TECHNICAL SUPPORT DOCUMENT (TSD)

July, 2014

I. GENERAL COMMENTS:

A. Company Information

1. Mission Linen Supply

2. Physical and Mailing Address: 301 South Park Avenue, Tucson, AZ 85705

B. Background

This air quality operating permit is a renewal of the 5-yr permit issued to Mission Linen Supply. Mission Linen Supply (applicant) owns and operates a Multi-Phase Extraction (MPE) and alternate (SVE) remediation system and a linen supply, uniform rental, and industrial laundering business at 301 S. Park Ave. The Mission Linen Supply facility constitutes a **Class III, Synthetic Minor Source** of volatile organic compounds (VOC) and hazardous air pollutants (HAPS). The facility operates under the following industrial classifications:

- MPE and alternate SVE remediation system SIC code: 1799 (NAICS 562910)
- Linen supply and industrial laundering operations SIC codes: 7213,7218 (NAICS 812331,812332)

MPE and Alternate SVE Remediation System

The installed MPE remediation system was permitted by the Pima County Department of Environmental Quality (PDEQ) on October 19, 2006. URS Corporation (URS) is the consultant for Mission Linen and operates the MPE remediation system on their behalf.

The facility is a former dry cleaning facility contaminated by tetrachloroethylene (PCE) spills which have migrated to underlying soils and may also have reached sewer lines through floor drains and sumps. PCE and its degradation products, trichloroethylene (TCE), cis-1, 2-dichloroethene (cis-1, 2-DCE), and vinyl chloride have also dissolved within diesel fuel, which lies atop the shallow aquifer at this location. The layer of diesel fuel which migrated onto the Mission Linen site from an upgradient source, contains up to 10% dissolved PCE at the location beneath the former dry cleaning area. The installed MPE system extracts and treats VOC contaminated diesel fuel, groundwater, and soil gas from a series of extraction wells at this location.

Previous to the installation of the MPE remediation system, a portable soil vapor extraction (SVE) system operated intermittently at the facility from February 2000 through February 2006. The previous SVE system consisted of an extraction blower and vapor phase granular activated carbon (GAC) and included a 500-pound permanganate-impregnated zeolite bead (PIZB) vessel to polish the exhaust gas and was permitted under ADEQ permit numbers 1001072 and 1001312. To accelerate cleanup of the diesel fuel/ PCE mixture from the subsurface, Mission Linen Supply conducted a Multi-Phase Extraction (MPE) pilot test in September 2003. The results showed that the MPE system was a feasible method of removing and treating the diesel fuel/ PCE mixture. Materials to be treated by the MPE system are VOC contaminated diesel fuel, groundwater, and soil gas. Specific pollutants identified in the application include PCE, TCE, Cis-1, 2-DCE, Ethylbenzene, Total Xylenes, and Volatile Fuel Hydrocarbons. A general permit for SVEU systems was not deemed appropriate for this site because the exhaust streams from the MPE do not contain gasoline range organic compounds and halogenated organic compounds are included in the contamination being remediated.

On July 25, 2014, a request to modify the existing MPE system was submitted by URS to allow for an alternate mode of operation using a soil vapor extraction (SVE) train. This request was processed as an addition to the renewal permit application. The alternate SVE system is designed to extract soil vapors from wells screened in a lower zone of the subsurface and will extract similar VOC species. When operating in SVE mode, the SVE blower will be connected through piping and valves to the existing air pollution control (APC) train and subject to the same emissions limits, monitoring, and recordkeeping provisions. Only one extraction system will be operated at a time (MPE mode or SVE mode). While operating in one mode (MPE or SVE) the other extraction train will remain shut down by turning off its associated pump/blower and isolating it with a shutoff valve.

Linen Supply and Industrial Laundering Operations

On April 18, 2014, a permit revision was submitted to include the linen supply and industrial laundering operations after receiving information from industry sources that VOC and HAP emissions result from the washing and drying of soiled industrial towels. The applicant has requested limitations on their industrial shop towel laundering operations to remain a synthetic minor source of VOC and HAPs. In addition, the application includes a boiler and four commercial dryers subject to local performance standards for fossil-fuel fired industrial and commercial equipment that are fired with natural gas.

C. Attainment Classification

The source is in an area that is in attainment for all pollutants.

II. SOURCE DESCRIPTION

A. MPE and Alternate SVE Remediation System

The MPE system and process consists of the application of high vacuum by means of liquid ring pump within a series of wells to extract a mixture of diesel fuel, groundwater, and soil vapor from the subsurface. A number of new and existing wells (11 total) are used for purposes of extracting these fluids. In the processing equipment, the liquid streams (diesel fuel and water) are separated from the vapor stream. (Refer to Figure 4 of the application for a process diagram).

The alternate SVE system and process will consist of the application of vacuum by means of a regenerative blower to wells screened in a lower zone of the subsurface to extract soil vapor. URS intends to only operate one extraction system at a time (MPE mode or SVE mode). While operating in one mode (MPE or SVE) the other extraction train will remain shut down by turning off its associated pump/blower and isolating it with a shutoff valve.

1. Treatment of Gases (MPE or SVE mode):

Extracted soil gas and fluids are treated to remove the VOCs and HAPS by routing them through APC consisting of three 2000 lb vapor-phase GAC vessels and a 500 lb PIZB vessel connected in series prior to discharge. The PIZB vessel is used as a polisher to oxidize any of the vinyl chloride present in the vapor stream that may “roll through” the GAC and be displaced by the PCE and TCE. The treated soil gas is discharged to the atmosphere through a vent on the building roof (Exhaust stream #2 on Figure 4 of application).

