

ADDENDUM NO. 2
TO
PLANS AND SPECIFICATIONS
FOR
WEST HAWAI'I SANITARY LANDFILL
GAS COLLECTION AND CONTROL SYSTEM
EXPANSION AT CELLS 8 AND 9
JOB NO. SW-4396
AT
PU'UANAHLU, NORTH KONA
COUNTY AND STATE OF HAWAI'I

NOTICE TO ALL PROSPECTIVE BIDDERS

The items listed below are made a part of the contract and shall govern the work, taking precedence over the previously issued plans and specifications governing the particular item of work mentioned.

REQUEST FOR INFORMATION

1. In regards to the West Hawai'i Sanitary Landfill Gas Collection and Control System Expansion at Cells 8 and 9 project, are there Union requirements?

Response: This project is subject to the prevailing wages as required by Chapter 104 of the Hawai'i Revised Statutes. The minimum wage schedule is included in the bid documents. Bidders are not required to be signatory to any Union to submit a bid. Your attention is directed to the type of Hawai'i contractor license that is required for this project.

2. The proposed vertical well schedule shows the pipe lengths totaling the same LF as the total well length. The gas extraction well assembly shows the pipe with 1' - 2' of aggregate below the pipe and the well schedule shows the solid PVC pipe going 3' above grade. Is the 3' of casing above grade in addition to the Length of Pipe shown on the proposed well schedule? Is the 1' - 2' Aggregate base in addition to the Total Well Length shown on the proposed well schedule?

Response: HDPE piping shall be above grade. See revised plans attached to this Addendum 2.

3. What are the current grade slopes where new LFG Headers and Laterals will be placed? Are countercurrent flow conditions expected? Does the current state of the pipe locations fall under the 1% "engineered soil" or the 4% "within the limits of waste" minimum gradation requirements?

Response: Countercurrent flows are not expected. Header and lateral shall be placed on top of the landfill existing cover such that liquids flow towards the flare and will not be trapped within the pipe. A 1% minimum grade shall be maintained, except for the road crossing which shall meet the grades noted in Detail 3 on Sheet 4 in the revised plans attached to this Addendum 2.

4. Detail 2 on Sheet 004 shows a 6" SCH 80 Steel Pipe with 6" SCH 80 Steel Well Screen but also shows PVC Coupler and PVC Bottom Cap. Are the pipe and well screen PVC or Steel?

Response: The well casing shall be SCH 80 PVC. See revised plans attached to this Addendum 2.

5. Please provide a detail of the 12" Butterfly Valve at the point of connection between existing and new 12" HDPE Header.

Response: The type of valve and location is shown. See revised plans attached to this Addendum 2.

6. Sheet 004 Detail 3 Note 2 states the location of all header casings to be field determined by owner. Are field casings required anywhere other than under the roadway crossing?

Response: Pipe casings for laterals/headers are only required for road crossings.

7. Is the sand bedding for the Header Casing underneath the roadway available on-site? How far to each side of the roadway does the sand bedding need to extend?

Response: Bedding sand is available onsite and will be provided to Contractor free of charge. Bedding sand shall be placed under the buried portion of the pipe.

8. Where are the on-site backfills and aggregate located? What are their sizes, gradation and amount available? Please indicate whether or not these materials will meet the specified materials and uses in the project documents.

Response: Soils available for the project are located in Cell 12. WMH will provide 3" minus soils free of charge. This soil can be used as General Backfill to fill the annular space in the boring. Soils for bedding sand will also be provided free of charge. As an option, the contractor could bring a 1" screen to process the 3" minus soil for the 1" to 3" gravel backfill or import this gravel at his own costs.

9. What is the max slope for ramps over 12" Header piping at the roadway crossing? Please provide detail for roadway crossing that shows max slopes of roadway, minimum flat surface on the top of ramp, compaction requirements and minimum width of roadway crossing. Will "Caution Gas Pipeline" signs be required at the road crossing?

Response: The road crossing ramps shall be constructed such that a trash truck and pick-up truck can pass over the crossing without bottoming out. Compaction shall be provided by wheel rolling the soil in place. The road crossing shall be wide enough to allow two vehicles to pass over at the same time. No signs required.

10. Please provide a detail for "rock piles" surrounding above-grade piping. (CY & Spacing).

Response: See Note 5 on Sheet 2 of the revised plans attached to this Addendum 2.

11. Will there be any permits required for the scope of this project?

Response: No permits required. However, Contractor is expected to do his work following Best Management Practices.

12. Section 02002 Landfill Gas Vertical Well Installation SOP's Item #11 states that the soil backfilled above the upper foam seal (5'-7' below surface) is to be tamped down for compaction. Is this the only tamping/compaction required during backfilling of the extraction well?

Response: Yes

13. Do you have an established method for tamping the soil in extraction wells?

Response: Tamp the soil in place every 12 inches of backfill. Note that only the last 5' of backfill (above the upper foam seal) shall be tamped in place.

14. Will boulders need to be placed around the (3) wellhead locations?

Response: No

15. Will WMH be providing a thermometer for testing drilling refuse as it is removed from the extraction wells?

Response: Thermometers will be the responsibility of the CQA Consultant.

16. Is a non-watermarked copy of the proposal for this project available? The copy provided in the specifications is watermarked and noted as not suitable for use.

Response: A non-water marked copy should be in the bid package. If not in the bid package, request from DPW Contracts Section at (808) 961-8321.

17. Will there be a cost for using water within the 3000 Gallon water limit/day? Is there a cost associated with using more than 3000 gallons if needed?

Response: Contractor should not use more than 3000 gal per day. In the event that Contractor uses more than the allocation, the charge will be \$4.20 per 1,000 gallon. Note that unless the Contractor will set up a temporary water meter, there is no accurate way to measure the water usage. It will be based on tanker load.

18. Where is the water source located?

Response: The water tank is located on the northeast corner of the site near the area where green waste is being processed into mulch.

19. Would you please confirm the QED LFG Well Head model desired. In the plan drawings sheet 4 of 4 Figure 4; Gas Extraction Well Head Detail indicates QED's Quick Change Orifice Plate model [ORP215] yet the Detail Note #2 calls for our standard OPU200 Orifice Plate Union Well Head. We believe the intent is for our Quick Change ORP215 as detailed in the drawing. For your reference, the OPU200 model requires the well head to be fully removed/taken off line for orifice plate change outs via a Union while our ORP215 Quick Change model allows the orifice plate to be easily accessible via the patented winged union in a matter of seconds without need for well head removal.

Response: Contractor shall provide and install QED wellhead model ORP125.

20. Is the contractor responsible for vacuum testing of the Headers and Laterals? If so, how long does the testing last?

Response: Once the header and laterals are tied to the existing GCCS; and thereby applying vacuum to the new system, WMH will walk the lines and check for leaks. Contractor is responsible to repair these leaks. This assessment will take no more than an hour to complete.

21. Would ASTM # 2 Rock be acceptable in the place of the 1" – 3" Gravel backfill for the gas wells? ASTM grading Requirements

Sieve	Passing
3"	100
2-1/2"	90-100
2"	35-70
1-1/2"	0-15
¾"	0-5

Response: #2 Rock is acceptable. The site also has aggregate onsite at no additional cost to the Contractor, but will need to be screened to meet the 1" to 3" gradation.

22. Are fabricated HDPE reduction fittings and tee's acceptable?

Response: Molded tees and fittings shall be used.

23. Plan sheet 2 note 5 calls out "Earthen Mounds" at 30' Spacing. What is the minimum inches of cover on top and to the side of the Header/Lateral gas piping?

Response: A minimum of 12" shall be placed on top and on the side.

24. What is the max slope for the roadway crossing? What max slope can a trash truck accommodate?

Response: a 20% maximum ramped slope shall be installed for the roadway crossing.

25. During the pre-bid meeting, it was discussed that the regrading of the existing header adjacent to Cell 1 was possibly being removed from the scope of work. Is this area of regrading existing header still part of the contract?

Response: Cost to regrade the header adjacent to Cell 1 is no longer needed. However, the County and WMH will decide if regrading the header/lateral in Cell 6 is needed at this time. The Contractor shall provide a cost to regrade this header/lateral in Cell 6 as an alternative cost item (Additive Alternative Bid Item #A1)

26. Spec section 01720 Other Notes, Note 2 states that all contractors employees will be required to complete the WMH Safety Orientation Module at a WMH site and pass an exam at the end of the module. It also states that all contractors employees must undergo the WMH Contractor LFG Safety Orientation which is available online. Are these two requirements referencing the same safety orientation? And, can one orientation satisfy the other, or vice versa?

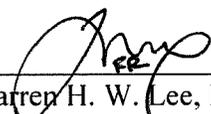
Response: These are the same safety orientations and is only needed once.

PLANS

DELETE plans in its entirety and **REPLACE** with attached revised plans (4 sheets).

ASBESTOS DUST MITIGATION CONTINGENCY PLAN

ADD the attached Asbestos Dust Mitigation Contingency Plan by Titan Industries LLC dated 8/29/16 (50 pages)



Warren H. W. Lee, P.E., Director
Department of Public Works
County of Hawai'i

Date Issued: September 23, 2016

Please detach and execute receipt below. Return immediately via facsimile (808) 961-8630 or mail to the Administration Office, Department of Public Works, County of Hawai'i at Aupuni Center, 101 Pauahi Street, Suite 7, Hilo, HI 96720-4224.

Receipt of Addendum No. 2 via website for the WEST HAWAI'I SANITARY LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION AT CELLS 8 AND 9, Job No. SW-4396, Pu'uuanahulu, North Kona, Hawai'i, is hereby acknowledged.

