



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

March 31, 2021

Roberto Puga
Principal of Trustee
Vernon Environmental Response Trust (ID 193552)
2700 S. Indiana Street
Vernon, CA 90058

SUBJECT: Administrative RECLAIM/Title V Facility Permit Revision:
Change of Ownership

Dear Mr. Puga:

Enclosed is the revised RECLAIM/Title V Facility Permit for Vernon Environmental Response Trust located at 2700 S. Indiana Street, Vernon, CA reflecting a change of ownership/operator of the facility as shown in the table below and includes Administrative Permit Revisions for Section D, Section I, Section K, Appendix A, and Appendix B.

	Facility Name	Facility ID	Facility Location Address
Previous	Exide Technologies, LLC	124838	2700 S. Indiana St., Vernon, CA 90058
New	Vernon Environmental Response Trust	193552	2700 S. Indiana St., Vernon, CA 90058

This change of ownership/operator was processed under A/N 627472 and involved changing all the permit sections of the RECLAIM/Title V Facility Permit to reflect the new facility name, ID number, responsible official and contact person.

Section D: Facility Description and Equipment Specific Conditions

New Application Number	Previous Application Number	Equipment	Description
--	--	--	Remove Facility Condition No. F67.2
--	--	--	Add Facility Condition No. F67.3
627459	598313	Floor Sweep, HEPA	Remove Condition No.

New Application Number	Previous Application Number	Equipment	Description
		Vacuum	E448.15 and update rule tag
627460	598314	Floor Sweep, HEPA Vacuum	Remove Condition No. E448.15 and update rule tag
627461	598315	Floor Sweep, HEPA Vacuum	Remove Condition No. E448.15 and update rule tag
--	--	E147: R219 Refrigeration Units	Removed from facility and permit
--	--	E148: R219 Cleaning Equipment	Removed from facility and permit
--	374197	D97, C98	Inactivated per Form 200-C; removed from permit
--	374247	D58-D69, D74-D96, D152-D155	Inactivated per Form 200-C; removed from permit
--	496419	C162, C163, D164	Inactivated per Form 200-C; removed from permit
--	501056	C179, C182	Inactivated per Form 200-C; removed from permit
--	517319	C185	Inactivated per Form 200-C; removed from permit
--	558210	C193	Inactivated per Form 200-C; removed from permit
--	558211	C194	Inactivated per Form 200-C; removed from permit
--	578643	C46, S140, C196	Inactivated per Form 200-C; removed from permit
--	598317	C211	Inactivated per Form 200-C; removed from permit

Section I: Compliance Plans & Schedule

New Application Number	Previous Application Number	Equipment	Description
627467	580051	--	Rule 1420.1 Compliance Plan
627468	585141	--	Rule 1420.1 Compliance Plan
627471	R-605703	--	Rule 1420.1(p)(2) Compliance Plan

Equipment List Summary

Current		Previous		Device ID	Equipment Description
Appl. No.	Permit No.	Appl. No.	Permit No.		
627454	G64771	501062	G14044	C181	Floor Sweep, Walk Behind
627455	G64792	587370	G46618	C207	Floor Sweep, Walk Behind
627457	G64793	520477	G20769	C190	Building Enclosure, Baghouse Area
627458	G64794	591485	G49407	D178	Truck Washing Station
				C180	Wash Station Enclosure
627459	G64795	598313	G49403	C208	Floor Sweep, HEPA Vacuum
627460	G64796	598314	G49404	C209	Floor Sweep, HEPA Vacuum
627461	G64797	598315	G49405	C210	Floor Sweep, HEPA Vacuum
627462	G64798	520575	G20722	C38	Dust Collector
				C186	Dust Collector
				S187	Stack
627463	G64799	520577	G20761	C39	Dust Collector
				C188	Dust Collector
				S189	Stack
627464	G64800	546549	G45399	C159	Cyclone
				C160	Central Vacuum System A Baghouse
				D161	Floor Sweep
				C48	Baghouse
				C192	Dust Collector
				S142	Stack
627465	G64801	558214	G45402	C156	Baghouse No. 1
				C200	Dust Collector
				C157	Baghouse No. 2
				C201	Dust Collector
				S158	Stack
627466	G64802	578644	G46617	C47	Baghouse
				C195	Dust Collector

Current		Previous		Device ID	Equipment Description
Appl. No.	Permit No.	Appl. No.	Permit No.		
				S141	Stack
627467	--	580051	--	--	Rule 1420.1 Compliance Plan – Closure Plan
627468	--	585141	--	--	Rule 1420.1 Compliance Plan – Ambient Air Sampling Monitors and Wind Station Compliance Plan
627471	--	R-605703	--	--	Rule 1420.1 Compliance Plan – Closure Implementation Plan

Section K: Title V Administration

This section has been updated to include current applicable rules and requirements.

Appendix A: NOx and Sox Emitting Equipment Exempt from Written Permit

Equipment	Description
Lab Equipment	Equipment has been removed from facility

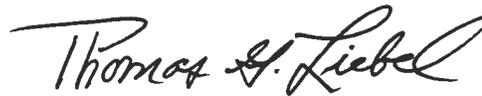
Please review the enclosed permit carefully. Also enclosed is a summary of the equipment list with the previous and current application and permit numbers. Effective upon receipt, the enclosed permit replaces in its entirety the previous RECLAIM/Title V Facility Permit issued to Exide Technologies, LLC under Facility ID 124838.

Appendix B: Rule Emission Limits

This section has been updated to include current applicable rules and requirements.

The operation of your facility is bound by the conditions and/or requirements stated in the Facility Permit to Operate. If you determine that there are administrative errors, or if you have any questions concerning changes to your permit, please contact Travis Rohde, Air Quality Engineer, (909) 396-2224 or trohde@aqmd.gov within 30 days of the receipt of your permit.

Very truly yours,



Thomas G. Liebel
Senior Engineering Manager
Engineering and Permitting

TGL: AS: MP: TR

cc: (w/enclosure)

Shelia Tsai, U.S. EPA (via cdx.epa.gov)

Scott Caso, Sr. Enforcement Manager – Compliance

Title V/RECLAIM Central File

A/N 627472 (TV Admin Revision)



FACILITY PERMIT TO OPERATE

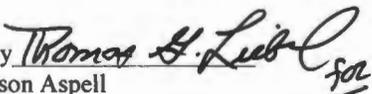
**VERNON ENVIRONMENTAL RESPONSE TRUST
2700 S INDIANA ST
VERNON, CA 90058**

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Wayne Nastri
Executive Officer

By 
Jason Aspell
Acting Deputy Executive Officer
Engineering and Permitting



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

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**FACILITY PERMIT TO OPERATE
VERNON ENVIRONMENTAL RESPONSE TRUST**

SECTION A: FACILITY INFORMATION

LEGAL OWNER &/OR OPERATOR: VERNON ENVIRONMENTAL RESPONSE TRUST

LEGAL OPERATOR (if different than owner):

EQUIPMENT LOCATION: 2700 S INDIANA ST
VERNON, CA 90058

MAILING ADDRESS: 2700 S INDIANA ST
VERNON, CA 90058

RESPONSIBLE OFFICIAL: ROBERTO PUGA

TITLE: PRINCIPAL OF TRUSTEE

TELEPHONE NUMBER: (714) 863-0484

CONTACT PERSON: ROBERTO PUGA

TITLE: PRINCIPAL OF TRUSTEE

TELEPHONE NUMBER: (714) 863-0484

TITLE V PERMIT ISSUED: May 26, 2017

TITLE V PERMIT EXPIRATION DATE: May 25, 2022

TITLE V	RECLAIM
YES	NOx: YES SOx: YES CYCLE: 1 ZONE: COASTAL



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. Total emission shall not exceed such annual allocations unless the operator obtains RTCs corresponding to the facility's increased emissions in compliance with Rules 2005 and 2007.

The level of Starting Allocation plus Non-Tradable Credits used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) - Trading Zone Restrictions is listed on the last page of this Section.

The following table lists the annual allocations that were issued to this facility and the amounts of RTCs held by this facility on the day of printing this Section.

RECLAIM POLLUTANT ANNUAL ALLOCATION (POUNDS)

Year Begin End (month/year)	Zone	RTC Initially Allocated	RTC Holding ¹ as of 03/31/2021 (pounds)	Non-Tradable ² Non-Usable RTCs (pounds)
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Footnotes:

1. This number may change due to pending trades, emissions reported under Quarterly Certification of Emissions Report (QCER) and Annual Permit Emission Program (APEP) Report required pursuant to Rule 2004, or deductions made pursuant to Rule 2010(b). The most recent total RTC information can be obtained from the District's RTC Listing.
2. The use of such credits is subject to restrictions set forth in paragraph of Rule 2002.



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SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. If the facility submits a permit application to increase in an annual allocation to a level greater than the facility's starting Allocation plus Non-Tradable credits as listed below, the application will be evaluated for compliance with Rule 2005 (c)(4). Rule 2005 (e) - Trading Zone Restrictions applies if an annual allocation is increased to a level greater than the facility's Starting Allocation plus Non-Tradable Credits:

Year Begin End (month/year)	Zone	NOx RTC Starting Allocation (pounds)	Non-Tradable Credits(NTC) (pounds)
1/1994 12/1994	Coastal	120555	0



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. If the facility submits a permit application to increase in an annual allocation to a level greater than the facility's starting Allocation plus Non-Tradable credits as listed below, the application will be evaluated for compliance with Rule 2005 (c)(4). Rule 2005 (e) - Trading Zone Restrictions applies if an annual allocation is increased to a level greater than the facility's Starting Allocation plus Non-Tradable Credits:

Year		Zone	SOx RTC	Non-Tradable
Begin	End		Starting Allocation	Credits(NTC)
(month/year)			(pounds)	(pounds)
1/1994	12/1994	Coastal	163915	0



**FACILITY PERMIT TO OPERATE
VERNON ENVIRONMENTAL RESPONSE TRUST**

SECTION C: FACILITY PLOT PLAN

(TO BE DEVELOPED)



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: SECONDARY METALS, LEAD SMELTING PROCESS					
System 6: FUGITIVE DUST CONTROL SYSTEM					
DUST COLLECTOR, WITH 208 CARTRIDGE FILTERS, EACH 1 FT.-2 IN. DIA. X 2 FT.-2IN. L., NORTH TORIT, MODEL DFT-4-208, WITH A 250 HP BLOWER AND A TRIBOELECTRIC-TYPE BROKEN FILTER DETECTOR A/N: 627462	C38	C186 C190		PM: (9) [RULE 404, 2-7-1986]	D12.1, D12.17, D381.1, E71.2, E102.1, E193.1, K67.1
DUST COLLECTOR, HEPA, 4 SECTIONS, WITH 60 PRE-FILTERS TOTAL, EACH 2 FT W. X 2 FT L. X 2 INCHES THICK, WITH 60 HEPA FILTERS TOTAL, EACH 2 FT W. X 2 FT L. X 11.5 INCHES THICK A/N: 627462	C186	C38 S187		PM: (9) [RULE 404, 2-7-1986]	D12.19, D323.1, E102.1, E448.1
STACK, HEIGHT: 120 FT ; DIAMETER: 7 FT A/N: 627462	S187	C186		PM: (9) [RULE 404, 2-7-1986]	D381.1
DUST COLLECTOR, WITH 208 CARTRIDGE FILTERS, EACH 1 FT.-2 IN. DIA. X 2 FT.-2IN. L., SOUTH TORIT, MODEL DFT-4-208, WITH A 250 HP BLOWER AND A TRIBOELECTRIC-TYPE BROKEN FILTER DETECTOR A/N: 627463	C39	CI88 C190		PM: (9) [RULE 404, 2-7-1986]	D12.1, D12.17, D381.1, E71.2, E102.1, E193.1, K67.1
DUST COLLECTOR, HEPA, 4 SECTIONS, WITH 60 PRE-FILTERS TOTAL, EACH 2 FT W. X 2 FT L. X 2 INCHES THICK, WITH 60 HEPA FILTERS TOTAL, EACH 2 FT W. X 2 FT L. X 11.5 INCHES THICK A/N: 627463	C188	C39 S189		PM: (9) [RULE 404, 2-7-1986]	D12.19, D323.1, E102.1, E448.1

- * (1) (1A) (1B) Denotes RECLAIM emission factor
- (3) Denotes RECLAIM concentration limit
- (5) (5A) (5B) Denotes command and control emission limit
- (7) Denotes NSR applicability limit
- (9) See App B for Emission Limits
- (2) (2A) (2B) Denotes RECLAIM emission rate
- (4) Denotes BACT emission limit
- (6) Denotes air toxic control rule limit
- (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
- (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: SECONDARY METALS, LEAD SMELTING PROCESS					
STACK, HEIGHT: 120 FT ; DIAMETER: 7 FT A/N: 627463	S189	C188		PM: (9) [RULE 404, 2-7-1986]	D381.1
ENCLOSURE, BUILDING, BAGHOUSE AREA, 140 FT W. X 320 FT L. X 79 FT H., APPROXIMATE DIMENSIONS A/N: 627457	C190	C38 C39 C156 C157			
System 9: REVERBERATORY AND SOFT LEAD REFINERY FURNACES APCS					
BAGHOUSE, WITH 450 HP BLOWER, 64000 SQ.FT. A/N: 627466	C47	S141 C195		PM: (9) [RULE 404, 2-7-1986]	D12.6, D12.10, D381.1, E102.1, E193.1
DUST COLLECTOR, HEPA, 8 SECTIONS, WITH 72 PRE-FILTERS TOTAL, EACH 2 FT. W. X 2 FT. L. X 2 INCHES THICK, WITH, 72 HEPA FILTERS TOTAL, EACH 2 FT. W. X 2 FT. L. X 1 FT. THICK A/N: 627466	C195	C47 S141		PM: (9) [RULE 404, 2-7-1986]	D12.19, D323.1, E102.1, E448.1
STACK, HEIGHT: 112 FT ; DIAMETER: 6 FT 11 IN A/N: 627466	S141	C47 C195			D381.1
System 10: REVERB FURNACE FEED ROOM APCS					
BAGHOUSE, NO. 1, WITH 494 BAGS, EACH 5 INCHES DIAMETER X 12 FEET LONG, PTFE MEMBRANE, MAC, MODEL 144MCF494, WITH A 150 HP BLOWER AND A BROKEN BAG DETECTOR, PULSE JET CLEANED A/N: 627465	C156	S158 C190 C200		PM: (9) [RULE 404, 2-7-1986]	D12.6, D12.10, D381.1, E102.1, E193.1

- * (1) (1A) (1B) Denotes RECLAIM emission factor
- (2) (2A) (2B) Denotes RECLAIM emission rate
- (3) Denotes RECLAIM concentration limit
- (4) Denotes BACT emission limit
- (5) (5A) (5B) Denotes command and control emission limit
- (6) Denotes air toxic control rule limit
- (7) Denotes NSR applicability limit
- (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
- (9) See App B for Emission Limits
- (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: SECONDARY METALS, LEAD SMELTING PROCESS					
DUST COLLECTOR, HEPA, WITH 25 PRE-FILTERS TOTAL, EACH 2 FT. W. X 2 FT. L. X 2 INCHES THICK, WITH, 25 HEPA FILTERS, EACH 2 FT. W. X 2 FT. L. X 1 FT. THICK A/N: 627465	C200	C156 S158		PM: (9) [RULE 404, 2-7-1986]	D12.19, D323.1, E102.1, E448.1
BAGHOUSE, NO. 2, WITH 494 BAGS, EACH 5 INCHES DIAMETER X 12 FEET LONG, PTFE MEMBRANE, MAC, MODEL 144MCF494, WITH A 150 HP BLOWER AND A BROKEN BAG DETECTOR, PULSE JET CLEANED A/N: 627465	C157	S158 C190 C201		PM: (9) [RULE 404, 2-7-1986]	D12.6, D12.10, D381.1, E102.1, E193.1
DUST COLLECTOR, HEPA, WITH 25 PRE-FILTERS TOTAL, EACH 2 FT. W. X 2 FT. L. X 2 INCHES THICK, WITH, 25 HEPA FILTERS, EACH 2 FT. W. X 2 FT. L. X 1 FT. THICK A/N: 627465	C201	C157 S158		PM: (9) [RULE 404, 2-7-1986]	D12.19, D323.1, E102.1, E448.1
STACK, HEIGHT: 120 FT ; DIAMETER: 6 FT A/N: 627465	S158	C156 C157 C200 C201		PM: (9) [RULE 404, 2-7-1986]	D381.1
System 11: CUPOLA FURNACE FEED ROOM APCS					
CYCLONE, SPENCER, MODEL CH950CB-MOD, HEIGHT: 7 FT ; DIAMETER: 4 FT 2 IN A/N: 627464	C159	C160 D161		PM: (9) [RULE 404, 2-7-1986]	D323.1, E102.1
BAGHOUSE, CENTRAL VACUUM SYSTEM A, SPENCER, MODEL JH9600B8-M, WITH 75 HP BLOWER, 468 SQ.FT. A/N: 627464	C160	C48 C159		PM: (9) [RULE 404, 2-7-1986]	D381.1, E102.1
FLOOR SWEEP, 50 TOTAL A/N: 627464	D161	C159		PM: (9) [RULE 404, 2-7-1986]	D323.1

- * (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: SECONDARY METALS, LEAD SMELTING PROCESS					
BAGHOUSE, WITH 300 HP BLOWER, 64000 SQ.FT. A/N: 627464	C48	C160 C192		PM: (9) [RULE 404, 2-7-1986]	D12.6, D12.10, D381.1, E102.1, E193.1
DUST COLLECTOR, HEPA, 8 SECTIONS, WITH 72 PRE-FILTERS TOTAL, EACH 2 FT. W. X 2 FT. L. X 2 INCHES THICK, WITH, 72 HEPA FILTERS TOTAL, EACH 2 FT. W. X 2 FT. L. X 1 FT. THICK A/N: 627464	C192	C48 S142		PM: (9) [RULE 404, 2-7-1986]	D12.19, D323.1, E102.1, E448.1
STACK, HEIGHT: 112 FT ; DIAMETER: 7 FT A/N: 627464	S142	C192			D381.1
Process 3: WASTE HANDLING					
System 11: VEHICLE WASH SYSTEM					
TRUCK WASHING STATION, VEVI, MODEL TW-2000, 11 FT-6 IN W. X 67 FT-1 IN L. X 3 FT-6 IN H., WITH A WASH BASIN, 11 FT-6 IN W. X 37 FT-0.5 IN L. X 3 FT-6 IN H. WITH A/N: 627458	D178			PM: (9) [RULE 405, 2-7-1986]	E448.5
ENCLOSURE, WASH STATION TUNNEL, 20 FT W. X 38 FT L. X 20 FT H. APPROXIMATE DIMENSIONS	C180			PM: (9) [RULE 405, 2-7-1986]	
System 12: PORTABLE VACUUM SWEEPING SYSTEM					

- * (1) (1A) (1B) Denotes RECLAIM emission factor
- (2) (2A) (2B) Denotes RECLAIM emission rate
- (3) Denotes RECLAIM concentration limit
- (4) Denotes BACT emission limit
- (5) (5A) (5B) Denotes command and control emission limit
- (6) Denotes air toxic control rule limit
- (7) Denotes NSR applicability limit
- (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
- (9) See App B for Emission Limits
- (10) See section J for NESHAP/MACT requirements

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FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 3: WASTE HANDLING					
FLOOR SWEEP, WALK BEHIND VACUUM SWEEPER, LEAD ABATEMENT, TENNANT, MODEL 3640E, 1-HP ELECTRIC, 2 FT-8 IN W. X 4 FT- 8 IN L. X 3 FT-2 IN H., WITH A HEPA FILTER A/N: 627454	C181			PM: (9) [RULE 404, 2-7-1986]	E448.4, K171.3
FLOOR SWEEP, WALK BEHIND VACUUM SWEEPER, LEAD ABATEMENT, TENNANT, MODEL 3640E, 1-HP ELECTRIC, 2 FT-8 IN W. X 4 FT- 8 IN L. X 3 FT-2 IN H., WITH A HEPA FILTER A/N: 627455	C207			PM: (9) [RULE 404, 2-7-1986]	E448.4, K171.3
FLOOR SWEEP, HEPA VACUUM LEAD ABATEMENT SYSTEM, NILFISK, MODEL ATTIX 44, CANISTER TYPE, 11 GALLON CAPACITY, 148 CFM RATED A/N: 627459	C208			PM: (9) [RULE 404, 2-7-1986]	E448.4, K171.3
FLOOR SWEEP, HEPA VACUUM LEAD ABATEMENT SYSTEM, NILFISK, MODEL ATTIX 44, CANISTER TYPE, 11 GALLON CAPACITY, 148 CFM RATED A/N: 627460	C209			PM: (9) [RULE 404, 2-7-1986]	E448.4, K171.3
FLOOR SWEEP, HEPA VACUUM LEAD ABATEMENT SYSTEM, NILFISK, MODEL ATTIX 44, CANISTER TYPE, 11 GALLON CAPACITY, 148 CFM RATED A/N: 627461	C210			PM: (9) [RULE 404, 2-7-1986]	E448.4, K171.3
Process 6: Rule 219 Exempt Equipment Subject to Source-Specific Requirements					

- * (1) (1A) (1B) Denotes RECLAIM emission factor
- (3) Denotes RECLAIM concentration limit
- (5) (5A) (5B) Denotes command and control emission limit
- (7) Denotes NSR applicability limit
- (9) See App B for Emission Limits
- (2) (2A) (2B) Denotes RECLAIM emission rate
- (4) Denotes BACT emission limit
- (6) Denotes air toxic control rule limit
- (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
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FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 6: Rule 219 Exempt Equipment Subject to Source-Specific Requirements					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E150			ROG: (9) [RULE 1113, 2-5-2016; RULE 1171, 2-1-2008; RULE 1171, 5-1-2009]	K67.4

- * (1) (1A) (1B) Denotes RECLAIM emission factor
 - (3) Denotes RECLAIM concentration limit
 - (5) (5A) (5B) Denotes command and control emission limit
 - (7) Denotes NSR applicability limit
 - (9) See App B for Emission Limits
 - (2) (2A) (2B) Denotes RECLAIM emission rate
 - (4) Denotes BACT emission limit
 - (6) Denotes air toxic control rule limit
 - (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 - (10) See section J for NESHAP/MACT requirements
- ** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.



**FACILITY PERMIT TO OPERATE
VERNON ENVIRONMENTAL RESPONSE TRUST**

SECTION D: DEVICE ID INDEX

**The following sub-section provides an index
to the devices that make up the facility
description sorted by device ID.**



**FACILITY PERMIT TO OPERATE
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SECTION D: DEVICE ID INDEX

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D161	3	1	11
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C192	4	1	11
C195	2	1	9
C200	3	1	10
C201	3	1	10
C207	5	3	12
C208	5	3	12
C209	5	3	12
C210	5	3	12



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F52.1 This facility is subject to the applicable requirements of the following rules or regulation(s):

Rule 1420.1

This facility shall comply with all requirements in Rule 1420.1 (p): Large Lead-Acid Battery Recycling Facility Closure Requirements.

[RULE 1420.1, 9-4-2015]

F67.3 The facility operator shall comply with all terms and conditions specified in Rule 2012, Appendix A, Chapter 1. The facility permit holder shall not be required to monitor or report NO_x emissions from equipment operated by contractors that does not contribute to the manufacturing process and which is exclusively used for environmental investigation, testing, or remediation.

[RULE 2012, 2-5-2016]

DEVICE CONDITIONS

D. Monitoring/Testing Requirements

D12.1 The operator shall install and maintain a(n) triboelectric-type broken bag detector to accurately indicate the existence of a leak in the cartridge filters.

The measuring device or gauge shall be accurate to within the limits defined in the calibration protocol from the manufacturer. It shall be calibrated once every 12 months.

The continuous monitoring system shall include visual and audio alarms.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C38, C39]

D12.6 The operator shall install and maintain a(n) differential pressure gauge to accurately indicate the differential pressure across the bags, in inches water column.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 204, 10-8-1993]

[Devices subject to this condition : C47, C48, C156, C157]

D12.10 The operator shall install and maintain a(n) sensor to accurately indicate the existence of a leak in the the baghouse bags.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C47, C48, C156, C157]

D12.17 The operator shall install and maintain a(n) differential pressure gauge to accurately indicate the differential pressure across the cartridge filters, in inches water column.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C38, C39]

D12.19 The operator shall install and maintain a(n) differential pressure gauge to accurately indicate the differential pressure across the the HEPA filter dust collector, in inches water column.

The pressure differential across the HEPA filter dust collector shall not exceed 4.0 inches water column.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1420.1, 9-4-2015]

[Devices subject to this condition : C186, C188, C192, C195, C200, C201]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

D323.1 The operator shall conduct an inspection for visible emissions from all stacks and other emission points of this equipment whenever there is a public complaint of visible emissions, whenever visible emissions are observed, and on a semi-annual basis, at least, unless the equipment did not operate during the entire semi-annual period. The routine semi-annual inspection shall be conducted while the equipment is in operation and during daylight hours.

If any visible emissions (not including condensed water vapor) are detected that last more than three minutes in any one hour, the operator shall verify and certify within 24 hours that the equipment causing the emission and any associated air pollution control equipment are operating normally according to their design and standard procedures and under the same conditions under which compliance was achieved in the past, and either:

- 1). Take corrective action(s) that eliminates the visible emissions within 24 hours and report the visible emissions as a potential deviation in accordance with the reporting requirements in Section K of this permit; or
- 2). Have a CARB-certified smoke reader determine compliance with the opacity standard, using EPA Method 9 or the procedures in the CARB manual "Visible Emission Evaluation", within three business days and report any deviations to AQMD.

The operator shall keep the records in accordance with the recordkeeping requirements in Section K of this permit and the following records:

- 1). Stack or emission point identification;
- 2). Description of any corrective actions taken to abate visible emissions;
- 3). Date and time visible emission was abated; and
- 4). All visible emission observation records by operator or a certified smoke reader.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995]

[Devices subject to this condition : C159, D161, C186, C188, C192, C195, C200, C201]

D381.1 The operator shall conduct an inspection for visible emissions from all stacks and other emission points of this equipment whenever there is a public complaint of visible emissions, whenever visible emissions are observed, and on a quarterly basis, at least, unless the equipment did not operate during the entire quarterly period. The routine quarterly inspection shall be conducted while the equipment is in operation and during daylight hours. If any visible emissions (not including condensed water vapor) are detected, the operator shall take corrective action(s) that eliminates the visible emissions within 24 hours and report the visible emissions as a potential deviation in accordance with the reporting requirements in Section K of this permit.

The operator shall keep the records in accordance with the recordkeeping requirements in Section K of this permit and the following records:

- 1). Stack or emission point identification;
- 2). Description of any corrective actions taken to abate visible emissions; and
- 3). Date and time visible emission was abated.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : C38, C39, C47, C48, S141, S142, C156, C157, S158, C160, S187, S189]

E. Equipment Operation/Construction Requirements



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

E71.2 The operator shall only use fire retardant filter media in this equipment during operation.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C38, C39]

E102.1 The operator shall discharge dust collected in this equipment only into closed containers.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1420.1, 9-4-2015]

[Devices subject to this condition : C38, C39, C47, C48, C156, C157, C159, C160, C186, C188, C192, C195, C200, C201]

E193.1 The operator shall operate and maintain this equipment according to the following requirements:



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- A. The triboelectric-type broken bag detector shall be maintained in full operation whenever the equipment it serves is in operation
- B. The operator shall operate and maintain the triboelectric-type broken bag detector with a continuous monitoring system consisting of visual and audible alarms.
- C. A printout of the high level alarm log shall be generated from the computer system interfaced with each broken bag detector system each calendar day. This printout shall be saved as a hard copy, or saved in electronic TIFF or PDF format each day. This printout shall display, in graphical form, the analog output signal from the triboelectric sensor.
- D. The detector shall be maintained in accordance with the specifications defined in the operating instructions from the manufacturer. The detector zero point calibration shall be performed not less than once every twelve months in accordance with the procedures specified by the manufacturer, as submitted by Exide Technologies under Application No. 466858, and/or as amended.
- E. Whenever the manufacturer(s) or current procedure(s) for setting the annual zero point on the triboelectric-type broken bag detectors changes, the operator shall submit a revised set of written procedures to the South Coast AQMD and shall make these procedures and associated records available upon request by South Coast AQMD personnel.
- F. For the purpose of this condition, a deviation shall be defined as the indication by the triboelectric-type broken bag detector alarm of the existence of a leak in the baghouse bags during the operation of the equipment it serves.
- G. Whenever a deviation occurs, the operator shall inspect this equipment to identify the cause of such a deviation, take immediate corrective action, and keep records of the duration and cause (including unknown cause, if applicable) of the deviation and the corrective actions taken.
- H. All deviations shall be reported to the South Coast AQMD on a semi-annual basis pursuant to the requirements specified in Condition Nos. 22 and 23 in Section K of



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

this permit. The semi-annual monitoring report shall include the total operating time of this equipment and the total accumulated duration of all deviations for each semi-annual reporting period specified in Condition No. 23 in Section K of this permit.

I. The operator shall inspect and maintain all components of this equipment on an annual basis in accordance with the manufacturer's specifications.

J. The operator shall keep adequate records in a format that is acceptable to the South Coast AQMD to demonstrate compliance with all applicable requirements specified in this condition for a minimum of five years.

[RULE 1420.1, 9-4-2015; RULE 204, 10-8-1993]

[Devices subject to this condition : C38, C39, C47, C48, C156, C157]

E448.1 The operator shall comply with the following requirements:

A. The HEPA filters used in this equipment shall be certified, in writing, by the manufacturer to have a minimum control efficiency of 99.97 percent on 0.3 micron particles.

B. Copies of the HEPA filter certifications shall be kept and maintained on file for a minimum of 5 years and shall be provided to South Coast AQMD personnel upon request.

[RULE 1420.1, 9-4-2015]

[Devices subject to this condition : C186, C188, C192, C195, C200, C201]

E448.4 The operator shall comply with the following requirements:



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- 1) The HEPA filters used in this equipment shall be certified by the manufacturer to have a minimum control efficiency of 99.97 percent on 0.3 micron particles.
- 2) Dust collected in this equipment shall only be discharged into containers which shall be maintained closed after the disposal of dust from this equipment.
- 3) After use and/or whenever maintenance is performed on the HEPA vacuum sweeper, this equipment shall only be disassembled, emptied and/or cleaned within a total enclosure building which is vented to air pollution control system(s) which are in full use and which have been issued Permits to Construct and/or Operate by the Executive Officer of the South Coast AQMD.
- 4) Visible emissions shall not be discharged from any point on this equipment.
- 5) Identification tag(s) or name plate(s) shall be displayed on this equipment to show manufacturer model no. and serial no. The tag(s) or name plate(s) shall be affixed to this equipment in a permanent and conspicuous location.

[RULE 1420.1, 9-4-2015]

[Devices subject to this condition : C181, C207, C208, C209, C210]

E448.5 The operator shall comply with the following requirements:



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

- 1) Vernon Environmental Response Trust shall maintain the Truck Wash Station in good operating condition at all times and shall use the station to wet wash all vehicles leaving the former process plant areas, except as otherwise provided below.
- 2) The operator shall develop an inspection protocol that is acceptable to the South Coast AQMD that shall be used for the quality control of inspections of each vehicle washed to ensure that the vehicle has been thoroughly cleaned. Written reports of each inspection shall be prepared and maintained for each shift. No vehicle shall exit the facility without passing inspection.
- 3) Oversized vehicles that cannot fit within the Truck Wash Station shall be washed using wet methods and/or wet wipes outside the Truck Wash Station. Inspections of these washed vehicles shall be completed following the South Coast AQMD-accepted inspection protocol and logged. All trucks washed outside the Truck Wash Station shall require a notification to the South Coast AQMD.
- 4) Maintenance and/or utility vehicles entering and leaving through 26th Street gate that do not carry any hazardous waste, and that did not enter a decontamination enclosure, are exempt from this condition.
- 5) Best practices for collecting and disposing of lead contaminated water and/or materials accumulated during the washing process shall be employed when operating the Truck Wash Station, and when washing oversized vehicles. Those practices shall include the minimization of the amount of water which is allowed to dry and be exposed to atmosphere prior to collection for treatment, and the containment of spent wet wipes in leak proof enclosed containers.
- 6) Whenever the Truck Wash Station is shut down due to malfunction or equipment failure, the operator shall submit a breakdown notification to the South Coast AQMD. In such breakdown events, the operator may wet wash vehicles outside the Truck Wash Station in accordance with subpart 3 of this condition.
- 7) All notifications made pursuant to subpart 6 of this condition shall be reported to (800) CUT-SMOG, not less than one (1) hour prior to commencing an alternative wet cleaning operation.



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SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

8) For the purpose of this condition, a deviation shall be defined as the shutdown of the Truck Wash Station due to malfunction or equipment failure or any other violation of any subpart of this condition.

9) Whenever a deviation occurs, the operator shall inspect this equipment to identify the cause of such a deviation, take immediate corrective action, and keep records of the duration and cause (including unknown cause, if applicable) of the deviation and the corrective actions taken.

10) All deviations shall be reported to the South Coast AQMD on a semi-annual basis pursuant to Condition Nos. 22 and 23 in Section K of this permit. The semi-annual monitoring report shall include the total operating time of this equipment and the total accumulated duration of all deviations for each semi-annual reporting period specified in Condition No. 23 in Section K of this permit.

11) If more than six deviations occur in any semi-annual reporting period specified in Condition No. 23 in Section K of this permit, the operator shall submit to the South Coast AQMD an application to modify the Rule 1420.1 Compliance Plan for Closure Activities (Plan). The Plan shall include a Quality Improvement Plan (QIP). The required Plan application containing the QIP shall be submitted to the South Coast AQMD within 90 calendar days after the due date for the semi-annual monitoring report.

12) The operator shall inspect and maintain all components of this equipment on an annual basis in accordance with the manufacturer's specifications.

13) The operator shall keep adequate records to demonstrate compliance with all the requirements in this condition. The records shall be kept in a format that is acceptable to the South Coast AQMD and kept for a minimum of five years.

[RULE 1420.1, 11-5-2010; RULE 1420.1, 9-4-2015; RULE 204, 10-8-1993]

[Devices subject to this condition : D178]



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SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

K. Record Keeping/Reporting

K67.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

The calendar dates on which calibrations of the triboelectric-type broken filter detector are performed.

A copy of the protocol from the manufacturer used to calibrate the triboelectric-type broken filter detector.

Documentation from the manufacturer certifying that all filter media used in this equipment is fire retardant.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C38, C39]

K67.4 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coating consisting of (a) coating type, (b) VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as supplied in g/l of coating, less water and exempt solvent, for other coatings.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[RULE 1113, 2-5-2016; RULE 1171, 2-1-2008; RULE 1171, 5-1-2009]

[Devices subject to this condition : E150]

K171.3 The operator shall provide to the District the following items:

The operator shall keep and maintain the following information and provide it upon request of South Coast AQMD personnel.

- 1) The information required by condition E448.4 part 5.
- 2) The number of working hours per day involving lead removal.
- 3) The date and time of each HEPA filter replacement.
- 4) A copy of the manufacturer's certification of efficiency for the HEPA filter(s).

[RULE 1420.1, 9-4-2015]

[Devices subject to this condition : C181, C207, C208, C209, C210]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION E: ADMINISTRATIVE CONDITIONS

The operating conditions in this section shall apply to all permitted equipment at this facility unless superseded by condition(s) listed elsewhere in this permit.

1. The permit shall remain effective unless this permit is suspended, revoked, modified, reissued, denied, or it is expired for nonpayment of permit processing or annual operating fees. [201, 203, 209, 301]
 - a. The permit must be renewed annually by paying annual operating fees, and the permit shall expire if annual operating fees are not paid pursuant to requirements of Rule 301(d). [301(d)]
 - b. The Permit to Construct listed in Section H shall expire one year from the Permit to Construct issuance date, unless a Permit to Construct extension has been granted by the Executive Officer or unless the equipment has been constructed and the operator has notified the Executive Officer prior to the operation of the equipment, in which case the Permit to Construct serves as a temporary Permit to Operate. [202, 205]
 - c. The Title V permit shall expire as specified under Section K of the Title V permit. The permit expiration date of the Title V facility permit does not supercede the requirements of Rule 205. [205, 3004]
2. The operator shall maintain all equipment in such a manner that ensures proper operation of the equipment. [204]
3. This permit does not authorize the emissions of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the Rules and Regulations of the SCAQMD. This permit cannot be considered as permission to violate existing laws, ordinances, regulations, or statutes of other governmental agencies. [204]
4. The operator shall not use equipment identified in this facility permit as being connected to air pollution control equipment unless they are so vented to the identified air pollution control equipment which is in full use and which has been included in this permit. [204]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION E: ADMINISTRATIVE CONDITIONS

5. The operator shall not use any equipment having air pollution control device(s) incorporated within the equipment unless the air pollution control device is in full operation. [204]
6. The operator shall maintain records to demonstrate compliance with rules or permit conditions that limit equipment operating parameters, or the type or quantity of material processed. These records shall be made available to SCAQMD personnel upon request and be maintained for at least: [204]
 - a. Three years for a facility not subject to Title V; or
 - b. Five years for a facility subject to Title V.
7. The operator shall maintain and operate all equipment to ensure compliance with all emission limits as specified in this facility permit. Compliance with emission limits shall be determined according to the following specifications, unless otherwise specified by SCAQMD rules or permit conditions: [204]
 - a. For internal combustion engines and gas turbines, measured concentrations shall be corrected to 15 percent stack-gas oxygen content on a dry basis and be averaged over a period of 15 consecutive minutes; [1110.2, 1134, 204]
 - b. For other combustion devices, measured concentrations shall be corrected to 3 percent stack-gas oxygen content on a dry basis and be averaged over a period of 15 consecutive minutes; [1146, 1146.1, 204]
 - c. For a large NO_x source, compliance with a RECLAIM concentration limit shall be measured over a continuous 60 minutes for that source; [2012]
 - d. For non-combustion sources, compliance with emission limits shall be determined and averaged over a period of 60 minutes; [204]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION E: ADMINISTRATIVE CONDITIONS

- e. For the purpose of determining compliance with Rule 407, carbon monoxide (CO) shall be measured on a dry basis and be averaged over 15 consecutive minutes, and sulfur compounds which would exist as liquid or gas at standard conditions shall be calculated as sulfur dioxide (SO₂) and be averaged over 15 consecutive minutes; [407]
- f. For the purpose of determining compliance with Rule 409, combustion contaminant emission measurements shall be corrected to 12 percent of carbon dioxide (CO₂) at standard conditions and averaged over 15 consecutive minutes. [409]
- g. For the purpose of determining compliance with Rule 475, combustion contaminant emission measurements shall be corrected to 3 percent of oxygen (O₂) at standard conditions and averaged over 15 consecutive minutes or any other averaging time specified by the Executive Officer. [475]
8. All equipment operating under the RECLAIM program shall comply concurrently with all SCAQMD Rules and Regulations, except those listed in Table 1 of Rule 2001 for NO_x RECLAIM sources and Table 2 of Rule 2001 for SO_x RECLAIM sources. Those provisions listed in Tables 1 or 2 shall not apply to NO_x or SO_x emissions after the date the facility has demonstrated compliance with all monitoring and reporting requirements of Rules 2011 or 2012, as applicable. Provisions of the listed SCAQMD rules in Tables 1 or 2 which have initial implementation dates in 1994 shall not apply to a RECLAIM NO_x or SO_x source, respectively. [2001]
9. The operator shall, when a source test is required by SCAQMD, provide a source test protocol to SCAQMD no later than 60 days before the proposed test date. The test shall not commence until the protocol is approved by SCAQMD. The test protocol shall contain the following information: [204, 304]
 - a. Brief description of the equipment tested.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION E: ADMINISTRATIVE CONDITIONS

- b. Brief process description, including maximum and normal operating temperatures, pressures, through-put, etc.
 - c. Operating conditions under which the test will be performed.
 - d. Method of measuring operating parameters, such as fuel rate and process weight. Process schematic diagram showing the ports and sampling locations, including the dimensions of the ducts/stacks at the sampling locations, and distances of flow disturbances, (e.g. elbows, tees, fans, dampers) from the sampling locations (upstream and downstream).
 - e. Brief description of sampling and analytical methods used to measure each pollutant, temperature, flow rates, and moisture.
 - f. Description of calibration and quality assurance procedures.
 - g. Determination that the testing laboratory qualifies as an "independent testing laboratory" under Rule 304 (no conflict of interest).
10. The operator shall submit a report no later than 60 days after conducting a source test, unless otherwise required by SCAQMD Rules or equipment-specific conditions. The report shall contain the following information: [204]
- a. The results of the source test.
 - b. Brief description of the equipment tested.
 - c. Operating conditions under which test will be performed.
 - d. Method of measuring operating parameters, such as fuel rate and process weight. Process schematic diagram showing the ports and sampling locations, including the dimensions of the ducts/stacks at the sampling locations, and distances of flow disturbances, (e.g. elbows, tees, fans, dampers) from the sampling locations (upstream and downstream).
 - e. Field and laboratory data forms, strip charts and analyses.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION E: ADMINISTRATIVE CONDITIONS

- f. Calculations for volumetric flow rates, emission rates, control efficiency, and overall control efficiency.
11. The operator shall, when a source test is required, provide and maintain facilities for sampling and testing. These facilities shall comply with the requirements of SCAQMD Source Test Method 1.1 and 1.2. [217]
12. Whenever required to submit a written report, notification or other submittal to the Executive Officer, SCAQMD, or the District, the operator shall mail or deliver the material to: Deputy Executive Officer, Engineering and Compliance, SCAQMD, 21865 Copley Drive, Diamond Bar, CA 91765-4178. [204]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION F: RECLAIM MONITORING AND SOURCE TESTING REQUIREMENTS

The Facility shall comply with all applicable monitoring and source testing requirements in Regulation XX. These requirements may include but are not limited to the following:

I. NO_x Monitoring Conditions

A. The Operator of a NO_x Major Source, as defined in Rule 2012, shall, as applicable:

Not Applicable

B. The Operator of a NO_x Large Source, as defined in Rule 2012, shall, as applicable:

Not Applicable

C. The Operator of a NO_x Process Unit, as defined in Rule 2012, shall, as applicable:

Not Applicable

II. NO_x Source Testing and Tune-up conditions

1. The operator shall conduct all required NO_x source testing in compliance with an SCAQMD-approved source test protocol. [2012]
2. The operator shall, as applicable, conduct source tests for every large NO_x source no later than December 31, 1996 and every 3 years thereafter. The source test shall include the determination of NO_x concentration and a relative accuracy audit of the exhaust stack flow determination (e.g. in-stack flow monitor or fuel flow monitor based F-factor calculation). Such source test results shall be submitted per the schedule described by APEP. In lieu of submitting the first source test report, the facility permit holder may submit the results of a source test not more than 3 years old which meets the requirements when conducted. [2012]
3. All NO_x large sources and NO_x process units shall be tuned-up in accordance with the schedule specified in Rule 2012, Appendix A, Chapter 5, Table 5-B. [2012]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION F: RECLAIM MONITORING AND SOURCE TESTING REQUIREMENTS

III. SO_x monitoring conditions

D. The Operator of a SO_x Major Source, as defined in Rule 2011, shall, as applicable:

Not Applicable

E. The Operator of a SO_x Process Unit, as defined in Rule 2011, shall, as applicable:

Not Applicable

IV. SO_x Source Testing Conditions

Not Applicable



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION G: RECORDKEEPING AND REPORTING REQUIREMENTS FOR RECLAIM SOURCES

The Facility shall comply with all applicable reporting and recordkeeping requirements in Regulation XX. These requirements may include but are not limited to the following:

- I. Recordkeeping Requirements for all RECLAIM Sources
- II. Reporting Requirements for all RECLAIM Sources

NO_x Reporting Requirements

- A. The Operator of a NO_x Major Source, as defined in Rule 2012, shall, as applicable:

Not Applicable

- B. The Operator of a NO_x Large Source, as defined in Rule 2012, shall:

Not Applicable

- C. The Operator of a NO_x Process Unit, as defined in Rule 2012, shall:

Not Applicable

SO_x Reporting Requirements

- D. The Operator of a SO_x Major Source, as defined in Rule 2011, shall, as applicable:

Not Applicable

- E. The Operator of a SO_x Process Unit, as defined in Rule 2011, shall:

Not Applicable



**FACILITY PERMIT TO OPERATE
VERNON ENVIRONMENTAL RESPONSE TRUST**

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

NONE



**FACILITY PERMIT TO OPERATE
VERNON ENVIRONMENTAL RESPONSE TRUST**

SECTION I: PLANS AND SCHEDULES

This section lists all plans approved by AQMD for the purposes of meeting the requirements of applicable AQMD rules specified below. The operator shall comply with all conditions specified in the approval of these plans.

