DRAFT
Engineering Evaluation
ERM-West, Inc.
999 Third Street, San Rafael, CA 94901
Plant No. 22583; Application No. 26510

Site Background

ERM-West, Inc. on behalf of Pacific Gas & Electric Company (PG&E) has applied for an Authority to Construct and/or Permit to Operate for the following sources at former San Rafael Manufactured Gas Plant (MGP) located at 999 Third Street in San Rafael:

S-1 Contaminated Soil Excavation Activities

S-2 Three contaminated soil storage piles

S-3 Groundwater Treatment System

A-1 Tenting Abatement System for Tent A, B and C: A minimum of four activated carbon containers, each container has at least 23,000 lb carbon and has two stacks (so a total of at least 8 stacks per tent), Stack heights are 8.5 feet above ground-level. Carbon beds are equipped with three equally-spaced sample ports at various heights in the activated carbon bed for monitoring activated carbon for contaminant breakthrough

A-2 Tenting Abatement System for Tent D: One activated carbon container, this container has at least 23,000 lb carbon and has two stacks, stack heights are 8.5 feet above ground-level

A-3 Groundwater Abatement System - Two carbon units, each with 55 gallons of carbon

This site is located at in the downtown commercial district of the City of San Rafael, CA. The proposed site is currently zoned for retail, office and residential mixed use and it is approximately 3 acres in size and contains three buildings.

Terra Pacific Group (TPG), a PG&E consultant, submitted a Remedial Action Plan (RAP) that was approved by Department of Toxic Substances Control (DTSC) to remediate contaminated soils, soil gases, and groundwater at the former San Rafael Manufacture Gas Plant. ERM will be undertaking the remediation activities described in the RAP. The surrounding neighborhood consists of mostly of commercial land use with residential land use to the southwest. Saint Raphael Elementary School (1100 5th Avenue, San Rafael, CA 94901) located within 1000 feet from the site.

The purpose of the remediation activities is to minimize the potential human health risks and environmental impacts, allowing the land to be redeveloped for mixed, multi-family residential or other uses. An Initial Study/ Negative Declaration was prepared as required by the California Environmental Quality Act (CEQA) and approved for this project by DTSC, who is the lead agency for these soil remediation activities.

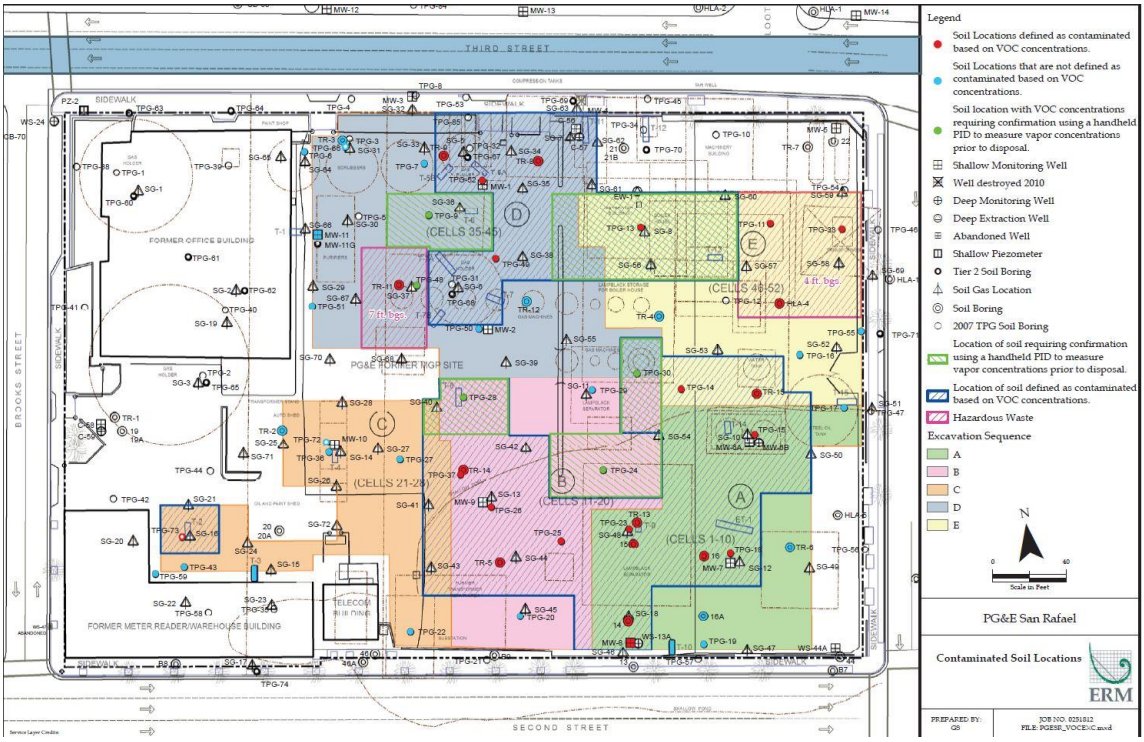
ERM is planning to excavate and remove contaminated soil from the site. The total quantity of excavated soil will be about 35,000 cubic yards. The soil will be excavated and generally placed directly into trucks and transported offsite. There may be up to three stockpiles of contaminated soil at any one time on site and they, when inactive, will be covered with a layer of emission suppression Rusmar (or equivalent) foam, mulch, or overlaid with plastic sheeting. As soil is removed, there will be about 42,000 cubic yards of clean backfill material imported into the site, which will be used to backfill the pits formed from excavation.

The owner/operator will be following extensive mitigation and monitoring measures listed in the Final Remedial Action Plan (RAP) and the Environmental Control and Monitoring Plan (ECMP) approved by DTSC to minimize the emissions. The website to view these two documents is listed in the reference page at the end of this evaluation report.

Excavation activity details

The actual excavation activity can be divided into five "sequences" (A, B, C, D, and E) as shown on Figure 1. The overall project is expected to last about 13 months. Excavation activities are planned to occur from 7 am to 5 pm on weekdays and occasional activities may be conducted on Saturdays after permission is obtained from the City of San Rafael. The exact order of excavation of these sequences will be determined with the final project schedule. However, an average high of 400 cubic yards (305 cubic meters) of contaminated soil will be excavated per day. A total of 35,000 cubic yards is anticipated to be excavated over the course of the project, though for conservatism, it is assumed 38,500 cubic yards of impacted soils (approximately 2,400 truckloads) will be excavated in this evaluation.

The District has reviewed the soil data for wells and borings at the proposed site. The following figure shows that the location of soil that will require burial due to VOC and/or TPHg concentrations exceeding 50 ppm. Per District's Regulation 8-40, soil has an organic content exceeding 50 ppm is considered as contaminated soil. There may be as much as 15,100 cubic yards of contaminated soil depending on the results of the FID/PID readings to be taken. Contaminated soil that transported to locations within the Bay Area Air Quality Management District jurisdiction will require burial. For the remaining soil that is not contaminated, it may be used at daily cover at solid waste disposal sites. The District reviewed and evaluated the soil data for daily cover and determinated that the acute impact at the solid waste disposal sites will be acceptable.



Most of the impacted soil is non-hazardous. Some soils (about 2,500 cubic yards), classified as non-RCRA Hazardous Waste, will be transported to the Clean Harbors Buttonwillow facility in Buttonwillow, CA or other Class I disposal facility approved by DTSC.. Contaminated soils (possibly as much as 15,100 cubic yards will be transported to the Hay Road Landfill, Keller Canyon Landfill, Altamont Landfill, forward Landfill or other landfills approved by DTSC. Contaminated soils might be transported to Keller Canyon Landfills, Altamont Landfill or Potrero Hills Landfill in the Bay Area Air Quality Management District jurisdiction only if landfills have District's approval to accept contaminated soil. As the contaminated soil is removed, approximately 42,000 cubic yards of clean backfill (2,500 truckloads) will be imported into the site and will be used to backfill the pits formed from excavation.

Figure 1 San Rafael Remediation Site (Five Sequences)

Figure 4 Source Locations

Health Risk Screening Analysis
PG&E San Rafael Remediation Site
San Rafael, California

Emissions Calculations

The excavation will generate emissions of precursor organic compounds (POC), non-precursor organic compounds (NPOC), particulate matter (PM10), and toxic air contaminants (TACs). There are three pathways for these pollutants to become airborne:

1. Volatile organic compounds will be emitted through the release of gases trapped in the soil pore space and through diffusion; and
2. Organic compounds and metals will be emitted as fugitive dust.
3. Toxic PM emissions (toxic metals and PAHs) will be emitted from the stock piles

Detailed emissions estimates of organics, TACs, and fugitive dust are provided in Appendix A along with a detailed description of the methodology used. The emission estimates provided are based on expected and typical operations. The proposed excavation is divided into five sequences (A, B, C, D and E) where the area excavated within each hour will be limited. The overall project is expected to last about 13 months. Hourly, daily, and annual emission estimates were determined for each sequence.

As identified in the Final Remediation Action Plan (RAP) (TPG, 2012), the chemicals of potential concern (COPCs) at the Former San Rafael Manufactured Gas Plant at 999 Third Street, San Rafael, CA 94901 are listed in the following table:

Chemicals of Potential Concerns			
1,2,4-Trimethylbenzene	Benzo(a)pyrene	Copper	Nickel
1,3,5-Trimethylbenzene	Benzo(a)pyrene equivalent	Cyanide	n-Propylbenzene
2-Butanone (MEK)	Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Phenanthrene
2-Methylnaphthalene	Benzo(b,k)fluoranthene	Dibenzofuran	Pyrene
4-Ethyltoluene	Benzo(g,h,i)perylene	Ethylbenzene	sec-Butylbenzene
4-Isopropytoluene 4-Methyl-2-pentanone (MIBK)	Benzo(k)fluoranthene	Fluoranthene	Selenium
Acenaphthene	Beryllium	Fluorene	Silver
Acenaphthylene	Bromoethane	Indeno(1,2,3-c,d)pyrene	Styrene
Acetone	Butylbenzyl phthalate	Isopropylbenzene	tert-Butylbenzene
Anthracene	Cadmium	Lead	Toluene
Antimony	Carbon Disulfide	Mercury	Trichloroethylene
Arsenic	Chlorobenzene	Methyl tert-butyl ether	Vanadium
Barium	Chloroform	Methylene Chloride	Xylenes
Benzene	Chromium	Molybdenum	Zinc
Benzo(a)anthracene	Chrysene	Naphthalene	
	Cobalt	n-Butylbenzene	

Following is a listing of the estimated amount of each constituent at the site. The following is the annual excavated mass for each constituent and is not the same as emissions.

Pollutants	Annual Excavated Mass of Constituents, lbs/year
1,1,1-Trichloroethane	0.26
1,2,4-Trimethylbenzene	6.53
1,3,5-Trimethylbenzene	5.48
2-Butanone (MEK)	9.80
4-Isopropyltoluene	6.92
Acetone	80.37
Arsenic	924.60
Benzene	390.02
Benzo(a)pyrene equivalent	20,186
Beryllium	72.00
Bromomethane	2.52
Cadmium	36.00
Carbon disulfide	10.76
Chlorobenzene	0.08
Chloroform	2.41
Copper	8990.00
Cyanide, Total	480.40
Ethylbenzene	512.56
Ethylene Dibromide	0.70
Isophorone	5313.00
Isopropylbenzene	8.16
Lead	7500.20
Mercury	35.20
Methyl tert-butyl ether	0.99
Methylene chloride	15.74
Naphthalene	59099.94
n-Butylbenzene	11.71
Nickel	10202.60
N-Propylbenzene	9.17
sec-Butylbenzene	16.38
Styrene	0.01
tert-Butylbenzene	3.55
Tetrachloroethene	1.67
Toluene	133.38
TPHg	7866.50
Xylenes (Total)	325.71

Excavation procedures details:

- Up to 38,500 cubic yards of impacted soil (containing volatile organic compound (VOC), arsenic, benzene, copper, lead, mercury, nickel, PAHs (including naphthalene), and other toxic air contaminants)
- Depths of excavation will be range from approximately 2 to 25 feet
- Excavation and backfill is expected to be completed in 13 months.
- Daily export of soils will be limited to an average of 30 truck trips.
- The excavated areas will be backfilled with clean backfill material and restored to their original conditions, to the extent possible.
- Excavation dewatering will be conducted in all areas where soils are removed from the saturated zone. Any groundwater extraction during excavation dewatering will be treated prior to being discharged under permit to the sanitary sewer.
- Dust control measures:
    - Covering all trucks hauling soil, sand and other loose materials or requiring all trucks to maintain at least two feet of freeboard;
    - Enclosing, covering with weighted black plastic sheeting or tarps, periodically spraying with water, or applying soil binders to exposed stockpiles;
    - Keep drop heights to minimum while loading vehicles with soil;
    - Sweeping and applying water on unpaved access roads/ paths, parking areas and staging areas; and
    - Stopping all earth movement outside the tents when dust control measures are not effective during high wind conditions.

Chromium

Chromium has been treated as trivalent chromium, not hexavalent chromium. There is no evidence indicating it would be hexavalent chromium.

Given the type of operations, historical operations at the site should not have resulted in hexavalent chromium impacts, and so the measured chromium levels are not expected to be hexavalent chromium. Also, the total chromium detected in the soil at the site is within typical “background” levels for California soils, suggesting historical operations did not contribute to total chromium levels.

Proposed configuration to reduce emissions

1. Four tents will be used at four locations. The tents will be under negative pressure and route vapors from the vent to activated carbon contained in minimum of four containers. Each carbon container will have at least 23,000 lbs of carbon.
2. For three of the larger tent locations (Tents A, B, and C), emissions will be routed to a minimum of four carbon containers, each with 2 stacks (so a total of at least 8 stacks per tent). The stack heights are 8.5 feet. For the small tent (Tent D), emissions will be routed to one carbon container with 2 stacks and the stack height is 8.5 feet as well.
3. 98% control of organics is assumed using the carbon containers (98% of the pore space and diffusion emissions).
4. No additional control for the fugitives is assumed. (Foam will be used in the tent. ERM is conservatively not accounting for foaming within the tents as appropriate.)

Cellulose cover or equivalent (e.g. Con-cover or Waster Cover) will be used on the inactive stockpiles within the tent.

Con-cover is a blend of polymers and a recycled fiber like newspaper. An equivalent cover is called FINN Waste Cover which is made from recycled paper and wood and contain polymers and other proprietary ingredients.

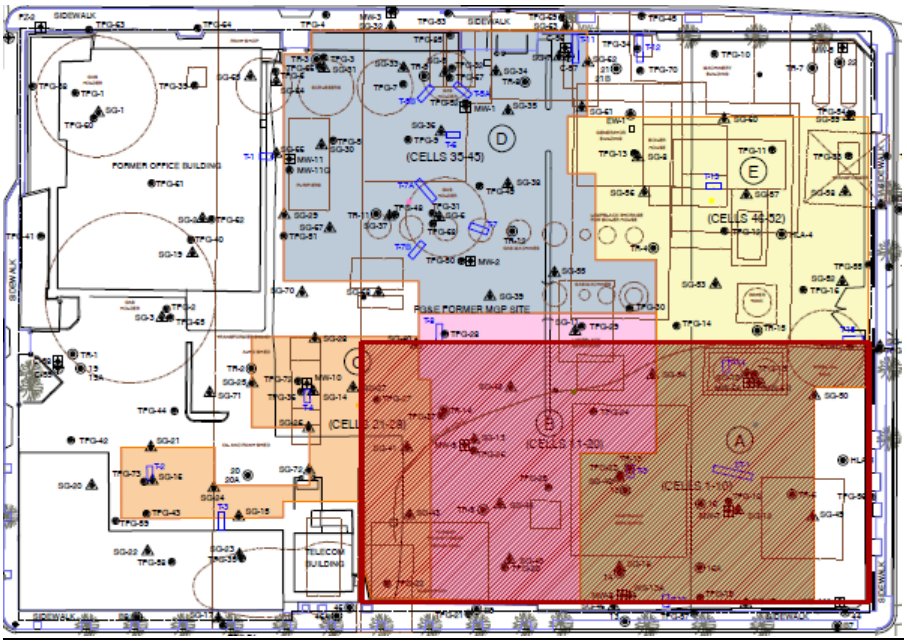
5. For the areas outside of the tents, ERM will use foaming in conjunction with Waste Cover and plastic sheeting so as to achieve 90% coverage.

