FORMER TEEPEE BURNER INVESTIGATION REPORT

Sierra Pacific Industries
Arcata Division Sawmill
2593 New Navy Base Road
Arcata, California

July 21, 2003

G

consulting
scientists and
engineers

FORMER TEEPEE BURNER INVESTIGATION REPORT

Sierra Pacific Industries
Arcata Division Sawmill
2593 New Navy Base Road
Arcata, California

July 21, 2003

Prepared For:

SIERRA PACIFIC INDUSTRIES

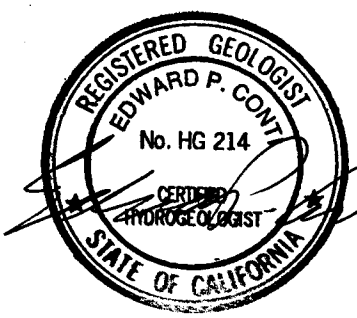
Prepared By:

MFG, INC.
1165 G Street, Suite E
Arcata, California 95521
(707) 826-8430

MFG Project No. 030229.10

PROFESSIONAL CERTIFICATION

This report was prepared by MFG, Inc. under the professional supervision of Edward P. Conti. The findings, recommendations, specifications and/or professional opinions presented in this report were prepared in accordance with generally accepted professional hydrogeologic practice, and within the scope of the project. There is no other warranty, either express or implied.



July 21, 2003

Edward P. Conti
C.HG. No. HG 214
Senior Consulting Geologist
MFG, INC.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

MFG, Inc. has prepared this report on behalf of Sierra Pacific Industries (SPI) to document soil sampling activities in the former teepee burner area at SPI's Arcata Division Sawmill. This work was performed to satisfy the requirements of paragraph 18 of the Consent Decree between Ecological Rights Foundation and Sierra Pacific Industries, Inc. et al (case number C-01-0520-MEJ). The Arcata Division Sawmill is located at 2593 New Navy Base Road in Arcata, California (hereinafter "the Site"). The Site location is shown in Figure 1. A Site plan showing the former location of the teepee burner at the Arcata Division Sawmill is presented in Figure 2. An enlargement of the former teepee burner area showing the soil sampling locations is presented in Figure 3.

This work was performed in accordance with the scope of work presented in MFG's *Teepee Burner Investigation* letter to SPI, dated March 28, 2003. Investigation activities consisted of collecting and chemically analyzing soil samples from five locations below the former teepee burner. This report summarizes the methods and results of the soil sampling and chemical analyses.

This report is organized as described below. Background information is provided in Section 2.0. The geology and hydrogeology of the Site is discussed in Section 3.0. The soil sampling and analysis methods and results are described in Section 4.0. Disposal of investigation-derived waste is discussed in Section 5.0, and references cited in this report are listed in Section 6.0.

2.0 BACKGROUND

2.1 Site Description

The Site is located on the Samoa Peninsula in Arcata, Humboldt County, California (Figure 1). A Site plan showing features of the Arcata Division Sawmill is included in Figure 2. The Site features in the area of the former teepee burner are included in Figure 3.

The Site was originally undeveloped land, consisting of sand dunes and mud flats, until approximately 1950 when SPI converted the land into a lumber mill. During conversion, SPI filled in portions of the Site. SPI began operations at this facility before the area was completely filled in. The mill has been active from 1950 to present day.

2.2 Former Teepee Burner

The former teepee burner area is located in the southeastern portion of the property, adjacent to the lunchroom and the wood chipper (Figure 2). The former teepee burner was used to burn the wood waste materials generated at the sawmill. Waste materials included sawdust, bark and other wood materials. A conveyor system was used to continuously feed wood material into the burner.

MFG interviewed various SPI employees knowledgeable about the Site history to estimate the location and size of the former teepee burner. Based on the recollections of the interviewed employees as well as the review of several undated oblique aerial photographs, the center of the former teepee burner was estimated to be immediately south of the chipper and its diameter was estimated to be approximately 90 feet (Figure 3).