- a. The operator does not have to comply with NOx or SOx emissions limits from rules identified in Table 1 or Table 2 of Rule 2001(j) which becomes effective after December 31, 1993.
- b. The operator does not have to comply with NOx or SOx emissions limits from rules identified in Table 1 or Table 2 of Rule 2001(j) after the facility has received final certification of all monitoring and reporting requirements specified in Section F and Section G.

Documents pertaining to the plan applications listed below are available for public review at AQMD Headquarters. Any changes to plan applications will require permit modification in accordance with Title V permit revision procedures.

List of approved plans:

Application	Rule
627467	1420.1
627468	1420.1
627471	1420.1(p)(2)

NOTE: This section does not list compliance schedules pursuant to the requirements of Regulation XXX – Title V Permits; Rule 3004(a)(10)(C). For equipment subject to a variance, order for abatement, or alternative operating condition granted pursuant to Rule 518.2, equipment specific conditions are added to the equipment in Section D or H of the permit.



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

ADMINISTRATIVE REQUIREMENTS

This facility shall be subject to the terms and conditions of this plan unless this plan is suspended, revoked, modified, reissued or denied. Failure to maintain a valid plan is a violation of Rule 1420.1.

It is the responsibility of the facility to comply with other District Rules and Regulations and with all laws, ordinances and regulations of other government agencies which are applicable to the operation of the equipment.

This plan does not authorize the emission of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the Rules and Regulations of the South Coast AQMD. This plan cannot be considered as permission to violate existing laws, ordinances, regulation, or statutes of the other governmental agencies.

CONDITIONS

1. Vernon Environmental Response Trust (VERT) shall implement all closure activities and associated lead mitigation measures as described in the Rule 1420.1 Closure Plans For Closure Activities (Plans) submitted under Application Nos. 580051 (December 2, 2015), 594187 (May 16, 2017), 605703 (June 25, 2018), 627467 (March 3, 2021), 627468 (March 3, 2021), and 627471 (March 3, 2021), including the most recent updates and amendments made to the plan (i.e. Appendix G of the DTSC Closure Plan dated December 8, 2016 and Attachments 14 and 15 of the Closure Implementation Plan dated September 29, 2017), and pursuant to all additional information provided to South Coast AQMD by VERT that has been incorporated into the said Compliance Plans. Where the requirements in Appendix G differ from the requirements in Attachment 14, the requirements in Attachment 14 shall be the overriding and applicable requirement. Any references to Exide or Exide Technologies in the Compliance Plans in Section I shall be considered references to VERT and VERT shall be responsible to comply with all of the requirements associated with the references or conditions.
2. The HAKI system (temporary Full Enclosure Unit) shall be configured and operated as described in the submitted Plan referenced above and, while in operation as a temporary closure for any closure activities, shall:
 - A. Vent to an emission collection system that ducts the entire gas stream which may contain lead or arsenic to an appropriate South Coast AQMD permitted control device;



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

- B. Maintain the ventilation at any opening, including but not limited to vents, windows, passages, doorways, bay doors, or roll-ups at a negative pressure of at least 0.02 mm of Hg (0.011 inches H₂O);
 - C. Have and maintain a digital differential pressure monitoring system equipped with a strip chart or electronic recorder. The digital differential monitoring system shall be capable of measuring and displaying negative pressure in the range of 0.01 to 0.2 mm Hg (0.005 to 0.11 inches H₂O) and shall be calibrated at least once every 12 calendar months (or more frequently if recommended by the manufacturer) and shall be equipped with a backup, uninterruptible power supply;
 - D. Maintain an in-draft velocity of 300 feet per minute or greater at any opening, including but not limited to vents, windows, passages, doorways, bay doors, or roll-ups as determined by placing an anemometer, or an equivalent device approved by the South Coast AQMD, at the center of the plane of any opening of the HAKI enclosure; and
 - E. To maintain functionality of the HAKI system and to protect human health and safety as per manufacturer recommendations, washing the roof of the HAKI is not required. On-going surveillance and inspection of the HAKI shall be performed to ensure integrity of the HAKI. Any holes or tears discovered in such surveillance and inspections shall be repaired as soon as it is practically possible.
3. In the event that the ambient air concentration of lead or arsenic are violated pursuant to Rule 1420.1 (d)(1) or (d)(5) VERT shall temporarily suspend the appropriate closure related activities that contributed to the exceedance until contingency measures in Section 5.2 of VERT's submitted Plan are implemented. If a previously unidentified activity which the contingency measures do not address contributes to the exceedances, then VERT shall, within 14 calendar days of the exceedance, file with the South Coast AQMD a revised Compliance Plan for Closure Activities. The revised Compliance Plan for Closure Activities must be approved by the South Coast AQMD before closure activities that contributed to the exceedance can resume.
 4. Any hot work (e.g. welding) type closure activity performed within the HAKI system that generates or has the potential to generate sparks shall require the use of fire blankets, water misting in the immediate hot work area, and a fire watch.
 5. Hand augering conducted during Closure (i.e. soil sampling and the installation of lysimeters) shall be subject to the following requirements:



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- A. 6-mil plastic sheeting shall be used to cover the work area directly adjacent to the hand augering area;
 - B. A fine water mist shall be sprayed while using the hand auger/slide hammer;
 - C. Following the completion of the hand augering/slide hammering and lysimeter installation, the plastic sheeting shall be vacuumed with a South Coast AQMD permitted HEPA filter vacuum cleaner and wiped with D-Wipe lead removing towelettes; and
 - D. After the hand auger is removed from the bore hole, the portion containing soil (the bucket end) shall be placed into a plastic bag prior to soil removal. The soil shall then be removed from the hand auger bucket while inside of the plastic bag and transferred from the plastic bag into a 5 gallon bucket (or other waste container) which shall be closed as soon as possible. If soil samples are collected, samples shall be sealed and bagged as soon as possible; and soil cuttings shall be placed into buckets or drums and covered as soon as feasible.
6. VERT shall implement all requirements contained in the Addendum for Application No. R-605703/627471 which contains a revision to the Mechanical Plan updated on August 15, 2019, beginning on Page 147 of Section I, and in the Memorandum of Understanding from the Department of Toxic Substances Control dated November 2, 2018, also contained in this Addendum.
 7. With regards to the Closure Implementation Plan Appendix 15 (Air Monitoring Plan) requirements contained in the Work Area Perimeter section on Page 117 of Section I, dust monitoring is not required to be conducted when a situation is deemed unsafe by the Closure Dust Mitigation Oversight Contractor.
 8. Roof washing on the upper roof section of the manufacturing building is no longer required due to worker safety concerns pursuant to the Exide letter dated November 12, 2019, identified on Page 166 of Section I.



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Rule 1420.1 Compliance Plan For Closure Activities

**CLOSURE PLAN
APPENDICES G AND H**

**VERNON ENVIRONMENTAL RESPONSE TRUST
VERNON, CALIFORNIA
(EPA ID NO. CAD 097 854 541)**

Prepared For:

**VERNON ENVIRONMENTAL RESPONSE TRUST
Vernon, California**

Prepared by:

**ADVANCED GEOSERVICES
West Chester, Pennsylvania**

**Project No. 2013-2993-21
February 13, 2014
Revised August 18, 2014
Revised September 30, 2014
Revised May 15, 2015
Revised July 28, 2015
Revised November 30, 2015**

Modified by:

**CALIFORNIA DEPARTMENT OF
TOXIC SUBSTANCES CONTROL**

Final December 8, 2016



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities

ENGINEERING CONTROLS PLAN

DTSC CLOSURE PLAN

AND

COMPLIANCE PLAN FOR CLOSURE ACTIVITIES

SCAQMD RULE 1420.1(p)

Prepared For:

**EXIDE TECHNOLOGIES
Vernon, California**

Prepared By:

**ADVANCED GEOSERVICES
West Chester, Pennsylvania**

Project No. 2013-2993-21

**May 15, 2015
Revised July 28, 2015
Revised November 24, 2015
Revised October 19, 2016**



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

1.0 INTRODUCTION

1.1 PURPOSE

This plan describes engineering controls to minimize release of liquids and fugitive emissions of lead and other toxic metals in air during closure of the Exide facility in Vernon, California. This document presents the general engineering control requirements for closure activities, as well as specific requirements for anticipated work activities for Phase 1 and Phase 2 closure.

1.2 SCOPE OF CLOSURE ACTIVITIES

The scope of closure activities, including work tasks, locations and estimated quantities, is provided in the Closure Plan. The scope of closure activities is not reiterated in this plan.

1.3 RCRA FACILITY INVESTIGATION

The RCRA Facility Investigation (RFI) may be implemented at the facility concurrent with closure activities. Engineering controls for the RFI are addressed in separate SCAQMD-approved mitigation plans and are not addressed in this plan.

1.4 COMPLIANCE PLAN

This plan addresses SCAQMD requirements and constitutes the Compliance Plan for Closure Activities per Rule 1420.1(p)(2).



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

2.0 ENGINEERING CONTROLS FOR LIQUID INFILTRATION

Closure activities generally include decontamination of equipment, areas and buildings with pressure washers. Engineering controls are intended to minimize infiltration of decontamination liquid into existing floors or pavement and sumps. Prior to wet decontamination, the concrete or asphalt floor surface will be vacuum cleaned to remove accumulated dirt, inspected for cracks and other damaged areas where liquids could infiltrate. Cracks will be vacuum cleaned to remove loose dust and dirt from within the cracks/damaged area. Vacuum cleaning will be performed using a SCAQMD-permitted HEPA vacuum. The cracks/damaged areas will be sealed by installing MasterSeal (Sonolastic) ® SL1™ or equivalent.

Concrete sumps will also be inspected for cracks and other areas where liquids could infiltrate. Cracks will be cleaned using a SCAQMD-permitted HEPA vacuum. HETRON® 922 Corrosion/Heat Resistant Epoxy Vinyl Ester Resin, or equivalent, will be applied to the bottom and interior sidewalls of concrete sumps with cracks, damage or exposed concrete in accordance with manufacturer's instructions.

Wet decontamination of equipment within the floor and sump area will occur following completion of curing in accordance with manufacturer's recommendations.



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

3.0 ENGINEERING CONTROLS FOR FUGITIVE EMISSIONS IN AIR

3.1 GENERAL

The goal of the engineering controls for fugitive emissions in air is to meet standard South Coast Air Quality Management District (SCAQMD) requirements pertaining to dust and emission controls to prevent emissions of lead and other toxic metals during the closure activities.

The closure activities for Phase 1 and assumed activities for Phase 2 are provided in the Closure Plan. Closure activities generally include the following potentially lead-dust generating activities:

Phase 1 (Closure)

- Inventory removal;
- Unit and equipment decontamination;
- Unit and equipment removal;
- Removal of emission control equipment filters;
- Emission control equipment (including ducts) decontamination and deconstruction;
- Building decontamination;
- Building gutting;
- Concrete milling, scarification and/or hydroblasting;
- Building deconstruction; and,
- Concrete, pavement, soil and soil gas sampling.

Phase 2 (Contingent Closure)

- Pavement removal;
- Soil excavation;
- Soil stabilization;
- Backfill;
- Grading;
- Cap installation;
- Paving;
- Monitoring well maintenance;
- Lysimeter installation; and,
- Soil gas sampling probe installation.

The closure activities will be conducted in accordance with SCAQMD Rule 1420.1 (h) (Housekeeping).

3.2 DEFINITIONS

High Efficiency Particulate Air (HEPA) Filter - a filter capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 micrometer in diameter or larger (SCAQMD Rule 1403).



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SCAQMD Business Days – Tuesday through Friday, excluding holidays.

3.3 WORK LOCATIONS

The location of closure activities is provided in the Closure Plan. Closure activities occur in one of two types of locations: (1) within an existing Total Enclosure Building, and (2) outside of an existing Total Enclosure Building.

3.3.1 Existing Total Enclosure Buildings

The existing Total Enclosure Buildings are as follows:

- Desulfurization Building (Mud Tank Building);
- RMPS Building;
- Reverb Feed Room Containment Building;
- Blast Feed Room Containment Building
- Baghouse Building; and,
- Smelter Building.

The following emission control equipment is currently operating at the facility and provides negative pressure for the aforementioned Total Enclosure Buildings. This emission control equipment is expected to remain in operation during closure with typical maintenance and repair until the equipment must be turned off, decontaminated and deconstructed as part of closure:

- Soft Lead Baghouse;
- Hard Lead Baghouse;
- Material Handling Baghouse;
- East and West MAC Baghouses;
- MAPCO Scrubber; and,
- North and South Torit Baghouses.

The existing operating air handling equipment will continue to operate to maintain negative pressure while decontaminating units and equipment, dismantling equipment, decontaminating building interiors, building gutting, and removal of metal wall and roof panels (i.e., de-skinning). At this point, only structural steel (i.e., columns, trusses) and concrete walls will remain. The existing emission control equipment will not be operated while removing structural steel or concrete walls (i.e., the baghouses and associated equipment will be turned off). The operating level of the equipment will be reduced as the size of the service area decreases to achieve negative pressure that meets the minimum requirements while maintaining a safe work environment (i.e., excessive negative pressure could pull the enclosure in on itself, putting personnel within at risk).

The air handling equipment at the existing Total Enclosures will maintain a negative pressure of at least 0.02 mm of Hg (0.011 inches of H₂O). Measurements will be conducted using the existing monitoring system or a temporary monitoring system. The in-draft velocity will be



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maintained at greater than 300 feet/minute and will be determined by placing an anemometer at the center of the plane of an existing equipment or mandoor of the Total Enclosure, or any opening that is readily accessible from the work area (i.e., ground surface or scaffold).

If the sequence of closure prevents existing emission control equipment from providing negative pressure for the aforementioned buildings, then existing equipment will be re-ducted to provide negative pressure, or a temporary negative air system with a SCAQMD-permitted HEPA filtration will be used. It is expected that the Torit and MAC Baghouses will provide negative pressure through building deconstruction.

An area for personnel to remove soiled personal protective equipment (PPE) and decontaminate boots will be located at each main entry point in the Total Enclosure.

The closure tasks occurring within Total Enclosure Buildings with existing operating emission control equipment and the associated engineering controls are summarized on the attached table.

3.3.2 Temporary Enclosures

Closure activities outside of Total Enclosure Buildings with existing operating emission control equipment will be conducted within temporary enclosures with a negative air system with SCAQMD-permitted HEPA filtration. The size of the enclosure will be dictated by the work task and size of equipment. The temporary enclosure will be constructed of a frame covered with 9 mil minimum heavy fire resistant reinforced plastic sheeting. The negative air unit will be sized to provide a minimum of 4 complete air changes per hour based on the size of the enclosure. The tent will be inspected hourly to ensure that there are no tears or leaks. Work inside the temporary enclosure will be suspended if a tear or leak is found until the tear or leak is repaired. Deconstruction of concrete and masonry walls may be performed without the use of enclosures if characterization chip sampling for the interior and exterior of the wall has been performed and the results demonstrate that the concrete has total lead concentrations less than 320 mg/kg. However, effective dust control and air monitoring measures will be used throughout the course of the work regardless of total lead concentrations.

A protective clothing change area will be established at the ingress/egress into the area. The change area will consist of a small tent placed immediately adjacent to the temporary enclosure. Poly sheeting will be installed between the temporary enclosure and the tent to seal off any openings and provide positive ventilation thru the change area. Personnel entering the work area will don PPE prior to entry and will remove the soiled PPE upon exit. Multiple layers of poly sheeting will be installed on the floor of the change area. The uppermost layer will be removed and bagged for disposal once personnel have removed their soiled PPE. The soiled PPE and plastic sheeting will be placed into a properly labeled container for offsite disposal.

The air handling equipment at the temporary enclosures will maintain a negative pressure of at least 0.02 mm of Hg (0.011 inches of H₂O). Measurements will be conducted using a temporary monitoring system. The in-draft velocity will be maintained at greater than 300 feet/minute (fpm) and will be determined by placing an anemometer at the center of the plane of an existing



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equipment or mandoor of the temporary enclosure, or any opening that is readily accessible from the work area (i.e., ground surface or scaffold).

If access into the temporary enclosure is required, an airlock-type temporary door with at least 300 fpm draft, verified using a handheld anemometer, will be constructed to provide access into and out of the temporary enclosure.

The work area will be vacuumed using a vacuum equipped with a SCAQMD-permitted HEPA filtration prior to the start of work and, at a minimum, at the end of each shift. More frequent cleaning using the SCAQMD-permitted HEPA vacuum will be performed if dust is present on the floor.

Once the work is complete, the roof and interior of the temporary enclosure will be cleaned using SCAQMD-permitted HEPA-equipped vacuums to remove any dust prior to removal. The interior of the temporary enclosure will be wiped down and sprayed with an encapsulant such as Fiberlock or similar before dismantling a temporary enclosure or removing plastic sheeting. Negative pressure will be operated for 30 minutes after spraying the encapsulant to allow the encapsulant to dry. Plastic sheeting will be folded in on itself as it is removed.

In the event that a temporary full enclosure is not physically feasible, work will be conducted within a partial enclosure. A partial enclosure is a structure comprised of temporary walls or partitions on at least three sides or $\frac{3}{4}$ of the perimeter and uses an existing permanent structure wall for the final wall. Enclosure performance criteria (negative pressure, draft etc.) described above will not be adjusted for partial enclosures.

It is anticipated that free-standing temporary enclosures will be constructed for the Oxidation Tank Area, Former WWTP, and WWTP. Where possible, temporary enclosures will be re-used. For example, the temporary enclosure for the Former WWTP may be sized so that it can be re-used at the WWTP.

The existing roof and columns at the Container Storage Areas, Drop Out System area, and West Yard Truck Wash will be used to support temporary enclosure walls. A temporary enclosure wall will separate the Central Container Storage Area (Unit 1) and the Drop Out System area.

Smaller moveable temporary enclosures will be used for activities outside of these areas, such as cleaning an individual inlet structure or sump, as they will be limited in size.

The closure tasks occurring within temporary enclosures are summarized on the attached table.

3.4 GENERAL ENGINEERING CONTROLS

3.4.1 General Methods

Exide and its contractors will implement the following general engineering controls at all locations to minimize emissions during implementation of the Closure Plan.



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- At the start of closure activities in a particular work area, accumulated dust in the work area that may contain lead or other toxic metals will be removed from horizontal surfaces, such as building columns, upper rafters and supports, and from equipment using wet wash down methods and/or SCAQMD-permitted HEPA- equipped vacuums. The dust will be collected and recycled at a secondary lead smelter or disposed off-site. Any large debris generated during the work shall be placed into bags or wrapped in poly sheeting prior to removal from the work area. At the Total Enclosure Building, the roll-up doors in the vicinity of the dust collection will be closed during dust removal.
- Any dust, dirt or sediment accumulations will be removed with a SCAQMD-permitted HEPA-equipped vacuum or wet methods. Brooms will not be used for dry sweeping, but may be used for scrubbing/cleaning a surface if the broom and the surface are wet. Use of shovels will be limited to those materials which cannot successfully be removed with a SCAQMD-permitted HEPA-equipped vacuum.
- During the actual work of removing the dust, dirt, sediment accumulations or waste material, the material shall be kept wetted or vacuumed to mitigate fugitive emissions produced at the work surface. All materials cleaned up from this work shall be collected and transported to a designated area inside the Total Enclosure for storage and disposal.
- The liquid run off from areas that are wetted shall be contained or directed into drains and collected for treatment so as not to allow the liquid run off to evaporate and cause a secondary means of dust to be entrained into the air
- All lead-contaminated equipment and materials will be stored in a manner that does not generate fugitive lead-dust, or will be cleaned by wet wash or a SCAQMD-permitted HEPA filter-equipped vacuum. Large piles of material will not be stored near the Total Enclosure roll-up doors to minimize the release of fugitive emissions through the rollup doors when open.
- Equipment and vehicles shall be decontaminated inside the Total Enclosure Building prior to exiting the building.
- No outside work will be performed when sustained winds exceed 12 MPH or instantaneous wind gusts exceed 20 MPH as measured by the Dust Mitigation Oversight representative with a Pocket Weather Tracker 4500NV.
- No work inside the Total Enclosures will be performed if the negative air system for the work area is not operating, and it is intended to be operating.
- All equipment, including SCAQMD-permitted HEPA-equipped vacuums and negative air pressure equipment, will have current SCAQMD permits to construct/operate. The permits shall be held by the Contractor or subcontractor conducting the work. Exide will not hold the permits.
- The established plant speed limit of 5 mph as required by the Basic Safety Orientation Form HS002, Rev 3.19.2014 shall be required of every employee, contractor and visitor.
- Exide will designate an environmental staff person whose responsibility it is to assure ongoing and sustained compliance with applicable SCAQMD Rules and Regulations. This environmental designee shall be trained and knowledgeable of



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Rule 1420.1 and Rule 1420 and be empowered to expeditiously employ sufficient mitigation measures and stop work to gain facility compliance.

- All facility trash and debris designated for offsite disposal will be placed in covered containers prior to transfer to a rolloff container within the Total Enclosure Building.
- All personnel shall ensure that all spent PPE (i.e., gloves, boots and Tyvek coveralls) are disposed in closed containers.
- The preferred method for metal cutting will be cold cutting. Cutting with torches will be conducted only if necessary. When the work includes “hot” techniques like cutting torches, welders, burners, etc., Exide’s HOT WORK PERMIT will be used.
- All records will be maintained by Exide and its contractors for 5 years. In addition, copies of all records will be furnished to DTSC at the end of construction activities.

3.4.2 Total Enclosure Buildings

The following activities will be performed inside the Total Enclosure Buildings.

Each overhead door location at the Total Enclosure Buildings will be equipped with potable water for decontamination of materials and equipment prior to transfer outside of the enclosure building. The overhead door will remain closed during all decontamination activities for material and equipment transfer to prevent the release of contaminated overspray out of the building. The decontamination area floor will be cleaned prior to removal of the piece of equipment to ensure lead residue is not transferred outside of the Total Enclosure Building.

It is anticipated that the Corridor will be used as a decontamination area for materials, equipment and vehicles to the extent possible during Phase 1.

Rollup doors of the Total Enclosure Buildings will be kept closed as much as possible during the closure activities. Additional detail is noted in Section 3.5.

3.4.3 Work Within Temporary Enclosures

All removed debris at temporary enclosure work areas shall be placed and sealed in 55-gallon drums or a lined hopper and taken to the Total Enclosure Building and deposited into the roll-off container. The exterior surfaces of the 55-gallon drums and hoppers shall be rinsed or wet cleaned prior to being taken outside of the temporary enclosure. Oversized debris not fitting within drums or hoppers shall be wrapped in plastic tarps or sheeting and sealed using adhesive tape. The plastic tarp or sheeting shall be rinsed or wet cleaned prior to removal from the temporary enclosure.

3.4.4 Drilling, Pavement Removal and Placement and Soil Activities

Drilling (excluding direct push and roto-sonic techniques), pavement removal and soil handling activities will be completed in an enclosure (total enclosure or temporary enclosure) with



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negative air and SCAQMD-permitted HEPA filtration. Direct push (geoprobe) and roto-sonic drilling techniques do not generate cuttings and may be performed without the use of an enclosure, although the sample extraction area shall be located within an enclosure.

Concrete or asphalt cutting/drilling may be performed outside Total Enclosure Buildings and will be conducted using wet methods to minimize generation of dust. The concrete being removed will be kept damp to minimize the generation of dust. Additional dust control will include applying a fine water mist directly on the work surface during the deconstruction activities. A fine water mist will also be applied to the concrete and soil as it is being excavated to minimize the generation of dust.

For areas where pavement must be removed, including drilling locations, grading of soils prior to pouring concrete or asphalt paving shall only be performed if soil surface that will be disturbed has a minimum 12% moisture content. Newly imported crushed aggregate or sand used as subgrade for new paving is not required to meet the 12% moisture requirement.

Any soil grading/leveling project with total lead concentrations over 320 mg/kg which has the potential to generate any dust shall be performed under temporary negative pressure enclosures maintained through the use of a SCAQMD-permitted HEPA negative air machines. Regardless of whether or not the grading is performed under temporary negative pressure enclosures, water or a stabilizing agent will be applied in sufficient quantities to prevent the generation of visible dust plumes when the work area is not immediately to be covered by plastic sheeting, geotextile fabric, newly imported subgrade, concrete, asphalt, or paving material. Effective dust control and air monitoring measures will be employed during all portions of the work regardless of total lead concentrations.

Any drilling, pavement removal and soil disturbing activities outside of the Total Enclosure Buildings will be performed only when sustained wind velocities are less than as noted in Section 3.4.1.

3.4.5 Waste Management

3.4.5.1 **Roll-off Containers**

All materials intended for off-site disposal or recycling will be washed as indicated in the Closure Plan prior to placement in a roll-off container. Roll-offs will be staged within the Total Enclosure to minimize trips into and out of the building as well as minimize the possibility of dust being released into the environment that could be generated when placing materials into the roll-off container. The roll-off will be similar to roll-offs currently in use at the facility. The roll-off container shall have metal or hard plastic covers and will be covered when not in use (i.e., when materials are not being actively placed into it). The exterior of the roll-off container will be decontaminated with potable water and tarped prior to removal from the Total Enclosure Building. Along with the tarping, shrink wrap plastic shall be applied over the tarp that shall extend from the top of the container to below the tarp on the container sides to further reduce the chance for fugitive emissions.



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Roll-off Containers will be totally contained where no dust or liquid leaking is allowed during transport. Containers used for debris collection, storage and transport, including but not limited to the roll-off containers, shall be completely sealed prior to transport across open areas of the facility outside of Total Enclosure Buildings.

3.4.5.2 Truck Trailers

The following procedures shall be used for loading of bulk waste material into truck trailers, including but not limited to feed material, plastic chips, sediment, residue, concrete or soil.

- Each end dump trailer will be inspected upon arrival to ensure that the vehicle is visually clean. The inspection will be noted on the pre-loading checklist (see attached Pre-Loading checklist). Trucks which are not visually clean will be turned away.
- The material shall be carefully loaded with front end loaders into leak proof / end dump trailers in a manner to prevent or minimize any fugitive dust generation during the loading operation. The use of water sprays on dusty stockpile material shall be utilized to help in fugitive dust control during loading. Also, water misting sprays shall be utilized at the loading point of the end dump trailers while the material is transferred into the trailers.
- Each end dump trailer shall be first inspected and examined to ensure there are no cracks or holes in the container prior to lining the containers in preparation for loading of the trailers. This inspection shall be noted on the pre-loading checklist (see attached Pre-Loading checklist).
- The end dump trailers are a leak-proof design and after inspection for cracks or holes in the container shall be lined at the facility with a single 10-mil poly propylene liner prior to loading any material. This will enhance the existing gasketed rear door.
- The 10-mil poly propylene liner shall be of such a dimension in length and width in order to make a "burrito" type enclosure around the loaded material using industrial type duct tape after the material has been loaded. This procedure mimics that used to transport material containing asbestos.
- The rib structure on top of the end dump trailers shall be rotated out of the way prior to lining, loading and completion of the burrito wrap. The rib structure shall then be rotated back into position for cleanup and securely covering the trailer with tarp material.
- The rib structure above the end dump trailer and the top edges of the trailer shall be completely wiped clean with wet cloth after completion of loading of the material into the trailer in order to remove any dust or debris collected on the ribs structure or top edges during the loading operation.
- After cleaning of the rib structure and top edges of the trailer, the outside of the trailer will be pressure washed to remove any dust or debris from the loading operations.
- Each end dump trailer shall be securely covered with a tarp system in a manner to cover all gaps and to provide for a sealed trailer during removal and shipment.



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- The tarped trailer and truck shall be first inspected to ensure that there are no gaps and that the container is fully secured and sealed and then power spray washed with city water to remove exterior dust from the trailer, tarp and truck.
- All of the above activities shall be conducted in the Reverb Feed Room Corridor section (with the door to the Corridor closed during loading and decontamination, and will be opened only during entry and exit) inside the Total Enclosure Building which is under negative pressure and which is vented to air pollution control system which is permitted by SCAQMD and is in full operation and is equipped with SCAQMD-permitted HEPA filtration.
- The truck and trailer will be inspected for adequacy of decontamination and complete a Decon Checklist (see attached Decon checklist).
- Trucks used for off-site shipments of material shall go through Unit 87, West Yard Truck Wash before leaving the facility. The trucks with the end dump trailers shall not be stored at the facility. Exide shall maintain records of washed trucks on the Truck Wash Log/Spread Sheet and records maintained inside the Bandini Street guard station, or other appropriate location at Exide, and made available to SCAQMD and DTSC staff, upon request.
- The transport trucks shall be dry and not dripping water from the trailer prior to leaving the facility. There can be no uncertainty regarding existence of any leaks vs. dripping of water from the West Yard Truck wash. Dripping of liquid waste during offsite transport is not allowed.

3.4.6 Scrap Metal Management

All scrap metal materials (pipe, ducting, panels) which are too large for the scrap roll-offs shall be cut down to shipping size within the remaining portions of the Total Enclosure Building or a temporary enclosure per Section 3.3.2. Sized scrap metal will be washed with potable water as indicated in the Closure Plan, and placed in roll-offs using the procedures in Section 3.4.5.

3.4.7 Electrical Supply

The facility's existing electrical service will be used to the extent possible during closure. If the existing electrical service is not available during a particular work task, temporary electrical power generators with SCAQMD and/or CARB permits (if applicable) will be used.

3.4.8 Modifications

Even with good planning and engineering controls implementation, elevated readings may occur at the ambient monitors. The work activities will be assessed and procedures modified as needed prior to resuming work.

3.5 SPECIFIC ENGINEERING CONTROLS

The following engineering controls will be implemented for the tasks shown.



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3.5.1 Inventory Removal

Removal of waste inventory shall be done either manually, with no tools, or with a variety of tools (such as shovels, bars, jack hammers and pumps) and utilizing mobile equipment to transport the materials. The removed materials shall be transported to the appropriate location for loading into a shipping container. The work area, including the floors adjacent to and around the specific material to be cleaned up, shall be cleaned of any dust by wet methods or vacuumed with a vacuum equipped with an SCAQMD-permitted HEPA filtration prior to the start of work. During the actual work of removing the material, the material shall be kept wetted to mitigate fugitive emissions produced at the point of impact.

3.5.2 Stack Capping

The stacks associated with existing emission control equipment shall be capped and sealed prior to decontamination and deconstruction of existing emission control equipment. The capping/sealing will be completed by installing a gasketed, steel plate to the top of the stack. The plate is secured to the stack by bolted flanges to tightly seal the plate and to prevent the plate from sliding off the stack in a windy condition. Since the stack is outside and above the roof of the Total Enclosure Building, the capping will occur outside of the Total Enclosure Building.

3.5.3 Stack and Ventilation A-Pipe Removal

The work will include the removal of the existing emission control equipment A-pipe, stacks and stack support structures which extend through the roof of the Total Enclosure Building.

3.5.3.1 Stack Removal

The stacks begin near the ground surface within the Total Enclosure Building, and extend upward through the roof and project above the roof to varying heights. A scaffold system will be installed on the roof to provide a means to construct a temporary enclosure per Section 3.3.2 around each existing stack support structure prior to their removal. The temporary enclosure will be large enough to enclose the roof opening required to remove the stack. The scaffold will be totally enclosed using reinforced fire resistant poly sheeting. The temporary enclosure will be operated under negative pressure and vented to a SCAQMD-permitted HEPA filtration control device. The roof in the area of the scaffolding will be cleaned using SCAQMD-permitted HEPA vacuums and washed prior to installation of the scaffolding. All water used for washing the roof areas shall be captured and treated properly to prevent a secondary means of fugitive emissions into the air.

Once the exterior scaffold has been erected and enclosed, the structure that supports the stack will also be wrapped with fire resistant poly sheeting to provide secondary protection. The installation of the secondary enclosure will be completed by accessing the pipe support structure from inside of the building. The support structure will be removed within the temporary enclosure. Roof sheet metal and roof structural steel will be removed within the temporary enclosure as needed to allow removal of the stack.



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Lifting lugs will be welded to the top of the stack. A minimum 9 mil plastic sheeting tube will be placed over the stack section which projects above the temporary enclosure. The plastic sheeting tube will be under negative pressure as it will be connected to the temporary enclosure at the stack support structure. A crane will be used to hold the weight of the stack. The stack will be cut using cold methods near the roof line and within the temporary enclosure. The cut section of stack will be lifted up and the end of the stack covered. The cut section will be lifted up above the roof and lowered to the ground. The hole in the roof will be covered until the next section of stack is ready to be removed. Additional sections of stack within the building will be removed using similar methods (i.e., cut, cover the end, lifted to above roof, lowered onto the ground). It is anticipated that each stack will be removed in approximately 3 sections. The roof of the temporary enclosure will be covered after all stack sections have been removed. Structural roof steel and sheet metal will be installed over the opening in the roof. The temporary enclosure will be removed.

3.5.3.2 A-Pipe Removal

The following tasks will be conducted to remove the A-pipe:

- Wash down the exterior of the A-pipe during roof decontamination.
- Install scaffolding for the temporary enclosure from the ground floor up through the roof and around the A-pipe.
- Install minimum 10-mil plastic on the temporary enclosure scaffold structure above the roof.
- Make an opening in the Smelter Building roof for negative air pressure into the temporary enclosure.
- Check for holes in the A-pipe and repair if needed with silicone, 18-gage sheet metal and self-tapping screws.
- Tap on the A-pipe to knock down any buildup inside the pipe and remove all debris.
- Wash the interior of the A-pipe with a 360-degree high pressure water spray head on a dolly connected to a cable at the top. Contain all water and transport to the wastewater treatment plant.
- Provide a crane to assist in the removal of the A-pipe.
- Provide cold cutting equipment and a portable SCAQMD-permitted HEPA vacuum for all cold cutting.
- Remove the A-pipe stairs and lower to the ground level within the temporary enclosure.
- Remove the east side of the A-pipe and lower to the ground within the temporary enclosure.
- Remove the west side of the A-pipe and lower to the ground within the temporary enclosure.
- Remove the A-pipe support bridge and lower to the ground within the temporary enclosure.



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- Cover the openings in the building roof and walls from the removal of the A-pipe using sheet metal, silicone sealant, and self-tapping screws. Openings will be covered for safety, maintenance of negative pressure, and roof washing.

3.5.4 Emission Control Equipment Removal

Spark arrestors or equivalent precautions will be employed when hot work will be vented to dry filter media. All materials removed will be washed with potable water prior to placement into a container for proper offsite disposal or recycling. Scrap metal management procedures in Section 3.4.6 will be used.

3.5.5 Baghouse Bag Removal

A temporary enclosure equipped with a SCAQMD-permitted HEPA-filter will be erected within the Total Enclosure across the top compartment doors of the baghouse and around the bottom collection hoppers of the baghouse. This enclosure is being put in place to prevent any fugitive dust from leaving the baghouse unit cells and lower hopper sections. These engineering controls shall prevent fugitives from the removal of old bags. Service platforms will be covered with plastic sheeting and extend up and over the handrails in order to contain any dust that may fall when removing the filters.

Filter bags will be removed from each cell and placed into a leak tight plastic bag and sealed. These bags shall be placed in a roll-off container that is staged inside of the Total Enclosure Building.

Accumulated dust will be removed from horizontal surfaces using wet wash down methods and/or SCAQMD-permitted HEPA vacuums. All collection hoppers and screw housings will be cleaned out using collection screws and SCAQMD-permitted HEPA vacuums. The plastic sheeting on the service platform will be rolled up after use and placed into a leak tight plastic or other impermeable material and then placed in a covered roll-off container. Equipment will be decontaminated by pressure washing and deconstructed.

3.5.6 Brick Removal

If the equipment containing brick can be moved (i.e., blast furnace crucible), the equipment will be moved to the decontamination area at the Corridor for removal of brick. The brick will be removed using wet deconstruction techniques, which will include pre-wetting the refractory brick and applying a fine water mist onto the surface being demolished. The brick will be transferred into a roll-off container or suitable shipping vehicle staged within the Total Enclosure Building. Once the brick has been removed, the remaining equipment will be cleaned by washing with potable water.

If the equipment containing brick cannot be moved, the brick will be pre-wetted at its current location and a fine water mist will be applied to the surface being demolished. The brick will be transferred into a roll-off container or suitable shipping vehicle staged within the Total Enclosure Building.



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3.5.7 Crack Sealing

Floor cracks will be cleaned and sealed prior to area or building decontamination as noted in Section 2.0. Cracks will be cleaned using a SCAQMD-permitted HEPA-vacuum and will have caulk applied. When sealing floor cracks in the Total Enclosure Building, the roll-up door in closest proximity to the work area shall remain fully closed during the activity to prevent any cross draft and for a period of one hour after completion of the repairs. Due to concerns with water infiltration into unsealed cracks, the floor surfaces will not be wetted down prior to the work.

3.5.8 Sump Sealing

Sumps will be cleaned and sealed prior to area or building decontamination as noted in Section 2.0. Depending on the sump condition, work may include wet cutting and jack hammering of coating and surface concrete, abrasive preparation of concrete surface, and application of chemical resistant coating. Work will be conducted in the Total Enclosure Building or in a temporary enclosure. All removed debris shall be placed and sealed in 55-gallon drums or a lined hopper and taken to the Total Enclosure Building and deposited into the roll-off container. The 55-gallon drums or hoppers shall be rinsed or wet cleaned prior to being taken outside of the temporary enclosure.

3.5.9 Decontamination

Engineering controls during decontamination of area and building walls, ceilings and floors will be provided by the negative pressure equipment associated with the Total Enclosure Building or temporary enclosure.

3.5.10 Deconstruction

The exact sequence of deconstruction of the RMPS Building, Reverb Feed Room, Baghouse Building and Smelter Building will be established during closure based on the Deconstruction Engineering Survey. The Blast Furnace Feed Room will likely be deconstructed first. The Baghouse Building will likely be deconstructed before the RMPS Building, Reverb Feed Room and Smelter Building as it is structurally dependent on the RMPS Building, Reverb Feed Room and Smelter Building. Existing operating emission control equipment associated with these areas (Soft Lead, Hard Lead, Material Handling, MACs, MAPCO Scrubber, Torits) will continue to operate until they are shut down, decontaminated and deconstructed in conjunction with the building deconstruction sequence. The Torits and the MACs will likely be used to maintain negative pressure during deconstruction.

Negative pressure will be maintained on the building while de-skinning (i.e., removing wall and roof panels) using existing emission control equipment or temporary equipment. A windbreak will be constructed on outside walls by putting heavy duty 10 mil minimum plastic sheeting on scaffolding or supported by structural building elements. The wall skin will be removed panel by panel using the following methods:



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- Spray panel to be removed with water to control dust expected at panel overlaps.
- Cut the fasteners and maintain panel in its original position.
- Vacuum dust accumulations within panel overlaps with SCAQMD-permitted HEPA vacuum.
- Wipe the overlaps and face of structural members with a damp rag or pressure wash the overlap to remove dust accumulations.
- Remove the panel and lower to the ground in a controlled fashion.

