

Monzeglio, Hope, NMENV

From: Jim Lieb [jlieb@giant.com]
Sent: Thursday, June 22, 2006 3:00 PM
To: Chavez, Carl J, EMNRD
Cc: Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV; Price, Wayne, EMNRD; Foust, Denny, EMNRD; Powell, Brandon, EMNRD; Ed Riege; Ed Rios
Subject: RE: Ciniza Flow Meters
Importance: High
Attachments: FlumeSelectionSheet.xls; NAPISDiagram.pdf

Hi Carl:

The use of the Palmer-Bowlus type flume was meant as a preliminary tentative proposal that will be refined as we study the different varieties of flumes that are available. We may use several different types based on the particular circumstances that are present at each of the flow monitoring locations. I have attached a table listing the **tentative** flow devices we are considering as part of our evaluation and selection process. Each type of flume has its own unique characteristics that must be evaluated and considered for the best fit. We will likely be working with Hubbell, Roth & Clark, Inc. engineering staff to select the best flume for each location and on the engineering that will be necessary to meet the OCD and HWB's request.

The flow meters **will** include the **totalizers and instantaneous read outs** as requested by OCD and HWB. We are considering an electronic output feature that can be either directly linked into PC computer or downloaded using a jump drive. Our evaluation process will consider each flowmeter sensor type and the level-to-flow converter instrument and select the best type at each location. The available choices to select from include the ultrasonic, bubbler, and pressure transducer based devices. Like the flumes, each of the flowmeter sensor devices has their own characteristics that will need evaluation for a best fit selection. I am very familiar with the ultrasonic type as we used an ultrasonic level sensor at the Federal-Mogul manufacturing facility I worked at in Michigan on the 100,000 GPD industrial waste water treatment plant. It was very reliable and virtually trouble free in operation. It was linked into a strip chart totalizer.

I have attached a scan of the latest diagram of our NAPIS; it shows the chopper pump installation. As an alternative to digging under the NAPIS and repairing the liner (which will be very difficult and potentially dangerous) we are considering the injection of bentonite sealing grout into the leaking zone surrounding the NAPIS. Then, in the event this does not eliminate the leakage, we will consider installing a liner **inside** the NAPIS. I am currently awaiting a proposal for the bentonite grout injection work.

I put Trihydro's report in the Fed Express today to OCD and HWB. The copies should reach you all tomorrow morning.

If you have any questions, please call me at (505) 722-0227 or email reply.

Sincerely,

Jim Lieb
Giant – Ciniza Refinery

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, June 22, 2006 10:49 AM
To: Jim Lieb; Steve Morris; Ed Riege
Cc: Foust, Denny, EMNRD; Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: Ciniza Flow Meters

Jim:

Hi. The OCD went to the website to evaluate the Palmer-Bowlus flow meters that you are proposing to use at Ciniza. They are not equipped with a totalizer and instantaneous readout as requested by the OCD/HWB. According to Wayne Price, he recommends

6/22/2006

ultrasonic meters, which have few moving parts and are very dependable over time.

Regarding the New API Separator, we are awaiting an as-built drawing to scale to help evaluate the problem there. We did receive a couple of drawings, but they do not appear to reflect the as-built or current construction and/or site-specific conditions at and near the NAPI at Ciniza.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/>
(Pollution Prevention Guidance is under "Publications")

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6/22/2006

Flow Meter Installation (TENTATIVE under evaluation)

Giant Refining - Ciniza Refinery

Jim Lieb

Jun-06

Location	Estimated Flow (gpm)	Water Quality	Type Flume (Tentative)	Size Flume (Throat)	Level Sensor Type
PSE to AL1	8	Debris-Dirt	Trapezoidal	small 4 inch pipe stub	TBD
NAPIS Benzene Stripper to AL1	93	very clean	Parshall	2 inch	TBD
OAPIS to AL1*	9.2	Debris-Dirt	Palmer-Bowlus**	4 inch	TBD
Boiler Plant Water to EP2	22	very clean	Parshall	2 inch	TBD
EP1 to EP2	101	Debris-Dirt	Trapezoidal	10 inch pipe stub	TBD
AL2 to EP1	101	Debris-Dirt	Trapezoidal	10 inch pipe stub	TBD