When operating in MPE mode the extracted vapor is routed through a series of filters to remove oil mist and dust, an air-to-air heat exchanger to cool the soil vapor stream, and a knockout vessel to collect moisture and condensate from the vapor stream prior to passing the vapors through the APC system. When operating in SVE mode the extracted vapor is routed through the APC system. Valves are used to connect and shutoff the separate extraction trains to the APC system (see system process flow diagram Attachment 1 of this TSD).

2. **Treatment of Liquid Stream (MPE mode):**

The extracted liquid stream from the MPE system passes through an oil/water separator where hydrocarbon liquids (predominantly diesel fuel) are separated from the water. The water is routed to treatment in a series of sealed vessels consisting of an oil-adsorbing clay bed to remove hydrocarbons that may pass through the oil/ water separator and liquid-phase GAC to remove VOCs. Treated water is either used in the laundry or routed to the wastewater treatment system for the facility. There are no emission points in the water treatment portion of the process. The hydrocarbon liquid is routed from the oil/ water separator to a product storage tank for temporary storage and eventual transportation off-site. The vents on the oil/ water separator and product storage tank that are routed to a vapor-phase GAC for treatment (Exhaust stream #1 on Figure 4 of application).

3. **MPE or Alternate SVE System Operating Plan:**

a. **Vapor Phase Carbon Drum (Exhaust Stream #1)**

A handheld photoionization detector (PID) will be used to monitor the influent and effluent side of the 200-lb vapor-phase GAC controlling vapors from the breathing and working losses in the liquid oil water separator and liquid product recovery storage tanks once each week during system operation. When effluent concentrations are within 5% of influent concentration, the GAC unit will be replaced. .

b. **2000-lb GAC and PIZB vessels (Exhaust Stream #2)**

Influent, effluent, and intermediate sampling points between 2000-lb GAC vessels will be monitored on a weekly basis using a hand-held PID. The influent sampling point will be prior to the initial GAC vessel and the effluent point will be after the discharge from the vessel containing the PIZB prior to the point at which the treated air stream is discharged to the atmosphere.

Field measurement of the VOC concentration will be used to determine GAC "breakthrough" which in this case is defined as the point at which the effluent concentration on the initial GAC bed is within 10% of the influent concentration to that vessel. If breakthrough in the initial GAC bed is detected, the GAC within that vessel will be scheduled for replacement and the remaining GAC vessels will be moved forward in the series (i.e., the secondary vessel becomes the initial vessel and the tertiary vessel becomes the secondary vessel). The vessel with the new GAC will be placed as the tertiary vessel.

To ensure compliance with permit conditions, influent and effluent grab samples from the vapor abatement system are collected on a daily basis for the first five days of continuous operation (schedule 1), twice weekly for the following two weeks of operation (schedule 2), weekly, for the following four weeks of operation (schedule 3) and monthly thereafter (schedule 4). The samples will be submitted to a laboratory for analysis of VOCs using EPA's Compendium Method TO-15.

B. Linen Supply and Industrial Laundering Operations

The applicant also operates a large linen supply and industrial laundering business. Goods processed at the Tucson facility include sheets, towels, table linens, healthcare items, industrial towels, garments, mats and a number of other items. Goods are provided to customers on a rental basis. Clean goods are delivered to the customer at a varied frequency from bi-weekly to daily depending on the delivery volumes. At the time that the clean goods are delivered, soiled items are also picked up and brought back to the facility where they are sorted, washed, dried, and either pressed or folded before being sent back to the customer.

Approximately 7,000,000 pounds (clean dry weight) of textiles are washed annually at the facility. Currently about 87,000 pounds of soiled industrial shop towels make up this total. The plant presently runs one full shift Monday through Thursday, 5AM to 2PM, and a partial shift on Fridays and Saturdays, 5 AM to 11 AM. There is some seasonality to the business so the operating schedule varies somewhat throughout the year. The linen supply and industrial laundering facility operates year-round, 52 weeks per year. The facility currently operates 2080 hours/year based on the current operating schedule.

Soiled goods are unloaded at the back of the plant by the delivery trucks when they return from deliveries at the end of the day. After unloading, the goods are sorted by wash classification. Washing is performed using a total of seven washer/extractors with capacities ranging from 100 pounds to 900 pounds (clean dry weight). After washing, some items are dried before going to finishing and some items, such as sheets and table linen, go directly to the ironers for pressing. Motel terry towels and industrial towels are always dried before being bagged or folded. After pressing and folding, clean goods are stored until they are delivered back to the customer.

The chemicals used for washing consist of Lauryl Alcohol Ethoxylate (LAE) surfactants, sodium hydroxide, chlorine bleach, hydrogen peroxide, laundry sour (fluorosilicic acid), anti-chlor (sodium thiosulfate), as well as fabric softeners, bacteriostats, etc.

While the laundering chemicals do not contribute to VOC/HAP emissions from the washers and dryers, entrained solvents and chemicals present on the soiled towels picked up from some customers do contribute emissions. The applicant minimizes the impact of these chemicals on the operations by maintaining a policy of not accepting towels that are saturated with solvents. If the towels appear to be saturated to the point where they will not pass a paint filter test [1] they are not accepted and left with the customer. [1] (Ref. SW 846 - EPA Test Methods for Evaluating Solid Waste, Method 9095B).

