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Infrastructure, environment, buildings

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ENVIRONMENT

Nathan Putnam
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A
624 Broadway, 11th Floor
Albany, NY 12233-7015

Subject:
Vapor Recovery System
United Stellar Industries Site
131 Sunnyside Boulevard, Plainview, New York

Date:
December 10, 2008

Contact:
Doug Smolensky

Phone:
631 391 5290

Email:
dsmolensky@arcadis-us.com

Our ref:
NY001422.0004.00002

Dear Mr. Putnam:

During our meeting of October 24, 2008, Mr. Karpinski requested additional information regarding the Vapor Recovery System (VRS) currently operating at the former United Stellar Industries Site. Specifically, he was interested in understanding the layout of the system, the locations of our sample ports, and our procedures for sample collection and observation of system operating parameters (i.e., air flow rates and applied vacuum).

Attached to this letter, please find the following:

- Description of Operation and Maintenance Activities
- Figure 1. Photo of the blower and knock out tank
- Figure 2. Photo showing the knockout tank, extraction system manifold and vacuum observation manifold.
- Figure 3. Process and Instrumentation Diagram

Please don't hesitate to call with any additional questions or comments.

Sincerely,
ARCADIS

Douglas A. Smolensky
Associate Vice President

Copies:
Steven Karpinski – NYSDOH
Jacquelyn Nealon - NYSDOH
Fred Werfel - Spiegel

Summary of Spiegel Soil Vapor Extraction (SVE) System Operation and Maintenance Activities
Plainview, New York

System Sampling:

- On a monthly basis, 5 samples are collected from the SVE System at the following locations:

    - SVE-1 (System Influent from Extraction Well SVE-1)
    - SVE-2 (System Influent from Extraction Well SVE-2)
    - SVE-3 (System Influent from Extraction Well SVE-3)
    - EFF-1 (Carbon-1 Effluent)
    - EFF-2 (Total System Effluent)

    These samples are collected in 1-liter Tedlar bags with single polypropylene hose/valves and septum fitting. Samples SVE-1, SVE-2 and SVE-3 are collected from sample ports installed in the treatment building prior to the blower, meaning that the sample ports are under vacuum. The sample ports consist of a barb and ball valve installed on the individual lines from each extraction well. To collect these samples, Teflon tubing is attached to the sample port. The other end of the Teflon tubing is hooked up to the influent of an electric vacuum pump. A separate piece of Teflon tubing is also hooked up to the effluent of the electric vacuum pump. Prior to sample collection, the ball valve in line with the sample port is opened, and the vacuum pump is turned on. The pump is allowed to run for approximately 1 minute to purge the pump and the Teflon tubing. Once the line is purged, the 1-liter Tedlar bag is hooked up to the open end of the Teflon tubing, and the Tedlar bag is filled (to approximately 75% of the total volume) with the vapors extracted from the line by the vacuum pump. Samples EFF-1 and EFF-2 are collected from sample ports installed on the downstream side of the blower, meaning that they are under pressure. Since the sample locations are under pressure, Teflon tubing is simply hooked up to the sample port and the Tedlar bag, and the ball valve installed in line with the sample port is opened. Once the Tedlar bag is approximately 75% full, the ball valve is closed and the tubing removed.

    The Tedlar bag samples are shipped in a cardboard box via FedEx priority overnight to Air Toxics Laboratory in Folsom, CA. All shipping containers are properly labeled, and the appropriate chain-of-custody documents are prepared and submitted. All system samples are analyzed according to USEPA Method TO-14.

System Parameter Readings:

- On a monthly basis, the following system parameter readings are collected from the SVE System:

    - Air Flow Measurements:

        - All air flow measurements are collecting using a thermo-anemometer. Flow monitoring ports (which consist simply of a hole drilled through the line with a plug) are used to measure air flow. The anemometer is inserted into the flow monitoring port at a depth that is approximately half way into the pipe. The average value over approximately a 1 minute time period is recorded as the flow rate at that location.

        - Air flow readings are collected at the following locations:

- System influent from extraction well SVE-1
- System influent from extraction well SVE-2
- System influent from extraction well SVE-3
- Combined influent (measured after the influent manifold)
- Total system effluent (measured on the system effluent line)

- Vacuum/Pressure Measurements:

  - Vacuum/pressure measurements consist of collecting vacuum/pressure readings from permanently installed gauges throughout the system, as well as induced vacuum measurements from the system monitoring points.