Following wall skin removal, the roof skin will be removed panel by panel using the following methods:

- Within an approximately 10 ft by 10 ft by 10 ft mobile negative pressure tent on top of the roof, remove 50% of the roof panel screws while vacuuming with a SCAQMD-permitted HEPA vacuum. Seal holes with silicone as the screws are removed.
- Cover roof panels with 10 mil minimum plastic sheeting and seal to the perimeter scaffolding and structures. Use rope or sand bags to hold the plastic sheeting in place as needed. This procedure will completely enclose the section of the roof to be removed with plastic sheeting.
- Use standoff supports with rounded ends to separate the plastic sheeting from roof panels without damaging the plastic sheeting. The standoff supports will be approximately 4 to 6 inches tall.
- Remove roof panels in small sections by cold cutting from inside the building while ensuring the 10-mil minimum plastic sheeting is not damaged. Remove the cut section and lower to the ground in a controlled fashion. It is anticipated that the roof panels will be removed in a row along the peak of the roof, parallel to the girt line, and then downwards row by row towards the roof/wall interface.
- As roof panels are removed, remove remaining screws connecting the roof panel to the structural steel from above or below the roof.
- As panels are removed, allow plastic sheeting to lay on structural steel. Use rope or cables between structural girts and trusses to create a grid to support the plastic sheeting.

Panels will be sorted by material type, and containerized for off-site recycling or disposal. The wall windbreak and roof plastic will be removed. Once the work is complete, the scaffolding and plastic will be cleaned using SCAQMD-permitted HEPA-equipped vacuums to remove any dust prior to removal. The interior of the windbreak will be wiped down and sprayed with an encapsulant such as Fiberlock or similar before dismantling the windbreak or removing plastic sheeting.

Negative pressure equipment will be shut down.

Structural steel for the walls and roof will be removed to the top of concrete wall using cold cutting and conventional equipment. The buildings will be systematically dismantled from the roof level down to the ground level. It is anticipated that gross deconstruction will be performed



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using large-tracked excavators (operating weight greater than 50,000 lbs) equipped with rotating shear or grapple attachments to cut and remove structural members down to the concrete slab/foundation level.

Concrete walls will be sampled on both sides to determine the lead content of the concrete. If the total lead concentration is above 320 mg/kg, then deconstruction must be performed within an enclosure operated under negative pressure. If total lead concentration is below 320 mg/kg, then enclosure and negative pressure are not required, but dust control and air monitoring measures will be used throughout the course of the work regardless of total lead concentrations. Concrete wall deconstruction to surrounding grade shall be performed using hydraulic hammers or concrete shears attached to standard construction equipment. Hydraulic hammers and shears shall be operated with continuous water spray/misting techniques to prevent generation of concrete dust.

High pressure water deconstruction techniques may be performed in limited areas in lieu of hydraulic hammers and concrete shears with water spray/misting techniques. High pressure water deconstruction can include the use of a "water knife" to cut concrete apart or high pressure nozzles to pulverize the concrete. By its very nature, deconstruction with high pressure water prevents the generation of dust, but requires the collection and management of large amount of water. This method also provides the ability to remove concrete surfaces to very discrete depths and horizontal limits.

3.5.12 Drilling

Soil sampling, soil gas sampling, lysimeter installation and soil gas probe installation will occur using drilling. Drilling techniques are expected to include direct push technology (i.e. Geoprobe), Rotosonic and/or hollow stem auger, and the specific technique for each location will be selected based on several factors, including: depth of required sampling, type of samples required, and contaminants of concern. Geoprobe and Rotosonic drilling have little to no potential for generation of dust because both techniques allow advancement of the boring without the creation of cuttings and collect a continuous sample in a plastic sleeve. Hollow stem auger drilling causes greater potential for fugitives, and its use will be minimized.

3.5.12.1 **Drilling Inside Total Enclosure Building**

Prior to the start of drilling activities within the Total Enclosure Building, the floor surfaces where the soil sampling is to take place shall be wetted down or power washed depending on how clean the concrete surface is. Water misting and wet dust suppression shall be done through the entirety of the project including but not limited to all concrete cutting, and jack hammering. The rollup door in proximity to the work area shall be closed at all times during sampling.

Concrete sections from the drilling not retained for laboratory analysis shall be placed into a roll-off container that is staged inside of the Total Enclosure Building. Roll-off management shall be as discussed in Section 3.4.5.



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To identify subsurface utilities, the sample location will be spray-painted or otherwise marked. At least 48 hours prior to drilling, Underground Service Alert (USA) will be called to identify subsurface utilities in public areas. A combination of previous utility locations, facility knowledge, hand augering the upper most 5 feet and/or private utility location will be used to identify subsurface utilities in privately owned areas.

3.5.12.2 Drill Site Preparation Outside Total Enclosure

The mitigation measures in this section are designed for drilling outside of the Total Enclosure Building. Drill site preparation will involve identifying subsurface utilities; coring or sawing through pavement materials; verifying the absence of subsurface utilities at the boring locations; setting up work zones; providing the containers required to contain waste materials; laying down polyethylene sheeting or equivalent to minimize the post-drilling cleanup operation; and setting up a sample examination area.

To identify subsurface utilities, the sample location will be spray-painted or otherwise marked. At least 48 hours prior to drilling, Underground Service Alert (USA) will be called to identify subsurface utilities in public areas. A combination of previous utility locations, facility knowledge, hand augering the upper most 5 feet and/or private utility location will be used to identify subsurface utilities in privately owned areas.

If the drill site is paved with concrete or asphalt, it will be cored or saw-cut to provide access to the underlying soil. The dimensions of the opening in the pavement will be large enough to accommodate the drill rig's auger/stem and/or lysimeter surface finishing, whichever is appropriate for the location. Coring or saw-cutting will be conducted as noted in Section 3.4.1.

Hand augering to clear the boring location for utilities will take place within the temporary enclosure equipped with SCAQMD-permitted HEPA filtration device for lead and operated under negative pressure. The clearance diameter should be at least as wide as the largest diameter hole that will be mechanically drilled. Location-specific conditions may require deeper clearance. The ground surface will first be covered with plastic sheeting, at least 10 mil or greater, extending to at least six feet beyond the boring location. The temporary enclosure will then be set into place over the boring location. No hand auger work will take place unless inside an enclosure with a SCAQMD-permitted HEPA filtration device for lead which is operating under negative pressure. The hand auger will be removed from the hole taking care to retain the subsurface material in the auger and a disposable aluminum pan placed under it. The subsurface material will be examined and logged, and any required samples collected for analysis. The excess material and the disposable pan will be placed in a sealed 55-gallon drum or lined hopper which is completely covered or tarped, except during loading. The drum or hopper is taken into the Total Enclosure where it is dumped into the roll-off. The roll-off is washed with potable water and shrink wrapped before being taken outside the Total Enclosure Building as noted in Section 3.4.5.1. After the boring location is cleared for utilities, the plastic sheeting will be vacuumed with a vacuum equipped with a SCAQMD-permitted HEPA filter for lead.



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The work support zone will be delineated in the field using a combination of orange traffic cones, barricades, and yellow caution tape as necessary. The dimensions of the zone will be established in the field based on site-specific geography. At a minimum, the work zone will be large enough to accommodate the drill rig, any required support vehicles, waste containers, and a sample processing area. The sample processing area may be located at a location near the work zone if adequate space is not present at the drilling location.

The area around the boring site, underneath the drill rig, connected support truck, sample processing area, and the waste containers will be protected by laying down heavy-gauge (10 mil or greater) polyethylene sheeting. The edges of the plastic sheeting will be secured to prevent unintended uplift from wind. A second layer of sheeting will be placed over the primary layer and will generally extend at least 6 feet from the boring location. Second layers of sheeting will not be used in walking areas due to slippery conditions. A wind screen will be set up on the upwind side of the proposed boring between 5 and 10 feet from the boring location. At the end of each working day, the plastic sheeting will be vacuumed with a vacuum equipped with a SCAQMD-permitted HEPA filter for lead. On completion of drilling operations, the polyethylene sheeting will be rolled up and disposed of along with other miscellaneous solid wastes in sealed drums or lined hopper, and the borings will be grouted.

3.5.12.3 Direct-Push Drilling

Shallow soil borings, including soil gas probes, proposed to be drilled to depths up to 72 ft bgs (below ground surface) are expected to be completed by direct push drilling methods with a truck-mounted rig. Direct push refers to tools and sensors that are “pushed” into the ground without the use of drilling to remove soil or to make a path for the tool. A Geoprobe® direct-push rig relies on a relatively small amount of static (vehicle) weight combined with percussion as the energy for advancement. Direct push drilling is one of the faster methods of drilling and sampling shallow borings and does not generate soil cuttings. The Geoprobe® system uses hollow, steel push rods ranging from 1-inch to 3.25-inches in diameter and are typically four feet in length. As the push rod is advanced into the ground, additional lengths of rod are added. Various sampling tools can be attached to the rods to allow for continuous or depth-discrete soil sampling.

3.5.12.4 Rotosonic Drilling

Rotosonic drilling is typically used for monitoring well installation. Monitoring well installation is not anticipated during the closure activities; however, the procedures have been provided in the event they are needed.

Rotosonic drilling utilizes high-frequency resonant energy to advance an outer, temporary conductor casing(s) and an internal core barrel into the underlying formation(s). Hydraulic motors on the drill head oscillate internal unbalanced weights. As a result of the weights being unbalanced, extreme vibrations are created in the drill stem allowing the drill to penetrate virtually any material with minimal side wall disturbance. In addition to the vibration, rotosonic drilling uses both rotation and down pressure of the drill casing to advance the borehole. The core barrel provides a continuous core of subsurface materials, while the conductor casing



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stabilizes the boring and provides a temporary seal of water-bearing unit(s) during coring. Rotosonic drilling also allows for telescoping of multiple outer conductor casings to seal-off multiple water-bearing units as needed.

MATERIALS AND EQUIPMENT: The following materials and equipment are required for implementation:

1. Rotosonic drill rig and associated equipment and materials;
2. Plastic Sheeting (10-mil min.);
3. Duct tape;
4. Flat shovel;
5. Hose and spray nozzle;
6. Hand auger;
7. Covered containment vessel for soil cuttings (drums, hopper or roll-off bin);
8. Plastic sleeves (socks) for core samples;
9. Portable safety/windscreen (4-ft high and 10-ft long min);
10. Four-sided temporary enclosure constructed of fire resistant poly sheeting fitted over a PVC frame and equipped with a SCAQMD-permitted HEPA filtration device for lead and operated under negative pressure while work is being performed; and,
11. Absorbent booms or pads.

The following procedures are based upon ASTM D6914-04 (2010) "Standard Practice for Sonic Drilling for Site Characterization and the Installation of Subsurface Monitoring Devices."

Preliminary Set up

1. Spread double layer of 10-mil reinforced plastic sheeting over work area with proposed boring no closer than 6-ft from any edge. Secure edges using duct tape or sand bags to prevent unintended uplift from wind or equipment. Spread a single layer of plastic sheeting of 10-mil in any area of foot traffic including the path to and beneath the enclosure for examination of soil samples if one is being used and secure edges with duct tape or sand bags. Spread double layer of 10-mil reinforced plastic sheeting over work area with proposed boring no closer than 6-ft from any edge. The second layer of plastic is not used in walking areas due to slippery conditions. Secure edges using duct tape or sand bags to prevent unintended uplift from wind or equipment. Spread a single layer of 10-mil plastic sheeting in any area of foot traffic including the path to and beneath the enclosure for examination of soil samples if one is being used and secure edges with duct tape, unless the soil examination area is a significant distance away and facility traffic crosses the path. In this situation, the samples will be double-lined with two layers of plastic socks.
2. Erect safety/wind screen on upwind side of proposed boring between 5 and 10 feet from location of boring. Distance may be greater than 10 feet if lead driller believes proximity will create a safety hazard for proposed drilling operations.



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(Note plastic sheeting is not expected to extend to safety/wind screen, although efforts shall be made to limit foot traffic beyond plastic sheeting).

3. Connect hose with nozzle to water source and activate water source and confirm sprayer is operational.
4. Examination of soil samples outside of the Total Enclosure Building will be done within the temporary enclosure equipped with SCAQMD-permitted HEPA air filtration device for lead and operated under negative pressure while soil examination is taking place.
5. Utility Clearance will be conducted as noted in Section 3.5.12.1.
6. If excess soil comes in contact with the exterior ground surface, it shall be immediately removed by means of a vacuum equipped with a SCAQMD-permitted HEPA filter for lead. In the event that a large amount of soil comes in contact with the ground surface, it shall be removed using a flat shovel or similar tool that will minimize damage to the plastic sheeting and then vacuumed using a SCAQMD-permitted HEPA filter for lead. Constant and direct water spray shall be applied as the soil is removed and placed in the appropriate waste containment vessel. If excess water begins to pond, the driller shall reduce the amount of water being applied and deploy absorbent booms or pads to control runoff.

Drilling

1. Once the borehole has been adequately cleared, the outer temporary conductor casing (drill casing) and inner core barrel are alternately advanced. The outer drill casing, constructed of flush-threaded carbon steel in 5 and 10-foot lengths, will be used as a temporary conductor casing and remain in the ground to prevent borehole collapse and to prevent cross communication between water-bearing units as the inner core barrel is advanced and then retracted for the collection of lithologic samples. The length of individual retrieved lithologic cores may vary between a few feet and ten feet, depending upon recovery percentages.
2. The diameter of the outer drill casing and core barrel will be determined by location-specific goals and the need for temporarily sealing of shallow water-bearing units, but the planned 4-inch diameter wells will be set in nominally 8-inch diameter casings. The inner core barrel diameter is generally one to two inches smaller than the outer drill casing.
3. Once the inner core barrel is retracted, a clear plastic sock shall be placed over the core barrel and slight resonance shall be applied to reduce the friction between the core sample and the inside wall of the core barrel. The sample will then slowly extrude from the core barrel into the plastic sock for examination by the field geologist. The top of the plastic sock will be tied tightly to prevent the release of any of the subsurface material prior to being carried to the sample examination



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enclosure. Once the inner core barrel is retracted, two layers of clear plastic sock shall be placed over the core barrel and slight resonance shall be applied to reduce the friction between the core sample and the inside wall of the core barrel. The sample will then slowly extrude from the core barrel into the plastic sock for examination by the field geologist. The top of the plastic sock will be tied tightly to prevent the release of any of the subsurface material prior to being carried to the sample examination enclosure.

4. A temporary, above ground containment area filled with water shall be maintained surrounding the borehole, such that any excess spoils that may fall into the containment area would be submerged. When cleaning slough from the boring, soil shall be wetted, or placed directly in 10-mil plastic liners, and transferred to a suitable waste containment vessel. Soil temporarily placed in hoppers shall be routinely wetted and covered with 10-mil plastic sheeting.
5. When the borehole is advanced through artificial fill soil and penetrates approximately 5 feet into native sediments, and all spoils have been containerized, the top layer of plastic sheeting covering the borehole area shall be removed and placed in the waste containment vessel. Removal shall be performed by gently folding the plastic over on itself to contain any residual soil and to prevent dust dispersion. The underlying layer of plastic sheeting shall remain in-place until completion of drilling.
6. In general, experienced field geologists can visually examine and manually manipulate soil materials within the plastic sock such that the soil can be adequately described and classified. When closer examination of soil cores is deemed necessary by the field geologist, or if the core sample must be subsampled, it shall first be carried into the temporary enclosure before being cut open. Any slough present in the soil cores will be logged accordingly.
7. When relatively undisturbed soil samples are required, a California-modified, split spoon sampler may be used. Such samplers are advanced using a standard automatic hammer. Soil samplers shall only be opened within the temporary enclosure.
8. Upon completion of the drilling and management of soil cuttings, the work zone shall be cleaned up. The remaining layer of plastic sheeting shall be removed using techniques described above for the top layer. The resulting ground surface shall be vacuumed using a SCAQMD-permitted HEPA filter-equipped vacuum for lead and then inspected by on-site field representatives to ensure that materials associated with the drilling have been removed. If residual materials are still present, the area shall be vacuumed again and then washed down with water. Wash water shall be flushed into the on-site storm water management system or removed using a SCAQMD-permitted HEPA filter-equipped vacuum for lead.



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9. Sealed 55-gallon drums containing soils will be placed in either the Central Container Storage Area (Unit 1) or placed into a roll-off located within the Total Enclosure Building as directed by Exide. For drums placed in the Central Container Storage Area, they will be washed with potable water and staged until there are a sufficient number to be placed on a trailer or truck and taken to a landfill for proper disposal. For soils placed into a roll-off, the procedures in Section 3.4.5.1 will be used.
10. Drums containing plastic sheeting, absorbent booms and non-soil debris generated by the drilling operations may be taken to the Total Enclosure Building and placed into the tarped roll-off designated for such materials. The procedures in Section 3.4.5.1 will be used.
11. No work will be performed if sustained wind speeds exceed the speeds noted in Section 3.4.1.

Preparation for Well Construction

1. When the targeted aquitard is encountered, the outer casing will be advanced into the aquitard and soil cuttings will be removed from the casing using the core barrel.
2. The outer casing will then be retracted approximately one foot and the borehole gauged to ensure that it had remained open.
3. Upon confirmation of an open borehole, medium bentonite chips will be emplaced, extending from the bottom of the borehole to at least five feet up into the outer casing.
4. The outer casing will then be retracted an additional foot to allow the chips to completely fill the boring annulus.
5. Finally, the outer casing will be keyed into the aquitard by advancing the casing through the bentonite seal and at least one foot into the undisturbed aquitard materials.
6. To verify the efficacy of the seal, standing groundwater will be bailed from the conductor casing and a Solinst™ water level meter will be used to record the rate of water level recovery. If the rate of recovery is less than 6 inches in two hours, the seal will be considered effective and drilling will be allowed to resume with a smaller diameter casing.
7. Upon reaching final depth, the well will be constructed following the Monitoring Well Installation and Field Sieve SOP's that are part of the approved RFI Work Plan. Typical proposed well construction diagrams are attached for reference.



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3.5.12.5 Well Construction

Shallow

Rotosonic drilling techniques with temporary conductor casing shall be used to drill and install the shallow monitoring wells.

A continuous core of soil (ASTM D 1586) shall be collected to document lithologic conditions. The well screen (typically 10 to 20 feet maximum saturated length) shall be set at the uppermost water-bearing zone (approximately 75 to 80 feet below ground surface (BGS)). The well screen length will also be based on the thickness of the aquifer of interest. The on-site geologist shall determine the final depth of the monitoring well by trying to finish drilling on top of a silty or clay unit.

To help ensure successful screening in the perched water bearing zone, the Geologist shall review boring logs from adjacent wells. Pilot boring at the location of proposed wells shall be completed prior to installation of the wells. The pilot borings shall be continuously sampled, the results compared against the previous boring logs and particular attention paid to the gradation and moisture beginning at 60 feet BGS. At the sign of first water, drilling will be advanced under the direction of the Geologist stopping periodically as deemed necessary by the Geologist to observed the accumulation of water in the boring. The bottom of the boring will be called by the Geologist when, based on professional judgment, a saturated zone capable of producing sufficient water for groundwater sampling using low flow techniques is encountered. The pilot boring shall penetrate at least 2 feet into the confining layer. Soil samples from the water bearing zone will be submitted for expedited gradation analysis and utilized to select the sand pack and screen materials. Temporary conductor casings shall remain in the hole while awaiting results of the gradation analysis unless it is more feasible to grout the hole in and drill a collocated boring to construct the well at a later time.

The wells shall be constructed with 4-inch diameter schedule 40 polyvinyl chloride (PVC) with factory slotted screens and riser casing. Wells installed during the Phase 3 RFI (MW-16 and MW-17) were both constructed using 20 feet of No. 0.010-in slot PVC screen and 2/16 sand. The well screens will be sand packed to approximately two feet above the top of the screen with No. 1 sand. A minimum two-foot thick bentonite seal will be installed on top of the sand pack. The remaining annulus of each borehole will be tremie-grouted to the surface using a 95 percent cement/5 percent bentonite grout.

Each shallow monitoring well will be completed with a minimum six-inch ID steel protective casing with a locking cap. The protective casing will extend from a depth of three to five feet BGS to approximately 2.5 feet above ground. A small drain hole in the protective casing will be located just above the surface seal. A neat cement or concrete seal will be placed around the protective casing to a depth of three to five feet BGS. A three-foot square well pad will be installed so that the surface slopes away from the well. Bumper guards consisting of cement or concrete-filled steel casing may be placed around the monitoring wells if the possibility of damage by vehicles exists. Wells completed in traffic and parking areas, or in visually obtrusive



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areas will be equipped with water-tight, 1-inch raised covers that will be set in a concrete pad as described above.

Deep

Rotosonic drilling techniques shall be used to drill and install the deep monitoring wells. A continuous core of soil (ASTM D 1586) shall be collected to document lithologic conditions. Deep wells will be temporarily cased into low permeability soil layers beneath the completion depth of the shallow wells. The boring will be initially advanced using 10-inch diameter temporary conductor casing to a minimum of 20 feet through the low permeability soil layer beneath the shallow wells. Once this targeted depth is reached, the shallow water bearing zone will be temporarily sealed.

Drilling into the underlying aquifer will be completed with 9-inch diameter temporary conductor casing. Drilling will be advanced under the direction of the Geologist stopping periodically as deemed necessary by the Geologist to observed the accumulation of water in the boring. The bottom of the boring will be called by the Geologist when, based on professional judgment, a saturated zone capable of producing sufficient water for groundwater sampling using low flow techniques is encountered. The wells shall be constructed with 4-inch diameter schedule 40 polyvinyl chloride (PVC) with factory slotted screens and riser casing. The sand pack and slot size of the well screen will be based on the results of field sieve analysis obtained from the pilot boring. However, based on recently constructed wells at the site, it is anticipated that the wells will be constructed using 2/16 sand with 0.010-in slotted screen. The well screens will be sand packed to approximately two feet above the top of the screen, with at least 1 foot of No. 1 sand as a transition sand pack. A minimum two-foot thick bentonite seal will be installed on top of the sand pack. The remaining annulus of each borehole will be tremie-grouted to the surface using a 95 percent cement/5 percent bentonite grout.

Each deep monitoring well will be completed with a minimum six-inch ID steel protective casing with a locking cap. The protective casing will extend from a depth of three to five feet bgs to approximately 2.5 feet above ground. A small drain hole in the protective casing will be located just above the surface seal. A neat cement or concrete seal will be placed around the protective casing to a depth of three to five feet bgs. A three-foot square well pad will be installed so that the surface slopes away from the well. Bumper guards consisting of cement or concrete-filled steel casing may be placed around the monitoring wells if the possibility of damage by vehicles exists. Wells completed in traffic areas, parking areas or in visually obtrusive areas will be equipped with water-tight, 1-inch raised covers that will be set in a concrete pad as described above.

The wells shall be completed and protected by traffic-rated well boxes (installed slightly above the ground surface to encourage surface drainage away from the well) or steel well protector (for "stick-up" wells).



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3.5.12.6 Well Development

Upon completion, but not sooner than 48 hours following completion of well construction, each well shall be developed to remove fine-grained material from the well casing, sand pack, and the adjacent formation. Development shall consist of the following steps:

1. Record static water level and total well depth.
2. Insert pump to mid-point of screened interval and begin pumping, or begin bailing, while recording turbidity and depth to water, until turbidity levels have stabilized. The pumping rate shall be selected so that the average entrance velocities exceed those anticipated during investigation and sampling activities (ideally 0.5 to 3.0 gpm). Water level measurements recorded at intervals during pumping shall be used to estimate the specific capacity and sustainable extraction rates of the wells for constant discharge aquifer testing, if such tests are judged necessary.
3. Discontinue pumping and perform surging. The wells shall be surged using tight-fitting, vented surge blocks to agitate the sand pack and draw fines from the sand pack and surrounding formation into the well casing. Do not use backwashing, surging, jetting or air lifting for well development. Do not add water to speed up the well development unless an approval is first obtained from DTSC.
4. Re-measure total well depth and repeat pumping and surging until turbidity levels at start of pumping are typically <5 nephelometric turbidity units (NTU).
5. The pH, electrical conductivity (EC), temperature, dissolved oxygen, turbidity, and oxygen reducing potential (ORP) of the extracted ground water shall be monitored periodically during well development. Well development data shall be recorded on well development log forms.
6. Complete a boring log and well construction log for the completed well providing date and time of construction, approximate location, well designation, materials of construction and dimensions (including diameter, total depth, etc.) and completion configuration.

3.5.12.7 Well Surveying

Each monitoring well will be surveyed for location and elevation. Well locations will be surveyed to the nearest 0.5 feet relative to the California State Plane Coordinate System. Wellhead elevations will be surveyed to the nearest 0.01 foot at a marked reference point on each well casing. The newly installed monitoring well will be surveyed within 30 days of the installation using conventional techniques utilizing the control points as reference points. If the impoundment is free of liquid at the time of the monitoring well survey, the location of each sump will also be surveyed and tied into the California State Plane Coordinate System. The surveying activities will be conducted under the direct supervision of a State of California



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licensed Professional Surveyor. The location of all benchmarks used in the survey, as well as the date(s) of the survey, will be documented in annual monitoring reports.

All wells should be re-surveyed as needed (e.g., re-surfacing, well head is modified or repaired, abnormal data, etc.).

3.5.12.8 Supplemental Dust Mitigation Measures

All backfill materials (sand, bentonite, and cement) may be contaminated with lead and hexavalent chromium. The mixing of cement with water will generate dust. This mixing activity shall be subject to mixing in the temporary enclosure equipped with SCAQMD-permitted HEPA filtration for lead and operated under negative pressure.

3.5.12.9 Boring Abandonment

Direct-push soil borings completed to 20 feet bgs or less will be abandoned using granular bentonite. Bentonite will be placed by hand into the boring from grade and hydrated in place with potable water. Borings that are drilled beyond 20 feet bgs will be abandoned using neat cement grout by the tremie method. A 0.5- to 1-inch diameter tremie pipe will be placed in the borehole, filled with cement grout, and removed in 5- to 10-foot sections to allow the cement to fill the vacated space at the base of the boring. This procedure will be repeated until the boring is backfilled to grade. The following day, the borings will be topped off should the cement within the borings settle overnight.

3.5.13 Well Maintenance

Prior to maintenance, the area around the well will be cleaned with a SCAQMD-permitted HEPA-vacuum. The well lid will be removed and the vault area cleaned with a SCAQMD-permitted HEPA-vacuum. Required maintenance will be conducted. If concrete removal is necessary, work will be conducted in a temporary enclosure per Section 3.4.4. Debris will be collected into a sealed plastic container/bag and disposed off-site.

3.5.14 Welding

Welding is not anticipated to occur during closure; however, the procedures are provided in the event they are needed. The areas to be welded will be cleaned by wiping with clean disposable wipes wet with a D-Lead Solution®. A wipe test will then be performed on the area to be welded using a Lead Wipe Test Kit (ESCA Tech Inc. Lead Test Kit). The test solution will be applied to the test kit supplied wipe. A wipe sample will be performed on 4 separate locations on each area to be welded using a new wipe wetted with the test solution. A yellow color indicates lead is present and additional cleaning is required. No color change indicates no lead is present. All 4 test locations must have a negative result prior to proceeding with the welding using standard welding techniques. The MSDS for the specific welding rod to be utilized will be reviewed. A welding rod will be utilized that does not contain lead. This process will be completed for each of the 4 areas that require additional welding. The welding will be completed immediately following the wipe testing.



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3.6 AIR MONITORING

3.6.1 Perimeter

Perimeter air monitoring will be conducted by Exide as indicated in the Air Monitoring Plan (Closure Plan Appendix H) and as required per SCAQMD Rule 1420.1(p)(1).

If during closure the ambient air concentrations of lead or arsenic exceed the limits in paragraphs (d)(1) and (d)(5) of SCAQMD Rule 1420.1, Exide will temporarily suspend closure-related activities that contributed to the exceedance until contingency measures in Section 5.2 are implemented. Exide shall submit a written report assessing the root cause of the exceedance and, if closure-related activities are determined to have contributed to the exceedance, Exide shall temporarily suspend the closure-related activities that contributed to the exceedance and provide a mitigation plan designed to avoid additional exceedances. The closure-related activities that contributed to the exceedance shall not re-commence until the Executive Officer, in consultation with DTSC, approves the mitigation plan and the mitigation measures are implemented.

Any exceedances of ambient air concentrations specified in paragraphs (d)(1) or (d)(5) of SCAQMD Rule 1420.1 will be reported with a notification made to the 1-800-CUT-SMOG within 24 hours of receipt of the completed sample analysis. A written report will be submitted to SCAQMD's Executive Officer no later than three business days after the notification. The written report will include the causes of the exceedance and the specific corrective action implemented.

If an ambient air concentration of lead greater than $0.300 \mu\text{g}/\text{m}^3$ occurs for any 24-hour sample, Exide will report the following information in writing to the SCAQMD Executive Officer within 72 hours of when the facility knew or should have known the result, including:

- Date of the occurrence;
- Name of the monitor;
- Ambient lead concentration at the monitor for the 24-hour sample;
- Potential cause or causes of the occurrence; and,
- Potential remedies to prevent the reoccurrence.

3.6.2 Real-Time

Real-time work area air monitoring will be conducted as indicated in the Air Monitoring Plan (Closure Plan Appendix H) by the Dust Mitigation Oversight representative.

As observing personnel note an increase in concentration of $50 \mu\text{g}/\text{m}^3$ of PM₁₀, using DustTrak devices, above background averaged over a minute and measured every 15 minutes at a location near the activity that is being conducted in conjunction with visual observation and experience, they shall direct work stoppage and then direct adjustments in the work practices and/or the applied control measures as appropriate. In response to adverse visual observations or DustTrak results, Exide and its contractors shall implement the following increased dust suppression



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activities. These increased dust suppression abatement activities will include, but are not limited to the following:

- Stop all work outside of any Total Enclosure Building that has the potential to generate lead or other toxic metals containing dust. Negative air filtration units installed on enclosures will remain in operation for the duration of the stop work order. Equipment that was being used inside of the Total Enclosure Building shall remain in place during the stop work period.
- Immediately begin application of water on all paved areas.
- Stop all onsite vehicle traffic outside of all Total Enclosure Buildings.
- All overhead doors on any Total Enclosure Building are to remain closed.
- Determine if there are any activities within any Total Enclosure Building that could be contributing to the increase in dust concentration. If so, these activities will be stopped.
- Determine if there are any offsite activities that are being conducted by others that are contributing to the increase in dust concentration. If so, suspend all activities outside of Total Enclosure Building that have the potential to generate lead and other toxic metals containing dust until additional dust mitigation has been implemented or the activity completed and the areas both on-site and off-site are cleaned.

The abatement activities described above will remain in effect until Exide and the Dust Mitigation Oversight representative determine the cause of the adverse readings and additional dust mitigation for the activity that caused the increase in dust concentration has been implemented.

If the cause of the adverse Dust Trak readings cannot be attributed to any one activity outside of Total Enclosure Buildings and no activity within any Total Enclosure Building, the work outside of the Total Enclosure Building will be restarted on a rolling basis with the activity that would be expected to generate the least amount of lead containing dust starting first. No work may resume until DustTrak readings show that the adverse dust condition does not exist anymore.

The real time data from the DustTraks will be continuously monitored during this rolling start to determine if there is an increase in the dust concentrations following the restart of any one activity. If an increase is noted after restarting any activity, that activity will be stopped until additional dust suppression measures have been implemented. The rolling start activities following the activity that caused the increase in dust consideration may be restarted using the basis described above with continuous monitoring of the real time particulate data to insure none of the follow on activities causes an increase in the total particulate concentration. If after work resumes, DustTrak readings show adverse dust conditions, the dust suppression and abatement activity described above shall be implemented.



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3.7 1420.1 HOUSEKEEPING

Exide will continue to implement those housekeeping measures outlined in SCAQMD Rule 1420.1(h) including sweeping of on-site paved areas, will be conducted as noted in the Closure Plan.



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4.0 OVERSIGHT

Exide will retain a third party consultant to oversee implementation of the engineering controls for liquid infiltration. The name and qualifications of the third party consultant will be provided to DTSC and SCAQMD 10 business days in advance of retaining the consultant. The third party consultant(s) will provide weekly reports to Exide, DTSC and SCAQMD regarding the engineering controls, Closure activities and progress on Friday of each week.

The Dust Mitigation Oversight representative discussed in Section 1.3.6.3 of the Closure Plan will oversee implementation of engineering controls for fugitive emissions in air and will perform real-time air monitoring. The Dust Mitigation Oversight representative will provide weekly reports to Exide, DTSC and SCAQMD regarding the engineering controls, Closure activities and progress on Friday of each week.

The third party consultant performing oversight of engineering controls for liquid infiltration may be the same as the consultant providing dust mitigation oversight.



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5.0 PLAN VARIATIONS AND CONTINGENCY MEASURES

5.1 VARIATIONS FROM PLAN

Though appropriate efforts have been made to anticipate closure-related activities and engineering controls, unanticipated conditions may arise from time to time that may need to be addressed. The appropriate general engineering control requirements presented within the Engineering Controls Plan will be implemented for any such activities with notification to DTSC and SCAQMD field representatives. If additional engineering controls are necessary for unanticipated activities or varying conditions, then, unless an emergency requires a faster response, the additional activities will be submitted to DTSC and SCAQMD for review and approval two (2) SCAQMD business days in advance of the work.

Variations from the Engineering Controls Plan must be approved by DTSC and SCAQMD. Operations associated with the variance from the plan will stop until DTSC and SCAQMD have approved the variation, unless ceasing operation while awaiting approval creates a worse environmental situation.

5.2 CONTINGENCY MEASURES

If ambient air concentrations of lead or arsenic exceed the limits in Rule 1420.1 (d)(1) and (d)(5), Exide will temporarily suspend closure-related activities that contributed to the exceedance until appropriate contingency measure(s) are implemented.

The contingency measure or measures implemented will be specific to the closure activities occurring at the time of the exceedance. Contingency measures, listed below as required under SCAQMD Rule 1420.1(p)(2)(B), may include:

- Extra water sprays on paved areas;
- Extra sweeping;
- Additional inspection of temporary enclosure to identify defects;
- An additional plastic sheeting layer on temporary enclosure(s);
- Increased negative pressure for Total Enclosure Building and/or temporary enclosure;
- Additional temporary enclosure cleaning with SCAQMD-permitted HEPA vacuum;
- Add water misting devices at work locations;
- Decrease threshold wind speed for outdoor work stoppage; or,
- Add wind speed threshold for work stoppage at temporary enclosures, including Total Enclosure Building in the process of deconstruction.



5.3 CONTINGENCY PLAN REVISION

If a previously unidentified activity which the contingency measures in Section 5.2 do not address contributes to the exceedances, then a revised Engineering Controls Plan will be submitted to DTSC and SCAQMD for approval before resuming closure related activities.



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6.0 SCHEDULE

A schedule for closure phases including inventory removal, decontamination, confirmation soil sampling, removal of equipment, building decontamination, soil and soil gas sampling, and building deconstruction and their associated engineering controls is provided in Appendix F of the Closure Plan and as an attachment to this plan.

As discussed in Section 1.4.2 of the Closure Plan, progress meetings will be held at the facility weekly with Exide, the Contractor, and the Resident Engineer when field activities are occurring. DTSC, SCAQMD and the City of Vernon will be invited to attend. The meeting agenda is provided in Section 1.4.2 of the Closure Plan, and includes discussion of work activities completed during the previous week, and work activities planned for the upcoming two weeks. The meeting will satisfy the requirement of Rule 1420.1(p)(2)(C) to periodically update the schedule to reflect the progression of closure activities.



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ENGINEERING CONTROLS PLAN
CLOSURE IMPLEMENTATION PLAN ATTACHMENT 14
AND
COMPLIANCE PLAN
FOR
CLOSURE ACTIVITIES
SCAQMD RULE 1420.1(p)

Prepared For:

EXIDE TECHNOLOGIES
Vernon, California

September 29, 2017



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1.0 INTRODUCTION

1.1 PURPOSE

This plan describes engineering controls to minimize release of liquids and fugitive emissions of lead and other toxic metals in air during closure of the Exide facility in Vernon, California. This document presents the general engineering control requirements for closure activities, as well as specific requirements for anticipated work activities for Phase 1 and Phase 2 closure.

1.2 SCOPE OF CLOSURE ACTIVITIES

The scope of closure activities, including work tasks, locations and estimated quantities, is provided in the Closure Plan and updated and refined in the Closure Implementation Plan. The scope of closure activities is not reiterated in this plan.

1.3 RCRA FACILITY INVESTIGATION

The RCRA Facility Investigation (RFI) may be implemented at the facility concurrent with closure activities. Engineering controls for the RFI are addressed in separate SCAQMD-approved mitigation plans and are not addressed in this plan.

1.4 COMPLIANCE PLAN

This plan addresses SCAQMD requirements and constitutes the Compliance Plan for Closure Activities per Rule 1420.1(p)(2).



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2.0 ENGINEERING CONTROLS FOR LIQUID INFILTRATION

Closure activities generally include decontamination of equipment, areas and buildings with pressure washers. Engineering controls are intended to minimize infiltration of decontamination liquid into existing floors or pavement and sumps. Prior to wet decontamination, the concrete or asphalt floor surface will be vacuum cleaned to remove accumulated dirt, inspected for cracks and other damaged areas where liquids could infiltrate. Cracks will be vacuum cleaned to remove loose dust and dirt from within the cracks/damaged area. Vacuum cleaning will be performed using a SCAQMD-permitted HEPA vacuum. The cracks/damaged areas will be sealed by installing MasterSeal (Sonolastic) ® SL1™ or equivalent.

Concrete sumps will also be inspected for cracks and other areas where liquids could infiltrate. Cracks will be cleaned using a SCAQMD-permitted HEPA vacuum. HETRON® 922 Corrosion/Heat Resistant Epoxy Vinyl Ester Resin, or equivalent, will be applied to the bottom and interior sidewalls of concrete sumps with cracks, damage or exposed concrete in accordance with manufacturer's instructions.

Wet decontamination of equipment within the floor and sump area will occur following completion of curing in accordance with manufacturer's recommendations.



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3.0 ENGINEERING CONTROLS FOR FUGITIVE EMISSIONS IN AIR

3.1 GENERAL

The goal of the engineering controls for fugitive emissions in air is to meet standard South Coast Air Quality Management District (SCAQMD) requirements pertaining to dust and emission controls to prevent emissions of lead and other toxic metals during the closure activities.

The closure activities for Phase 1 and assumed activities for Phase 2 are provided in the Closure Plan and Closure Implementation Plan (CIP). Closure activities generally may include the following potentially lead-dust generating activities:

Phase 1 (Closure)

- Inventory removal;
- Unit and equipment decontamination;
- Unit and equipment removal;
- Removal of emission control equipment filters;
- Emission control equipment (including ducts) decontamination and deconstruction;
- Building decontamination;
- Building gutting;
- Concrete milling, scarification and/or hydroblasting;
- Building deconstruction; and,
- Concrete, pavement, soil and soil gas sampling.

Phase 2 (Contingent Closure)

- Pavement removal;
- Soil excavation;
- Soil stabilization;
- Backfill;
- Grading;
- Cap installation;
- Paving;
- Monitoring well maintenance;
- Lysimeter installation; and,
- Soil gas sampling probe installation.

The closure activities will be conducted in accordance with SCAQMD Rule 1420.1 (h) (Housekeeping).

3.2 DEFINITIONS

High Efficiency Particulate Air (HEPA) Filter - a filter capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 micrometer in diameter or larger (SCAQMD Rule 1403).

SCAQMD Business Days – Tuesday through Friday, excluding holidays.



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3.3 WORK LOCATIONS

The location of closure activities is provided in the Closure Plan. Closure activities occur in one of two types of locations: (1) within the existing Total Enclosure Building or Temporary Enclosures, and (2) outside of an existing Total Enclosure Building or Temporary Enclosure.

3.3.1 Existing Total Enclosure Buildings

The existing Total Enclosure Buildings are as follows:

- Desulfurization Building (Mud Tank Building);
- RMPS Building;
- Reverb Feed Room Containment Building;
- Blast Feed Room Containment Building
- Baghouse Building; and,
- Smelter Building.

The following emission control equipment is currently operating at the facility and provides negative pressure for the aforementioned Total Enclosure Buildings. This emission control equipment is expected to remain in operation during closure with typical maintenance and repair until the equipment must be turned off, decontaminated and deconstructed as part of closure:

- Soft Lead Baghouse;
- Hard Lead Baghouse;
- Material Handling Baghouse;
- East and West MAC Baghouses;
- MAPCO Scrubber; and,
- North and South Torit Baghouses.

The existing operating air handling equipment will continue to operate to maintain negative pressure while decontaminating units and equipment, dismantling equipment, decontaminating building interiors, building gutting, and removal of metal wall and roof panels (i.e., de-skinning). At this point, only structural steel (i.e., columns, trusses) and concrete walls will remain. The existing emission control equipment will not be operated while removing structural steel or concrete walls (i.e., the baghouses and associated equipment will be turned off). The operating level of the equipment will be reduced as the size of the service area decreases to achieve negative pressure that meets the minimum requirements while maintaining a safe work environment (i.e., excessive negative pressure could pull the enclosure in on itself, putting personnel within at risk).

The air handling equipment at the existing Total Enclosures will maintain a negative pressure of at least 0.02 mm of Hg (0.011 inches of H₂O). Measurements will be conducted using the existing monitoring system or a temporary monitoring system. The in-draft velocity will be maintained at greater than 300 feet/minute and will be determined by placing an anemometer at the center of the



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plane of an existing equipment or mandoor of the Total Enclosure, or any opening that is readily accessible from the work area (i.e., ground surface or scaffold).

If the sequence of closure prevents existing emission control equipment from providing negative pressure for the aforementioned buildings, then existing equipment will be re-ducted to provide negative pressure, or a temporary negative air system with a SCAQMD-permitted HEPA filtration will be used. It is expected that the Torit and MAC Baghouses will provide negative pressure through building deconstruction.

An area for personnel to remove soiled personal protective equipment (PPE) and decontaminate boots will be located at each main entry point in the the Enclosures.

