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**OPERATION AND MAINTENANCE MANUAL
ROLLING THUNDER BUSINESS PARK
CYGNET LAND, LLC
EL PASO COUNTY, COLORADO**

June 2008

PREPARED FOR:

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PROJECT NO. 06-003-0041

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Inspection

Inspection Frequency

- Inspections of the pond should be, as a minimum, once every week until vegetation is re-established and then once a quarter. Inspections should also occur after major storm events.
- Hydraulic and structural facilities should be inspected annually. Also, inspections should be made for obvious problems during routine maintenance visits, especially for plugging of outlets.
- Inspections should be made for debris and litter just before annual storm seasons (that is April and May) and following significant rainfall events.
- Results of inspections should be recorded and kept at a central location for review and recording by the owner.
- Sediment removal should be performed when it occupies more than 20% of the WQCV. This time frame will vary, but should be expected to be done every 10 to 20 years as needed per inspection.
- Forebay and micro-pool will require sediment removal every 1 to 2 years.
- A baseline survey should be performed at the time of construction and comparison surveys conducted every 2 years after.
- The porous landscape detention facility (PLD) will require a bi-annual inspection of it's hydraulic performance.

Inspection Items

- Inspections should evaluate the berm, spillway condition, depth of sediment behind the berm and condition of the downstream face of the pond. A site survey will be the best indication of excessive sediment buildup and degradation of the spillway.
- An inspection of the vegetation on the berm and the downstream face of the spillway should be performed. Bare areas should be noted and repaired using native grasses. Any sloughing or erosion of the embankment should also be noted and repaired.
- Items to record include erosion of the downstream face, excessive buildup of sediment in all areas of the pond (micro-pool, forebay, etc), and the mowing frequency of the vegetation on the facility.
- The PLD will need to be inspected to ensure the sand media is allowing an acceptable infiltration.

Inspection Personnel

A qualified engineer and/or surveyor should conduct inspections of the facility.

Operations

No specific operating instructions are required.

Maintenance

Mowing

Mowing shall occur to limit unwanted vegetation. Maintain irrigated turf grass as 2 to 4 inches tall and non irrigated native turf grasses at 4 to 6 inches.

Debris and Litter Removal

Remove debris and litter from the entire pond to minimize outlet clogging and improve aesthetics.

Landscaping Removal and Replacement (PLD)

Sandy loam turf and landscaping layer will clog over time. Layer will need to be removed and replaced, along with all turf and other vegetation growing on the surface to rehabilitate infiltration rates.

Structural

Repair pond inlets, outlets, forebays, low flow channel liners and energy dissipators whenever damage is discovered.

Nuisance Control

Address odor, insects and overgrowth issues associated with stagnant or standing water in the bottom zone.

Erosion and Sediment Removal

Repair and revegetate eroded areas in the basin and channels. Remove accumulated sediment from the forebay, micro-pool and the bottom of the basin.

An Operation and Maintenance Log follows.

Operation & Maintenance Log

ROLLING THUNDER BUSINESS PARK
OPERATION AND MAINTENANCE LOG

(Record inspections, items found maintenance and corrective actions taken. Also record any training received by Contractor personnel with regard to erosion control, materials handling and any inspections by outside agencies)

DATE	ITEM	SIGNATURE OF PERSON MAKING ENTRY