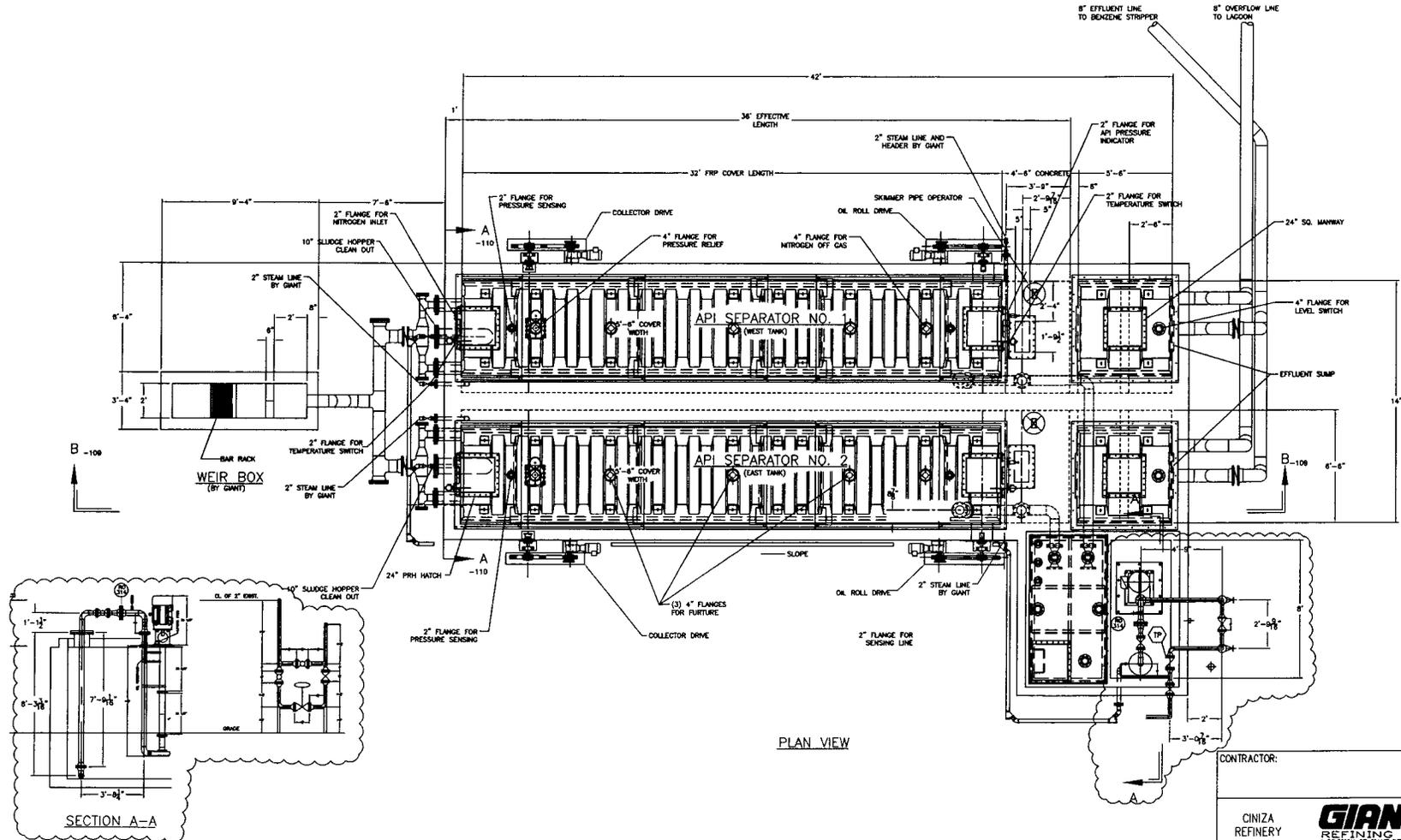
TBD = to be determined

*Monitoring at storm sewer inlet to OAPIS would be more accurate

**Palmer-Bowlus is recommended for sewer installations.

Parshall flumes are not recommended for locations with high debris/dirty water. Not accurate at low flows.

Trapezoidal flumes are recommended for dirty water applications. Reliable flow measurements at low flows.