<u>Anticipated Schedule under Tent A</u>

Operating Schedule: 92 days

Sequence A – 42 days; Sequence B – 37 days; and Sequence C – 13 days

Total Area under Tent A: Sequence A – 14,644 ft^2; Sequence B – 12,660 ft^2; and Sequence C – 4,479 ft^2

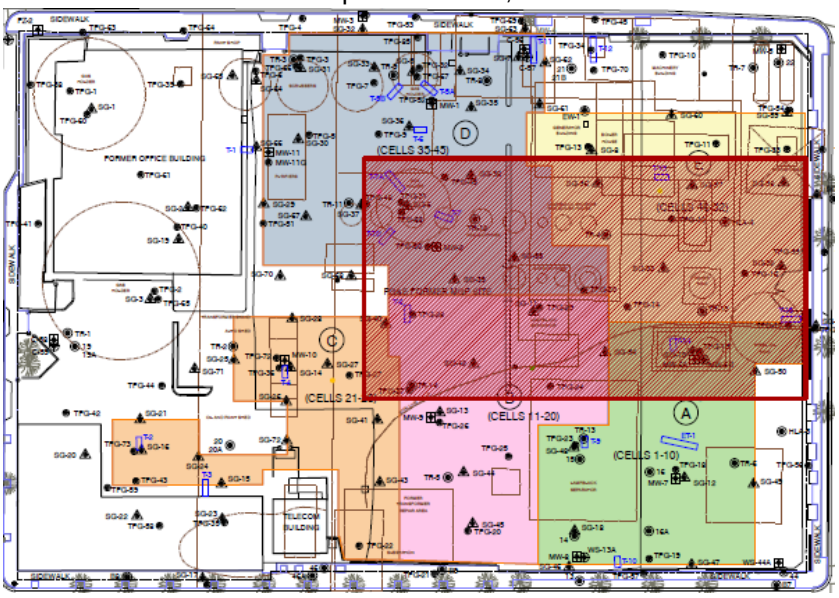


Anticipated Schedule under Tent B

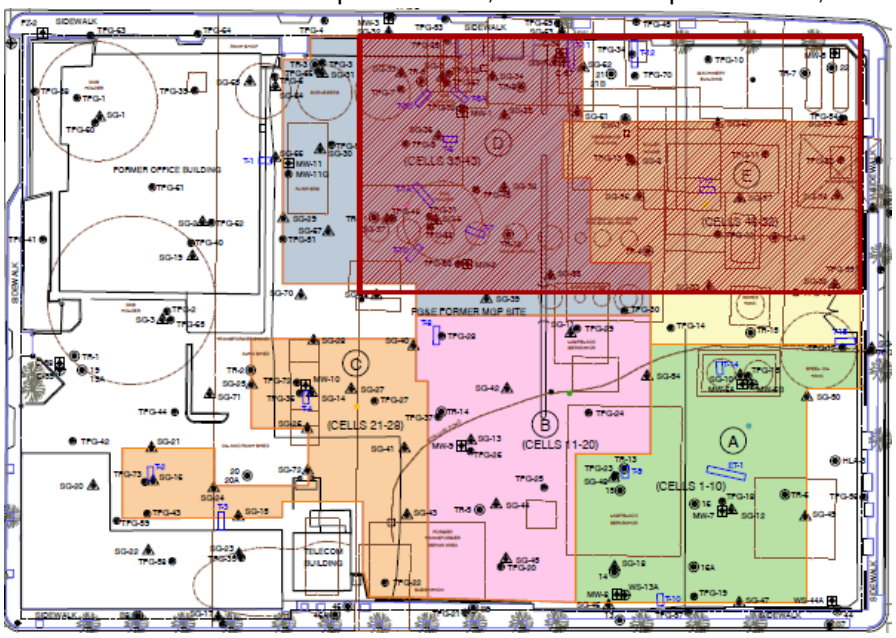
Operating Schedule: 83 days

Sequence B – 7 days; Sequence D – 32 days; and Sequence E – 44 days

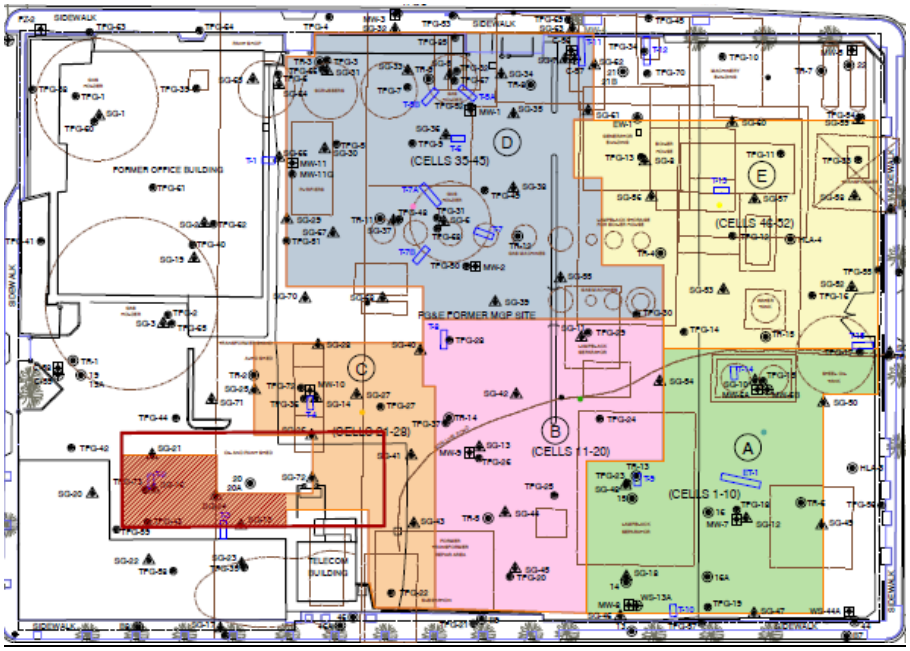
Total Area under Tent B: Sequence B – 1,800 ft^2; Sequence C – 44 ft^2; Sequence D – 8,539 ft^2 and Sequence E – 11,627 ft^2



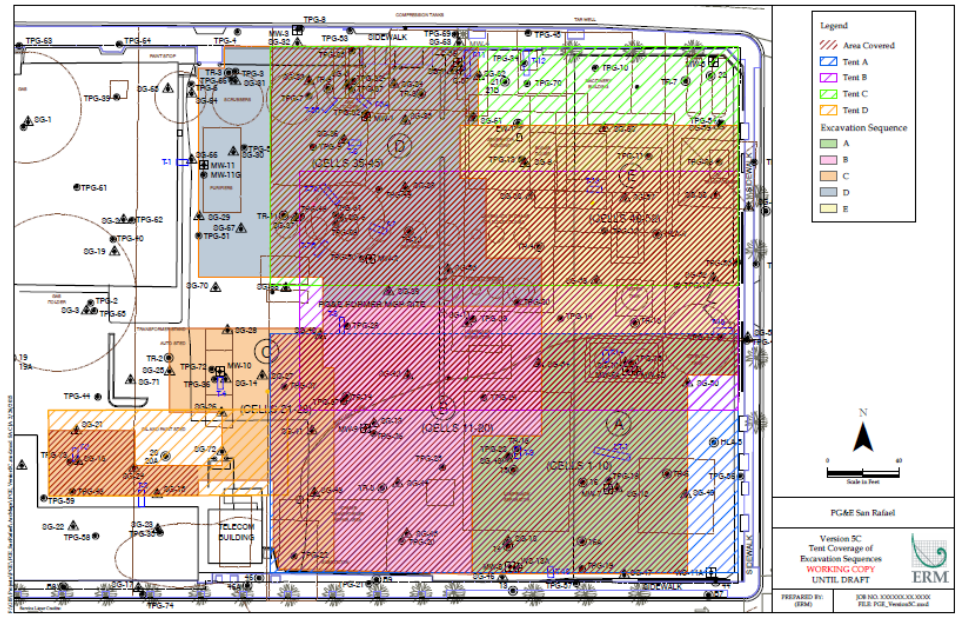
Anticipated Schedule under Tent C
Operating Schedule: 40 days
Sequence D – 28 days; and Sequence E – 12 days
Total Area under Tent C: Sequence D – 8,368 ft^2 and Sequence E – 3,791 ft^2



Anticipated Schedule under Tent D
Operating Schedule: 15 days
Sequence C – 15 days
Total Area under Tent D: Sequence C – 2362 ft^2



Overall Untended and Tented Area



Untented Area

Operating Schedule: 32 days

Sequence C – 13 days, Sequence D – 19 days

Total untented area: Sequence C – 3860 ft^2 and Sequence D – 5,501 ft^2

Some areas could not be tented to accommodate truck moment. In addition existing structures onsite made tenting impractical in locations near the structures.

Picture of the carbon containers

Work schedule during rainy days

ERM will not stop excavation due to rain unless the rainfall is hindering operations or safety. Light rain will not wash away the foam but a heavier rain likely would. ERM would work in light rain and likely stop work outside tented areas on heavier rain days. In the case of heavier rains, ERM would plan accordingly and place a greater reliance on the Cellulose cover or equivalent (e.g. Con-Cover or Waste Cover) product and/or plastic sheeting to cover soils outside the tent. [2]

2. Per ERM email dated on December 4, 2014

POC, NPOC Emissions from Active Area

Maximum Total Abated Daily POC and NPOC Emissions		
	POC Emissions, lbs/day	NPOC Emissions, lbs/day
Sequence A	1.430	0.030
Sequence B	1.300	0.010
Sequence C	0.460	0.0005
Sequence D	0.040	0.001
Sequence E	0.850	0.020
Max	**1.430**	**0.030**

Total Annual POC and NPOC Emissions		
	POC Emissions, lbs/year	NPOC Emissions, lbs/year
Sequence A	27.900	0.530
Sequence B	27.000	0.299
Sequence C	6.190	0.045
Sequence D	9.080	0.113
Sequence E	25.200	0.417
Total	**95.37**	**1.404**

POC, NPOC Emissions from Inactive Stock Pile Outside of Tent

Emissions from Diffusion from Three Stockpiles	
POC, lbs/day	0.140
NPOC, lbs/day	0.001
Total	**0.140**

Total Annual Emissions from Three Stockpiles		
	POC Emissions, lbs/year	NPOC Emissions, lbs/year
Sequence A	0.000	0.000
Sequence B	0.000	0.000
Sequence C	2.010	0.021
Sequence D	2.650	0.028
Sequence E	0.000	0.000
Total	**4.660**	**0.049**

Max Daily POC and NPOC = 1.430 + 0.030 + 0.140 + 0.001 = 1.601 lbs/day

Total Annual POC and NPOC = 95.37 + 1.404 + 4.66 + 0.049 = 101.48 lbs/year = 0.051 tons/year (TPY)

Total Daily and Annual PM10 Emissions

Total Daily PM Emissions (lb/day)	
Sequence A	0.715
Sequence B	0.715
Sequence C	0.711
Sequence D	0.725
Sequence E	0.716
Stockpile	0.068
Max	**0.725**

Total Annual PM Emissions (lb/year)	
Sequence A	26.453
Sequence B	24.555
Sequence C	25.624
Sequence D	60.723
Sequence E	28.389
Stockpile	13.008
Total	**178.751**

Total Daily PM10 = 0.725 lbs/day
Total Annual PM10 = 178.751 lbs/year = 0.089 tons/year (TPY)

Emissions are based on the ERM proposed excavation procedures and configurations. ERM will also follow the RAP and ECMP to reduce the emissions. The District has reviewed the details and included them in the permit conditions.

Plant Cumulative Increase

S-1 and S-2 located at "999 Third Street, San Rafael, CA 94901". This is a new facility. Therefore, there are no existing emissions at the plant.

Pollutants	Current Emissions [TPY]	New Emissions [TPY]	New Total Emissions [TPY]
POC	0.000	0.051	0.063
NOx	0.000	0.000	0.000
SO2	0.000	0.000	0.000
CO	0.000	0.000	0.000
PM10	0.000	0.089	0.089
NPOC	0.000	0.001	0.001

Toxic Risk Screening Analysis

This application required a Toxics Risk Screen because the emissions are over the trigger levels in BAAQMD Regulation 2, Rule 5, Table 2-5-1.

The HRSA estimates the incremental health risks resulting from toxic air contaminant (TAC) emissions from the soil excavation project in open storage piles, open excavation areas and exhaust stacks for tented excavation areas.

Although the duration of the proposed operation will be about 13 months, the project was conservatively evaluated assuming that the annual emission will continue to occur over a 9-year period.

For a 9-year exposure, the maximum residential impact occurs for the child receptor; thus, the residential cancer risk is calculated using the breathing rates and age sensitivity factors for a child. Assuming that the project emissions will occur at the same annual emission rate for 9 years, the maximum cancer risk is estimated to be 2.3 in a million, the maximum chronic hazard index is 0.02, the maximum acute hazard index with the north sidewalk blocked off is 1.0 and the one-month lead concentration at 0.0005 $\mu g/m^3$ complies with the approvable average lead concentration (<0.12 $\mu g/m^3$) per CARB's lead risk management guidelines. In accordance with Regulation 2-5, these risk levels are considered acceptable. The operation will meet TBACT requirements.

Best Available Control Technology for Toxics (TBACT)

The owner/operator of soil excavation activities will be following extensive mitigation measures listed in the Final Remedial Action Plan (RAP) and the Environmental Control and Monitoring Plan (ECMP) approved by DTSC to minimize the emissions. The District's considered these measures are the best available control technology for toxics. The TBACT measures are as following:

- Most of the proposed excavation activities will be inside tents. Tents will be abated with carbon units.
- Soil will be excavated and generally placed directly into trucks and transported offsite.
- Inactive stockpiles will be covered with a layer of emission suppression Rusmar Foam or equivalent, foam, mulch, Cellulose cover (e.g. Con-cover or Waste Cover) or overlaid with plastic sheeting.
- During excavation within the tent, all exposed contaminated soil surfaces is expected to be kept visibly moist by water spray, treated with an approved vapor suppression – Rusmar Foam or equivalent, or covered with Cellulose cover or equivalent (e.g. Con-cover or Waste Cover) or continuous heavy duty plastic sheeting to minimize emissions of organic compounds to the atmosphere.
- For the areas outside of the tents, ERM will use foaming in conjunction with Waste Cover and plastic sheeting so as to achieve 90% coverage.
- All the contaminated soils loaded into trucks or trailer for offsite disposal or treatment is expected to be covered with an approved vapor suppression – Rusmar Foam or equivalent, or covered with Cellulose cover or equivalent (e.g. Con-cover or Waste Cover) or continuous heavy duty plastic sheeting to minimize emissions of organic compounds to the atmosphere.
- Appropriate decontamination of outer clothing will be required.
- Trucks will be cleaned off prior leaving the excavation site.

Statement of Compliance

Regulation 2, Rule 1 California Environmental Quality Act and Public Notice Requirements

California Environmental Quality Act (CEQA) Regulation 2-1-310
Except for projects which are considered ministerial per District's Regulation 2-1-311 or otherwise exempt per Regulation 2-1-312, all new sources that require a permit with BAAQMD must be reviewed in accordance with the California Environmental Quality Act (CEQA). CEQA requires a review of potential significant environmental impacts from proposed projects. An Initial Study/Negative Declaration was prepared as required by CEQA and approved by DTSC (as the lead agency). City of San Rafael, as a responsible agency, has reviewed and adopted the Initial Study/Negative Declaration. The study examined environmental impacts of the proposed project and concluded that air quality impacts would be less than significant with appropriate control measures.

Public Notification Regulation 2-1-412
This source is located within 1,000 feet of a school: Saint Raphael School; therefore, this application requires Public Notification per District's Regulation 2-1-412.

Regulation 2, Rule 2 New Source Review

Best Available Control Technology (BACT) Regulation 2-2-301
In accordance with Regulation 2, Rule 2, Section301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO2 or PM10.

Based on the emission calculation above, the owner/operator of S-1 is not subject to BACT.

Offsets Regulation 2-2-302
Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/year of POC or NOx per Regulation 2, Rule 2, Section 302. Based on the emission calculation above, offsets are not required for this project.

Regulation 2, Rule 5 New Source Review of Toxic Air Contaminants
Since toxic air contaminant (TAC) emissions for this project will exceed risk screen trigger levels, a Health Risk Screening Analysis (HRSA) is required for this project pursuant to Regulation 2-5-401. The District conducted an HRSA for this project in accordance with the BAAQMD HRSA Guidelines. The following HRSA tables show that these risk levels are considered acceptable. A detailed HRSA report is attached.

TBACT:
Regulation 2-5-301 requires best available control technology for toxic air contaminants (TBACT) for each source that has a source risk of more than 1.0 in a million cancer risk or more than 0.2 chronic hazard index. The proposed excavation project is expected to meet TBACT. Please refer to TBACT discussion above.
Project Risks:
Regulation 2-5-302 limits project risks to 10.0 in a million cancer risk, 1.0 chronic hazard index, and 1.0 acute hazard index. The proposed project risks are all less than Regulation 2-5-302 project risk limis. Therefore, this project will comply with Regulation 2-5-302.

Maximum Chronic Health Risks by Receptor

Receptor	Cancer Risk, chances in a million	Chronic Hazard Index	30-day Average Lead Conc., μ/m^3
Resident	2.3	0.009	0.0005
Worker	0.3	0.02	-
Parkside Children's Center Student	0.5	0.003	-
Saint Raphael School Student	0.5	0.004	-

Maximum Acute Hazard Index

Location	Acute Hazard Index
Max. Off-site (north sidewalk)	1.7
Max. Off-site, if north sidewalk partially blocked off	1.0
Resident	0.1
Worker	0.4
Parkside Children's Center Student	0.02
Saint Raphael School Student	0.03

Regulation 8-2-301 Organic Compounds – Miscellaneous Operations

The proposed excavation project is expected to be in compliance with Regulation 8-2. The total emissions will be less than 15 pounds per day.

Regulation 8-40 Organic Compounds – Aeration of Contamination Soil

Based on the information submitted, this operation is expected to be in compliance with Regulation 8-40, Aeration of Contaminated Soil, including procedures, monitoring and notification requirements.

Soil that contains less than 50 ppm of volatile air contaminants is considered not contaminated per Regulation 8-40. It will be transported to landfills as daily coverage. This soil may contain toxic air contaminants that are not volatile.

As previously described, soil contains greater than 50 ppm will be transported to a landfill that has approval to accept contaminated soil.

On site soil measurements will be required to determine when some of the wells or borings have mixed soil data.

Recommendation

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the sources listed below. However, the proposed source will be located within 1,000 feet of a school which triggers the public notification requirements of District Regulation 2-1-412. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct for the following source:

S-1 Contaminated Soil Excavation Activities

S-2 Three contaminated soil storage piles

S-3 Groundwater Treatment System

A-1 Tenting Abatement System for Tent A, B and C: A minimum of four activated carbon containers, each container has at least 23,000 lb carbon and has two stacks (so a total of at least 8 stacks per tent), Stack heights are 8.5 feet high above ground-level. Carbon beds are equipped with three equally-spaced sample ports at various heights in the activated carbon bed for monitoring activated carbon for contaminant breakthrough

A-2 Tenting Abatement System for Tent D: One activated carbon container, this container has at least 23,000 lb carbon and has two stacks, stack heights are 8.5 feet high above ground-level

A-3 Groundwater Abatement System - Two carbon units, each with 55 gallons of carbon

Permit Conditions for Soil Excavation project:

Please refer to the figures in the evaluation report for the sequences and tents locations and details.

Application No. 26510; Plant No. 22583; ERM-West, Inc. for S-1 and S-2

S-1 Contaminated Soil Excavation Activities

S-2 Three contaminated soil storage piles

S-3 Groundwater Treatment System

A-1 Tenting Abatement System for Tent A, B and C: A minimum of four activated carbon containers, each container has at least 23,000 lb carbon and has two stacks (so a total of at least 8 stacks per tent), Stack heights are 8.5 feet

A-2 Tenting Abatement System for Tent D: One activated carbon container, this container has at least 23,000 lb carbon and has two stacks, stack heights are 8.5 feet

A-3 Groundwater Abatement System - Two carbon units, each with 55 gallons of carbon

1. The owner/operator shall not excavate more than 400 cubic yards of contaminated soil per day at S-1 or more than 38,500 cubic yards total.
   [Basis: Regulation 2-5]

2. The owner/operator shall not excavate more than 120 cubic yards per hour.
   [Basis: Cumulative Increase, Regulation 2-5]

3. The owner/operator shall only excavate on weekdays from 7am to 5pm. The owner/operator may operate on Saturdays after permission is obtained from the City of San Rafael.
   [Basis: Initial Study/Negative Declaration approved by DTSC]

4. The owner/operator shall use a tent (A-1 or A-2) when excavation activities occur within the following areas:
   a. The eastern portion of the site starting at the Lindaro Street boundary and extending approximately 246 feet west between the 2nd street boundary and the 3rd street boundary.
   b. A portion of the property starting on the 2nd street boundary approximately 246 feet west of the Lindaro street boundary and extending approximately 16 feet to the west and approximately 134 feet to the north.
   c. A portion of the property starting on the 3rd street boundary approximately 246 feet west of the Lindaro street boundary and extending approximately 16 feet to the west and approximately 134 feet to the south.
   d. A portion of the property approximately 302 feet west of the Lindaro street boundary and approximately 52 feet north and the 2nd street boundary extending approximately 85 feets to the west and approximately 48 feet to the north.