C. Fossil Fuel Fired Industrial and Commercial Equipment

The facility also operates a boiler and commercial dryers that provide heat for the processes and operations at the facility. The boiler and dryers supply indirect heat from the combustion of natural gas and are subject to local performance standards for fossil-fuel fired industrial and commercial equipment.

III. REGULATORY HISTORY

A. Testing & Inspections

Periodic photo ionization detector (PID) monitoring and EPA, Method TO-15 sampling of the influent and effluent VOC and HAP concentrations from the extraction system have been routinely conducted by URS for compliance with the existing permit conditions. In addition, regular inspections have been conducted by PDEQ since the initial permit was issued. The most recent full compliance evaluation (FCE) was conducted on November 26, 2008.

B. Excess Emissions

Mission Linen has submitted the following permit deviation reports to PDEQ as required under the existing operating permit:

October 21, 2011 reported emissions of vinyl chloride in excess of the permit limits. Vapor samples collected November 3, 2011 showed emissions to be below permit limitations. As a mitigation step, a permanganate-impregnated zeolite bead treatment (PIZB) process was installed to specifically address the potential of vinyl chloride in the vapor stream.

[PDEQ did not take any further action and the issue was adequately resolved on December 1, 2011.]

C Enforcement Actions

Mission Linen has to date resolved all enforcement actions. The following enforcement actions have been issued by PDEQ:

Following an inspection on November 26, 2008, an opportunity to correct was issued for failure to change out the vapor phase carbon unit (VPC) within three weeks following the initial discovery that the effluent concentration reached a value within 5% of the influent concentration and for failure to submit written notice of the change of the liquid ring pump.

[This opportunity to correct was adequately resolved on February 10, 2009.]

D. Permitting Actions

The following is a summary of the facility permit actions. Mission Linen submitted several notifications under the existing operating permit for minor facility changes that did not require a permit revision. On April 18, 2014, the applicant submitted an application for a minor permit revision to incorporate limitations on emissions from the linen supply and industrial laundering operations and fuel burning equipment at the facility. On July 25, 2014, URS submitted a request to incorporate in the permit the operation of an alternate SVE system designed to extract soil vapors from a lower zone of the subsurface that contain the same VOC and HAP species as those collected by the MPE system. The proposed remediation system will be redesigned to use the existing MPE air pollution controls and to enable switching between the MPE or SVE extraction modes, while shutting down and isolating the other extraction system.

IV. EMISSIONS ESTIMATES

A. MPE

Based on several assumptions, a material balance was used to estimate the concentrations of VOC & HAP species in the hydrocarbon liquids. Refer to Section 2.2 of the 01/28/2005 application for a listing of assumptions. PDEQ has checked and verified URS' PTE calculations. Results of these calculations are summarized in the tables below. The potential maximum VOC, HAPs emissions are based on the maximum concentrations measured from the wells for PCE, TCE, cis-1,2-DCE and vinyl chloride (based on Miller Brooks, September 2003, Monitoring Report and Draft Remedial Investigation Report) and air stream pilot test data collected during MPE testing for ethylbenzene, xylenes and volatile fuel hydrocarbons. The estimated emissions were based on the maximum concentrations and a maximum design vapor extraction flow rate of 4248 liters per minute (150 cfm) through the soil vapor gas treatment units. Refer to Section 2.2 (pages 2-3 to 2-7) of the 01/28/2005 application for potential to emit (PTE) calculations.

PDEQ has verified and updated URS's PTE calculations to include data presented in their renewal application dated July 11, 2014. Emissions of VOC & HAPs from the MPE system without controls are shown in the tables below. More information can also be found in Tables 2 & 3 of the 01/28/2005 application and the 07/18/2011renewal application.

Table 1.[1]
Summary of Estimated HAP and VOC emissions from Product Tank & Oil Water Separator
Mission Linen MPE System - Exhaust Stream #1

Description	PCE	TCE	DCE	VOCs	Diesel	Total HAPs	Total VOCs
Product Tank (lbs/yr) [2]	4.18	2.75	0.18	4.59	4.75	7.11	16.45
Oil-Water Separator (lbs/yr) [2]	0.29	0.24	0.02	0.57	0.29	0.55	1.41
Uncontrolled Emissions (lbs/yr)	4.47	2.99	0.20	5.16	5.14	7.66	17.96
Uncontrolled Emissions (tons/yr)	0.0022	0.0015	0.0001	0.0026	0.0026	**0.0038**	**0.009**
Controlled Emissions (lbs/yr)	0.45	0.30	0.02	0.52	0.51	0.77	1.80
Controlled Emissions (tons yr)	0.0002	0.0002	0.00	0.0003	0.0003	**0.0004**	**0.001**

[1.] For a more detailed table, refer to Table 2 in the 01/28/2005 and 07/18/2011 applications.
[2.] Emissions from vessels, upstream of controls based on results from TANKS 4.09 for pure species, and prorated for liquid weight fraction. Gasoline was used as surrogate to represent VOCs in the recovered product. The recovered hydrocarbon liquid does not contain gasoline.

Table 2.
Estimated HAP and VOC emissions from Exhaust Stream #2
Mission Linen MPE System.