PLAN VIEW

SECTION A-A

CONTRACTOR:

CINIZA REFINERY **GIANT** REFINING CO. GALLUP NEW MEXICO
A DIVISION OF GIANT INDUSTRIES

API CHOPPER PUMP
PIPING PLAN AND ELEVATIONS

DRN. BY: CLM	DATE: 02DEC05	RFE/RFC No: -
CHK'D. BY: MJS	DATE: 05DEC05	SCALE: FULL
APP'D. BY: MJS	DATE: 05DEC05	CAD REF: PROJECTS
WELD SPEC: WPS-001	PAINT: GIANT 19-RP-1	
DRAWING NO.	84-09-107	
REV	0	

REFERENCE DWG. TITLE	REF. DWG. No.	REV.	REVISION DESCRIPTION	RFC/RFE No.	DRAWN	CHK'D	APPRVD
			APPROVED FOR CONSTRUCTION	CC9051.51	CLM 04DEC05	MJS 05DEC05	MJS 05DEC05

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Monzeglio, Hope, NMENV

From: Chavez, Carl J, EMNRD
Sent: Thursday, June 15, 2006 9:55 AM
To: Jim Lieb
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV; Ed Rios; Price, Wayne, EMNRD
Subject: RE: Ciniza Refinery Flow Meter Locations

Jim:

Good morning. Wayne and I discussed your msg. We are examining the Palmer-Bowlus type flumes with totalizers. Is there any specific model or type that you are proposing to use (see http://tracomfrp.com/palmer_bowlus.htm)? Please provide a link to info. on the specific type for our review.

Regarding the flow meter locations, the OCD requires monitoring between EP1 and EP2 and between AL2 and EP1. This will help us to determine infiltration loss, evaporation loss rates, and to better understand the overall treatment system capacity.

The OCD considers the flow from the OAPI drainage system to be an important flow monitoring point regardless of where the effluent is routed. While the flow rate of the pump is important to monitor to determine if it can keep up with drainage from the OAPI, the flow into the OAPI drainage system coming from an unidentified source(s) is also important to know. The OCD had anticipated that the continuous flow of contaminated water into the OAPI drainage network would be fixed. In consideration of the fire water evaporation pond (note: we have not received the design), Giant had proposed decommissioning the OAPI and routing water from the OAPI drainage network into the fire water pond. In consideration of this, the assumption by OCD was that the water would not be contaminated water and would be suitable for use as an emergency fire water source. Giant had verbally mentioned to me on May 9, 2006 that the dye test did not identify any leakage into the OAPI drainage network from the suspected process area. However, the OAPI continues to receive water coming from an unidentified source. Consequently, the OCD feels that there is a need to quantify the actual flow rate of water into the OAPI drainage network. We will need to meet or hold a conference call with Giant to further discuss the feasibility of the fire water pond as proposed on March 28, 2006, after reviewing the results of the dye test and NAPI issues discussed on March 28, 2006.

After receiving a couple of drawings of the NAPI, we are wondering whether the drawings reflect the more recent construction activities, i.e.; installation and/or repair of the secondary containment system, as built specifications, etc? Please clarify that the drawing represent the current construction of the NAPI or send current as-built drawings (to scale) for our review.

Thank you.

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From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, June 15, 2006 8:50 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV; Ed Rios
Subject: RE: Ciniza Refinery Flow Meter Locations
Importance: High

Carl:

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Monzeglio, Hope, NMENV

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Sent: Thursday, June 15, 2006 8:50 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV; Ed Rios
Subject: RE: Ciniza Refinery Flow Meter Locations
Importance: High

Carl:

We will install the integrated flow meters as OCD and HWB require at the locations, likely using Palmer-Bowlus type flumes with totalizers. Yesterday, Hope emailed reply to us that monitoring flow at location EP1 to EP2 in lieu of AL2 to EP1 was acceptable to the HWB. Would the alternate monitoring location also be acceptable to the OCD?

I'm not sure how you came to the conclusion that the flow rate to the NAPIS from the OAPIS is 0.5 gpm. I recall mentioning the 0.5 gpm rate as a "guesstimate" of the dry weather flow rate to the OAPIS. The Sandpiper pump that we are using to pump from the OAPIS to the NAPIS is capable of greater flow when it is running pumping down the level in the OAPIS. At this time we do not know what the actual flow rate is when the pump is running. To get an actual estimate of the flow, Steve Morris is going to run the discharge into a 55 gallon drum using a stopwatch feature on his watch. The NAPIS is capable of handling, and has been handling satisfactorily, the Sandpiper pumped flow from the OAPIS.

We will be forwarding the Trihydro sewer dye trace report including Giant's corrective action plan to OCD and HWB prior to June 26.

Regards,

Jim Lieb
 Giant - Ciniza

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, June 14, 2006 2:53 PM
To: Jim Lieb
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV
Subject: RE: Ciniza Refinery Flow Meter Locations

Jim:

The OCD and HWB require integrated flow meters (flow meter with totalizer (cumulative volumes) with visual determination of flow rate upon inspection).

