alturas Road Fallbrook, CA 92028
Facility Contact, Title and Phone	Jack Bebee, Engineering and Planning Manager, (760) 728-1125
Authorized Person to Sign and Submit Reports	Jack Bebee, Engineering and Planning Manager, (760) 728-1125
Mailing Address	P.O. Box 2290, Fallbrook, CA 92028
Billing Address	Same as Mailing Address
Type of Facility	Municipal Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	No
Reclamation Requirements	Producer and Distributor (regulated under separate waste discharge requirements (WDRs))
Facility Permitted Flow Rate	2.7 million gallons per day (MGD)
Facility Design Flow	2.7 MGD
Watershed	Pacific Ocean
Receiving Water	Pacific Ocean
Receiving Water Type	Ocean

A. The Fallbrook Public Utility District (hereinafter Discharger or FPUD) is the owner and operator of the Fallbrook Public Utility District Treatment Plant No. 1 (hereinafter Facility), a municipal POTW.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to FPUD herein.

B. The Facility discharges treated secondary effluent through the Oceanside OO, which is owned and operated by the City of Oceanside, to the Pacific Ocean, a water of the United States, and currently regulated under Order No. R9-2006-002, which was adopted on April 12, 2006 and expires on June 1, 2011. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements and an NPDES permit are adopted and effective pursuant to this Order.

C. FPUD filed a Report of Waste Discharge (ROWD) and submitted an application for renewal of its WDRs and National Pollutant Discharge Elimination System (NPDES) permit on September 30, 2010.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

FPUD owns and operates the Facility, FPUD land outfall pipe, and FPUD sanitary sewer system. These facilities are collectively referred to as FPUD's Facilities in this Order. This Order establishes discharge prohibitions, limitations, and conditions to regulate discharges of effluent consisting of treated wastewater from FPUD's Facilities to the Pacific Ocean; these discharges were regulated by Order No. R9-2006-002 (NPDES permit No. CA0108031) that expired on June 1, 2011, but was administratively continued until the effective date of this Order.

FPUD provides wastewater collection, treatment, and disposal services for approximately 25,000 people utilizing residential service connections within the FPUD service area. Additionally, the Facility provides treatment and disposal services for approximately 10,000 gallons of wastewater generated by the Fallbrook US Naval Weapons Station. Currently, FPUD is not required to have an industrial pretreatment program since the Facility does not accept contributions from any industrial dischargers or sources subject to pretreatment standards.

The Facility is located at 1425 South Alturas Road, Fallbrook CA 92028 in San Diego County, adjacent to Fallbrook Creek. Wastewater treatment unit operations and processes at the Facility consist of mechanical bar screening, aerated grit removal, primary sedimentation, aeration and secondary clarification (activated sludge treatment process), chlorination, and filtration. Treated wastewater is discharged to the Pacific Ocean through the Oceanside OO. Secondary treatment design capacity is currently 2.70 MGD average daily flow. The annual average daily flow in 2008 was 1.75 MGD, and in 2009 was 1.71 MGD.

Screenings from the headworks and solids from grit removal at the Facility are collected on-site and trucked to a landfill in San Diego County, California. Sludge from the secondary treatment facilities is thickened aerobically, digested, and dewatered via centrifuge. Dewatered sludge are fed to a thermal dryer system to produce Class A EQ sewage sludge and disposed of via land application. If the dryer system is off-line, sewage sludge is dewatered via drying beds and hauled to a land application site in Yuma, Arizona by a contractor.

B. Discharge Points and Receiving Waters

The Facility discharges secondary effluent to the Oceanside OO via pump stations and a land outfall system. FPUD has a contractual agreement with the City of Oceanside to discharge up to 2.4 MGD of treated effluent through the Oceanside OO on an annual average basis.

The City of Oceanside owns and operates the Oceanside OO which begins at the City of Oceanside La Salina Wastewater Treatment Plant site just north of the mouth of the Loma Alta Creek and extends southwesterly approximately 8,850 feet offshore to a depth of approximately 100 feet. The Oceanside OO contains a 38-inch internal diameter steel pipe with a 1-inch thick cement mortar interior lining and 2.75-inch thick cement mortar outer jacket. The Oceanside OO has a 35.75-inch internal diameter. The Oceanside OO terminates with a 230-foot diffuser collinear with the rest of the outfall and extends to a depth of approximately 108 feet. The diffuser has fourteen 5-inch diameter ports and ten 4-inch diameter ports. The terminus of the diffuser is located at Latitude 33° 09' 46" North, Longitude 117° 23' 29" West.