Description	PCE	TCE	DCE	Vinyl Chloride	Ethyl Benzene	Xylenes	VOCs	Total HAPs	Total VOCs
Vapor conc. (ppmv) [1]	4700	1200	210	6	0.95	1.7	990	N/A	N/A
Uncontrolled Emissions (tons/yr) [2]	71.7	14.6	1.87	0.054	0.0093	0.0166	11.6	**88.25**	**99.85**
Controlled Emissions (tons/yr) [3]	0.533	0.182	1.87	0.0063	0.0093	0.0166	1.16	**2.62**	**3.78**

[1] Vapor concentrations are assumed 80% of the mass extracted in the well product.
[2] Operating schedule is based on full-time operation, 90% of the year (7,884 hr/yr).
[3] Based on proposed emission limits developed from ISC3 modeling for PCE, TCE, Vinyl Chloride and 90% removal efficiency for VOCs.

Table 3.
Total Estimated HAP and VOC emissions from MPE and Alternate SVE System (Exhaust Streams 1 & 2)

Description	PCE	TCE	DCE	Vinyl Chloride	Ethyl Benzene	Xylenes	VOCs	Total HAPs	Total VOCs
Uncontrolled Emissions (tons/yr) [2]	71.7	14.6	1.87	0.054	0.0093	0.0166	11.6	**88.25**	**99.85**
Controlled Emissions (tons/ yr) [3]	0.533	0.182	1.87	0.0063	0.0093	0.0166	1.16	**2.62**	**3.78**

As shown in Table 3, the uncontrolled emissions from the MPE system demonstrate that the applicant meets the permitting thresholds for requiring a Class III permit. After applying pollution controls to the MPE system and, the emissions estimate is reduced to 2.62 tons/yr for HAPs and 3.78 tons/yr for VOCs allowing for 10% downtime of the MPE system. The use of the pollution controls on the MPE system will be taken as a synthetic minor limitation.

B. Alternate SVE System

The alternate SVE extraction system (SVE Mode) has been designed to extract vapors from a lower zone of the subsurface from a number of wells. The volatile organic compounds extracted within the soil will be the same as for the MPE system. Although the relative concentrations may vary, the same assumptions have been applied for the estimated maximum vapor concentrations . The soil vapor from the SVE system will be discharged to the existing air pollution controls with same flow rate limitations and emission limits and resulting in the same estimated emissions for the remediation system when operating in SVE mode.

C. Linen Supply and Industrial Laundering Operations

The applicant has submitted a minor permit application to include their linen supply and industrial laundering operations and associated equipment in the permit. No federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) or New Source Performance Standards (NSPS) emissions source category standards apply to these operations and there are no EPA established emission factors for this industry sector. While information on the emissions from these operations is limited, the applicant has received information and PDEQ has verified that VOC's and HAP's can be emitted as a result of laundering and drying soiled industrial towels that contain entrained solvents. The applicant has provided emission estimates from this operation using the most conservative emission factors found from their research. The factors submitted as a basis for estimating the emissions were developed by the Minnesota Pollution Control Agency as a result of emissions testing conducted at G & K Services Inc., Minneapolis, MN (October 22-24, 2003) using established EPA methods and was used to classify the sources potential to emit from these operations.

For comparison, PDEQ also reviewed a fugitive air emissions estimate and data presented in a document from the EPA Office of Water, titled, "*Technical Development Document for Final Action Regarding Pretreatment Standards for the Industrial Laundries Point Source Category (Revised March 2000)*". The EPA model provides a lower estimate of VOC and HAP emissions for the facility when normalized to year round production and the estimated wastewater flows calculated from the Tucson facility using the maximum washer throughput. According to the study data from 7 industrial laundering facilities , the primary volatile and semivolatile organics emitted , that account for 80% of

the emissions from the laundering operations, based on the worst case wastewater concentrations of organic species measured, in decreasing order are: n-Decane (60%) , Acetone (7%), Pthalate (6 %), Xylene (4.5%), tetrachloroethene (3%), and Toluene (3%). The emission factors submitted by the applicant (ref. G & K) provides estimates that are 17% greater for total VOC, and 116% greater for total HAP than the EPA published study estimates.

PDEQ reviewed the emissions testing information and the proposed emission factors and are in general agreement with the testing methodology and basis for their development. The emission factors appear to be representative of the ambient air emissions from a similar industrial laundering operation under actual conditions and provide more conservative estimates than the data published in the referenced EPA study. PDEQ concurs with the applicant, that the proposed annual throughput limitation of 3,000,000 lb of soiled shop towels and 100,000 lb of soiled print towels will limit the emissions to a significant margin below the major source thresholds of 100 tons per year VOC and 25 tons per year of combined HAPs, while allowing the applicant flexibility to expand its industrial towel laundering operations if needs require. The estimated emissions are summarized in the Table below.

Table 4.
Total Estimated VOC and HAP emissions from laundering of soiled shop towels with Annual Throughput Limitations (3,000,000 lb of soiled shop towels and 100,000 lb of soiled print towels)

Pollutant	Shop Towels Tons/year	Printer Towels Tons/Year	Total Tons/Year
Total VOC's	23.64	6.06	29.70
Total HAP's	9.57	0.73	10.30

C. Fossil Fuel Fired Commercial and Industrial Equipment

In their permit revision, the applicant has also included natural gas fired equipment including a boiler and commercial dryers used for process heating at the industrial laundering facility that are subject to local performance standards. The emissions from the combustion of natural gas in the boiler and dryers are given in the following Table.