According to our March 28, 2006 meeting at the Ciniza Refinery, the OCD had asked the question about the maximum flow rate for the discharge from the OAPI to be routed to the NAPI. Giant informed us that the max. flow rate would need to be less than or equal to about 0.5 gpm for OAPI effluent to be routed to the NAPI. Exceedences of 0.5 gpm would result in effluent from the OAPI continuing to be routed or overflow (?) into AL1. The OCD and HWB approved this on an interim basis until Giant could assess and fix the leakage problems in the drainage system of the OAPI. Currently the OCD and HWB are awaiting the results of the dye test and Giant's officials determination of the nature of leakage into the OAPI drainage system and repairs needed to fix the problem.

The OCD and HWB have received the design of the NAPI as requested on March 28, 2006 to determine possible action(s) at the NAPI.

I hope this helps. Please contact me if you have questions. Thanks.

Carl J. Chavez, CHMM
 New Mexico Energy, Minerals & Natural Resources Dept.
 Oil Conservation Division, Environmental Bureau

6/15/2006

Monzeglio, Hope, NMENV

From: Monzeglio, Hope, NMENV
Sent: Wednesday, June 14, 2006 4:10 PM
To: 'Jim Lieb'; Chavez, Carl J, EMNRD
Cc: Ed Riege; Steve Morris; Cobrain, Dave, NMENV
Subject: RE: Ciniza Refinery Flow Meter Locations

NMED is ok with the flow rate from EP-1 to EP-2 instead of AL2 to EP-1.

Hope

From: Jim Lieb [mailto:jl Lieb@giant.com]
Sent: Wednesday, June 14, 2006 1:19 PM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV
Subject: RE: Ciniza Refinery Flow Meter Locations
Importance: High

Carl:

There is no direct flow from the OAPIS to the AL1. Flow from the OAPIS goes directly to the NAPIS.

We would like to propose use of V-Notch meters as flow meters. We already have experience with V-Notches flow meters and they would be relatively inexpensive and quick to install in time for the study which will begin soon. We would make them permanent by setting them in concrete frames.

It will be very difficult to install a meter between AL2 and EP1. However, the flow between EP1 and EP2 is essentially the same as flow from AL2 to EP1 and could easily be installed.

Let me know.

Thank you,

Jim

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, June 14, 2006 10:30 AM
To: Jim Lieb
Cc: Price, Wayne, EMNRD
Subject: FW: Ciniza Refinery Flow Meter Locations

Jim:

I forgot to include item 6 below in my previous e-mail. Please include item 6 below in the flow meter monitoring location list.

- 1) PSE (pilot station effluent) to AL1 (aeration lagoon #1);
- 2) NAPIS (new API separator)- Benzene Stripper to AL1 (flow rate from benzene stripper to AL1);
- 3) OAPIS (old API separator) to AL1;
- 4) Boiler water to EP2 (evaporation pond #2); and
- 5) Flow between EP1 to EP2.
- 6) AL2 to EP1

Please contact me if you have questions. Thank you.

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Sent: Wednesday, June 14, 2006 1:19 PM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV
Subject: RE: Ciniza Refinery Flow Meter Locations
Importance: High

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It will be very difficult to install a meter between AL2 and EP1. However, the flow between EP1 and EP2 is essentially the same as flow from AL2 to EP1 and could easily be installed.

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From: Chavez, Carl J, EMNRD
Sent: Wednesday, June 14, 2006 12:17 PM
To: Jim Lieb
Cc: Ed Riege; Steve Morris; Johnny Sanchez
Subject: RE: Ciniza Refinery Flow Meter Locations

Jim:

I was thinking about the treatment system study that Giant has scheduled and will be working to submit the study results to the OCD and HWB in September of 2006. Giant should install the flow meters for the study. Regarding the monitoring frequency, based on your work, we recommend that Giant propose a monitoring frequency that will allow Giant to monitor flow rates at a frequency commensurate with its treatment system, operations, etc., and that the OCD and HWB can agree on. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
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From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Wednesday, June 14, 2006 11:39 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Steve Morris
Subject: RE: Ciniza Refinery Flow Meter Locations

Carl:

Got it. Was there a timetable to go with this? I don't recall one or have one noted in my notes.

Jim

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Subject: Ciniza Refinery Flow Meter Locations

Jim:

Good morning. From our March 28, 2006 meeting, you may recall we discussed the locations for flow meter monitoring at Ciniza. The OCD and HWB require flow meters at the following locations:

- 1) PSE (pilot station effluent) to AL1 (aeration lagoon #1);
- 2) NAPIS (new API separator)- Benzene Stripper to AL1 (flow rate from benzene stripper to AL1);
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