

# E&M Engineers and Surveyors, PC

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## Campground Improvements

### Yogi Bear's Jellystone Park of Western New York

By: Glenn Cooley, P.E.

The year 2009 was a very busy year for construction at Yogi Bear's Jellystone Park. The campground is located on Youngers Road in the Town of Java in Wyoming County, New York. Scott Crompton of Crompton Camp Resorts, Inc. had a series of planned and unplanned improvements last year. Some of the planned improvements included a new water park (one of only two at a New York State campground) which included an extensive retaining wall, a new bathhouse for the water park, new "pull-through" campsites, replacement of the campground sewage treatment system and completion of their new maintenance building. Some of the unplanned improvements were storm water collection and treatment facilities.

Water Park - The water park had been in planning for a couple of year; the design was done by Harlan-McGee of North America. The park area is approximately a half acre and includes a perimeter "dry" area for lounging.



Due to the location of the water park, a retaining wall was necessary to hold the slope behind it. The wall is a maximum of 5 feet high and 190 feet long. The wall is visible in the photo above. The design of the segmented block retaining wall was checked and certified by E&M. The bathhouse for the water park was premanufactured and code checked by E&M, while the ADA accessible perimeter deck was designed by E&M.

Pull Through Campsites - Twenty four pull through campsites were constructed in what was a tent camping area. The new sites are for larger RV's and include a concrete parking slab and patio along with water, sewer and electric hookups. The sanitary sewers for the new sites were connected into the new, central septic tank along with a new sewer for 12 previously unsewered sites.

Sewage Treatment System - The new sewage treatment system was designed to handle at least 300 campsites (260 existing plus 40 new). The existing system consisted of septic tanks and a large absorption field. The absorption field had been on the verge of failing over several camping

seasons so the resort had planned to construct a replacement. After doing soil percolation tests, it was determined that a new absorption field was not feasible. A conventional sewage treatment plant was also not feasible as the small on-site stream would require advanced treatment including nitrification. A treatment plant would be shut down after the season and restarted at the beginning of the next season. In an “on-off” situation the nitrification process needs 2-3 months to become established. This is totally unacceptable as treatment would be substandard for most of the summer camping season.

A new system was proposed which would use the existing septic tanks and a new large tank along with a holding lagoon and sand filters for treatment prior to discharge. The lagoon is designed to retain all the campground wastewater between June 1<sup>st</sup> and October 31<sup>st</sup> of each year. This is the period of time during which a nitrified effluent is required by NYSDEC. Starting November 1<sup>st</sup> water is pumped out of the lagoon, through sand filters and discharged into the on-site stream. Disinfection of the wastewater is not required during this winter discharge period. More campground improvement discussion will be in an upcoming newsletter.

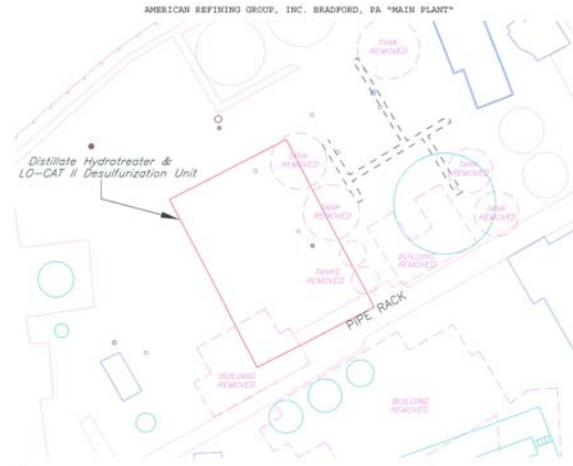
### **E&M Engineers and Surveyors Receives ABC’s “Excellence in Construction” Award**

By: Frederick J. Moricca III, P.L.S.

E&M Engineers and Surveyors P.C. has been awarded the 2009 “Excellence In Construction Merit Award”, from the Central Pennsylvania Chapter of the Associated Builders and Contractors (ABC) for its work in the survey layout of the Distillate Hydrotreater & LO-CAT II Desulfurization Unit for the American Refining Group, Inc.(ARG) in Bradford, PA



To layout this new unit for ARG, E&M was required to use a more creative means to stake-out the proposed foundation. To start with, this site was right in the heart of a 125 year-old refinery. There were both old and new oil holding tanks, overhead pipe racks running all directions, and older multistory brick buildings; some of which were entwined with the oil tanks and overhead pipe racks.



ARG MAIN PLAN, BRADFORD, PA

Before demolition could take place existing overhead utilities had to be relocated. The relocation of these utilities required us to find and stake-out a three dimensional corridor through vertical tank openings, pipe racks and their stanchions, and along other existing utilities that were not to be removed or relocated.

Once the utilities were relocated from the proposed site of the Distillate Hydrotreater & LO-CAT II Desulfurization Unit we started layout of the proposed “mud mat or base mat”. This mat is typically a 4-foot thick concrete pad that helps in the strengthening of the sub base for the proposed foundation. The new foundation was built on this “mud mat or base mat”.