   Please refer to the figures in the evaluation report for the exact tenting locations.
   [Basis: Cumulative Increase; Regulation 2-5]

5. The owner/operator shall abate Source S-1 at all times with A-1, at least four (23,000 lb minimum capacity) activated carbon vessels when excavating in Tent A, B and C or with A-2, at least one (23,000 lb minimum capacity) activated carbon vessel when excavating in Tent D to capture pollutant from active excavation activity for the excavations identified in Part 4 above. The owner/operator shall follow the details provided with the application and in the evaluation report.
   [Basis: Cumulative Increase; Regulation 2-5]

6. The owner/operator shall maintain the A-1 and A-2 stack heights at least 8.5 feet above ground-level.
   [Basis: Regulation 2-5]

7. The owner/operator shall prevent public access to the sidewalk adjacent to the Third Street property line and make the sidewalk inaccessible when excavating sequence D outside the tent. The owner/operator shall ensure that no parking is available adjacent to the sidewalk during this excavation.
   [Basis: Regulation 2-5]

8. All excavated contaminated soil in storage piles must be covered with Cellulose cover or equivalent (e.g. Con-cover or Waster Cover) or plastic sheeting except for an active area not to exceed 6,000 square feet. The covering shall be in good conditions, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate. While the storage pile is active, the surface area not covered by plastic sheeting or other covering shall not exceed 6,000 square feet.
   [Basis: Cumulative Increase. Regulation 2-5, Regulation 8-40-304]

9. All contaminated soil above grade shall be completely covered during periods of inactivity longer than one hour. The contaminated soil shall be covered with Cellulose cover or equivalent (e.g. Con-cover or Waste Cover) or continuous heavy-duty plastic sheeting to minimize emission to the atmosphere. The covering shall be in good condition, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate.
   [Basis: Regulation 8-40-305]

10. During excavation within the tent, all exposed contaminated soil surfaces above existing grade level shall be kept visibly moist by water spray, treated with an approved vapor suppressant – Rusmar Foam or equivalent, or covered with Cellulose cover or equivalent (e.g. Con-cover or Waste Cover) or continuous heavy duty plastic sheeting to minimize emissions of organic compounds to the atmosphere. The covering shall be in good conditions, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate.
    [Basis: Regulation 8-40-306.1, Regulation 2-5]

11. When excavating outside of the tented areas, specified in Part 4, the owner/operator shall apply foam to control emissions when disturbing contaminated soil. Within one hour of active soil excavation or stockpile generation from soils excavated from areas outside the tent, the owner/operator shall apply one of the following to any remaining exposed contaminated soil:
    a. Cellulose cover or equivalent (e.g. Con-cover, Waste Cover, plastic sheeting)
    b. Clean soil upon completion of excavation (i.e. backfilling)

12. The owner/operate of S-1 shall monitor with a photo-ionization detector (PID), flame-ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer at the following locations:
    a. At the inlet to each carbon container.
    b. At the three sample ports in the carbon bed of each container.
    c. At the outlet of each carbon container prior to venting to the atmosphere.

    When using an FID to monitor breakthrough, readings may be taken with and without a carbon filter tip fitted on the FID probe. Concentrations measured with the carbon filter tip in place shall be considered methane for the purposes of these permit conditions.
    [Basis: Cumulative Increase, BACT/TBACT]

    <u>MONITORING AND CHANGING OUT THE CARBON BEDS (Permit Conditions 13-16)</u>

13. The owner/operator shall record these monitoring readings in a monitoring log at the time they are taken. The monitoring results shall be used to estimate the frequency of carbon change-out

necessary to maintain compliance with conditions number 14, and shall be conducted on a daily basis.
[Basis: Cumulative Increase, BACT/TBACT]

14. The owner/operator shall change out each carbon container with unspent carbon upon breakthrough. Breakthrough defined as the detection of 10 ppmv or greater (measured as C1) at the sample port upstream and closest to the outlet:
[Basis: Cumulative Increase, BACT/TBACT]

15. The owner/operator of this source shall maintain the following records for each month of operations of the source:
    a. The hours and times of operation.
    b. Each monitor reading or analysis result for the day of operation they are taken.
    c. The number of carbon beds removed from service.

    All measurements, records, and data required to be maintained by the owner/operator shall be retained and made available for inspection by the District for at least two years following the data the data is recorded.
    [Basis: Cumulative Increase, BACT/TBACT]

16. The owner/operator shall report in writing any non-compliance with parts 14 to the Director of the Compliance &Enforcement Division by the next business day after discovery. The submittal shall detail the corrective action taken and shall include the data showing the exceedance as well at the time of occurrence.
[Basis: Cumulative Increase, BACT/TBACT]

<u>TRUCKS (Permit Conditions 17-21)</u>

17. All contaminated soils loaded into trucks or trailer for offsite disposal or treatment shall be covered with an approved vapor suppressant – Rusmar Foam or equivalent or Cellulose cover or equivalent (e.g. Con-cover or Waste Cover) or continuous heavy-duty plastic sheeting to minimize emission of organic compounds to the atmosphere. The covering shall be in good condition, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate.
[Basis: Regulation 8-40-306.2]

18. The owner/operator shall have no more than an average of 30 trucks per day to transport contaminated soil offsite.
[Basis: Cumulative Increase, Regulation 2-5, and Initial Study/Negative Declaration approved by DTSC]

19. The owner/operator shall have no more than an average of 40 trucks per day to transport clean soil to site for backfilling.
[Basis: Cumulative Increase, Regulation 2-5, and Initial Study/Negative Declaration approved by DTSC]

20. The owner/operator shall meeting the following operational requirement s to transport/ handle contaminated soil:
    a. Earth-handling activities outside the tents shall be halted during high winds (sustained 15 mph or greater);
    b. On-site vehicles and equipment shall be limited to 15 mph;
    c. On-site vehicles and equipment shall be restricted to paved roads to the extent possible;
    d. Excavated soils shall be directly loaded onto trucks when possible; the duration of on-site soil stockpile shall be minimized;
    e. The exterior of the truck, trailer, and tires shall be cleaned-off prior to the truck leaving the site;
    f. Real time dust monitoring shall be conducted;
    g. Keep drop heights to minimum while loading vehicles with soil;
    h. No more than four trucks on site at a time; and
    i. Idling time for all equipment shall be minimized.

    [Basis: Cumulative Increase, Regulation 2-5, and Initial Study/Negative Declaration approved by DTSC]

21. The owner/operator shall allow the trucks to travel only on paved portions of the property or on "clean" soil that has been used as backfill after removing contaminated soil, to the extent possible.

    [Basis: Regulation 2-5 and Initial Study/Negative Declaration approved by DTSC]

22. The owner/operator shall ensure the clothing and shoes of onsite workers handling contaminated soil remain at the site when they exit the site unless appropriate decontamination of outer clothing is undertaken.

    [Basis: Cumulative Increase, Regulation 2-5]

23. The owner/operator shall ensure that excavated contaminated soil is not used as daily, intermediate, or final cover at any solid waste disposal site within the District.

    The soil associated with the following wells or borings are considered contaminated:
    Sequence A: Soil Borings 14, 15, and 16, MW-8, TPG-15, TPG-18, TPG-23, ET-1, TR-13
    Sequence B: TPG-25, TPG-26, TR-14, TR-5
    Sequence C: TPG-73
    Sequence D: TPG-31, TPG-49, TPG-52, T-7B, TR-8, TR-9
    Sequence E: TPG-13, TPG-14, TPG-54, TR-15
    [Basis: Regulation 8-40-301]

24. The owner/operator shall monitor the soil excavated from the following wells or borings during the excavation with a photo-ionization detector (PID), flame-ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer to ensure the appropriate handling:
    Sequence B: TPG-24, T-8 and TPG-28
    Sequence D: TPG-9, TPG-30, TPG-48
    Sequence E: TPG-13

The monitoring may be performed on the soil near the location of the above wells or borings or on the soil in the truck or in the stockpile. The owner/operator shall use the monitoring to determine whether the soil is contaminant.
[Basis: Regulation 8-40-301]

25. The owner/operator shall backfill the excavated pit(s) with clean soil or other equivalent clean backfill materials.
[Basis: Regulation 8-40-215]

26. When operating S-3, the owner/operator shall abate S-3 at all times with A-3.
[Basis: Cumulative Increase]

27. The owner/operator shall provide a written report to the Compliance and Enforcement Division no later than 30 working days after excavation of each of the four tent areas and the untented area is completed. The written verification shall include:
    a. Location of site at which excavation occurred.
    b. Quantity of soil excavated in cubic yards.
    c. Procedures employed meet the requirements of Section 8-40-301 through 306.
    [Basis: Regulation 8-40-405, Cumulative Increase]

28. The volume of excavated soil in cubic yards shall be recorded in a monitoring log on a daily basis.
[Basis: Regulation 1-523]

29. The owner/operator shall follow the dust control and VOC measure specified in the Environmental Control and Monitoring Plan (ECMP) dated on June 27, 2013 as approved by the California Department of Toxics Substances Control:
    a. Real- time dust monitoring.
    b. Fenceline air monitoring.
    c. Real-time action levels for dust and VOC.
    [Basis: Cumulative Increase and Regulation 2-5]

30. The owner/operator shall gather and treat groundwater on site before discharging to sewer as outlined in an approved Central Marin Sanitation District permit.
[Basis: Initial Study/Negative Declaration approved by DTSC]

31. The owner/operator shall transport the impacted soil that classified as non-RCRA Hazardous Waste, to the Clean Harbors Buttonwillow facility in Buttonwillow, CA or other Class I disposal facility approved by DTSC.
[Basis: Initial Study/Negative Declaration approved by DTSC]

32. The owner/operator shall transport the contaminated soil to the Hay Road Landfill, Keller Canyon Landfill, Altamont Landfill, Forward Landfill or other landfills approved by DTSC. The owner/operator might transport the contaminated soil to Keller Canyon Landfill, Altamont Landfill, or Potrero Hills Landfill in the District jurisdiction only if landfills have District's approval to accept contaminated soil.

[Basis: Initial Study/Negative Declaration approved by DTSC, Regulation 8-40]

33. Any non-compliance with these conditions shall be reported in writing to the Compliance and Enforcement Division by the next business days after discovery. The submittal shall detail the corrective action taken and shall include the data showing the exceedance as well as the time of occurrence.
    [Basis: Regulation 1-441]

34. Upon final completion of the excavation project, the Permit Holder shall notify the Engineering Division within two weeks of completion of all remediation activities.
    [Basis: Regulation 1-441]

by_____date_____

Flora Chan
Air Quality Engineer II

Appendix A – Emission Calculations Methodology and Results

Introduction

Emissions of chemicals of potential concern (COPC) were estimated using the pore space and diffusion methodology outlined by the United States Environmental Protection Agency (USEPA) guidance *Estimation of Air Impacts for the Excavation of Contaminated Soils* (USEPA guidance 1992).

Per the USEPA guidance 1992, emissions from exposed surfaces during excavation are equal to the sum of emissions from the soil pore space and from diffusion. In addition, emissions from inactive contaminated storage piles were also estimated. However, these storage piles will be covered with vapor suppressant foam and mulch, in addition to an outer plastic tarp. Being inactive, significant emissions are expected only from diffusion. Also, while these storage piles will be generally inactive, when they are active, instead of material being excavated from the pit to the truck, material will be either excavated from the pit to the pile or from the pile to the truck. Thus, the emission estimates dealing with excavation from the pit to the truck will already cover the infrequent situations where the storage piles are active. Fugitive dust emissions were also calculated and then used to estimated particulate matter of 10 microns or smaller (PM10) and toxic emissions associated with the fugitive dust.

Assumptions

The emissions estimates provided are based on expected typical operations. The emission estimates are based on averaging the results from soil gas and soil sampling data taken from the site. Figure 1 shows the excavation area divided into five areas or sequences as it is labeled on the figure. Effectively, at any one time, work will only be performed within a single sequence.

In general, if gas and soil sampling results came up as below the non-detect limit, the value is conservatively treated as being equal to the non-detect level. The exception was if all sample results within a sequence were below the non-detect level. In those cases, it is assumed no significant concentration of that pollutant is in the soil. Also, for naphthalene, some soil sampling was done using two different test methods. In those naphthalene samples, the result from method 8270C is used in the analysis.

In additional, the following assumptions were made during the analysis:

- Total Soil to be excavated is no more than 38,500 cubic yards.
- A maximum of 400 cubic yards of contaminated soil is excavated per day
- Up to three stockpiles – with a diameter of 36 feet and a height of 7 feet for a surface area of about 101 m^2 each (1,100 square feet) – are used. Emissions from the stockpiles occur 24 hours per day.
- Excavation activities occur up to 8 hours per weekday.
- The average high emitting surface area is 136 m^2 per hour.
- Air filled porosity (Ea) and total porosity are conservatively assumed to equal to 0.21 based on measured soil properties.
- Soil and air temperatures are approximately 25 degree Celsius.
- Moisture content is 14% - This moisture content is for clay/dirt mixtures at municipal soil waste landfills from AP-42 Table 13.2.4-1.

Pore Space and Diffusion Emission Approach Per USEPA Guidance

Emissions of soil pore space are estimated based on a modified version of Equation 3 from the USEPA guidance. The modification is made because actual contaminant concentration levels in the pore space are available and therefore do not need to be estimated:

$$ERps = \frac{Sps \times Ea \times Q \times ExC \times a \times b \times (1 - C)}{c}$$

Where:

ERps = emission rate from pore space, lbs/day
Sps = concentration of VOC in pore space, µg/L (based on soil gas test results)
Ea = air filled porosity, 0.21
Q = quantity of soil excavated, 400 cubic yards/day
ExC = soil-gas to atmosphere exchange rate, 0.33 (EPA default)
C = control efficiency
a = conversion factor, 28.32 L/cf
b = conversion factor, 27 cf/cy
c = conversion factor, 454E6 µg/lb

Emissions from diffusion are estimated bas on Equation 4 of the USEPA guidance:

$$ERDIFF = \frac{Ssoil \times SA \times 10{,}000}{\frac{Ea}{Keq \times kg} + (\frac{\pi t}{De \times Keq})^{1/2}} \times \frac{T(1 - C)}{c}$$

Where:

ERDIFF = emission rate from diffusion, lbs/day
Ssoil = concentration of contaminant in soil, g/cm^3 (Based on soil sample results)
SA = emitting surface area, 88m2
Ea = air filled porosity, 0.21
Keq = equilibrium coefficient
Kg = gas phase mass transfer coefficient, cm/s (default from USEPA guidance)
T = significant diffusion time, 60s (default form USEPA guidance
De = effective diffusivity @ 25 degree Celsius, cm^2/s
T = daily duration of excavation, 28,800 s/day
C = control efficiency
c = conversion factor, 454E6 µg/lb

The emitting surface area (SA) is initially calculated based on the assumption that a soil pit is formed. USEPA assumes the pit has default dimensions of 10m x 15m x 1m for a surface area of 150 m^2. USEPA derives this surface area assuming a default soil excavation of 150 m^3/hr; however, the soil excavation rate for this site is approximately 38.28 m^3/hr based on a daily excavation rate of 400 cubic

yards. To obtain the emitting surface area specific to this site, the default dimensions of the pit described in the USEPA are proportioned based on the ratio between default soil excavation rate and the site specific soil excavation rate. The surface area is then calculated based on the modified pit dimensions. The 88.2m^2 value (60.3 m^2 from the pit and 27.9 m^2 from the truck area) is found to be consistent with the exposed emitting surface expected based on actual operations.

Per USEPA guidance, the diffusion equation assumes that the instantaneous emission rate at 60 seconds after soil is initially excavated is representative of the average emissions rate over the first 6 minutes. Furthermore, the USEPA assumption is that emissions after 6 minutes is minimal but that new soil will be disturbed with enough frequency that emissions occur continuously at the average rate during the first 6 minutes. So the equation inherently assumes that the emitting surface area of 88.2m^2 is disturbed with enough frequency to support this assumption.

Effective diffusivity in air and equilibrium coefficients are specific to each contaminant and is calculated based on the Equation A-15 and A-16 listed in Appendix A of the USEPA guidance:

$$De = \frac{Da\ (Ea)^{3.33}}{(Et)^{3.33}}$$

Where:

De = effective diffusivity in air, cm2/s
Da = diffusivity of contaminant in air at 25 degree Celsius, cm^2/s
Ea = air filled porosity, 0.21
Et = total porosity, 0.26 (equals 1-measured density of soil/USEPA default particle density of 2.65 g/cm^3)

$$Keq = \frac{P \times MW \times Ea}{R \times T \times S\text{soil}}$$

Where:

Keq = equilibrium coefficient
P = vapor pressure at 25 degree Celsius, mmHg
MW = molecular weight of contaminant, g/g-mol
Ea = air filled porosity, 0.21
R = universal gas constant, 62,361 mmHg-cm^3/mol-K
T = temperature, 289K
Ssoil = concentration of contaminant in soil, g/cm^3

Contaminant specific vapor pressure and molecular weight (MW) are used in the equation above for all volatile organic compounds (VOCs) except total petroleum hydrocarbon (TPH). Instead, the USEPA recommended defaults of 35 mmHG and 100g/g-mol are used for TPH. Also, the default of 0.0269 is used for TPH's De.

Active excavation will result in emissions from both pore space and diffusion. On the other hand, the emission form the inactive stock piles would be primarily from diffusion since the soil would not be disturbed in such a way to release gases in the pore space. There are no more than 3 stockpiles anticipated, each with a diameter of 36 feet and a height of 5 feet. However, for conservatism, the

maximum height of the piles is assumed to be 7 feet high. Assuming the pile forms in a shape of a cone, the total surface area per pile is 101 m^2 and a total of 304 m^2 for three piles. Emissions from the inactive piles are assumed to occur 24 hours a day.

There will be two tenting abatement systems when excavation:
For Tent A, B, and c: There will be a minimum of four activated carbons containers, each container has at least 23,000 lb carbon and has two stacks (so total of 8 stacks per tent).
For Tent D: There will be one activated carbon containers, and this container has at least 23,000 lb carbon and has two stacks. 98% control efficiency was assumed using the carbon containers for emission calculations.

TAC, POC, and NPOC from Fugitive Dust

Emissions of toxic air contaminants (TAC), precursor organic compounds (POC), and non-precursor organic compounds (NPOC) from fugitive dust for each sequence were estimated by multiplying the average chemical concentration in the soil by the particulate matter (PM) emission factors specific to each sequence.

PM emissions are calculated for 2 categories of activities and are based on the listed reference:

1. PM emission from wind erosion (occurring 24 hours a day)
    - Rapid Assessment of Exposure to Particulate Emission from Surface Contamination Site, Equation 4-4, page 42 (USEPA 1985); and
    - Supplemental Guidance for Developing Soil Screening Levels for Superfund Site, Equation 4-5, Page 4-18 (USEPA 2002)
2. PM emission from excavation (occurring 8 hours per day)

Key parameters used for these estimates are listed below:

- Moisture content (14%) was used. This moisture content is for clay/dirt mix at municipal soil waste landfills from AP-42 Table 13.2.4-1.
- 50% fugitive dust control for basic construction mitigation (BAAQMD 2012)
- PM emission factor for annual emissions from excavation activities are based on effective days of excavation based on an excavation rate of 400 cubic yards per day and a total of no more than 38,500 cubic yards of excavated soil.
- PM emission factor for annual emissions from wind erosion is conservatively based on total duration of each sequence.