3.0 SITE GEOLOGY AND HYDROGEOLOGY

The subsurface lithology and hydrogeology at the Site was previously investigated and described by Environet Consulting (Environet, 2003). The subsurface lithology consists primarily of fine- to medium-grained sand of apparent sand dune origin to a depth of approximately 22 feet below ground level (bgl), the maximum depth explored during previous drilling activities at the Site. The sand is sporadically interbedded with thin lenses of "Bay Mud," consisting of a mixture of sand and silt (Environet, 2003).

In the eastern portion of the Site, groundwater has been measured in existing monitoring wells at depths ranging from approximately 1 to 5 feet bgl. The groundwater flow direction is generally to the east, toward the Mad River Slough (Figure 2) (Environet, 2003).

4.0 SOIL SAMPLING METHODS AND RESULTS

4.1 Field Methods

4.1.1 Soil Borings

Prior to soil boring activities, MFG obtained a boring permit from the Humboldt County Division of Environmental Health (HCDEH) (Appendix A). Underground Service Alert (USA) was contacted to mark the area for underground utilities and SPI personnel reviewed facility drawings for the presence of underground utilities in the vicinity of the former teepee burner.

On April 3, 2003, the concrete was cored using a rotary drill at five boring locations (TP-1, TP-2, TP-3, TP-4 and TP-5). The locations of the borings are shown in Figure 3. The concrete was removed and a hand auger was used to collect soil samples from each boring; however, refusal was encountered at depths ranging from approximately 0.7 to 1.0 foot below ground level (bgl) in borings TP-2 (1.0 feet bgl), TP-3 (1.0 feet bgl), TP-4 (0.8 feet bgl) and TP-5 (0.7 feet bgl). Refusal was not encountered in boring TP-1, which was hand augered to a depth of 2.5 feet bgl. Soil samples were collected from the five borings as described in Section 4.1.2. Each boring was subsequently backfilled with neat cement on April 3, 2002 after completion of the soil sampling activities.

On April 7, 2003, the five boring locations were re-cored using a rotary drill. The neat cement was subsequently removed and a direct-push drilling rig was used to attempt to advance the soil borings below the depths of previous hand auger refusal. Drilling services were provided by Fisch Environmental Exploration Services of Spring Valley, California. Fisch encountered refusal in borings TP-4 and TP-5 at approximately the same depths as the hand auger on April 3, 2003. Therefore, the boring activities on April 7, 2003 were terminated and drilling was rescheduled for April 16, 2003 using a direct push drill rig with a more powerful hydraulic hammer. Borings TP-4 and TP-5 and the re-cored locations for borings TP-1, TP-2 and TP-3 were backfilled with neat cement following drilling activities on April 7, 2003.

On April 16, 2003, Fisch successfully penetrated the subsurface at offset locations for borings TP-2, TP-3, TP-4 and TP-5 using a direct push drill rig. These four borings drilled on April 16, 2003 were located approximately 6 to 18 inches from the original borings attempted on April 3 and April 7, 2003.

The borings were drilled to depths ranging from approximately 4.0 to 4.4 feet bgl. Boring TP-1A, located approximately 24 inches northeast of boring TP-1, was also drilled on April 16, 2003 to a depth of 4.0 feet bgl. Each boring was backfilled with neat cement following drilling activities on April 16, 2003.

Soil cuttings and equipment wash water generated during the boring and sampling activities were placed in separate steel, Department of Transportation (DOT)-approved, 55-gallon drums that were sealed, labeled and temporarily stored at the Site pending disposal (Section 5.0).

4.1.2 Soil Sampling

On April 3, 2003, four soil samples were collected from boring TP-1, two from the depth of approximately 0.75 to 1.25 feet below ground level (bgl) (samples TP-1A and TP-1A2) and two from the depth interval of approximately 2.0 to 2.5 feet bgl (samples TP-1B and TP-1B2). In addition, one soil sample was collected from the bottom of each of borings TP-2, TP-3, TP-4 and TP-5 from the depth interval of approximately 0.5 to 1.0 feet bgl. The depth intervals for the soil samples are included in Tables 1 and 2.

