



Region 6 Compliance Assurance and Enforcement Division
INSPECTION REPORT

Inspection Date(s):	07/17/2018		
Media:	Water		
Regulatory Program(s)	CWA – NPDES		
Company Name:	Belen, City of		
Facility Name:	Belen Wastewater Treatment Plant		
Facility Physical Location:	1300 Conservancy Road		
(city, state, zip code)	Belen, NM 87002		
Mailing address:	100 South Main Street		
(city, state, zip code)	Belen, NM 87002		
County/Parish:	Valencia County		
Facility Contact:	Jerah Cordova	Mayor, City of Belen	
	jerah.cordova@belen-nm.gov		
FRS Number:	110001934462		
Identification/Permit Number:			
Media Number:	NM0020150		
NAICS:	221320		
SIC:	4952		
Personnel participating in inspection:			
Amy Andrews, P.E.	USEPA/6EN-WMH	Environmental Engineer	214-907-0638
Reyes Moreno	City of Belen	Wastewater Operator	505-966-2730
Ben Morrales	City of Belen	Wastewater Operator	505-966-2730
EPA Lead Inspector Signature/Date			
	Amy Andrews		Date
Supervisor Signature/Date			
	Carol Peters		Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

Environmental Protection Agency (EPA) Region 6 inspector, Amy Andrews arrived at the City of Belen Wastewater Treatment Plant at 8:50 AM on July 17, 2018 for an unannounced Compliance Evaluation Inspection (CEI). I met with Reyes Moreno, City of Belen Wastewater Treatment Operator, for the Opening Conference. I presented my credentials to Mr. Reyes and explained that this was an EPA inspection to determine compliance with the facility's National Pollutant Discharge Elimination System (NPDES) permit and the Clean Water Act (CWA). The inspection was conducted under the authority of the NPDES permit program, in accordance with the Federal CWA.

This report is based on information supplied by City of Belen representatives (the permittee), observations made by the EPA inspector, and records and reports maintained by the permittee and the EPA.

FACILITY DESCRIPTION

The City of Belen WWTP is located at 1300 Conservancy Road, Belen, in Valencia County, New Mexico. The facility is a non-pretreatment facility classified as a major municipal discharger, permitted for 1.2 million gallons per day (MGD) design flow, with and actual average flow maintained around 0.4 MGD. Discharge is to receiving waters named Bosque Drain and thence to the Rio Grande.

The Belen WWTP is an activated sludge facility. The main plant lift station consists of a wetwell and four submersible pumps rated for 880 gpm each. Entrance works include a barscreen and Parshall Flume. All flow from the entrance works goes to the grit tank, where high specific gravity solids are dropped out of the raw wastewater influent in the grit chamber. Slurry from the grit chamber is taken to the grit classifier and de-watered. These solids (grit) are disposed of in a landfill. The wastewater flow from the grit chamber goes to the two aeration basins. The flow is split between the two aeration basins, although either of the basins can handle the entire flow for maintenance, if necessary. Flow from the aeration basins is usually split between two secondary clarifiers, however currently one of the clarifiers is offline. Sludge is drawn from the bottom of the secondary clarifiers and pumped to the sludge thickener unit. The sludge is decanted (thickened) in this unit prior to being pumped to the aerobic digesters. Supernatant from the sludge thickener is piped back the influent wet well and re-introduced to the aeration basins. After digestion, sludge is taken to the sludge drying beds. Drainage from the beds is routed back to the wet well at the Main Plant Lift Station. After drying to approximately 50 percent total solids, the sludge is moved to a sludge composting pad for composting. The sludge is composted after drying without the use of amendment materials. After composting, the sludge is used as a soil conditioner on public and private property. From the clarifier(s), all wastewater flow goes through the chlorine contact chamber, where chlorine contact time is around 30-45 minutes, and then is dechlorinated using sulfur dioxide. Water is then discharged via a rectangular weir into the Bosque Drain.

Section II - OBSERVATIONS

During the opening meeting, I was informed that the Belen WWTP is in the process of working on an assessment to update the whole plant within the next seven years. The facility indicated that the plan is to rehabilitate the aeration basins, to install ultraviolet disinfection instead of the current chlorine contact chamber and dechlorination, and to get rid of the digesters and switch to a belt press for the biosolids management.

After the opening meeting, we began the inspection with a tour of the WWTP. The facility was clean with no obvious operational issues, however one of the aeration basins has been down for repair for the last six months but should be back up and running in the next two months. One of the clarifiers has been offline for a while, the other clarifier has algae issues due to humidity problems, and the clarifier weirs are in need of leveling.

The laboratory was clean and well maintained, with appropriate Standard Operating Procedure (SOP) documents available, however laboratory bench sheets were difficult to read due to poor copy quality of the blank sheets. A records review showed that the facility's Multi-Sector General Permit (MSGP) Stormwater Pollution Prevention Plan (SWPPP) had not been updated since 2010.