The closure tasks occurring within Total Enclosure Buildings with existing operating emission control equipment and the associated engineering controls are summarized on the attached Engineering Control Summary table.

3.3.2 Temporary Enclosures

Decontamination and deconstruction activities outside of Total Enclosure Buildings with existing operating emission control equipment will be conducted within temporary enclosures or the HAKI system with a negative air system with SCAQMD-permitted HEPA filtration. The size of the enclosure will be dictated by the work task and size of equipment. The temporary enclosure will be constructed of a frame covered with one layer of 6-mil minimum heavy fire resistant reinforced plastic sheeting. The negative air unit will be sized to provide a minimum of 4 complete air changes per hour based on the size of the enclosure. The tent will be inspected hourly to ensure that there are no tears or leaks. Work inside the temporary enclosure will be suspended if a tear or leak is found until the tear or leak is repaired. Deconstruction of concrete and masonry walls may be performed without the use of enclosures if characterization chip sampling for the interior and exterior of the wall has been performed and the results demonstrate that the concrete has total lead concentrations less than 320 mg/kg. However, effective dust control and air monitoring measures will be used throughout the course of the work regardless of total lead concentrations.

A protective clothing change area will be established at the ingress/egress into the area. The change area will consist of a small tent placed immediately adjacent to the temporary enclosure. Poly sheeting will be installed between the temporary enclosure and the tent to seal off any openings and provide positive ventilation thru the change area. Personnel entering the work area will don PPE prior to entry and will remove the soiled PPE upon exit. Multiple layers of poly sheeting will be installed on the floor of the change area. The uppermost layer will be removed and bagged for disposal once personnel have removed their soiled PPE. The soiled PPE and plastic sheeting will be placed into a properly labeled container for offsite disposal.

The air handling equipment at the temporary enclosures will maintain a negative pressure of at least 0.02 mm of Hg (0.011 inches of H₂O). Measurements will be conducted using a temporary monitoring system. The in-draft velocity will be maintained at greater than 300 feet/minute (fpm)



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and will be determined by placing an anemometer at the center of the plane of an existing equipment or mandoor of the temporary enclosure, or any opening that is readily accessible from the work area (i.e., ground surface or scaffold).

If access into the temporary enclosure is required, an airlock-type temporary door with at least 300 fpm draft, verified using a handheld anemometer, will be constructed to provide access into and out of the temporary enclosure.

The work area will be vacuumed using a vacuum equipped with a SCAQMD-permitted HEPA filtration prior to the start of work and, at a minimum, at the end of each shift. More frequent cleaning using the SCAQMD-permitted HEPA vacuum will be performed if dust is present on the floor.

Once the work is complete, the roof and interior of the temporary enclosure will be cleaned using SCAQMD-permitted HEPA-equipped vacuums to remove any dust prior to removal. The interior of the temporary enclosure will be wiped down and sprayed with an encapsulant such as Fiberlock or similar before dismantling a temporary enclosure or removing plastic sheeting. Negative pressure will be operated for 30 minutes after spraying the encapsulant to allow the encapsulant to dry. Plastic sheeting will be folded in on itself as it is removed.

In the event that a temporary full enclosure is not physically feasible, work will be conducted within a partial enclosure. A partial enclosure is a structure comprised of temporary walls or partitions on at least three sides or $\frac{3}{4}$ of the perimeter and uses an existing permanent structure wall for the final wall and roof support. Enclosure performance criteria (negative pressure, draft etc.) described above will not be adjusted for partial enclosures.

It is anticipated that free-standing temporary enclosures will be constructed for the Oxidation Tank Area, Former WWTP, and WWTP. Where possible, temporary enclosures will be re-used. For example, the temporary enclosure for the Former WWTP may be sized so that it can be re-used at the WWTP.

The existing roof and columns at the Container Storage Areas, Drop Out System area, and West Yard Truck Wash will be used to support temporary enclosure walls. A temporary enclosure wall will separate the Central Container Storage Area (Unit 1) and the Drop Out System area.

Smaller moveable temporary enclosures will be used for activities outside of these areas, such as cleaning an individual inlet structure or sump, as they will be limited in size.

The closure tasks occurring within temporary enclosures are described in the attached Engineering Control Summary table.

3.4 GENERAL ENGINEERING CONTROLS

3.4.1 General Methods



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Exide and its contractors will implement the following general engineering controls at all locations to minimize emissions during implementation of the Closure Plan.

- At the start of closure activities in a particular work area, accumulated dust in the work area that may contain lead or other toxic metals will be removed from horizontal surfaces, such as building columns, upper rafters and supports, and from equipment using wet wash down methods and/or SCAQMD-permitted HEPA-equipped vacuums. The dust will be collected and recycled at a secondary lead smelter or disposed off-site. Any large debris generated during the work shall be placed into bags or wrapped in poly sheeting prior to removal from the work area. At the Total Enclosure Building, the roll-up doors in the vicinity of the dust collection will be closed during dust removal.
- Any dust, dirt or sediment accumulations will be removed with a SCAQMD-permitted HEPA-equipped vacuum or using wet methods. Brooms will not be used for dry sweeping, but may be used for scrubbing/cleaning a surface if the broom and the surface are wet. Use of shovels will be limited to those materials which cannot successfully be removed with a SCAQMD-permitted HEPA-equipped vacuum.
- During the actual work of removing the dust, dirt, sediment accumulations or waste material, the material shall be kept wetted or vacuumed to mitigate fugitive emissions produced at the work surface. All materials cleaned up from this work shall be collected and transported to a designated area inside the Enclosure for storage and disposal.
- The liquid run off from areas that are wetted shall be contained or directed into drains and collected for treatment so as not to allow the liquid run off to evaporate and cause a secondary means of dust to be entrained into the air
- All lead-contaminated equipment and materials will be stored in a manner that does not generate fugitive lead-dust, or will be cleaned by wet wash or a SCAQMD-permitted HEPA filter-equipped vacuum. Large piles of material will not be stored near the Total Enclosure roll-up doors to minimize the release of fugitive emissions through the rollup doors when open.
- Equipment and vehicles shall be decontaminated inside the Total Enclosure Building prior to exiting the building.
- No outside work will be performed when sustained winds exceed 12 MPH or instantaneous wind gusts exceed 20 MPH as measured by the Dust Mitigation Oversight representative with a Pocket Weather Tracker 4500NV.
- No work inside the Enclosures will be performed if the negative air system for the work area is not operating, and it is intended to be operating.
- All equipment, including SCAQMD-permitted HEPA-equipped vacuums and negative air pressure equipment, will have current SCAQMD permits to construct/operate.
- The established plant speed limit of 5 mph as required by the Basic Safety Orientation Form HS002, Rev 3.19.2014 shall be required of every employee, contractor and visitor.
- Exide will designate an environmental staff person whose responsibility it is to assure ongoing and sustained compliance with applicable SCAQMD Rules and



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Regulations. This environmental designee shall be trained and knowledgeable of Rule 1420.1 and Rule 1420 and be empowered to expeditiously employ sufficient mitigation measures and stop work to gain facility compliance.

- All hazardous wastes designated for offsite disposal will be placed in covered containers..
- All personnel shall ensure that all spent PPE (i.e., gloves, boots and Tyvek coveralls) are disposed in closed containers.
- The preferred method for metal cutting will be cold cutting. Cutting with torches will be conducted only if necessary. When the work includes “hot” techniques like cutting torches, welders, burners, etc., AIS’s HOT WORK PERMIT will be used.
- All records will be maintained by Exide and its contractors for 5 years. In addition, copies of all records will be furnished to DTSC at the end of construction activities.

3.4.2 Total Enclosure Buildings

The following activities will be performed inside the Total Enclosure Buildings.

Each overhead door location at the Total Enclosure Buildings will be equipped with potable water for decontamination of materials and equipment prior to transfer outside of the enclosure building. The overhead door will remain closed during all decontamination activities for material and equipment transfer to prevent the release of contaminated overspray out of the building. Items will be decontaminated in a designated area then transferred to the staging/load out corridor and await loading onto trucks. Once loaded the trucks will be decontaminated prior to exiting the enclosure. Both decontamination and staging areas will be decontaminated once daily at a minimum after items have been removed.

It is anticipated that the Corridor will be used as a decontamination area for materials, equipment and vehicles to the extent possible during Phase 1.

Rollup doors of the Total Enclosure Buildings will be kept closed as much as possible during the closure activities. Additional detail is noted in Section 3.5.

3.4.3 Work Within Temporary Enclosures

All removed debris at temporary enclosure work areas shall be placed and sealed in drums or a lined and covered bins, or may be taken to the Total Enclosure Building and deposited into the roll-off container. The exterior surfaces of the drums and bins shall be rinsed or wet cleaned prior to being taken outside of the temporary enclosure. Oversized debris not fitting within drums or hoppers shall be wrapped in plastic tarps or sheeting and sealed using adhesive tape. The plastic tarp or sheeting shall be rinsed or wet cleaned prior to removal from the temporary enclosure.

3.4.4 Drilling, Pavement Removal and Placement and Soil Activities

Drilling (excluding direct push and roto-sonic techniques), pavement removal and soil handling activities will be completed in an enclosure (total enclosure or temporary enclosure) with negative air and SCAQMD-permitted HEPA filtration. Direct push (geoprobe) and roto-sonic drilling



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techniques do not generate cuttings and may be performed without the use of an enclosure, although the sample extraction area shall be located within an enclosure.

Concrete or asphalt cutting/drilling may be performed outside Total Enclosure Buildings and will be conducted using wet methods to minimize generation of dust. The concrete being removed will be kept damp to minimize the generation of dust. Additional dust control will include applying a fine water mist directly on the work surface during the deconstruction activities. A fine water mist will also be applied to the concrete and soil as it is being excavated to minimize the generation of dust.

For areas where pavement must be removed, including drilling locations, grading of soils prior to pouring concrete or asphalt paving shall only be performed if soil surface that will be disturbed has a minimum 12% moisture content. Newly imported crushed aggregate or sand used as subgrade for new paving is not required to meet the 12% moisture requirement.

In accordance with SCAQMD Rule 1466, any soil grading/leveling project involving more than 50 cubic yards of removal with total lead concentrations over 320 mg/kg which has the potential to generate any dust shall be performed under temporary negative pressure enclosures maintained through the use of a SCAQMD-permitted HEPA negative air machines. Regardless of whether or not the grading is performed under temporary negative pressure enclosures, water or a stabilizing agent will be applied in sufficient quantities to prevent the generation of visible dust plumes when the work area is not immediately to be covered by plastic sheeting, geotextile fabric, newly imported subgrade, concrete, asphalt, or paving material. Effective dust control and air monitoring measures will be employed during all portions of the work regardless of total lead concentrations.

Any drilling, pavement removal and soil disturbing activities outside of the Total Enclosure Buildings will be performed only when sustained wind velocities are less than as noted in Section 3.4.1.

3.4.5 Waste Management

3.4.5.1 **Roll-off Containers**

All materials intended for off-site disposal or recycling will be decontaminated as applicable in the Closure Implementation Plan (CIP) prior to placement in a roll-off container. Roll-offs will be staged within the Enclosures to minimize trips into and out of the building as well as minimize the possibility of dust being released into the environment that could be generated when placing materials into the roll-off container. The roll-off will be similar to roll-offs currently in use at the facility. The roll-off container shall have metal or hard plastic covers and will be covered when not in use (i.e., when materials are not being actively placed into it). The exterior of the roll-off container will be decontaminated with potable water and tarped prior to removal from the Total Enclosure Building.

Roll-off Containers will be totally contained where no dust or liquid leaking is allowed during transport. Containers used for debris collection, storage and transport, including but not limited to



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the roll-off containers, shall be completely sealed prior to transport across open areas of the facility outside of Enclosures.

3.4.5.2 Truck Trailers

The following procedures shall be used for loading of bulk waste material into truck trailers, including but not limited to feed material, plastic chips, sediment, residue, concrete or soil, but not to materials being recycled or reused.

- Each end dump trailer will be inspected upon arrival to ensure that the vehicle is visually clean. The inspection will be noted on the pre-loading checklist (see Pre-Loading checklist in Attachment 2 of the Closure Implementation Plan). Trucks which are not visually clean will be turned away.
- The material shall be carefully loaded with front end loaders into leak proof / end dump trailers in a manner to prevent or minimize any fugitive dust generation during the loading operation. The use of water sprays on dusty stockpile material shall be utilized to help in fugitive dust control during loading. Also, water misting sprays shall be utilized at the loading point of the end dump trailers while the material is transferred into the trailers.
- Each end dump trailer shall be first inspected and examined to ensure there are no cracks or holes in the container prior to lining the containers in preparation for loading of the trailers. This inspection shall be noted on the pre-loading checklist (see attached Pre-Loading checklist).
- The end dump trailers are a leak-proof design and after inspection for cracks or holes in the container shall be lined at the facility with a single 6-mil poly propylene liner prior to loading any material. This will enhance the existing gasketed rear door.
- The 6-mil poly propylene liner shall be of such a dimension in length and width in order to make a "burrito" type enclosure around the loaded material using industrial type duct tape after the material has been loaded. This procedure mimics that used to transport material containing asbestos.
- The rib structure, if present, on top of the end dump trailers shall be rotated out of the way prior to lining, loading and completion of the burrito wrap. The rib structure shall then be rotated back into position for cleanup and securely covering the trailer with tarp material.
- The rib structure, if present, above the end dump trailer and the top edges of the trailer shall be decontaminated after completion of loading of the material into the trailer in order to remove any dust or debris collected on the ribs structure or top edges during the loading operation.
- After cleaning of the rib structure, if present, and top edges of the trailer, the outside of the trailer will be decontaminated to remove any dust or debris from the loading operations.
- Each end dump trailer shall be securely covered with a tarp system in a manner to cover all gaps and to provide for a sealed trailer during removal and shipment.



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- The tarped trailer and truck shall be first inspected to ensure that there are no gaps and that the container is fully secured and sealed and then power spray washed with city water to remove exterior dust from the trailer, tarp and truck.
- All of the above activities shall be conducted in the Reverb Feed Room Corridor section (with the door to the Corridor closed during loading and decontamination, and will be opened only during entry and exit) inside the Total Enclosure Building which is under negative pressure and which is vented to air pollution control system which is permitted by SCAQMD and is in full operation and is equipped with SCAQMD-permitted HEPA filtration.
- The truck and trailer will be inspected for adequacy of decontamination and complete a Decon Checklist (see attached Decon checklist).
- Trucks used for off-site shipments of material shall go through Unit 87, West Yard Truck Wash before leaving the facility. Oversized vehicles, that cannot fit within the truck wash station may be washed using wet methods and/or wet wipes outside the truck wash station. The trucks with the end dump trailers shall not be stored at the facility. Exide shall maintain records of washed trucks on the Truck Wash Log/Spread Sheet and records maintained inside the Bandini Street guard station, or other appropriate location at Exide, and made available to SCAQMD and DTSC staff, upon request.
- The transport trucks shall be dry and not dripping water from the inside of the trailer prior to leaving the facility. There can be no uncertainty regarding existence of any leaks vs. dripping of water from the West Yard Truck wash. Dripping of liquid waste during offsite transport is not allowed.

3.4.6 Scrap Metal Management

All scrap metal materials (pipe, ducting, panels) will be decontaminated as indicated in the Closure Implementation Plan.

3.4.7 Electrical Supply

The facility's existing electrical service will be used to the extent possible during closure. If the existing electrical service is not available during a particular work task, temporary electrical power generators with SCAQMD and/or CARB permits (if applicable) will be used.

3.4.8 Modifications

Even with good planning and engineering controls implementation, elevated readings may occur at the ambient monitors. The work activities will be assessed and procedures modified as needed prior to resuming work.

3.5 SPECIFIC ENGINEERING CONTROLS

The following engineering controls will be implemented for the tasks shown. Pursuant to Section 25 of the Closure Plan, alternative methods outlined in the DTSC-approved Closure



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Implementation Plan and including methods which consider the use of the HAKI structure (such as stack removal and deskinning) may be followed in lieu of those listed below.

3.5.1 Inventory Removal

Removal of waste inventory shall be done either manually, with no tools, or with a variety of tools (such as shovels, bars, jack hammers and pumps) and utilizing mobile equipment to transport the materials. The removed materials shall be transported to the appropriate location for loading into a shipping container. The work area, including the floors adjacent to and around the specific material to be cleaned up, shall be cleaned of any dust by wet methods or vacuumed with a vacuum equipped with an SCAQMD-permitted HEPA filtration prior to the start of work. During the actual work of removing the material, the material shall be kept wetted to mitigate fugitive emissions produced at the point of impact.

3.5.2 Stack Capping

Prior to the baghouses stack removals, the top of each stack opening will be sealed and wrapped with 6-mil plastic. A window will be cut within the stack section below the roof line which will allow for placement of a 6 mil poly sheathing on the inside of the stack above the cut locations to cap the bottom of the stack section. The poly sheathing will be placed on both sides of the cut so the stack section remaining in-place is capped also. The stack will be wrapped with poly sheathing at the top and bottom only.

3.5.3 Stack and Ventilation A-Pipe Removal

The work will include the removal of the existing emission control equipment A-pipe, stacks and stack support structures which extend through the roof of the Total Enclosure Building.

3.5.3.1 Stack Removal

The crane rigging crew will secure the crane and prepare to lift. Once secured, the stack will be cut below the roof line. As allowed by the calculations in *Attachment 10, Duct Modification Plan*, a small section the roof of the FEU will be opened to allow the stack to be lowered while negative pressure is maintained on the FEU. The crane will then safely lower the cut section of stack down into the FEU where it will be decontaminated within the confines of the building and within the segmented enclosure. Decontamination will not occur prior to lowering the stack into the building. This procedure modifies Closure Plan Appendix G while continuing to protect the environment. The changes result in not wrapping with a 6-mil poly sheathing due to the potential safety concern of placing workers within a crane basket for extended periods to wrap the stacks and the fact the stacks will be lowered into the FEU for decontamination rather than being lowered to the ground outside of the negative pressure enclosure precludes the need for secondary containment provided by the proposed sleeve.



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3.5.3.2 A-Pipe Removal

Windows will be cut into the Reverb A-pipe at both ends below the FEU roof, and a 6-mil poly sheeting will be placed inside the Reverb A-pipe at both ends to cap the ends of the Reverb A-pipe. The poly sheeting will be placed to both sides of the cut so the A-pipe remaining in-place will also be capped. The Reverb A-pipe will only be wrapped at each end. Then, a crane rigging crew will secure the crane and prepare to lift the Pipe. Once secured, the Reverb A-pipe will be cut at both ends. As allowed by the calculations in *Attachment 10, Duct Modification Plan*, a section of the roof of the FEU will be temporarily opened along the length of the Reverb A-pipe to allow the Reverb A-pipe to be lowered within the existing Segment 2 enclosure while negative pressure is maintained on the FEU. Calculations have been performed to verify sufficient negative air will be maintained during this activity. The crane will then safely lower the Reverb A-pipe down into the FEU where it will be decontaminated within the confines of the building and within the segmented enclosure. The roof sheathing will then be resealed by placing poly sheathing used for making the HAKI roof over the void created during the removal. These spliced in sections of sheathing will be chemically welded as per their manufacturer's recommendations. Decontamination will not occur prior to lowering the Reverb A-pipe into the building, since it was never used and because it extends above the maximum elevation of the FEU. This procedure modifies the method described in Closure Plan Appendix G Section 3.5.3.2, while continuing to protect the environment. The changes result in not wrapping with a 6-mil poly sheathing due to the potential safety concern of placing workers within a crane basket for extended periods to wrap the stacks and the fact that the stacks will be lowered into the FEU for decontamination rather than being lowered to the ground outside of the negative pressure enclosure, which precludes the need for secondary containment provided by the proposed sleeve.

The Blast A-Pipe will be enclosed by the Segment 2 FEU. It will be gross decontaminated in-place, then deconstructed using methods similar to other equipment/buildings. Final decontamination will be conducted after deconstruction.

3.5.4 Emission Control Equipment Removal

Spark arrestors or equivalent precautions will be employed when hot work will be vented to dry filter media. All materials removed will be washed with potable water prior to placement into a container for proper offsite disposal or recycling. Scrap metal management procedures in Section 3.4.6 will be used.

3.5.5 Baghouse Bag Removal

Filter bags will be removed from each cell and placed into a leak tight plastic bag and sealed. These bags shall be placed in a roll-off container that is staged inside of the Total Enclosure Building.



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Accumulated dust will be removed from horizontal surfaces using wet wash down methods and/or SCAQMD-permitted HEPA vacuums. All collection hoppers and screw housings will be cleaned out using collection screws and SCAQMD-permitted HEPA vacuums. The plastic sheeting on the service platform will be rolled up after use and placed into a leak tight plastic or other impermeable material and then placed in a covered roll-off container. Equipment will be decontaminated by pressure washing and deconstructed.

3.5.6 Brick Removal

Brick removal will be done by handheld rivet busters, spade tip hammers, etc.. During the removal process, technicians will utilize a misting system placed within the stack above all areas they are working to maintain a fog or mist of water at all times, effectively suppressing dust. All removed debris, interior buildup, brick and rinseate will be collected and properly containerized for reuse, eventual offsite disposal or on-site treatment at a Dewatering Container and the WWTP.

3.5.7 Crack Sealing

Floor cracks will be cleaned and sealed prior to area or building decontamination as noted in Section 2.0. Cracks will be cleaned using a SCAQMD-permitted HEPA-vacuum and will have caulk applied. When sealing floor cracks in the Total Enclosure Building, the roll-up door in closest proximity to the work area shall remain fully closed during the activity to prevent any cross draft and for a period of one hour after completion of the repairs. Due to concerns with water infiltration into unsealed cracks, the floor surfaces will not be wetted down prior to the work.

3.5.8 Sump Sealing

Sumps will be cleaned and sealed prior to area or building decontamination as noted in Section 2.0. Depending on the sump condition, work may include wet cutting and jack hammering of coating and surface concrete, abrasive preparation of concrete surface, and application of chemical resistant coating. Work will be conducted in the Total Enclosure Building or in a temporary enclosure. All removed debris shall be placed and sealed in 55-gallon drums or a lined hopper and taken to the Total Enclosure Building and deposited into the roll-off container. The 55-gallon drums or hoppers shall be rinsed or wet cleaned prior to being taken outside of the temporary enclosure.

3.5.9 Decontamination

Engineering controls during decontamination of area and building walls, ceilings and floors will be provided by the negative pressure equipment associated with the Total Enclosure Building or temporary enclosure.

3.5.10 Deconstruction



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The exact sequence of deconstruction of the RMPS Building, Reverb Feed Room, Baghouse Building and Smelter Building will be established during closure based on the Deconstruction Engineering Survey. Existing operating emission control equipment associated with these areas (Soft Lead, Hard Lead, Material Handling, MACs, MAPCO Scrubber, Torits) will continue to operate until they are shut down, decontaminated and deconstructed in conjunction with the building deconstruction sequence. The Torits will likely be used to maintain negative pressure during deconstruction.

The Closure Plan, as originally written, called for the construction of portable Negative Air Enclosures for roof and vertical wall panel decontamination and removal. This proposed method created a considerable amount of work being performed under “high risk” conditions for the Project, including AIS Technicians working on elevated roof structures with unknown stability, while being tied off and in appropriate fall protection at all times. AIS had concerns that placing workers and a negative air enclosure on the roof, as described in the Closure Plan increased the health and safety risk for the workers and the Project. To mitigate this concern, AIS identified a full enclosure system (HAKI system) and its design was submitted to the DTSC and SCAQMD on December 9, 2016. The USEPA has determined that the Facility is “no longer an affected source” under NESHAP because Exide cannot physically operate as a secondary lead smelter having permanently disabled the Blast and Reverberatory furnaces, which means that NESHAP requirements are not be part of the final Title V Permit.

The SCAQMD has issued a renewed Title V Permit to govern closure activities, including Exide’s use of the HAKI system. Exide’s closure activities will comply with the final Title V Permit.

As described in Exide’s HAKI submittal (see *Attachment 8, FEU – HAKI Truss System*), which was conditionally approved by the DTSC on December 27, 2016 date, AIS will utilize a segmented full enclosure unit (FEU), which will be composed of a combination of conventional scaffolding for the walls and HAKI Truss System for the roof. The system is a truss system capable of spanning the entire width of the structure and will provide secondary enclosure by utilizing a track system within the trusses to place poly sheathing. See *Attachment 8* for additional detail for the FEU and the HAKI system. The thickness of the plastic used for the full enclosure will include (1) roof structure of 20-mil fire retardant plastic, and (2) wall structure of 14- mil fire retardant plastic. With a wind load rating of 75mph, this will withstand all anticipated wind gusts. AIS has performed work utilizing the above mentioned system on multiple projects throughout Southern California. Negative air machines and/or additional ducting from the existing baghouses will be added as necessary to maintain constant negative air pressure to continuously prevent a fugitive dust event. Duct modifications are provided in *Attachment 10, Duct Modification Plan*. The durability of the secondary containment will allow crews to safely dismantle or abate buildings enveloped by this system in most weather conditions and help prevent the possibility of work stoppage due to rain or dust emission. In addition, the enclosure structure will provide access points along the perimeter of the structure to all wall panels and provide extra tie off locations which will decrease any cumbersome stretches of lanyards and allow safer and easier access for building decontamination.

As shown in *Attachment 8 FEU – HAKI Truss System*, a HAKI system FEU will be constructed at Segment 1 (West buildings). At this time the HAKI system will also be installed at the Corridor. Following work within Segment 1, a HAKI system FEU will be constructed at Segment 2 (East



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buildings). Following work within Segment 2, a HAKI system FEU will be constructed at Segment 3 (Center buildings). The Oxidation Tank Area and electrical systems north of the Baghouse Building will be removed prior to construction of Segment 3 using a portable enclosure unit.

To allow for the deconstruction of walls the FEU scaffolding walls will extend up and penetrate through the existing roof in the baghouse building. The roof penetration will be conducted within a temporary enclosure. The plastic sheeting on the scaffolding walls will be sealed to the adjacent roof outside the FEU. Any guy wire penetrations through the existing roof will occur after the FEU is operational, and will not require a temporary enclosure. The HAKI system will be anchored to the existing floor as shown in *Attachment 8, FEU – HAKI Truss System*.

As discussed in *Attachment 10, Duct Modification Plan*, the negative air pressure for the FEU will be monitored using existing and temporary monitoring devices. The proposed temporary monitoring device will meet SCAQMD requirements. Detail on the device will be provided separately.

In the event that there is a minor breach in the FEU during the Project the following contingency plan for minor repairs will be implemented:

- ◆ Maintain supply of repair materials onsite including: Poly Sheathing for walls, HAKI Roof Sheathing, Chemical Welding Supplies and specialty tools
- ◆ Have designated trained repair person onsite daily that is familiar with HAKI and FEU systems
- ◆ Complete inspection of temporary enclosure to identify defects;
- ◆ An additional plastic sheeting layer on areas of enclosure(s) requiring repair
- ◆ Increased negative pressure for Total Enclosure Building and or temporary enclosure
- ◆ Additional temporary enclosure cleaning with SCAQMD-permitted HEPA vacuum
- ◆ Add water misting devices at work locations
- ◆ Decrease threshold wind speed for outdoor work stoppage
- ◆ Add wind speed threshold for work stoppage at temporary enclosures, including Total Enclosure Building in the process of deconstruction

The enclosure system utilizes conventional scaffolding for walls and a HAKI Truss System for the roof portion. This system is a truss system capable of spanning the entire width of each of the Segment's structures and will provide a secondary enclosure by utilizing a track system within the trusses to place poly sheathing.



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3.5.12 Drilling

Soil sampling, soil gas sampling, and soil gas probe installation will occur using drilling. Drilling techniques are expected to include direct push technology (i.e. Geoprobe), Rotosonic and/or hollow stem auger, and the specific technique for each location will be selected based on several factors, including: depth of required sampling, type of samples required, and contaminants of concern. Geoprobe and Rotosonic drilling have little to no potential for generation of dust because both techniques allow advancement of the boring without the creation of cuttings and collect a continuous sample in a plastic sleeve. Hollow stem auger drilling causes greater potential for fugitives, and its use will be minimized.

3.5.12.1 **Drilling Inside Total Enclosure Building**

Prior to the start of drilling activities within the Total Enclosure Building, the floor surfaces where the soil sampling is to take place shall be wetted down or power washed depending on how clean the concrete surface is. Water misting and wet dust suppression shall be done through the entirety of the project including but not limited to all concrete cutting, and jack hammering. The rollup door in proximity to the work area shall be closed at all times during sampling.

Concrete sections from the drilling not retained for laboratory analysis shall be placed into a roll-off container. Roll-off management shall be as discussed in Section 3.4.5.

To identify subsurface utilities, the sample location will be spray-painted or otherwise marked. At least 48 hours prior to drilling, Underground Service Alert (USA) will be called to identify subsurface utilities in public areas. A combination of previous utility locations, facility knowledge, or hand augering the upper most 5 feet and/or private utility location will be used to identify subsurface utilities in privately owned areas.

3.5.12.2 **Drill Site Preparation Outside Total Enclosure**

The mitigation measures in this section are designed for drilling outside of the Total Enclosure Building. Drill site preparation will involve identifying subsurface utilities; coring or sawing through pavement materials; verifying the absence of subsurface utilities at the boring locations; setting up work zones; providing the containers required to contain waste materials; laying down polyethylene sheeting or equivalent to minimize the post-drilling cleanup operation; and setting up a sample examination area.

To identify subsurface utilities, the sample location will be spray-painted or otherwise marked. At least 48 hours prior to drilling, Underground Service Alert (USA) will be called to identify subsurface utilities in public areas. A combination of previous utility locations, facility knowledge, or hand augering the upper most 5 feet and/or private utility location will be used to identify subsurface utilities in privately owned areas.



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If the drill site is paved with concrete or asphalt, may be cored or saw-cut to provide access to the underlying soil. The dimensions of the opening in the pavement will be large enough to accommodate the drill rig's auger/stem, whichever is appropriate for the location. Coring or saw-cutting will be conducted as noted in Section 3.4.1.

If required, hand augering to clear the boring location for utilities will take place within the temporary enclosure equipped with SCAQMD-permitted HEPA filtration device for lead and operated under negative pressure. The clearance diameter should be at least as wide as the largest diameter hole that will be mechanically drilled. Location-specific conditions may require deeper clearance. The ground surface will first be covered with plastic sheeting, at least 10 mil or greater, extending to at least six feet beyond the boring location. The temporary enclosure will then be set into place over the boring location. No hand auger work will take place unless inside an enclosure with a SCAQMD-permitted HEPA filtration device for lead which is operating under negative pressure. The hand auger will be removed from the hole taking care to retain the subsurface material in the auger and examined and logged, and any required samples collected for analysis. The excess material will be placed in a sealed drum or lined hopper which is completely covered or tarped, except during loading. The roll-off or drum is washed with potable water and shrink wrapped before being taken outside the Total Enclosure Building as noted in Section 3.4.5.1. After the boring location is cleared for utilities, the plastic sheeting will be vacuumed with a vacuum equipped with a SCAQMD-permitted HEPA filter for lead.

The work support zone will be delineated in the field using a combination of orange traffic cones, barricades, and yellow caution tape as necessary. The dimensions of the zone will be established in the field based on site-specific geography. At a minimum, the work zone will be large enough to accommodate the drill rig, any required support vehicles, waste containers, and a sample processing area. The sample processing area may be located at a location near the work zone if adequate space is not present at the drilling location.

The area around the boring site, underneath the drill rig, connected support truck, sample processing area, and the waste containers will be protected by laying down heavy-gauge (10 mil or greater) polyethylene sheeting. At the end of each working day, the plastic sheeting will be vacuumed with a vacuum equipped with a SCAQMD-permitted HEPA filter for lead. On completion of drilling operations, the polyethylene sheeting will be rolled up and disposed of along with other miscellaneous solid wastes in sealed drums or lined hopper, and the borings will be grouted.

3.5.12.3 Direct-Push Drilling

Shallow soil borings, including soil gas probes, are expected to be completed by direct push drilling methods with a truck-mounted rig. Direct push refers to tools and sensors that are "pushed" into the ground without the use of drilling to remove soil or to make a path for the tool. A Geoprobe® direct-push rig relies on a relatively small amount of static (vehicle) weight combined with percussion as the energy for advancement. Direct push drilling is one of the faster methods of drilling and sampling shallow borings and does not generate soil cuttings. The Geoprobe® system uses hollow, steel push rods ranging from 1-inch to 3.25-inches in diameter and are typically four feet in length. As the push rod is advanced into the ground, additional



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lengths of rod are added. Various sampling tools can be attached to the rods to allow for continuous or depth-discrete soil sampling.

3.5.12.4 Rotosonic Drilling

Rotosonic drilling is typically used for monitoring well installation. Monitoring well installation is not anticipated during the closure activities; however, the procedures have been provided in the event they are needed.

Rotosonic drilling utilizes high-frequency resonant energy to advance an outer, temporary conductor casing(s) and an internal core barrel into the underlying formation(s). Hydraulic motors on the drill head oscillate internal unbalanced weights. As a result of the weights being unbalanced, extreme vibrations are created in the drill stem allowing the drill to penetrate virtually any material with minimal side wall disturbance. In addition to the vibration, rotosonic drilling uses both rotation and down pressure of the drill casing to advance the borehole. The core barrel provides a continuous core of subsurface materials, while the conductor casing stabilizes the boring and provides a temporary seal of water-bearing unit(s) during coring. Rotosonic drilling also allows for telescoping of multiple outer conductor casings to seal-off multiple water-bearing units as needed.

MATERIALS AND EQUIPMENT: The following materials and equipment are required for implementation:

1. Rotosonic drill rig and associated equipment and materials;
2. Plastic Sheeting (10-mil min.);
3. Duct tape;
4. Flat shovel;
5. Hose and spray nozzle;
6. Hand auger;
7. Covered containment vessel for soil cuttings (drums, hopper or roll-off bin);
8. Plastic sleeves (socks) for core samples;
9. Absorbent booms or pads.

The following procedures are based upon ASTM D6914-04 (2010) "Standard Practice for Sonic Drilling for Site Characterization and the Installation of Subsurface Monitoring Devices."

Preliminary Set up

1. Spread double layer of 10-mil reinforced plastic sheeting over work area with proposed boring no closer than 6-ft from any edge. Secure edges using duct tape or sand bags to prevent unintended uplift. Spread a single layer of plastic sheeting of 10-mil in any area of foot traffic including the path to and beneath the enclosure for examination of soil samples if one is being used and secure edges with duct tape or sand bags.



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2. Connect hose with nozzle to water source and activate water source and confirm sprayer is operational.
3. Examination of soil samples outside of the Total Enclosure Building will be done within the temporary enclosure equipped with SCAQMD-permitted HEPA air filtration device for lead and operated under negative pressure while soil examination is taking place.
4. Utility Clearance, as required will be conducted as noted in Section 3.5.12.1.
5. If excess soil comes in contact with the exterior ground surface, it shall be immediately removed by means of a vacuum equipped with a SCAQMD-permitted HEPA filter for lead. In the event that a large amount of soil comes in contact with the ground surface, it shall be removed using a flat shovel or similar tool that will minimize damage to the plastic sheeting and then vacuumed using a SCAQMD-permitted HEPA filter for lead. Constant and direct water spray shall be applied as the soil is removed and placed in the appropriate waste containment vessel. If excess water begins to pond, the driller shall reduce the amount of water being applied and deploy absorbent booms or pads to control runoff.

Drilling

1. Once the borehole has been adequately cleared, the outer temporary conductor casing (drill casing) and inner core barrel are alternately advanced. The outer drill casing, constructed of flush-threaded carbon steel in 5 and 10-foot lengths, will be used as a temporary conductor casing and remain in the ground to prevent borehole collapse and to prevent cross communication between water-bearing units as the inner core barrel is advanced and then retracted for the collection of lithologic samples. The length of individual retrieved lithologic cores may vary between a few feet and ten feet, depending upon recovery percentages.
2. The diameter of the outer drill casing and core barrel will be determined by location-specific goals and the need for temporarily sealing of shallow water-bearing units, but the planned 4-inch diameter wells will be set in nominally 8-inch diameter casings. The inner core barrel diameter is generally one to two inches smaller than the outer drill casing.
3. Once the inner core barrel is retracted, a clear plastic sock shall be placed over the core barrel and slight resonance shall be applied to reduce the friction between the core sample and the inside wall of the core barrel. The sample will then slowly extrude from the core barrel into the plastic sock for examination by the field geologist. The top of the plastic sock will be tied tightly to prevent the release of any of the subsurface material prior to being carried to the sample examination enclosure. Once the inner core barrel is retracted, two layers of clear plastic sock shall be placed over the core barrel and slight resonance shall be applied to reduce the friction between the core sample and the inside wall of the core barrel. The



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sample will then slowly extrude from the core barrel into the plastic sock for examination by the field geologist. The top of the plastic sock will be tied tightly to prevent the release of any of the subsurface material prior to being carried to the sample examination enclosure.

4. A temporary, above ground containment area filled with water shall be maintained surrounding the borehole, such that any excess spoils that may fall into the containment area would be submerged. When cleaning slough from the boring, soil shall be wetted, or placed directly in 10-mil plastic liners, and transferred to a suitable waste containment vessel. Soil temporarily placed in hoppers shall be routinely wetted and covered with 10-mil plastic sheeting.
5. When the borehole is advanced through artificial fill soil and penetrates approximately 5 feet into native sediments, and all spoils have been containerized, the top layer of plastic sheeting covering the borehole area shall be removed and placed in the waste containment vessel. Removal shall be performed by gently folding the plastic over on itself to contain any residual soil and to prevent dust dispersion. The underlying layer of plastic sheeting shall remain in-place until completion of drilling.
6. In general, experienced field geologists can visually examine and manually manipulate soil materials within the plastic sock such that the soil can be adequately described and classified. When closer examination of soil cores is deemed necessary by the field geologist, or if the core sample must be subsampled, it shall first be carried into the temporary enclosure before being cut open. Any slough present in the soil cores will be logged accordingly.
7. When relatively undisturbed soil samples are required, a California-modified, split spoon sampler may be used. Such samplers are advanced using a standard automatic hammer. Soil samplers shall only be opened within the temporary enclosure.
8. Upon completion of the drilling and management of soil cuttings, the work zone shall be cleaned up. The remaining layer of plastic sheeting shall be removed using techniques described above for the top layer. The resulting ground surface shall be vacuumed using a SCAQMD-permitted HEPA filter-equipped vacuum for lead and then inspected by on-site field representatives to ensure that materials associated with the drilling have been removed. If residual materials are still present, the area shall be vacuumed again and then washed down with water. Wash water shall be flushed into the on-site storm water management system or removed using a SCAQMD-permitted HEPA filter-equipped vacuum for lead.
9. Sealed drums containing soils will be placed in either the Central Container Storage Area (Unit 1) or placed into a roll-off located within the Total Enclosure Building as directed by Exide. For drums placed in the Central Container Storage Area, they will be washed with potable water and staged until there are a sufficient number to



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be placed on a trailer or truck and taken to a landfill for proper disposal. For soils placed into a roll-off, the procedures in Section 3.4.5.1 will be used.

10. Drums containing plastic sheeting, absorbent booms and non-soil debris generated by the drilling operations may be taken to Enclosures and placed into the tarped roll-off designated for such materials. The procedures in Section 3.4.5.1 will be used.
11. No work will be performed if sustained wind speeds exceed the speeds noted in Section 3.4.1.

Preparation for Well Construction

1. When the targeted aquitard is encountered, the outer casing will be advanced into the aquitard and soil cuttings will be removed from the casing using the core barrel.
2. The outer casing will then be retracted approximately one foot and the borehole gauged to ensure that it had remained open.
3. Upon confirmation of an open borehole, medium bentonite chips will be emplaced, extending from the bottom of the borehole to at least five feet up into the outer casing.
4. The outer casing will then be retracted an additional foot to allow the chips to completely fill the boring annulus.
5. Finally, the outer casing will be keyed into the aquitard by advancing the casing through the bentonite seal and at least one foot into the undisturbed aquitard materials.
6. To verify the efficacy of the seal, standing groundwater will be bailed from the conductor casing and a Solinst™ water level meter will be used to record the rate of water level recovery. If the rate of recovery is less than 6 inches in two hours, the seal will be considered effective and drilling will be allowed to resume with a smaller diameter casing.
7. Upon reaching final depth, the well will be constructed following the Monitoring Well Installation and Field Sieve SOP's that are part of the approved RFI Work Plan. Typical proposed well construction diagrams are attached for reference.

3.5.12.5 Well Construction

Shallow

Rotosonic drilling techniques with temporary conductor casing shall be used to drill and install the shallow monitoring wells.



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A continuous core of soil (ASTM D 1586) shall be collected to document lithologic conditions. The well screen (typically 10 to 20 feet maximum saturated length) shall be set at the uppermost water-bearing zone (approximately 75 to 80 feet below ground surface (BGS)). The well screen length will also be based on the thickness of the aquifer of interest. The on-site geologist shall determine the final depth of the monitoring well by trying to finish drilling on top of a silty or clay unit.

To help ensure successful screening in the perched water bearing zone, the Geologist shall review boring logs from adjacent wells. Pilot boring at the location of proposed wells shall be completed prior to installation of the wells. The pilot borings shall be continuously sampled, the results compared against the previous boring logs and particular attention paid to the gradation and moisture beginning at 60 feet BGS. At the sign of first water, drilling will be advanced under the direction of the Geologist stopping periodically as deemed necessary by the Geologist to observed the accumulation of water in the boring. The bottom of the boring will be called by the Geologist when, based on professional judgment, a saturated zone capable of producing sufficient water for groundwater sampling using low flow techniques is encountered. The pilot boring shall penetrate at least 2 feet into the confining layer. Soil samples from the water bearing zone will be submitted for expedited gradation analysis and utilized to select the sand pack and screen materials. Temporary conductor casings shall remain in the hole while awaiting results of the gradation analysis unless it is more feasible to grout the hole in and drill a collocated boring to construct the well at a later time.