The City of Oceanside has a contract with FPUD for the discharge of an average annual flowrate of 2.4 MGD of treated wastewater through the Oceanside OO, subject to waste discharge requirements contained in this Order. The City of Oceanside also has a contract with the United States Marine Corp Base Camp Pendleton (USMCBCP) for the discharge of up to 3.6 MGD of undisinfected secondary effluent through the Oceanside OO, subject to waste discharge requirements contained in Order No. R9-2008-0096 (NPDES Permit No. CA0109347). The City of Oceanside also has a contract with the industrial discharger Genentech to discharge brine flow up to 0.85 MGD through the Oceanside OO, subject to waste discharge requirements contained in Order No. R9-2008-0082 (NPDES Permit No. CA0109193). The combined permitted flow rate from all parties discharging through the Oceanside OO was 29.055 MGD.

Section II.B of the Fact Sheet for Order No. R9-2006-002 stated that the design capacity of the Oceanside OO is an average daily flow of 30 MGD, with a maximum rated peak-day capacity of 45 MGD. However, during an inspection of the Oceanside OO in 2009, the City of Oceanside determined that the outfall interior diameter is 35.75-inches, not 36-inches as shown in construction drawings. The City of Oceanside 2009 inspection also determined that a coating of soft muck is currently coating the entire interior circumference of the outfall pipe, reducing outfall capacity. Further, a sediment survey of the diffuser confirmed a sediment buildup, particularly near the end of the diffuser, also contributing to a loss of outfall capacity. The City of Oceanside submitted these findings to the San Diego Water Board in a 2010 Ocean Outfall Capacity Report. The report concludes that the current available capacity of the Oceanside OO is 22.6 MGD, significantly less than the previously reported 30 MGD. However, the City of Oceanside reported that this capacity is sufficient until 2015, when wet weather flows may result in an exceedance of the Oceanside OO capacity.

Below is a table displaying projected peak flows to the Oceanside OO.

Table F-2. Facility Information

Source	Peak Day Flow (MGD)	Projected Peak Flow (MGD) Under Wet Weather Conditions[1]		
		Current	Projected 2015	Projected 2020
City of Oceanside	15.75[2]	18.22[7]	19.93[7]	20.70[7]
Mission Basin Desalination Facility	1.3[3]	1.26	1.26[3]	1.26[3]
Genentech, Inc.	0.11[2]	0.11[4]	0.2[4]	0.2[4]
Camp Pendleton	2.8[5]	2.8[5]	2.8[5]	2.8[5]
FPUD	2.5[6]	2.5[6]	2.5[6]	2.5[6]
Total	21.18	24.89[7]	26.69[7]	27.46[7]

[1] From Ocean Outfall Capacity Evaluation Report (Carrollo Engineers, 2010). Assumes a 30 million gallon effluent storage pond at the City of Oceanside San Luis Rey Water Reclamation Facility (SLRWF) is not utilized.
[2] Observed maximum day flow during 2009.
[3] Based on typical peak day brine flow observed in 2009.
[4] Based on flow projections from Genentech, Inc.
[5] Historic Camp Pendleton peak wet weather discharge to the Oceanside OO, which occurred during wet weather period in winter of 2005.
[6] Historic FPUD peak wet weather discharge to the Oceanside OO, which occurred during wet weather period in winter 2005.
[7] Combined projected peak inflow to the La Salina Wastewater Treatment Plant and SLRWRF. Actual wet weather discharge flows from the two plants to the Oceanside OO will be lower than these projected values through the use of effluent storage capacity at the SLRWRF.