Section III – AREAS OF CONCERN

Requirement 1

NPDES Permit NM0020150, Part I: Requirements for NPDES Permits, Section A. Limitations and Monitoring Requirements, 1. Final Effluent Limits: *Pollutants TSS and BOD, Discharge Limitations in lbs/day (also referred to as "loading")*.

Concern 1

Permittee is not using actual flow rates in calculations. i.e., for the Month of May 2018, the permittee recorded daily flow rates between 0.334 MGD and 0.486 MGD, however all loading calculations used a daily flow rate value of 0.4 MGD. Permittee is also rounding all concentrations prior to calculating loadings (i.e., using 2.0 mg/L instead of 2.4 mg/L), which results in different calculated values.

Requirement 2

NPDES Permit NM0020150, Part I: Requirements for NPDES Permits, Section A. Limitations and Monitoring Requirements, 1. Final Effluent Limits: *Pollutants TSS and BOD, Sample Type, 6-Hour Composite Sample. 6-Hour Composite Sample is defined in Part III: Standard Conditions, F.22.e. as consisting of six effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 am) and composited according to flow.*

Concern 2

Although the facility is collecting six effluent portions at one hour intervals beginning at 10:00 am, they are not composited according to actual flow at the time of portion collection. The facility does not record the actual flow rate at the time of collection, flow rate is only collected once per day, and all samples are composited assuming that the flow is constant at 0.4 MGD, with 500 milliliters for each

portion of the composite. Composite portions are pre-typed on blank bench sheets, leaving no ability to record flow at each hour and calculate an appropriate flow-weighted volume for each portion.

Requirement 3

NPDES Permit NM0020150, Part III: Standard Conditions D.5. Additional Monitoring by the Permittee: *If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report (DMR). Such increased monitoring frequency shall also be indicated on the DMR.*

Concern 3

The permittee sends samples for Biochemical Oxygen Demand (BOD) and total suspended solids (TSS) to Hall Environmental twice a month as a comparison for sample analysis done in-house for the same pollutants. The results of the duplicate sampling are not currently being used to calculate results on the DMR.

Requirement 4

NPDES Permit NM0020150, Part III: Standard Conditions C.4 Record Contents: *Records of monitoring information shall include: ... b. The individual(s) who performed the sampling or measurements; ... d. The individual(s) who performed the analyses.*

Concern 4

Hand written bench sheets are typed out at a later date as a quality control procedure, and the initials of the individual who performed the sampling and/or analyses is replaced with the initials of the individual doing the quality control check on the results. The individual who does the actual sampling and actual laboratory analysis needs to be maintained on the final version of the forms.

Requirement 5

NPDES Permit NM0020150, Part III: C.2. Representative Sampling: *Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.*

Concern 5

Sampling is typically collected on consecutive days each week, instead of spread over the week. It is possible that the samples are not representative of the entire process if there are variations in the wastewater stream throughout the week (i.e., higher residential flow over the weekend vs higher industrial flow during the week).

Section IV – FOLLOW UP

The following information was received by EPA after exiting the Facility on 7/17/2018:

- Laboratory Analytical Report sent via email on 7/18/2018
- Copy of 2014 NPDES Permit Application sent via email on 7/18/2018

Section V – LIST OF APPENDICES

Appendix 1 – Bench sheets showing flow rates and loading calculations for May 2018

Appendix 1
Bench sheets showing flow rates and
loading calculations for May 2018

CITY OF BELEN
WASTE WATER TREATMENT FACILITIES
INFLUENT EFFLUENT
FLOW TOTALIZER LOG

10/10/17 10:00 AM

Avg = .404

Max = .486

Month / Year May 2018

DAY	TIME	BY	INFLUENT TOTALIZER READING	FLOW (MGD)	EFFLUENT TOTALIZER READING	FLOW (MGD)
			016430		165735	
1	10:15am	JAL	017030	.600	166145	.410
2	10:27am	JAL	017779	.749	166567	.422
3	10:07	RS	018367	.588	166969	.397
4	10:12am	JAL	018940	.573	167362	.398
5	10:00	AA	019483	.543	167756	.394
6	10:00	AA	020047	.564	168156	.400
7	10:00	K	020663	.616	168600	.444
8	10:05am	BM	021320	.657	169052	.452
9	10:06am	RS	021884	.569	169446	.389
10	10:20	RS	022477	.588	169854	.408
11	10:12am	JAL	023073	.601	170284	.430
12	10:00am	AA	023669	.596	170669	.385
13	10:00	AA	024263	.594	171089	.420
14	10:00	RS	024849	.586	171498	.409
15	10:00	RS	025479	.630	171925	.427
16	10:19am	JAL	026064	.585	172330	.405
17	10:03am	JAL	026634	.570	172733	.403
18	10:03am	JAL	027223	.589	173136	.403
19	10:08	K	027764	.541	173511	.375
20	10:11	K	028321	.557	173904	.393
21	10:05am	JAL	028930	.609	174349	.445
22	10:25am	K	029615	.685	174835	.486
23	10:00	AA	030232	.617	175268	.433
24	10:13am	JAL	030848	.616	175702	.434
25	10:04am	JAL	031424	.576	176091	.389
26	10:00	AA	031955	.531	176439	.348
27	10:00	AA	032496	.541	176824	.385
28	10:00am	K	033000	.504	177158	.334
29	10:00am	K	033578	.578	177557	.399
30	10:03am	JAL	034077	.499	177897	.340
31	10:12am	JAL	034616	.539	178258	.361