On April 16, 2003, two soil samples were collected from boring TP-1A and two soil samples were collected from each of the four offset borings TP-2, TP-3, TP-4 and TP-5. The soil samples from boring TP-1A were collected from the depth intervals of 1.5 to 2.5 and 2.5 to 3.5 feet bgl, which equated to 0.0 to 1.0 and 1.0 to 2.0 feet below what appeared in other borings to be a baked clay layer suspected of being the former base of the teepee burner (Section 4.2). The baked clay layer was not encountered in boring TP-1A. Each soil sample collected from boring TP-1A was composited in a stainless steel bowl and split in the field to produce two soil subsamples for chemical analysis (samples TP-1A (0-1.0)A/TP-1A (0-1.0)B and TP-1A (1-2.0)A/TP-1A(1-2.0)B). The depth intervals for the soil samples from boring TP-1A are included in Tables 1 and 2. The soil samples from borings TP-2, TP-3 and TP-4 were collected from the depth intervals of approximately 0.0 to 0.5 and 2.0 to 2.5 feet below the apparent baked clay layer. The soil samples from boring TP-5 were collected from the depth intervals of approximately 1.5 to 2.0 and 3.5 to 4.0 feet bgl, which equated to 0.0 to 0.5 and 2.0 to 2.5 feet below the apparent baked clay layer encountered in other borings, but not encountered in boring TP-5 (Section 4.2). The depth intervals for the soil samples from these borings are included in Table 1. A sample of the baked clay layer was collected from boring TP-4 at a depth of approximately 1.25 feet bgl for chemical analysis (sample TP-4 CHIP).

Soil from each sample interval for chemical analysis was collected on April 3, 2003 using a slide hammer drive sampler with a stainless steel liner insert. At borings TP-2, TP-3, TP-4 and TP-5, the soil from each drive sampler interval was collected in a stainless steel liner with the aid of a stainless steel trowel because sample recovery with the drive sampler was less than six inches. Each stainless steel liner was covered with Teflon® sheets, capped with polyethylene lids and sealed with duct tape. The sample containers were labeled and immediately placed in an ice-cooled, insulated chest for transport to the laboratory. Chain-of-custody records were completed for the samples on the day of collection and accompanied the samples until receipt by the laboratory.

On April 16, 2003, the borings were continuously cored using a direct-push drilling rig that advanced 2.0-inch outer diameter drive casing. The soil was collected in 1.0-inch outer diameter, 3-foot long butyrate liners fitted within the drive casing. Each butyrate liner was cut open in the field and the soil inspected for evidence of impact, if any. At boring TP-1A, the soil from each sample interval selected for chemical analysis was transferred from the butyrate liner directly into a stainless steel bowl. The selected soil from each sample interval was composited in the field and split to produce two subsamples. The two subsamples were then placed into separate wide-mouth glass jars with Teflon®-lined caps using a stainless steel trowel. At borings TP-2, TP-3, TP-4 and TP-5, the soil from each sample interval selected for chemical analysis was transferred from the butyrate liners directly into wide-mouth glass jars with Teflon®-lined caps using a stainless steel trowel. The sample containers were labeled and immediately placed in an ice-cooled, insulated chest for transport to the laboratory. Chain-of-custody records were completed for the samples on the day of collection and accompanied the samples until receipt by the laboratory.

The soil was described in the field for lithologic classification, color and moisture content in accordance with the American Society of Testing and Materials (ASTM) Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) D 2488. Indications of contamination, including observations regarding odor or staining, if any, were noted on a boring log for each location. The boring logs are included as Appendix B. The site stratigraphy and field observations are discussed in Section 4.2.

Non-disposable sampling equipment was decontaminated before and after use at each sampling location by washing in a solution of Liquinox® detergent and water and triple rinsing with distilled water. The wash water was placed into the 55-gallon drum containing wash water from drilling activities as described in Section 4.1.1.

4.2 Stratigraphy and Field Observations

The materials encountered beneath the concrete surface during the soil boring activities consisted of medium-grained sand above the suspected base of the former teepee burner. The suspected base of the former teepee burner consisted of reddish grey material that appeared to be baked clay with gravel. This material was first encountered at depths ranging from approximately 0.7 to 1.0 foot bgl in borings TP-2, TP-3 and TP-4. The thickness of the apparent baked clay and gravel layer ranged from approximately 0.8 to 1.0 foot. The apparent baked clay and gravel layer was not encountered in borings TP-1, TP-1A and TP-5. The apparent baked clay and gravel layer was underlain by medium-grained sand to a depth of approximately 4.4 feet bgl, the maximum depth explored during boring activities. Saturated soil was encountered immediately below the baked clay and gravel layer.