    - System Vacuum/Pressure Measurements: System vacuum/pressure measurements are collected from permanently installed vacuum/pressure gauges. Vacuum/pressure readings are collected from the following locations:

      - System influent from extraction well SVE-1
      - System influent from extraction well SVE-2
      - System influent from extraction well SVE-3
      - Blower influent
      - Blower effluent
      - Carbon-1 influent
      - Total system effluent

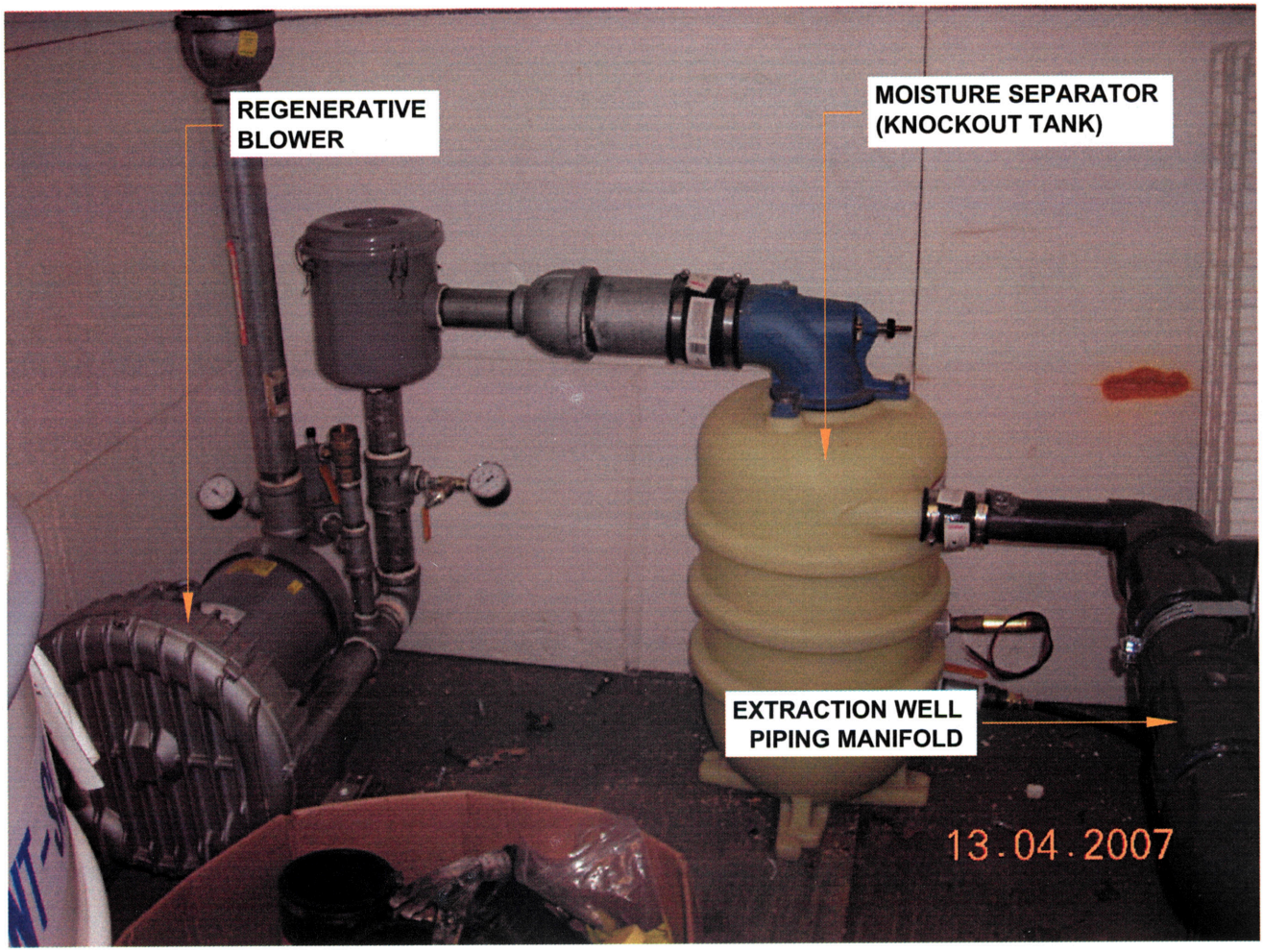
    - Induced Vacuum Measurements: Induced vacuum measurements are collected from the six system monitoring points. Pipe runs from the monitoring points into the treatment building allow induced vacuum measurements to be collected inside the treatment building. The pipe runs from the monitoring points are equipped with a cap and barb at the end of the run in the treatment building. Rubber tubing is attached to the barb, and the other end is attached to a manometer. Induced vacuum measurements are collected using the manometer.