Prior to 2016, the City of Oceanside plans to clean muck and debris from the interior of the outfall which will serve to increase the outfall capacity to 23.4 MGD and provide sufficient capacity until approximately 2025.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in Order No. R9-2006-002 for discharges from the Facility and representative monitoring data obtained at Monitoring Location M-001 and M-002 (Discharge Point No. 001) are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data at M-001

Parameter	Units	Effluent Limitation			Monitoring Data (July 2005 – February 2010)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Carbonaceous Biochemical Oxygen Demand (5-day @ 20°C) ($CBOD_5$)	mg/L	25	40	--	16	32	--
	% Removal	85	--	--	93[2]	--	--
Total Suspended Solids (TSS)	mg/L	30	45	--	7.9	19	--
	% Removal	85	--	--	97[2]	--	--
pH	standard units	--	--	6.0 – 9.0[1]	--	--	6.2[2]/7.6

[1] Between 6.0 and 9.0 at all times.
[2] Minimum.

Table F-4. Historic Effluent Limitations and Monitoring Data at Discharge Point No. 001 (M-002)

Parameter	Units	Effluent Limitation			Monitoring Data (July 2005 – February 2010)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Oil and Grease	mg/L	25	40	75[1]	ND	ND	ND
Settleable Solids	mL/L	1.0	1.5	3.0[1]	1.0	0.26	5.0
Turbidity	NTU	75	100	225[1]	4.7	16	53
Chronic Toxicity	TUc[2]	--	--	88[1]	--	--	25[2]

ND – Not detected
NR – Not Reported
[1] Applied as an instantaneous maximum effluent limitation.
[2] Chronic toxicity expressed as Chronic Toxicity Units (TUc) = 100/NOEL, where NOEL (No Observed Effect Level) is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism.

D. Compliance Summary

1. Compliance Evaluation Inspections (CEI) of Treatment Plant No. 1 were conducted on October 22, 2007, January 15, 2009, and on April 8, 2010. Compliance issues noted by the inspectors were as follows:

   a. On October 22, 2007, FPUD failed to properly report mass emission loadings for CBOD, TSS, and BOD between June 1, 2006 and the date of the inspection. Additionally, the inspector noted that oil and grease grab samples had not been collected according to the procedures under 40 CFR Part 136.

   b. On February 28, 2008, FPUD did not report a value in the self-monitoring report for total suspended solids (TSS); however, the TSS value did not exceed the permit limitation.

   c. On January 15, 2009, FPUD failed to properly report mass emission loadings for CBOD, TSS, and BOD between June 1, 2006 and the date of the inspection.

   d. In the January 15, 2009 and April 8, 2010 CEI Reports, the inspector noted that FPUD's sampling methods for oil and grease were not in accordance with 40 CFR Part 136, as required in Order No. R9-20069-0002, Attachment E, Monitoring and Reporting Program.

2. From June 2006 to June 2010, according to the Discharger's reports, there were nine deficient monitoring violations and three effluent limitations violations. A notice of violation was issued for all of these violations on July 17, 2012.

E. Planned Changes

FPUD plans to upgrade existing process facilities without capacity increase.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the United States Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (CWC) (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under CWC section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 through 21177.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Quality Control Board (San Diego Water Board) adopted a *Water Quality Control Plan for the San Diego Basin* (hereinafter Basin Plan) on September 8, 1994 that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives. The Basin Plan was subsequently approved by the State Water Board on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the San Diego Water Board and approved by the State Water Board. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

Table F-5. Basin Plan Beneficial Uses

Discharge Point No.	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean	Industrial service supply; navigation; contact water recreation; non-contact water recreation; commercial and sport fishing; preservation of biological habitats of special significance; wildlife habitat; rare, threatened, or endangered species; marine habitat; aquaculture; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting.

Requirements of this Order implement the Basin Plan.

2. **California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (hereinafter Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, 2005, and 2009. The State Water Board adopted the latest amendment on September 15, 2009 and it became effective on March 10, 2010. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized below:

Table F-6. Ocean Plan Beneficial Uses

Discharge Point No.	Receiving Water	Beneficial Uses
001	Pacific Ocean	Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish migration; fish spawning and shellfish harvesting.

In order to protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

3. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

4. **Antidegradation Policy.** 40 CFR 131.12 requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The San Diego Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies (San Diego Basin Plan Chapter 3, pages 3-2 & 3-3). The permitted discharge must be consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

5. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.