Emissions of TAC are then based on the concentrations of chemicals in the soil and the PM emission factors. Hourly, daily, and annual emissions of TAC are estimated using the following equation:

$$TAC = S \times 10^{-6} \times EF$$

Where:

TAC = hourly, daily, or annual emission rate, lbs/hr, lbs/day, or lbs/yr
S = concentration of TAC in soil, mg/kg
EF = hourly, daily, or annual PM emission rate, lbs/hr, lbs/day, or lbs/yr

Vehicles will only be traveling on clean soil or paved surfaces without contaminated soil. Thus the TAC levels in the PM emitted from vehicle tracing are treated as insignificant.

Appendix B – Emission Calculations Methodology and Results

The emission calculations for the proposed excavation project are presented in the following tables:

Annual Abated Emissions in Sequences based on Diffusion:

- Tent A – Table 1
- Tent B – Table 2
- Tent C – Table 3
- Tent D – Table 4
- Not Tented Area – Table 5

A Summarized "Total Annual Abated Emissions in Sequences from Diffusion" Table – Table 6

Total Annual Emissions from Three Stockpiles – Table 7

Annual Abated Fugitive Emissions in Sequences:

- Tent A – Table 8
- Tent B – Table 9
- Tent C – Table 10
- Tent D – Table 11
- Not Tented Area – Table 12

Total Hourly Abated Emission in Sequences from Diffusion – Table 13

Total Daily Abated Emission in Sequences from Diffusion – Table 14

Total Abated Annual Emission from Three Stockpiles – Table 15

Total Abated Emission in Sequences including tented, not tented areas and three stockpiles – Table 16

Table 1 - Annual Abated Emissions in Sequences from Diffusion (Tent A)

Chemical	Tent A Abated Emissions (lbs/yr)					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
Acetone	3.79E-01	2.14E-01	2.04E-02	0.00E+00	0.00E+00	6.13E-01
Benzene	1.93E+00	7.61E-01	9.46E-02	0.00E+00	0.00E+00	2.78E+00
Bromomethane	1.84E-02	1.11E-02	1.04E-03	0.00E+00	0.00E+00	3.06E-02
n-Butylbenzene	7.60E-02	5.64E-02	4.82E-03	0.00E+00	0.00E+00	1.37E-01
sec-Butylbenzene	1.09E-01	7.93E-02	6.75E-03	0.00E+00	0.00E+00	1.95E-01
tert-Butylbenzene	2.37E-02	1.84E-02	1.47E-03	0.00E+00	0.00E+00	4.35E-02
Chloroform	7.80E-03	8.16E-03	5.26E-04	0.00E+00	0.00E+00	1.65E-02
Carbon Disulfide	2.99E-02	2.43E-02	2.45E-03	0.00E+00	0.00E+00	5.66E-02
Chlorobenzene	1.70E-04	1.56E-04	6.92E-05	0.00E+00	0.00E+00	3.95E-04
Ethylbenzene	1.26E+00	1.11E+00	1.13E-01	0.00E+00	0.00E+00	2.48E+00
4-Ethyltoluene	0.00E+00	3.04E-07	0.00E+00	0.00E+00	0.00E+00	3.04E-07
Isopropylbenzene	3.21E-02	2.66E-02	3.26E-03	0.00E+00	0.00E+00	6.19E-02
4-Isopropyltoluene	4.92E-02	3.66E-02	2.87E-03	0.00E+00	0.00E+00	8.86E-02
Methylene Chloride	1.52E-01	1.94E-02	4.51E-03	0.00E+00	0.00E+00	1.75E-01
Naphthalene	4.21E-01	3.58E-01	6.33E-02	0.00E+00	0.00E+00	8.43E-01
n-Propylbenzene	5.13E-02	3.80E-02	3.73E-03	0.00E+00	0.00E+00	9.31E-02
Toluene	4.02E-01	4.10E-01	3.23E-02	0.00E+00	0.00E+00	8.45E-01
1,2,4-Trimethylbenzene	5.49E-02	3.09E-02	2.76E-03	0.00E+00	0.00E+00	8.85E-02
1,3,5-Trimethylbenzene	3.97E-02	2.86E-02	2.28E-03	0.00E+00	0.00E+00	7.06E-02
Xylenes (total)	1.03E+00	9.64E-01	7.62E-02	0.00E+00	0.00E+00	2.07E+00
Methyl tert-butyl ether	1.21E-02	2.71E-03	1.20E-03	0.00E+00	0.00E+00	1.60E-02
Styrene	2.06E-05	1.89E-05	7.53E-05	0.00E+00	0.00E+00	1.15E-04
Tetrachloroethene	9.21E-03	3.43E-02	3.75E-03	0.00E+00	0.00E+00	4.73E-02
1,1,1-Trichloroethane	7.04E-04	2.64E-03	2.87E-04	0.00E+00	0.00E+00	3.63E-03
TPHg	2.23E+01	1.97E+01	1.92E+00	0.00E+00	0.00E+00	4.39E+01
Volatile Hydrocarbons	2.84E+01	2.39E+01	2.36E-00	0.00E+00	0.00E+00	5.47E+01
POC	2.79E+01	2.37E+01	2.34E+00	0.00E+00	0.00E+00	5.39E+01
NPOC	5.30E-01	2.61E-01	2.49E-02	0.00E+00	0.00E+00	8.16E-01

Table 2 - Annual Abated Emissions in Sequences from Diffusion (Tent B)

Chemical	Tent B Abated Emissions (lbs/yr)					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
Acetone	0.00E+00	3.05E-02	2.02E-04	4.89E-02	2.85E-01	3.65E-01
Benzene	0.00E+00	1.08E-01	9.38E-04	2.17E-01	6.39E-01	9.65E-01
Bromomethane	0.00E+00	1.58E-03	1.03E-05	1.94E-03	1.43E-02	1.79E-02
n-Butylbenzene	0.00E+00	8.02E-03	4.78E-05	2.29E-02	5.91E-02	9.01E-02
sec-Butylbenzene	0.00E+00	1.13E-02	6.69E-05	2.92E-02	8.41E-02	1.25E-01
tert-Butylbenzene	0.00E+00	2.61E-03	1.45E-05	5.06E-03	1.87E-02	2.64E-02
Chloroform	0.00E+00	1.16E-03	5.21E-06	9.67E-04	6.03E-03	8.16E-03
Carbon Disulfide	0.00E+00	3.46E-03	2.43E-05	2.55E-02	2.42E-02	5.32E-02
Chlorobenzene	0.00E+00	2.21E-05	6.86E-07	1.94E-04	1.71E-04	3.88E-04
Ethylbenzene	0.00E+00	1.58E-01	1.12E-03	2.75E-01	6.28E-01	1.06E+00
4-Ethyltoluene	0.00E+00	4.32E-08	0.00E+00	1.35E-07	3.69E-07	5.46E-07
Isopropylbenzene	0.00E+00	3.78E-03	3.23E-05	4.90E-02	2.57E-02	7.85E-02
4-Isopropyltoluene	0.00E+00	5.20E-03	2.85E-05	6.39E-03	3.81E-02	4.97E-02
Methylene Chloride	0.00E+00	2.75E-03	4.47E-05	8.05E-03	2.87E-02	3.96E-02
Naphthalene	0.00E+00	5.09E-02	6.28E-04	1.96E-01	3.77E-01	6.24E-01
n-Propylbenzene	0.00E+00	5.41E-03	3.70E-05	3.16E-02	4.03E-02	7.73E-02
Toluene	0.00E+00	5.83E-02	3.20E-04	8.65E-02	1.01E-01	2.46E-01
1,2,4-Trimethylbenzene	0.00E+00	4.39E-03	2.73E-05	6.44E-03	3.32E-02	4.40E-02
1,3,5-Trimethylbenzene	0.00E+00	4.07E-03	2.26E-05	4.99E-03	3.00E-02	3.91E-02
Xylenes (total)	0.00E+00	1.37E-01	7.55E-04	1.34E-01	4.18E-01	6.90E-01
Methyl tert-butyl ether	0.00E+00	3.85E-04	1.19E-05	2.12E-03	2.97E-03	5.48E-03
Styrene	0.00E+00	2.69E-06	7.47E-07	1.06E-01	2.07E-05	1.06E-01
Tetrachloroethene	0.00E+00	4.88E-03	3.72E-05	6.60E-03	9.26E-03	2.08E-02
1,1,1-Trichloroethane	0.00E+00	3.75E-04	2.84E-06	5.51E-04	7.08E-04	1.64E-03
TPHg	0.00E+00	2.80E+00	1.90E-02	3.38E+00	1.65E+01	2.27E+01
Volatile Hydrocarbons	0.00E+00	3.40E+00	2.34E-02	4.64E+00	1.93E+01	2.74E+01
POC	0.00E+00	3.37E+00	2.31E-02	4.59E+00	1.90E+01	2.70E+01
NPOC	0.00E+00	3.72E-02	2.47E-04	5.70E-02	3.14E-01	4.09E-01

Table 3 - Annual Abated Emissions in Sequences from Diffusion (Tent C)

Chemical	Tent C Abated Emissions (lbs/yr)					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
Acetone	0.00E+00	0.00E+00	0.00E+00	4.79E-02	9.31E-02	1.41E-01
Benzene	0.00E+00	0.00E+00	0.00E+00	2.12E-01	2.08E-01	4.21E-01
Bromomethane	0.00E+00	0.00E+00	0.00E+00	1.90E-03	4.68E-03	6.58E-03
n-Butylbenzene	0.00E+00	0.00E+00	0.00E+00	2.24E-02	1.93E-02	4.17E-02
sec-Butylbenzene	0.00E+00	0.00E+00	0.00E+00	2.86E-02	2.74E-02	5.60E-02
tert-Butylbenzene	0.00E+00	0.00E+00	0.00E+00	4.96E-03	6.11E-03	1.11E-02
Chloroform	0.00E+00	0.00E+00	0.00E+00	9.48E-04	1.97E-03	2.91E-03
Carbon Disulfide	0.00E+00	0.00E+00	0.00E+00	2.50E-02	7.89E-03	3.29E-02
Chlorobenzene	0.00E+00	0.00E+00	0.00E+00	1.90E-04	5.57E-05	2.46E-04
Ethylbenzene	0.00E+00	0.00E+00	0.00E+00	2.69E-01	2.05E-01	4.74E-01
4-Ethyltoluene	0.00E+00	0.00E+00	0.00E+00	1.32E-07	1.20E-07	2.52E-07
Isopropylbenzene	0.00E+00	0.00E+00	0.00E+00	4.80E-02	8.39E-03	5.64E-02
4-Isopropyltoluene	0.00E+00	0.00E+00	0.00E+00	6.26E-03	1.24E-02	1.87E-02
Methylene Chloride	0.00E+00	0.00E+00	0.00E+00	7.89E-03	9.37E-03	1.73E-02
Naphthalene	0.00E+00	0.00E+00	0.00E+00	1.92E-01	1.23E-01	3.15E-01
n-Propylbenzene	0.00E+00	0.00E+00	0.00E+00	3.10E-02	1.31E-02	4.41E-02
Toluene	0.00E+00	0.00E+00	0.00E+00	8.48E-02	3.28E-02	1.18E-01
1,2,4-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	6.31E-03	1.08E-02	1.71E-02
1,3,5-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	4.89E-03	9.80E-03	1.47E-02
Xylenes (total)	0.00E+00	0.00E+00	0.00E+00	1.32E-01	1.36E-01	2.68E-01
Methyl tert-butyl ether	0.00E+00	0.00E+00	0.00E+00	2.07E-03	9.67E-04	3.04E-03
Styrene	0.00E+00	0.00E+00	0.00E+00	1.04E-01	6.75E-06	1.04E-01
Tetrachloroethene	0.00E+00	0.00E+00	0.00E+00	6.47E-03	3.02E-03	9.49E-03
1,1,1-Trichloroethane	0.00E+00	0.00E+00	0.00E+00	5.40E-04	2.31E-04	7.70E-04
TPHg	0.00E+00	0.00E+00	0.00E+00	3.31E+00	5.37E+00	8.68E+00
Volatile Hydrocarbons	0.00E+00	0.00E+00	0.00E+00	4.55E+00	6.30E+00	1.09E+01
POC	0.00E+00	0.00E+00	0.00E+00	4.50E+00	6.20E+00	1.07E+01
NPOC	0.00E+00	0.00E+00	0.00E+00	5.58E-02	1.02E-01	1.58E-01

Table 4 - Annual Abated Emissions in Sequences from Diffusion (Tent D)

Chemical	Tent D Abated Emissions (lbs/yr)					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
Acetone	0.00E+00	0.00E+00	1.35E-02	0.00E+00	0.00E+00	1.35E-02
Benzene	0.00E+00	0.00E+00	6.17E-01	0.00E+00	0.00E+00	6.17E-01
Bromomethane	0.00E+00	0.00E+00	6.02E-04	0.00E+00	0.00E+00	6.02E-04
n-Butylbenzene	0.00E+00	0.00E+00	2.76E-03	0.00E+00	0.00E+00	2.76E-03
sec-Butylbenzene	0.00E+00	0.00E+00	3.86E-03	0.00E+00	0.00E+00	3.86E-03
tert-Butylbenzene	0.00E+00	0.00E+00	8.42E-04	0.00E+00	0.00E+00	8.42E-04
Chloroform	0.00E+00	0.00E+00	2.98E-04	0.00E+00	0.00E+00	2.98E-04
Carbon Disulfide	0.00E+00	0.00E+00	1.70E-03	0.00E+00	0.00E+00	1.70E-03
Chlorobenzene	0.00E+00	0.00E+00	3.65E-05	0.00E+00	0.00E+00	3.65E-05
Ethylbenzene	0.00E+00	0.00E+00	1.08E+00	0.00E+00	0.00E+00	1.08E+00
4-Ethyltoluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropylbenzene	0.00E+00	0.00E+00	1.80E-03	0.00E+00	0.00E+00	1.80E-03
4-Isopropyltoluene	0.00E+00	0.00E+00	1.65E-03	0.00E+00	0.00E+00	1.65E-03
Methylene Chloride	0.00E+00	0.00E+00	2.43E-03	0.00E+00	0.00E+00	2.43E-03
Naphthalene	0.00E+00	0.00E+00	8.86E-02	0.00E+00	0.00E+00	8.86E-02
n-Propylbenzene	0.00E+00	0.00E+00	2.11E-03	0.00E+00	0.00E+00	2.11E-03
Toluene	0.00E+00	0.00E+00	3.43E-01	0.00E+00	0.00E+00	3.43E-01
1,2,4-Trimethylbenzene	0.00E+00	0.00E+00	1.57E-03	0.00E+00	0.00E+00	1.57E-03
1,3,5-Trimethylbenzene	0.00E+00	0.00E+00	1.31E-03	0.00E+00	0.00E+00	1.31E-03
Xylenes (total)	0.00E+00	0.00E+00	4.02E-02	0.00E+00	0.00E+00	4.02E-02
Methyl tert-butyl ether	0.00E+00	0.00E+00	6.33E-04	0.00E+00	0.00E+00	6.33E-04
Styrene	0.00E+00	0.00E+00	5.69E-01	0.00E+00	0.00E+00	5.69E-01
Tetrachloroethene	0.00E+00	0.00E+00	1.98E-03	0.00E+00	0.00E+00	1.98E-03
1,1,1-Trichloroethane	0.00E+00	0.00E+00	1.51E-04	0.00E+00	0.00E+00	1.51E-04
TPHg	0.00E+00	0.00E+00	1.01E+00	0.00E+00	0.00E+00	1.01E+00
Volatile Hydrocarbons	0.00E+00	0.00E+00	3.78E+00	0.00E+00	0.00E+00	3.78E+00
POC	0.00E+00	0.00E+00	3.77E+00	0.00E+00	0.00E+00	3.77E+00
NPOC	0.00E+00	0.00E+00	1.59E-02	0.00E+00	0.00E+00	1.29E-01

Table 5 - Annual Abated Emissions in Sequences from Diffusion (Not Tented Area)

Chemical	Not Tented Abated Emissions (lbs/yr)					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
Acetone	0.00E+00	0.00E+00	3.42E-06	5.06E-06	0.00E+00	8.48E-06
Benzene	0.00E+00	0.00E+00	8.88E-03	3.20E-02	0.00E+00	4.08E-02
Bromomethane	0.00E+00	0.00E+00	3.39E-03	4.95E-03	0.00E+00	8.34E-03
n-Butylbenzene	0.00E+00	0.00E+00	2.04E-07	2.86E-07	0.00E+00	4.90E-07
sec-Butylbenzene	0.00E+00	0.00E+00	5.30E-07	2.86E-07	0.00E+00	8.16E-07
tert-Butylbenzene	0.00E+00	0.00E+00	2.04E-07	2.86E-07	0.00E+00	4.90E-07
Chloroform	0.00E+00	0.00E+00	1.77E-03	2.59E-03	0.00E+00	4.37E-03
Carbon Disulfide	0.00E+00	0.00E+00	3.42E-07	3.25E-05	0.00E+00	3.28E-05
Chlorobenzene	0.00E+00	0.00E+00	1.91E-07	2.35E-03	0.00E+00	2.35E-03
Ethylbenzene	0.00E+00	0.00E+00	9.44E-03	5.57E-02	0.00E+00	6.52E-02
4-Ethyltoluene	0.00E+00	0.00E+00	5.87E-07	4.38E-07	0.00E+00	1.02E-06
Isopropylbenzene	0.00E+00	0.00E+00	1.94E-06	2.86E-07	0.00E+00	2.22E-06
4-Isopropyltoluene	0.00E+00	0.00E+00	7.42E-07	4.65E-07	0.00E+00	1.21E-06
Methylene Chloride	0.00E+00	0.00E+00	4.22E-03	6.17E-03	0.00E+00	1.04E-02
Naphthalene	0.00E+00	0.00E+00	6.30E-03	1.29E-02	0.00E+00	1.92E-02
n-Propylbenzene	0.00E+00	0.00E+00	6.89E-07	2.86E-07	0.00E+00	9.75E-07
Toluene	0.00E+00	0.00E+00	3.89E-03	2.89E-02	0.00E+00	3.28E-02
1,2,4-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,3,5-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes (total)	0.00E+00	0.00E+00	1.93E-07	3.88E-07	0.00E+00	5.81E-07
Methyl tert-butyl ether	0.00E+00	0.00E+00	2.13E-07	8.22E-07	0.00E+00	1.03E-06
Styrene	0.00E+00	0.00E+00	3.01E-02	5.81E-02	0.00E+00	8.82E-02
Tetrachloroethene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,1-Trichloroethane	0.00E+00	0.00E+00	1.90E-07	3.15E-07	0.00E+00	5.04E-07
TPHg	0.00E+00	0.00E+00	1.98E-07	3.78E-07	0.00E+00	5.76E-07
Volatile Hydrocarbons	0.00E+00	0.00E+00	6.80E-02	2.04E-01	0.00E+00	2.72E-01
POC	0.00E+00	0.00E+00	6.38E-02	1.98E-01	0.00E+00	2.61E-01
NPOC	0.00E+00	0.00E+00	4.22E-03	6.17E-03	0.00E+00	1.04E-02