- Photoionization Detector (PID) Measurements:

  - PID measurements are collected from all of the aforementioned sample locations. PID measurements are collected by filling a 1-liter Tedlar bag with vapor (by following the same procedures outlined in the "System Sampling" section) and allowing the PID to extract the vapor from the bag and take a measurement.

- *Condensate Build-Up*:

  During the colder winter months (i.e. December through April), there is condensate build-up in the system knock-out tank (prior to the blower). The knock-out tank is equipped with a vacuum relief valve on its effluent side, so that when the water level in the knock out tank rises to a certain level, the vacuum relief valve releases. This allows the blower to pull in ambient air through the vacuum relief valve instead of through the knock-out tank, preventing the blower from sucking in water. The knock-out tank capacity is 7 gallons, therefore, during the colder months when condensate build-up occurs, the tank must be drained at least every week. To drain the knock-out tank, the system must be shut down. Once the system is offline, the drain valve on the knock-out tank is opened and an electric pump pumps the condensate out of the tank, through a liquid-phase carbon drum, and then discharges the cleaned condensate to the ground. Once the condensate is drained, the drain valve on the knock-out tank is closed and the system is restarted. During the warmer months (i.e. May through November), there is little to no condensate accumulation in the knock-out tank.



VAPOR RECOVERY SYSTEM LAYOUT
UNITED STELLAR INDUSTRIES
131 SUNNYSIDE BLVD.
PLAINVIEW, NEW YORK

VIEW OF BLOWER AND MOISTURE SEPERATOR

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FIGURE
1

CITY:Melville-NY DIV/GROUP:ENRcad DB:ALS LD: PIC: PM:SF TM:RP LYR:ON=*;OFF=*REF*
G:\APROJECT\Spiegel\Sunnyside\CADD\NY001422.0004.00002 Fig 1.dwg LAYOUT: 1SAVED: 12/5/2008 11:22 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: PDFPLOTSTYLETABLE: ARCADIS_MELVILLE.CTB PLOTTED: 12/5/2008 2:39 PM BY: SANCHEZ, ADRIAN
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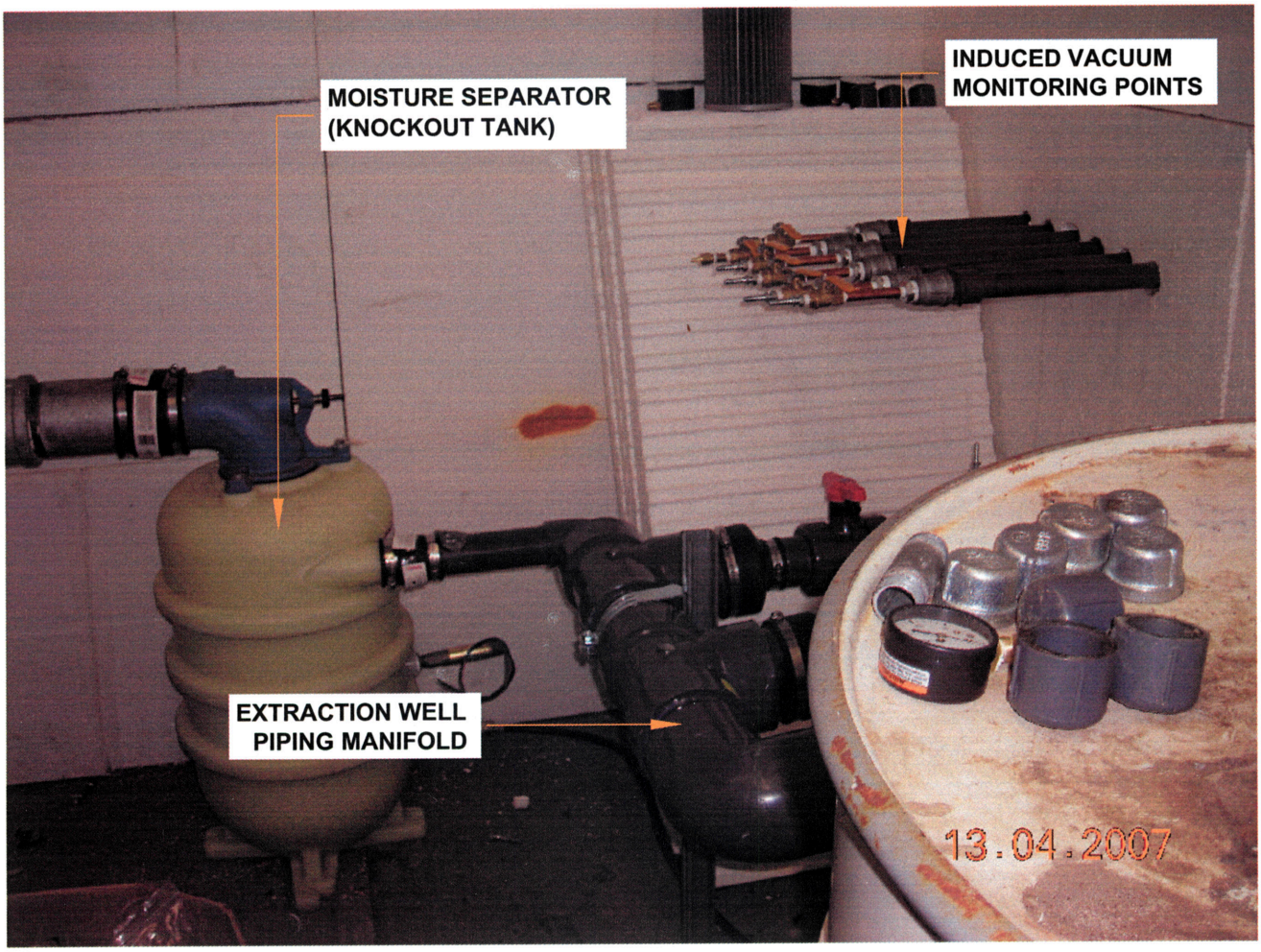