Table 5.
Total Estimated emissions from Natural Gas Combustion in Boiler and Dryers (8760 hours)

Description	NO_X	CO	SOx	PM_{10}	HAPS	VOC's
Uncontrolled Emissions (tons/yr)	14.64	12.30	0.09	1.11	0.28	0.81

D. Facility Wide PTE

Based on the potential to emit the source's class is a Class III synthetic minor stationary source for HAPs and VOCs. The total facility wide potential to emit (PTE) from all operations is provided in the following Table.

Table 6.
Facility Wide Potential to Emit with Controls (8760 hours)

Pollutant	NOx	CO	SOx	PM_{10}	VOC	HAP's
Tons/Year	14.64	12.30	0.09	1.11	34.71	13.49

VI. APPLICABLE REQUIREMENTS

The stationary source is not subject to any federal rules or performance standards for source categories in 40 CFR Part 60, NSPS or 40 CFR Part 63,NESHAP. The following requirements from Title 17 of the Pima County Code are applicable to the source:

40 CFR 60 Appendix A-4 Reference Test Method 9

Pima County Code (PCC) Title 17, Chapter 12: Permits and Permit Revisions

17.12.010 Statutory authority
17.12.020 Planning, constructing, or operating without a permit
17.12.040 Reporting requirements
17.12.045 Test methods and procedures
17.12.050 Performance tests
17.12.080 Permit display or posting
17.12.165 Permit application processing procedures for Class II and Class III permits
17.12.185 Permit contents for Class II and Class III permits
17.12.235 Facility changes that require a permit revision
17.12.240 Procedures for certain changes that do not require a permit revision Class II or Class III
17.12.255 Minor Permit Revision
17.12.260 Significant Permit Revision
17.12.270 Permit Reopenings – Revocation and reissuance – Termination
17.12.350 Material Permit Condition
17.12.520 Fees related to Class II and Class III permits

Pima County Code (PCC) Title 17, Chapter 16: New and Existing Stationary Source Performance Standards

17.16.010 Local rules and standards - Applicability of more than one standard
17.16.020 Noncompliance with applicable standards
17.16.030 Odor limiting standards
17.16.040 Standards and applicability (Includes NESHAP)
17.16.050 Visibility limiting standard
17.16.130 Applicability
17.16.165 Standards of performance for fossil-fuel fired industrial and commercial equipment
17.16.430 Standards of performance for unclassified sources

Pima County Code (PCC) Title 17, Chapter 20: Emission Source Testing and Monitoring

17.20.010 Source sampling, monitoring, testing
17.20.040 Concealment of emissions

Pima County Code Title 17, Chapter 24: Emission Source Recordkeeping and Reporting

17.24.020 Recordkeeping for compliance determination

VII. PERMIT CONTENTS

A. Section I – MPE and Alternate SVE System

Emission Limits/ Standards:

17.16.430.A.1.a	PM Standard
17.16.040.A & 17.16.130.B.3	Opacity Standard
17.16.050.D	Visibility Limiting Standard
17.16.430.D	Odor Limiting Standard
17.16.430.G	Processing of VOCs
17.16.430.G	Use of abatement equipment
17.16.430.G	Flow through Limit
17.12.190.B	No direct discharge into the atmosphere

Fuel Limitation

Change of fuels with appropriate revision.

Operating Limitations

17.12.190.B & 17.16.430.G	Conditions for GAC & PIZB use.
17.12.190.B & 17.16.430.G	Conditions for Vapor Phase Carbon use

Monitoring:

17.12.185.A.3	PM monitoring not required unless requested by the Control Officer.
17.12.185.A.3	Opacity & Odor monitoring (See operational limitations)
17.12.185.A.3	Fuel Limitation: None

Operational Limitations

17.12.185.A.3	Monitoring of gas concentrations in GAC & PIZB
17.12.185.A.3	Grab-sample schedule from vapor abatement system
17.12.185.A.3	Observe exhaust stacks for evidence of visible emissions
17.12.185.A.3	Monitoring of gas concentrations in VPC
17.12.185.A.3	Weekly performance checks of equipment

Recordkeeping Requirements:

17.12.185.A.4	Recordkeeping of gas concentrations
17.12.185.A.4	Record results of opacity observations
17.12.185.A.4	Record results of performance observations
17.12.185.A.4	Display contact information at the site of the system
17.12.185.A.4	Location of Records

Reporting Requirements:

17.12.185.A.5	Submittal of initial system test report required by permit
17.12.185.A.5	Submittal of other reports requested by the Control Officer
17.12.030 & 17.12.185.A.3.d.	Submit O & M plan within 60 days of permit issuance
17.12.320	Emissions Inventory reporting

Testing Requirements:

17.20.010.B	Testing upon Control Officer's request
17.20.010.B	Calibration tests for PID 17.20.010.B
17.20.010.B	Compliance with Particulate Matter Standard
17.12.185.A.3	Compliance with Opacity Standard
17.12.185.A.3	Testing before startup

B. Section II: Industrial Laundering Operations

The provisions of this Section are applicable to the industrial laundering operations and equipment (washers and dryers) identified in Table II of Attachment 2.