The wells shall be constructed with 4-inch diameter schedule 40 polyvinyl chloride (PVC) with factory slotted screens and riser casing. Wells installed during the Phase 3 RFI (MW-16 and MW-17) were both constructed using 20 feet of No. 0.010-in slot PVC screen and 2/16 sand. The well screens will be sand packed to approximately two feet above the top of the screen with No. 1 sand. A minimum two-foot thick bentonite seal will be installed on top of the sand pack. The remaining annulus of each borehole will be tremie-grouted to the surface using a 95 percent cement/5 percent bentonite grout.

Each shallow monitoring well will be completed with a minimum six-inch ID steel protective casing with a locking cap. The protective casing will extend from a depth of three to five feet BGS to approximately 2.5 feet above ground. A small drain hole in the protective casing will be located just above the surface seal. A neat cement or concrete seal will be placed around the protective casing to a depth of three to five feet BGS. A three-foot square well pad will be installed so that the surface slopes away from the well. Bumper guards consisting of cement or concrete-filled steel casing may be placed around the monitoring wells if the possibility of damage by vehicles exists. Wells completed in traffic and parking areas, or in visually obtrusive areas will be equipped with water-tight, 1-inch raised covers that will be set in a concrete pad as described above.

Deep

Rotosonic drilling techniques shall be used to drill and install the deep monitoring wells. A continuous core of soil (ASTM D 1586) shall be collected to document lithologic conditions. Deep wells will be temporarily cased into low permeability soil layers beneath the completion depth of



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the shallow wells. The boring will be initially advanced using 10-inch diameter temporary conductor casing to a minimum of 20 feet through the low permeability soil layer beneath the shallow wells. Once this targeted depth is reached, the shallow water bearing zone will be temporarily sealed.

Drilling into the underlying aquifer will be completed with 9-inch diameter temporary conductor casing. Drilling will be advanced under the direction of the Geologist stopping periodically as deemed necessary by the Geologist to observed the accumulation of water in the boring. The bottom of the boring will be called by the Geologist when, based on professional judgment, a saturated zone capable of producing sufficient water for groundwater sampling using low flow techniques is encountered. The wells shall be constructed with 4-inch diameter schedule 40 polyvinyl chloride (PVC) with factory slotted screens and riser casing. The sand pack and slot size of the well screen will be based on the results of field sieve analysis obtained from the pilot boring. However, based on recently constructed wells at the site, it is anticipated that the wells will be constructed using 2/16 sand with 0.010-in slotted screen. The well screens will be sand packed to approximately two feet above the top of the screen, with at least 1 foot of No. 1 sand as a transition sand pack. A minimum two-foot thick bentonite seal will be installed on top of the sand pack. The remaining annulus of each borehole will be tremie-grouted to the surface using a 95 percent cement/5 percent bentonite grout.

Each deep monitoring well will be completed with a minimum six-inch ID steel protective casing with a locking cap. The protective casing will extend from a depth of three to five feet bgs to approximately 2.5 feet above ground. A small drain hole in the protective casing will be located just above the surface seal. A neat cement or concrete seal will be placed around the protective casing to a depth of three to five feet bgs. A three-foot square well pad will be installed so that the surface slopes away from the well. Bumper guards consisting of cement or concrete-filled steel casing may be placed around the monitoring wells if the possibility of damage by vehicles exists. Wells completed in traffic areas, parking areas or in visually obtrusive areas will be equipped with water-tight, 1-inch raised covers that will be set in a concrete pad as described above.

The wells shall be completed and protected by traffic-rated well boxes (installed slightly above the ground surface to encourage surface drainage away from the well) or steel well protector (for "stick-up" wells).



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3.5.12.6 Well Development

Upon completion, but not sooner than 48 hours following completion of well construction, each well shall be developed to remove fine-grained material from the well casing, sand pack, and the adjacent formation. Development shall consist of the following steps:

1. Record static water level and total well depth.
2. Insert pump to mid-point of screened interval and begin pumping, or begin bailing, while recording turbidity and depth to water, until turbidity levels have stabilized. The pumping rate shall be selected so that the average entrance velocities exceed those anticipated during investigation and sampling activities (ideally 0.5 to 3.0 gpm). Water level measurements recorded at intervals during pumping shall be used to estimate the specific capacity and sustainable extraction rates of the wells for constant discharge aquifer testing, if such tests are judged necessary.
3. Discontinue pumping and perform surging. The wells shall be surged using tight-fitting, vented surge blocks to agitate the sand pack and draw fines from the sand pack and surrounding formation into the well casing. Do not use backwashing, surging, jetting or air lifting for well development. Do not add water to speed up the well development unless an approval is first obtained from DTSC.
4. Re-measure total well depth and repeat pumping and surging until turbidity levels at start of pumping are typically <5 nephelometric turbidity units (NTU).
5. The pH, electrical conductivity (EC), temperature, dissolved oxygen, turbidity, and oxygen reducing potential (ORP) of the extracted ground water shall be monitored periodically during well development. Well development data shall be recorded on well development log forms.
6. Complete a boring log and well construction log for the completed well providing date and time of construction, approximate location, well designation, materials of construction and dimensions (including diameter, total depth, etc.) and completion configuration.

3.5.12.7 Well Surveying

Each monitoring well will be surveyed for location and elevation. Well locations will be surveyed to the nearest 0.5 feet relative to the California State Plane Coordinate System. Wellhead elevations will be surveyed to the nearest 0.01 foot at a marked reference point on each well casing. The newly installed monitoring well will be surveyed within 30 days of the installation using conventional techniques utilizing the control points as reference points. If the impoundment is free of liquid at the time of the monitoring well survey, the location of each sump will also be surveyed and tied into the California State Plane Coordinate System. The surveying activities will be conducted under the direct supervision of a State of California licensed Professional Surveyor.



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The location of all benchmarks used in the survey, as well as the date(s) of the survey, will be documented in annual monitoring reports.

All wells should be re-surveyed as needed (e.g., re-surfacing, well head is modified or repaired, abnormal data, etc.).

3.5.12.9 **Boring Abandonment**

Direct-push soil borings completed to 20 feet bgs or less will be abandoned using granular bentonite. Bentonite will be placed by hand into the boring from grade and hydrated in place with potable water. Borings that are drilled beyond 20 feet bgs will be abandoned using neat cement grout by the tremie method. A 0.5- to 1-inch diameter tremie pipe will be placed in the borehole, filled with cement grout, and removed in 5- to 10-foot sections to allow the cement to fill the vacated space at the base of the boring. This procedure will be repeated until the boring is backfilled to grade. The following day, the borings will be topped off should the cement within the borings settle overnight.

3.5.13 Well Maintenance

Prior to maintenance, the area around the well will be cleaned with a SCAQMD-permitted HEPA-vacuum. The well lid will be removed and the vault area cleaned with a SCAQMD-permitted HEPA-vacuum. Required maintenance will be conducted. If concrete removal is necessary, work will be conducted in a temporary enclosure per Section 3.4.4. Debris will be collected into a sealed plastic container/bag and disposed off-site.

3.5.14 Welding

Welding is not anticipated to occur during closure; however, the procedures are provided in the event they are needed. The areas to be welded will be cleaned by wiping with clean disposable wipes wet with a D-Lead Solution®. A wipe test will then be performed on the area to be welded using a Lead Wipe Test Kit (ESCA Tech Inc. Lead Test Kit). The test solution will be applied to the test kit supplied wipe. A wipe sample will be performed on 4 separate locations on each area to be welded using a new wipe wetted with the test solution. A yellow color indicates lead is present and additional cleaning is required. No color change indicates no lead is present. All 4 test locations must have a negative result prior to proceeding with the welding using standard welding techniques. The MSDS for the specific welding rod to be utilized will be reviewed. A welding rod will be utilized that does not contain lead. This process will be completed for each of the 4 areas that require additional welding. The welding will be completed immediately following the wipe testing.

3.6 AIR MONITORING

3.6.1 Perimeter Ambient Air Monitoring



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Perimeter ambient air monitoring will be conducted by Exide as indicated in the Air Monitoring Plan (Closure Plan Appendix H) and as required per SCAQMD Rule 1420.1(p)(1).

If during closure the ambient air concentrations of lead or arsenic exceed the limits in paragraphs (d)(1) and (d)(5) of SCAQMD Rule 1420.1, Exide will temporarily suspend closure-related activities that contributed to the exceedance until contingency measures in Section 5.2 are implemented. Exide shall submit a written report assessing the root cause of the exceedance and, if closure-related activities are determined to have contributed to the exceedance, Exide shall temporarily suspend the closure-related activities that contributed to the exceedance and provide a mitigation plan designed to avoid additional exceedances. The closure-related activities that contributed to the exceedance shall not re-commence until the Executive Officer, in consultation with DTSC, approves the mitigation plan and the mitigation measures are implemented.

Any exceedances of ambient air concentrations specified in paragraphs (d)(1) or (d)(5) of SCAQMD Rule 1420.1 will be reported with a notification made to the 1-800-CUT-SMOG within 24 hours of receipt of the completed sample analysis. A written report will be submitted to SCAQMD's Executive Officer no later than three business days after the notification. The written report will include the causes of the exceedance and the specific corrective action implemented.

If an ambient air concentration of lead greater than 0.100 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) occurs for any 30-day average sample, Exide shall report the following information in writing to the SCAQMD Executive Officer within 72 hours of when the facility knew or should have known the result, including:

- Date(s) of the occurrence;
- Name of the monitor;
- 30-day average ambient lead concentrations at the monitor;
- Ambient lead concentration at the monitor for all associated 24-hour samples in the 30-day range;
- Potential cause or causes of the occurrence; and,
- Potential remedies to prevent the reoccurrence.

Similarly, if an ambient air concentration of arsenic greater than 10 nanograms per cubic meter (ng/m^3) occurs for any 24-hour sample, Exide shall report the following information in writing to the SCAQMD Executive Officer within 72 hours of when the facility knew or should have known the result, including:

- Date(s) of the occurrence;
- Name of the monitor;
- Ambient arsenic concentration at the monitor for the 24-hour sample;
- Potential cause or causes of the occurrence; and,
- Potential remedies to prevent the reoccurrence.



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3.6.2 Real-Time Work Area Particulate Matter Monitoring

Real-time work area air monitoring will be conducted as indicated in the Air Monitoring Plan (Closure Plan Appendix H) by the Dust Mitigation Oversight representative.

As observing personnel note an increase in concentration of $50 \mu\text{g}/\text{m}^3$ of PM10, using DustTrak devices, above background averaged over a minute and measured every 15 minutes at a location near the activity that is being conducted in conjunction with visual observation and experience, they shall direct work stoppage and then direct adjustments in the work practices and/or the applied control measures as appropriate. In response to adverse visual observations or DustTrak results, Exide and its contractors shall implement the following increased dust suppression activities. These increased dust suppression abatement activities will include, but are not limited to the following:

- Stop all work outside of any Total Enclosure Building that has the potential to generate lead or other toxic metals containing dust. Negative air filtration units installed on enclosures will remain in operation for the duration of the stop work order. Equipment that was being used inside of the Total Enclosure Building shall remain in place during the stop work period.
- Immediately begin application of water on all paved areas.
- Stop all onsite vehicle traffic outside of all Total Enclosure Buildings.
- All overhead doors on any Total Enclosure Building are to remain closed.
- Determine if there are any activities within any Total Enclosure Building that could be contributing to the increase in dust concentration. If so, these activities will be stopped.
- Determine if there are any offsite activities that are being conducted by others that are contributing to the increase in dust concentration. If so, suspend all activities outside of Enclosures that have the potential to generate lead and other toxic metals containing dust until additional dust mitigation has been implemented or the activity completed and the areas both on-site and off-site are cleaned.

The abatement activities described above will remain in effect until Exide and the Dust Mitigation Oversight representative determine the cause of the adverse readings and additional dust mitigation for the activity that caused the increase in dust concentration has been implemented.

If the cause of the adverse DustTrak readings cannot be attributed to any one activity outside of Enclosures and no activity within any Enclosure, the work outside of the Enclosure will be restarted on a rolling basis with the activity that would be expected to generate the least amount of lead containing dust starting first. No work may resume until DustTrak readings show that the adverse dust condition does not exist anymore.

The real time data from the DustTraks will be continuously monitored during this rolling start to determine if there is an increase in the dust concentrations following the restart of any one activity. If an increase is noted after restarting any activity, that activity will be stopped until additional dust suppression measures have been implemented. The rolling start activities following the activity that caused the increase in dust consideration may be restarted using the basis described above with



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continuous monitoring of the real time particulate data to insure none of the follow on activities causes an increase in the total particulate concentration. If after work resumes, DustTrak readings show adverse dust conditions, the dust suppression and abatement activity described above shall be implemented.

3.7 1420.1 HOUSEKEEPING

Exide will continue to implement those housekeeping measures outlined in SCAQMD Rule 1420.1(h) including sweeping of on-site paved areas, will be conducted as noted in the Closure Plan.



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4.0 OVERSIGHT

Exide will retain a third-party consultant to oversee implementation of the engineering controls for liquid infiltration. The name and qualifications of the third party consultant will be provided to DTSC and SCAQMD 10 business days in advance of retaining the consultant. The third party consultant(s) will provide weekly reports to Exide, DTSC and SCAQMD regarding the engineering controls, Closure activities and progress on Monday of each week.

The Dust Mitigation Oversight representative discussed in Section 1.3.6.3 of the Closure Plan will oversee implementation of engineering controls for fugitive emissions in air and will perform real-time air monitoring. The Dust Mitigation Oversight representative will provide weekly reports to Exide, DTSC and SCAQMD regarding the engineering controls, Closure activities and progress on Monday of each week.

The third-party consultant performing oversight of engineering controls for liquid infiltration may be the same as the consultant providing dust mitigation oversight.



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5.0 PLAN VARIATIONS AND CONTINGENCY MEASURES

5.1 VARIATIONS FROM PLAN

Though appropriate efforts have been made to anticipate closure-related activities and engineering controls, unanticipated conditions may arise from time to time that may need to be addressed. The appropriate general engineering control requirements presented within the Engineering Controls Plan will be implemented for any such activities with notification to DTSC and SCAQMD field representatives. If additional engineering controls not already listed in the Closure Plan or Closure Implementation Plan are necessary for unanticipated activities or varying conditions, then, unless an emergency requires a faster response, the additional activities will be submitted to DTSC and SCAQMD for review and approval two (2) SCAQMD business days in advance of the work.

Variations from the Engineering Controls Plan must be approved by DTSC and SCAQMD. Operations associated with the variance from the plan will stop until DTSC and SCAQMD have approved the variation, unless ceasing operation while awaiting approval creates a worse environmental situation. Pursuant to Section 25 of the Closure Plan, alternative methods outlined in the DTSC-approved Closure Implementation Plan may be followed in lieu of those listed in this document.

5.2 CONTINGENCY MEASURES

If ambient air concentrations of lead or arsenic exceed the limits in Rule 1420.1 (d)(1) and (d)(5), Exide will temporarily suspend closure-related activities that contributed to the exceedance until appropriate contingency measure(s) are implemented.

The contingency measure or measures implemented will be specific to the closure activities occurring at the time of the exceedance. Contingency measures, listed below as required under SCAQMD Rule 1420.1(p)(2)(B), may include:

- Extra water sprays on paved areas;
- Extra sweeping;
- Additional inspection of temporary enclosure to identify defects;
- An additional plastic sheeting layer on temporary enclosure(s);
- Increased negative pressure for Total Enclosure Building and/or temporary enclosure;
- Additional temporary enclosure cleaning with SCAQMD-permitted HEPA vacuum;
- Add water misting devices at work locations;
- Decrease threshold wind speed for outdoor work stoppage; or,
- Add wind speed threshold for work stoppage at temporary enclosures, including Total Enclosure Building in the process of deconstruction.



5.3 CONTINGENCY PLAN REVISION

If a previously unidentified activity which the contingency measures in Section 5.2 do not address contributes to the exceedances, then a revised Engineering Controls Plan will be submitted to DTSC and SCAQMD for approval before resuming closure related activities.



Vernon Environmental Response Trust

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6.0 SCHEDULE

A schedule for closure phases including inventory removal, decontamination, confirmation soil sampling, removal of equipment, building decontamination, soil and soil gas sampling, and building deconstruction and their associated engineering controls is provided in Appendix F of the Closure Plan and in the Closure Implementation Plan Attachment 3 and described in Section 3.2.1.

As discussed in Section 1.4.2 of the Closure Plan, progress meetings will be held at the facility weekly with Exide, the Contractor, and the Resident Engineer when field activities are occurring. DTSC, SCAQMD and the City of Vernon will be invited to attend. The meeting agenda is provided in Section 1.4.2 of the Closure Plan, and includes discussion of work activities completed during the previous week, and work activities planned for the upcoming two weeks. The meeting will satisfy the requirement of Rule 1420.1(p)(2)(C) to periodically update the schedule to reflect the progression of closure activities.



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ENGINEERING CONTROLS SUMMARY TABLE



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MIASE | ENGINEERING CONTROL SUMMARY BY UNIT, AREA OR BUILDING
ESDSE TECHNOLOGIES, VERNON, CALIFORNIA

UNIT NO.	UNIT NAME OR ACTIVITY	UNIT TYPE	GLORIBE AREA	BUILDING	UNIT EMISSIONS REMOVAL ACTIVITY SUMMARY	ENGINEERING CONTROLS DURING UNIT DECON. SAMPLING, REMOVAL	AREA BUILDING DESIGN, SAMPLING ACTIVITY SUMMARY	ENGINEERING CONTROLS DURING DECONSTRUCTION	BUILDING DECONSTRUCTION	ENGINEERING CONTROLS DURING DECONSTRUCTION	OPERATING DITCHES / PORTABLE NEGATIVE AIR EQUIPMENT
94	Refining Kettle 1	Metal/Plastics Unit	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
95	Refining Kettle 2	Metal/Plastics Unit	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
96	Refining Kettle 3	Metal/Plastics Unit	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
97	Refining Kettle 4	Metal/Plastics Unit	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
98	Refining Kettle 5	Metal/Plastics Unit	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
99	Refining Kettle 6	Metal/Plastics Unit	Smelter Refining	Smelter	pressure wash, venturi (checking only)	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
100	Refining Kettle 7	Metal/Plastics Unit	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
101	Refining Kettle 8	Metal/Plastics Unit	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
102	Refining Kettle 9	Metal/Plastics Unit	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
36	Reverse Process	Metal/Plastics Unit, Treatment	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
37	Blow Pumps	Metal/Plastics Unit, Treatment	Smelter Refining	Smelter	pressure wash, venturi	Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	no	Test Enclosure Building or Full Enclosure Unit	Self-Loss, Manual Handling, MACH, Torts (See Note 2)
SMELTER BUILDING - DECONSTRUCTION											
SAMPLER BUILDING - DECONSTRUCTION											
63	WWT# Acid Storage Tank	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment
70	WWT# Recycled Acid Tank	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment
82	Deposition Tank 1	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment
85	Neutralization Tank 2	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment
87	Reaction Tank 1	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment
88	Reaction Tank 2	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment
89	Reaction Tank 3	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment
89	Reaction Tank 4	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment
61	Reaction Tank 5	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment
55	Neutralization Tank	Tank	WWT#	Smelter	3x interior pressure wash, 1x exterior pressure wash, venturi	Temporary enclosure	no	Temporary enclosure	no	Temporary enclosure	Portable Negative Air Equipment



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PHASE 1 ENGINEERING CONTROL SUMMARY BY UNIT, AREA OR BUILDING
CERBER TECHNOLOGIES, VERNON, CALIFORNIA

UNIT NO.	UNIT NAME OR ACTIVITY	UNIT TYPE	CLOSURE AREA	BUILDING	UNIT ENTRY, SAMPLES, REMOVAL ACTIVITY SUMMARY	ENGINEERING CONTROLS FOR UNIT/FACILITY SAMPLING, REMOVAL	APPLICABLE REGULATORY ACTIVITY SUMMARY	ENGINEERING CONTROLS FOR UNIT/FACILITY SAMPLING	BUILDING DECONTAMINATION	ENGINEERING CONTROLS FOR UNIT/FACILITY SAMPLING	OPERATING MACHINES, PORTABLE/NEGATIVE AIR EQUIPMENT
48	Building Tank No. 2	Tank	Deep Out System	outside	3a. Inactive permits work, 1a. existing permits work, 1b. permit on existing	temporary enclosure - plastic sheet on existing	no	Temporary enclosure	no	no	Portable Negative Air Equipment
49	Building Tank No. 3	Tank	Deep Out System	outside	3a. Inactive permits work, 1a. existing permits work, 1b. permit on existing	temporary enclosure - plastic sheet on existing	no	Temporary enclosure	no	no	Portable Negative Air Equipment
50	Building Tank No. 4	Tank	Deep Out System	outside	3a. Inactive permits work, 1a. existing permits work, 1b. permit on existing	temporary enclosure - plastic sheet on existing	no	Temporary enclosure	no	no	Portable Negative Air Equipment
	DRUG OUT SYSTEM - DECONTAMINATION		Deep Out System	outside	no	HEPA vac & remove vent filter, walls, concrete/wall on job barrier	no	temporary enclosure - plastic sheet on existing	no	no	Portable Negative Air Equipment



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INSPECTION FORMS

**(REFER TO ATTACHMENT 2 OF THE CLOSURE
IMPLEMENTATION PLAN:**

**ATTACHMENT 2-4: PRE-LOADING CHECKLIST
ATTACHMENT 2-5: TRUCK INSPECTION AND
DECONTAMINATION CHECKLIST**



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MATERIALS SAFETY DATA SHEETS



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PRODUCT DATA

7 07 92 00 Joint Sealants

SONOLASTIC® SL 1™

One-component elastomeric, self-leveling polyurethane sealant

Description

SL 1™ is a one-component nonpriming, self-leveling elastomeric polyurethane designed for expansion joints in concrete floors and decks. Use it where flexibility as well as abrasion and puncture resistance are required.

Yield

See page 3 for charts.

Packaging

- 2 gallon pails (7.6 L)
- 825 ml cartridges, 12 cartridges per carton
- 300 ml cartridges in limestone, 30 cartridges per carton
- 20 oz (590 ml) ProPaks in limestone, 20 ProPaks per carton

Shelf Life

In bulk: 6 months when properly stored
Cartridges and ProPaks: 1 year when properly stored

Storage

Store in unopened containers in a cool, clean, dry area. Storing at elevated temperatures will reduce shelf life.

Color

Limestone, gray or stone

Features

- Movement capability of $\pm 25\%$
- Abrasion resistant
- Easy to gun
- Variety of types and sizes of packaging
- Nonpriming on most surfaces
- Self levels
- Wide application-temperature range
- Excellent weatherability

Benefits

- Expands and contracts with joint movement
- Provides longer wearing and durability
- Installs quickly
- Reduces jobsite waste
- Offers excellent adhesion
- Requires no tooling
- Suitable for all climates
- Offers long-lasting performance

Where to Use

APPLICATION

- Expansion joints
- Pavers
- Plaza decks
- Industrial floors
- Driveways
- Sidewalks
- Decks
- Parking areas
- Pitch pans

LOCATION

- Horizontal
- Interior and exterior

SUBSTRATE

- Concrete
- Metal

How to Apply

Joint Preparation

1. The number of joints and the joint width should be designed not to exceed $\pm 25\%$ movement.
2. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 3/8" (10 mm) and the minimum is 1/4" (6 mm). Maximum recommended joint width is 1-1/2" (38 mm).
3. In deep joints, sealant depth must be controlled with Backer-Rod (closed cell only) or Expansion-Joint Filler (see Form Nos. 1017927 and 1017916). Other caulks should not be used as fillers. Do not prime Backer-Rod or Expansion Joint Filler. Do not puncture backer-rod; it may cause bubbling.
4. Caulking and sealing should be performed when temperatures are above 40° F (4° C). Application to moist surfaces will adversely affect adhesion. Application may proceed as low as 20° F (-7° C) only if substrates are clean and completely free of moisture or frost.





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SONNEBORN® PRODUCT DATA
SL 1™

Technical Data

Composition

SL 1™ is a single-component polyurethane sealant, which cures by reaction with atmospheric moisture.

Compliances

- ASTM C 920, Type S, Grade P, Class 25, Use T, M and D*
- Federal Specification TTS- 00230C, Type 1, Class A
- Corps of Engineers CRD-C-541
- Canadian Specification CAN/CGSB 19.13-M87, Classification C-1-40-B-N and C-1-25-B-N, No. 81028
- Canadian approval for use in areas that handle food
- USDA compliant for use in areas that handle meat and poultry

* Refer to substrates in Where to Use.

Typical Properties

PROPERTY	VALUE
Service temperature range, ° F (° C)	-40 to 180 (-40 to 82)
Shrinkage	Nil

Test Data

PROPERTY	RESULTS	TEST METHODS
Tensile strength, psi (MPa)	300 (2.1)	ASTM D 412
Elongation, %	800	ASTM D 412
Hardness, Shore A	25	ASTM C 661
Shrinkage	Nil	
Artificial weathering, Xenon arc, 1,000 hrs	Excellent	ASTM G 26
Low temperature flexibility, ° F (° C)	-15 (-26)	ASTM C 793
Viscosity, poise	325	Brookfield

Test results are typical values obtained under laboratory conditions. Reasonable variations can be expected.

Surface Preparation

It is essential that joints be clean and dry. Joint surfaces must be structurally sound, fully cured, and free of all loose aggregate, paint, oil, grease, asphalt, wax, mastic compounds, waterproofing compounds, form-release materials, curing compounds or any other contaminants.

NEW CONCRETE

Remove all loose material from joints by wire brushing. Sandblast surfaces in contact with form-release agents. Fresh concrete must be fully cured. Laitance must be removed by abrading.

OLD CONCRETE

For previously sealed joints, remove all old material by mechanical means. If joint surfaces have absorbed oils, remove sufficient concrete to ensure a clean surface.

Priming

1. For most applications, priming is not required; joints subject to periodic water immersion, however, must be primed with Primer 733 (see Form No. 1017903). On surfaces other than concrete, conduct a test application to verify adhesion.
2. Apply primer in a thin, uniform film. Avoid build-up of excess primer.
3. Avoid applying primer beyond joint faces. To minimize the contamination of adjacent surfaces, apply masking tape before priming and remove before the sealant has begun to thicken and set.
4. Allow approximately 15 – 30 minutes drying time before applying sealant (primer should be tack free). Priming and sealing must be done on the same work day.

Application

1. Fill joints by pouring the sealant from a spouted container or flowing the sealant from a bulk-loading gun or from the cartridge or ProPak.
2. Fill joints from the bottom; avoid bridging of the joint, which may form air voids. Sealant will self level to form a clean joint surface.
3. The maximum depth of SL 1™ should be 3/8" (10 mm).

Curing Time

1. Protect joint from dirt and traffic until cured.
 2. Curing of SL 1™ will vary with temperature and humidity. Curing times assume a typical joint of 1/2" (13 mm) width by 1/4" (6 mm) depth at 75° F (24° C) and 50% relative humidity. Lower temperatures will extend curing time.
- Skins over: within 24 hours
Foot traffic: 3 days
Full cure: 1 week



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SONNEBORN® PRODUCT DATA
 SL 1™

Yield

LINEAR FEET PER GALLON*

JOINT DEPTH (INCHES)	1/4		3/8		JOINT WIDTH (INCHES)		
	1/4	3/8	1/2	5/8	3/4	7/8	1
1/4	308	205	154	122	—	—	—
3/8	—	—	—	82	68	58	51
1/2	—	—	—	—	51	44	38

* 1 gallon equals approximately twelve 300 ml cartridges.

LINEAR METERS PER LITER

JOINT DEPTH (MM)	8		10		JOINT WIDTH (MM)		
	8	10	13	16	19	22	25
8	24.8	16.5	12.4	9.8	—	—	—
10	—	—	—	6.6	5.5	4.7	4.1
13	—	—	—	—	4.1	3.5	3

LINEAR FEET PER 825 ML CARTRIDGE

JOINT DEPTH (INCHES)	1/4"		3/8"		JOINT WIDTH (INCHES)		
	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
1/4	72	48	36	28.5	—	—	—
3/8	—	—	—	19.25	16	13.5	12
1/2	—	—	—	—	12	10.2	8.8

LINEAR METER PER 825 ML CARTRIDGE

JOINT DEPTH (MM)	6		10		JOINT WIDTH (MM)		
	6	10	13	16	19	22	25
6	20.5	13.6	10.2	8.1	—	—	—
10	—	—	—	5.4	4.5	3.9	3.4
13	—	—	—	—	3.4	2.9	2.5



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We create chemistry

Safety Data Sheet
MasterSeal SL 1 stn also SL1 STN

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1. Identification

Product identifier used on the label

MasterSeal SL 1 stn also SL1 STN

Recommended use of the chemical and restriction on use

Recommended use*: for industrial and professional users

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Chemical family: No data available.

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Flam. Liq.	4	Flammable liquids
Skin Corr./Irrit.	2	Skin corrosion/irritation
Eye Dam./Irrit.	2A	Serious eye damage/eye irritation
Resp. Sens.	1	Respiratory sensitization
Skin Sens.	1	Skin sensitization
Carc.	2	Carcinogenicity
Repr.	2 (unborn child)	Reproductive toxicity
STOT RE	1	Specific target organ toxicity — repeated exposure



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Label elements

Pictogram:



Signal Word:
Danger

Hazard Statement:

- | | |
|------|--|
| H227 | Combustible liquid. |
| H319 | Causes serious eye irritation. |
| H315 | Causes skin irritation. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H317 | May cause an allergic skin reaction. |
| H351 | Suspected of causing cancer. |
| H361 | Suspected of damaging the unborn child. |
| H372 | Causes damage to organs (Central nervous system) through prolonged or repeated exposure. |

Precautionary Statements (Prevention):

- | | |
|------|--|
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P260 | Do not breathe dust/gas/mist/vapours. |
| P201 | Obtain special instructions before use. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P284 | [In case of inadequate ventilation] wear respiratory protection. |
| P270 | Do not eat, drink or smoke when using this product. |
| P264 | Wash with plenty of water and soap thoroughly after handling. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |

Precautionary Statements (Response):

- | | |
|--------------------|--|
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P304 + P341 + P311 | IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician. |
| P308 + P311 | IF exposed or concerned: Call a POISON CENTER or doctor/physician. |
| P303 + P362 | IF ON SKIN (or hair): Wash with plenty of soap and water. |
| P333 + P311 | If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician. |
| P332 + P313 | If skin irritation occurs: Get medical advice/attention. |
| P362 + P364 | Take off contaminated clothing and wash before reuse. |
| P337 + P311 | If eye irritation persists: Call a POISON CENTER or doctor/physician. |
| P370 + P378 | In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water spray for extinction. |

Precautionary Statements (Storage):

- | | |
|-------------|--|
| P405 | Store locked up. |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |

Precautionary Statements (Disposal):



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P501 Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

Labeling of special preparations (GHS):

CONTAINS ISOCYANATES. INHALATION OF ISOCYANATE MISTS OR VAPORS MAY CAUSE RESPIRATORY IRRITATION, BREATHLESSNESS, CHEST DISCOMFORT AND REDUCED PULMONARY FUNCTION. OVEREXPOSURE WELL ABOVE THE PEL MAY RESULT IN BRONCHITIS, BRONCHIAL SPASMS AND PULMONARY EDEMA. LONG-TERM EXPOSURE TO ISOCYANATES HAS BEEN REPORTED TO CAUSE LUNG DAMAGE, INCLUDING REDUCED LUNG FUNCTION WHICH MAY BE PERMANENT. ACUTE OR CHRONIC OVEREXPOSURE TO ISOCYANATES MAY CAUSE SENSITIZATION IN SOME INDIVIDUALS, RESULTING IN ALLERGIC RESPIRATORY REACTIONS INCLUDING WHEEZING, SHORTNESS OF BREATH AND DIFFICULTY BREATHING. ANIMAL TESTS INDICATE THAT SKIN CONTACT MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

CAS Number	Weight %	Chemical name
8052-41-3	>= 1.0 - < 3.0%	Stoddard solvent
91-08-7	>= 0.3 - < 1.0%	toluene-2,6-diisocyanate
2530-83-8	>= 0.2 - < 0.3%	trimethoxy(3-(oxiranylmethoxy)propyl)silane
149-57-5	>= 0.0 - < 0.2%	2-ethylhexanoic acid
1317-65-3	>= 0.0 - < 25.0%	Limestone
13463-67-7	>= 0.0 - < 10.0%	Titanium dioxide
14807-96-6	>= 3.0 - < 5.0%	talc

4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing.

If inhaled:

If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

If on skin:

After contact with skin, wash immediately with plenty of water and soap. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.



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If swallowed:

Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor.

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Eye irritation, skin irritation, allergic symptoms
Hazards: Symptoms can appear later.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
carbon dioxide, carbon monoxide, harmful vapours, nitrogen oxides, fumes/smoke, carbon black

Advice for fire-fighters

Protective equipment for fire-fighting:
Wear a self-contained breathing apparatus.

Further information:

The degree of risk is governed by the burning substance and the fire conditions. If exposed to fire, keep containers cool by spraying with water. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/aerosol/spray mists. Wear eye/face protection. If exposed to high vapour concentration, leave area immediately. Use personal protective clothing. Handle in accordance with good building materials hygiene and safety practice.

Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up



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For small amounts: Pick up with inert absorbent material (e.g. sand, earth etc.). Dispose of contaminated material as prescribed.
For large amounts: Pump off product.

7. Handling and Storage

Precautions for safe handling

Avoid aerosol formation. Avoid inhalation of mists/vapours. Avoid skin contact. No special measures necessary provided product is used correctly.

Conditions for safe storage, including any incompatibilities

No applicable information available.

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect from direct sunlight.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

toluene-2,6-diisocyanate	ACGIH TLV	TWA value 0.005 ppm ; STEL value 0.02 ppm ;
2-ethylhexanoic acid	ACGIH TLV	TWA value 5 mg/m3 Inhalable fraction and vapor ;
Limestone	OSHA PEL	PEL 5 mg/m3 Respirable fraction ; PEL 15 mg/m3 Total dust ; TWA value 15 mg/m3 Total dust ; TWA value 5 mg/m3 Respirable fraction ;
Titanium dioxide	OSHA PEL	PEL 15 mg/m3 Total dust ; TWA value 10 mg/m3 Total dust ;
	ACGIH TLV	TWA value 10 mg/m3 ;



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Safety Data Sheet
MasterSeal SL 1 stn also SL1 STN

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(30606244/SDS GEN US/EN)

talc	OSHA PEL	<p>TWA value 20 millions of particles per cubic foot of air ; TWA value 2.4 millions of particles per cubic foot of air Respirable ; The exposure limit is calculated from the equation, $250/(\%SiO_2+5)$, using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits. TWA value 0.1 mg/m³ Respirable ; The exposure limit is calculated from the equation, $10/(\%SiO_2+2)$, using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits. TWA value 0.3 mg/m³ Total dust ; The exposure limit is calculated from the equation, $30/(\%SiO_2+2)$, using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits. TWA value 2 mg/m³ Respirable dust ; TWA value 0.3 mg/m³ Total dust ; The exposure limit is calculated from the equation, $30/(\%SiO_2+2)$, using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits. TWA value 0.1 mg/m³ Respirable ; The exposure limit is calculated from the equation, $10/(\%SiO_2+2)$, using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits. TWA value 2.4 millions of particles per cubic foot of air Respirable ; The exposure limit is calculated from the equation, $250/(\%SiO_2+5)$, using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits. TWA value 20 millions of particles per cubic foot of air ;</p>
	ACGIH TLV	<p>TWA value 2 mg/m³ Respirable fraction ; The value is for particulate matter containing no asbestos and <1% crystalline silica.</p>
Stoddard solvent	OSHA PEL ACGIH TLV	<p>PEL 500 ppm 2,900 mg/m³ ; TWA value 100 ppm ;</p>

Advice on system design:
Provide adequate exhaust ventilation to control work place concentrations.

Personal protective equipment

Respiratory protection:
When workers are facing concentrations above the occupational exposure limits they must use appropriate certified respirators.

Hand protection:
Wear chemical resistant protective gloves., Manufacturer's directions for use should be observed because of great diversity of types.



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Eye protection:

Tightly fitting safety goggles (chemical goggles).

Body protection:

Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:

Do not inhale gases/vapours/aerosols. Avoid contact with the skin, eyes and clothing. Avoid exposure - obtain special instructions before use. Handle in accordance with good building materials hygiene and safety practice. Wearing of closed work clothing is recommended. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).

9. Physical and Chemical Properties

Form:	paste	
Odour:	slight odour	
Odour threshold:	No applicable information available.	
Colour:	pigmented	
pH value:	not applicable	
Melting point:	No applicable information available.	
Boiling point:	not applicable	
Sublimation point:	No applicable information available.	
Flash point:	81.5 °C 178.7 °F	(ASTM D3278)
Flammability:	not determined	
Lower explosion limit:	No applicable information available.	
Upper explosion limit:	No applicable information available.	
Autoignition:	not applicable	
Vapour pressure:	No applicable information available.	
Density:	1.15 g/cm ³ (20 °C)	
Relative density:	No applicable information available.	
Vapour density:	No applicable information available.	
Partitioning coefficient n-octanol/water (log Pow):	No applicable information available.	
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.	
Viscosity, dynamic:	No applicable information available.	
Viscosity, kinematic:	No applicable information available.	
Solubility in water:	(15 °C) insoluble	
Miscibility with water:	not (e.g. <10%)	
Solubility (quantitative):	No applicable information available.	
Solubility (qualitative):	No applicable information available.	
Evaporation rate:	No applicable information available.	
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.	

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:



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Not an oxidizer.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is stable if stored and handled as prescribed/indicated.

Conditions to avoid

See MSDS section 7 - Handling and storage.

Incompatible materials

strong acids, strong bases, strong oxidizing agents, strong reducing agents

Hazardous decomposition products

Decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Harmful by inhalation.

Oral

No applicable information available.

Inhalation

No applicable information available.

Dermal

No applicable information available.

Assessment other acute effects

No applicable information available.

Irritation / corrosion

Assessment of irritating effects: Eye contact causes irritation.

Sensitization

Assessment of sensitization: Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract.

Chronic Toxicity/Effects

Repeated dose toxicity



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Assessment of repeated dose toxicity: Prolonged exposure may cause chronic effects.

Genetic toxicity

Assessment of mutagenicity: The substance was mutagenic in various bacterial test systems; however, a mutagenic effect could not be confirmed in mammalian cell culture.

Carcinogenicity

Assessment of carcinogenicity: Contains a compound classified as IARC Group 2B (possibly carcinogenic to humans).

Information on: toluene-2,6-diisocyanate

Assessment of carcinogenicity: IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans).

Reproductive toxicity

Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Other Information

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Eye irritation, skin irritation, allergic symptoms

Medical conditions aggravated by overexposure

The isocyanate component is a respiratory sensitizer. It may cause allergic reaction leading to asthma-like spasms of the bronchial tubes and difficulty in breathing. Medical supervision of all employees who handle or come into contact with isocyanates is recommended. Contact may aggravate pulmonary disorders. Persons with history of respiratory disease or hypersensitivity should not be exposed to this product. Preemployment and periodic medical examinations with respiratory function tests (FEV, FVC as a minimum) are suggested. Persons with asthmatic conditions, chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:
Based on available Data, the classification criteria are not met.

Persistence and degradability



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Assessment biodegradation and elimination (H2O)

Poorly biodegradable.

The product is unstable in water. The elimination data also refer to products of hydrolysis.

Assessment biodegradation and elimination (H2O)

Information on: TDI

Poorly biodegradable. The product is unstable in water. The elimination data also refer to products of hydrolysis.

Mobility in soil

Assessment transport between environmental compartments

Adsorption to solid soil phase is not expected.

Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control. The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. Residues should be disposed of in the same manner as the substance/product. Do not discharge into drains/surface waters/groundwater.

Container disposal:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport

USDOT

Classified as combustible liquid in containers greater than 119 gallons.

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations



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Registration status:

Chemical TSCA, US released / listed

TSCA § 5 proposed Significant New Use Restriction (SNUR)
This product contains a substance subject to a pending SNUR.
40 CFR 721.10789

EPCRA 311/312 (Hazard categories): Acute; Chronic; Fire

EPCRA 313:

CAS Number	Chemical name
584-84-9	toluene-2,4-diisocyanate
91-08-7	toluene-2,6-diisocyanate

CERCLA RQ	CAS Number	Chemical name
5000 LBS	7664-38-2	phosphoric acid
1000 LBS	108-88-3	Toluene
100 LBS	108-90-7; 75-28-5; 584-84-9; 91-08-7	chlorobenzene; Propane, 2-methyl-; toluene-2,4-diisocyanate; toluene-2,6-diisocyanate

State regulations

State RTK	CAS Number	Chemical name	
PA	13463-67-7	Titanium dioxide	
	8052-41-3	Stoddard solvent	
	1317-65-3	Limestone	
	584-84-9	toluene-2,4-diisocyanate	
	91-08-7	toluene-2,6-diisocyanate	
	14807-96-6	talc	
	53306-54-0	bis(2-propylheptyl) phthalate	
	1305-78-8	calcium oxide	
	MA	8052-41-3	Stoddard solvent
		1317-65-3	Limestone
584-84-9		toluene-2,4-diisocyanate	
91-08-7		toluene-2,6-diisocyanate	
14807-96-6		talc	
NJ	1305-78-8	calcium oxide	
	13463-67-7	Titanium dioxide	
	13463-67-7	Titanium dioxide	
	8052-41-3	Stoddard solvent	
	14807-96-6	talc	
	53306-54-0	bis(2-propylheptyl) phthalate	
	1305-78-8	calcium oxide	
	1317-65-3	Limestone	
	584-84-9	toluene-2,4-diisocyanate	

CA Prop. 65:
WARNING: THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

NFPA Hazard codes:
Health : 2 Fire: 2 Reactivity: 0 Special:

16. Other Information

SDS Prepared by:



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BASF NA Product Regulations
SDS Prepared on: 2015/07/08

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END OF DATA SHEET



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Technical Datasheet Ashland Performance Materials



HETRON® FR 992 FR / CR Epoxy Vinyl Ester Resin

HETRON FR992 resin is a low viscosity, unpromoted, flame retardant⁽¹⁾ patented epoxy vinyl ester with F-Cat technology. This patented technology results in a resin that exhibits no foaming, excellent exotherm control, and industry-leading storage stability. Laminates made with HETRON FR992 resin have achieved a flame spread of <25 (ASTM E-84) when 3% antimony trioxide is added and a flame spread of <75 without antimony trioxide. HETRON FR992 resin gives final products with:

- Excellent flame retardancy
- High strength characteristics
- Excellent impact strength and toughness
- Fast wet-out and low drainage
- Excellent corrosion resistance to acidic and alkaline environments

APPLICATIONS AND USE

HETRON FR992 resin can be used for corrosion resistant, reinforced thermosetting plastic equipment including filament wound, hand lay-up and spray-up tanks, pipes, ducts, stacks, scrubbers, linings or other equipment handling corrosive gases, vapors or liquids where a high degree of flame retardancy is required.