Table 6 – Total Annual Abated Emissions in Sequences from Diffusion (Summarized)

Chemical	Abated Emissions (lbs/yr)					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
Acetone	3.79E-01	2.45E-01	3.41E-02	9.68E-02	3.78E-01	1.13E+00
Benzene	1.93E+00	8.69E-01	7.22E-01	4.61E-01	8.47E-01	4.82E+00
Bromomethane	1.84E-02	1.27E-02	5.05E-03	8.79E-03	1.90E-02	6.40E-02
n-Butylbenzene	7.60E-02	6.45E-02	7.63E-03	4.53E-02	7.84E-02	2.72E-01
sec-Butylbenzene	1.09E-01	9.06E-02	1.07E-02	5.78E-02	1.12E-01	3.79E-01
tert-Butylbenzene	2.37E-02	2.10E-02	2.32E-03	1.00E-02	2.49E-02	8.18E-02
Chloroform	7.80E-03	9.33E-03	2.60E-03	4.51E-03	8.00E-03	3.22E-02
Carbon Disulfide	2.99E-02	2.78E-02	4.18E-03	5.06E-02	3.21E-02	1.44E-01
Chlorobenzene	1.70E-04	1.78E-04	1.07E-04	2.74E-03	2.26E-04	3.42E-03
Ethylbenzene	1.26E+00	1.27E+00	1.20E+00	6.00E-01	8.33E-01	5.16E+00
4-Ethyltoluene	0.00E+00	3.47E-07	5.87E-07	7.04E-07	4.89E-07	2.13E-06
Isopropylbenzene	3.21E-02	3.04E-02	5.09E-03	9.70E-02	3.41E-02	1.99E-01
4-Isopropyltoluene	4.92E-02	4.18E-02	4.55E-03	1.26E-02	5.06E-02	1.59E-01
Methylene Chloride	1.52E-01	2.21E-02	1.12E-02	2.21E-02	3.81E-02	2.45E-01
Naphthalene	4.21E-01	4.09E-01	1.59E-01	4.02E-01	4.99E-01	1.89E+00
n-Propylbenzene	5.13E-02	4.34E-02	5.88E-03	6.26E-02	5.34E-02	2.17E-01
Toluene	4.02E-01	4.69E-01	3.79E-01	2.00E-01	1.34E-01	1.58E+00
1,2,4-Trimethylbenzene	5.49E-02	3.52E-02	4.35E-03	1.28E-02	4.40E-02	1.51E-01
1,3,5-Trimethylbenzene	3.97E-02	3.27E-02	3.61E-03	9.88E-03	3.98E-02	1.26E-01
Xylenes (total)	1.03E+00	1.10E+00	1.17E-01	2.66E-01	5.54E-01	3.07E+00
Methyl tert-butyl ether	1.21E-02	3.09E-03	1.85E-03	4.19E-03	3.93E-03	2.51E-02
Styrene	2.06E-05	2.16E-05	6.00E-01	2.68E-01	2.75E-05	8.68E-01
Tetrachloroethene	9.21E-03	3.92E-02	5.76E-03	1.31E-02	1.23E-02	7.95E-02
1,1,1-Trichloroethane	7.04E-04	3.01E-03	4.41E-04	1.09E-03	9.39E-04	6.19E-03
TPHg	2.23E+01	2.25E+01	2.95E+00	6.69E+00	2.18E+01	7.63E+01
Volatile Hydrocarbons	2.84E+01	2.73E+01	6.23E+00	9.40E+00	2.56E+01	9.70E+01
POC	2.79E+01	2.70E+01	6.19E+00	9.28E+00	2.52E+01	9.56E+01
NPOC	5.30E-01	2.99E-01	4.53E-02	1.19E-01	4.17E-01	1.41E+00

Table 7 – Total Annual Abated Emissions from Three Stockpiles

Chemical	Emissions From Portion of Stock Pile Emissions Occurring Outside Tent					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total Stockpile Emissions from Sequences Not Tented (lbs/yr)
Acetone	0.00E+00	0.00E+00	1.76E-02	2.31E-02	0.00E+00	4.07E-02
Benzene	0.00E+00	0.00E+00	8.15E-02	1.07E-01	0.00E+00	1.89E-01
Bromomethane	0.00E+00	0.00E+00	8.99E-04	1.18E-03	0.00E+00	2.08E-03
n-Butylbenzene	0.00E+00	0.00E+00	4.16E-03	5.47E-03	0.00E+00	9.63E-03
sec-Butylbenzene	0.00E+00	0.00E+00	5.82E-03	7.66E-03	0.00E+00	1.35E-02
tert-Butylbenzene	0.00E+00	0.00E+00	1.26E-03	1.66E-03	0.00E+00	2.93E-03
Chloroform	0.00E+00	0.00E+00	4.53E-04	5.97E-04	0.00E+00	1.05E-03
Carbon Disulfide	0.00E+00	0.00E+00	2.11E-03	2.78E-03	0.00E+00	4.90E-03
Chlorobenzene	0.00E+00	0.00E+00	5.96E-05	7.84E-05	0.00E+00	1.38E-04
Ethylbenzene	0.00E+00	0.00E+00	9.70E-02	1.28E-01	0.00E+00	2.25E-01
Isopropylbenzene	0.00E+00	0.00E+00	2.81E-03	3.70E-03	0.00E+00	6.51E-03
4-Isopropyltoluene	0.00E+00	0.00E+00	2.47E-03	3.26E-03	0.00E+00	5.73E-03
Methylene Chloride	0.00E+00	0.00E+00	3.88E-03	5.12E-03	0.00E+00	9.00E-03
Naphthalene	0.00E+00	0.00E+00	5.31E-02	6.99E-02	0.00E+00	1.23E-01
n-Propylbenzene	0.00E+00	0.00E+00	3.22E-03	4.24E-03	0.00E+00	7.45E-03
Toluene	0.00E+00	0.00E+00	2.78E-02	3.66E-02	0.00E+00	6.44E-02
1,2,4-Trimethylbenzene	0.00E+00	0.00E+00	2.38E-03	3.13E-03	0.00E+00	5.51E-03
1,3,5-Trimethylbenzene	0.00E+00	0.00E+00	1.96E-03	2.58E-03	0.00E+00	4.55E-03
Xylenes (total)	0.00E+00	0.00E+00	6.57E-02	8.65E-02	0.00E+00	1.52E-01
Methyl tert-butyl ether	0.00E+00	0.00E+00	1.03E-03	1.36E-03	0.00E+00	2.40E-03
Styrene	0.00E+00	0.00E+00	7.22E-06	9.51E-06	0.00E+00	1.67E-05
Tetrachloroethene	0.00E+00	0.00E+00	3.23E-03	4.25E-03	0.00E+00	7.48E-03
1,1,1-Trichloroethane	0.00E+00	0.00E+00	2.47E-04	3.25E-04	0.00E+00	5.72E-04
TPHg	0.00E+00	0.00E+00	1.65E+00	2.18E+00	0.00E+00	3.83E+00
POC	0.00E+00	0.00E+00	2.01E+00	2.65E+00	0.00E+00	4.66E+00
NPOC	0.00E+00	0.00E+00	2.14E-02	2.82E-02	0.00E+00	4.97E-02

Table 8 - Annual Abated Fugitive Emissions in Sequences (Tent A)

Chemical	Tent A Abated Total for Model (Sequences includes Stockpiles that are tented), lbs/yr					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
1,1,1-Trichloroethane	1.44E-09	2.99E-08	1.86E-10	0.00E+00	0.00E+00	3.15E-08
1,2,4-Trimethylbenzene	3.76E-07	2.00E-07	4.37E-09	0.00E+00	0.00E+00	5.81E-07
1,3,5-Trimethylbenzene	2.70E-07	1.88E-07	3.59E-09	0.00E+00	0.00E+00	4.61E-07
1-Methylnaphthalene	1.01E-05	3.42E-07	5.73E-08	0.00E+00	0.00E+00	1.05E-05
2-Butanone (MEK)	1.19E-06	4.18E-08	7.00E-09	0.00E+00	0.00E+00	1.24E-06
2-Methylnaphthalene	1.62E-04	1.39E-03	1.54E-05	0.00E+00	0.00E+00	1.57E-03
4-Isopropyltoluene	3.34E-07	2.40E-07	4.55E-09	0.00E+00	0.00E+00	5.79E-07
Acenaphthene	5.45E-04	3.95E-04	7.58E-06	0.00E+00	0.00E+00	9.47E-04
Acenaphthylene	1.29E-04	1.22E-04	2.75E-06	0.00E+00	0.00E+00	2.54E-04
Acetone	4.18E-06	2.24E-06	5.26E-08	0.00E+00	0.00E+00	6.48E-06
Anthracene	4.01E-04	2.42E-04	5.59E-06	0.00E+00	0.00E+00	6.48E-04
Antimony	4.16E-07	1.92E-06	5.37E-08	0.00E+00	0.00E+00	2.39E-06
Arsenic	1.41E-05	2.58E-05	4.69E-06	0.00E+00	0.00E+00	4.46E-05
Barium	3.12E-04	6.12E-04	1.97E-05	0.00E+00	0.00E+00	9.44E-04
Benzene	2.51E-05	9.29E-06	3.44E-07	0.00E+00	0.00E+00	3.47E-05
Benzo(a)anthracene	3.64E-04	2.30E-04	5.87E-06	0.00E+00	0.00E+00	6.00E-04
Benzo(a)pyrene	5.98E-04	4.10E-04	1.06E-05	0.00E+00	0.00E+00	1.02E-03
Benzo(b)fluoranthene	6.56E-04	3.47E-04	9.83E-06	0.00E+00	0.00E+00	1.01E-03
Benzo(b,k)fluoranthene	1.66E-03	5.64E-05	9.43E-06	0.00E+00	0.00E+00	1.73E-03
Benzo(g,h,i)perylene	4.60E-04	3.57E-04	9.36E-06	0.00E+00	0.00E+00	8.26E-04
Benzo(k)fluoranthene	1.85E-04	1.60E-04	3.59E-06	0.00E+00	0.00E+00	3.49E-04
Beryllium	1.32E-06	2.23E-06	5.27E-08	0.00E+00	0.00E+00	3.61E-06
Bromomethane	1.26E-07	7.25E-08	1.74E-09	0.00E+00	0.00E+00	2.00E-07
Butylbenzyl phthalate	4.30E-08	3.32E-08	5.55E-09	0.00E+00	0.00E+00	8.17E-08
Cadmium	1.21E-06	6.81E-07	2.50E-08	0.00E+00	0.00E+00	1.91E-06
Carbon disulfide	3.53E-07	2.76E-07	6.91E-09	0.00E+00	0.00E+00	6.36E-07
Chlorobenzene	7.21E-10	5.56E-10	9.30E-11	0.00E+00	0.00E+00	1.37E-09
Chloroform	9.85E-08	1.02E-07	1.31E-09	0.00E+00	0.00E+00	2.02E-07
Chloromethane	1.48E-07	5.54E-09	9.27E-10	0.00E+00	0.00E+00	1.55E-07
Chromium	5.65E-05	6.53E-05	2.58E-06	0.00E+00	0.00E+00	1.24E-04
Chrysene	4.21E-04	3.16E-04	7.34E-06	0.00E+00	0.00E+00	7.44E-04
cis-1,2-Dichloroethene	7.66E-08	3.10E-09	5.19E-10	0.00E+00	0.00E+00	8.03E-08
cis-1,3-Dichloropropene	7.96E-08	3.20E-09	5.36E-10	0.00E+00	0.00E+00	8.34E-08
Cobalt	1.90E-05	2.24E-05	6.96E-07	0.00E+00	0.00E+00	4.21E-05
Copper	1.21E-04	6.17E-04	6.56E-06	0.00E+00	0.00E+00	7.45E-04
Cyanide, Total	2.55E-05	6.44E-06	3.49E-07	0.00E+00	0.00E+00	3.23E-05
Dibenz(a,h)anthracene	6.68E-05	8.42E-05	1.51E-06	0.00E+00	0.00E+00	1.53E-04
Dibenzofuran	6.26E-08	4.82E-08	8.07E-09	0.00E+00	0.00E+00	1.19E-07
Ethylbenzene	1.86E-05	1.57E-05	5.30E-07	0.00E+00	0.00E+00	3.49E-05
Ethylene Dibromide	9.09E-08	3.11E-09	5.20E-10	0.00E+00	0.00E+00	9.45E-08

Chemical	Tent A Abated Total for Model (Sequences includes Stockpiles that are tented), lbs/yr					
	Sequence A	**Sequence B**	**Sequence C**	**Sequence D**	**Sequence E**	**Total**
Fluoranthene	1.76E-03	1.22E-03	2.78E-05	0.00E+00	0.00E+00	3.01E-03
Fluorene	3.28E-04	1.55E-04	3.88E-06	0.00E+00	0.00E+00	4.87E-04
Hexachlorobutadiene	1.95E-10	1.51E-10	2.52E-11	0.00E+00	0.00E+00	3.71E-10
Indeno(1,2,3-c,d)pyrene	3.73E-04	3.02E-04	7.56E-06	0.00E+00	0.00E+00	6.83E-04
Isophorone	9.13E-05	5.41E-04	3.73E-06	0.00E+00	0.00E+00	6.36E-04
Isopropylbenzene	2.11E-07	1.67E-07	5.17E-09	0.00E+00	0.00E+00	3.83E-07
Lead	1.98E-04	2.12E-04	9.28E-05	0.00E+00	0.00E+00	5.02E-04
Mercury	4.46E-07	8.02E-07	2.60E-08	0.00E+00	0.00E+00	1.27E-06
Methyl tert-butyl ether	1.36E-07	4.59E-09	7.69E-10	0.00E+00	0.00E+00	1.41E-07
Methylene Chloride	1.69E-06	1.75E-07	1.17E-08	0.00E+00	0.00E+00	1.88E-06
Molybdenum	2.60E-06	3.12E-06	6.23E-08	0.00E+00	0.00E+00	5.79E-06
M-Xylene	5.97E-06	2.02E-07	3.38E-08	0.00E+00	0.00E+00	6.20E-06
Naphthalene	3.85E-03	1.94E-03	4.22E-05	0.00E+00	0.00E+00	5.84E-03
n-Butylbenzene	5.15E-07	3.68E-07	7.64E-09	0.00E+00	0.00E+00	8.91E-07
Nickel	1.85E-04	1.50E-04	5.59E-06	0.00E+00	0.00E+00	3.40E-04
N-Propylbenzene	2.19E-08	2.26E-07	2.82E-09	0.00E+00	0.00E+00	2.51E-07
Phenanthrene	2.70E-03	1.50E-03	3.42E-05	0.00E+00	0.00E+00	4.23E-03
Phenol	5.22E-05	5.59E-04	6.73E-06	0.00E+00	0.00E+00	6.18E-04
P-Xylene	7.57E-06	2.57E-07	4.29E-08	0.00E+00	0.00E+00	7.87E-06
Pyrene	2.06E-03	1.31E-03	3.09E-05	0.00E+00	0.00E+00	3.39E-03
sec-Butylbenzene	7.38E-07	5.17E-07	1.07E-08	0.00E+00	0.00E+00	1.27E-06
Selenium	3.42E-06	2.19E-06	6.56E-08	0.00E+00	0.00E+00	5.67E-06
Silver	1.43E-06	1.36E-06	3.57E-08	0.00E+00	0.00E+00	2.82E-06
Styrene	4.43E-11	3.42E-11	5.72E-12	0.00E+00	0.00E+00	8.42E-11
tert-Butylbenzene	1.60E-07	1.20E-07	2.32E-09	0.00E+00	0.00E+00	2.83E-07
Tetrachloroethene	9.20E-09	1.90E-07	1.19E-09	0.00E+00	0.00E+00	2.00E-07
Toluene	5.48E-06	5.43E-06	1.37E-07	0.00E+00	0.00E+00	1.10E-05
TPHd	2.21E-02	1.60E-02	5.55E-04	0.00E+00	0.00E+00	3.87E-02
TPHg	3.38E-04	2.76E-04	6.86E-06	0.00E+00	0.00E+00	6.21E-04
TPHmo	2.66E-02	1.70E-02	8.28E-04	0.00E+00	0.00E+00	4.45E-02
TPPH	3.86E-05	1.31E-06	2.19E-07	0.00E+00	0.00E+00	4.01E-05
Trichloroethylene	1.14E-07	3.86E-09	6.46E-10	0.00E+00	0.00E+00	1.18E-07
Vanadium	1.67E-04	1.40E-04	3.39E-06	0.00E+00	0.00E+00	3.11E-04
Xylenes, Total	1.39E-05	1.26E-05	3.03E-07	0.00E+00	0.00E+00	2.69E-05
Zinc	4.09E-04	6.81E-04	1.29E-05	0.00E+00	0.00E+00	1.10E-03
Benzo(a)pyrene equivalent	8.88E-04	6.50E-04	2.24E-05	0.00E+00	0.00E+00	1.56E-03
Total POC	6.90E-02	4.73E-02	2.03E-03	0.00E+00	0.00E+00	1.18E-01
Total NPOC	6.18E-06	2.86E-06	1.04E-07	0.00E+00	0.00E+00	9.15E-06

Table 9 - Annual Abated Fugitive Emissions in Sequences (Tent B)