INF = 18,186,000 GALS

EFF = 12,523,000 GALS

Te E

S.S.T.

E-COLI

[illegible]
$$33 \div 15 = 2$$

५०



$h = 51$

~~106-512.1~~

$$BM \quad 106 \div 15 = 12 \text{ R } 2$$
$$\underline{12.11952 \div 14}$$

A

7 Day $33 \div 5 = 7$ $\boxed{2}$
 1 Day $114 \div 5 = 22$ $\boxed{8}$
 7 Day $33 \div 5 = 7$ $\boxed{2}$
 1 Day $114 \div 5 = 22$ $\boxed{8}$
 T.S.S

E-COLI

$186 \div 5 = 37.2 \div 3 = 12.4$

2.8451548

(DR/3000 Spectrophotometer)

10:00	Flows	500	1:00	Flows	500	0.4	
11:00		500	2:00		500		
12:00		500	3:00		500		

Belen Wastewater Treatment Plant **B.O.D. 5 Worksheet**

Sampling Done By RMDate of Sampling 5-22-18Time Of Sampling 10:00am To 3:00pmExact Sampling Loc: EFF after Rectangular weirSample: Grab Composite XType of flow: Instantaneous Daily XSample preservation RefrigeratorDate of Analysis 5-24-18Time of arrival 3:01pMethod Used: Standard Methods 22nd Ed.Section 5210-B 5-5 5-10

Sample temperature at time of analysis should be warmed to 20°C before analysis. If stored over 2 hours must be refrigerated to 4°C.

Sample PretreatmentTime of Analysis 1:01Sample PH 7.3

Sample PH Adjusted to _____

Polyseed Preparation: Date 5-24-18 Time 9:00a
 Let Seed Settle for at least 1/2 hour, decant & continue stirring
 CL2 present NO mg/l; De CL2 _____ TRC READING 0
 Date of sodium sulfite _____
 Volume of sodium sulfite _____
 H2SO4 _____ NAOH(6.5 7.5) Sample rechecked to CL2 _____
 Dechlorinated with: Sulfur Dioxide
 (DR/3000 Spectrophotometer)

Dilution Water Blanks

Bottle #	#1	#2
D.O. Initial	9.49	9.05
D.O. Final	9.49	9.05
Difference	0.0	0.0

Seed Correction

Bottle Number	#3	#4	#5
ml Seed Used	14	16	18
D.O. Initial	9.68	9.65	9.29
D.O. Final	7.43	7.32	7.17
Difference	2.25	2.33	2.12
D.O. Used/ml Seed	5	5	5
Seed correction	0.8	0.7	0.6

Glucose Glutamic

Bottle Number	#10	#11
ml Standard	6	6
ml Seed used	5	5
D.O. Initial	9.65	9.68
D.O. final	4.39	4.44
Difference	5.26	5.24
Seed Correction	0.7	0.7
Corrected Diff	4.6	4.54
BOD mg/l	228	227
GC should be 198 ± 30.5		

Sample Data

Bottle number	#6	#7	#8	#9
ml Standard	150	200	200	250
ml Seed used	5	5	5	5
D.O. Initial	9.06	9.02	7.01	8.67
D.O. Final	6.81	6.88	6.80	6.12
Difference	2.25	2.14	2.21	2.55
Seed Correction	0.7	0.7	0.7	0.7
Corrected Difference	1.6	1.44	1.51	1.85
BOD mg/l	3.1	2.2	2.3	2.22
mg/l-Day	24.933333 or		2.0	mg/l

Analysis (Preparer) BmDate 5-24-18Time 1:10pmAnalysis (Reading) BmDate 5-29-18Time 1:10p

Dilutions that result in a residual D.C. of at least 1 mg/l and a D.O. uptake of at least 2 mg/l after 5 days of incubation produce the most reliable results.

Before seed is used it should be allowed to settle for at least 1 hr. and no longer than 36 hours at 20°C before use.