Signed _____ Title _____
Firm _____ Date _____

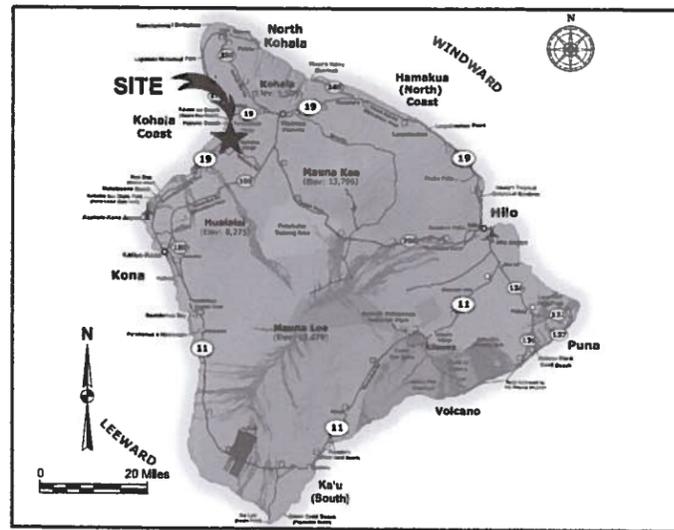
WEST HAWAII SANITARY LANDFILL GCCS EXPANSION AT CELLS 8 AND 9

JOB NO. SW-4396

PUUANAHULU, NORTH KONA, HAWAII

TMK 7-1-003:001

JULY 2016

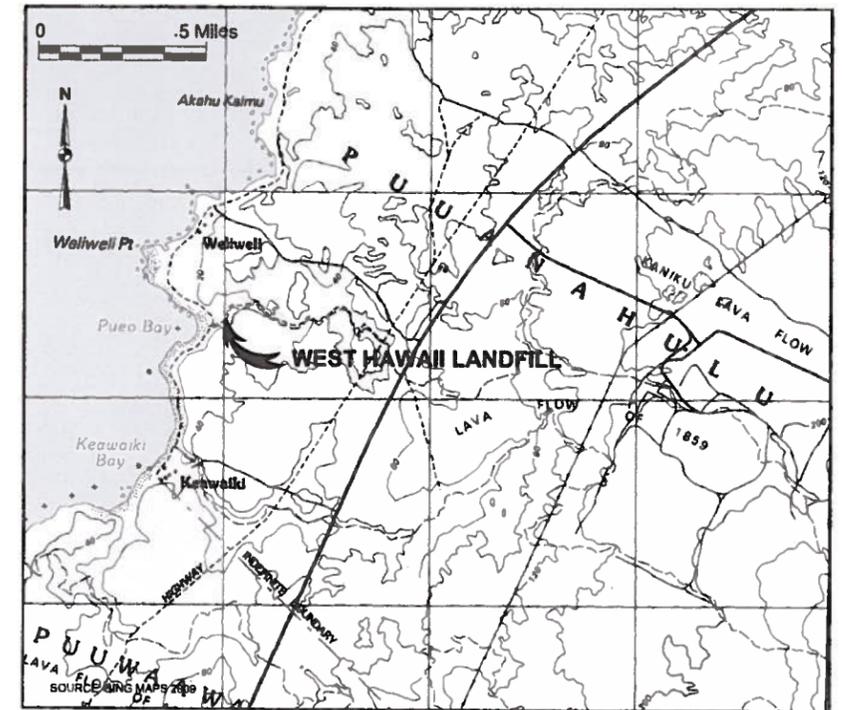


SITE VICINITY MAP

- 1 TITLE PAGE
- 2 PROPOSED WELL LAYOUT
- 3 WELL LAYOUT WITH BASE GRADES
- 4 VERTICAL WELL DETAILS



HAWAIIAN ISLANDS



SITE LOCATION MAP

APPROVALS


MAYOR, COUNTY OF HAWAII

AUG 10 2016

DATE


DIRECTOR, DEPT. OF ENVIRONMENTAL MANAGEMENT, COUNTY OF HAWAII

8/3/16

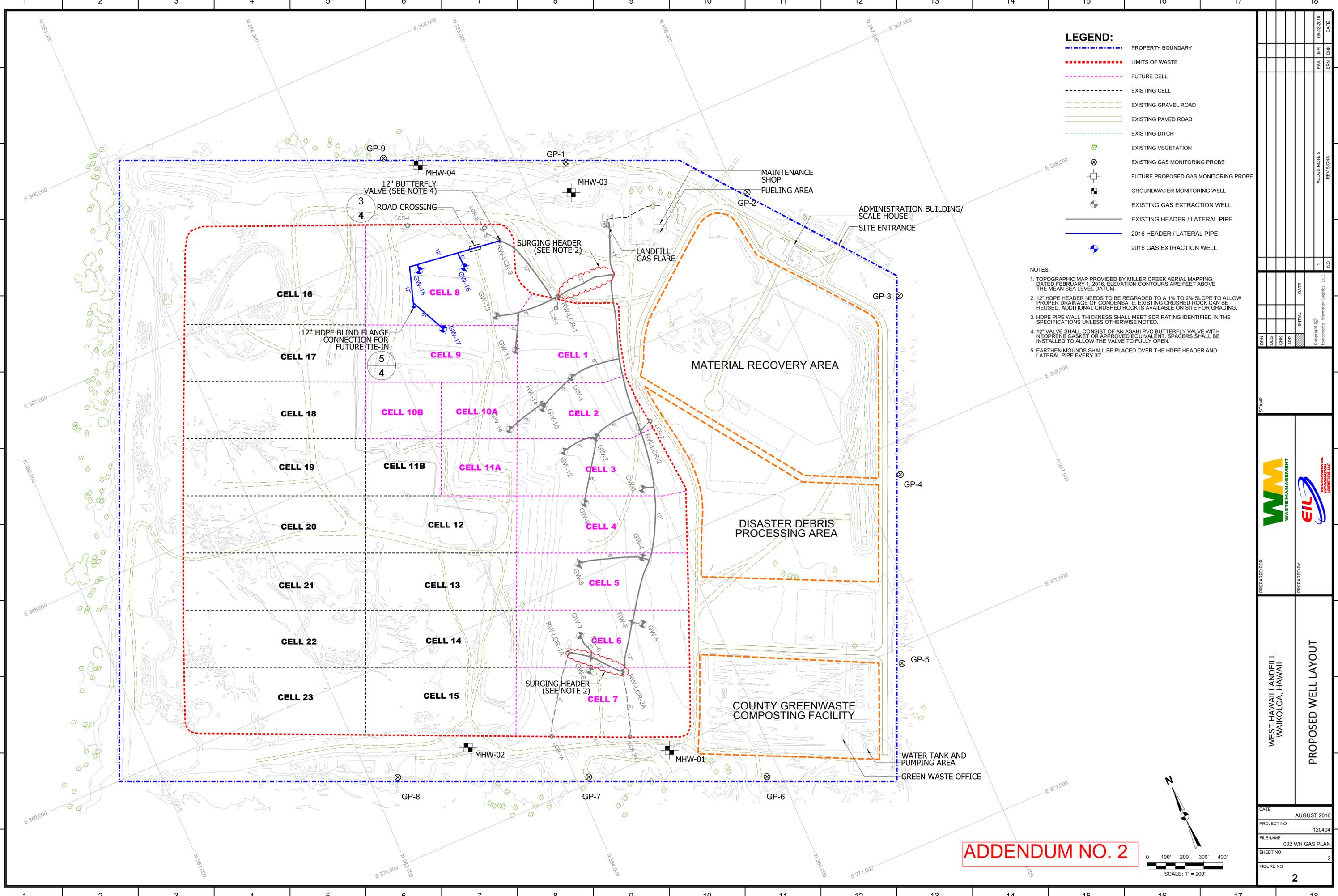
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PREPARED BY



ENVIRONMENTAL
INFORMATION
LOGISTICS, LLC

Addendum No. 2

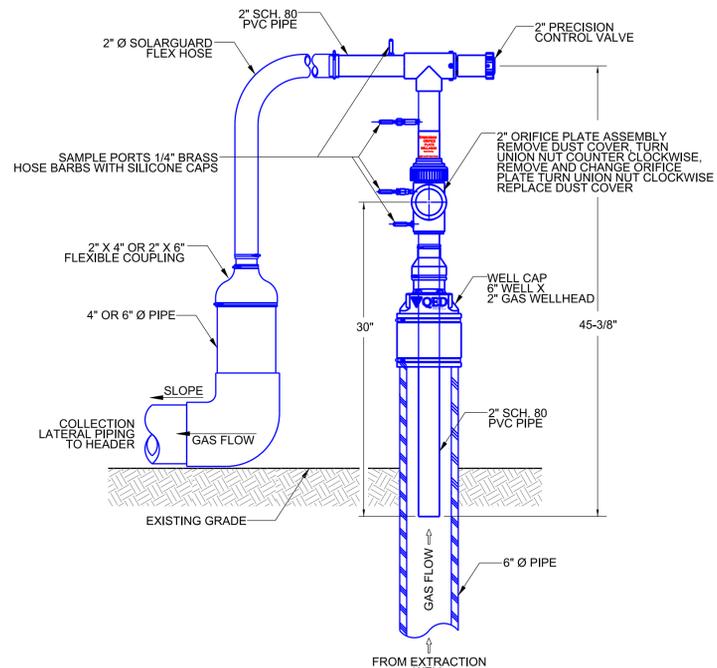


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ADDED NOTE 5						NO
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PAA						NO
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CHK						NO
DATE						NO

STAMP	
PREPARED FOR	WEST HAWAII LANDFILL WAIKOLOA, HAWAII
PREPARED BY	PROPOSED WELL LAYOUT
DATE	AUGUST 2016
PROJECT NO	120404
FILENAME	002 WH GAS PLAN
SHEET NO	2
FIGURE NO	2

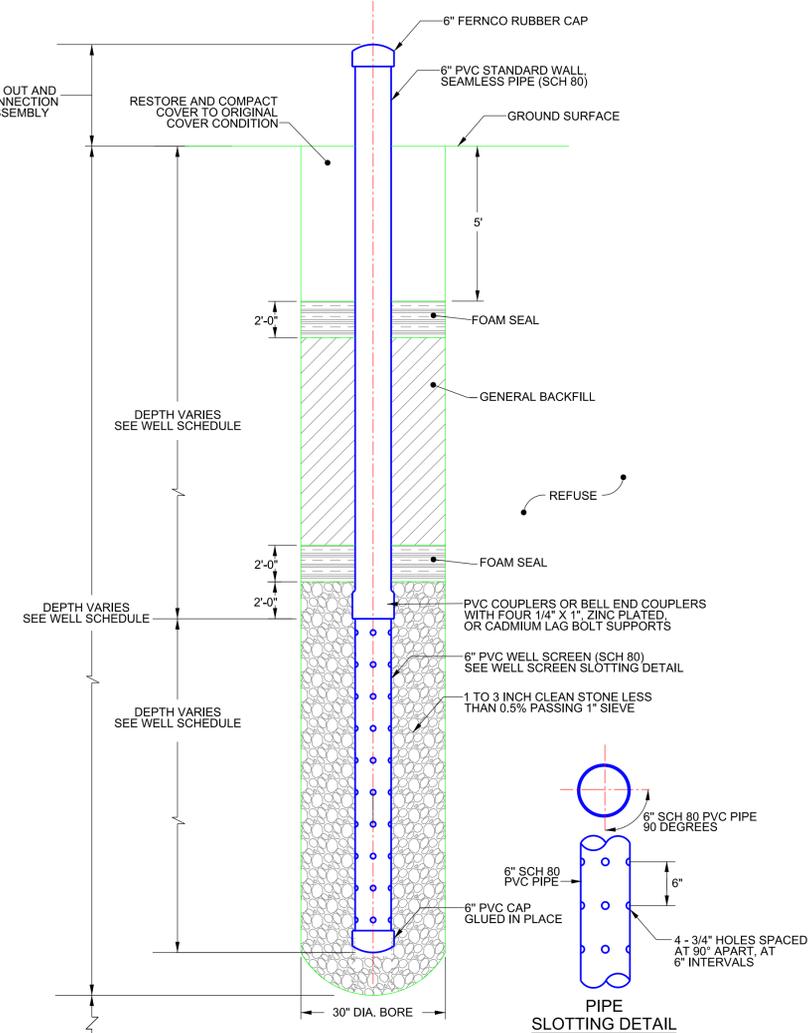
ADDENDUM NO. 2





GAS EXTRACTION WELLHEAD DETAIL 1
NTS

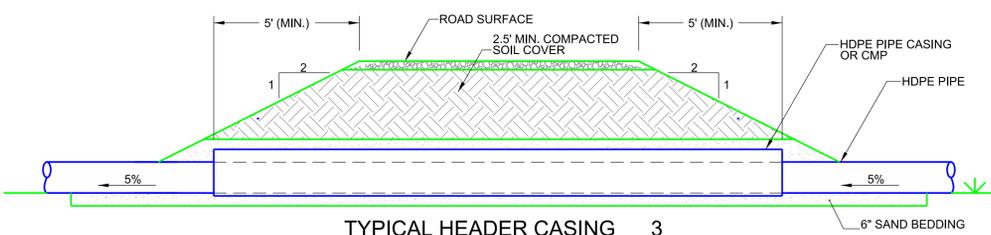
- NOTES:
1. HEADER SHALL BE ROUTED ABOVE GRADE TO THE EXTENT POSSIBLE IN ACCORDANCE WITH DETAIL 6.
 2. WELLHEAD WILL CONSIST OF A 6-IN QED OPU200 WITH PVC PIPING MATERIALS.