4.3 Chemical Analysis Methods and Results

The soil samples were submitted for chemical analysis to Alpha Analytical Laboratories Inc. of Ukiah, California, a laboratory certified by the California Department of Health Services.

All of the samples collected from borings TP-1, TP-1A, TP-2, TP-3, TP-4 and TP-5 were analyzed for chlorinated phenols using the Canadian Pulp Method.

At MFG's request, Alpha Analytical Laboratories Inc. sent one of the soil samples from boring TP-1 (sample TP-1A2) and two of the split soil samples from boring TP-1A (samples TP-1A(0-1.0)B and TP-1A (1-2.0)B) to Frontier Analytical Laboratory in El Dorado Hills, California, a laboratory certified by the California Department of Health Services. These samples were analyzed for dioxins and furans using EPA Method 1613. The soil sample collected on April 3, 2003 from boring TP-1 from the depth interval of 2.0 to 2.5 feet bgl (sample TP-1B2) was not analyzed for dioxins and furans because one of the samples collected from adjacent boring TP-1A on April 16, 2003 is from the depth interval of 1.5 to 2.5 feet bgl. The sample from boring TP-1A is representative of the intended sample interval.

The chemical analysis results are summarized in Tables 1 and 2. Copies of the laboratory reports and chain-of-custody records are included in Appendix C.

Chlorinated phenols were not detected in any of the soil samples at or above the laboratory reporting limit of 1.0 milligram per kilogram (mg/kg) (Table 1).

Dioxins and furans were detected in the three soil samples analyzed from borings TP-1 and TP-1A, which were located approximately in the center of the former teepee burner. Concentrations of dioxins ranged from 1.25 to 6,670 picograms per gram (pg/g). Concentrations of furans ranged from non-detect to 198 pg/g. The total toxicity equivalency (TEQ) of the three samples ranged from 21.2 to 306 pg/g (Table 2).

5.0 DISPOSAL OF INVESTIGATION-DERIVED WASTE

Soil cuttings and equipment wash water were placed in steel, 55-gallon drums and are stored temporarily at the Site (Section 4.1). The investigation-derived waste will be disposed of in accordance with applicable regulations.

6.0 REFERENCES

Environet Consulting (Environet), 2003, *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*: January 30.

TABLES

TABLE 1

SUMMARY OF CHEMICAL ANALYSIS OF SOIL SAMPLES FOR CHLORINATED PHENOLS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

SAMPLE ID	BORING ID	BORING TOTAL DEPTH (feet bgl)	SAMPLE DEPTH (feet bgl)	SAMPLE DEPTH (feet below apparent baked clay layer)[1]	SAMPLE DATE[2]	LITHOLOGY	CHLORINATED PHENOLS (mg/kg)
						Reporting Limit:	1.0
TP-1A	TP-1	2.5	0.75-1.25	--	03-Apr-03	SAND	ND
TP-1B			2.0-2.5	0.5-1.0	03-Apr-03	SAND	ND
TP-1A(0-1.0)A[3]	TP-1A	4.0	1.5-2.5	0.0-1.0	16-Apr-03	SAND	ND
TP-1A(1-2.0)A[3]			2.5-3.5	1.0-2.0	16-Apr-03	SAND	ND
TP-2A	TP-2	4.2	0.5-1.0	--	03-Apr-03	SAND	ND
TP-2(0-0.5)			1.7-2.2	0.0-0.5	16-Apr-03	SAND	ND
TP-2(2.0-2.5)			3.7-4.2	2.0-2.5	16-Apr-03	SAND	ND
TP-3A	TP-3	4.4	0.5-1.0	--	03-Apr-03	SAND	ND
TP-3(0-0.5)			1.9-2.4	0.0-0.5	16-Apr-03	SAND	ND
TP-3(2.0-2.5)			3.9-4.4	2.0-2.5	16-Apr-03	SAND	ND
TP-4A	TP-4	4.0	0.6-0.8	--	03-Apr-03	SAND	ND
TP-4 CHIP[4]			1.25	--	16-Apr-03	CLAY [3]	ND
TP-4(0-0.5)			1.5-2.0	0.0-0.5	16-Apr-03	SAND	ND
TP-4(2.0-2.5)			3.5-4.0	2.0-2.5	16-Apr-03	SAND	ND
TP-5A	TP-5	4.0	0.5-0.7	--	03-Apr-03	SAND	ND
TP-5(0-0.5)			1.5-2.0	0.0-0.5	16-Apr-03	SAND	ND
TP-5(2.0-2.5)			3.5-4.0	2.0-2.5	16-Apr-03	SAND	ND