Standard	Discussion	Authority
I.A	Voluntary annual throughput limitations for industrial laundered shop towels.	17.12.185.B.1.b 17.12.190.B
I.B	Voluntary annual throughput limitations for industrial laundered print towels.	17.12.185.B.1.b 17.12.190.B
I.C	Requirement to install, calibrate, maintain, and operate weighing devices to weight of soiled shop and printer towels processed, and to maintain an accuracy of 5% over the operating range of the device.	PCC 17.12.190.B 17.12.350.A.3.c
II.A	Requirement to weigh separately the amounts of printer towels and shop towels separately.	PCC 17.12.185.A.3
II.B.	Requirement to regularly maintain and calibrate the weighing device according to the manufacturer's specifications.	PCC 17.12.185.A.3
III.A	Requirement to keep records of the daily, monthly, and twelve month rolling total weight of shop towels and printer towels processed.	PCC 17.12.185.A.4
III.B	Requirement to keep all records of maintenance and calibration for the weighing devices.	PCC 17.12.185.A.4
IV.	Requirement to report to the Control Officer any emissions in excess of the limits.	PCC 17.12.A.5 PCC 17.12.040
V.	Testing is not required.	PCC 17.12.045 PCC 17.12.050 PCC 17.20.010

C. Section II: Fossil-Fuel Fired Industrial and Commercial Equipment

The provisions of this Section apply to Fossil-Fuel fired Industrial and Commercial Equipment (Boilers and Dryers) specifically listed in Table 2 of Attachment 2 of the permit.

Standard	Discussion	Authority
I.A	Opacity Standard - By law, the Permittee cannot allow any equipment under his control to emit effluents (such as exhaust from the boiler) that exceed specific values of opacity (the degree to which light cannot pass through the plume of effluent/exhaust.) The value of opacity that cannot be exceeded is stated in the permit for the boiler.	PCC 17.16.040.A
I.B	Fuel Limitation – The Permittee may demonstrate compliance with the fuel limitation requirement by documenting the specific fuel supplied to the boiler.	PCC 17.12.185.A.3
II	The opacity of visible emissions from the boilers while combusting natural gas fuel is inherently low and are not significant enough to warrant a regular monitoring demonstration of compliance with the standard; as such the Permittee is required to operate and maintain the boilers at all times - including periods of startup, shutdown, and malfunction - in a manner consistent with good air pollution control practices and consistent with manufacturer's guidelines.	PCC 17.12.185.A.3
III.A	Recordkeeping Requirements – Provision to record all opacity checks to demonstrate compliance with the opacity standard.	PCC 17.12.185.A.4
III.B	Records retention to allow the Control Officer an opportunity to review historical monitoring data to determine compliance with the permit requirements	PCC 17.12.185.A.4
IV.	Reporting requirements for emissions in excess of the limits are identified in the Additional Permit Requirements of this permit.	PCC 17.12.185.A.5
V.A	When required, opacity measurements are required to be performed according to EPA Reference Method 9.	PCC 17.20.010
V.B	Since the sulfur content of pipeline quality natural gas is regulated by the Federal Energy Regulatory Commission, identifying that pipeline quality natural gas was fired exclusively in the applicable boiler would suffice to demonstrate compliance with the fuel limitation standard.	PCC 17.12.185.A.3, PCC 17.20.010
V.C	The Permittee may seek approval for the use of alternative test methods to demonstrate compliance with applicable emission limitation standards.	PCC 17.12.045.D

D. Section IV: Facility Wide Operations

The provisions of this Category apply to Facility Wide operations and all sources of air contaminants operating at the facility.

Standard	Discussion	Authority
I.A.1	This a general requirement applicable to all facilities to not permit the planning, construction, installation erection, modification, use or operation of an emission source which will cause or contribute to a violation of a performance standard in Title 17.	PCC 17.12.185.A.2 PCC 17.16.020.A
I.A.2.	General pollution control requirement for unclassified sources to install and use control methods, devices, and equipment where means are available to reduce effectively the contribution to air pollution from evaporation, leakage, or discharge.	PCC 17.16.430.F
I.A.3	This a general requirement applicable to all facilities to install abatement equipment or alter the stack, vent or other outlet at the request of the Control Officer where the outlet is at such a level that emissions constituting air pollution are discharged to adjoining property.	PCC17.12.185.A.2 PCC 17.16.020.B
I.B	This general odor limiting standard applies to all facilities and sources in Pima County.	PCC 17.12.185.A.2 PCC 17.16.030
I.C	This general opacity limit applies to facility wide point and nonpoint sources in eastern Pima County for facilities located outside of the Tohono O'Odham, Pasqua Yaqui, and San Xavier Indian Reservations.	PCC 17.16.050.B PCC 17.16.130.B.1
I.D	This is the Pima County general visibility limiting standard and applies to all facilities and limits emissions to 20% opacity as measured by EPA Method 9 and the diffusion of visible emissions beyond the property boundary line.	PCC 17.16.050
I.E.	General conditions applicable to all facilities prohibiting the concealment of emissions taken directly from PCC 17.20.040.	PCC 17.20.040
II.A	Demonstration of compliance with the odor limiting standard is not required unless asked by the Control Officer when the Control officer has reasonable casue.to believe a violation of the odor limiting standard has been committed.	PCC 17.12.185.A.3
II.B	Demonstration of the general opacity and fugitive emission requirements is not required unless requested by the Control Officer.	PCC 17.12.185.A.3
III.A	This provision defines the required elements in the facility wide opacity and visible emission checks.	PCC 17.12.185.A.3&4

