

COMPLIANCE EVALUATION INSPECTION REPORT

Nevada Division of Environmental Protection
Bureau of Water Pollution Control

FACILITY PERMIT: Town of Gabbs – NEV70021

FACILITY DESCRIPTION: (4) Facultative Ponds

OUTFALL: (2) RIBs

FACILITY LOCATION: 1 Mile W of North Gabbs, Nye County, Nevada
T12N, R36E, Sec 28
Latitude: 38° 52' 04.6"N, Longitude: 117° 56' 28.8"W
Elevation: 4,532 ft. above sea level

DATE OF INSPECTION: Wednesday, November 18, 2009

ATTENDEES: Mark Kaminski, P.E., NDEP
Joe Maez, P.E., NDEP
Ray Dummar, Certified WW Operator, Nye County Public Works
Jeff Donahue, Asst. Operator, Nye County Public Works

CURRENT DISCHARGE: 0.018 MGD

PERMITTED FLOW: 0.04 MGD

DATE OF REPORT: November 24, 2009

FACILITY OVERVIEW

Today's site activity at the Gabbs WWTF consisted of Recovery Act (ARRA) and compliance evaluation (CEI) inspections by NDEP staff. This report documents the CEI. The Gabbs WWTF facility upgrade project broke ground in September 2009. The aerial photograph below was compiled in August 2006 when the facility consisted of two unlined ¼-acre treatment ponds and a 1-acre RIB.



Figure 1 – Aerial Map

DISCHARGE MONITORING REPORTS

Table 1 – Discharge Monitoring

Qtr/Yr	Flow (INF)	CBOD (INF)	CBOD (EFF)	TSS (INF)	TSS (EFF)	pH (EFF)
3rd-08	0.021	35	27	26	25	8.5
4th-08	0.019	88	30	54	19	7.2
1st-09	0.018	68	25	N/A	N/A	8.5
2nd-09	0.018	82	25	44	55	9.1
Limits	.095 MGD	M&R	M&R	M&R	M&R	6-9 S.U.

Flow: Influent flow averaged 60 GPCD. Domestic water usage averaged a much higher 300 (winter) to 1,000 GPCD. For the upgrade project, funding availability limited the collection system upgrade to only the replacement of 400 feet of nearly collapsed sewer main and a splitter box all located at the head works. After new pond construction, the flow limit is reduced to 0.04 MGD, which is double the town’s current flow demand.

Influent: The influent CBOD and TSS levels averaged only 68 and 41 mg/l, respectively, indicative of very weak-strength domestic wastewater. This could indicate groundwater infiltration or sewer exfiltration. Infiltration is not suspected by NDEP because of the low flow and groundwater depth.

Effluent: Presently, effluent CBOD and TSS limits are Monitor & Report (M&R). After new pond construction, the effluent limits become 45 and 90 mg/l, respectively, for CBOD and TSS on a quarterly sampling basis.

pH: The higher pH pond effluent of 9.1 SU was likely indicative of algal growth.

Table 2 – MW-1 Monitoring

Qtr-Yr	NO ₃ -N	TN-N	TDS	CI	DTGW
3rd-08	< 0.05	1.2	1,000	45	18.0
4th-08	< 1.0	< 1.6	800	46	15.9
1st-09	< 1.0	< 1.1	810	53	16.0
2nd-09	< 1.1	< 1.1	790	49	16.5
Ave.	0.0	0.3	850	48.3	16.6
Limits	M&R (mg/l)	10 mg/l	M&R (mg/l)	M&R (mg/l)	M&R (ft)

MW-1: The monitoring well was installed in 2007 at a location down-gradient of the now decommissioned ponds. Upon pond lining, the monitoring well will be located between pond 1A and RIB 4. The groundwater gradient is to the west.

FINDINGS OF WALKTHROUGH INSPECTION

Ray Dummar resides locally and is certified as a Grade I wastewater operator for Nye County Public Works. Ray is assisted by Jeff Donahue (OIT) and will need to apply to the Certification Board. For a brief period, this facility’s operation had been contracted to Paul Strasdin (Grade III).

Head Works: Just upstream of the flow meter, trenching work is underway for replacement of 400 feet of sewer main and the flow splitter. A new steel lid was fabricated for the meter vault.



Fig. 2 – Trenching



Fig. 3 – Vault



Fig. 4 – Recorder

Treatment Ponds: Four ponds (2A, 2B, 1A & 1B) are being lined with 60-mil HDPE (textured surface) and have equivalent dimensions of 1½ acres (surface) × 5 feet (operating depth). Ponds 2B and 2A are now complete. The flow arrangement can either be parallel (two cells) or series (four cells). The operator's preference is series flow to maintain minimum ballast in each cell of 1 feet and well water addition may be needed in the summer to offset evaporation. Since staff gages were not funded, the operator will track the operating depth using the rungs on the sidewall escape ladders (rungs spaced six inches apart). Pond 2B was filling and had not yet iced over. Its color was a light olive green with no objectionable odor. The operator pointed out the inlet where the relatively clear influent stream was representative of the light BOD loading measured at the head works.



Fig. 5 – Pond 2B Inlet



Fig. 6 – Inlet Detail



Fig. 7 – Pond 2A Lining



Fig. 8 – Lining Detail



Fig. 9 – Pond 1B (to be lined)



Fig. 10 – MW-1 (overlooking the Pond 1A, which is scheduled for lining)

RIBs: The ponds will discharge to one of two percolations ponds designated as RIB 3 & RIB 4, which are unchanged from the original design. Each RIB capacity is 4¼ million gallons. Thus, disposal capacity is not an issue. When the unlined ponds were decommissioned, effluent was drained into RIB 3 where only a small puddle of water remains.



Fig. 11 – RIB 3



Fig. 12 – RIB 4 (dry)

Biosolids: When the unlined ponds were decommissioned, the spoil pile was placed alongside the outer shoulder of the service road. After five years of these ponds' operation, the operator observed little sludge (biosolids) accumulation upon their dewatering, mentioned as being 1 to 2 inches in overall thickness prior to drying. There was also some vegetation (cattail and bulrush) removed from the sidewall embankment. The total estimated volume of spoil and sludge is 400 yd³. The contractor proposes to compact this material and seed it with native grass. This plan is forwarded for review by Permits (Janine Hartley) to determine applicability with biosolids beneficial reuse. Tech Services comments that the contractor's plan appears reasonable provided that the seeded area is periodically watered to establish plant growth (grass N uptake is estimated at 50 lbs N/acre-ton). The stabilized spoil area will be within the posted perimeter fence line and located two-thirds mile from the nearest residence. There are no nearby wells, except for MW-1.



Fig. 13 – Spoil Pile alongside the East Fence Line



Fig. 14 – Spoil Pile alongside the South Fence Line

INSPECTION FINDINGS

NDEP is pleased to see progression of this upgrade project. At this time, no response is needed but three recommendations are provided.

1. Irrigation: For the first growing season, the stabilized spoil pile needs to be periodically watered by a water truck to establish the grass seed.
2. Exfiltration: During winter (assuming low outdoor water usage), the potable demand is $5 \times$ the measured influent flow rate. As funding allows, an investigation of the upstream collection system in town is recommended to determine exfiltration (leakage) or areas of solids dropout.
3. Certification: Mr. Donahue should contact the operator's certification board to have a local operator available upon Mr. Dummar's retirement.