VAPOR RECOVERY SYSTEM LAYOUT
UNITED STELLAR INDUSTRIES
131 SUNNYSIDE BLVD.
PLAINVIEW, NEW YORK

VIEW OF SAMPLING AND EXTRACTION PIPING MANIFOLD

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FIGURE
2

CITY:Melville-NY DIV/GROUP:ENRcad DB:ALS LD: PIC: PM:SF TM:RP LYR:ON=*;OFF=*REF*
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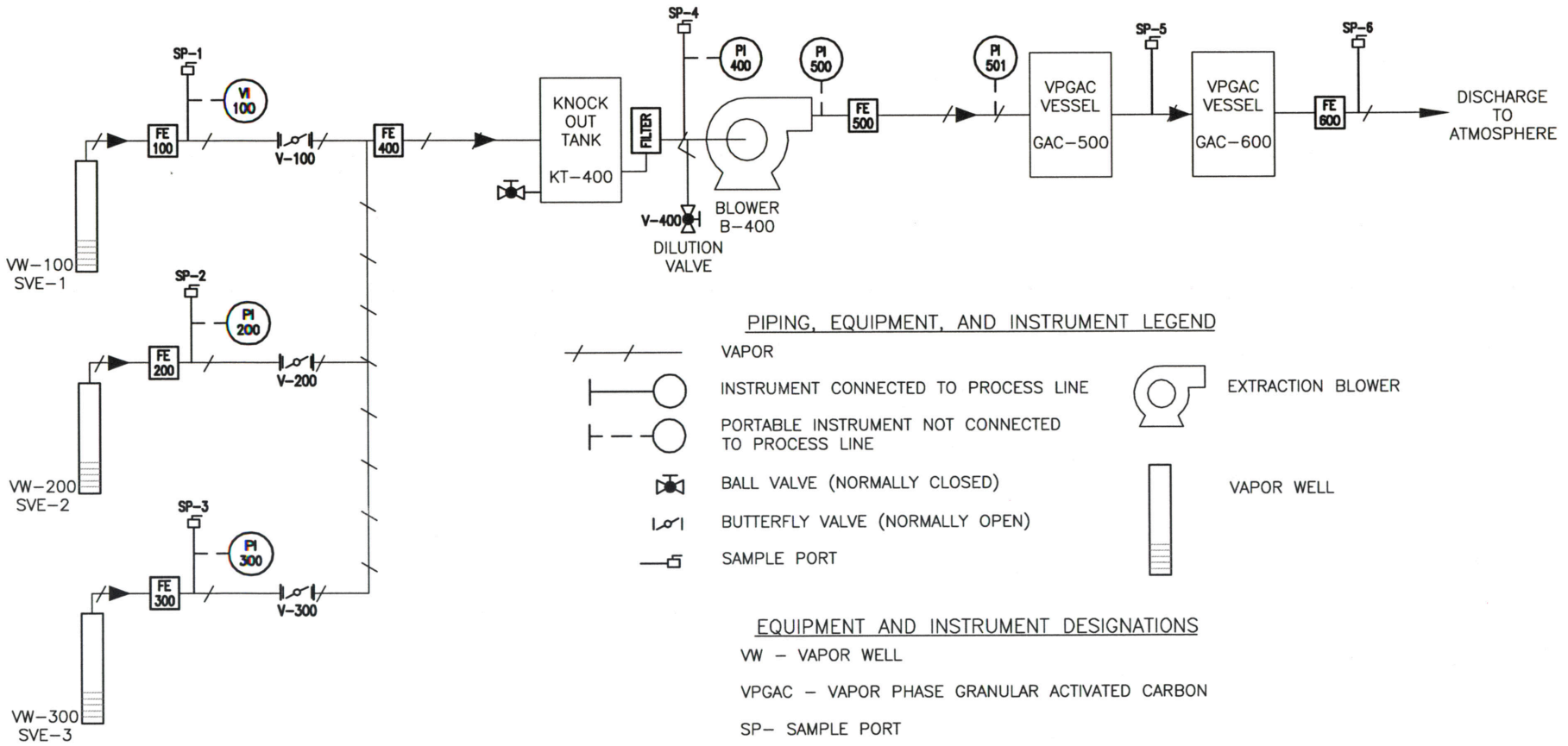

PIPING, EQUIPMENT, AND INSTRUMENT LEGEND

- VAPOR
- INSTRUMENT CONNECTED TO PROCESS LINE
- PORTABLE INSTRUMENT NOT CONNECTED TO PROCESS LINE
- BALL VALVE (NORMALLY CLOSED)
- BUTTERFLY VALVE (NORMALLY OPEN)
- SAMPLE PORT
- EXTRACTION BLOWER
- VAPOR WELL

EQUIPMENT AND INSTRUMENT DESIGNATIONS

VW – VAPOR WELL

VPGAC – VAPOR PHASE GRANULAR ACTIVATED CARBON

SP– SAMPLE PORT

V – SHUTOFF VALVE

VI – VELOCITY INDICATOR

PI – PRESSURE/VACUUM INDICATOR

FE – FLOW ELEMENT

EQUIPMENT DESCRIPTIONS

B–400:
MAKE: GAST
MODEL: 6350A–2
TYPE: REGENERATIVE
SIZE: 5 HP, 3 PHASE, 208–230/460V

KT–500:
MAKE: EG&G ROTRON
MODEL: REFURBISHED

GAC–600:
MAKE: US FILTER/WESTATES
MODEL: VSC–400 W/ VOCARB NS/NR 4X10 VPGAC

UNITED STELLER INDUSTRIES
131 SUNNYSIDE BLVD.
PLAINVIEW, NEW YORK

SOIL VAPOR EXTRACTION SYSTEM SCHEMATIC

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FIGURE 3