HETRON 922 resin is a non-flame retardant epoxy vinyl ester. HETRON FR992Sb resin can be used to achieve <25 flame spread without mixing additional antimony. HETRON FR998/35 resin can be used to fabricate laminates with improved corrosion resistance. Conditions for these resins are outlined in Ashland's Resin Selection Guide at www.hetron.com. For recommendations on specific services and environments, please contact us at hetron@ashland.com.

TYPICAL LIQUID RESIN PROPERTIES

Property ⁽²⁾ at 25°C (77°F)	Value	Unit
Viscosity, Brookfield # 2 spindle @ 30 rpm	425	mPas (cps)
Percent Solids	57.5	%
Color	<5	Gardner
Specific Gravity	1.16	gm/cc

(1) HETRON polyester resin will burn if provided with a sufficient amount of heat and oxygen. The degree of flame retardancy of the cured polyester resin is characterized by the ASTM E-84 tunnel test. This test is performed under strictly controlled conditions where a flame spread rating is assigned according to comparisons with test set-point materials. The behavior of the cured composite under these controlled conditions can vary from an actual fire situation.

(2) Properties are typical values based on material tested in our laboratories. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.



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HETRON® FR 992 FR / CR Epoxy Vinyl Ester Resin

TYPICAL CURING CHARACTERISTICS	SPI Gel Time at 82°C (180°F) Bath	Value	Unit
	Gel Time, 2% Luperco ⁽²⁾ ATC Paste	17	minutes
	Total Time	23	minutes
	Peak Exotherm	193 (380)	°C(°F)

MEKP Cure System Typical gellimes at different temperatures using different pre-acceleration systems and curing with Delta⁽³⁾ X-9, Lupersol⁽³⁾ DDM-9 and Hi-Point⁽⁴⁾ 90 catalysts⁽⁵⁾.

CAUTION: Thoroughly mix promoters with resin before adding catalyst.

Temperature / Catalyst	DMA	Co-nap6%	Delta X-9	DDM-9	HiPoint 90	HiPoint 90/CHP 50/50
18°C (65°F) / 1.25 phr	0.1 phr	0.2 phr	15 minutes	27 minutes	25 minutes	60 minutes
	0.075 phr	0.2 phr	20 minutes	30 minutes	30 minutes	70 minutes
	0.05 phr	0.2 phr	25 minutes	40 minutes	33 minutes	75 minutes
25°C (77°F) / 1.25 phr	0.04 phr	0.3 phr	10 minutes	12 minutes	13 minutes	27 minutes
	0.04 phr	0.2 phr	15 minutes	20 minutes	20 minutes	40 minutes
	0.04 phr	0.1 phr	30 minutes	40 minutes	36 minutes	74 minutes
29°C (85°F) / 1.25 phr	0.05 phr	0.3 phr	8 minutes	8 minutes	8 minutes	18 minutes
	0.05 phr	0.2 phr	10 minutes	12 minutes	12 minutes	24 minutes



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	0.05 phr	0.1 phr	20 minutes	25 minutes	24 minutes	50 minutes
BPO / DMA Cure System	Temperature / BPO Paste 50%		DMA		Gel Time	
	18°C (65°F) / 2.0 phr		0.3 phr		26 minutes	
			0.2 phr		36 minutes	
			0.1 phr		70 minutes	
	24°C (75°F) / 2.0 phr		0.3 phr		16 minutes	
			0.2 phr		24 minutes	
			0.1 phr		50 minutes	
	29°C (85°F) / 2.0 phr		0.3 phr		11 minutes	
			0.2 phr		16 minutes	
			0.1 phr		27 minutes	

- (3) Registered trademark of Atofina Chemicals Inc.
- (4) Registered trademark of Witco Chemical Corporation.
- (5) All levels are based on parts per hundred resin (phr)

Effect of Copper Naphthenate

Copper Naphthenate⁽⁶⁾ (Cu-nap 8%) will influence gel time, gel-to-peak and peak exotherm at different temperatures and pre-accelerations. Catalyst used is Delta X-9 at 1.25 phr.

CAUTION: Thoroughly mix promoters with resin before adding catalyst.

Temperature / Cu-nap 8%	Co-nap6%	DMA	Gel Time	Gel-Peak	Peak Exo
18°C (65°F) / 0 phr	0.3 phr	0.05 phr	11 minutes	10 minutes	166°C (330°F)
18°C (65°F) / 0.04 phr	0.3 phr	0.05 phr	11 minutes	15 minutes	116°C (240°F)
25°C (77°F) / 0 phr	0.1 phr	0.04 phr	26 minutes	12 minutes	168°C (335°F)
25°C (77°F) / 0.04 phr	0.1 phr	0.04 phr	22 minutes	17 minutes	129°C (265°F)



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HETRON® FR 992 FR / CR Epoxy Vinyl Ester Resin

29°C (85°F) / 0 phr	0.1 phr	0.03 phr	19 minutes	12 minutes	168°C (335°F)
29°C (85°F) / 0.04 phr	0.1 phr	0.03 phr	20 minutes	20 minutes	127°C (260°F)
35°C (95°F) / 0 phr	0.1 phr	0.02 phr	19 minutes	12 minutes	166°C (330°F)
35°C (95°F) / 0.04 phr	0.1 phr	0.02 phr	20 minutes	26 minutes	121°C (250°F)

Exotherm control formulations - When laminates require a lower exotherm, copper⁽⁷⁾ may be incorporated to achieve the desired reduction. High hydrogen peroxide catalysts, such as CADOX⁽⁸⁾ M-50 or DELTA X-9, should be used to avoid dramatic moves in gel times.

(6) Can be acquired by Akcros Chemical, Inc., Huls America Inc., or O.M. Group Inc.

(7) More than 500 ppm of 8% copper may be detrimental to cure

(8) Registered trademark of Akzo Nobel

Effects of Copper Levels at 25°C (77°F)

Copper Naphthenate (Cu-nap 8%) will influence Gel Time, Gel-to-Peak and Peak Exotherm at 25°C (77°F). Catalyst used is Delta X-9 at 1.25 phr.

CAUTION: Thoroughly mix promoters with resin before adding catalyst.

Cu-naphthenate 8%	DMA	Co-nap6%	Gel Time	Gel-Peak	Peak Exo
0 phr	0.04 phr	0.1 phr	23 minutes	10 minutes	171°C (340°F)
0.01 phr	0.04 phr	0.1 phr	20 minutes	10 minutes	160°C (320°F)
0.02 phr	0.04 phr	0.1 phr	20 minutes	14 minutes	154°C (310°F)
0.03 phr	0.04 phr	0.1 phr	21 minutes	16 minutes	143°C (290°F)
0.04 phr	0.04 phr	0.1 phr	21 minutes	16 minutes	132°C (270°F)

For all surfaces that will be exposed to air during fabrication (top-coating, lining, patching, exterior surfaces, etc.) the addition of 0.4% paraffin wax to the final resin layer is recommended. A waxed surface may interfere with secondary bonding adhesion.



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HETRON® FR 992 FR / CR Epoxy Vinyl Ester Resin

Flame retardant vinyl ester resins do not demonstrate ultraviolet stability equivalent to non-halogenated vinyl ester resins. Ultraviolet stability may be improved by adding 1.0% CYASORB⁽⁹⁾ UV-9 ultraviolet screener to the exterior exposed surfaces where aesthetic appearance is desired.

TYPICAL MECHANICAL PROPERTIES

Property ⁽²⁾ of cured casting ⁽¹⁰⁾ at 25°C (77°F)	Value (SI)	Value (US)	Method
Barcol Hardness	35	35	ASTM D2583
Tensile Strength	90 MPa	13,000 psi	ASTM D638
Tensile Modulus	3450 MPa	5.0 psi x 10 ⁵	ASTM D638
Tensile Elongation at yield	4.6%	4.6%	ASTM D638
Tensile Elongation at break	5.0%	5.0%	ASTM D638
Flexural Strength	145 MPa	21,000 psi	ASTM D790
Flexural Modulus	3585 MPa	5.2 psi x 10 ⁵	ASTM D790
Heat Distortion Temperature	108°C	227°F	ASTM D648

(9) Registered trademark of Cytec Industries

(10) Catalyzed with 1.0% BPO, cured two hours at 71°C (160°F), then one hour at 93°C (200°F), post-cured two hours at 138°C (280°F).

Physical properties of laminates at various thicknesses and temperatures. Curing formulation = 100 phr HETRON FR992, 0.30 phr 6% cobalt naphthenate, 0.05 phr DMA, 1.50 phr HI POINT 90, post cured 2 hours at 121°C (250°F). V=10 mil glass surfacing veil, M=450 g/m² (1.5 oz/ft²) chopped strand mat, R=800 gm/m² (24 oz/yd²) woven roving

Laminate thickness (mm)	Temp. (°C)	Ten Str (MPa)	Ten Mod (MPa)	Flex Str (MPa)	Flex Mod (MPa)
3.18 (V, 2M; 25% glass)	25	140	5590	88	7720
	93	140	4960	91	6960
	121	106	2760	52	3450
6.35 (V, 2M, 2(RM); 39% glass)	25	240	8340	137	12,760
	93	223	7170	165	9790
	121	86	4140	130	9030
12.7 (V, 4M, 4(RM); 43% glass)	25	181	7450	160	13,240



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HETRON® FR 992 FR / CR Epoxy Vinyl Ester Resin

	93	218	8340	150	15,580
	121	159	6760	131	6760
Laminate Thickness (in.)	Temp. (°F)	Ten Str (psi)	Ten Mod (psix10 ⁵)	Flex Str (psi)	Flex Mod (psix10 ⁵)
0.125 (V, 2M; 25% glass)	77	19,800	8.1	12,800	11.2
	200	20,200	7.2	13,200	10.1
	250	15,400	4.0	7500	5.0
0.25 (V, 2M, 2(RM); 39% glass)	77	35,000	12.1	19,900	18.5
	200	32,400	10.4	23,900	14.2
	250	12,500	6.0	18,900	13.1
0.50 (V, 4M, 4(RM); 43% glass)	77	26,200	10.8	23,200	19.2
	200	31,600	12.1	21,400	22.6
	250	23,100	9.8	19,000	9.8

TYPICAL FLAME
RETARDANCY OF
LAMINATES

Tested Material	Class	ASTM E-84 Flame Spread
HETRON FR992 resin laminate ⁽¹¹⁾ with 3% antimony trioxide	I	<25
HETRON FR992 resin laminate ⁽¹¹⁾ without antimony trioxide	II	<75
Cement Asbestos Board (control)	I	0
Red Oak (control)	III	100

(11) Properties are typical values based on material tested in our laboratories. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items. Laminate thickness = 3.18 mm (0.125 in.) with approximately 27% glass content



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Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

Document 2161 V2 F2. Language EN V1, Approved 2008-12-29, © 2011 Ashland Inc. Page 7 (8)

Technical Datasheet Ashland Performance Materials



HETRON® FR 992 FR / CR Epoxy Vinyl Ester Resin

Master Batch Guide	Cobalt Naphthenate 6% Quantity for:	55-Gal (230 kg, 507 lbs)	5-Gal (21 kg, 46 lbs)
	0.2%	15.1 fl.oz/449 cc	1.3 fl.oz/39 cc
	0.3%	22.8 fl.oz/673 cc	2.0 fl.oz/59 cc
	0.4%	31.3 fl.oz/926 cc	2.7 fl.oz/78 cc
	DMA Quantity for:	55-Gal (230 kg, 507 lbs)	5-Gal (21 kg, 46 lbs)
	0.05%	4.0 fl.oz/119 cc	0.36 fl.oz/10 cc
	0.10%	8.1 fl.oz/239 cc	0.73 fl.oz/21 cc
	0.15%	12.1 fl.oz/358 cc	1.10 fl.oz/32 cc
	Copper Naphthenate 8% Quantity for:	55-Gal (230 kg, 507 lbs)	5-Gal (21 kg, 46 lbs)
	0.02%	1.1 fl.oz/34 cc	0.10 fl.oz/3 cc
	0.03%	2.2 fl.oz/66 cc	0.19 fl.oz/6 cc
	0.04%	3.4 fl.oz/100 cc	0.27 fl.oz/8 cc
	9% MEKP Quantity for:	0.95 liter (1 quart)	2kg (5 lbs)
	1.25%	0.39 fl.oz/11.5 cc	0.90 fl.oz/26.6 cc

CERTIFICATES AND APPROVALS The manufacturing, quality control and distribution of products, by Ashland Performance Materials, comply with one or more of the following programs or standards: Responsible Care, ISO 9001, ISO 14001 and OHSAS 18001.

STANDARD PACKAGE Non-Returnable Drum with Net Weight of 230 Kgs (507 Lbs)
DOT Label Requirement: Flammable Liquid

COMMERCIAL WARRANTY Six months from date of shipment, when stored in accordance with the conditions stated below.



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Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

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Technical Datasheet Ashland Performance Materials



HETRON® FR 992 FR / CR Epoxy Vinyl Ester Resin

STORAGE

Drums - Store at temperatures below 25°C (77°F). Storage life decreases with increasing storage temperature. Avoid exposure to heat sources such as direct sunlight or steam pipes. To avoid contamination of product with water, do not store outdoors. Keep containers sealed to prevent moisture pick-up and monomer loss. Mild mixing is recommended after prolonged storage. Rotate stock.

Bulk - See Ashland's Bulk Storage and Handling Manual for Polyesters and Vinyl Esters. A copy of this may be obtained from Ashland Performance Materials at +1.614.790.3333 or 800.523.6963.

All other conditions being equal, higher storage temperatures will reduce product stability and lower storage temperatures will extend product stability.

Notice

All information presented herein is believed to be accurate and reliable, and is solely for the user's consideration, investigation and verification. The information is not to be taken as an express or implied representation or warranty for which Ashland assumes legal responsibility. Any warranties, including warranties of merchantability or non-infringement of intellectual property rights of third parties, are herewith expressly excluded.

Since the user's product formulations, specific use applications and conditions of use are beyond the control of Ashland, Ashland makes no warranty or representation regarding the results which may be obtained by the user. It shall be the responsibility of the user to determine the suitability of any of the products mentioned for the user's specific application.

Ashland requests that the user reads, understands and complies with the information contained herein and the current Material Safety Data Sheet.



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Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities

SCHEDULE
(ATTACHMENT 3 OF CLOSURE IMPLEMENTATION PLAN)



South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

Section I Page: 115
Facility ID: 193552
Application: 627471
Date: March 31, 2021

Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities

AIR MONITORING PLAN
(ATTACHMENT 15 OF THE CLOSURE IMPLEMENTATION
PLAN)



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities

AIR MONITORING PLAN

CLOSURE IMPLEMENTATION PLAN APPENDIX 15

Prepared For:

EXIDE TECHNOLOGIES
Vernon, California

September 29, 2017



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

This document summarizes air monitoring to be conducted during closure of the Exide facility in Vernon, California.

Visual Performance Standard

The performance standard for closure activities is no visible dust.

Ambient Air – Facility Perimeter

Ambient air monitoring will be conducted daily during closure. The Ambient Air Monitoring will be performed in accordance with the current SCAQMD Title V Permit, the applicable sections of SCAQMD Rule 1420.1, and the applicable Rule 1420.1 Compliance Plan(s). As the ambient air monitor locations were selected for facility operations, perimeter ambient air monitors may be moved to better correspond to locations representative of closure activities. AQMD concurrence will be obtained before moving perimeter air monitors.

In accordance with SCAQMD Rule 1420.1, ambient air concentration shall not exceed 0.150 $\mu\text{g}/\text{m}^3$ lead averaged over any 30 consecutive days and 10.0 nanograms per cubic meter (ng/m^3) arsenic averaged over a 24-hour time period. From January 1, 2016 to December 31, 2016, the ambient air concentration for lead shall not exceed 0.110 $\mu\text{g}/\text{m}^3$ averaged over any 30 consecutive days. On and after January 1, 2017, the ambient air concentration for lead shall not exceed 0.100 $\mu\text{g}/\text{m}^3$ averaged over any 30 consecutive days.

Work Area Perimeter

Continuous real-time particulate (dust) monitoring will be conducted downwind of the work area. Dust monitoring will be implemented by the Dust Mitigation Oversight Contractor when work is conducted within a Temporary Enclosure or in an area of deconstruction conducted after decontamination outside of an enclosure, but not when work is conducted within the HAKI or Total Enclosure buildings. As may be relevant to the particular work aspect at hand, the continuous dust monitors (e.g., Dust Tracks) will be deployed on a stand downwind and potentially upwind of a work function to track and gauge the trending in particulate dust generation during work progress. The number of DustTraks utilized downwind will be in proportion to the degree of wind direction variance with one unit for each 30 degrees of wind direction variance. When the wind direction is outside the capture zone of at least one Dust Trak unit, the work will be stopped until the Dust Trak unit(s) can be relocated. Upwind real-time monitors will also be used for comparison to downwind results. Monitoring will be conducted using an aerosol monitor such as a DustTrak Aerosol Monitor or equivalent. Manufacturer's information for the DustTrak monitor is attached. Readings will be taken every 15 minutes and recorded on the attached form or similar. Data will be downloaded from the datalogger on the monitor at the end of the working period each day. The aerosol monitor will be calibrated and maintained as recommended by the manufacturer.

Personal Air Monitoring

Personal air monitoring will be conducted as discussed in the Contractor's site-specific Health and Safety Plan.



Vernon Environmental Response Trust

Rule 1420.1 Compliance Plan For Closure Activities

Reporting

Ambient air monitoring data collected by Exide and dust monitoring data collected by the Dust Mitigation Oversight Contractor and/or the Contractor shall be provided to Exide and the Resident Engineer using a searchable/sortable continuously updated summary table (i.e., Excel spreadsheet). The summary table shall include the sample ID, a description of the wind direction, a description of the sample location onsite, a description of the sample location with respect to work activity (upwind or downwind), the sample collection date and time period, the sample collection volume, the sample result, and the calculated air quality value. The updated summary table and a copy of the laboratory analytical report shall be submitted to Exide on the same day that the data is received.

Performance Standard Exceedances

In the event that an ambient air standard set forth in Rule 1420.1 or in the Rule 1420.1 Compliance Plan for Closure Activities is exceeded, the Contractor will be required to increase dust control measures, such as the use of water sprays to control dust, increased housekeeping, spraying paved surfaces adjacent to the work zones, and changing work methods.

As observing personnel note potentially adverse dust evolution using the DustTrak devices (i.e., increasing levels) in conjunction with visual observation and experience, they shall direct work stoppage and then direct adjustments in the work practices and/or the applied control measures as appropriate. In response to adverse visual observations or DustTrak results, the measures discussed in the Engineering Controls Plan will be implemented.

Repeated exceedances will result in shutting down the operation causing the dust until appropriate corrective measures are developed and implemented. The Contractor will not be compensated for down time caused by the inability to meet the performance criteria.



South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

Section I Page: 119
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Application: 627471
Date: March 31, 2021

Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities

Real Time Air Monitoring Form



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

~~Advanced GeoServices Corp.~~

DTSC Third-Party Oversight Contractor

~~10257 Julian Drive, Suite 111
Westchester, PA 19380-4294~~ ~~010-000-9100 (Project) 000-9199~~

REAL TIME AIR MONITORING RESULTS

Project Name: _____ DTSC Technician: _____

Date: _____ Wind Direction (start of day): _____

Weather Conditions: _____ Wind Direction (noon): _____

Work Area Type (circle one): Decom Equipment Removal Deconstruction Excavation Backfill

Description of Activities in Work Area: _____

Monitor Location (circle one): Enclosure Entrance Opposite End

Monitor Number: _____

Monitor Location Sketch: (provide north arrow, Work Area, fences, distances to property line)

Time Interval	Actual Time	Reading (µg/m ³)	Performance Standard (µg/m ³)	Is reading less than standard (circle yes or no)?	
0700 to 0715				YES	NO
0715 to 0730				YES	NO
0730 to 0745				YES	NO
0745 to 0800				YES	NO
0800 to 0815				YES	NO
0815 to 0830				YES	NO
0830 to 0845				YES	NO
0845 to 0900				YES	NO
0900 to 0915				YES	NO
0915 to 0930				YES	NO
0930 to 0945				YES	NO
0945 to 0930				YES	NO
0930 to 0945				YES	NO
0945 to 1000				YES	NO
1000 to 1015				YES	NO
1015 to 1030				YES	NO
1030 to 1045				YES	NO
1045 to 1100				YES	NO
1100 to 1115				YES	NO
1115 to 1130				YES	NO
1130 to 1145				YES	NO
1145 to 1200				YES	NO
1200 to 1215				YES	NO
1215 to 1230				YES	NO
1230 to 1245				YES	NO
1245 to 1300				YES	NO
1300 to 1315				YES	NO
1315 to 1330				YES	NO
1330 to 1345				YES	NO
1345 to 1400				YES	NO
1400 to 1415				YES	NO
1415 to 1430				YES	NO
1430 to 1445				YES	NO
1445 to 1500				YES	NO
1500 to 1515				YES	NO
1515 to 1530				YES	NO
1530 to 1545				YES	NO
1545 to 1600				YES	NO
1600 to 1615				YES	NO
1615 to 1630				YES	NO
1630 to 1645				YES	NO
1645 to 1700				YES	NO



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities

Real Time Air Monitoring Equipment

Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

Exposure Monitoring

DUSTTRAK™ Aerosol Monitor

The DUSTTRAK™ Aerosol Monitor measures aerosols in a wide variety of environments, from offices and industrial workplaces to outdoor environmental and construction sites. TSI's DUSTTRAK provides reliable exposure assessment by measuring particle concentrations corresponding to PM10, PM2.5, PM1.0 or respirable size fractions.

The DUSTTRAK is a portable, battery-operated laser photometer which gives you a real-time digital readout with the added benefits of a built-in data logger. Suitable for clean office settings as well as harsh industrial workplaces and outdoor applications, the DUSTTRAK detects potential problems with airborne contaminants such as dust, smokes, fumes and mists.

The DUSTTRAK is easy to use, too. You can perform quick spot checks or you can program the advanced logging modes for long-term sampling. You can program the start/stop times, recording intervals and other parameters. You can even set up the instrument for continuous unattended operation.

The DUSTTRAK's new continuous analog output and adjustable alarm output allow remote access to real-time particle concentration data. Applications include site perimeter monitoring, ambient monitoring, process area monitoring and other remote uses. The alarm output with user-defined setpoint alerts you when upset or changing conditions occur. This feature allows you to program a switch closure at a concentration value of your choosing.



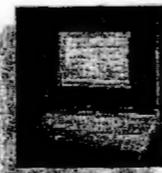
The DUSTTRAK provides a real-time measurement based on 90° light scattering. A pump draws the sample aerosol through an optics chamber where it is measured. A sheath air system isolates the aerosol in the chamber to keep the optics clean for improved reliability and low maintenance.

Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

Specifications

Model 8520 DustTrak Aerosol Monitor

Sensor Type	90° light scattering
Range	0.001 to 100 mg/m ³ (Calibrated to ISO 12103-1, A1 test dust)
Resolution	±0.1% of reading or ±0.001 mg/m ³ , whichever is greater
Zero Stability	±0.001 mg/m ³ over 24 hours using 10-second time-constant
Particle Size Range	0.1 to approximately 10 micrometers
Flow Rate	Adjustable 1.4 to 2.4 l/min (1.7 nominally)
Temperature Coefficient	+0.001 mg/m ³ per °C (for variations from temperature at which the DUSTTRAK was zeroed)
Operating Temperature	32° F to 120° F (0°C to 50°C)
Storage Temperature	-4° F to 140° F (-20°C to 60°C)
Operating Humidity	0 to 95% rh (non-condensing)
Time Constant	Adjustable from 1 to 60 seconds
Data Logging	31,000 data points (21 days of logging once/minute)
Logging Interval	Adjustable from 1 second to 1 hour
Physical External Dimensions	8.7 in. x 5.9 in. x 3.4 in. (221 mm x 150 mm x 87 mm)
Instrument Weight	3.3 pounds with batteries (1.5 kg)
Serial Interface	RS-232 1200 baud
Power AC	AC adapter (included)
Battery	Four C-size alkaline batteries (included)
Battery Run-time	Alkaline 16 hours
Analog Output Specifications	
Analog Output Voltage	0 to 5 VDC
Analog Output Scaling ¹	0 to 100 mg/m ³ 0 to 10.0 mg/m ³ 0 to 1.00 mg/m ³ 0 to 0.100 mg/m ³
Output Impedance	0.01 ohm
Maximum Output Current	15 mA



The DUSTTRAK comes complete with TSI's TRAKPRO™ Data Analysis Software to allow you to perform a more comprehensive analysis of your measurement results. This exclusive Windows®-based program helps you generate the detailed graphs and reports needed to effectively communicate your findings.

Specifications are subject to change without notice.
Windows is a registered trademark of the Microsoft Corporation.

Alarm Output Specifications

Type	Non-latching, MOSFET solid state (polarized) ² analog switch
Setpoint Range ¹	0.010 to 100 mg/m ³
Maximum Voltage	15 VDC
Maximum Current	1 Amp
Deadband	-5% of alarm setpoint
Connector	4-Pin, Mini-DIN connector

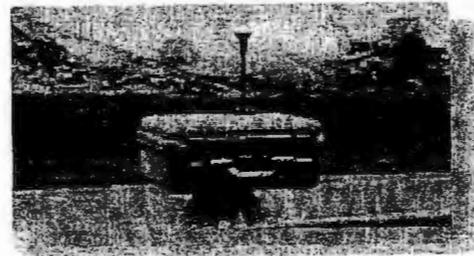
¹ User selectable through TRAKPRO™ Data Analysis Software.
² See TSI Application Note IT1 - 074 for important wiring information.

Ordering Information

Model	Description
8520	The DUSTTRAK Aerosol Monitor and accessories includes: Auxiliary Analog and Alarm Outputs, Carrying Case, Alkaline Batteries, TRAKPRO™ Data Analysis Software, Filter, Computer Cable, 25-pin to 9-pin Adapter, Operation Service Manual, Calibration Certificate, 10 mm Nylon Dorr-Oliver Cyclone, Inlet Conditioning Kit 1.0 and 2.5 µm, Sampling Extension Tube, Miscellaneous Service Tools and Two-Year Warranty.

Optional Accessories

Model	Description
8520-1	Environmental Enclosure



TSI

TSI Incorporated

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Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

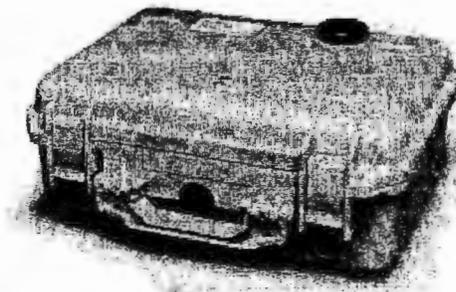
Exposure Monitoring

DUSTTRAK® Environmental Enclosure

The DUSTTRAK™ Aerosol Monitor is a portable, battery-operated, laser-photometer that measures and records airborne dust concentrations. The DUSTTRAK has been used to measure aerosols in a wide variety of environments, from offices to industrial workplaces. Now the DUSTTRAK has a weatherproof Environmental Enclosure accessory for making the same accurate and precise measurements outdoors.

The Environmental Enclosure can be used in conjunction with the DUSTTRAK for many different applications. While its primary use is in outdoor applications, the enclosure and extended-life battery may also be advantageous in indoor industrial applications to provide additional security and protection to the instrument.

The Environmental Enclosure comes with a sampling inlet specifically designed to sample efficiently in a broad range of wind conditions. The enclosure also contains a water trap that prevents precipitation from entering the instrument. The extended-life, lead acid batteries that are included with the enclosure permit continuous, 24-hour operation. Two batteries are supplied with the unit, allowing one battery to be charged while the other is in operation. The rugged enclosure provides a secure method of storing and transporting the DUSTTRAK and its accessories.



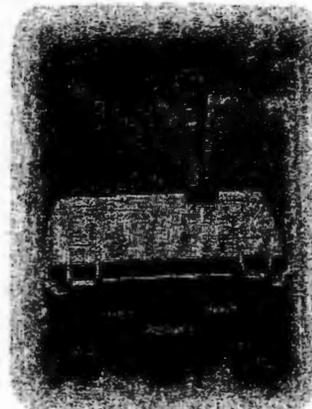
The DUSTTRAK Aerosol Monitor has an easy-to-read digital display showing real-time concentrations in milligrams per cubic meter (mg/m^3) while simultaneously logging data into memory. The DUSTTRAK has enough memory to record weeks worth of data...even at one-minute intervals. The unique sheath air system provides consistent performance in the dirtiest environments. Critical lenses are isolated from particle-laden flows by surrounding the sample with filtered air. Particles can't collect on surfaces they never touch!

Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

The Environmental Enclosure may be mounted to a standard surveyor tripod equipped with a 5/8"-11 threaded stud. The enclosure should be set up in a location where it can easily sample the particles of interest. It should be placed away from obstructions which may affect wind currents. The sampling inlet on the Environmental Enclosure samples most efficiently from 0 to 22 mph.

Monitoring applications include:

- Environmental site perimeters
- Construction sites
- Fugitive dust emissions
- Harsh industrial environments
- Dust control
- Urban pollution



Specifications

Environmental Enclosure Model 8520-1

Sampling Conditions

Operating Temperature	32 to 120°F (0 to 50°C)
Wind Speed	0 to 22.5 mph (0 to 10 m/h)
Aerosol Concentration Range	0.001 to 100 mg/m ³ (Calibrated to ISO 12103-1, A1 test dust)
Storage Temperature	-4 to 140°F (-20 to 60°C)
Zero Stability	±0.001 mg/m ³ over 24 hours using 10-second time-constant
Particle Size Range	0.1 to approximately 10 micrometers (Upper limit is dependent on flow rate)
Flow Rate	1.7 L/min
Temperature Coefficient	+0.001 mg/m ³ per °C (for variations from temperature at which DUSTTRAK was zeroed)

Physical

External Dimensions	16 in. x 13 in. x 7.5 in. (406 mm x 330 mm x 191 mm)
Weight (with battery and DUSTTRAK)	15.8 lb (7.2 kg)

Specifications are subject to change without notice.

User Maintenance

Maintenance Check/	Recommended daily, but longer intervals allowed based on battery usage.
Data Collection	Weekly, under normal conditions, or daily if concentrations are over 30 mg/cm ³
Clean Inlet	As needed

Re-grease O-rings

Power Requirements

External Battery Pack	6 VDC, 10 Ah
Battery Run-time	24 to 60 hours (typical)
Battery Charge Time	13 hours at 72°F (22°C) (New battery, deep discharge to 95% charge)

Ordering Information

Model 8520-1	Description
	Environmental Enclosure includes: Two Battery Packs, Battery Charger, Omni-directional Sampling Inlet, Dust Caps, Tubing, Plug, and O-rings.

TSI

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Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

Frequently Asked Questions-DUSTTRAK™ Aerosol Monitor

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TSI

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Products: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Model #: 0000-9999

» Product Categories » Exposure monitoring » DUSTTRAK Aerosol Monitor

DUSTTRAK™ Aerosol Monitor Model 8520

Product Info | Accessories | Application Notes | Tech Notes | FAQs | Support | Service

Frequently Asked Questions



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General

1. **How often is calibration required?**
TSI recommends returning the instrument to the factory for cleaning and calibration on an annual basis. Turnaround time is typically 2 to 3 working days after receipt of the unit with proper documentation. Recommended user maintenance schedules for routine cleaning, filter replacement, and zero check is covered in the Operation and Service Manual.

2. **What U.S. standards or guidelines apply to ambient particulate levels in buildings?**
ASHRAE 62-1989 states:
"Indoor air quality shall be considered acceptable if the required rates of acceptable outdoor air are provided for the occupied space." ASHRAE 62-1989 references the national primary ambient-air quality standard for outdoor air as set by the U.S. EPA.

 Long term—50 µg/m³ concentration average over 1 year (0.05 mg/m³)
 Short term—150 µg/m³ concentration average over 24 hours (0.150 mg/m³)

 Although this standard was developed for outdoor air, current thinking by industry experts is that indoor air quality should be as good as that of the outdoor air.

 Exposure values for specific substances are published by OSHA (Occupational Safety and Health Administration), NIOSH (National Institute for Occupational Safety and Health), and ACGIH (American Conference of Governmental Industrial Hygienists).



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

Frequently Asked Questions-DUSTTRAKTM Aerosol Monitor

Page 4 of 6

3. Can I measure other particle size ranges with the DUSTTRAK?

Yes. The DUSTTRAK is supplied with inlet conditioners (impactors) that limit the upper size to 2.5 or 1.0 microns. Additionally, the DUSTTRAK is supplied with a 10-millimeter Nylon Dorr-Oliver Cyclone for respirable sampling with a cut-off at 4 microns.

4. What type of device is the DUSTTRAK aerosol monitor?

The DUSTTRAK is a laser photometer. The sensing mechanism consists of a laser diode directed at the aerosol stream. Scattered light is collected with optics and a photodetector at 90° to the light beam. The intensity of the scattered light is a function of the particle mass concentration.

5. Can I use the DUSTTRAK outdoors?

Yes. The DUSTTRAK has been used outdoors but it is not considered weatherproof, so it is not suitable for long-term, unattended operation. However, the optional Environmental Enclosure is designed to protect the DUSTTRAK from harsh weather conditions. It is also sometimes used indoors if the environment is particularly demanding. [Click here for details on the Environmental Enclosure.](#)

6. How long will the DUSTTRAK monitor operate before the internal filter overloads in an environment containing 3-5 mg/m³ dust?

At a 5 mg/m³ concentration, the internal nozzle requires cleaning at 70-hour operation intervals and the internal filter must be replaced after 140 hours of operation. This subject is covered in the Operation and Service Manual.

7. Can I measure respirable aerosol mass concentration with the DUSTTRAK monitor?

Yes. The DUSTTRAK is supplied with a 10 millimeter Nylon Dorr-Oliver Cyclone which provides a particle size cut-off at 4 microns (internationally accepted as the 50% cut-off size for respirable aerosol mass).

8. What is the measurement range of the DUSTTRAK monitor?

The mass concentration range is 0.001 to 100 mg/m³. The particle size range is 0.1 to 10 microns.

9. Can I change the calibration constant to correspond to a different aerosol such as coal dust or oil mist?

Yes. Factory calibration to the standard ISO Test Dust is assigned a calibration constant of 1.00. You may change the calibration constant using the procedure outlined in the DUSTTRAK manual. Factory calibration can be restored by resetting the calibration to 1.00.



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

10. **How does sampling in high humidity affect the readings obtained from the DUSTTRAK?**

Relative humidity higher than 80 percent can cause particle concentration readings to be biased high from the actual concentration of dry particles. The amount that an aerosol's mass concentration increases due to water absorption is a complex function of the particle's material and the atmosphere's absolute humidity (i.e. specific humidity). This humidity effect can bias the DUSTTRAK's readings up to 60 percent high in the most extreme conditions of high temperature and high relative humidity.

11. **What are the differences between Log 1, Log 2, and Log 3 modes?**

Log 1 mode requires a manual start/stop action. Logging interval and time constant may be set from the keypad.

Log 2 and Log 3 modes provide automatic start/stop logging for unattended operation. The two modes are identical in their basic operation, but may be programmed individually using a PC compatible computer and TRAKPRO software. The following items may be defined:

- o Start date
- o Start time
- o Test length
- o Logging interval
- o Number of tests
- o Time delay between tests

After Log 2 and Log 3 protocols have been defined using TRAKPRO software, the Q-TRAK Plus/DUSTTRAK will retain the programmed information.

12. **Is the DUSTTRAK aerosol monitor intrinsically safe?**
No. The DUSTTRAK has not been tested or certified for operation in a hazardous area where intrinsic safety is required.

13. **Do statistics relate to the total time the instrument is turned on or only to the time sampling is taking place?**

Statistics are collected only during the time sampling is taking place. This is true whether you are operating in the Survey mode or Logging mode.

14. **Will the DUSTTRAK measure liquid aerosols such as water and oil?**

Yes. A major advantage of using the DUSTTRAK is its ability to measure volatile aerosols such as water and oil. These cannot be measured accurately gravimetrically because of evaporation from the collection filter.

15. **What are the traceability specifications?**

There is no National Institute of Standards and Technology (NIST)



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

Frequently Asked Questions-DUSTTRAK™ Aerosol Monitor

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standard for optical mass measurements. Calibration of the DUSTTRAK is performed by TSI using Emery oilmist aerosol and nominally adjusted to the respirable mass of standard ISO 12103-1, AI test dust (formerly called Arizona test dust).

16. **What batteries are used in the DUSTTRAK, and how long do they last?**

The DUSTTRAK is shipped with four standard C-size alkaline batteries. Quality alkaline batteries will provide about 16 hours of operation. Nickel cadmium (NiCd) batteries may be used in the DUSTTRAK, but must be recharged in an external charger provided by the user. Operating time using fully charged NiCd batteries will be about 6 hours. For long-term measurement, the DUSTTRAK may be operated on AC power using the adaptor supplied with the instrument. If the DUSTTRAK is powered by the batteries included with the optional Environmental Enclosure, the battery life is at least 24 hours in very cold weather extremes. [Click here for details on the life of the batteries included with the Environmental Enclosure.](#)

17. **What happens if my batteries die during a measurement?**

Low battery charge is indicated by a battery symbol on the display. The DUSTTRAK will continue to operate for approximately 60 minutes before measurement and logging functions stop. Power will shut off automatically, but the logged data will be retained by an internal lithium backup battery.

18. **Can I use a different cyclone filter on the DUSTTRAK?**

Yes. The flow rate of the DUSTTRAK may need to be adjusted to the rate specified with the new cyclone. Flow rate can be adjusted between 1.4 and 2.4 L/min using the flow meter provided with the DUSTTRAK.

19. **Can I connect a computer to the DUSTTRAK for continuous monitoring?**

Yes. An enhancement made in November 1996 allows the DUSTTRAK to do serial data acquisition using simple ASCII commands. The DUSTTRAK can be set up to provide a reading once per interval (from 0 to 60 seconds) or to output a single concentration reading. Request Application Note ITI-044 for more information.

20. **What length of sample tube can be used with the DUSTTRAK monitor?**

The DUSTTRAK is supplied with a 4 foot sampling tube. Using a sampling tube longer than 4 feet is not recommended because particle transport losses in the tube may adversely affect the measurement.

21. **Where can I get a connector to mate with the 4-pin, mini-DIN output connector on the back of the DUSTTRAK?**

Connectors are commercially available. Just specify a male, 4-pin, mini-DIN connector.

22. **Can I use the DUSTTRAK aerosol monitor to**



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

determine when air system filters need to be changed or cleaned?

Yes. If you have established the particle level at which the filters need service, you can use the DUSTTRAK to monitor current operating conditions. Since no alarm or set point capability is provided in the DUSTTRAK, it would be necessary to observe conditions manually.

23. Can I use the DUSTTRAK for remote monitoring applications?

Yes. The DUSTTRAK can be used to monitor aerosol mass concentrations in real-time by transmitting data from remote locations via the analog or serial output features. This real-time information can be used for a variety of remote monitoring applications such as environmental site perimeter monitoring, ambient work area monitoring, and process area monitoring.

24. Can the Log 1, Log 2, and Log 3 modes be operating at the same time?

No. Only one logging function can be activated at a time.

25. If I need to have laboratory analysis performed to obtain independent data, how can the DUSTTRAK aerosol monitor help me?

The DUSTTRAK can be used for real-time evaluation of aerosol concentration during sample collection for laboratory analysis. Gravimetric samples only provide an average of concentration over the total collection period.

The DUSTTRAK also provides assurance and a record of conditions during the periods between laboratory analysis tests. The DUSTTRAK can be a valuable tool in troubleshooting suspected problem areas or monitoring changing conditions.

26. How do I tell if my DUSTTRAK has the analog and alarm output features?

All DUSTTRAKS have the analog output and alarm functions as of 10/18/00 beginning with serial number 22499. You can visually verify if your DUSTTRAK is equipped with these features. Look for the 4-pin, mini-DIN connector labeled "Analog/Alarm Output". It is located on the backside of the instrument. All DUSTTRAKS with serial numbers from 21960 to 22498 can be upgraded to incorporate these functions for a nominal fee. Older DUSTTRAKS with serial numbers lower than 21960 cannot be upgraded to incorporate this new feature. [Click here for upgrade information.](#)

27. How much data can be logged before the DUSTTRAK runs out of memory?

The DUSTTRAK can log over 31,000 data points, or 21 days of data stored at 1-minute intervals. Logging intervals may be longer or shorter as set by the user.

28. Can I adjust the alarm setpoint without using TRAKPRO software?

No. TRAKPRO software version 3.1 or higher is required to control the



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Frequently Asked Questions-DUSTTRAK™ Aerosol Monitor

alarm and analog output functions. The DUSTTRAK is shipped from the factory with the alarm setpoint at 0.100 mg/m³ and with the alarm function turned "off".