Standard	Discussion	Authority
III.B	This provision defines the required retention of records.	PCC 17.12.185A.4.b
III.C	This provision defines the permit posting, record locations, and recordkeeping requirements for compliance determinations.	PCC 17.12.080 PCC 17.24.20.A
IV.	Reporting requirements for emissions in excess of the limits are provided in I.B of the Additional Permit Requirements.	PCC 17.12.185.A.5 PCC 17.12.040
V.	Facility Changes - The facility may make a physical change or change in method of operation if the conditions identified for a permit revision are met.	PCC 17.12.240 PCC 17.12.255 PCC 17.12.260
VI.	When required, opacity measurements are required to be performed according to EPA Reference Method 9.	PCC 17.12.050 PCC 17.20.010

E. Additional Permit Requirements

Standard	Discussion	Authority
I	Compliance with Permit Conditions: This section of the permit identifies generic conditions that are applicable to all Class II and Class III sources.	PCC 17.12.185 A.7.a &b, PCC 17.12.185.A.5 17.12.040, 17.12.185.A.9, and, PCC 17.12.510
II	Permit Revision, Reopening, Revocation and Reissuance, or Termination for Cause: The Permittee and Control Officer are provided means of revising, reopening, or terminating the permit for cause.	PCC 17.12.185.A.7.c
III	Duty to provide information: The Permittee is required to furnish records to the Control Officer when requested.	PCC 17.12.165.G & PCC 17.12.185.A.7.e
IV	Severability Clause: This generic condition provides an avenue for the permit to be enforceable even if a part of the permit is found to be invalid.	PCC 17.12.185.A.6

VIII. ALTERNATE OPERATING SCENARIOS

The applicant has not requested any alternate operating scenarios for the system. An increase in extraction wells discussed in the permit application would not be an alternate operating scenario.

The requested change in this renewal to modify the current remediation system design and permit to enable operation of an alternate SVE extraction train, i.e. to be able to switch operation of the remediation system between the two modes of extraction would not be an alternate operating scenario for permitting purposes since the soil vapor discharge from the system while operating in SVE mode will be connected to the same soil vapor treatment train and exhaust stream subject to the same permit requirements without introducing or triggering any new applicable requirements.

IX. MISCELLANEOUS COMMENTS

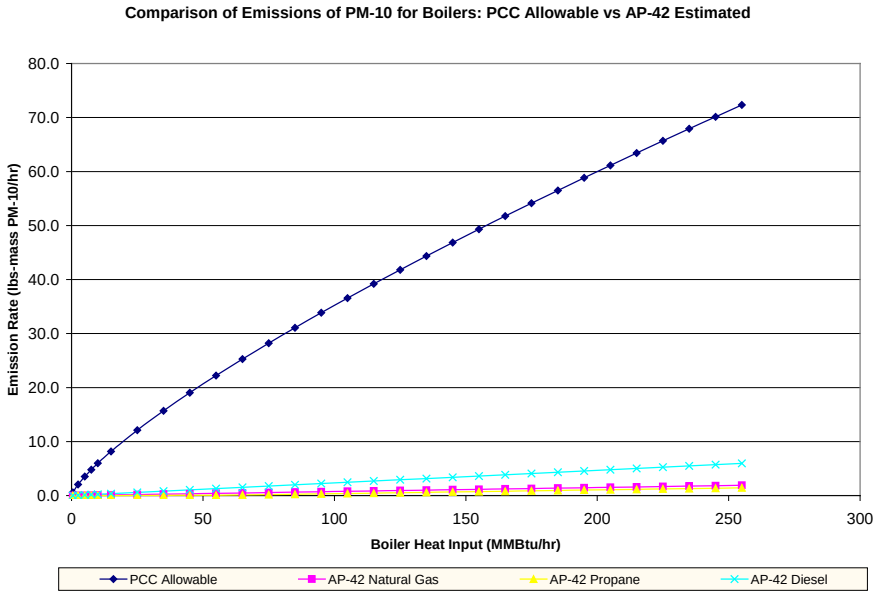
A. Sulfur Dioxide:

Even though the sulfur content limit is 0.9% by weight in Pima County, natural gas delivered to Pima County consistently shows sulfur levels below this limit as shown in past records of fuel supplier specifications/ purchase records which verify sulfur content of the fuel fired. The limitation for use of natural gas will ensure high sulfur fuel is not fired allowing the omission of the rule in PCC 17.16.165.G. These rules are incorporated by reference in Attachment 1 of the permit.

Compliance with the fuel limitation requirements of the Specific Conditions shall ensure compliance with the Sulfur Dioxide standard of PCC 17.16.165.E; which limit the emission of SO_2 to 1.0 pound per million BTU heat input, when burning low sulfur fuel. Since this source does not use diesel or fuel oil it is not necessary to include this standard in the permit even though there is fossil-fuel fired equipment at the facility. The rule specifically applies to sources that use diesel fuel.

B. Particulate Matter:

PCC 17.16.165.C limits the emissions of particulate matter from commercial and industrial fossil-fuel fired equipment (including but not limited to boilers.) This rule has not been included in the permit as allowable emissions are consistently over an entire order of magnitude higher than EPA AP-42 estimated potential emissions. The chart below, illustrates the point.