Once the “mud mat” was poured and cured, the layout of the foundation work was started. The layout for the foundation was more complicated than the “mud mat”. With the foundation, we had more than just the footprint to layout; we also needed to layout column lines and elevated equipment pads-all of which had to be tied into the foundation. Normally, this layout is not very difficult, but this was not a typical construction

site. With the site cleared of the old tanks and brick buildings, we still had to deal with very narrow perches to set our equipment upon. Usually these perches were three foot ledges and we were required to share them with others. With such tight working areas, we had to be very aware of how we laid-out our survey control lines and offset points. We would push or project our control outside the construction area to protect our control lines. This would allow us to recreate our original control lines when it became necessary to re-layout the original control within the tight confines of the construction site. This regimen was a daily occurrence for the first few days due to confined size of the construction site and the numerous sub-contractors also trying to get their work completed.

Once the foundation pad was poured we performed an as-built survey of the foundation. We also located the anchor bolts so that the project engineer and the steel fabricator could verify that required tolerances for the new foundation and the anchor bolts were met.

The as-built survey was accepted and steel beams started to be erected, and E&M had done its job, and done its job well with the survey-portion of the new Distillate Hydrotreater & LO-CAT II Desulfurization Unit.

This site was a prime example that any site can easily be laid-out if you pay attention to the site conditions, review the plans with contractor, perform checks to your survey control to catch any errors, and talk with the contractor and subcontractors. Other than having to reset a few points during construction, the survey layout worked perfectly. Thus, by having good field procedures and performing checks throughout construction stake-out procedure allowed E&M the ability to keep the contractor on schedule when it came to the survey layout of the Distillate Hydrotreater & LO-CAT II Desulfurization Unit for the American Refining Group, Inc..

Now completed, this new unit will provide American Refining Group, Inc. (ARG) with an increased capability to produce a full range of gasoline products for automotive use.

## **NYSDEC SPDES GENERAL PERMIT No. GP-01010-001**

by: Garrett M. Hacker, Project Manager

In a previous article, I discussed the New York State Department of Environmental Conservation, State Pollution Discharge Elimination System (NYSDEC SPDES) General Permit No. GP-0-08-001 for storm water discharges from construction activities. This permit was issued by the NYSDEC on April 15, 2008, pursuant to Article 17, Titles 7, 8 and Article 70 of the Environmental Conservation Law. GP-0-08-001 was intended to be in effect for only two years and authorize storm water discharge from construction sites to surface waters of the State.

Recently the NYSDEC has prepared a new SPDES General Permit for storm water discharge from construction activities, GP-0-10-001 effective January 29, 2010. The new permit is intended to be in effect for five years, expiring on January 28, 2015.

Similar to GP-0-08-001, GP-0-10-001 authorizes storm water discharge from construction sites to surface water of the State from the following construction activities:

- Construction activities involving soil disturbance of one (1) or more acres, less if part of a larger common plan.
- Construction activities involving soil disturbances of less than one (1) acre where the NYSDEC has determined a SPDES permit is required.
- Construction activities located in watersheds identified in Appendix D of the application.

The following is a brief overview of the permit revisions:

### *Design Related:*

- Upon completion and release of the new NYSDEC Design Manual, owners or operators of a construction activity that requires post construction storm water controls will be required to prepare a SWPPP that implements practices defined as “Green

Infrastructure”. Green Infrastructure consists of practices such as bioretention, green roofs, porous pavements and cisterns. Designers must address this in a 5-step process. (1) Preserve natural features and reduce impervious cover. (2) Calculation of water quality volume for site. (3) Calculation of runoff reduction volume by applying “Green Infrastructure techniques”. (4) Use of standard treatment practices where applicable. (5) Calculation of volume and peak discharge control practices.

*Inspection Related:*

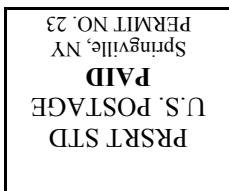
- C Qualified inspector shall inspect all points of discharge to natural surface water bodies located within or adjacent to property.
- C Qualified inspector shall provide description of the condition of all points of discharge to natural surface water bodies and take digital photos, date stamped of all practices identified as requiring corrective action and attached to inspection report.

- C Qualified inspector is required to take digital photos, date stamped showing the conditions of the practices after corrective actions and attach to inspection report.

*Miscellaneous:*

- C Duty to provide information - NOI, SWPPP and inspection reports are required to be made available to the public for any person requesting such information within five business days of written request.
- C MS4 Notification of SWPPP Amendments - Owner or operator is required to notify and obtain approval from MS4 prior to making modifications to approved post construction storm water management practices.

E&M Engineers and Surveyors PC is experienced in all aspects of the SPDES permit process and employs a staff of certified inspectors capable of performing SWPPP inspections. Information for this article was obtained from the NYSDEC website ([www.dec.ny.gov](http://www.dec.ny.gov)).



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