29. **Can logged data be transferred to another database or spreadsheet for reporting or data analysis?**

Yes. Using TRAKPRO software, data can be exported in standard comma-delimited ASCII format. Most spreadsheet and database programs can read this format.

30. **What happens to the analog output signal if the measured aerosol concentration exceeds the programmed scaling limit?**

If the DUSTTRAK measures aerosol mass concentrations that are greater than the selected scaling range, the analog output voltage will remain fixed at the maximum of 5.0 volts.

31. **I purchased my DUSTTRAK before the analog and alarm features were available. Can I upgrade my DUSTTRAK?**

All DUSTTRAKS with serial numbers from 21960 to 22498 can be upgraded to incorporate these functions for a nominal fee. Older DUSTTRAKS with serial numbers lower than 21960 cannot be upgraded to incorporate this new feature. [Click here for upgrade information.](#)

32. **What is the warm-up time of the DUSTTRAK?**

When the DUSTTRAK is first turned on, it takes about a minute for the instrument to settle down to a stable reading. After warm-up, stable readings can be obtained in 10-15 seconds.

33. **How long can the cable be for transmitting the DUSTTRAK'S 0-5 VDC analog output?**

We have successfully transmitted the 0-5 VDC signal 100 feet using 22 gauge wire without any degradation (voltage drop) in the signal. However, if signal transmission is required over distances greater than 100 feet (30 meters), then a 0-5 VDC to 4-20 mA signal converter should be considered. See TSI [Application Note ITI-073](#) for additional information.

34. **Where do I find technical information on interfacing and using the DUSTTRAK analog output and alarm functions?**

This technical information can be found in TSI [Application Note ITI-073](#) and [Application Note ITI-074](#) for the analog and alarm output functions, respectively.



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Frequently Asked Questions-DUSTTRAK™ Aerosol Monitor

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35. How can I convert the DUSTTRAK'S 0-5 VDC analog output to a current output such as 4-20 mA?

By using a standard signal converter that converts 0-5 VDC to 4-20 mA. See TSI [Application Note ITI-073](#) for additional information.

36. What happens if the data logger memory becomes full?

If the data logger becomes full, the test in progress will stop. Information stored up to that point will be retained in the data logger.

37. Is logged data retained if I change the instrument batteries?

Yes. There is an internal backup battery that protects all stored data. The battery is designed to last for more than 10 years.

38. How long is the warranty on the DUSTTRAK monitor?

The DUSTTRAK is warranted to be free from defects in workmanship and material for a period of twenty-four months from the date of shipment to the customer. See the Operation and Service Manual for detailed warranty terms and conditions.

39. What is the analog output resolution in volts per milligram/m³?

The analog output resolution is a function of the scaling range selected. See TSI [Application Note ITI-073](#) for more detailed information.

[TSI Top](#)

TrakPro/Data Logging

1. Can we copy the software for use on other computers?

Yes. The software is copyrighted, but may be copied to enable use of TSI products with several computers.

2. What does the TRAKPRO software allow me to do?

TRAKPRO Data Analysis Software has numerous functions:

- o Download (receive) stored data from the Q-TRAK Plus, DUSTTRAK, PROTECTAIR, and P-TRAK data logger.
- o Store test data to disk.
- o Display data in table or graphical form.
- o Send table or graphical information to a monochrome or color printer.
- o Combine multiple data sets into a single graph for comparison purposes. Up to six channels of data may be presented from tests run at the same time or at different times.



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Frequently Asked Questions-DUSTTRAK™ Aerosol Monitor

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- Create graph titles, annotate graphs, change scales.
 - Print graphs on monochrome or color printers.
 - Export data to other database or spreadsheet software via comma-delimited ASCII data file.
 - Set date and time functions in the Q-TRAK Plus, DUSTTRAK, PROTECTAIR, and P-TRAK.
 - Alter the selection of logging intervals and time constants available for Log 1 in the Q-TRAK Plus/DUSTTRAK/P-TRAK.
 - Define & upload data logging protocols (log 2 & log 3) used by the Q-TRAK Plus/DUSTTRAK/P-TRAK for unattended operation.
-
- **What is the cost of the TRAKPRO software?**
TRAKPRO Data Analysis Software is provided at no additional charge.
-
- **I'm not a computer expert. What is the easiest way to understand the software?**
TRAKPRO software delivered with the Q-TRAK Plus IAQ Monitor or DUSTTRAK aerosol monitor includes example data. These files contain test examples useful for learning how the software operates independent of the instrument.
-
- **What are the computer requirements for TRAKPRO Data Analysis Software?**
 - Windows® 95, 98, ME, NT, or 2000
 - RS-232 Serial Port
-

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Frequently Asked Questions-DUSTTRAK™ Environmental Enclosure

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Products: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Model #: 0000-9999

» Product Categories » Exposure monitoring » DUSTTRAK Environmental Enclosure

DUSTTRAK™ Environmental Enclosure Model 8520-1

[Product Info](#) | [Application Notes](#) | [Tech Notes](#) | [FAQs](#)

Frequently Asked Questions

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1. **Can I leave the Environmental Enclosure out in the rain?**
Yes. The case is weather resistant. It can tolerate all weather conditions. *It should not be placed in direct contact with the ground.*

2. **What is the maximum particle concentration that the Environmental Enclosure can handle?**

The Environmental Enclosure adds no constraints on the DUSTTRAK and can be used in particle concentrations up to the DUSTTRAK's maximum of 100 mg/m³.

3. **Which DUSTTRAK size-conditioning inlets can I use in conjunction with the Environmental Enclosure?**
The Environmental Enclosure is compatible with the 1.0, 2.5, and 10.0 micrometer size-conditioning inlets (impactors) supplied with the DUSTTRAK. The TSI-supplied cyclone (P/N 800665) is not compatible with the Environmental Enclosure.

4. **Where is the best place to set up the Environmental Enclosure?**
The Environmental Enclosure can be set up and operated effectively in most outdoor locations. Rooftops, bench tops, fields, and ditches are all examples of places you could place the Environmental Enclosure. The inlet tube must be oriented substantially perpendicular to the ground and in a place where there are no obstructions that will disturb the air flow around it. Look for a location with consistent, stable wind conditions, and without swirling turbulence. Trees, buildings, or other large objects will cause flow disturbance around the aerosol inlet and adversely affect readings. The best rule of thumb is to put it in the most open area available.

5. **Does direct sunlight cause a heat problem within the Enclosure?**
No. The light gray color acts as a thermal insulator. This will prevent an increase of the temperature inside the Enclosure above the ambient

Related Items

- » [Application Notes](#)
- » [Technical Notes](#)



Vernon Environmental Response Trust Rule 1420.1 Compliance Plan For Closure Activities

Frequently Asked Questions-DUSTTRAK™ Environmental Enclosure

1 4 2 0 1

temperature. The thermal mass of the Enclosure will also dampen temperature fluctuations normally experienced outdoors.

6. Can I use another battery charger to charge my battery packs?

This is not recommended. The charger provided with the Environmental Enclosure (part no. 801564) has been designed to match the needs of this battery pack. Using another charger could result in severe damage to the battery. The charger charges at 7.5 volts, 850 mA and automatically stops when full charge is reached. The battery is a 6-volt sealed lead-acid type with a rating of 10 amp-hours.

7. How often do I need to clean the aerosol inlet?

The inlet does not easily clog with debris and can be operated confidently for an extended period of time without cleaning under most conditions. If the Environmental Enclosure is being operated in high concentrations (more than 20 mg/m³) the inlet may need frequent cleaning. The inlet should be kept clean to prevent debris from constricting the flow. The best way to clean the inlet is to unscrew it from the Enclosure and blow it out from its threaded end (base). If readings are abnormally low make sure that the inlet is clean, and blow it out periodically as a precautionary measure.

8. What is the aspiration efficiency of the Environmental Enclosure?

Please refer to TSI Application Note ITI-060 *Inlet Aspiration Efficiency of the DUSTTRAK™ Environmental Enclosure Model 8520-1*.

9. Can I substitute different tubing to connect the Enclosure's aerosol inlet to the DUSTTRAK inlet?

Using alternate tubing is not recommended. The tubing provided with the Enclosure is special electrically conductive tubing designed to minimize particle transport losses. Use of tubing made from other materials may result in low readings. The Environmental Enclosure Accessory Kit (P/N 801566) includes a replacement tube along with other components.

10. Can the Environmental Enclosure perform PM10, PM2.5, or PM1.0 sampling?

Yes. The external inlet will effectively sample particles up to 10 microns. Your choice of DUSTTRAK inlet (impactor) will determine which PM sample is taken.

11. What kind of tripod do I need to mount the Enclosure?

Any style of sturdy industrial tripod will work as long as it utilizes a connector with a 5/8 inch x 11 thread (flat). This type of tripod is often used for surveying instruments. One possible vendor is:

Sokkia Measuring Systems



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Frequently Asked Questions-DUSTTRAK™ Environmental Enclosure

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Look on their web site at <http://www.sokkia.com> for the nearest distributor.

Although tripod mounting the Environmental Enclosure is recommended for most applications, other mounting options are acceptable. Mounting on a pole/rail/table/etc. will work suitably.

12. What happens if the battery becomes fully discharged while sampling?

When the voltage of the external battery pack reaches 5.1 volts or less, the battery pack will automatically shut off. If the DUSTTRAK does not have an auxiliary power source (internal C-cell size batteries), it will turn off and the sample will be terminated. All data stored in the internal memory will be left intact due to the DUSTTRAK's internal lithium battery back-up feature.

13. How high should I have my Enclosure off the ground when sampling?

The Enclosure should be kept a reasonable distance off the ground to prevent any major air flow disturbances caused by the ground from affecting the sample obtained. TSI recommends mounting the Environmental Enclosure 3 to 4 feet off the ground.

14. How long can I run the DUSTTRAK on the external battery pack without charging it?

A fully charged battery will run for up to 60 hours under ideal conditions. The battery pack has an automatic voltage cut-off which prevents the battery from becoming deeply discharged. To prolong the life of your battery, you should recharge it every 24 hours.

15. Can I use an AC power source to run the DUSTTRAK inside the Enclosure?

There are currently no options available from TSI for using an AC adapter along with the Environmental Enclosure. The DUSTTRAK AC adapter (P/N 2613033) is not rated for outdoor use.

16. Will running the flow through the additional aerosol inlet (impactor) change the flow rate to the DUSTTRAK?

No. The pressure drop is minimal through the omnidirectional aerosol inlet on the Environmental Enclosure and causes no change in the volume of air that the DUSTTRAK is sampling. Be sure to set the DUSTTRAK flow rate to 1.7 L/min before installing it in the enclosure. The sampling inlet on the Enclosure is specifically designed for a flow rate of 1.7 L/min.

17. Can I turn the DUSTTRAK On/Off without opening the Enclosure through the RS-232 port in the Enclosure?

Although the DUSTTRAK will respond to remote queries through the RS-232 port, it cannot be switched On/Off remotely. The instrument can, however, be set to record data a predetermined times through the Log 2 or Log 3 modes. Refer to the DUSTTRAK Operation and Service manual for information on how to do this.



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Frequently Asked Questions-DUST TRAK™ ENVIRONMENTAL ENCLOSURE

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TSI DUSTTRAK Environmental Enclosure

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 Model #: 0000-9999

» Product Categories » Exposure monitoring

DUSTTRAK™ Environmental Enclosure Model 8520-1

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Exposure monitoring

- Products by Application
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- Products by Name
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Product Information



The **DUSTTRAK™** has a **Environmental Enclosure** accessory for use outdoors and in harsh environments.

Find a Distributor or Representative

Enter U.S. zip code

» [U.S. Site](#)
» [International](#)

The weatherproof Environmental Enclosure protects the DUSTTRAK™ Aerosol Monitor when used outdoors and in harsh industrial environments. Primarily used in outdoor settings, the wind- and rain-proof enclosure features an extended-life battery for long-term unattended sampling.

The Environmental Enclosure comes with an omni-directional sampling inlet specifically designed to sample efficiently in a broad range of wind conditions. The inlet on the enclosure samples most efficiently from 0 to 22 mph.

The high-capacity battery included with the enclosure permits continuous, 24-hour operation. Two high-capacity batteries are included with the enclosure, allowing one battery to be charged while the other is in operation.

The enclosure can be mounted to a standard surveyor tripod (using a 5/8" thread).

Features and Benefits

- Omni-directional sampling inlet
- Efficient sampling in a broad range of wind conditions (up to 22 mph)
- Extended-life battery for continuous 24-hour monitoring
- Protection from wind and rain
- Field portable
- Enclosure provides additional protection and security to the instrument

Applications

- Environmental site perimeter monitoring
- Fugitive dust emissions
- Construction site monitoring
- Urban pollution monitoring
- Dust control
- Harsh industrial environments

Included Items

- Environmental enclosure
- Battery charger
- Water trap, sample tubing and O-rings

Literature

- Brochures
- Spec Sheets

News



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Have Questions?

Contact TSI Sales at 1-800-874-2811 or +1-651-490-2811 from 8 a.m. to 4 p.m. (CST), Monday through Friday or email tsisales@tsi.com.



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TSI DUSTTRAK Environmental Enclosure

- Two high-capacity battery packs

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Vernon Environmental Response Trust

Rule 1420.1 Compliance Plan For Ambient Air Sampling Monitors and Wind Station

ADMINISTRATIVE REQUIREMENTS

This facility shall be subject to the terms and conditions of this plan unless this plan is suspended, revoked, modified, reissued or denied. Failure to maintain a valid plan is a violation of Rule 1420.1.

It is the responsibility of the facility to comply with other South Coast AQMD Rules and Regulations and with all laws, ordinances and regulations of other government agencies which are applicable to the operation of the equipment.

This plan does not authorize the emission of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the Rules and Regulations of the South Coast AQMD. This plan cannot be considered as permission to violate existing laws, ordinances, regulation, or statutes of the other governmental agencies.

CONDITIONS

1. VERT shall install and maintain new and/or relocated lead monitors at the locations, as indicated in Condition No. 2 below, and shall maintain, conduct and report sampling results using these monitors as required by Rule 1420.1 (j), except when otherwise specified below.
2. VERT shall locate and operate the ambient lead monitoring stations according to the following specifications:
 - A. For the purpose of this condition, the perimeter fencelines of the VERT facility shall be defined according to the nomenclature described in the diagram located in Attachment 'A' which is incorporated into this compliance plan, and according to the definitions in the following table.

Facility Corner	ID	UTM East (Km)	UTM North (Km)	Geodetic (WGS 84) Longitude	Geodetic (WGS 84) Latitude
North East	NE	389.849	3763.585	-118.19285	34.00710
North	N	389.726	3763.637	-118.19419	34.00756
Middle	MID	389.662	3763.484	-118.19486	34.00617
North West	NW	389.490	3763.548	-118.19673	34.00673
South West	SW	389.448	3763.454	-118.19717	34.00588
South	S	389.745	3763.329	-118.19394	34.00478
Admin South East	SE	389.818	3763.299	-118.19315	34.00452



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Ambient Air Sampling Monitors and Wind Station

B. VERT shall maintain and operate ambient lead monitoring stations at location numbers 1, 2, 4 and 5, as indicated in the following table:

Ambient Lead Monitor	ID	Fenceline ID	Reference Corner	Distance Along Fenceline From Reference Corner (Meters)
1	NE	NE-N	NE	0 + 5
2	N	NE-N	N	22 + 10
3	MID	N-MID	MID	85 + 10
4	SW	SW-S	SW	16 + 10
5	SE	ADMIN BLDG	SE	0 + 10

C. VERT shall maintain and operate a monitoring station at a location immediately adjacent to the west bank of the flood channel and perpendicular to monitor location number 3 indicated in the above table. The operator shall provide a written enforceable contract with the property owner allowing VERT to install and operate a monitoring station at this location and for South Coast AQMD personnel to have access to the station without restriction.

D. Sampling at all monitoring stations shall be performed on a daily schedule in accordance with Rule 1420.1 (j).

3. Each ambient air lead monitoring station shall be equipped with an uninterruptible backup power supply capable of maintaining the monitoring system in full, continuous operation for a minimum of three (3) hours during electrical power interruptions, including voluntary, emergency, anticipated and/or unanticipated losses of electrical power. In the event that compliance with this condition cannot be maintained after installation of the backup power supply, VERT shall, within one hour of power interruption, contact the South Coast AQMD by calling 1-800-CUT-SMOG under the menu option of "breakdown."
4. Pursuant to Rule 1420.1, VERT shall keep adequate records to verify the following:
 - A. Records from the ambient air lead monitoring stations.
 - B. The records shall be retained for a period of five years and shall be made available to the South Coast AQMD upon request.
5. VERT shall be allowed to operate a roving air sampler for the purpose of ensuring continuous sampling at all monitoring locations. The location of the roving air sampler shall be sited in accordance with the requirements of these conditions. All conditions stated in this plan shall apply to the roving air sampler.



Vernon Environmental Response Trust

Rule 1420.1 Compliance Plan For Ambient Air Sampling Monitors and Wind Station

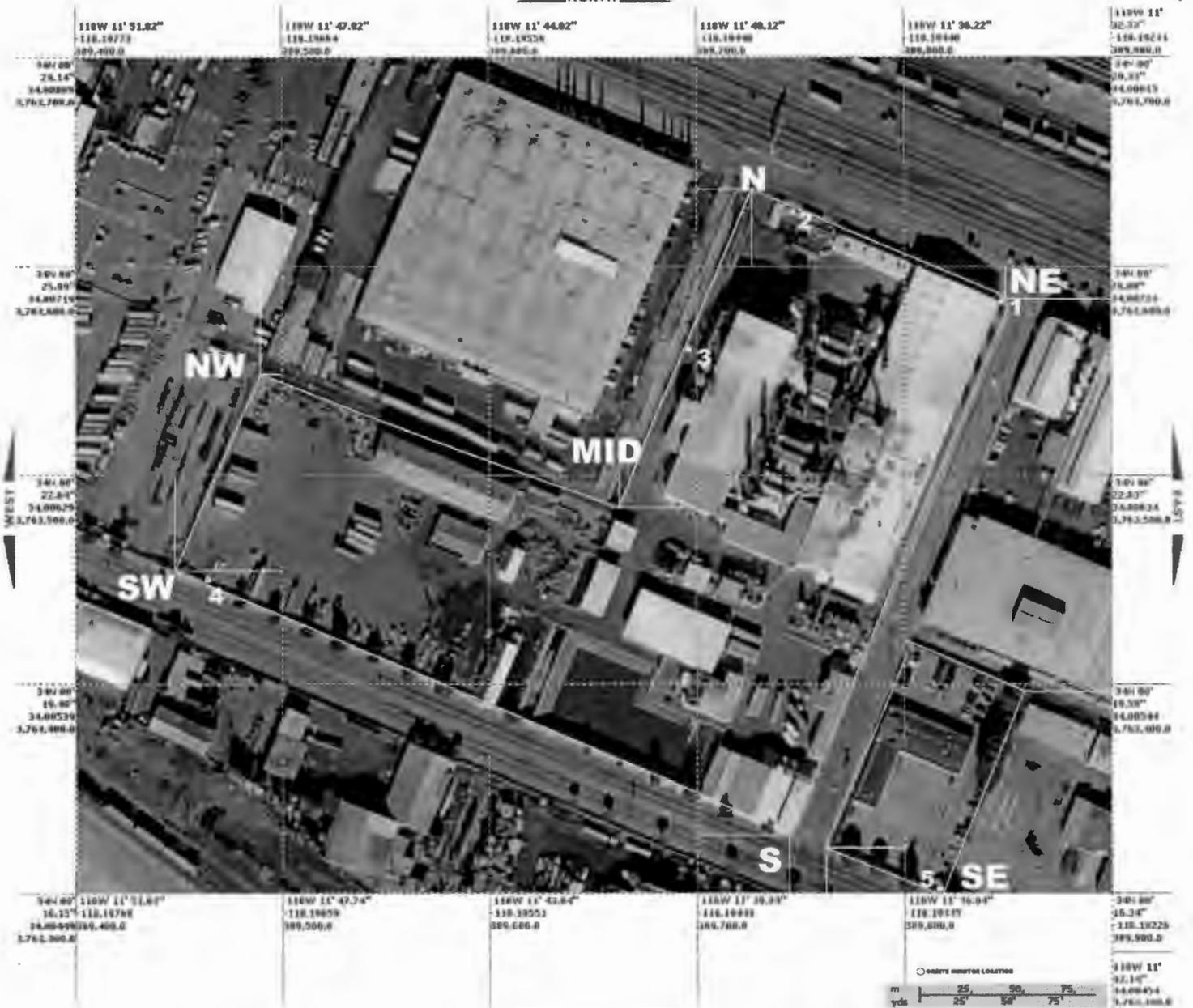
6. VERT shall verify the location of each instance where the roving air sampler is operated by providing an electronic copy of a digital photograph (embedded with a date and time stamp) in the data set documenting air monitoring results which is emailed to the existing list of South Coast AQMD contacts on a regular basis. A new photograph is required for each roving air sampler use.
7. VERT shall continuously record wind speed and direction data at all times using equipment approved by the Executive Officer at a minimum of one location and placement approved by the Executive Officer pursuant to the requirements in Rule 1420.1 (j)(5).
8. The geographical coordinate data, mast height, and technical specifications for the wind monitor shall be kept on file and submitted to South Coast AQMD personnel upon request. The wind monitoring station shall be located in the Southwest corner of the facility as indicated in Attachment B.
9. This station, or device shall be capable of indicating the wind speed with an accuracy of 0.2 meters/sec. \pm 5% of observed speed.
10. The starting wind speed measurement threshold of the wind speed detector shall not exceed 0.5 meters per second.
11. Data measured by the wind speed measurement instrument shall be digitally recorded on a data logger which is equipped with a digital data connection to a computer system located in the VERT Administration Building. The wind speed data shall be recorded in real time and the wind monitoring data shall be provided to South Coast AQMD personnel upon request.
12. The wind monitoring and associated data acquisition system shall be connected to an uninterruptible power supply with at least three (3) hours of reserve battery backup capacity.
13. All wind monitoring records will be maintained by the operator for a period of five (5) years and made available upon request of South Coast AQMD personnel.
14. The data logger time shall be synchronized to correct US time (<http://www.time.gov/>) within \pm 1 minute of the correct chronological time.
15. A sampling rate of one (1) sample per second shall be employed by the monitoring station or instrument.
16. This instrument or station shall be calibrated and maintained in accordance with the manufacturer's specifications.
17. The wind monitoring system shall be safely mounted on a telescoping mast at a minimum height of forty five feet (45'-0") above ground level.



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Ambient Air Sampling Monitors and Wind Station

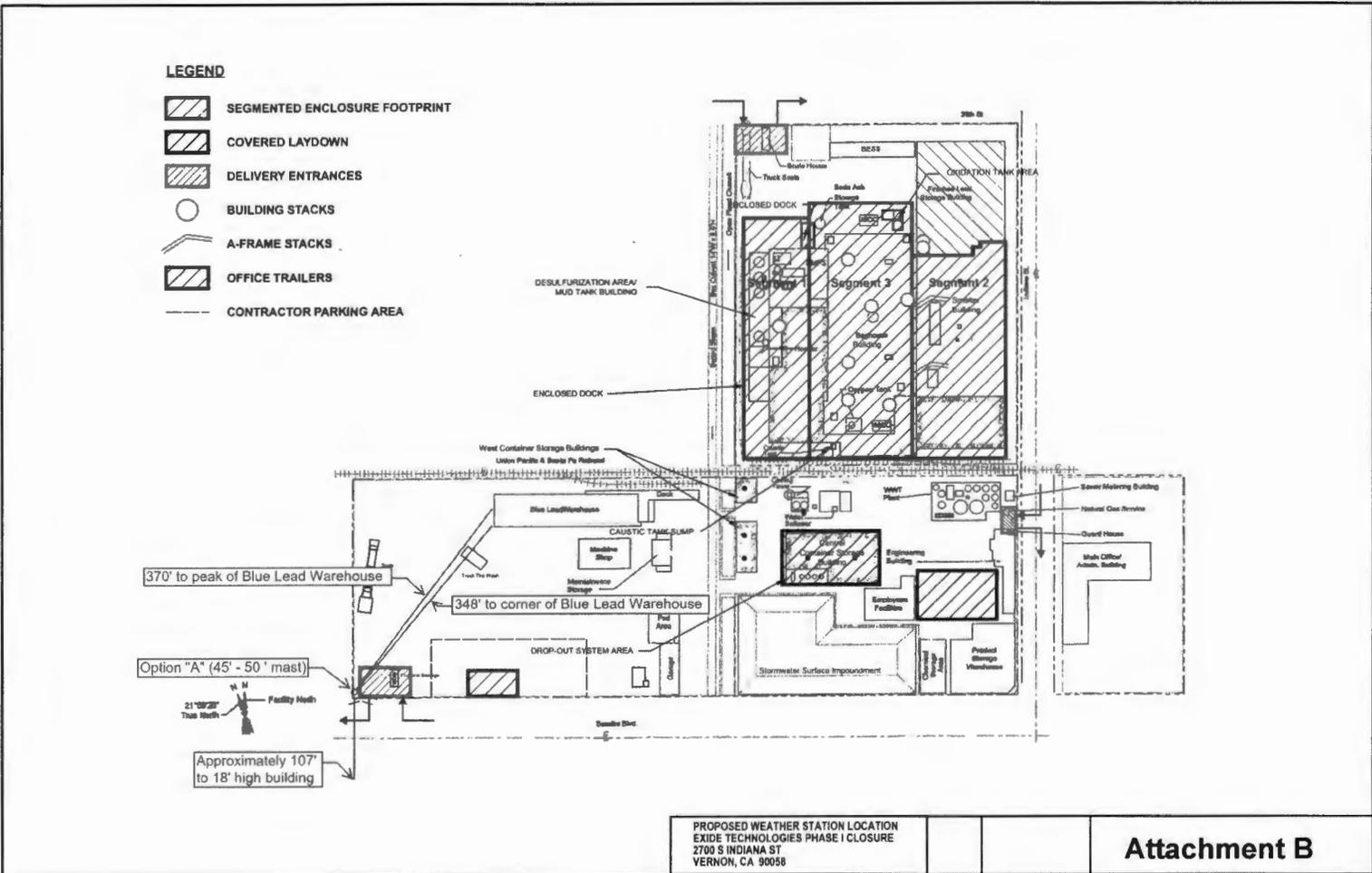
ATTACHMENT A

NORTH



VERT VERNON, CALIFORNIA - ONSITE AMBIENT LEAD MONITORING SITING

Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Ambient Air Sampling Monitors and Wind Station





South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

Section I Page: 145
Facility ID: 193552
Application: 627471
Date: March 31, 2021

Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities

REFERENCE LETTER FOR
APPLICATION NO. 605703/627471



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities



BrandSafway Services Infrastructure Services Group
Scotia-Glenville Industrial Park, Building 406, Scotia, New York 12302
PHONE: 518-381-6000
FAX: 518-381-4613

Exide HAKI

BrandSafway Project#: 152097

HAKI Containment Structure - Enclosure Washing Procedure

To Whom it may concern,

It is understood that there is a monthly or quarterly (depending on roof height) washing procedure for the Exide Technologies Facility at 2700 S. Indiana St., Vernon, CA, required by the Facility's South Coast Air Quality Management District Title V permit. Once the temporary containment system is installed with the covered roofing system (HAKI Roofing System), BrandSafway is requesting that the washing procedure not be applied to the HAKI Roofing System for the following reasons:

- The roof cover material used in the HAKI roofing system cannot be used for worker access
 - The cover material associated with the HAKI Roofing System is not strong enough to safely accommodate the point loading associated with personnel walking on the system
 - Tie-off points for fall protection to ensure the safety of roof washers are not available on the HAKI Roofing System
- Introducing water to both the elevated scaffolding and the sloped HAKI Roofing System further exposes workers to slips, trips and falls
- Elevated portions of the enclosure should only be accessed by properly trained workers
- Large amounts of water run-off can cause injuries to workers below
- The containment structure is designed for natural weather conditions, and not high velocity water sprays

Please contact the BrandSafway Infrastructure Services Group with any questions or concerns at (518)-381-6000.

Prepared by: Scott Tomlinson
Applications Engineer
Infrastructure Services Group
4/23/2018



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities

ADDENDUM FOR
APPLICATION NO. R-605703/627471



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities

Phase 1 Closure at Exide Facility
Vernon, CA

American Integrated Services, Inc.
Mechanical Plan

Mechanical Plan

Phase I Decontamination and Deconstruction Project
Vernon, CA 90058

Prepared for

Exide Technologies
2700 South Indiana Street
Vernon, CA 90058

Prepared by

 *American Integrated Services, Inc.*

1502 E Opp
Wilmington, CA 90744

August 15, 2019
June 20, 2019
May 7, 2019
December 6, 2016



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Duct Modification Narrative

1.1 Introduction

This plan has been created for Phase 1 of the decommissioning of Exide Technologies at 2700 S. Indiana St. in Vernon, CA.

1.2 Purpose

The purpose of this plan is to show that negative pressure will be maintained inside the buildings and Full Enclosure Unit (FEU) utilizing existing baghouses during the segmented deconstruction in accordance with the Closure Plan and AQMD Rule 1420.1 Compliance Plan for Closure Activities.

Per Rule 1420.1 Compliance Plan for Closure Activities, all enclosures shall be maintained continuously at a negative pressure of at least 0.011 inches H₂O (0.02 mm of Hg). However, AIS voluntarily chooses to maintain a negative pressure rating of approximately 0.02" of H₂O to increase safety for its workers and those outside of the enclosures. While it is expected that the FEU can withstand brief periods of pressures of 0.250 or slightly greater, during daily closure activities the goal for pressure will generally be below 0.175" of H₂O to allow for pressure changes when roll up doors open and to limit potential stress, which is still being evaluated, on the FEU shrink wrap. The in-draft air velocity will be maintained at greater than 300 fpm. The calculations below were based from test data provided by Exide. The flow rate survey was conducted by Almega Environmental on December 7, 2018. Please note that the calculations presented are designed to be conservative to create an increased level of safety.

Unit Description	Stack Flow (ACFM)
South Torit	105,263
North Torit	91,977
Soft Lead Baghouse	67,052
Hard Lead Baghouse	74,854
Mac Baghouse	75,762
Material Handling Baghouse	53,160

Existing louver information:

Location	Size	Quantity	Total Area (S.F.)	Free Area 75% of Total Area (S.F.)
Baghouse Building	5.1' x 7.6'	13	507	380



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Enclosure per segment:

Enclosure Type and Operational Bag Houses			
	Segment 1 Location	Segment 2 Location	Segment 3 Location
During Segment 1 Activities	Full Enclosure Unit Operational Bag Houses: MAC, Mat. Handling, Soft Lead, Hard Lead, Torits	Existing Building	Existing Building
During Segment 2 Activities	Not applicable - removed	Full Enclosure Unit Operational Bag Houses: MAC*, Mat. Handling*, Soft Lead, Hard Lead*, Torits	Existing Building
During Segment 3 Activities	Not applicable - removed	Not applicable - removed	Full Enclosure Unit Operational Bag Houses: Mat. Handling*, Soft Lead*, Hard Lead*, Torits

*could be shut down before work begins but will remain operational initially in case additional capacity is required to maintain negative air pressure.

Generally, baghouses will be shut down in sequence starting with the MAC baghouse in the south end of the building moving north and finishing with the Torit baghouses. Bag House shutdowns will generally take place near completion of activities scheduled for a specific segment.



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2.1 Engineering Controls

2.2 Segment 1

Refer to Segment 1 calculations:

Both the 13 existing louvers on the Bag House Building and one truck access opening (RD2) can be open at the same time while still reaching or exceeding the established negative pressure requirement. The in-draft velocity at the truck access opening will be greater than 300 fpm. The negative pressure reading inside the Segment 1 enclosure will be approximately 0.07" of H₂O. (see section IB of calculations). Existing manometers inside the enclosure (units LF1, LF3, STA2, STA3, BH1, TN, TS, BS, NRMPS) will be taken off line and will be replaced with 3 portable manometers (see sheet M-2).

The 2 Torit baghouses, Material Handling, Hard Lead, Soft Lead, and MAC baghouses will remain in operation to serve this segment and the rest of the enclosure buildings. The remaining manometers (W1, W2, W3, A, B, C, CDR, STA1, STA 4, BHN1 & BHN2) will monitor the Baghouse, Smelter, and Blast Feed buildings.

2.3 Segment 2

Refer to Segment 2 calculations:

The Material Handling and MAC baghouses can be shutdown at this time but will remain in operational condition so they can be restarted if additional capacity is potentially needed during the Reverb Furnace A-pipe removal.

The 3 existing louvers in the Baghouse building may be covered. For make-up air, the remaining 10 existing louvers and 2 of the 4 truck access openings (RD2, RD3, RD6) can be open at the same time. The in-draft velocity at the 2 truck access openings being utilized will be greater than 300 fpm. The negative pressure reading inside the Segment 2 enclosure will be at approximately 0.02" of H₂O or greater (see section IIC of calculations). Existing manometers inside the enclosure (units A, B, C, STA1, and CDR) will be taken off line and replaced with 2 portable manometers (see sheet M-2).

All manometers serving the finished lead building will remain operational: STA4, W1, W2, W3. A portable manometer will be placed at location W2 if electrical power cannot be maintained to keep existing manometers operational.

Should a new opening on the roof for crane access during stack removal be required, the opening may be up to 625 square feet (assuming all baghouses are still in operation). All truck access openings must be kept closed prior to and during the stack removal to maintain a negative pressure of approximately 0.02" of H₂O or greater.

The two Torits, Material Handling, Soft Lead, Hard Lead, and MAC baghouses may remain in operation to serve this segment. The existing manometers (BHN1 & BHN2) will continue to monitor the Baghouse building. Manometers (STA4, W1, W2, W3) will monitor Finished Lead bldg. Two portable manometers will monitor the FEU during segment 2 activities.



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2.3 Segment 3

Refer to Segment 3 calculations:

The Material Handling, Hard Lead and Soft Lead baghouses can be shutdown at this time but will remain available or operational if needed for additional capacity through end of Segment 3. The two Torit baghouses will remain in operation during this segment. Negative pressure will be maintained within the Finished Lead Warehouse.

Ducting from the 2 Torit baghouses will be routed to serve the Segment 3 enclosure (Baghouse building) as needed. All existing louvers in the Baghouse building can be covered. For make-up air, only RD2 truck access opening can be open at all times. The in-draft velocity at the truck access opening is greater than 300 fpm. The negative pressure reading inside the central building and Finished Lead Warehouse will be 0.07" of H₂O or greater (see section IIIA of calculations). Existing manometers inside the enclosure will be replaced with 4 portable manometers (see sheet M-3).

Five 60 s.f. make-up-air openings with plastic flaps to prevent backflow can be created in the FEU wall at various locations. Should these five openings be opened, all truck access doors must be closed. The negative pressure reading inside the central building will be approximately 0.06" of H₂O or greater (see section IIIB of calculations).

When openings in the roof are required for stack removal, a new 14'x14' opening will be created. Truck access openings (RD2, RD4, RD5, and RD6) must be kept closed prior to and during the stack removal to maintain a negative pressure of 0.02" of H₂O or greater.

Any deviations from the plan while work is taking place, must be discussed as soon as possible and calculations checked before implementation. This way work continues, and no time is added to substantial completion.

The Finished Lead Warehouse will be decontaminated during or after Segment 3.

3.0 Conclusion

Once decontamination of Segment 3 is complete, the Torits will be shut down and decontaminated within a temporary negative air enclosure. Negative pressure will be monitored by a single portable manometer if power to existing manometers in the Finished Lead building (STA4, W1, W2, W3) is not able to remain operational.

The Contractor (AIS) may modify the baghouse sequence shutdown outlined above, as needed. Revised negative pressure and in-draft velocity calculations shall be provided in an amendment to Exide, DTSC and SCAQMD for approval prior to making changes not evaluated under this Mechanical Plan.



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Calculations

Symbol	Description	Unit
ΔP	Differential Pressure	inches of H ₂ O or "water
Q_s	Room leakage flow rate	ft ³ /min
A	Net open area of the room	ft ²
v	Air velocity in the open area	ft/min
2610	Conversion factor	
$\Delta P = \left[\frac{Q_s}{(2610)(A)} \right]^2$	Formula to calculate differential pressure	inches of H ₂ O or "water
$v = \frac{Q_s}{A}$	Formula to calculate air velocity	ft/min

I. BAGHOUSES FOR SEGMENT 1
ALL BAGHOUSES ARE IN OPERATION.
(468,068 CFM USED DURING SEGMENT 1 WORK.)

PRESSURE AND AIR VELOCITY IF:
A) ONLY 13 EXISTING LOUVERS ARE OPEN (TOTAL FREE AREA OF 380 S.F.)

$$\Delta P = \left[\frac{Q_s}{(2610)A} \right]^2 = \left[\frac{468,068 \frac{ft^3}{min}}{(2610)(380 ft^2)} \right]^2 = 0.22" \text{ water}$$

$$v_{louver} = \frac{Q_s}{A} = \frac{468,068 \frac{ft^3}{min}}{380 ft^2} = 1232 \frac{ft}{min}$$

PRESSURE AND VELOCITY IS TOO HIGH.

B) IF ALL 13 EXISTING LOUVERS AND 1 TRUCK ACCESS (280 S.F.) DOOR (RD2) ARE OPEN
(TOTAL AREA IS 660 S.F.)

$$\Delta P = \left[\frac{Q_s}{(2610)A} \right]^2 = \left[\frac{468,068 \frac{ft^3}{min}}{(2610)(660 ft^2)} \right]^2 = 0.07" \text{ water}$$



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SINCE TRUCK ACCESS OPENING IS 42% OF THE TOTAL OPENING:

$$v_{\text{truck access}} = \frac{Q_s}{A} = \frac{(0.42) \left(468,068 \frac{\text{ft}^3}{\text{min}} \right)}{280 \text{ ft}^2} = 702 \frac{\text{ft}}{\text{min}}$$

II. BAGHOUSES FOR SEGMENT 2

SHUTDOWN MATERIAL HANDLING AND MAC BAGHOUSES . THE 2 TORITS, SOFT LEAD, AND HARD LEAD BAGHOUSES WILL REMAIN IN OPERATION DURING THIS SEGMENT. COVER 3 OUT OF 13 LOUVERS IN THE BAGHOUSE BUILDING.

PRESSURE & AIR VELOCITY IF:

A) ONLY THE 10 EXISTING LOUVERS IN THE BAGHOUSE BUILDING ARE OPEN (TOTAL FREE AREA IS 293 S.F.)

$$\Delta P = \left[\frac{Q_s}{(2610)A} \right]^2 = \left[\frac{339,146 \frac{\text{ft}^3}{\text{min}}}{(2610)(293 \text{ ft}^2)} \right]^2 = 0.20" \text{ water}$$

$$v_{\text{louver}} = \frac{Q_s}{A} = \frac{339,146 \frac{\text{ft}^3}{\text{min}}}{293 \text{ ft}^2} = 1157 \frac{\text{ft}}{\text{min}}$$

PRESSURE AND VELOCITY IS TOO HIGH.