GAS EXTRACTION WELL ASSEMBLY 2
NTS

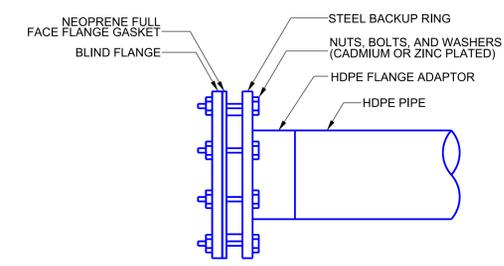
WELL NUMBER	Well COORDINATES		FINAL CURRENT ELEVATION	BASE GRADE ELEVATION	BASE OFFSET (FT)	TOTAL WELL LENGTH BELOW GRADE (FT)	LENGTH OF PIPE (FT)		TOP OF CASING ABOVE GRADE (FT)	
	NORTH	EAST					SOLID	SCREENED		
GW-15	384,306.21	367,173.28	190.0	130.9	20	39	22	17	3	
GW-16	384,531.80	367,252.53	187.2	131.1	20	36	22	14	3	
GW-17	384,300.41	367,505.09	202.7	139.1	20	44	22	22	3	
						Total	119	66	53	9

PROPOSED VERTICAL WELL SCHEDULE

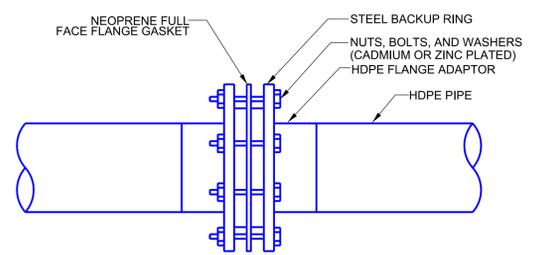


TYPICAL HEADER CASING 3
NTS

- NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR ROADWAY REPAIR TO ORIGINAL CONDITION AFTER CONSTRUCTION.
 2. LOCATION OF ALL HEADER CASINGS TO BE FIELD DETERMINED BY OWNER.
 3. CONTRACTOR SHALL NOT PERFORM ROAD CROSSING OF ACCESS ROADS WITHOUT PRIOR APPROVAL FROM OWNER.
 4. GRADE HEADER CASING CROSS SLOPE TO A MINIMUM 5% SLOPE.
 5. ROAD CROSSING MAY ALSO BE TRENCHED WITH A MINIMUM OF 2.5 FEET OF BACKFILL OVER THE PIPE.



BLIND FLANGE (TYP) 5
NTS



FLANGE CONNECTION (TYP) 4
NTS

- PLAN NOTES:
1. HDPE PIPE WALL THICKNESS SHALL MEET SDR RATING IDENTIFIED IN THE SPECIFICATIONS UNLESS OTHERWISE NOTED.
 2. CLEAN SAND OR SELECT SITE MATERIAL BEDDING AND BACKFILL COMPACTED IN MAXIMUM LIFTS OF 9".
 3. CONTRACTOR TO REPAIR COVER TO ORIGINAL CONDITIONS AND SPECIFICATIONS.
 4. ALL NUTS, BOLTS AND WASHERS ARE CADMIUM OR ZINC PLATED UNLESS OTHERWISE STATED.
 5. DIMENSIONS, LOCATION & SIZE OF SYSTEM COMPONENTS ARE SUBJECT TO CHANGE IN THE FIELD DURING CONSTRUCTION.

ADDENDUM NO. 2

DATE	08-02-2016
REVISIONS	
NO	1
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PREPARED FOR
WASTE MANAGEMENT

PREPARED BY
EIL

WEST HAWAII LANDFILL
WAIKOLOA, HAWAII

VERTICAL WELL DETAILS

DATE: AUGUST 2016
PROJECT NO: 120404
FILENAME: 004 WH DET1 072716
SHEET NO: 4 OF 4
FIGURE NO: 4

Asbestos Dust Mitigation Contingency Plan

**WEST HAWAII SANITARY LANDFILL
71-1111 QUEEN KA'AHUMANU HWY
WAIKOLOA, HI 96738**



Titan Industries, LLC
889 Ahua Street
Honolulu, Hawaii 96819
(808) 673-2022 phone / (808) 833-5153 fax

Asbestos Dust Mitigation Contingency Plan

Prepared for:

WASTE MANAGEMENT HAWAII
92-460 FARRINGTON HWY
KAPOLEI, HI 96707

Prepared by:



Kirk K. Markle
Senior Industrial Hygienist

Titan Industries, LLC
889 Ahua Street
Honolulu, HI 96189 August 29, 2016

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Appendices

- A Asbestos Inspector
- B Asbestos Project Designer
- C Asbestos Project Monitor
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- E Laboratory Certification

LIST OF ACRONYMS

ACM	Asbestos-Containing Material
ADMCP	Asbestos Dust Mitigation Contingency Plan
AIHA	American Industrial Hygiene Association
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
GFCI	Ground Fault Interrupt Circuit
HIOSH	Hawaii Occupational Safety and Health
LFG	Landfill Gas
MSDS	Material Safety Data Sheets
MSW	Municipal Solid Waste
NSPS	National Source Performance Standards
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
PPM	Parts Per Million
RCRA	Resource Conservation and Recovery Act
Titan	Titan Industries, LLC
TCLP	Toxicity Characteristic Leaching Procedure
TPD	Tons Per Day
TSCA	Toxic Substance Control Act.
WMH	Waste Management Hawaii
WHSL	West Hawaii Sanitary Landfill

SECTION 1 - INTRODUCTION

Titan Industries, LLC [Titan] has prepared this Asbestos Dust Mitigation Contingency Plan (ADMCP) for the proposed drilling work, in compliance with the New Source Performance Standards. This ADMCP outlines the protective measures that will be in place to protect on-site personnel and the environment, from potential exposure to airborne asbestos particulates, during drilling activities at the West Hawaii Sanitary Landfill (WHSL) located in Waikoloa, Hawaii, hereinafter referred to as the "Site". The project scope involves the installation of three landfill gas (LFG) extraction wells in association with the landfills expansion.

Titan and other site personnel will use level D personal protective equipment [PPE] for the duration of the drilling work, except when significant contact with asbestos-containing materials is anticipated then Level C PPE will be donned. Included are the safe work practices and emergency contact information.

1.1 SITE DESCRIPTION

The site covers an area of approximately 300 acres. The permitted waste footprint, covers approximately 150 acres, which is fairly square. The landfill entrance at Queen Kaahumanu is approximately 262 feet above mean sea level and the extreme western point of the property is 152 feet above sea level. The natural terrain of the site has a 5% slope in the center with a 10% slope extending in all directions from the center.

The WHSL is permitted to receive up to 750 tons per day (tpd) of non-hazardous MSW.

1.2 PROJECT INFORMATION

The primary objective of this project is to expand the gas collection control systems to comply with surface methane concentration limit requirements as referenced in Subpart WWW of the New Source Performance Standards (NSPS).

SECTION 2 – ASBESTOS CONTROL AND HAZARDS PLAN

2.1 ASBESTOS HAZARDS AND CONTROL MEASURES

The project involves the installation of three extraction wells within the landfill property, but outside of the asbestos burial locations. Therefore, all drilling spoils are assumed to be non-asbestos containing, unless the onsite certified asbestos project monitor/asbestos inspector determines that asbestos is present.

If asbestos is identified, wet methods shall be applied to the cuttings to minimize airborne particulates. Depending on the type of asbestos identified, level D PPE will be used unless the material is considered friable, then level C PPE would be applicable. Project related work will be conducted in accordance with the State of Hawaii Title 11, Hawaii Administrative Rules, Department of Health, Chapter 501 Asbestos Requirements for active waste disposal sites.

Field personnel will be required to minimize the potential for asbestos exposure, through the use of safe work practices and engineering controls. The use of respiratory protection is not expected to be necessary for the majority of the project.

Drill cuttings collected during the installation of the extraction wells will be properly stored in an appropriate storage container bearing the required asbestos labeling, pending proper disposal at the end of the project. Air monitoring will be conducted during drilling operations to document the concentration of airborne particulates for drilling personnel at the Site. The air monitoring results will be used to determine whether a negative exposure assessment for asbestos can be made. If the results of the air monitoring samples indicate airborne particulate concentrations are below the regulatory exposure limit, a determination of a negative exposure assessment will be prepared for the scope of work.

Inhalation of asbestos fibers can cause asbestosis, cancer of the lungs or mesothelioma. Inhalation is the primary potential exposure pathway for airborne asbestos. Exposure to asbestos via inhalation of airborne particulates could occur during subsurface drilling activities that disturb buried asbestos waste. Engineering controls that minimize the potential for airborne particulate exposure will include the use of wet methods by misting the drill cuttings with water. Wet methods will be used throughout the projects duration.

The asbestos-containing drill cuttings retrieved from the borehole during field activities will be temporarily stockpiled wet, in pre-labeled 6-mil polyethylene asbestos bags also referred to as A-bags. These stockpiled drill cuttings will be transferred daily to a dumpster lined with 6-mil polyethylene sheeting and the proper asbestos warning labels posted on the exterior of the dumpster. The dumpster will be secured to prevent public and employee exposure to the asbestos containing waste debris.

2.2 PRE-WORK ACTIVITIES

A health and safety briefing will be provided by Waste Management of Hawaii to address safety and emergency planning at the Site. In addition, the evacuation procedures and routes to the nearest hospital will be discussed.

2.3 WORK AREAS

This section provides a brief description of the work areas that will be established for drilling activities. In addition to the areas described below, an evacuation meeting point has been established at the grassy area near the guard shack, adjacent to the mailbox at the landfill entrance. The work zones described in this section may be modified based on the type of operation to be conducted.

Exclusion Zone

The exclusion zone is the area where drilling operations will be performed. Asbestos warning signs will be posted. Designated protection levels will be required for all personnel entering the exclusion area. The exclusion area will be marked with barricades, safety cones, and flagging tape, as necessary to restrict access. The Certified Asbestos Project Manager will be responsible for enforcing access into the exclusion zone.

Support Zone

The support zone covers all areas outside of the exclusion zone. The support area provides for all administrative and support functions necessary to keep the field activities running smoothly. Portable water and hand washing facilities will be provided at the site. The entire site will be considered the support area when drilling work is being conducted.

2.4 PREPARATION OF THE WORK AREA

The drilling work will be performed within the exclusion zone with the boundaries clearly marked using asbestos warning tape to identify and control access to the regulated work area. Restricted access into the exclusion zone shall be established using barricades, cones and flagging tape. Warning signs will be posted at the entrance to the work area. Only personnel with the proper PPE and current asbestos certifications will be allowed into the work area. The regulated work area will have clean water for decontamination of personnel and equipment

Vehicle access to the site is controlled through the gated entrance. Access will be limited to personnel with specific operational duties. Unauthorized personnel and the public shall not be allowed access in the work area during drilling operations.

2.5 PERSONAL PROTECTIVE EQUIPMENT

The risk of exposure to asbestos-containing particulates at the site will be controlled using a combination of safe work practices, wet methods, dust control measures, and the use of personal protective equipment. The PPE specified in this section will be in use during drilling and sampling activities. Field personnel will be required to inspect personal protective equipment for scratches, abrasions, punctures, or tears before each use. Unusable PPE will be discarded and replaced.

The proper PPE for the scope of work is Level D. The following Level D protective equipment will be required for site personnel during the majority of the field work associated with this project:

- Steel toed, steel shank safety shoes
- Safety vest
- Long sleeved shirt and long pants

- Hard hat
- Neoprene gloves
- Safety glasses with side shield
- Ear plugs
- Hard hat

When working in areas where a significant contact with asbestos-containing materials is anticipated, additional personal protective equipment may be necessary. In those instances, the proper PPE would be Level C and will consist of a respirator equipped with HEPA filtration, protective body suits (Tyvek) with head and foot coverings, gloves, eye protection, hard-hats and steel-toe boots.

The following Level C procedures are provided for the workers' safety; failure to comply with recommended procedures may limit the effectiveness of the PPE against hazardous materials. These procedures may be modified by Titan personnel if warranted due to field conditions

PPE Donning Procedure (Level C):

- Inspect all protective gear prior to use.
- Don Tyvek coveralls, inner and outer gloves, and secure with tape (leave pull-tab). If Tyvek is loose, secure with tape to avoid capture in moving or rotating equipment.
- Don respirator.