Chemical	Tent B Abated Total for Model (Sequences Include Stockpiles that are tented), lbs/yr					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
1,1,1-Trichloroethane	0.00E+00	4.12E-09	0.00E+00	4.20E-10	1.14E-09	5.68E-09
1,2,4-Trimethylbenzene	0.00E+00	2.55E-08	0.00E+00	2.27E-08	2.16E-07	2.65E-07
1,3,5-Trimethylbenzene	0.00E+00	2.42E-08	0.00E+00	1.60E-08	1.98E-07	2.38E-07
1-Methylnaphthalene	0.00E+00	9.20E-09	0.00E+00	1.29E-07	3.51E-07	4.89E-07
2-Butanone (MEK)	0.00E+00	1.12E-09	0.00E+00	4.84E-08	4.28E-08	9.24E-08
2-Methylnaphthalene	0.00E+00	1.87E-04	0.00E+00	4.34E-05	1.25E-03	1.48E-03
4-Isopropyltoluene	0.00E+00	3.10E-08	0.00E+00	2.10E-08	2.51E-07	3.03E-07
Acenaphthene	0.00E+00	5.13E-05	5.99E-09	3.30E-05	3.02E-04	3.87E-04
Acenaphthylene	0.00E+00	1.55E-05	5.69E-10	6.01E-05	1.76E-04	2.52E-04
Acetone	0.00E+00	2.83E-07	0.00E+00	2.89E-07	3.06E-06	3.63E-06
Anthracene	0.00E+00	3.09E-05	4.16E-09	5.52E-05	2.47E-04	3.33E-04
Antimony	0.00E+00	2.36E-07	0.00E+00	2.50E-06	3.31E-06	6.05E-06
Arsenic	0.00E+00	3.14E-06	3.90E-08	2.59E-05	1.93E-05	4.84E-05
Barium	0.00E+00	7.34E-05	0.00E+00	4.87E-04	1.13E-03	1.69E-03
Benzene	0.00E+00	1.08E-06	6.53E-12	1.53E-06	7.54E-06	1.02E-05
Benzo(a)anthracene	0.00E+00	2.91E-05	6.51E-09	7.61E-05	2.73E-04	3.78E-04
Benzo(a)pyrene	0.00E+00	5.19E-05	1.32E-08	1.23E-04	5.60E-04	7.35E-04
Benzo(b)fluoranthene	0.00E+00	4.34E-05	1.18E-08	9.56E-05	4.73E-04	6.12E-04
Benzo(b,k)fluoranthene	0.00E+00	1.52E-06	0.00E+00	2.12E-05	5.77E-05	8.05E-05
Benzo(g,h,i)perylene	0.00E+00	4.54E-05	1.57E-08	1.02E-04	4.81E-04	6.29E-04
Benzo(k)fluoranthene	0.00E+00	2.05E-05	3.24E-09	4.61E-05	2.02E-04	2.69E-04
Beryllium	0.00E+00	2.81E-07	0.00E+00	9.99E-07	1.80E-06	3.08E-06
Bromomethane	0.00E+00	9.11E-09	0.00E+00	4.74E-09	9.54E-08	1.09E-07
Butylbenzyl phthalate	0.00E+00	8.92E-10	0.00E+00	7.82E-07	3.40E-08	8.17E-07
Cadmium	0.00E+00	7.96E-08	0.00E+00	5.45E-07	7.37E-07	1.36E-06
Carbon disulfide	0.00E+00	3.45E-08	0.00E+00	3.19E-07	2.73E-07	6.26E-07
Chlorobenzene	0.00E+00	1.49E-11	0.00E+00	1.45E-09	5.69E-10	2.03E-09
Chloroform	0.00E+00	1.36E-08	0.00E+00	3.58E-09	8.04E-09	2.53E-08
Chloromethane	0.00E+00	1.49E-10	0.00E+00	3.09E-09	5.68E-09	8.92E-09
Chromium	0.00E+00	7.50E-06	0.00E+00	6.29E-05	1.07E-04	1.77E-04
Chrysene	0.00E+00	4.04E-05	8.46E-09	9.20E-05	3.42E-04	4.75E-04
cis-1,2-Dichloroethene	0.00E+00	8.34E-11	0.00E+00	1.17E-09	3.18E-09	4.43E-09
cis-1,3-Dichloropropene	0.00E+00	8.61E-11	0.00E+00	1.21E-09	3.28E-09	4.57E-09
Cobalt	0.00E+00	2.70E-06	0.00E+00	2.10E-05	2.55E-05	4.93E-05
Copper	0.00E+00	8.32E-05	0.00E+00	6.74E-05	1.18E-04	2.69E-04
Cyanide, Total	0.00E+00	6.75E-07	0.00E+00	5.28E-06	6.01E-06	1.20E-05
Dibenz(a,h)anthracene	0.00E+00	1.10E-05	1.27E-09	1.63E-05	8.14E-05	1.09E-04
Dibenzofuran	0.00E+00	1.30E-09	0.00E+00	1.14E-06	4.94E-08	1.19E-06
Ethylbenzene	0.00E+00	1.87E-06	2.88E-12	2.48E-06	8.48E-06	1.28E-05
Ethylene Dibromide	0.00E+00	8.36E-11	0.00E+00	1.17E-09	3.18E-09	4.44E-09

Chemical	Tent B Abated Total for Model (Sequences Include Stockpiles that are tented), lbs/yr					
	Sequence A	**Sequence B**	**Sequence C**	**Sequence D**	**Sequence E**	**Total**
Fluoranthene	0.00E+00	1.56E-04	2.55E-08	2.90E-04	1.31E-03	1.76E-03
Fluorene	0.00E+00	1.95E-05	2.08E-09	3.40E-05	1.58E-04	2.11E-04
Hexachlorobutadiene	0.00E+00	4.05E-12	0.00E+00	5.68E-11	1.54E-10	2.15E-10
Indeno(1,2,3-c,d)pyrene	0.00E+00	3.85E-05	1.18E-08	8.10E-05	3.93E-04	5.12E-04
Isophorone	0.00E+00	7.43E-05	0.00E+00	8.40E-06	2.29E-05	1.06E-04
Isopropylbenzene	0.00E+00	2.02E-08	0.00E+00	3.62E-07	1.59E-07	5.41E-07
Lead	0.00E+00	2.45E-05	8.40E-07	9.17E-05	1.87E-04	3.04E-04
Mercury	0.00E+00	9.60E-08	0.00E+00	7.86E-07	5.07E-07	1.39E-06
Methyl tert-butyl ether	0.00E+00	1.24E-10	0.00E+00	1.73E-09	4.71E-09	6.56E-09
Methylene Chloride	0.00E+00	1.67E-08	0.00E+00	2.77E-08	2.75E-07	3.20E-07
Molybdenum	0.00E+00	4.01E-07	0.00E+00	1.95E-06	3.61E-06	5.96E-06
M-Xylene	0.00E+00	5.44E-09	0.00E+00	7.61E-08	2.07E-07	2.89E-07
Naphthalene	0.00E+00	2.48E-04	1.01E-08	1.65E-04	1.63E-03	2.05E-03
n-Butylbenzene	0.00E+00	4.71E-08	0.00E+00	1.34E-07	3.87E-07	5.68E-07
Nickel	0.00E+00	1.74E-05	0.00E+00	3.34E-04	1.52E-04	5.03E-04
N-Propylbenzene	0.00E+00	3.02E-08	0.00E+00	2.09E-07	1.73E-08	2.57E-07
Phenanthrene	0.00E+00	1.91E-04	2.09E-08	1.99E-04	1.52E-03	1.91E-03
Phenol	0.00E+00	7.48E-05	0.00E+00	1.59E-05	6.19E-04	7.10E-04
P-Xylene	0.00E+00	6.90E-09	0.00E+00	9.66E-08	2.63E-07	3.66E-07
Pyrene	0.00E+00	1.67E-04	3.21E-08	3.05E-04	1.35E-03	1.82E-03
sec-Butylbenzene	0.00E+00	6.62E-08	0.00E+00	1.64E-07	5.51E-07	7.81E-07
Selenium	0.00E+00	2.66E-07	0.00E+00	2.45E-06	3.85E-06	6.56E-06
Silver	0.00E+00	1.69E-07	0.00E+00	1.02E-06	1.99E-06	3.18E-06
Styrene	0.00E+00	9.19E-13	0.00E+00	8.06E-10	3.50E-11	8.42E-10
tert-Butylbenzene	0.00E+00	1.55E-08	0.00E+00	2.53E-08	1.23E-07	1.64E-07
Tetrachloroethene	0.00E+00	2.62E-08	0.00E+00	2.67E-09	7.27E-09	3.61E-08
Toluene	0.00E+00	6.77E-07	2.80E-12	7.70E-07	1.13E-06	2.57E-06
TPHd	0.00E+00	2.05E-03	2.24E-06	4.25E-03	1.04E-02	1.67E-02
TPHg	0.00E+00	3.46E-05	7.25E-10	1.06E-04	1.66E-04	3.06E-04
TPHmo	0.00E+00	2.12E-03	3.93E-06	5.94E-03	1.61E-02	2.42E-02
TPPH	0.00E+00	3.52E-08	0.00E+00	4.93E-07	1.34E-06	1.87E-06
Trichloroethylene	0.00E+00	1.04E-10	0.00E+00	1.45E-09	3.95E-09	5.51E-09
Vanadium	0.00E+00	1.75E-05	0.00E+00	6.21E-05	9.44E-05	1.74E-04
Xylenes, Total	0.00E+00	1.59E-06	8.45E-12	2.34E-06	5.04E-06	8.97E-06
Zinc	0.00E+00	8.79E-05	0.00E+00	1.83E-04	2.38E-04	5.09E-04
Benzo(a)pyrene equivalent	0.00E+00	7.82E-05	1.79E-08	1.88E-04	8.28E-04	1.09E-03
Total POC	0.00E+00	5.76E-03	6.34E-06	1.30E-02	4.05E-02	5.93E-02
Total NPOC	0.00E+00	3.36E-07	0.00E+00	4.05E-07	3.58E-06	4.32E-06

Table 10 - Annual Abated Fugitive Emissions in Sequences (Tent C)

Chemical	Tent C Abated Total for Model (Sequences includes Stockpiles that are tented), lbs/yr					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
1,1,1-Trichloroethane	0.00E+00	0.00E+00	0.00E+00	3.60E-10	1.02E-10	4.61E-10
1,2,4-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	2.10E-08	6.42E-08	8.52E-08
1,3,5-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	1.47E-08	5.93E-08	7.40E-08
1-Methylnaphthalene	0.00E+00	0.00E+00	0.00E+00	1.10E-07	3.12E-08	1.42E-07
2-Butanone (MEK)	0.00E+00	0.00E+00	0.00E+00	4.55E-08	3.81E-09	4.93E-08
2-Methylnaphthalene	0.00E+00	0.00E+00	0.00E+00	3.83E-05	3.85E-04	4.24E-04
4-Isopropyltoluene	0.00E+00	0.00E+00	0.00E+00	1.93E-08	7.53E-08	9.46E-08
Acenaphthene	0.00E+00	0.00E+00	0.00E+00	3.04E-05	8.84E-05	1.19E-04
Acenaphthylene	0.00E+00	0.00E+00	0.00E+00	5.81E-05	5.36E-05	1.12E-04
Acetone	0.00E+00	0.00E+00	0.00E+00	2.68E-07	9.22E-07	1.19E-06
Anthracene	0.00E+00	0.00E+00	0.00E+00	5.26E-05	7.30E-05	1.26E-04
Antimony	0.00E+00	0.00E+00	0.00E+00	2.44E-06	1.00E-06	3.44E-06
Arsenic	0.00E+00	0.00E+00	0.00E+00	2.51E-05	5.21E-06	3.03E-05
Barium	0.00E+00	0.00E+00	0.00E+00	4.72E-04	3.40E-04	8.11E-04
Benzene	0.00E+00	0.00E+00	0.00E+00	1.40E-06	1.96E-06	3.37E-06
Benzo(a)anthracene	0.00E+00	0.00E+00	0.00E+00	7.31E-05	8.13E-05	1.54E-04
Benzo(a)pyrene	0.00E+00	0.00E+00	0.00E+00	1.18E-04	1.69E-04	2.87E-04
Benzo(b)fluoranthene	0.00E+00	0.00E+00	0.00E+00	9.13E-05	1.42E-04	2.33E-04
Benzo(b,k)fluoranthene	0.00E+00	0.00E+00	0.00E+00	1.82E-05	5.14E-06	2.33E-05
Benzo(g,h,i)perylene	0.00E+00	0.00E+00	0.00E+00	9.83E-05	1.45E-04	2.44E-04
Benzo(k)fluoranthene	0.00E+00	0.00E+00	0.00E+00	4.43E-05	6.12E-05	1.05E-04
Beryllium	0.00E+00	0.00E+00	0.00E+00	9.64E-07	5.09E-07	1.47E-06
Bromomethane	0.00E+00	0.00E+00	0.00E+00	4.16E-09	2.86E-08	3.27E-08
Butylbenzyl phthalate	0.00E+00	0.00E+00	0.00E+00	7.65E-07	3.02E-09	7.68E-07
Cadmium	0.00E+00	0.00E+00	0.00E+00	5.27E-07	2.04E-07	7.31E-07
Carbon disulfide	0.00E+00	0.00E+00	0.00E+00	3.11E-07	7.89E-08	3.89E-07
Chlorobenzene	0.00E+00	0.00E+00	0.00E+00	1.39E-09	5.06E-11	1.44E-09
Chloroform	0.00E+00	0.00E+00	0.00E+00	3.15E-09	7.15E-10	3.87E-09
Chloromethane	0.00E+00	0.00E+00	0.00E+00	2.77E-09	5.05E-10	3.28E-09
Chromium	0.00E+00	0.00E+00	0.00E+00	6.10E-05	3.11E-05	9.20E-05
Chrysene	0.00E+00	0.00E+00	0.00E+00	8.83E-05	1.02E-04	1.91E-04
cis-1,2-Dichloroethene	0.00E+00	0.00E+00	0.00E+00	1.00E-09	2.82E-10	1.28E-09
cis-1,3-Dichloropropene	0.00E+00	0.00E+00	0.00E+00	1.03E-09	2.92E-10	1.33E-09
Cobalt	0.00E+00	0.00E+00	0.00E+00	2.04E-05	7.32E-06	2.77E-05
Copper	0.00E+00	0.00E+00	0.00E+00	6.42E-05	2.90E-05	9.33E-05
Cyanide, Total	0.00E+00	0.00E+00	0.00E+00	5.08E-06	1.45E-06	6.53E-06
Dibenz(a,h)anthracene	0.00E+00	0.00E+00	0.00E+00	1.56E-05	2.45E-05	4.01E-05
Dibenzofuran	0.00E+00	0.00E+00	0.00E+00	1.11E-06	4.39E-09	1.12E-06
Ethylbenzene	0.00E+00	0.00E+00	0.00E+00	2.28E-06	1.99E-06	4.28E-06
Ethylene Dibromide	0.00E+00	0.00E+00	0.00E+00	1.00E-09	2.83E-10	1.29E-09

Chemical	Tent C Abated Total for Model (Sequences includes Stockpiles that are tented), lbs/yr					
	Sequence A	**Sequence B**	**Sequence C**	**Sequence D**	**Sequence E**	**Total**
Fluoranthene	0.00E+00	0.00E+00	0.00E+00	2.78E-04	3.91E-04	6.69E-04
Fluorene	0.00E+00	0.00E+00	0.00E+00	3.23E-05	4.62E-05	7.84E-05
Hexachlorobutadiene	0.00E+00	0.00E+00	0.00E+00	4.87E-11	1.37E-11	6.24E-11
Indeno(1,2,3-c,d)pyrene	0.00E+00	0.00E+00	0.00E+00	7.76E-05	1.19E-04	1.96E-04
Isophorone	0.00E+00	0.00E+00	0.00E+00	7.20E-06	2.03E-06	9.24E-06
Isopropylbenzene	0.00E+00	0.00E+00	0.00E+00	3.53E-07	4.43E-08	3.97E-07
Lead	0.00E+00	0.00E+00	0.00E+00	8.76E-05	4.92E-05	1.37E-04
Mercury	0.00E+00	0.00E+00	0.00E+00	7.63E-07	1.28E-07	8.91E-07
Methyl tert-butyl ether	0.00E+00	0.00E+00	0.00E+00	1.48E-09	4.18E-10	1.90E-09
Methylene Chloride	0.00E+00	0.00E+00	0.00E+00	2.40E-08	7.27E-08	9.67E-08
Molybdenum	0.00E+00	0.00E+00	0.00E+00	1.89E-06	1.09E-06	2.98E-06
M-Xylene	0.00E+00	0.00E+00	0.00E+00	6.53E-08	1.84E-08	8.37E-08
Naphthalene	0.00E+00	0.00E+00	0.00E+00	1.51E-04	4.73E-04	6.24E-04
n-Butylbenzene	0.00E+00	0.00E+00	0.00E+00	1.29E-07	1.15E-07	2.44E-07
Nickel	0.00E+00	0.00E+00	0.00E+00	3.26E-04	4.13E-05	3.67E-04
N-Propylbenzene	0.00E+00	0.00E+00	0.00E+00	2.04E-07	1.54E-09	2.06E-07
Phenanthrene	0.00E+00	0.00E+00	0.00E+00	1.86E-04	4.48E-04	6.34E-04
Phenol	0.00E+00	0.00E+00	0.00E+00	1.37E-05	1.92E-04	2.06E-04
P-Xylene	0.00E+00	0.00E+00	0.00E+00	8.28E-08	2.34E-08	1.06E-07
Pyrene	0.00E+00	0.00E+00	0.00E+00	2.91E-04	4.01E-04	6.92E-04
sec-Butylbenzene	0.00E+00	0.00E+00	0.00E+00	1.58E-07	1.64E-07	3.22E-07
Selenium	0.00E+00	0.00E+00	0.00E+00	2.38E-06	1.16E-06	3.54E-06
Silver	0.00E+00	0.00E+00	0.00E+00	9.93E-07	5.96E-07	1.59E-06
Styrene	0.00E+00	0.00E+00	0.00E+00	7.88E-10	3.11E-12	7.91E-10
tert-Butylbenzene	0.00E+00	0.00E+00	0.00E+00	2.41E-08	3.68E-08	6.09E-08
Tetrachloroethene	0.00E+00	0.00E+00	0.00E+00	2.29E-09	6.46E-10	2.94E-09
Toluene	0.00E+00	0.00E+00	0.00E+00	7.17E-07	1.69E-07	8.86E-07
TPHd	0.00E+00	0.00E+00	0.00E+00	4.08E-03	2.91E-03	6.98E-03
TPHg	0.00E+00	0.00E+00	0.00E+00	1.02E-04	4.43E-05	1.46E-04
TPHmo	0.00E+00	0.00E+00	0.00E+00	5.71E-03	4.63E-03	1.03E-02
TPPH	0.00E+00	0.00E+00	0.00E+00	4.23E-07	1.19E-07	5.42E-07
Trichloroethylene	0.00E+00	0.00E+00	0.00E+00	1.25E-09	3.52E-10	1.60E-09
Vanadium	0.00E+00	0.00E+00	0.00E+00	5.99E-05	2.59E-05	8.58E-05
Xylenes, Total	0.00E+00	0.00E+00	0.00E+00	2.21E-06	1.21E-06	3.41E-06
Zinc	0.00E+00	0.00E+00	0.00E+00	1.76E-04	5.87E-05	2.35E-04
Benzo(a)pyrene equivalent	0.00E+00	0.00E+00	0.00E+00	1.78E-04	2.40E-04	4.18E-04
Total POC	0.00E+00	0.00E+00	0.00E+00	1.24E-02	1.12E-02	2.36E-02
Total NPOC	0.00E+00	0.00E+00	0.00E+00	3.68E-07	1.02E-06	1.38E-06

Table 11 - Annual Abated Fugitive Emissions in Sequences (Tent D)