Comparative Chart of Allowable Particulate Emissions Under Pima County Code, Title 17, and Estimated Potential Emissions based on EPA AP-42 Estimates for External Combustion Sources. Allowable emissions are consistently over ten times estimated potential emissions. Therefore, it is not necessary to include the standard in the permit explicitly, but by reference in Attachment 1.

X. IMPACTS TO AMBIENT AIR QUALITY

Not a major source and so no studies are required

XI. CONTROL TECHNOLOGY DETERMINATION

No control technologies needed to be determined.

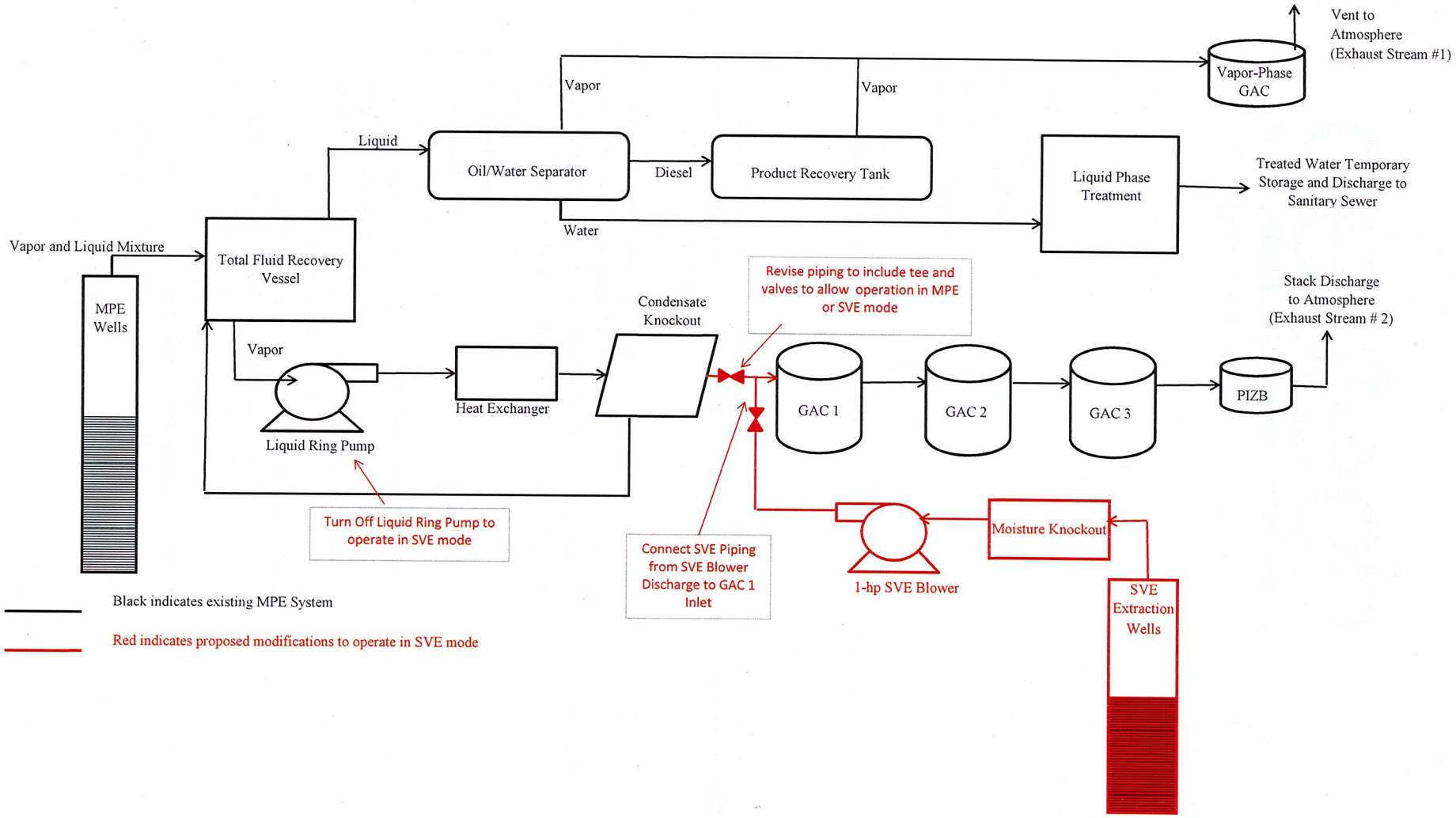
XII. PREVIOUS PERMIT CONDITIONS

The permit was divided into sections to include additional sections for the fossil fuel fired commercial and industrial equipment and the industrial laundering operations. Also, a general facility wide section has been added which is applicable to all facility wide sources and all sources of air contaminants at the facility.

MPE and Alternate SVE Remediation System

Minor changes in the provisions were made to clarify their application to the system and for operation in the MPE or SVE mode of extraction rather than the MPE only. The requirements for both extraction modes are identical. The condition in I.I. was changed to clarify that when operating in either the MPE or SVE mode, the other extraction system will be shut down and isolated.

ATTACHMENT 1

MPE AND ALTERNATE SVE PROCESS FLOW DIAGRAM

Park Euclid WQARF - MPE System Process Flow Diagram - Proposed Modifications to Allow Operation in MPE or SVE Mode