PPE Doffing Procedure:

- Using a HEPA vacuum, workers shall remove dust and debris to the extent possible.
- Wash and rinse excess debris from respirators, boots, gloves, and Tyvek coveralls.
- Loosen tape using the pull-tab and remove outer protective clothing in the following order: boots, outer gloves, and Tyvek coveralls. Place disposable PPE into designated containers, and reusable PPE inside the equipment area for re-entry.
- Wash hands and face thoroughly.
- Respirator filters should be taped closed to prevent debris from exiting the filter while in storage.

2.6 RESPIRATORY PROTECTION

If site conditions change and warrant a change in PPE, air purifying respirators with full-face coverage may be used.

Respirator Cartridges

Where required, air-purifying respirators will be equipped with high-efficiency particulate air (HEPA) filters.

Cartridge Changes

All cartridges will be changed at least once daily. The HEPA or P100 filter may become saturated with water or clogged with dust, necessitating more frequent changes. Filters will be changed when personnel begin to experience increased inhalation resistance or a breakthrough of a chemical warning property.

Inspection and Cleaning

Respirators will be checked periodically by the site supervisor and inspected before each use by the wearer. All respirators and associated equipment will be decontaminated and hygienically cleaned after use and placed into a Ziploc bag for storage.

Fit Testing

Annual respirator fit tests are required of all personnel wearing negative pressure respirators. The test will use isoamyl acetate or irritant smoke. The fit test must use the identical brand, style, and size of respirator to be used in the field. Additionally, a positive and negative fit test shall be conducted each time a respirator is donned.

Facial Hair

No personnel with facial hair that interferes with the sealing surface of the respirator will be permitted to wear a respirator.

Corrective Lenses

Normal eyeglasses cannot be worn under full-face respirators because the temple bars interfere with the sealing surfaces of the respirator. For workers requiring corrective lenses, special spectacles designed for use with respirators will be provided. Contact lenses shall not be worn with any type of respirator.

2.7 Heat Disorders

Control Measures:

- Daily consumption of approximately 1 to 2 gallons of water and electrolyte solutions. Body weight loss due to perspiration should not exceed 1.5% of total body weight per work shift.
- Monitoring of pulse, body temperature.
- Rotation of personnel performing strenuous tasks.

Heat Disorders:

- Heat cramps - muscle spasms during or after the work shift.
- Heat exhaustion - fatigue, clammy skin, nausea, profuse sweating.
- Heat stroke - confusion, hot, dry skin, absence of sweating (life threatening).

General First-Aid:

- Provide emergency decontamination
- Remove to a cool area
- Provide cool fluids (if conscious)
- Seek medical assistance

2.8 DECONTAMINATION

Personnel decontamination will not be required during routine site operations. Drilling equipment will be cleaned before it is removed from the site at the central cleaning area. Equipment may also be completed at a boring or wellhead after work has been completed at the location. To

reduce the amount of wastewater generated at the site, equipment and machinery may be wrapped, while wet with plastic sheeting or bags for use the following day. Field personnel will be expected to practice vigilant personnel hygiene and follow the minimum decontamination procedures described in this section.

Drilling equipment and machinery used for drilling work shall be cleaned before it is removed from the site. The equipment will be pressure washed at the designated cleaning area before it is removed from the site. Small equipment can be wet wiped or scrubbed clean before it is removed from the site.

Equipment cleaning on site will be performed using a low volume, high pressure washer. All waste water shall be treated as contaminated with asbestos and shall be filtered using two in-line filter cartridges (Fliterite Type 6CMC-1, or approved equal) with 2" inlet and outlets. The outlet of the first cartridge shall connect to the inlet of the second cartridge. The first cartridge shall contain six (6) 100-micron pre-filters and a second cartridge shall contain six (6) 0.5 micron filters or equal staging according to filtering unit type. For this project, filtered water will be used for dust control. Discharge of water in the county storm drain system is prohibited unless proper permit is acquired. Filters will be disposed of as asbestos-contaminated waste.

2.9 PERSONAL HYGIENE

Vigilant personal hygiene will be required during field activities to prevent exposure to asbestos fibers. Personnel are expected to minimize contact with wastes during drilling operations, stockpiling, packaging, and disposal activities. Site operations personnel will be required to wash their hands before eating, drinking, chewing gum or tobacco, or smoking. Disposable protective equipment shall be removed at the work area and bagged for proper disposal.

Sufficient set of disposable protective full body clothing consisting of material impenetrable by asbestos fibers and of the proper size for each individual to accommodate movement without tearing. Such clothing shall consist of full-body coveralls, footwear, gloves, and headgear. Disposable clothing shall not be allowed to accumulate and shall be disposed of as asbestos-contaminated waste.

Washing facilities including portable water, a cleansing agent, and paper towels will be provided by the contractor to personnel during field operations. Portable toilet facilities also will be available.

2.10 AIR SAMPLING PUMPS, CALIBRATION AND RECORD KEEPING

Portable air monitoring pumps will be used to collect personal air samples for asbestos. Low volume pumps equipped with a mix of cellulose ester air sampling cassettes will be placed on designated employees to measure asbestos fiber concentrations during a typical work shift. The pumps will be calibrated daily before use following the manufacturer's recommendations. Pumps used to collect samples for analysis will be calibrated before and after use using an electronic bubble flow meter or appropriate primary standard. All calibration data and monitoring results will be recorded on date collection forms or field notebooks. Employee exposure data will be collected and summarized by the Certified Asbestos Project Monitor and distributed to the Project Manager.

2.11 VISUAL MONITORING

Titan personnel will conduct visual monitoring of the work area throughout the work shift to monitor site conditions during subsurface drilling operations. The certified Asbestos Project Monitor will visually inspect drill cuttings for discoloration or other suspect material characteristics that may indicate the presence of asbestos-containing materials. If suspect asbestos-containing materials are present the drill cuttings will be continually misted with water to ensure it remains wet. If the cuttings appear dry during drilling operations, work will be halted temporarily until adequate water can be applied to the cuttings.

2.12 AIR MONITORING

Air Monitoring will be performed during drilling activities to measure airborne asbestos fiber concentrations. Measurements will be compared to the Hawaiian Occupational Health and Safety (HIOSH) permissible exposure limit (PEL) of 0.1 fiber per cubic centimeter (f/cc) of air. Employee exposure to asbestos fibers shall be determined during operations that disturb buried wastes at the WHSL by collecting air samples from the breathing zone of field personnel while the borings are being advanced through refuse.

Asbestos air samples will be collected following the sampling and analysis procedures in Method 7400A of the *NIOSH Manual of Analytical Methods* (U.S. Department of Health and Human Services NIOSH Publication No. 84-100, fourth edition, August 1994). Field blank samples will accompany the samples submitted for analysis. Exposure monitoring results will be used to evaluate compliance with HIOSH PEL.

2.13 WASTE HANDLING AND DISPOSAL

At the end of each shift workers will place the asbestos-containing drill cuttings and associated material in a double-lined dumpster and wrap for disposal. Following regulatory requirements, the material will be properly labeled and buried at the WHSL in the specified asbestos waste area.

SECTION 3 – BEST MANAGEMENT PRACTICES

In the event of an emergency, personnel will evacuate the work area and notify the project supervisor. Personnel will assemble at a predetermined, onsite location. The project supervisor will brief all personnel on-site regarding the emergency telephone numbers and safety procedures required at the site.

3.1 TRAINING AND CERTIFICATIONS

All personnel performing or supervising field activities at the site covered by this plan will have received the initial safety training required by OSHA. Current refresher training status will also be required for all personnel engaged in hazardous waste operations field activities. Documentation that this training has been completed will be submitted to the Project Manager and will be made available for review upon request.

Additional training will be required for personnel performing subsurface activities at the site. The Asbestos Project Monitor must be trained consistent with the HIOSH requirements for a class III asbestos worker. The Asbestos Project Monitor must also be capable of identifying suspect asbestos-containing materials and industrial wastes in drill cuttings and prohibiting work in areas where these wastes are present.

Personnel performing drilling activities and handling of the drill cuttings will receive training required by HIOSH for Class IV work.

Prior to the initiation of site activities, the project supervisor will conduct a health and safety briefing. During the briefing, the site hazards, PPE, and emergency procedures will be discussed. Upon completion of the briefing, all personnel will be required to read and sign the certification page of this plan.

During field operations, safety meetings will be held at least weekly by the project manager to review specific health and safety aspects of scheduled work. Safety meetings will also be held after any significant emergency occurrence to evaluate the emergency situation, review procedures implemented to address the emergency, and determine if procedural or operational changes are necessary to prevent subsequent emergencies.

Safety meetings will be conducted by the project supervisor. Topics of discussion will include emergency procedures, evacuation routes, recognition of signs and symptoms of overexposure, importance of proper decontamination, and safe work practices.

3.2 Safe Work Practices

- Unauthorized personnel are not allowed on-site.
- A high standard of personal hygiene will be observed. Smoking, eating, drinking, chewing gum or tobacco, taking medication, and applying cosmetics will not be permitted within any work areas.
- Safety glasses or other eye protection will be worn while in the designated work area.
- Personnel under the influence of alcohol or controlled substances will not be allowed on-site; those taking medication will notify the project supervisor before the start of work.
- Personnel will discard and replace any damaged or heavily soiled protective clothing.

- Personnel will notify the project supervisor of any defective monitoring, emergency, or other protective/safety equipment.
- A supply of potable water, electrolyte replacement solutions, shaded break area, sufficient lighting, and sanitary restroom facilities will be accessible to personnel on-site.
- No worker will be allowed to work alone in a designated work area. Workers will pair off in teams of two and will be responsible for each other, using the “buddy” system
- Personnel will utilize safe work practices and be knowledgeable of emergency procedures discussed during daily safety meetings.
- Any personnel exhibiting unsafe work practices will be removed from the work site immediately.

3.3 EMERGENCY PROCEDURES

General response procedures to fires and medical emergencies are described in the following sections. Injuries, accidents, or incidents that occur during field activities must be reported to the Project Manager and addressed immediately. Telephone numbers of the project contacts and local emergency public services will be available on site during drilling operations. A map with directions to the nearest emergency medical facility will also be provided. Cellular telephones or other portable communication devices will be available to field crews to facilitate communication in case of an emergency. Injuries, accidents, or incidents occurring during site operations must be reported to the Project Manager and attended to immediately.

3.4 RESPONSE TO FIRES

If a fire occurs at the site work area, the Project Manager will be notified immediately and will assess the severity of the fire and determine if outside assistance is required. The Project Manager is responsible for notifying the site District Manager and appropriate agencies, and requesting emergency assistance.

If the fire can be controlled using site personnel and portable fire extinguishing equipment, the Project Manager will supervise the operation (only incipient stage fires). The Project Manager will immediately halt the operation if he determines that site personnel cannot control the fire and notify the fire department. The site or project personnel manager will meet the fire department at the designated evacuation point located at the front gate, which is approximately 1,000 feet inside the main highway

3.5 MEDICAL EMERGENCIES

If a medical emergency occurs, the injured person will be attended to and the project manager notified. The project manager will assess the situation and determine whether the injured person can be cared for on-site or if medical treatment is necessary. A map with directions to Kona Community Hospital, the designated emergency medical facility will be available at the site. If treatment at Kona Community Hospital is necessary, another employee may drive the injured person to the hospital. Alternatively, and ambulance service may be summoned for emergency medical assistance and transportation to the hospital. An accident/loss/near miss incident report will be completed by the Project Manager for any injury, or accident that occurs at the site.

3.6 Emergency Contacts

Service		Telephone Number
Ambulance/Fire Department		911
Police		911
Poison Control Center		(808) 941-4411
Hospital	Address	Telephone Number
Kona Community Hospital	79-1019 Haukapila St. Kealahou, HI 96750	(808) 322-9311

SECTION 4 - REFERENCES

American National Standards Institute, Inc. (ANSI), 1980, Z88.2, Practices for Respiratory Protection.