Chemical	Tent D Abated Total for Model (Sequences includes Stockpiles that are tented), lbs/yr					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
1,1,1-Trichloroethane	0.00E+00	0.00E+00	1.13E-10	0.00E+00	0.00E+00	1.13E-10
1,2,4-Trimethylbenzene	0.00E+00	0.00E+00	3.39E-09	0.00E+00	0.00E+00	3.39E-09
1,3,5-Trimethylbenzene	0.00E+00	0.00E+00	2.19E-09	0.00E+00	0.00E+00	2.19E-09
1-Methylnaphthalene	0.00E+00	0.00E+00	3.94E-08	0.00E+00	0.00E+00	3.94E-08
2-Butanone (MEK)	0.00E+00	0.00E+00	4.26E-09	0.00E+00	0.00E+00	4.26E-09
2-Methylnaphthalene	0.00E+00	0.00E+00	9.40E-06	0.00E+00	0.00E+00	9.40E-06
4-Isopropyltoluene	0.00E+00	0.00E+00	3.67E-09	0.00E+00	0.00E+00	3.67E-09
Acenaphthene	0.00E+00	0.00E+00	9.71E-06	0.00E+00	0.00E+00	9.71E-06
Acenaphthylene	0.00E+00	0.00E+00	2.03E-06	0.00E+00	0.00E+00	2.03E-06
Acetone	0.00E+00	0.00E+00	6.12E-08	0.00E+00	0.00E+00	6.12E-08
Anthracene	0.00E+00	0.00E+00	5.09E-06	0.00E+00	0.00E+00	5.09E-06
Antimony	0.00E+00	0.00E+00	2.40E-07	0.00E+00	0.00E+00	2.40E-07
Arsenic	0.00E+00	0.00E+00	4.73E-06	0.00E+00	0.00E+00	4.73E-06
Barium	0.00E+00	0.00E+00	2.37E-04	0.00E+00	0.00E+00	2.37E-04
Benzene	0.00E+00	0.00E+00	7.19E-06	0.00E+00	0.00E+00	7.19E-06
Benzo(a)anthracene	0.00E+00	0.00E+00	4.90E-06	0.00E+00	0.00E+00	4.90E-06
Benzo(a)pyrene	0.00E+00	0.00E+00	8.61E-06	0.00E+00	0.00E+00	8.61E-06
Benzo(b)fluoranthene	0.00E+00	0.00E+00	8.39E-06	0.00E+00	0.00E+00	8.39E-06
Benzo(b,k)fluoranthene	0.00E+00	0.00E+00	5.74E-06	0.00E+00	0.00E+00	5.74E-06
Benzo(g,h,i)perylene	0.00E+00	0.00E+00	7.94E-06	0.00E+00	0.00E+00	7.94E-06
Benzo(k)fluoranthene	0.00E+00	0.00E+00	3.06E-06	0.00E+00	0.00E+00	3.06E-06
Beryllium	0.00E+00	0.00E+00	7.27E-07	0.00E+00	0.00E+00	7.27E-07
Bromomethane	0.00E+00	0.00E+00	1.40E-09	0.00E+00	0.00E+00	1.40E-09
Butylbenzyl phthalate	0.00E+00	0.00E+00	3.38E-09	0.00E+00	0.00E+00	3.38E-09
Cadmium	0.00E+00	0.00E+00	4.16E-07	0.00E+00	0.00E+00	4.16E-07
Carbon disulfide	0.00E+00	0.00E+00	9.01E-09	0.00E+00	0.00E+00	9.01E-09
Chlorobenzene	0.00E+00	0.00E+00	5.66E-11	0.00E+00	0.00E+00	5.66E-11
Chloroform	0.00E+00	0.00E+00	1.06E-09	0.00E+00	0.00E+00	1.06E-09
Chloromethane	0.00E+00	0.00E+00	5.64E-10	0.00E+00	0.00E+00	5.64E-10
Chromium	0.00E+00	0.00E+00	3.34E-05	0.00E+00	0.00E+00	3.34E-05
Chrysene	0.00E+00	0.00E+00	6.57E-06	0.00E+00	0.00E+00	6.57E-06
cis-1,2-Dichloroethene	0.00E+00	0.00E+00	5.32E-10	0.00E+00	0.00E+00	5.32E-10
cis-1,3-Dichloropropene	0.00E+00	0.00E+00	5.52E-10	0.00E+00	0.00E+00	5.52E-10
Cobalt	0.00E+00	0.00E+00	8.84E-06	0.00E+00	0.00E+00	8.84E-06
Copper	0.00E+00	0.00E+00	6.63E-05	0.00E+00	0.00E+00	6.63E-05
Cyanide, Total	0.00E+00	0.00E+00	5.77E-06	0.00E+00	0.00E+00	5.77E-06
Dibenz(a,h)anthracene	0.00E+00	0.00E+00	1.15E-06	0.00E+00	0.00E+00	1.15E-06
Dibenzofuran	0.00E+00	0.00E+00	4.91E-09	0.00E+00	0.00E+00	4.91E-09
Ethylbenzene	0.00E+00	0.00E+00	1.82E-05	0.00E+00	0.00E+00	1.82E-05
Ethylene Dibromide	0.00E+00	0.00E+00	5.80E-10	0.00E+00	0.00E+00	5.80E-10

Chemical	Tent D Abated Total for Model (Sequences includes Stockpiles that are tented), lbs/yr					
	Sequence A	**Sequence B**	**Sequence C**	**Sequence D**	**Sequence E**	**Total**
Fluoranthene	0.00E+00	0.00E+00	2.36E-05	0.00E+00	0.00E+00	2.36E-05
Fluorene	0.00E+00	0.00E+00	3.37E-06	0.00E+00	0.00E+00	3.37E-06
Hexachlorobutadiene	0.00E+00	0.00E+00	1.43E-09	0.00E+00	0.00E+00	1.43E-09
Indeno(1,2,3-c,d)pyrene	0.00E+00	0.00E+00	6.46E-06	0.00E+00	0.00E+00	6.46E-06
Isophorone	0.00E+00	0.00E+00	2.27E-06	0.00E+00	0.00E+00	2.27E-06
Isopropylbenzene	0.00E+00	0.00E+00	3.63E-09	0.00E+00	0.00E+00	3.63E-09
Lead	0.00E+00	0.00E+00	8.83E-05	0.00E+00	0.00E+00	8.83E-05
Mercury	0.00E+00	0.00E+00	4.98E-07	0.00E+00	0.00E+00	4.98E-07
Methyl tert-butyl ether	0.00E+00	0.00E+00	4.68E-10	0.00E+00	0.00E+00	4.68E-10
Methylene Chloride	0.00E+00	0.00E+00	7.70E-09	0.00E+00	0.00E+00	7.70E-09
Molybdenum	0.00E+00	0.00E+00	3.79E-08	0.00E+00	0.00E+00	3.79E-08
M-Xylene	0.00E+00	0.00E+00	2.06E-08	0.00E+00	0.00E+00	2.06E-08
Naphthalene	0.00E+00	0.00E+00	5.76E-05	0.00E+00	0.00E+00	5.76E-05
n-Butylbenzene	0.00E+00	0.00E+00	6.06E-09	0.00E+00	0.00E+00	6.06E-09
Nickel	0.00E+00	0.00E+00	4.14E-05	0.00E+00	0.00E+00	4.14E-05
N-Propylbenzene	0.00E+00	0.00E+00	1.72E-09	0.00E+00	0.00E+00	1.72E-09
Phenanthrene	0.00E+00	0.00E+00	2.97E-05	0.00E+00	0.00E+00	2.97E-05
Phenol	0.00E+00	0.00E+00	4.10E-06	0.00E+00	0.00E+00	4.10E-06
P-Xylene	0.00E+00	0.00E+00	2.61E-08	0.00E+00	0.00E+00	2.61E-08
Pyrene	0.00E+00	0.00E+00	2.68E-05	0.00E+00	0.00E+00	2.68E-05
sec-Butylbenzene	0.00E+00	0.00E+00	8.48E-09	0.00E+00	0.00E+00	8.48E-09
Selenium	0.00E+00	0.00E+00	3.99E-08	0.00E+00	0.00E+00	3.99E-08
Silver	0.00E+00	0.00E+00	1.58E-07	0.00E+00	0.00E+00	1.58E-07
Styrene	0.00E+00	0.00E+00	3.48E-12	0.00E+00	0.00E+00	3.48E-12
tert-Butylbenzene	0.00E+00	0.00E+00	1.86E-09	0.00E+00	0.00E+00	1.86E-09
Tetrachloroethene	0.00E+00	0.00E+00	7.22E-10	0.00E+00	0.00E+00	7.22E-10
Toluene	0.00E+00	0.00E+00	4.23E-06	0.00E+00	0.00E+00	4.23E-06
TPHd	0.00E+00	0.00E+00	5.83E-04	0.00E+00	0.00E+00	5.83E-04
TPHg	0.00E+00	0.00E+00	1.23E-04	0.00E+00	0.00E+00	1.23E-04
TPHmo	0.00E+00	0.00E+00	7.87E-04	0.00E+00	0.00E+00	7.87E-04
TPPH	0.00E+00	0.00E+00	1.64E-07	0.00E+00	0.00E+00	1.64E-07
Trichloroethylene	0.00E+00	0.00E+00	3.93E-10	0.00E+00	0.00E+00	3.93E-10
Vanadium	0.00E+00	0.00E+00	3.09E-05	0.00E+00	0.00E+00	3.09E-05
Xylenes, Total	0.00E+00	0.00E+00	7.44E-06	0.00E+00	0.00E+00	7.44E-06
Zinc	0.00E+00	0.00E+00	2.44E-04	0.00E+00	0.00E+00	2.44E-04
Benzo(a)pyrene equivalent	0.00E+00	0.00E+00	1.25E-05	0.00E+00	0.00E+00	1.25E-05
Total POC	0.00E+00	0.00E+00	8.46E-04	0.00E+00	0.00E+00	8.46E-04
Total NPOC	0.00E+00	0.00E+00	6.31E-08	0.00E+00	0.00E+00	6.31E-08

Table 12 - Annual Abated Fugitive Emissions in Sequences (Not Tented Area)

Chemical	Abated Emissions Not Tented, lbs/yr						
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Stockpiles	Total
1,1,1-Trichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.10E-09	4.10E-09
1,2,4-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.61E-08	9.61E-08
1,3,5-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.91E-08	7.91E-08
1-Methylnaphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-06	1.26E-06
2-Butanone (MEK)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.54E-07	1.54E-07
2-Methylnaphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.40E-04	3.40E-04
4-Isopropyltoluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-07	1.00E-07
Acenaphthene	0.00E+00	0.00E+00	6.50E-07	1.40E-06	0.00E+00	1.53E-04	1.56E-04
Acenaphthylene	0.00E+00	0.00E+00	1.55E-07	2.43E-06	0.00E+00	5.92E-05	6.18E-05
Acetone	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-06	1.16E-06
Anthracene	0.00E+00	0.00E+00	3.10E-07	3.77E-06	0.00E+00	1.14E-04	1.18E-04
Antimony	0.00E+00	0.00E+00	2.50E-07	0.00E+00	0.00E+00	1.18E-06	1.43E-06
Arsenic	0.00E+00	0.00E+00	3.40E-06	6.61E-06	0.00E+00	1.65E-05	2.66E-05
Barium	0.00E+00	0.00E+00	1.21E-04	0.00E+00	0.00E+00	4.34E-04	5.55E-04
Benzene	0.00E+00	0.00E+00	1.99E-08	8.80E-08	0.00E+00	7.55E-06	7.66E-06
Benzo(a)anthracene	0.00E+00	0.00E+00	3.74E-07	7.38E-06	0.00E+00	1.15E-04	1.22E-04
Benzo(a)pyrene	0.00E+00	0.00E+00	6.30E-07	1.24E-05	0.00E+00	2.05E-04	2.18E-04
Benzo(b)fluoranthene	0.00E+00	0.00E+00	5.19E-07	1.29E-05	0.00E+00	1.90E-04	2.04E-04
Benzo(b,k)fluoranthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-04	2.08E-04
Benzo(g,h,i)perylene	0.00E+00	0.00E+00	6.01E-07	1.34E-05	0.00E+00	1.71E-04	1.85E-04
Benzo(k)fluoranthene	0.00E+00	0.00E+00	2.27E-07	2.99E-06	0.00E+00	7.18E-05	7.50E-05
Beryllium	0.00E+00	0.00E+00	3.64E-07	0.00E+00	0.00E+00	1.16E-06	1.52E-06
Bromomethane	0.00E+00	0.00E+00	4.08E-09	7.31E-09	0.00E+00	3.83E-08	4.97E-08
Butylbenzyl phthalate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-07	1.22E-07
Cadmium	0.00E+00	0.00E+00	7.20E-08	0.00E+00	0.00E+00	5.50E-07	6.22E-07
Carbon disulfide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-07	1.52E-07
Chlorobenzene	0.00E+00	0.00E+00	0.00E+00	7.31E-09	0.00E+00	2.05E-09	9.36E-09
Chloroform	0.00E+00	0.00E+00	4.08E-09	7.31E-09	0.00E+00	2.89E-08	4.03E-08
Chloromethane	0.00E+00	0.00E+00	0.00E+00	7.31E-09	0.00E+00	2.04E-08	2.77E-08
Chromium	0.00E+00	0.00E+00	2.55E-05	0.00E+00	0.00E+00	5.67E-05	8.22E-05
Chrysene	0.00E+00	0.00E+00	5.86E-07	8.47E-06	0.00E+00	1.43E-04	1.52E-04
cis-1,2-Dichloroethene	0.00E+00	0.00E+00	4.08E-09	0.00E+00	0.00E+00	1.14E-08	1.55E-08
cis-1,3-Dichloropropene	0.00E+00	0.00E+00	4.08E-09	0.00E+00	0.00E+00	1.18E-08	1.59E-08
Cobalt	0.00E+00	0.00E+00	4.03E-06	0.00E+00	0.00E+00	1.53E-05	1.94E-05
Copper	0.00E+00	0.00E+00	2.16E-05	0.00E+00	0.00E+00	1.44E-04	1.66E-04
Cyanide, Total	0.00E+00	0.00E+00	0.00E+00	2.71E-06	0.00E+00	7.67E-06	1.04E-05
Dibenz(a,h)anthracene	0.00E+00	0.00E+00	1.47E-07	2.36E-06	0.00E+00	3.04E-05	3.29E-05
Dibenzofuran	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-07	1.78E-07
Ethylbenzene	0.00E+00	0.00E+00	3.03E-08	1.71E-07	0.00E+00	1.17E-05	1.19E-05
Ethylene Dibromide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-08	1.14E-08
Fluoranthene	0.00E+00	0.00E+00	1.76E-06	2.87E-05	0.00E+00	5.54E-04	5.85E-04

Chemical	Abated Emissions Not Tented, lbs/yr						
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Stockpiles	Total
Fluorene	0.00E+00	0.00E+00	4.83E-07	1.99E-06	0.00E+00	8.07E-05	8.32E-05
Hexachlorobutadiene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.55E-10	5.55E-10
Indeno(1,2,3-c,d)pyrene	0.00E+00	0.00E+00	4.95E-07	1.02E-05	0.00E+00	1.40E-04	1.51E-04
Isophorone	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.21E-05	8.21E-05
Isopropylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-07	1.14E-07
Lead	0.00E+00	0.00E+00	3.59E-05	7.72E-05	0.00E+00	1.78E-04	2.91E-04
Mercury	0.00E+00	0.00E+00	2.19E-07	0.00E+00	0.00E+00	5.73E-07	7.92E-07
Methyl tert-butyl ether	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E-08	1.69E-08
Methylene Chloride	0.00E+00	0.00E+00	8.16E-09	1.46E-08	0.00E+00	2.58E-07	2.81E-07
Molybdenum	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-06	1.37E-06
M-Xylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.44E-07	7.44E-07
Naphthalene	0.00E+00	0.00E+00	6.66E-07	1.95E-06	0.00E+00	9.06E-04	9.08E-04
n-Butylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-07	1.68E-07
Nickel	0.00E+00	0.00E+00	1.55E-05	0.00E+00	0.00E+00	1.23E-04	1.39E-04
N-Propylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.21E-08	6.21E-08
Phenanthrene	0.00E+00	0.00E+00	2.02E-06	1.37E-05	0.00E+00	7.05E-04	7.21E-04
Phenol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-04	1.48E-04
P-Xylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.45E-07	9.45E-07
Pyrene	0.00E+00	0.00E+00	2.29E-06	3.17E-05	0.00E+00	6.08E-04	6.42E-04
sec-Butylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-07	2.35E-07
Selenium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-06	1.44E-06
Silver	0.00E+00	0.00E+00	9.54E-08	0.00E+00	0.00E+00	7.86E-07	8.82E-07
Styrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-10	1.26E-10
tert-Butylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.11E-08	5.11E-08
Tetrachloroethene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.61E-08	2.61E-08
Toluene	0.00E+00	0.00E+00	9.03E-09	8.25E-08	0.00E+00	3.00E-06	3.09E-06
TPHd	0.00E+00	0.00E+00	1.66E-03	2.26E-04	0.00E+00	7.25E-03	9.13E-03
TPHg	0.00E+00	0.00E+00	5.04E-07	5.47E-06	0.00E+00	1.49E-04	1.55E-04
TPHmo	0.00E+00	0.00E+00	3.05E-03	4.38E-04	0.00E+00	9.49E-03	1.30E-02
TPPH	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.82E-06	4.82E-06
Trichloroethylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-08	1.42E-08
Vanadium	0.00E+00	0.00E+00	2.12E-05	0.00E+00	0.00E+00	7.45E-05	9.57E-05
Xylenes, Total	0.00E+00	0.00E+00	6.99E-08	1.66E-07	0.00E+00	6.65E-06	6.89E-06
Zinc	0.00E+00	0.00E+00	4.61E-05	0.00E+00	0.00E+00	2.85E-04	3.31E-04
Benzo(a)pyrene equivalent	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.53E-04	4.53E-04
Total POC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-02	3.06E-02
Total NPOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-06	2.28E-06