B) IF THE 10 EXISTING LOUVERS IN THE BAGHOUSE BUILDING AND 1 TRUCK ACCESS (280 S.F.) DOOR (RD2) ARE OPEN (TOTAL AREA IS 573 S.F.)

$$\Delta P = \left[\frac{Q_s}{(2610)A} \right]^2 = \left[\frac{339,146 \frac{\text{ft}^3}{\text{min}}}{(2610)(573 \text{ ft}^2)} \right]^2 = 0.05" \text{ water}$$

SINCE TRUCK ACCESS IS 49% OF THE TOTAL OPENING:

$$v_{\text{truck access}} = \frac{Q_s}{A} = \frac{(0.4) \left(339,146 \frac{\text{ft}^3}{\text{min}} \right)}{280 \text{ ft}^2} = 592 \frac{\text{ft}}{\text{min}}$$



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C) IF THE 10 EXISTING LOUVERS IN THE BAGHOUSE BUILDING AND 2 TRUCK ACCESS DOORS (RD2 & RD3) ARE OPEN (TOTAL AREA IS 769 S.F.)

$$\Delta P = \left[\frac{Q_s}{(2610)A} \right]^2 = \left[\frac{339,146 \frac{ft^3}{min}}{(2610)(769 ft^2)} \right]^2 = 0.03" \text{ water}$$

SINCE TRUCK ACCESS RD2 IS 25% OF THE TOTAL OPENING:

$$v_{\text{truck access}} = \frac{Q_s}{A} = \frac{(0.25) \left(339,146 \frac{ft^3}{min} \right)}{196 ft^2} = 433 \frac{ft}{min}$$

III. BAGHOUSES FOR SEGMENT 3

SHUTDOWN HARD LEAD AND SOFT LEAD BAGHOUSES. ONLY 2 TORIT BAGHOUSES LEFT (197,240 CFM)

PRESSURE & AIR VELOCITY IF:

A) IF ONLY RD2 TRUCK ACCESS (280 S.F.) IS OPEN

$$\Delta P = \left[\frac{Q_s}{(2610)A} \right]^2 = \left[\frac{197,240 \frac{ft^3}{min}}{(2610)(280 ft^2)} \right]^2 = 0.07" \text{ water}$$

$$v_{\text{truck access}} = \frac{Q_s}{A} = \frac{\left(197,240 \frac{ft^3}{min} \right)}{280 ft^2} = 704 \frac{ft}{min}$$

B) IF ALL FIVE 60 S.F. MAKE-UP-AIR OPENINGS ON THE FEU ARE (300 S.F.)

$$\Delta P = \left[\frac{Q_s}{(2610)A} \right]^2 = \left[\frac{197,240 \frac{ft^3}{min}}{(2610)(300 ft^2)} \right]^2 = 0.06" \text{ water}$$



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$$v_{\text{make-up-air}} = \frac{Q_s}{A} = \frac{\left(197,240 \frac{\text{ft}^3}{\text{min}}\right)}{300 \text{ft}^2} = 657 \frac{\text{ft}}{\text{min}}$$

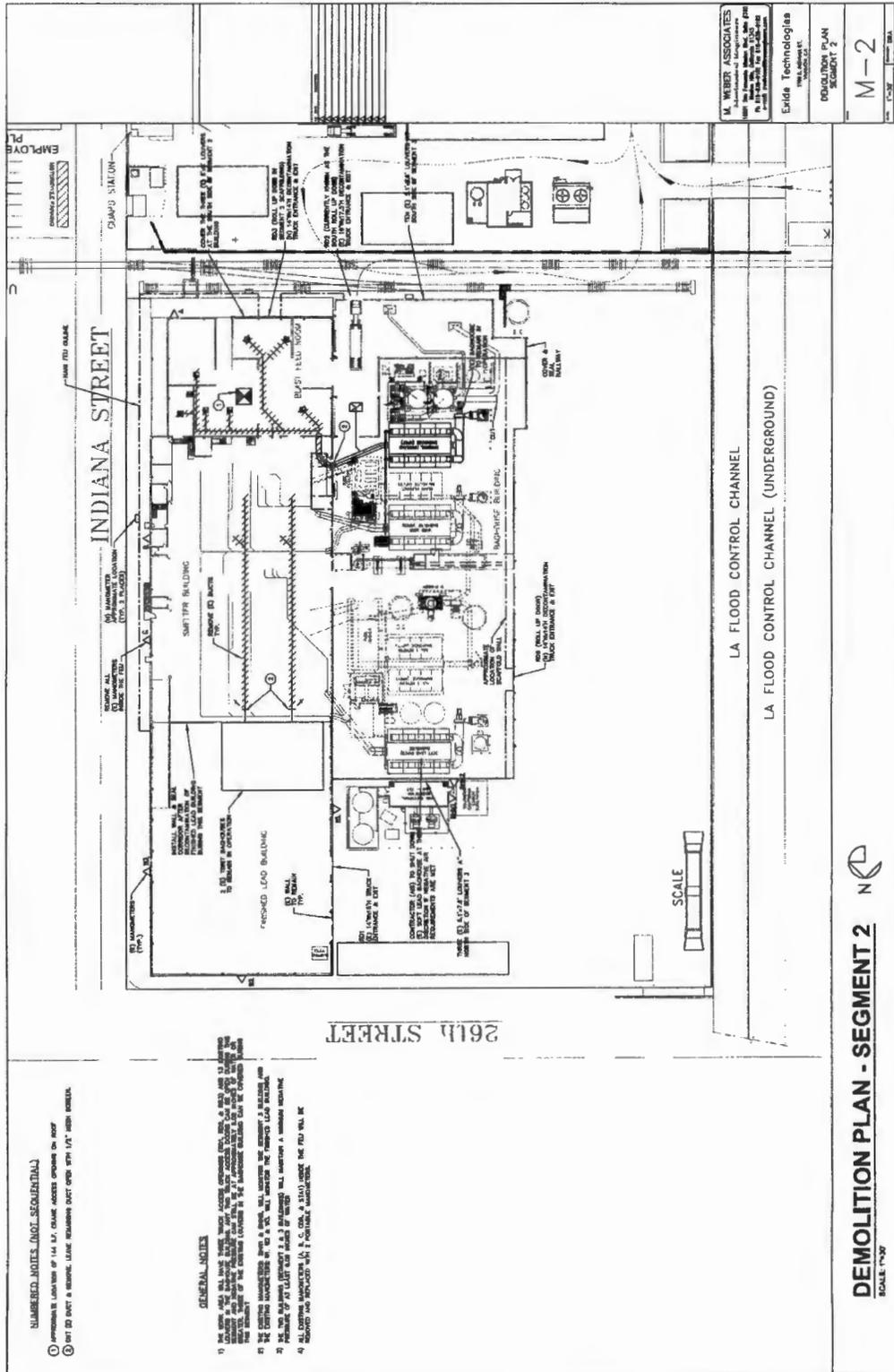


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Attachment 1: Drawings



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities





Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities



Matthew Rodriguez
Secretary for
Environmental
Protection



Department of Toxic Substances Control

Barbara A. Lee, Director
8800 Cal Center Drive
Sacramento, California 95826-3200



Edmund G. Brown Jr.
Governor

MEMORANDUM OF UNDERSTANDING

November 2, 2018

To: Whom it May Concern
From: Matt Wetter, DTSC

RE: EXIDE CLOSURE; PROPOSED MINOR CHANGES TO FUGITIVE DUST MONITORING REQUIREMENTS SPECIFIED IN ATTACHMENTS 14 AND 15 TO THE CLOSURE IMPLEMENTATION PLAN

This memorandum was prepared to document understanding between South Coast Air Quality Management District (SCAQMD), Department of Toxic Substances Control (DTSC), and Exide regarding proposed minor changes to the Exide Closure Implementation Plan (CIP), dated October 22, 2017 and associated appendices and ultimately the Exide Closure Plan, dated December 8, 2016, and the Exide Title V Permit, dated August 15, 2018. Exide prepared the CIP and Title V permit application. DTSC reviewed and approved the CIP. However, portions of the CIP, specifically Attachments 14 (Engineering Controls Plan) and 15 (Air Monitoring Plan), are also subject to SCAQMD review and approval because they are referenced in Exide's Title V permit.

During a conference call on October 9, 2018 Exide, DTSC and SCAQMD discussed the proposed changes. SCAQMD indicated at that time that the proposed changes are administrative revisions and would not require further review and/or approval by US Environmental Protection Agency (US EPA). DTSC has evaluated the proposed changes, and has also determined that they are minor variations as defined in Section 25.0 of the Closure Plan, and thus this memorandum is adequate method to memorialize the agreed upon changes.

DTSC has prepared this memorandum of understanding because the tasks that are subject to change are primarily for DTSC's contractor (Parsons) and associated subcontractor (Panacea) to implement under required Dust Mitigation Oversight activities and because DTSC is responsible for approving changes to the CIP or to the Closure Plan.



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November 2, 2018

Re: Proposed Minor Changes to Fugitive Dust Monitoring Requirements

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Proposed changes that have been mutually agreed to, and are approved by DTSC include:

1. Current CIP Requirement (Attachment 15 – Air Monitoring Plan) – Use of DustTrak Aerosol Monitor or equivalent Model 8520.
 - This requirement will be changed to allow the use equivalent equipment with the same calibration data such as newer DustTrak, ADR-1500, or similar equipment specified in the SCAQMD Rule 1466.
2. CIP Requirement (Attachment 14 – Engineering Controls Plan, Section 3.6.2) - Stop work when (downwind – upwind) >50 ug/m³ based on 15-minute readings.
 - This requirement will be changed to allow visual observation to determine if immediate work stoppage is needed. Then the Dust Mitigation Oversight Contractor will use approximately 2-hour interval readings to determine the concentrations on approximately a 2-hourly basis. If the Real Time Monitoring (RTM) concentration exceeds >25 ug/m³, then stop work for at least 30 minutes and until the average 30-minute, concentration is <25 ug/m³. 25 ug/m³ was selected to be consistent with similar requirements included in Rule 1466, though it is understood by all parties that Rule 1466 is not directly applicable to this situation.
3. Current CIP Requirement (Attachment 15 – Air Monitoring Plan) - *“Reading will be taken every 15-minutes and recorded on the attached form or similar.”*
 - This requirement will be changed to allow recording average concentrations in approximately 2-hour intervals to facilitate implementation by monitoring staff.
4. Current CIP Requirement (Attachment 15 – Air Monitoring Plan) – *“1 unit for each 30 degrees of wind direction variance...Work will stop until DustTrak can be relocated....”*
 - This requirement will be changed to allow 1 upwind and 2 downwind monitors; and to use absolute values of the relative concentrations. No stoppage of work will be required due to wind direction change.
5. Current CIP Requirements – Inconsistency on Page 17 of the main CIP text and Attachment 14 of the CIP.
 - Issues: Bullets 1 and 2 of Page 17 of the main CIP text (presented below with highlights added) are contradictory (25 ug/m³ and 50 ug/m³ thresholds), and it appears that one or the other should have been deleted before publication. Further, using high volume sampler (HVS) for real-time monitoring is impractical. Typical US EPA HVS requires 110-volt power source, and a physical sample filter and lab analysis which does not provide “real time” results. Likely this text should have referred to a RTM instead of an HVS.



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November 2, 2018

Re: Proposed Minor Changes to Fugitive Dust Monitoring Requirements

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Phase 1 Closure at Exide Facility
Vernon, CA

Ambion Integrated Services, Inc.
Closure Implementation Plan

No outside work will be performed when sustained winds exceed 12 MPH, or instantaneous wind gusts exceed 20 MPH. Also, work will be ceased if real time dust readings exceed:

- PM10 levels of 25 micrograms per cubic meter averaged over two hours, as the difference between upwind and downwind samples collected on ~~SCAQMD~~ or other U.S. EPA-approved equivalent method for PM10 monitoring; and/or,
- PM10 levels of 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM10 monitoring.

Work will remain ceased until actual dust sample laboratory analysis for lead can be completed. Based upon those results, either additional dust suppression will be implemented to control nuisance dust with no hazardous components, or a full enclosure with negative air will be constructed if elevated metals are detected in the sample. The above described methods are in compliance with the approved Closure Plan Sections 11.3.4 and 11.3.7 and Attachment 14, Engineering Controls Plan, page 3-2.

- This requirement will be changed to allow:

Long-Term (Weekly as provided by Exide) = Use existing HVS data around the site and weekly analysis report for confirmation. Evaluation criteria based on the existing SCAQMD Rule 1420.1 Lead Emission Standard of 0.100 ug/m3.

Mid-Term (Daily as provided by oversight staff) = Use 2-hour average interval concentrations from the RTM with an action level of 25 ug/m3 of PM10 above background (absolute values of downwind minus upwind concentrations). This is consistent with Section 3.6.2 of Attachment 14 of the CIP, except that an interval of 2 hours instead of 15 minutes is being proposed to accommodate practical field implementations and equipment limitations.

Short-Term (15-minute intervals or as needed shorter duration when potential dust generation work is performed inside temporary enclosures) = Use visual observation method.



Vernon Environmental Response Trust
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Global Leader
in Stored Electrical Energy

Exide Technologies
2700 S. Indiana Street
Los Angeles, CA 90023
Phone 323.262.1101

Charles Tupac
Supervising AQ Engineer
South Coast AQMD
21865 Copley Dr.
Diamond Bar, CA 91765

November 12, 2019

Re: Exide Technologies (Facility ID#124838)
Exide Technologies Vernon Facility Title V Permit Revision: Request to Discontinue Roof Washing

Dear Mr. Tupac,

This request is to be added to the Exide Title V permit revision application currently open and pending with the SCAQMD (A/N 615757). We are making this request to address safety concerns associated with continued roof washing.

Exide Vernon ceased production operations in March 2014. Since then, Exide has formally deactivated Permits to Operate as well as obsolete compliance plans. The Title V Permit has been modified to reflect that the site is under closure and to include applicable exemptions from Rule 1420.1 requirements. Lastly, in January 2017, the US EPA determined that the National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting (40 C.F.R. Part 63, Subpart X) no longer applies to Exide Vernon.

While Exide is exempt from the housekeeping provisions under Rule 1420.1(q), the Closure Plan and Closure Implementation Plan state that Exide will follow the housekeeping requirements of Rule 1420.1 (h) Housekeeping Requirements. A new HAKI enclosure is currently under construction over Segment 2 of the Total Enclosure. Construction is scheduled to be complete by the end of November 2019. Once construction is completed, the only exposed portion of the original roof surface remaining will be that of the Baghouse building. This is the highest roof surface on site. Exide and Exide's contractor conducting the roof washing (Advanced Constructors) have concerns related to the access of areas to be washed, the safety of the workers while washing the roof, and proper egress from the roof area in case of an emergency.

With the elimination of the A-Pipe structure from Segment 2 in October 2019, Advanced Constructors will no longer have direct, safe, access or egress to the Baghouse building roof. Because of access and egress issues and safety concerns related to working at an elevated level without a direct escape route, Exide is respectfully requesting relief from all roof washing requirements. Please find attached a letter from Advanced Constructors outlining their concerns about sending a crew of workers on the roof.



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There have been no exceedances of the 30-day ambient air standard for lead since 2014. Thus, not washing the HAKI roof does not appear to have caused any negative impacts on ambient air for lead. As a result, we believe that continuing to wash the roof presents safety concerns that may not yield significant benefits to the ambient air. All other appropriate housekeeping measures will remain in place.

Feel free to contact me directly if you have any questions or concerns regarding this request. Thank you for your consideration on this matter.

Regards,

A handwritten signature in black ink, appearing to read "Steve Delmar".

Steve Delmar

Environmental Health and Safety Manager
(323) 262-1101 ext. 259
(626) 698-8448 [cell]
steve.delmar@exide.com



Vernon Environmental Response Trust
Rule 1420.1 Compliance Plan For Closure Activities



November 11, 2019

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Exide Technologies 2700 S. Indiana St Vernon, CA 90058 Rule 1420.1

We have been providing roof washing services for Exide, as required by AQMD Rule 1420.1, for many years. We have a well-established crew and system to wash down the roofs, both upper and lower, as well as walkways around the manufacturing buildings.

Exide has hired contractors to cover the manufacturing buildings with an enclosure-scaffolding structure and wrap it with a reinforced poly material to maintain a negative pressure as they remove the manufacturing buildings inside it. The first segment of the manufacturing building removal is complete and the enclosure-scaffolding structure is being relocated to the second segment manufacturing building.

The A-Pipe structure on the roof of the second segment building was previously used for safe access to, and egress from, the upper roof. The A-Pipe structure has recently been removed and this route is no longer available to our crew. Once installation of the relocated enclosure-scaffolding structure is complete, we believe it will not be safe to continue roof washing on the upper roof section of the manufacturing building because of both the demolition activities within the building, and in particular, the limited means of access and egress in the event of an emergency.

Please contact me if you have any question

Sincerely,

Randal Brown
Advanced Constructors, Corp.



South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

Section J	Page: 1
Facility ID:	193552
Revision #:	3
Date:	March 31, 2021

**FACILITY PERMIT TO OPERATE
VERNON ENVIRONMENTAL RESPONSE TRUST**

SECTION J: AIR TOXICS

NOT APPLICABLE



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION K: TITLE V Administration

GENERAL PROVISIONS

1. This permit may be revised, revoked, reopened and reissued, or terminated for cause, or for failure to comply with regulatory requirements, permit terms, or conditions. [3004(a)(7)(C)]
2. This permit does not convey any property rights of any sort or any exclusive privilege. [3004(a)(7)(E)]

Permit Renewal and Expiration

3. (A) Except for solid waste incineration facilities subject to standards under section 129(e) of the Clean Air Act, this permit shall expire five years from the date that this Title V permit is issued. The operator's right to operate under this permit terminates at midnight on this date, unless the facility is protected by an application shield in accordance with Rule 3002(b), due to the filing of a timely and complete application for a Title V permit renewal, consistent with Rule 3003. [3004(a)(2), 3004(f)]

(B) A Title V permit for a solid waste incineration facility combusting municipal waste subject to standards under Section 129(e) of the Clean Air Act shall expire 12 years from the date of issuance unless such permit has been renewed pursuant to this regulation. These permits shall be reviewed by the Executive Officer at least every five years from the date of issuance. [3004(f)(2)]
4. To renew this permit, the operator shall submit to the Executive Officer an application for renewal at least 180 days, but not more than 545 days, prior to the expiration date of this permit. [3003(a)(6)]

Duty to Provide Information

5. The applicant for, or holder of, a Title V permit shall furnish, pursuant to Rule 3002(d) and (e), timely information and records to the Executive Officer or designee within a reasonable time as specified in writing by the Executive Officer or designee. [3004(a)(7)(F)]

Payment of Fees

6. The operator shall pay all required fees specified in Regulation III - Fees. [3004(a)(7)(G)]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION K: TITLE V Administration

Reopening for Cause

7. The Executive Officer will reopen and revise this permit if any of the following circumstances occur:
- (A) Additional regulatory requirements become applicable with a remaining permit term of three or more years. Reopening is not required if the effective date of the requirement is later than the expiration date of this permit, unless the permit or any of its terms and conditions has been extended pursuant to paragraph (f)(4) of Rule 3004.
 - (B) The Executive Officer or EPA Administrator determines that this permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.
 - (C) The Executive Officer or EPA Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements. [3005(g)(1)]

COMPLIANCE PROVISIONS

8. The operator shall comply with all regulatory requirements, and all permit terms and conditions, except:
- (A) As provided for by the emergency provisions of condition no. 17 or condition no. 18, or
 - (B) As provided by an alternative operating condition granted pursuant to a federally approved (SIP-approved) Rule 518.2.

Any non-compliance with any federally enforceable permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or denial of a permit renewal application. Non-compliance may also be grounds for civil or criminal penalties under the California State Health and Safety Code. [3004(a)(7)(A)]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION K: TITLE V Administration

9. The operator shall allow the Executive Officer or authorized representative, upon presentation of appropriate credentials to:
 - (A) Enter the operator's premises where emission-related activities are conducted, or records are kept under the conditions of this permit;
 - (B) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
 - (C) Inspect at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
 - (D) Sample or monitor at reasonable times, substances or parameters for the purpose of assuring compliance with the facility permit or regulatory requirements. [3004(a)(10)(B)]

10. All terms and conditions in this permit, including any provisions designed to limit a facility's potential to emit, are enforceable by the EPA Administrator and citizens under the federal Clean Air Act, unless the term or condition is designated as not federally enforceable. Each day during any portion of which a violation occurs is a separate offense. [3004(g)]

11. A challenge to any permit condition or requirement raised by EPA, the operator, or any other person, shall not invalidate or otherwise affect the remaining portions of this permit. [3007(b)]

12. The filing of any application for a permit revision, revocation, or termination, or a notification of planned changes or anticipated non-compliance does not stay any permit condition. [3004(a)(7)(D)]

13. It shall not be a defense for a person in an enforcement action, including those listed in Rule 3002(c)(2), that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit, except as provided for in "Emergency Provisions" of this section. [3004(a)(7)(H)]



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14. The operator shall not build, erect, install, or use any equipment, the use of which, without resulting in a reduction in the total release of air contaminants to atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Chapter 3 (commencing with Section 41700) of Part 4, of Division 26 of the California Health and Safety Code or of AQMD rules. This rule shall not apply to cases in which the only violation involved is of Section 41700 of the California Health and Safety Code, or Rule 402 of AQMD Rules. [408]

15. Nothing in this permit or in any permit shield can alter or affect:
 - (A) Under Section 303 of the federal Clean Air Act, the provisions for emergency orders;
 - (B) The liability of the operator for any violation of applicable requirements prior to or at the time of permit issuance;
 - (C) The applicable requirements of the Acid Rain Program, Regulation XXXI;
 - (D) The ability of EPA to obtain information from the operator pursuant to Section 114 of the federal Clean Air Act;
 - (E) The applicability of state or local requirements that are not "applicable requirements", as defined in Rule 3000, at the time of permit issuance but which do apply to the facility, such as toxics requirements unique to the State; and
 - (F) The applicability of regulatory requirements with compliance dates after the permit issuance date. [3004(c)(3)]

16. For any portable equipment that requires an AQMD or state permit or registration, excluding a) portable engines, b) military tactical support equipment and c) AQMD-permitted portable equipment that are not a major source, are not located at the facility for more than 12 consecutive months after commencing operation, and whose operation does not conflict with the terms or conditions of this Title V permit: 1) the facility operator shall keep a copy of the AQMD or state permit or registration; 2) the equipment operator shall comply with the conditions on the permit or registration and all other regulatory requirements; and 3) the facility operator shall treat the permit or registration as a part of its Title V permit, subject to recordkeeping, reporting and certification requirements. [3004(a)(1)]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION K: TITLE V Administration EMERGENCY PROVISIONS

17. An emergency¹ constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limit only if:
- (A) Properly signed, contemporaneous operating records or other credible evidence demonstrate that:
 - (1) An emergency occurred and the operator can identify the cause(s) of the emergency;
 - (2) The facility was operated properly (i.e. operated and maintained in accordance with the manufacturer's specifications, and in compliance with all regulatory requirements or a compliance plan), before the emergency occurred;
 - (3) The operator took all reasonable steps to minimize levels of emissions that exceeded emissions standard, or other requirements in the permit; and,
 - (4) The operator submitted a written notice of the emergency to the AQMD within two working days of the time when the emissions limitations were exceeded due to the emergency. The notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and
 - (B) The operator complies with the breakdown provisions of Rule 430 – Breakdown Provisions, or subdivision (i) of Rule 2004 – Requirements, whichever is applicable. [3002(g), 430, 2004(i)]
18. The operator is excused from complying with any regulatory requirement that is suspended by the Executive Officer during a state of emergency or state of war emergency, in accordance with Rule 118 - Emergencies. [118]

¹ "Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the operator, including acts of God, which: (A) requires immediate corrective action to restore normal operation; and (B) causes the facility to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency; and (C) is not caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION K: TITLE V Administration RECORDKEEPING PROVISIONS

19. In addition to any other recordkeeping requirements specified elsewhere in this permit, the operator shall keep records of required monitoring information, where applicable, that include:
- (A) The date, place as defined in the Title V permit, and time of sampling or measurements;
 - (B) The date(s) analyses were performed;
 - (C) The company or entity that performed the analyses;
 - (D) The analytical techniques or methods used;
 - (E) The results of such analyses; and
 - (F) The operating conditions as existing at the time of sampling or measurement. [3004(a)(4)(B)]
20. The operator shall maintain records pursuant to Rule 109 and any applicable material safety data sheet (MSDS) for any equipment claimed to be exempt from a written permit by Rule 219 based on the information in those records. [219(t)]
21. The operator shall keep all records of monitoring data required by this permit or by regulatory requirements for a period of at least five years from the date of the monitoring sample, measurement, report, or application. [3004(a)(4)(E)]

REPORTING PROVISIONS

22. The operator shall comply with the following requirements for prompt reporting of deviations:
- (A) Breakdowns shall be reported as required by Rule 430 – Breakdown Provisions or subdivision (i) of Rule 2004 - Requirements, whichever is applicable.



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- (B) Other deviations from permit or applicable rule emission limitations, equipment operating conditions, or work practice standards, determined by observation or by any monitoring or testing required by the permit or applicable rules that result in emissions greater than those allowed by the permit or applicable rules shall be reported within 72 hours (unless a shorter reporting period is specified in an applicable State or Federal Regulation) of discovery of the deviation by contacting AQMD enforcement personnel assigned to this facility or otherwise calling (800) CUT-SMOG.
 - (C) A written report of such deviations reported pursuant to (B), and any corrective actions or preventative measures taken, shall be submitted to AQMD, in an AQMD approved format, within 14 days of discovery of the deviation.
 - (D) All other deviations shall be reported with the monitoring report required by condition no. 23. [3004(a)(5)]
23. Unless more frequent reporting of monitoring results are specified in other permit conditions or in regulatory requirements, the operator shall submit reports of any required monitoring to the AQMD at least twice per year. The report shall include a) a statement whether all monitoring required by the permit was conducted; and b) identification of all instances of deviations from permit or regulatory requirements. A report for the first six calendar months of the year is due by August 31 and a report for the last six calendar months of the year is due by February 28. [3004(a)(4)(F)]
24. The operator shall submit to the Executive Officer and to the Environmental Protection Agency (EPA), an annual compliance certification. For RECLAIM facilities, the certification is due when the Annual Permit Emissions Program (APEP) report is due and shall cover the same reporting period. For other facilities, the certification is due on March 1 for the previous calendar year. The certification need not include the period preceding the date the initial Title V permit was issued. Each compliance certification shall include:
- (A) Identification of each permit term or condition that is the basis of the certification;



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- (B) The compliance status during the reporting period;
- (C) Whether compliance was continuous or intermittent;
- (D) The method(s) used to determine compliance over the reporting period and currently, and
- (E) Any other facts specifically required by the Executive Officer to determine compliance.

The EPA copy of the certification shall be sent to: Director of the Air Division Attn:
Air-3 USEPA, Region IX 75 Hawthorne St. San Francisco, CA 94105 [3004(a)(10)(E)]

25. All records, reports, and documents required to be submitted by a Title V operator to AQMD or EPA shall contain a certification of accuracy consistent with Rule 3003(c)(7) by a responsible official (as defined in Rule 3000). [3004(a)(12)]

PERIODIC MONITORING

26. All periodic monitoring required by this permit pursuant to Rule 3004(a)(4)(c) is based on the requirements and justifications in the AQMD document "Periodic Monitoring Guidelines for Title V Facilities" or in case-by-case determinations documented in the TitleV application file. [3004(a)(4)]



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

SECTION K: TITLE V Administration

FACILITY RULES

This facility is subject to the following rules and regulations

With the exception of Rule 402, 473, 477, 1118 and Rules 1401 through 1420, the following rules that are designated as non-federally enforceable are pending EPA approval as part of the state implementation plan. Upon the effective date of that approval, the approved rule(s) will become federally enforceable, and any earlier versions of those rules will no longer be federally enforceable.

RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
RULE 1113	2-5-2016	Federally enforceable
RULE 1171	2-1-2008	Federally enforceable
RULE 1171	5-1-2009	Non federally enforceable
RULE 118	12-7-1995	Non federally enforceable
RULE 1303(a)(1)-BACT	12-6-2002	Non federally enforceable
RULE 1303(a)(1)-BACT	5-10-1996	Federally enforceable
RULE 1303(b)(2)-Offset	12-6-2002	Non federally enforceable
RULE 1303(b)(2)-Offset	5-10-1996	Federally enforceable
RULE 1401	9-10-2010	Non federally enforceable
RULE 1420.1	11-5-2010	Federally enforceable
RULE 1420.1	9-4-2015	Non federally enforceable
RULE 1420.1(p)(2)	9-4-2015	Non federally enforceable
RULE 1466	12-1-2017	Non federally enforceable
RULE 2011	2-5-2016	Federally enforceable
RULE 2012	2-5-2016	Federally enforceable
RULE 204	10-8-1993	Federally enforceable
RULE 217	1-5-1990	Federally enforceable
RULE 219	4-6-2018	Non federally enforceable
RULE 219	9-4-1981	Federally enforceable
RULE 3002	11-5-2010	Federally enforceable
RULE 3003	11-5-2010	Federally enforceable
RULE 3004	12-12-1997	Federally enforceable



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

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RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
RULE 3004(a)(4)-Periodic Monitoring	12-12-1997	Federally enforceable
RULE 3005	11-5-2010	Federally enforceable
RULE 3006	3-1-2019	Non federally enforceable
RULE 3007	10-8-1993	Federally enforceable
RULE 301	7-1-2020	Non federally enforceable
RULE 304	7-1-2020	Non federally enforceable
RULE 304.1	5-3-2019	Non federally enforceable
RULE 306	7-1-2020	Non federally enforceable
RULE 315	5-3-2019	Non federally enforceable
RULE 401	11-9-2001	Non federally enforceable
RULE 401	3-2-1984	Federally enforceable
RULE 402	5-7-1976	Non federally enforceable
RULE 403	6-3-2005	Federally enforceable
RULE 404	2-7-1986	Federally enforceable
RULE 405	2-7-1986	Federally enforceable
RULE 407	4-2-1982	Federally enforceable
RULE 408	5-4-2018	Non federally enforceable
RULE 408	5-7-1976	Federally enforceable
RULE 409	8-7-1981	Federally enforceable
RULE 430	7-12-1996	Non federally enforceable
RULE 701	6-13-1997	Federally enforceable



**FACILITY PERMIT TO OPERATE
VERNON ENVIRONMENTAL RESPONSE TRUST**

**APPENDIX A: NOX AND SOX EMITTING EQUIPMENT EXEMPT FROM WRITTEN
PERMIT PURSUANT TO RULE 219**

1. PROCESS HEATERS, NATURAL GAS



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 02-05-2016]

- (1) Except as provided in paragraphs (c)(3), (c)(4) of the Rule, no person shall supply, sell, offer for sale, market, manufacture, blend, repackage, apply, store at a worksite, or solicit the application of any architectural coating within the District that is listed in the Table of Standards 1 and contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified.
- (2) No person within the District shall, at the point of sale of any architectural coating subject to the above paragraph (1), add to such coating any colorant that contains VOC in excess of the corresponding applicable VOC limit specified in the Table of Standards 2.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 02-05-2016] TABLE OF STANDARDS 1 VOC LIMITS

**Grams of VOC Per Liter of Coating,
Less Water and Less Exempt Compounds**

COATING CATEGORY	Category Codes	Current Limit ¹	Effective Date			Small Container Exemption
			1/1/14	2/5/16	1/1/19	
Bond Breakers	5	350				✓
Building Envelope Coating	62	100			50	✓
Concrete-Curing Compounds	7	100				✓
Concrete-Curing Compounds For Roadways and Bridges ²	7	350				✓ ³
Concrete Surface Retarder	58	50	50			✓
Default	51	50	50			✓
Driveway Sealer	52	50				✓
Dry-Fog Coatings	8	50	50			✓
Faux Finishing Coatings						
Clear Topcoat	9a	100	100			✓
Decorative Coatings	9	350				✓
Glazes	9b	350				✓
Japan	9c	350				✓
Trowel Applied Coatings	9d	50	50			✓
Fire-Proofing Coatings	10	150	150			✓
Flats	13	50				✓ ⁵
Floor Coatings	14	50				✓
Form Release Compound	16	100	100			✓
Graphic Arts (Sign) Coatings	17	200	150	200		✓
Industrial Maintenance (IM) Coatings	19	100				✓ ⁵
Color Indicating Safety Coatings		480				✓ ⁵
High Temperature IM Coatings	18	420				✓ ⁵
Non-Sacrificial Anti-Graffiti Coatings	19a	100				✓ ⁵
Zinc-Rich IM Primers	56	100				✓ ⁵
Magnesite Cement Coatings	22	450				✓ ³
Mastic Coatings	23	100	100			✓
Metallic Pigmented Coatings	24	150	150			✓
Multi-Color Coatings	25	250				✓ ³
Nonflat Coatings	26, 27, 28	50				✓ ⁵



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 02-05-2016]

Pre-Treatment Wash Primers	29	420				✓ ³
Primers, Sealers, and Undercoaters	30	100				✓
Reactive Penetrating Sealers	59	350				✓ ⁴
Recycled Coatings	33	250			150	✓
Roof Coatings	34	50				✓
Roof Coatings, Aluminum	53	100				✓
Roof Primers, Bituminous	4	350				✓ ³
Rust Preventative Coatings	35	100				✓ ⁶
Sacrificial Anti-Graffiti Coatings	60	50				✓ ³
Shellac						
Clear	37	730				✓ ⁴
Pigmented	38	550				✓ ⁴
Specialty Primers	39	100				✓
Stains	41	100				✓
Stains, Interior	40	250				✓
Stone Consolidants	61	450				✓ ³
Swimming Pool Coatings						
Repair	43	340				✓ ³
Other	42	340				✓ ³
Tile and Stone Sealers	63	100				✓
Traffic Coatings	45	100				✓
Tub and Tile Refinishing Coatings	64	420				✓ ⁴
Waterproofing Sealers	48	100				✓
Waterproofing Concrete/Masonry Sealers	49	100				✓
Wood Coatings		275				
Varnish	46, 47	275				
Sanding Sealers	36	275				
Lacquer	20	275				



**FACILITY PERMIT TO OPERATE
VERNON ENVIRONMENTAL RESPONSE TRUST**

**APPENDIX B: RULE EMISSION LIMITS
[RULE 1113 02-05-2016]**

Wood Conditioners	65	100				
Wood Preservatives						
Below-Ground	50	350				✓ ³
Other	55	350				✓ ³

1. The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.
2. Does not include compounds used for curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas.
3. Effective 02/05/2016, the small container exemption no longer applies per (f)(1).
4. Effective 01/01/2018, the small container exemption no longer applies per (f)(1).
5. Effective 01/01/2019, the small container exemption is further restricted per (f)(1).
6. Effective 01/01/2020, the small container exemption is further restricted per (f)(1).

**TABLE OF STANDARDS 1 (cont.)
VOC LIMITS**

Grams of VOC Per Liter of Material

COATING	Limit
Low-Solids Coating	120



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 02-05-2016]

TABLE OF STANDARDS 2 VOC LIMITS FOR COLORANTS

**Grams of VOC Per Liter of Colorant
Less Water and Less Exempt Compounds**

COLORANT ADDED TO	Limit
Architectural Coatings, excluding IM Coatings	50
Solvent-Based IM	600
Waterborne IM	50



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 02-01-2008]

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

	CURRENT LIMITS*	EFFECTIVE 1/1/2008*	EFFECTIVE 1/1/2009
SOLVENT CLEANING ACTIVITY	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)		
(iii) Medical Devices & Pharmaceuticals	800 (6.7)		
(B) Repair and Maintenance Cleaning			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)		



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 02-01-2008]

SOLVENT CLEANING ACTIVITY (cont.)	CURRENT LIMITS*	EFFECTIVE 1/1/2008*	EFFECTIVE 1/1/2009
	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(iii) Medical Devices & Pharmaceuticals			
(A) Tools, Equipment, & Machinery	800 (6.7)		
(B) General Work Surfaces	600 (5.0)		
(C) Cleaning of Coatings or Adhesives Application Equipment	25 (0.21)		
(D) Cleaning of Ink Application Equipment			
(i) General	25 (0.21)		
(ii) Flexographic Printing	25 (0.21)		
(iii) Gravure Printing			
(A) Publication	100 (0.83)		
(B) Packaging	25 (0.21)		
(iv) Lithographic (Offset) or Letter Press Printing			
(A) Roller Wash, Blanket Wash, & On-Press Components			
(1) Newsprint	100 (0.83)		



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 02-01-2008]

	CURRENT LIMITS*	EFFECTIVE 1/1/2008*	EFFECTIVE 1/1/2009
SOLVENT CLEANING ACTIVITY (cont.)	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(II) Other Substrates	500 (4.2)	100 (0.83)	
(B) Removable Press Components	25 (0.21)		
(v) Screen Printing	500 (4.2)	100 (0.83)	
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	650 (5.4)	650 (5.4)	100 (0.83)
(vii) Specialty Flexographic Printing	100 (0.83)		
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)		

* The specified limits remain in effect unless revised limits are listed in subsequent columns.



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 05-01-2009]

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

	CURRENT LIMITS*	EFFECTIVE 1/1/2010
SOLVENT CLEANING ACTIVITY	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application		
(i) General	25 (0.21)	
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)	
(iii) Medical Devices & Pharmaceuticals	800 (6.7)	
(B) Repair and Maintenance Cleaning		
(i) General	25 (0.21)	
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)	



**FACILITY PERMIT TO OPERATE
VERNON ENVIRONMENTAL RESPONSE TRUST**

**APPENDIX B: RULE EMISSION LIMITS
[RULE 1171 05-01-2009]**

	CURRENT LIMITS*	EFFECTIVE 1/1/2010
SOLVENT CLEANING ACTIVITY (cont.)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(iii) Medical Devices & Pharmaceuticals		
(A) Tools, Equipment, & Machinery	800 (6.7)	
(B) General Work Surfaces	600 (5.0)	
(C) Cleaning of Coatings or Adhesives Application Equipment	25 (0.21)	
(D) Cleaning of Ink Application Equipment		
(i) General	25 (0.21)	
(ii) Flexographic Printing	25 (0.21)	
(iii) Gravure Printing		
(A) Publication	100 (0.83)	
(B) Packaging	25 (0.21)	
(iv) Lithographic (Offset) or Letter Press Printing		
(A) Roller Wash, Blanket Wash, & On-Press Components	100 (0.83)	



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 05-01-2009]

	CURRENT LIMITS*	EFFECTIVE 1/1/2010
SOLVENT CLEANING ACTIVITY (cont.)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(B) Removable Press Components	25 (0.21)	
(v) Screen Printing	100 (0.83)	
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	650 (5.4)	100 (0.83)
(vii) Specialty Flexographic Printing	100 (0.83)	
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)	

* The specified limits remain in effect unless revised limits are listed in subsequent columns.



**FACILITY PERMIT TO OPERATE
 VERNON ENVIRONMENTAL RESPONSE TRUST**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 404 02-07-1986]**

The operator shall not discharge into the atmosphere from this equipment, particulate matter in excess of the concentration at standard conditions, shown in Table 404(a).

Where the volume discharged is between figures listed in the Table, the exact concentration permitted to be discharged shall be determined by linear interpolation.

For the purposes of this rule, emissions shall be averaged over one complete cycle of operation or one hour, whichever is the lesser time period.

TABLE 404(a)

Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter ² Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions		Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions	
Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot	Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot
25 or less	883 or less	450	0.196	900	31780	118	0.0515
30	1059	420	.183	1000	35310	113	.0493
35	1236	397	.173	1100	38850	109	.0476
40	1413	377	.165	1200	42380	106	.0463
45	1589	361	.158	1300	45910	102	.0445



**FACILITY PERMIT TO OPERATE
 VERNON ENVIRONMENTAL RESPONSE TRUST**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 404 02-07-1986]**

Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions		Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions	
Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot	Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot
50	1766	347	.152	1400	49440	100	.0437
60	2119	324	.141	1500	52970	97	.0424
70	2472	306	.134	1750	61800	92	.0402
80	2825	291	.127	2000	70630	87	.0380
90	3178	279	.122	2250	79460	83	.0362
100	3531	267	.117	2500	88290	80	.0349
125	4414	246	.107	3000	105900	75	.0327
150	5297	230	.100	4000	141300	67	.0293
175	6180	217	.0947	5000	176600	62	.0271
200	7063	206	.0900	6000	211900	58	.0253
250	8829	190	.0830	8000	282500	52	.0227
300	10590	177	.0773	10000	353100	48	.0210
350	12360	167	.0730	15000	529700	41	.0179
400	14130	159	.0694	20000	706300	37	.0162
450	15890	152	.0664	25000	882900	34	.0148



**FACILITY PERMIT TO OPERATE
 VERNON ENVIRONMENTAL RESPONSE TRUST**

**APPENDIX B: RULE EMISSION LIMITS
 [RULE 404 02-07-1986]**

Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions		Volume Discharged Calculated as Dry Gas At Standard Conditions		Maximum Concentration of Particulate Matter Allowed in Discharged Gas Calculated as Dry Gas at Standard Conditions	
Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot	Cubic meters Per Minute	Cubic feet Per Minute	Milligrams per Cubic Meter	Grains per Cubic Foot
500	17660	146	.0637	30000	1059000	32	.0140
600	21190	137	.0598	40000	1413000	28	.0122
700	24720	129	.0563	50000	1766000	26	.0114
800	28250	123	.0537	70000 or more	2472000 or more	23	.0100



FACILITY PERMIT TO OPERATE VERNON ENVIRONMENTAL RESPONSE TRUST

APPENDIX B: RULE EMISSION LIMITS [RULE 405 02-07-1986]

The operator shall not discharge into the atmosphere from this equipment, solid particulate matter including lead and lead compounds in excess of the rate shown in Table 405(a).

Where the process weight per hour is between figures listed in the table, the exact weight of permitted discharge shall be determined by linear interpolation.

For the purposes of this rule, emissions shall be averaged over one complete cycle of operation or one hour, whichever is the lesser time period.

TABLE 405(a)

Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All Points of Process		Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All points of Process	
		Kilograms Per Hour	Pounds Per Hour			Kilograms Per Hour	Pounds Per Hour
100 or less	220 or less	0.450	0.99	9000	19840	5.308	11.7
150	331	0.585	1.29	10000	22050	5.440	12.0
200	441	0.703	1.55	12500	27560	5.732	12.6
250	551	0.804	1.77	15000	33070	5.982	13.2
300	661	0.897	1.98	17500	38580	6.202	13.7
350	772	0.983	2.17	20000	44090	6.399	14.1
400	882	1.063	2.34	25000	55120	6.743	14.9
450	992	1.138	2.51	30000	66140	7.037	15.5
500	1102	1.209	2.67	35000	77160	7.296	16.1
600	1323	1.340	2.95	40000	88180	7.527	16.6



**FACILITY PERMIT TO OPERATE
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**APPENDIX B: RULE EMISSION LIMITS
[RULE 405 02-07-1986]**

Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All Points of Process)		Process Weight Per Hour		Maximum Discharge Rate Allowed for Solid Particulate Matter (Aggregate Discharged From All points of Process)	
Kilograms Per Hour	Pounds Per Hour	Kilograms Per Hour	Pounds Per Hour	Kilograms Per Hour	Pounds Per Hour	Kilograms Per Hour	Pounds Per Hour
700	1543	1.461	3.22	45000	99210	7.738	17.1
800	1764	1.573	3.47	50000	110200	7.931	17.5
900	1984	1.678	3.70	60000	132300	8.277	18.2
1000	2205	1.777	3.92	70000	154300	8.582	18.9
1250	2756	2.003	4.42	80000	176400	8.854	19.5
1500	3307	2.206	4.86	90000	198400	9.102	20.1
1750	3858	2.392	5.27	100000	220500	9.329	20.6
2000	4409	2.563	5.65	125000	275600	9.830	21.7
2250	4960	2.723	6.00	150000	330700	10.26	22.6
2500	5512	2.874	6.34	175000	385800	10.64	23.5
2750	6063	3.016	6.65	200000	440900	10.97	24.2
3000	6614	3.151	6.95	225000	496000	11.28	24.9
3250	7165	3.280	7.23	250000	551200	11.56	25.5
3600	7716	3.404	7.50	275000	606300	11.82	26.1
4000	8818	3.637	8.02	300000	661400	12.07	26.6
4500	9921	3.855	8.50	325000	716500	12.30	27.1
5000	11020	4.059	8.95	350000	771600	12.51	27.6
6000	13230	4.434	9.78	400000	881800	12.91	28.5
7000	15430	4.775	10.5	450000	992100	13.27	29.3
8000	17640	5.089	11.2	500000 or more	1102000 or more	13.60	30.0