Code of Federal Regulations, 29 CFR 1926, Safety and Health Regulations for Construction.

Code of Federal Regulations, 29 CFR 1926.95, Criteria for Personal Protective Equipment.

Code of Federal regulations, 29 CFR 1926.59, Hazard Communication.

Code of Federal Regulations, 29 CFR 1926.96, Occupational Foot Protection.

Code of Federal Regulations, 29 CFR 1926.100, Head Protection.

Code of Federal Regulations, 29 CFR 1926.134, Respiratory Protection Standards.

Code of Federal Regulations, 29 CFR, part 1926, Subpart 1101, Asbestos

Code of Federal Regulations, 29 CFR 1926.200, Accident Prevention Signs and Tags.

Code of Federal Regulations, 29 CFR 1926.202, Barricades.

Code of Federal Regulations, 40 CFR, Part 60, Subpart WWW, Standards for Performance for Municipal Solid Waste Landfills

Code of Federal Regulations, 40 CFR, Part 61, Subpart A, Hazardous Waste Management Systems.

Code of Federal Regulations, 40 CFR 260, Hazardous Waste Management Systems.

Code of Federal Regulations, 40 CFR 261, Identification and Listing of Hazardous Waste.

Code of Federal Regulations, 49 CFR, part 61, Subpart B and C, Hazardous Materials Tables and Hazard Communications.

Code of Federal Regulations, 49 CFR, part 178, Specifications for Packaging and 40 CFR 761 Subpart D

APPENDIX A

Asbestos Inspector



MURANAKA ENVIRONMENTAL CONSULTANTS, INC.

Training Certificate

This is to certify that

KIRK MARKLE

has attended the

ASBESTOS INSPECTOR REFRESHER COURSE

*The person has completed the requisite training course
for asbestos accreditation under TSCA Title II, Asbestos Model Accreditation Plan.*

Accreditation number: MEC-AIR-09-08-2016-0135-05

Student's Social Security Number: XXX-XX-2509

*Muranaka Environmental Consultants, Inc. is an accredited training provider in the State of Hawaii
P.O. Box 4341 Honolulu, Hawaii 96812-4341 Phone: (808) 845-8822 Fax: (808) 845-8823*

September 8, 2016

September 8, 2017

September 8, 2016

Date of Attendance

Expiration Date

Date of examination


Mark T. Muranaka, MS., M.P.H., President



Markle
Kirk K.
Titan Industries, LLC
HIASB-0366
State Exp. Date **01/16/2017**

State of Hawai'i Asbestos Certification

Training Course Exp. Dates

W	n/a	MP	02/24/17
CS	n/a	PD	11/10/16
INS	09/08/17	PM	03/10/17

W= Worker
CS= Cont /Sup
INS= Inspector
PD= Project Designer
MP= Mgmt. Planner
PM= Project Monitor

APPENDIX B

Asbestos Project Designer



MURANAKA ENVIRONMENTAL CONSULTANTS, INC.

Training Certificate

This is to certify that

KIRK MARKLE

has attended the

AHERA ASBESTOS PROJECT DESIGNER REFRESHER COURSE

*The person has completed the requisite training course
for asbestos accreditation under TSCA Title II, Asbestos Model Accreditation Plan.*

Accreditation number: MEC-APDR-11-10-2015-0469-06

Student's Social Security Number: XXX-XX-2509

*Muranaka Environmental Consultants, Inc. is an accredited training provider in the State of Hawaii
P.O. Box 4341 Honolulu, Hawaii 96812-4341 Phone: (808) 845-8822 Fax: (808) 845-8823*

November 10, 2015 - November 10, 2015

November 10, 2016

November 10, 2015

Dates of Attendance

Expiration Date

Date of examination

Mark T. Muranaka, M.S., M.P.H., President

APPENDIX C

Asbestos Project Monitor



MURANAKA ENVIRONMENTAL CONSULTANTS, INC.

Training Certificate

This is to certify that

KIRK MARKLE

has attended the

ASBESTOS PROJECT MONITOR REFRESHER

The person has completed the requisite training course for asbestos accreditation under TSCA Title II, Asbestos Model Accreditation Plan.

Accreditation number: MEC-ACSR-03-10-2016-0029-14

Student's Social Security Number: XXX-XX-2509

*Muranaka Environmental Consultants, Inc. is an accredited training provider in the State of Hawaii
P.O. Box 4341 Honolulu, Hawaii 96812-4341 Phone: (808) 845-8822 Fax: (808) 845-8823*

<i>March 10, 2016</i>	<i>March 10, 2017</i>	<i>March 10, 2016</i>
<i>Date of Attendance</i>	<i>Expiration Date</i>	<i>Date of examination</i>

Mark T. Muranaka, M.S., M.P.H. President

APPENDIX D
Competent Person and
Worker Licensing Certification



State of Hawai'i Asbestos Certification

Training Course Exp. Dates

W	n/a	MP	n/a
CS	07/25/17	PD	n/a
INS	n/a	PM	06/15/17

Yamamoto
Daniel S.
Titan Industries, LLC
HIASB-0134
State Exp. Date **10/12/2017**

W= Worker
CS= Cont./Sup.
INS= Inspector
PD= Project Designer
MP= Mgmt. Planner
PM= Project Monitor



GLOBETECK GROUP, INC

2752 Woodlawn Drive, Suite 5-204A, Honolulu, HI 96822 - PHONE (808) 833-5787 - FAX (808) 833-5987

SITE: <http://www.globeteckgroup.com>

is pleased to announce that

Daniel Yamamoto

XXX-XX-0752



has attended and successfully completed the requisite training course for AHERA Asbestos Contractor/Supervisor Refresher accreditation under TSCA Title II, Asbestos Model Accreditation Plan and the provider is accredited to provide training within the State of Hawaii.

AHERA Asbestos Contractor/Supervisor Refresher Training Certificate

Certificate Number: GGI-CSR07252016-10Y

Place of Training: Honolulu, Hawaii

Date of Course: July 25, 2016

Date of Examination: July 25, 2016

Date of Expiration: July 25, 2017



Mohammad Rouf, MPH, CHMM
Training Director
Honolulu, Hawaii



GLOBETECK GROUP, INC

2752 Woodlawn Drive, Suite 5-204A, Honolulu, HI 96822 - PHONE (808) 833-5787 - FAX (808) 833-5987

SITE: <http://www.globeteckgroup.com>

is pleased to announce that

Daniel Yamamoto

XXX-XX-0752



has attended and successfully completed, in accordance with the State of Hawaii, Asbestos Project Monitor Refresher Training Course as prescribed by the State of Hawaii under Title 11-504, Hawaii Administrative Rules. The above mentioned person has passed an examination in this course with at least a minimum score of 70%. This training course meets all requirements of the Title 11, HAR 501-504 and the training provider is accredited within the State of Hawaii.

Hawaii Asbestos Project Monitor Refresher Training Certificate

Certificate Number: GGI-PMR06152016-02Y

Place of Training: Honolulu, Hawaii

Date of Course: June 15, 2016

Date of Examination: June 15, 2016

Date of Expiration: June 15, 2017

Mohammad Rouf, MPH, CHMM
Training Director
Honolulu, Hawaii



CERTIFICATE OF FIT TEST

PART 1 PERSONAL DATA

NAME: **Daniel Yamamoto**

SSN: XXX-XX-0752

MEDICAL CLEARANCE: 2/10/2016

JOB DESCRIPTION: FOREMAN

(exam date)

PART 2 FIT TEST DATA

RESPIRATOR: FULL FACE _____ 1/2 FACE X OTHER _____

MANUFACTURER: NORTH

MODEL: 7700 SIZE: S M L XL

TEST METHOD: IRRITANT SMOKE TEST

CARTRIDGE: P100

APPROVAL# _____

PART 3 TRAINER CERTIFICATION

I Certify that the above named individual:

Has been trained in the use, limitations and maintenance of air purifying respirators.

Has passed a qualitative fit test with the respirator listed above.

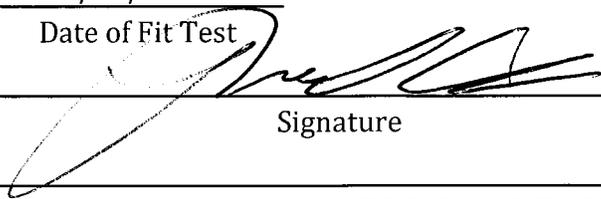
Could not be fit tested because:

2/27/2016

Date of Fit Test

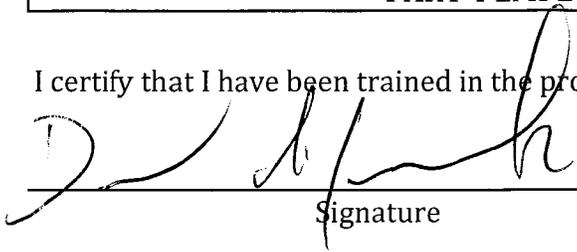
2/27/2017

Expiration Date


Signature

PART 4 EMPLOYEE ACKNOWLEDGEMENT

I certify that I have been trained in the proper use and limitations of Air Purifying Respirators.


Signature

2/27/2016
Date

Concentra Medical Centers (HI)

545 Ohohia Street Honolulu, HI 96819
Phone: (808) 831-3000 Fax: (808) 834-5763

EMPLOYER AUTHORIZATION AND INFORMATION FOR RESPIRATORY EVALUATION

EMPLOYER TO COMPLETE THE FOLLOWING :

Employee Name: Yamamoto, Daniel S.

Employer: Titan Industries

Check Type of Respirator(s) To Be Used (Check ALL that apply)

- Checked: Air-purifying (non-powered), Air-purifying (powered), 1/2 Face with Canisters
Other: Make: North Model: 7700 Cartridge: HEPA

Special Work Conditions (Check ALL That Apply When Wearing Respirator)

- Checked: High Places, Enclosed Places, Protective Clothing

Questionnaire will be: HAND CARRIED MAILED OTHER

Address: 1329 Kaihee Street 6
HONOLULU HI 96822
Employee SSN: XXX-XX-0752

Extent of Usage (Check ALL that apply)

- Checked: On a daily basis 8 Total Hours

Expected Physical Effort Required (Check ALL that apply)

- Checked: Heavy

Exposure to Hazardous Materials (Check ALL that apply)

- Checked: Arsenic, Lead

Other(s): Asbestos
EVALUATION AUTHORIZATION BY: [Signature]

Signature of Employer Representative

DO NOT WRITE BELOW THIS LINE

DO NOT WRITE BELOW THIS LINE

DO NOT WRITE BELOW THIS LINE

PLHCP1 WRITTEN STATEMENT for RESPIRATORS (EMPLOYER)

PHYSICIAN WILL COMPLETE THE FOLLOWING

This report may contain confidential medical information and is intended for the designated employer contact only. The Americans with Disabilities Act (ADA) imposes very strict limitations on the use of information obtained during physical examination of qualified individuals with disabilities. All information must be collected and maintained on separate forms, in separate files, and must be treated as a confidential medical record, with the following exceptions:
- Supervisors and managers may be informed about necessary restrictions on the work or duties of an employee and necessary accommodations.
- First aid and safety personnel may be informed, when appropriate, if the disability might require emergency treatment.

Based on my findings, I have determined that this individual (Check ALL that apply)

- Checked: Class I - No Restrictions on Respirator Use
Fit Test Required, Fit Test Performed Satisfactorily
Special prescription eyewear needed to accommodate respirator

1 Physician or other Licensed Healthcare Professional

2 Employee must seek further medical evaluation by a private physician who must submit a report to Concentra Medical Centers (HI) of his/her findings to

(Check ALL that apply)

- Checked: The above individual HAS been examined for respirator fitness in accordance with 29 CFR 1910.134. This limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
In accordance with specific OSHA requirements, I have informed the above named individual of the results of this evaluation and of any medical conditions resulting from exposures that may require further explanation or treatment. Where applicable, the above named individual has been informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos/lead and/or other chemical exposure(s).