Table 13 – Total Hourly Abated Emission in Sequences from Diffusion

Chemical	Abated Emissions (lbs/hr)							
	Sequence A-Use for Tent A	Sequence B-Use for Tent A or B	Sequence C - Use for Tent A or B	Sequence C - Use for Tent D	Sequence C - No Tent	Sequence D -Use for Tent B or C	Sequence D -No Tent	Sequence E-Use for Tent B or C
Acetone	2.66E-03	1.49E-03	0.00E+00	6.19E-05	8.96E-08	1.46E-04	9.06E-08	1.89E-03
Benzene	1.37E-02	4.84E-03	1.41E-06	1.29E-02	2.33E-04	5.63E-04	5.72E-04	3.27E-03
Bromomethane	1.28E-04	7.75E-05	0.00E+00	1.17E-06	8.87E-05	1.13E-06	8.87E-05	9.48E-05
n-Butylbenzene	5.20E-04	4.03E-04	9.34E-10	4.85E-06	5.33E-09	1.62E-04	5.12E-09	3.80E-04
sec-Butylbenzene	7.47E-04	5.66E-04	9.34E-10	6.79E-06	1.39E-08	1.94E-04	5.12E-09	5.44E-04
tert-Butylbenzene	1.63E-04	1.33E-04	9.34E-10	1.56E-06	5.33E-09	2.78E-05	5.12E-09	1.22E-04
Chloroform	5.27E-05	6.16E-05	9.34E-10	4.75E-07	4.64E-05	4.59E-07	4.64E-05	3.81E-05
Carbon Disulfide	1.93E-04	1.66E-04	0.00E+00	9.34E-06	8.96E-09	2.38E-04	5.81E-07	1.46E-04
Chlorobenzene	0.00E+00	0.00E+00	9.34E-10	1.05E-09	4.99E-09	8.15E-07	4.21E-05	0.00E+00
Ethylbenzene	7.96E-03	7.55E-03	4.37E-07	2.31E-02	2.47E-04	8.58E-04	9.98E-04	2.82E-03
4-Ethyltoluene	0.00E+00	2.68E-09	0.00E+00	0.00E+00	1.54E-08	1.51E-09	7.84E-09	2.97E-09
Isopropylbenzene	1.95E-04	1.70E-04	9.34E-10	1.71E-06	5.07E-08	4.85E-04	5.12E-09	1.42E-04
4-Isopropyltoluene	3.41E-04	2.66E-04	1.95E-09	3.14E-06	1.94E-08	1.49E-05	8.32E-09	2.50E-04
Methylene Chloride	1.14E-03	8.12E-05	9.34E-10	1.21E-06	1.10E-04	1.19E-06	1.10E-04	1.42E-04
Naphthalene	2.19E-03	1.94E-03	4.64E-05	1.27E-03	1.65E-04	9.86E-04	2.31E-04	1.81E-03
n-Propylbenzene	3.41E-04	2.62E-04	9.34E-10	3.14E-06	1.80E-08	2.81E-04	5.12E-09	2.50E-04
Toluene	2.62E-03	2.98E-03	5.88E-07	7.39E-03	1.02E-04	3.33E-04	5.18E-04	1.69E-04
1,2,4-Trimethylbenzene	3.90E-04	2.18E-04	0.00E+00	2.52E-06	0.00E+00	1.78E-05	0.00E+00	2.12E-04
1,3,5-Trimethylbenzene	2.76E-04	2.07E-04	0.00E+00	2.43E-06	0.00E+00	1.10E-05	0.00E+00	1.97E-04
Xylenes (total)	6.85E-03	7.00E-03	0.00E+00	0.00E+00	5.06E-09	1.30E-09	6.95E-09	1.85E-03
Methyl tert-butyl ether	7.38E-05	0.00E+00	0.00E+00	0.00E+00	5.57E-09	3.27E-09	1.47E-08	0.00E+00
Styrene	0.00E+00	0.00E+00	1.77E-06	1.29E-02	7.88E-04	1.19E-03	1.04E-03	0.00E+00
Tetrachloroethene	0.00E+00	2.28E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,1-Trichloroethane	0.00E+00	1.76E-05	9.34E-10	1.05E-09	4.97E-09	5.16E-07	5.63E-09	0.00E+00
TPHg	1.43E-01	1.36E-01	9.34E-10	1.05E-09	5.19E-09	9.82E-10	6.77E-09	9.45E-02
Volatile hydrocarbons	1.83E-01	1.65E-01	5.07E-05	5.76E-02	1.78E-03	5.51E-03	3.65E-03	1.09E-01
POC	1.79E-01	1.63E-01	5.07E-05	5.75E-02	1.67E-03	5.36E-03	3.54E-03	1.07E-01
NPOC	3.80E-03	1.81E-03	1.87E-09	6.31E-05	1.11E-04	1.48E-04	1.11E-04	2.04E-03

Table 14 – Total Daily Abated Emission in Sequences from Diffusion

Chemical	Abated Emissions (lbs/day)							
	Sequence A	Sequence B	Sequence C - Tent A/B	Sequence C - Tent D	Sequence C - No Tent	Sequence D -Tent B/C	Sequence D -No Tent	Sequence E
Acetone	2.13E-02	1.19E-02	0.00E+00	4.95E-04	7.17E-07	1.17E-03	7.25E-07	1.52E-02
Benzene	1.10E-01	3.87E-02	1.13E-05	1.03E-01	1.86E-03	4.50E-03	4.58E-03	2.61E-02
Bromomethane	1.03E-03	6.20E-04	0.00E+00	9.33E-06	7.10E-04	9.07E-06	7.10E-04	7.59E-04
n-Butylbenzene	4.16E-03	3.22E-03	7.47E-09	3.88E-05	4.27E-08	1.29E-03	4.10E-08	3.04E-03
sec-Butylbenzene	5.98E-03	4.53E-03	7.47E-09	5.44E-05	1.11E-07	1.55E-03	4.10E-08	4.35E-03
tert-Butylbenzene	1.30E-03	1.06E-03	7.47E-09	1.25E-05	4.27E-08	2.23E-04	4.10E-08	9.74E-04
Chloroform	4.22E-04	4.93E-04	7.47E-09	3.80E-06	3.72E-04	3.67E-06	3.72E-04	3.05E-04
Carbon Disulfide	1.55E-03	1.33E-03	0.00E+00	7.47E-05	7.17E-08	1.90E-03	4.65E-06	1.17E-03
Chlorobenzene	0.00E+00	0.00E+00	7.47E-09	8.40E-09	3.99E-08	6.52E-06	3.37E-04	0.00E+00
Ethylbenzene	6.37E-02	6.04E-02	3.50E-06	1.84E-01	1.98E-03	6.86E-03	7.98E-03	2.26E-02
4-Ethyltoluene	0.00E+00	2.15E-08	0.00E+00	0.00E+00	1.23E-07	1.21E-08	6.27E-08	2.38E-08
Isopropylbenzene	1.56E-03	1.36E-03	7.47E-09	1.36E-05	4.05E-07	3.88E-03	4.10E-08	1.14E-03
4-Isopropyltoluene	2.73E-03	2.13E-03	1.56E-08	2.51E-05	1.55E-07	1.19E-04	6.66E-08	2.00E-03
Methylene Chloride	9.10E-03	6.50E-04	7.47E-09	9.67E-06	8.84E-04	9.52E-06	8.84E-04	1.13E-03
Naphthalene	1.75E-02	1.55E-02	3.72E-04	1.02E-02	1.32E-03	7.89E-03	1.85E-03	1.45E-02
n-Propylbenzene	2.73E-03	2.09E-03	7.47E-09	2.51E-05	1.44E-07	2.25E-03	4.10E-08	2.00E-03
Toluene	2.09E-02	2.38E-02	4.70E-06	5.91E-02	8.14E-04	2.66E-03	4.15E-03	1.35E-03
1,2,4-Trimethylbenzene	3.12E-03	1.74E-03	0.00E+00	2.02E-05	0.00E+00	1.42E-04	0.00E+00	1.70E-03
1,3,5-Trimethylbenzene	2.21E-03	1.66E-03	0.00E+00	1.94E-05	0.00E+00	8.80E-05	0.00E+00	1.57E-03
Xylenes (total)	5.48E-02	5.60E-02	0.00E+00	0.00E+00	4.05E-08	1.04E-08	5.56E-08	1.48E-02
Methyl tert-butyl ether	5.90E-04	0.00E+00	0.00E+00	0.00E+00	4.46E-08	2.61E-08	1.18E-07	0.00E+00
Styrene	0.00E+00	0.00E+00	1.42E-05	1.03E-01	6.30E-03	9.52E-03	8.33E-03	0.00E+00
Tetrachloroethene	0.00E+00	1.83E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,1-Trichloroethane	0.00E+00	1.41E-04	7.47E-09	8.40E-09	3.97E-08	4.13E-06	4.51E-08	0.00E+00
TPHg	1.14E+00	1.09E+00	7.47E-09	8.40E-09	4.16E-08	7.86E-09	5.41E-08	7.56E-01
Volatile hydrocarbons	1.47E+00	1.32E+00	4.05E-04	4.61E-01	1.42E-02	4.41E-02	2.92E-02	8.70E-01
POC	1.43E+00	1.30E+00	4.05E-04	4.60E-01	1.34E-02	4.29E-02	2.83E-02	8.54E-01
NPOC	3.04E-02	1.45E-02	1.49E-08	5.05E-04	8.84E-04	1.18E-03	8.84E-04	1.63E-02

	Abated Emissions (lbs/day)							
Chemical	Sequence A	Sequence B	Sequence C - Tent A/B	Sequence C - Tent D	Sequence C - No Tent	Sequence D - Tent B/C	Sequence D - No Tent	Sequence E
Acetone	0.02	0.01	0	4.95E-04	7.17E-07	1.17E-03	7.25E-07	0.02
Benzene	0.11	0.04	1.13E-05	0.10	1.86E-03	4.50E-03	4.58E-03	0.03
Bromomethane	1.03E-03	6.20E-04	0	9.33E-06	7.10E-04	9.07E-06	7.10E-04	7.59E-04
n-Butylbenzene	4.16E-03	3.22E-03	7.47E-09	3.88E-05	4.27E-08	1.29E-03	4.10E-08	3.04E-03
sec-Butylbenzene	5.98E-03	4.53E-03	7.47E-09	5.44E-05	1.11E-07	1.55E-03	4.10E-08	4.35E-03
tert-Butylbenzene	1.30E-03	1.06E-03	7.47E-09	1.25E-05	4.27E-08	2.23E-04	4.10E-08	9.74E-04
Chloroform	4.22E-04	4.93E-04	7.47E-09	3.80E-06	3.72E-04	3.67E-06	3.72E-04	3.05E-04
Carbon Disulfide	1.55E-03	1.33E-03	0	7.47E-05	7.17E-08	1.90E-03	4.65E-06	1.17E-03
Chlorobenzene	0	0	7.47E-09	8.40E-09	3.99E-08	6.52E-06	3.37E-04	0
Ethylbenzene	0.06	0.06	3.50E-06	0.18	1.98E-03	6.86E-03	7.98E-03	0.02
4-Ethyltoluene	0	2.15E-08	0	0	1.23E-07	1.21E-08	6.27E-08	2.38E-08
Isopropylbenzene	1.56E-03	1.36E-03	7.47E-09	1.36E-05	4.05E-07	3.88E-03	4.10E-08	1.14E-03
4-Isopropyltoluene	2.73E-03	2.13E-03	1.56E-08	2.51E-05	1.55E-07	1.19E-04	6.66E-08	2.00E-03
Methylene Chloride	9.10E-03	6.50E-04	7.47E-09	9.67E-06	8.84E-04	9.52E-06	8.84E-04	1.13E-03
Naphthalene	0.02	0.02	3.72E-04	0.01	1.32E-03	7.89E-03	1.85E-03	0.01
n-Propylbenzene	2.73E-03	2.09E-03	7.47E-09	2.51E-05	1.44E-07	2.25E-03	4.10E-08	2.00E-03
Toluene	0.02	0.02	4.70E-06	0.06	8.14E-04	2.66E-03	4.15E-03	1.35E-03
1,2,4-Trimethylbenzene	3.12E-03	1.74E-03	0	2.02E-05	0	1.42E-04	0	1.70E-03
1,3,5-Trimethylbenzene	2.21E-03	1.66E-03	0	1.94E-05	0	8.80E-05	0	1.57E-03
Xylenes (total)	0.05	0.06	0	0	4.05E-08	1.04E-08	5.56E-08	0.01
Methyl tert-butyl ether	5.90E-04	0	0	0	4.46E-08	2.61E-08	1.18E-07	0
Styrene	0	0	1.42E-05	0.10	6.30E-03	9.52E-03	8.33E-03	0
Tetrachloroethene	0	1.83E-03	0	0	0	0	0	0
1,1,1-Trichloroethane	0	1.41E-04	7.47E-09	8.40E-09	3.97E-08	4.13E-06	4.51E-08	0
TPHg	1.14	1.09	7.47E-09	8.40E-09	4.16E-08	7.86E-09	5.41E-08	0.76
Volatile hydrocarbons	1.47	1.32	7.47E-09	8.40E-09	4.06E-08	7.57E-09	4.92E-08	0.87
POC	1.43	1.30	1.31E-03	1.82	0.05	0.86	0.45	0.85
NPOC	0.03	0.01	0	0	0	0	0	0.02

Table 15 – Total Abated Annual Emission from Three Stockpiles

Chemical	Total Abated Stock Pile Emissions (but not accounting for tent abatement), inside and outside tent (lbs/yr), See NOTE	Emissions From Portion of Stock Pile Emissions Occurring Outside Tent					
		Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total Stockpile Emissions from Sequences Not Tented (lbs/yr)
Acetone	3.12E-01	0.00E+00	0.00E+00	1.76E-02	2.31E-02	0.00E+00	4.07E-02
Benzene	1.45E+00	0.00E+00	0.00E+00	8.15E-02	1.07E-01	0.00E+00	1.89E-01
Bromomethane	1.60E-02	0.00E+00	0.00E+00	8.99E-04	1.18E-03	0.00E+00	2.08E-03
n-Butylbenzene	7.39E-02	0.00E+00	0.00E+00	4.16E-03	5.47E-03	0.00E+00	9.63E-03
sec-Butylbenzene	1.04E-01	0.00E+00	0.00E+00	5.82E-03	7.66E-03	0.00E+00	1.35E-02
tert-Butylbenzene	2.25E-02	0.00E+00	0.00E+00	1.26E-03	1.66E-03	0.00E+00	2.93E-03
Chloroform	8.06E-03	0.00E+00	0.00E+00	4.53E-04	5.97E-04	0.00E+00	1.05E-03
Carbon Disulfide	3.76E-02	0.00E+00	0.00E+00	2.11E-03	2.78E-03	0.00E+00	4.90E-03
Chlorobenzene	1.06E-03	0.00E+00	0.00E+00	5.96E-05	7.84E-05	0.00E+00	1.38E-04
Ethylbenzene	1.73E+00	0.00E+00	0.00E+00	9.70E-02	1.28E-01	0.00E+00	2.25E-01
Isopropylbenzene	5.00E-02	0.00E+00	0.00E+00	2.81E-03	3.70E-03	0.00E+00	6.51E-03
4-Isopropyltoluene	4.40E-02	0.00E+00	0.00E+00	2.47E-03	3.26E-03	0.00E+00	5.73E-03
Methylene Chloride	6.91E-02	0.00E+00	0.00E+00	3.88E-03	5.12E-03	0.00E+00	9.00E-03
Naphthalene	9.44E-01	0.00E+00	0.00E+00	5.31E-02	6.99E-02	0.00E+00	1.23E-01
n-Propylbenzene	5.72E-02	0.00E+00	0.00E+00	3.22E-03	4.24E-03	0.00E+00	7.45E-03
Toluene	4.95E-01	0.00E+00	0.00E+00	2.78E-02	3.66E-02	0.00E+00	6.44E-02
1,2,4-Trimethylbenzene	4.23E-02	0.00E+00	0.00E+00	2.38E-03	3.13E-03	0.00E+00	5.51E-03
1,3,5-Trimethylbenzene	3.49E-02	0.00E+00	0.00E+00	1.96E-03	2.58E-03	0.00E+00	4.55E-03
Xylenes (total)	1.17E+00	0.00E+00	0.00E+00	6.57E-02	8.65E-02	0.00E+00	1.52E-01
Methyl tert-butyl ether	1.84E-02	0.00E+00	0.00E+00	1.03E-03	1.36E-03	0.00E+00	2.40E-03
Styrene	1.29E-04	0.00E+00	0.00E+00	7.22E-06	9.51E-06	0.00E+00	1.67E-05
Tetrachloro-ethene	5.75E-02	0.00E+00	0.00E+00	3.23E-03	4.25E-03	0.00E+00	7.48E-03
1,1,1-Trichloroethane	4.39E-03	0.00E+00	0.00E+00	2.47E-04	3.25E-04	0.00E+00	5.72E-04
TPHg	2.94E+01	0.00E+00	0.00E+00	1.65E+00	2.18E+00	0.00E+00	3.83E+00
POC	3.58E+01	0.00E+00	0.00E+00	2.01E+00	2.65E+00	0.00E+00	4.66E+00
NPOC	3.82E-01	0.00E+00	0.00E+00	2.14E-02	2.82E-02	0.00E+00	4.97E-02

Table 16 – Total Abated Emission in Sequence including tented, not tented areas and three stockpiles

Chemical	Abated Emissions (lbs/yr)					
	Sequence A	Sequence B	Sequence C	Sequence D	Sequence E	Total
Acetone	3.79E-01	2.45E-01	3.41E-02	9.68E-02	3.78E-01	1.13E+00
Benzene	1.93E+00	8.69E-01	7.22E-01	4.61E-01	8.47E-01	4.82E+00
Bromomethane	1.84E-02	1.27E-02	5.05E-03	8.79E-03	1.90E-02	6.40E-02
n-Butylbenzene	7.60E-02	6.45E-02	7.63E-03	4.53E-02	7.84E-02	2.72E-01
sec-Butylbenzene	1.09E-01	9.06E-02	1.07E-02	5.78E-02	1.12E-01	3.79E-01
tert-Butylbenzene	2.37E-02	2.10E-02	2.32E-03	1.00E-02	2.49E-02	8.18E-02
Chloroform	7.80E-03	9.33E-03	2.60E-03	4.51E-03	8.00E-03	3.22E-02
Carbon Disulfide	2.99E-02	2.78E-02	4.18E-03	5.06E-02	3.21E-02	1.44E-01
Chlorobenzene	1.70E-04	1.78E-04	1.07E-04	2.74E-03	2.26E-04	3.42E-03
Ethylbenzene	1.26E+00	1.27E+00	1.20E+00	6.00E-01	8.33E-01	5.16E+00
4-Ethyltoluene	0.00E+00	3.47E-07	5.87E-07	7.04E-07	4.89E-07	2.13E-06
Isopropylbenzene	3.21E-02	3.04E-02	5.09E-03	9.70E-02	3.41E-02	1.99E-01
4-Isopropyltoluene	4.92E-02	4.18E-02	4.55E-03	1.26E-02	5.06E-02	1.59E-01
Methylene Chloride	1.52E-01	2.21E-02	1.12E-02	2.21E-02	3.81E-02	2.45E-01
Naphthalene	4.21E-01	4.09E-01	1.59E-01	4.02E-01	4.99E-01	1.89E+00
n-Propylbenzene	5.13E-02	4.34E-02	5.88E-03	6.26E-02	5.34E-02	2.17E-01
Toluene	4.02E-01	4.69E-01	3.79E-01	2.00E-01	1.34E-01	1.58E+00
1,2,4-Trimethylbenzene	5.49E-02	3.52E-02	4.35E-03	1.28E-02	4.40E-02	1.51E-01
1,3,5-Trimethylbenzene	3.97E-02	3.27E-02	3.61E-03	9.88E-03	3.98E-02	1.26E-01
Xylenes (total)	1.03E+00	1.10E+00	1.17E-01	2.66E-01	5.54E-01	3.07E+00
Methyl tert-butyl ether	1.21E-02	3.09E-03	1.85E-03	4.19E-03	3.93E-03	2.51E-02
Styrene	2.06E-05	2.16E-05	6.00E-01	2.68E-01	2.75E-05	8.68E-01
Tetrachloroethene	9.21E-03	3.92E-02	5.76E-03	1.31E-02	1.23E-02	7.95E-02
1,1,1-Trichloroethane	7.04E-04	3.01E-03	4.41E-04	1.09E-03	9.39E-04	6.19E-03
TPHg	2.23E+01	2.25E+01	2.95E+00	6.69E+00	2.18E+01	7.63E+01
Volatile Hydrocarbons	2.84E+01	2.73E+01	6.23E+00	9.40E+00	2.56E+01	9.70E+01
POC	2.79E+01	2.70E+01	6.19E+00	9.28E+00	2.52E+01	9.56E+01
NPOC	5.30E-01	2.99E-01	4.53E-02	1.19E-01	4.17E-01	1.41E+00

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