	Flows		Flows	
10:00	500	1:00	500	
11:00	500	2:00	500	
12:00	500	3:00	500	

CITY OF BELEN

WASTEWATER TREATMENT PLANT

TOTAL SUSPENDED SOLIDS WORKSHEET

Sample By: RM	Analysis By: RM				
	05/22/18				
Time of sampling :	10:00am - 3:00pm				
Exact Sampling Location :	Eff. After Rectangular Weir				
Sample Preservation :	4c Refrigerator				
Type of Sample: (Grab: Composite : X)					
Type of Flow : (Instantaneous: Daily Avg.: X)					
Time of arrival:	3:01 PM				
Date of analysis:	05/22/18	Time of Analysis	3:05pm		
Methods Used: Standard Methods 22nd Edition					
Section 2540D 2-66 2-67					
Refrigerate sample at 4c up to the time of analysis					
Sample Number	#1	#2	Duplicate #3	Influent #5	#6
1st Drying Start Time	3:10pm	104*			
1st Drying Stop Time	4:10pm	104*			
Sample Volume (mL)	100	250	250	100	25
1st Wt Dry Sample + Filter & Dish (gm)	1.3704	1.3649	1.3772		
Wt of Filter & Dish (gm) (Tare)	1.3701	1.3642	1.3766		
1st Wt Dry Sample (gm)	0.3	0.7	0.6		
2nd Wt of Dry Sample + Filter & Dish (gm)	1.3704	1.3649	1.3772		
Wt of Filter & Dish (gm)	1.3701	1.3642	1.3766		
2nd Wt of dry Sample (gm)	0.3	0.7	0.6		
2nd Drying Start Time					
2nd Drying Stop Time : Date:					
TOTAL SUSPENDED SOLIDS (TSS) (mg/L)	3.00	2.80	2.40		
Average TSS (mg/l)	2.7	or	3.0 mg/L		
<u>Blanks</u>					
Dish Number	#4	#7			
Sample Volume (ml)	100	100			
1st Wt of Dry Sample + Filter & Dish (gm)					
Wt of Filter & Dish (gm) (Tare)					
1st. Wt. Dry Sample (gm)	0	0			
2nd Wt. Of Dry Sample + Filter & Dish (gm)					
Wt of Filter & Dish (gm) (Tare)		0			
2nd Wt. Dry Sample (gm)	0	#VALUE!			
Total Suspended Solids (TSS) (mg/l)	0	#VALUE!			
TSS, mg/l - Final Wt. Grams - Initial x 1,000,000					
Sample volume, ml					

CITY OF BELEN

WASTEWATER TREATMENT PLANT

TOTAL SUSPENDED SOLIDS WORKSHEET

Sample By:	Analysis By: <i>Buhr</i>				
	5-22-18				
Time of sampling :	10:00am - 3:00pm				
Exact Sampling Location :	Eff. After Rectangular Weir				
Sample Preservation :	4c Refrigerator				
Type of Sample: (Grab: Composite: X)					
Type of Flow : (Instantaneous: Daily Avg.: X)					
Time of arrival:	3:01pm				
Date of analysis:	5-22-18 Time of Analysis 3:05pm				
Methods Used: Standard Methods 22nd Edition					
Section 2540D 2-66 2-67					
Refrigerate sample at 4c up to the time of analysis					
Sample Number	#1	#2	Duplicate #3	Influent #5	#6
1st Drying Start Time	3:10pm	104*			
1st Drying Stop Time	4:10pm	104*			
Sample Volume (mL)	100	250	250	100	25
1st Wt Dry Sample + Filter & Dish (gm)	1.3704	1.3649	1.3772		
Wt of Filter & Dish (gm) (Tare)	1.3701	1.3642	1.3766		
1st Wt Dry Sample (gm)	0.3	0.7	0.6		
2nd Wt of Dry Sample + Filter & Dish (gm)	1.3704	1.3649	1.3772		
Wt of Filter & Dish (gm)	1.3701	1.3642	1.3766		
2nd Wt of dry Sample (gm)	0.3	0.7	0.6		
2nd Drying Start Time					
2nd Drying Stop Time : Date:					
TOTAL SUSPENDED SOLIDS (TSS) (mg/L)	3.00	2.80	2.48		
Average TSS (mg/l)	2.7	or	3.8	mg/L	
<u>Blanks</u>					
Dish Number	#4	#7			
Sample Volume (ml)	100	100			
1st Wt of Dry Sample + Filter & Dish (gm)					
Wt of Filter & Dish (gm) (Tare)					
1st. Wt. Dry Sample (gm)					
2nd Wt. Of Dry Sample + Filter & Dish (gm)					
Wt of Filter & Dish (gm) (Tare)					
2nd Wt. Dry Sample (gm)					
Total Suspended Solids (TSS) (mg/l)					
TSS, mg/l - Final Wt. Grams - Initial x 1,000,000					
Sample volume, ml					