RONALD H. KIENITZ, D.O.

Physician's Signature RONALD H. KIENITZ, D.O.

Physician's Name (Printed)

Physician's License Number (Optional in Most States)

Date of Exam

FEB 10 2017 Expires On

MEDICAL SURVEILLANCE EXAM

PATIENT: Yamamoto, Daniel S.

EMPLOYER: Titan Industries

SSN: XXX-XX-0752

JOB TITLE:

DOB: 09/18/1963

HIRE DATE:

GENDER: M

EXAMINATION RESULTS

Able to perform essential functions as listed.

Unable to perform all essential functions as listed. Please list failed essential function(s):

No medical restrictions are indicated.

The following medical restrictions are indicated:

Recommend further evaluation.

Remarks:

Physician Print Name Here



Physician's Signature

Medical Surveillance - Asbestos

Patient: Yamamoto, Daniel S.
SSN: XXX-XX-0752
DOB: 09/18/1963
Gender: M
Marital Status: S
Address: 1329 Kaihee Street 6
HONOLULU, HI 96822
Home Phone: (808) 384-8635
Work Phone: (808) 673-2022 Ext.:

Job Title:
Employer: Titan Industries
Address: PO Box 2780
Honolulu, HI 968032780
Job Contact: Aisha Rahman
Role: Primary Contact
Phone: (808) 358-7818 Ext.:
Fax: (808) 673-2023
Race: ASIAN BLACK HISPANIC INDIAN WHITE OTHER

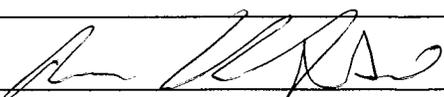
The above individual was seen on 02/10/2016 in accordance with: 29 CFR 1926.1101.
40 CFR 763.121.

The following was performed:

- Completion and review of the standardized medical questionnaire and work history with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems per Appendix D in 1926.1101.
- Review of the employer's description of: this employee's duties as they relate to the employee's exposure, the employee's representative or anticipated exposure level, and personal protection equipment to be utilized by the employee.
- Review of information from previous medical examinations if available.
- A physical examination with emphasis upon the pulmonary, cardiovascular, and gastrointestinal systems.
- A pulmonary function test of forced vital capacity (FVC) and forced expiratory volume at one second (FEV 1) in accordance with NIOSH and ATS standards.
- A chest roentgenogram, posterior-anterior, 14x17 inches (or current film on file) with interpretation in accordance with 29 CFR 1926.1101. (M)(2)(ii)(C).
- NOTE: According to 29 CFR 1926.1101 (M)(2)(ii)(C), it is up to the discretion of the physician whether or not a chest X-ray is required.
- The employee was informed by the physician of the results of the exam and of any medical conditions that may result from asbestos exposure including the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

Unless otherwise noted below, this evaluation indicates that there are no detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos, and there are no recommended limitations on the employee concerning the use of personal protective equipment or respirator.

Comments or limitations (if any):


Provider Signature

FEB 10 2016
Date



GLOBETECK GROUP, INC

2752 Woodlawn Drive, Suite 5-204A, Honolulu, HI 96822 - PHONE (808) 833-5787 - FAX (808) 833-5987

SITE: <http://www.globeteckgroup.com>

is pleased to announce that

Stephen Silva

XXX-XX-6897



has attended and successfully completed the requisite training course for AHERA Asbestos Contractor/Supervisor Refresher accreditation under TSCA Title II, Asbestos Model Accreditation Plan and the provider is accredited to provide training within the State of Hawaii.

AHERA Asbestos Contractor/Supervisor Refresher Training Certificate

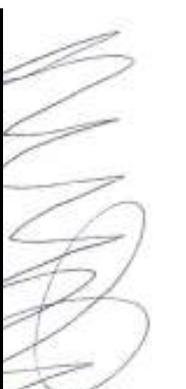
Certificate Number: GGI-CSR02102016-11S

Place of Training: Honolulu, Hawaii

Date of Course: February 10 2016

Date of Examination: February 10 2016

Date of Expiration: February 10 2017




Mohammad Rouf, MPH, CHMM
Training Director
Honolulu, Hawaii

State of Hawai'i Asbestos Certification



Silva
Stephen M.
Titan Industries, LLC
HIASB-0738
State Exp. Date **08/16/2017**

Training Course Exp. Dates

W	n/a	MP	n/a
CS	02/10/17	PD	n/a
INS	n/a	PM	n/a

W= Worker
CS= Cont./Sup.
INS= Inspector
PD= Project Designer
MP= Mgmt. Planner
PM= Project Monitor

CERTIFICATE OF FIT TEST

PART 1 PERSONAL DATA

NAME: **Stephen Silva**
SSN: XXX-XX-6897 MEDICAL CLEARANCE: 6/15/2015
JOB DESCRIPTION: FOREMAN (exam date)

PART 2 FIT TEST DATA

RESPIRATOR: FULL FACE _____ 1/2 FACE X OTHER _____
MANUFACTURER: NORTH
MODEL: 7700 SIZE: S M L XL
TEST METHOD: IRRITANT SMOKE TEST
CARTRIDGE: P100
APPROVAL# _____

PART 3 TRAINER CERTIFICATION

I Certify that the above named individual:

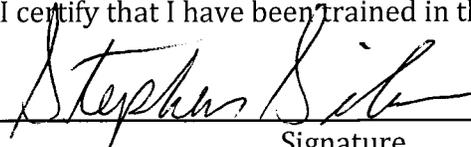
Has been trained in the use, limitations and maintenance of air purifying respirators.
Has passed a qualitative fit test with the respirator listed above.
Could not be fit tested because:

3/1/2016 3/1/2017
Date of Fit Test Expiration Date

Signature

PART 4 EMPLOYEE ACKNOWLEDGEMENT

I certify that I have been trained in the proper use and limitations of Air Purifying Respirators.


Signature 3/1/2016
Date

Concentra Medical Centers (HI)

545 Ohohia Street Honolulu, HI 96819
Phone: (808) 831-3000 Fax: (808) 834-5763

EMPLOYER AUTHORIZATION AND INFORMATION FOR RESPIRATORY EVALUATION

EMPLOYER TO COMPLETE THE FOLLOWING :

Employee Name: Silva, Stephen M.

Employer: Titan Industries

Check Type of Respirator(s) To Be Used (Check ALL that apply)

- Air-purifying (non-powered)
Air-purifying (powered)
Atmosphere supplying Respirator
Combination air-line and SCBA
Continuous-Flow Respirator
Supplied-Air Respirator
Open Circuit SCBA
Closed Circuit SCBA
Dust Mask
1/2 Face with Canisters
Full Face with Canisters
Make: North Model: 7700 Cartridge: North

Special Work Conditions (Check ALL That Apply When Wearing Respirator)

- High Places
Enclosed Places
Protective Clothing
Temperature Extremes
Mostly Cold
Mostly Hot
Other:

Questionare will be: HAND CARRIED MAILED OTHER

Address:

89-640 Haleakala Ave

WAIANAE HI 96792

Employee SSN: XXX-XX-6897

Extent of Useage (Check ALL that apply)

- On a daily basis 8 Total Hours
Occasionally - but not more than twice a week
Rarely - or for Emergency situations only

Expected Physical Effort Required (Check ALL that apply)

- Light
Moderate
Heavy

Exposure to Hazardous Materials (Check ALL that apply)

- Arsenic
Benzene
Coke Oven
Cotton Seed / Dust
Cadmium
Formaldehyde
Methylene Chloride
Lead
Textiles
Chromium

Other(s): Asbestos

EVALUATION AUTHORIZATION BY: [Signature]

Signature of Employer Representative

DO NOT WRITE BELOW THIS LINE

DO NOT WRITE BELOW THIS LINE

DO NOT WRITE BELOW THIS LINE

PLHCP1 WRITTEN STATEMENT for RESPIRATORS (EMPLOYER)

PHYSICIAN WILL COMPLETE THE FOLLOWING

This report may contain confidential medical information and is intended for the designated employer contact only. The Americans with Disabilities Act (ADA) imposes very strict limitations on the use of information obtained during physical examination of qualified individuals with disabilities.

- Supervisors and managers may be informed about necessary restrictions on the work or duties of an employee and necessary accommodations.
First aid and safety personnel may be informed, when appropriate, if the disability might require emergency treatment.

Based upon my findings, I have determined that this individual (Check ALL that apply)

- Employee must schedule a medical examination with Concentra Medical Centers (HI) prior to respirator approval and usage.
Class I - No Restrictions on Respirator Use
Class II - Some Specific Use Restrictions
Class III - Respirator Use is NOT PERMITTED
Further Testing / Evaluation is Required.
Fit Test Required
Fit Test Performed Satisfactorily
Fit Test Performed Unsatisfactorily
Fit Test NOT Performed at: Concentra Medical Centers (HI)
Special prescription eyewear needed to accommodate respirator
Facial hair needs to be shaved to assure tight seal on certain face masks.

Physician or other Licensed Healthcare Professional
Employee must seek further medical evaluation by a private physician who must submit a report to Concentra Medical Centers (HI) of his/her findings to

(Check ALL that apply)

- The above individual HAS been examined for respirator fitness in accordance with 29 CFR 1910.134. This limited evaluation is specific to respirator use only.
The above individual HAS NOT been examined by me for respirator fitness.
In accordance with specific OSHA requirements, I have informed the above named individual of the results of this evaluation and of any medical conditions resulting from exposures that may require further explanation or treatment.

Physician's Signature

Physician's License Number (Optional in Most States)

Physician's Name (Printed) Adolph Diaz-Ordaz, M.D.

Date of Exam JUN 21 2016 Expires On JUN 21 2017

Patient: Silva, Stephen M.
SSN: XXX-XX-6897
DOB: 02/23/1969
Gender: M
Marital Status: S
Address: 89-640 Haleakala Ave
WAIANAE, HI 96792
Home Phone: (808) 277-4340
Work Phone: (808) 673-2022 Ext.:

Job Title: _____
Employer: Titan Industries
Address: PO Box 2780
Honolulu, HI 968032780
Job Contact: Aisha Rahman
Role: Primary Contact
Phone: (808) 358-7818 Ext.:
Fax: (808) 673-2023

Race: ASIAN BLACK HISPANIC INDIAN WHITE Q^THER

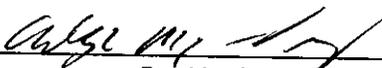
The above individual was seen on 06/21/2016 in accordance with: _____ 29 CFR 1926.1101.
_____ 40 CFR 763.121.

The following was performed:

- Completion and review of the standardized medical questionnaire and work history with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems per Appendix D in 1926.1101.
- Review of the employer's description of: this employee's duties as they relate to the employee's exposure, the employee's representative or anticipated exposure level, and personal protection equipment to be utilized by the employee.
- Review of information from previous medical examinations if available.
- A physical examination with emphasis upon the pulmonary, cardiovascular, and gastrointestinal systems.
- A pulmonary function test of forced vital capacity (FVC) and forced expiratory volume at one second (FEV 1) in accordance with NIOSH and ATS standards.
- A chest roentgenogram, posterior-anterior, 14x17 inches (or current film on file) with interpretation in accordance with 29 CFR 1926.1101. (M)(2)(ii)(C).
- NOTE: According to 29 CFR 1926.1101 (M)(2)(ii)(C), it is up to the discretion of the physician whether or not a chest X-ray is required.
- The employee was informed by the physician of the results of the exam and of any medical conditions that may result from asbestos exposure including the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

Unless otherwise noted below, this evaluation indicates that there are no detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos, and there are no recommended limitations on the employee concerning the use of personal protective equipment or respirator.

Comments or limitations (if any): _____



Provider Signature

JUN 21 2016

Date

PATIENT: Silva, Stephen M. EMPLOYER: Titan Industries
SSN: XXX-XX-6897 JOB TITLE:
DOB: 02/23/1969 HIRE DATE:
GENDER: M

EXAMINATION RESULTS

Able to perform essential functions as listed.

Unable to perform all essential functions as listed. Please list failed essential function(s):

No medical restrictions are indicated.

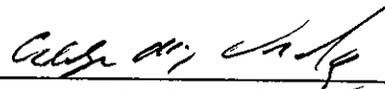
The following medical restrictions are indicated:

Recommend further evaluation.

Remarks: _____

Adolph Diaz-Ordaz, M.D.

Physician Print Name Here



Physician's Signature



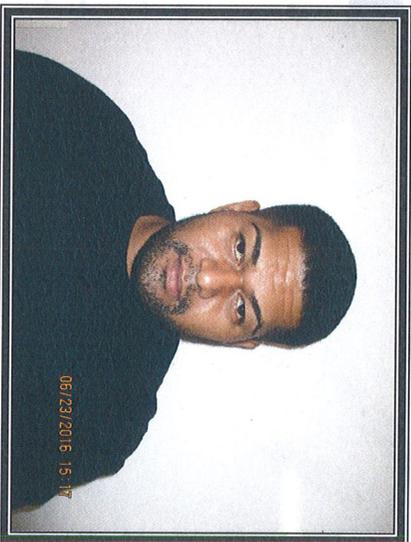
GLOBETECK GROUP, INC

2752 Woodlawn Drive, Suite 5-204A, Honolulu, HI 96822 - PHONE (808) 833-5787 - FAX (808) 833-5987
SITE: <http://www.globeteckgroup.com>

is pleased to announce that

Robert Silva-Sale

XXX-XX-0105



has attended and successfully completed the requisite training course for AHERA Asbestos Contractor/Supervisor Initial accreditation under TSCA Title II, Asbestos Model Accreditation Plan and the provider is accredited to provide training within the State of Hawaii.

AHERA Asbestos Contractor/Supervisor Initial Training Certificate

Certificate Number: GGI-CS106242016-07S
Place of Training: Honolulu, Hawaii
Dates of Course: June 20-24, 2016
Date of Examination: June 24, 2016
Date of Expiration: June 24, 2017

Mohammad Rouf, MPH, CHMM
Training Director
Honolulu, Hawaii





State of Hawai'i Asbestos Certification

Training Course Exp. Dates

W	06/24/17	MP	n/a
CS	n/a	PD	n/a
INS	n/a	PM	n/a

W= Worker
CS= Cont./Sup.
INS= Inspector
PD= Project Designer
MP= Mgmt. Planner
PM= Project Monitor

Silva-Sale

Robert J.
Titan Industries, LLC

HIASB-4164

State Exp. Date **06/29/2017**

CERTIFICATE OF FIT TEST

PART 1 PERSONAL DATA

NAME: Robert Silva-Sale
SSN: XXX-XX-0105 MEDICAL CLEARANCE: 10/30/2015
JOB DESCRIPTION: LABORER (exam date)

PART 2 FIT TEST DATA

RESPIRATOR: FULL FACE _____ 1/2 FACE OTHER _____
MANUFACTURER: NORTH
MODEL: 7700 SIZE: S M L XL
TEST METHOD: IRRITANT SMOKE TEST
CARTRIDGE: P100
APPROVAL# _____

PART 3 TRAINER CERTIFICATION

I Certify that the above named individual:

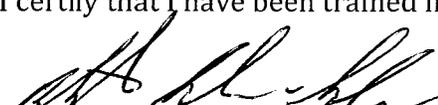
- Has been trained in the use, limitations and maintenance of air purifying respirators.
- Has passed a qualitative fit test with the respirator listed above.
- Could not be fit tested because:

10/30/2015 10/30/2016
Date of Fit Test Expiration Date

Signature

PART 4 EMPLOYEE ACKNOWLEDGEMENT

I certify that I have been trained in the proper use and limitations of Air Purifying Respirators.


Signature 10/30/2015
Date

Concentra Medical Centers (HI)

545 Ohohia Street Honolulu, HI 96819
Phone: (808) 831-3000 Fax: (808) 834-5763

EMPLOYER AUTHORIZATION AND INFORMATION FOR RESPIRATORY EVALUATION

EMPLOYER TO COMPLETE THE FOLLOWING :

Employee Name: Silva-Sale, Robert J.

Employer: Titan Industries

Check Type of Respirator(s) To Be Used (Check ALL that apply)

- Air-purifying (non-powered) Air-purifying (powered)
 - Atmosphere supplying Respirator
 - Combination air-line and SCBA
 - Continuous-Flow Respirator
 - Supplied-Air Respirator
 - Open Circuit SCBA Closed Circuit SCBA
 - Dust Mask 1/2 Face with Canisters Full Face with Canisters
- Make: NORTH Model: 7700 Cartridge: HEPA

Special Work Conditions (Check ALL That Apply When Wearing Respirator)

- High Places Enclosed Places Protective Clothing
- Temperature Extremes Mostly Cold Mostly Hot
- Other: _____

Questionnaire will be: HAND CARRIED MAILED OTHER

Address: 2272 Kalena Dr 26F

HONOLULU HI 96819

Employee SSN: XXX-XX-0105

Extent of Usage (Check ALL that apply)

- On a daily basis 8 Total Hours
- Occasionally - but not more than twice a week _____ Total Hours
- Rarely - or for Emergency situations only _____ Total Hours

Expected Physical Effort Required (Check ALL that apply)

- Light Moderate Heavy

Exposure to Hazardous Materials (Check ALL that apply)

- Arsenic Benzene
- Coke Oven Cotton Seed / Dust
- Cadmium Formaldehyde
- Methylene Chloride Lead
- Textiles Chromium

Other(s): ASBESTOS

EVALUATION AUTHORIZATION BY: *[Signature]*

Signature of Employer Representative

DO NOT WRITE BELOW THIS LINE

DO NOT WRITE BELOW THIS LINE

DO NOT WRITE BELOW THIS LINE

PLHCP¹ WRITTEN STATEMENT for RESPIRATORS (EMPLOYER)

PHYSICIAN WILL COMPLETE THE FOLLOWING

This report may contain confidential medical information and is intended for the designated employer contact only. The Americans with Disabilities Act (ADA) imposes very strict limitations on the use of information obtained during physical examination of qualified individuals with disabilities. All information must be collected and maintained on separate forms, in separate files, and must be treated as a confidential medical record, with the following exceptions:

- Supervisors and managers may be informed about necessary restrictions on the work or duties of an employee and necessary accommodations.
- First aid and safety personnel may be informed, when appropriate, if the disability might require emergency treatment.

Based upon my findings, I have determined that this individual (Check ALL that apply)

- Employee must schedule a medical examination with Concentra Medical Centers (HI) prior to respirator approval and usage.
- Class I - No Restrictions on Respirator Use
- Class II - Some Specific Use Restrictions To be used for Emergency Response or Escape Only Other: _____
- Class III - Respirator Use is NOT PERMITTED
- Further Testing / Evaluation is Required. ²
- Fit Test Required Fit Test Performed Satisfactorily
- Fit Test Performed Unsatisfactorily Fit Test NOT Performed at: Concentra Medical Centers (HI)
- Special prescription eyewear needed to accommodate respirator Special prescription eyewear needed to accommodate respirator
- Facial hair needs to be shaved to assure tight seal on certain face masks.
- ¹Physician or other Licensed Healthcare Professional
- ²Employee must seek further medical evaluation by a private physician who must submit a report to Concentra Medical Centers (HI) of his/her findings to

(Check ALL that apply)

- The above individual HAS been examined for respirator fitness in accordance with 29 CFR 1910.134. This limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- The above individual HAS NOT been examined by me for respirator fitness. The employee's medical evaluation consisted of a review of OSHA's Medical Evaluation Questionnaire in Appendix C Part A Section 2. In accordance with 29 CFR 1910.134, this limited evaluation is specific to respirator use only. Employees would be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- In accordance with specific OSHA requirements, I have informed the above named individual of the results of this evaluation and of any medical conditions resulting from exposures that may require further explanation or treatment. Where applicable, the above named individual has been informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos, lead and/or other chemical exposure(s).

RONALD H. KIENITZ, D.O.

Physician's Signature
RONALD H. KIENITZ, D.O.
Physician's License Number (Optional in Most States)

Physician's Name (Printed) OCT 30 2016
OCT 30 2015 Expires On
Date of Exam

Medical Surveillance - Asbestos

Patient: Silva-Sale, Robert J.
SSN: XXX-XX-0105
DOB: 11/21/1986
Gender: M
Marital Status: S
Address: 2272 Kalena Dr 26F
HONOLULU, HI 96819
Home Phone: (808) 304-6796
Work Phone: _____ Ext.: _____

Job Title: _____
Employer: Titan Industries
Address: PO Box 2780
Honolulu, HI 968032780
Job Contact: Aisha Rahman
Role: Primary Contact
Phone: (808) 358-7818 Ext.: _____
Fax: (808) 673-2023
Race: ASIAN BLACK HISPANIC INDIAN WHITE OTHER

The above individual was seen on 10/30/2015 in accordance with: _____ 29 CFR 1926.1101.
_____ 40 CFR 763.121.

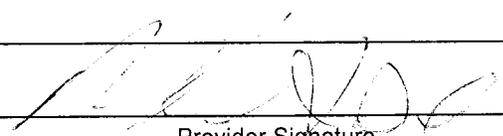
The following was performed:

- Completion and review of the standardized medical questionnaire and work history with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems per Appendix D in 1926.1101.
- Review of the employer's description of: this employee's duties as they relate to the employee's exposure, the employee's representative or anticipated exposure level, and personal protection equipment to be utilized by the employee.
- Review of information from previous medical examinations if available.
- A physical examination with emphasis upon the pulmonary, cardiovascular, and gastrointestinal systems.
- A pulmonary function test of forced vital capacity (FVC) and forced expiratory volume at one second (FEV 1) in accordance with NIOSH and ATS standards.
- A chest roentgenogram, posterior-anterior, 14x17 inches (or current film on file) with interpretation in accordance with 29 CFR 1926.1101. (M)(2)(ii)(C).
- NOTE: According to 29 CFR 1926.1101 (M)(2)(ii)(C), it is up to the discretion of the physician whether or not a chest X-ray is required.
- The employee was informed by the physician of the results of the exam and of any medical conditions that may result from asbestos exposure including the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

Unless otherwise noted below, this evaluation indicates that there are no detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos, and there are no recommended limitations on the employee concerning the use of personal protective equipment or respirator.

Comments or limitations (if any): _____

RONALD H. KIENITZ, D.O.



Provider Signature

OCT 30 2015

Date

Physical Exam

Name: Silva-Sale, Robert J.

SSN: XXX-XX-0105

Date: 10/30/2015

Examination Results

Able to perform essential functions as listed.

Unable to perform all essential functions as listed. Please list failed essential function(s):

No medical restrictions are indicated.

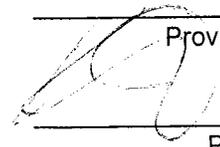
The following medical restrictions are indicated:

Recommend further evaluation.

Remarks:

RONALD H. KIENITZ, D.O.

Provider Print Name Here



Provider Signature

APPENDIX E

Laboratory Certification



Report Issue Date: 11/16/2015

Jennifer Hsu Liao
Hawaii Analytical Laboratory, LLC
3615 Harding Avenue #308
Honolulu, HI 96816

Participant ID# 101812

Dear Jennifer Hsu Liao,

Please find your organization's Industrial Hygiene Proficiency Analytical Testing results for **IHPAT Round 203**. It is the participant's responsibility to thoroughly review results and to immediately contact the AIHA Proficiency Analytical Testing Programs in writing, if any errors are found in your report. The PAT Board has issued technical review of data and summary of the source material change feedback survey for IHPAT Asbestos 203a report related to the. Direct access to the PDF report is available via: <http://bit.ly/IHPAT203Report>.

The proficiency demonstrated by the results of this IHPAT round is valid until the results of the retest round are available on January 15, 2016, if the participant chooses to enroll, or until February 16, 2016 when the next IHPAT report will be available. Unacceptable performance may be improved by correctly analyzing a set of retest samples. If you require a retest for the round, you may order one by completing the Retest Order Form available online at www.aihapat.org. The completed form and payment must be received by November 30, 2015. Refer to the PAT Programs Schedule located at www.aihapat.org for important retest round dates.

Please handle, store and analyze your PAT samples in the same manner as routine client samples. To submit results, visit the Proficiency Analytical Testing (PAT) page and click on the PAT Data Entry Portal: www.aihapat.org. **Always print and save the confirmation page** after submitting data via the PAT Data Entry Portal.

Participants shall not describe their proficiency status in a manner that implies accreditation, certification or variations thereof. PAT results pertain only to the participant organization at the location listed on this results report. AIHA PAT Programs makes every effort to ensure that individual participant results are kept confidential and are not made public. Round results are only released to the participant and those entities requiring this information for accreditation, regulatory and contract purposes. New participants are made aware of the arrangement in advance of participation and consent is sought prior to the release of records for participants. PAT reports may not be reproduced or distributed unless copied in its entirety.

Any enrolled participant that is unable to participate in a PT round must request an "Excused Absence" in order to not receive outliers and an unacceptable performance rating. This written request must be received before the PT round closes. Please note that an "Excused Absence" will not be granted for more than two consecutive rounds.

IHPAT Round 204 sample kits will be mailed to participants around January 1, 2016. An email will be sent out upon shipment of the samples. If you do not receive samples within fifteen (15) days after the ship date please contact the AIHA PAT Programs. Your organization's data will be due by 11:59pm ET on February 1, 2016. The analytes for **IHPAT Round 204** are:

- **Metals – cadmium (CAD), lead (LEA), nickel (NKL)**
- **Asbestos – amosite**
- **Silica – coal mine dust / talc**
- **Organics – chloroform (CFM), 1,2-dichloroethane (DCE), trichloroethylene (TCE)**
- **Diffusive – benzene (BNZ), o-xylene (OXY), toluene (TOL)**

Samples are generated, characterized, packaged, and shipped by SRI International, Menlo Park, CA 94025 under contract with AIHA Proficiency Analytical Testing Programs. Unless otherwise noted, sample homogeneity and stability criteria were satisfied for all samples.

I encourage you to contact me with any feedback, questions or if you wish to contest your results at aoler@aiha.org.

Sincerely,

Angela Oler, ASQ CQA
Manager, AIHA PAT Programs

Industrial Hygiene Proficiency Analytical Testing Results

This document contains three sub-reports relating to IHPAT Round 203. The first report contains your organization's results listed per contaminant, per sample. The second report contains your current and 2 previous test round performance respectively (where applicable), and the final report contains summary results for all participants for IHPAT Round 203.

Testing Results for IHPAT Round 203

This part of the report contains your organization's results listed per contaminant, per sample.

Contaminant	Units	#	Result	Ref. Value	Lower Limit	Upper Limit	z-Score	Rating
Cadmium (CAD)	mg	1	0.02832	0.02760	0.02368	0.03152	0.5	A
	mg	2	0.00428	0.00399	0.00347	0.00452	1.6	A
	mg	3	0.00845	0.00791	0.00688	0.00894	1.6	A
	mg	4	0.01356	0.01288	0.01134	0.01443	1.3	A
Lead (LEA)	mg	1	0.0315	0.0301	0.0262	0.0341	1.1	A
	mg	2	0.0189	0.0182	0.0157	0.0206	0.9	A
	mg	3	0.0471	0.0457	0.0399	0.0515	0.7	A
	mg	4	0.0682	0.0659	0.0565	0.0754	0.7	A
Manganese (MNG)	mg	1	0.0463	0.0456	0.0397	0.0514	0.4	A
	mg	2	0.1780	0.1802	0.1555	0.2049	-0.3	A
	mg	3	0.0977	0.0955	0.0823	0.1086	0.5	A
	mg	4	0.0634	0.0610	0.0531	0.0688	0.9	A
Asbestos / Fibers (ASB)	f/mm2	1	240	235	115	397	0.1	A
	f/mm2	2	554	404	198	683	1.7	A
	f/mm2	3	176	227	111	384	-1.2	A
	f/mm2	4	69	50	25	85	1.7	A

Statistical Analysis Interpretation Note:

Reference value is the mean of the reference group.

Lower limit = reference value - 3 standard deviations; Upper limit = reference value + 3 standard deviations

z-Score = (reported result - reference value)/standard deviation. Note: z-Scores are used to predict trends and to indicate how far a particular score is away from the mean.

A – Acceptable* Analysis; U - Unacceptable Analysis

Fiber data are positively skewed therefore transformations are used to obtain approximately normal distributions.

Both the assigned values and acceptance limits are based on consensus of the reference group. *The acceptability of reported results is based on upper and lower acceptance limits. This is why a reported result may appear unacceptable according to z-Score, but be identified as acceptable.

Any non-participation or non-reporting of PAT data will result in unacceptable results (see PAT Programs Participation Policies, Section 2.1.6.2.).

Overall Performance Summary Concluding with 203

The following table contains your organization's current and 2 previous test rounds performance respectively (where applicable). For more information in regard to the determination of proficiency, please visit: www.aihapat.org.

Sample	Round	Round Score	Round Performance	Proficiency Status -Three Round Score
Metals	201	12/12	Pass	
	202	12/12	Pass	
	203	12/12	Pass	P
Asbestos	201	3/4	Pass	
	202	4/4	Pass	
	203	4/4	Pass	P

Interpretation Note:

The denominators represent the total number of samples analyzed.

The numerators represent the number of acceptable results.

Pass: Round Score \geq 75% Fail: Round Score < 75%

P – Proficient; NP – Non-proficient; I – Indeterminate (not enough rounds to determine proficiency)

A participant is rated proficient for the applicable IHPAT analyte group if the participant has a passing score for the applicable IHPAT analyte group in two (2) of the last three (3) consecutive PT rounds. A participant is rated non-proficient for the applicable PT analyte group if the participant has failing scores for the associated PT analyte group in two (2) of the last three (3) consecutive PT rounds.

The following items are available in the [Industrial Hygiene Scheme Plan](#):

Procedures used to statistically analyze the data, establish any assigned value and standard deviation for proficiency assessment, or other criteria for evaluation; details of the metrological traceability and measurement uncertainty of any assigned value; information about design and implementation of PT scheme. Industrial Hygiene Scheme Plan is available at <http://www.aihapat.org/documents-policies-fees/Pages/default.aspx>.

Measurement uncertainty of any assigned value is also available on the respective certificate of analysis for the round.

Technical Comment: The PAT Board has issued a report related to the technical review of data and summary of the source material change feedback survey for IHPAT Asbestos 203. Direct access to the PDF report is available via: <http://bit.ly/IHPAT203Report>.

Performance of all Participants for IHPAT Round 203

The following table contains aggregate results for all participants IHPAT Round 203.

Contaminant	#	Ref. Value	Ref. Std. Dev.**	RSD (%)	Uncertainty Measurement	Total Participants	Total Acceptable	Low*	High*
Cadmium (CAD)	1	0.02760	0.00131	4.7	0.000161	149	142	5	2
	2	0.00399	0.00018	4.4	0.000022	149	139	5	5
	3	0.00791	0.00034	4.3	0.000042	149	141	5	3
	4	0.01288	0.00052	4.0	0.000064	149	136	9	4
Lead (LEA)	1	0.0301	0.0013	4.3	0.000161	150	145	4	1
	2	0.0182	0.0008	4.5	0.000100	150	140	5	5
	3	0.0457	0.0019	4.2	0.000236	150	140	6	4
	4	0.0659	0.0032	4.8	0.000388	150	143	5	2
Manganese (MNG)	1	0.0456	0.0019	4.3	0.000239	147	140	4	3
	2	0.1802	0.0082	4.6	0.001014	147	139	5	3
	3	0.0955	0.0044	4.6	0.000539	147	140	3	4
	4	0.0610	0.0026	4.3	0.000324	147	142	3	2
Silica (SIL)	1	0.1884	0.0280	14.8	0.005709	52	51	0	1
	2	0.0568	0.0068	11.9	0.001380	52	49	1	2
	3	0.1511	0.0167	11.1	0.003415	52	50	1	1
	4	0.0838	0.0123	14.7	0.002509	52	50	1	1
Asbestos / Fibers (ASB)	1	235	47	20.0	6.338645	737	580	109	48
	2	404	81	20.0	10.900099	737	569	98	70
	3	227	45	20.0	6.120451	737	567	129	41
	4	50	10	20.0	1.353734	737	663	26	48
n-Butyl Acetate (BAC)	1	0.4332	0.0194	4.5	0.002898	108	100	5	3
	2	0.8519	0.0424	5.0	0.006327	108	98	8	2
	3	0.2342	0.0160	6.8	0.002390	108	102	5	1
	4	0.6449	0.0264	4.1	0.003930	108	102	6	0
Ethyl Acetate (EAC)	1	0.2251	0.0101	4.5	0.001507	108	101	4	3
	2	0.5054	0.0224	4.4	0.003333	108	102	4	2
	3	0.8750	0.0476	5.4	0.007096	108	104	3	1
	4	0.1422	0.0068	4.8	0.001014	108	101	4	3
2-Propanol (IPA)	1	0.1466	0.0137	9.4	0.002047	107	98	5	4
	2	0.3182	0.0253	8.0	0.003776	107	97	6	4
	3	0.6539	0.1013	15.5	0.015099	107	103	2	2
	4	0.4780	0.0355	7.4	0.005295	107	97	6	4

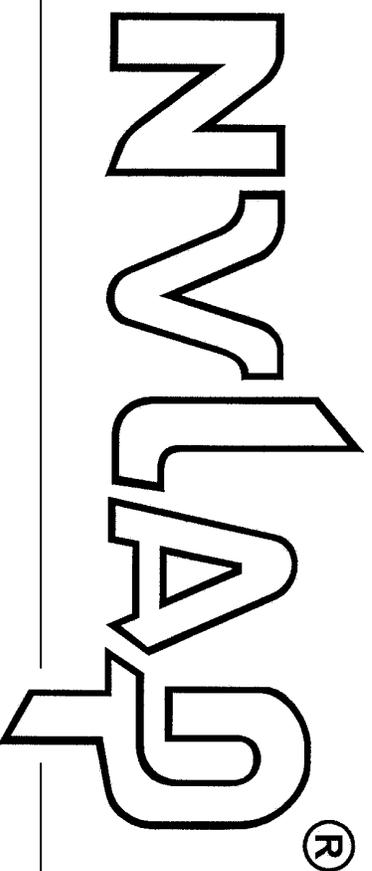
Note: **The reference group standard deviation is used but is limited to no less than 4% relative standard deviation or no greater than 20% relative standard deviation.

***Low** - number of participant results that are less than the Lower Limit; ***High** - number of participant results that are greater than the Upper Limit.

Reference group/participant data sets for individual methods are not separated out during statistical analysis. Methods used by participants produce comparable data based upon the proficiency samples provided. Methods represented by fewer than eight participant data points are not assessed for comparability.

Additional technical comments or recommendations, when available, shall be shared with participants via the web and participants shall be notified via email.

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200655-0

Hawaii Analytical Laboratory, LLC
Honolulu, HI

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

BULK ASBESTOS FIBER ANALYSIS

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to Joint ISO-ILAC-IAF Communiqué dated January 2009).*

2014-04-01 through 2015-03-31

Effective dates



For the National Institute of Standards and Technology