NOTES:

bgl Below ground level.
mg/kg Milligrams per kilogram.
-- Not Applicable.
ND Not detected at or above the laboratory reporting limit indicated at the top of the column.
1. Hand auger refusal was encountered in borings TP-2, TP-3, TP-4 and TP-5 on April 3, 2003; however, the apparent baked clay layer was encountered only in borings TP-2, TP-3 and TP-4 on April 16, 2003.
2. Borings TP-2, TP-3, TP-4 and TP-5 drilled on April 16, 2003 were offset approximately 6 to 18 inches from the April 3, 2003 locations. Boring TP-1A was located approximately 24 inches northeast of boring TP-1.
3. Composite sample.
4. Sample of the apparent baked clay layer.

Chlorinated phenols were analyzed using the Canadian Pulp Method and included the following target analytes: 2,4,6-trichlorophenol; 2,3,5,6-tetrachlorophenol; 2,3,4,6-tetrachlorophenol; 2,3,4,5-tetrachlorophenol; and pentachlorophenol.

TABLE 2

SUMMARY OF CHEMICAL ANALYSES OF SOIL SAMPLES FOR DIOXINS AND FURANS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

SAMPLE ID	BORING ID	SAMPLE DEPTH (feet bgl)	SAMPLE DEPTH (feet below apparent baked clay layer) [1]	SAMPLE DATE	LITHOLOGY	2, 3, 7, 8-TCDD (pg/g)	1, 2, 3, 7, 8-PeCDD (pg/g)	1, 2, 3, 4, 7, 8-HxCDD (pg/g)	1, 2, 3, 6, 7, 8-HxCDD (pg/g)	1, 2, 3, 7, 8, 9-HxCDD (pg/g)	1, 2, 3, 4, 6, 7, 8-HpCDD (pg/g)	OCDD (pg/g)	2, 3, 7, 8-TCDF (pg/g)	1, 2, 3, 7, 8-PeCDF (pg/g)	2, 3, 4, 7, 8-PeCDF (pg/g)	1, 2, 3, 4, 7, 8-HxCDF (pg/g)	1, 2, 3, 6, 7, 8-HxCDF (pg/g)	2, 3, 4, 6, 7, 8-HxCDF (pg/g)	1, 2, 3, 7, 8, 9-HxCDF (pg/g)	1, 2, 3, 4, 6, 7, 8-HpCDF (pg/g)	1, 2, 3, 4, 7, 8, 9-HpCDF (pg/g)	OCDF (pg/g)	TOTAL TEQ [2, 3] (pg/g)	PERCENT 2,3,7,8-TCDD
TP-1A2	TP-1	0.75-1.25	--	03-Apr-03	SAND	10.2	47.6	44.2	517	177	4,370	5,170	5.38	2.99	3.11	2.89	4.20	5.49	0.967 J	102	4.06	188	181	5.64
TP-1A(0-1.0)B [4]	TP-1A [5]	1.5-2.5	0.0-1.0	16-Apr-03	SAND	19.6	89.5	77.8	835	297	6,670	6,060	11.1	5.05	5.62	4.68	7.37	8.48	1.83 J	111	5.44	198	306	6.41
TP-1A(1-2.0)B [4]	TP-1A [5]	2.5-3.5	1.0-2.0	16-Apr-03	SAND	1.25	4.96	4.47	57.1	21.2	524	495	2.39	1.09 J	1.33 J	0.88 J	1.36 J	1.4 J	ND[0.337]	8.58	ND[0.623]	13.5	21.2	5.90
					TEF [6]:	1	1	0.1	0.1	0.1	0.01	0.0001	0.1	0.05	0.5	0.1	0.1	0.1	0.1	0.01	0.01	0.0001	--	--

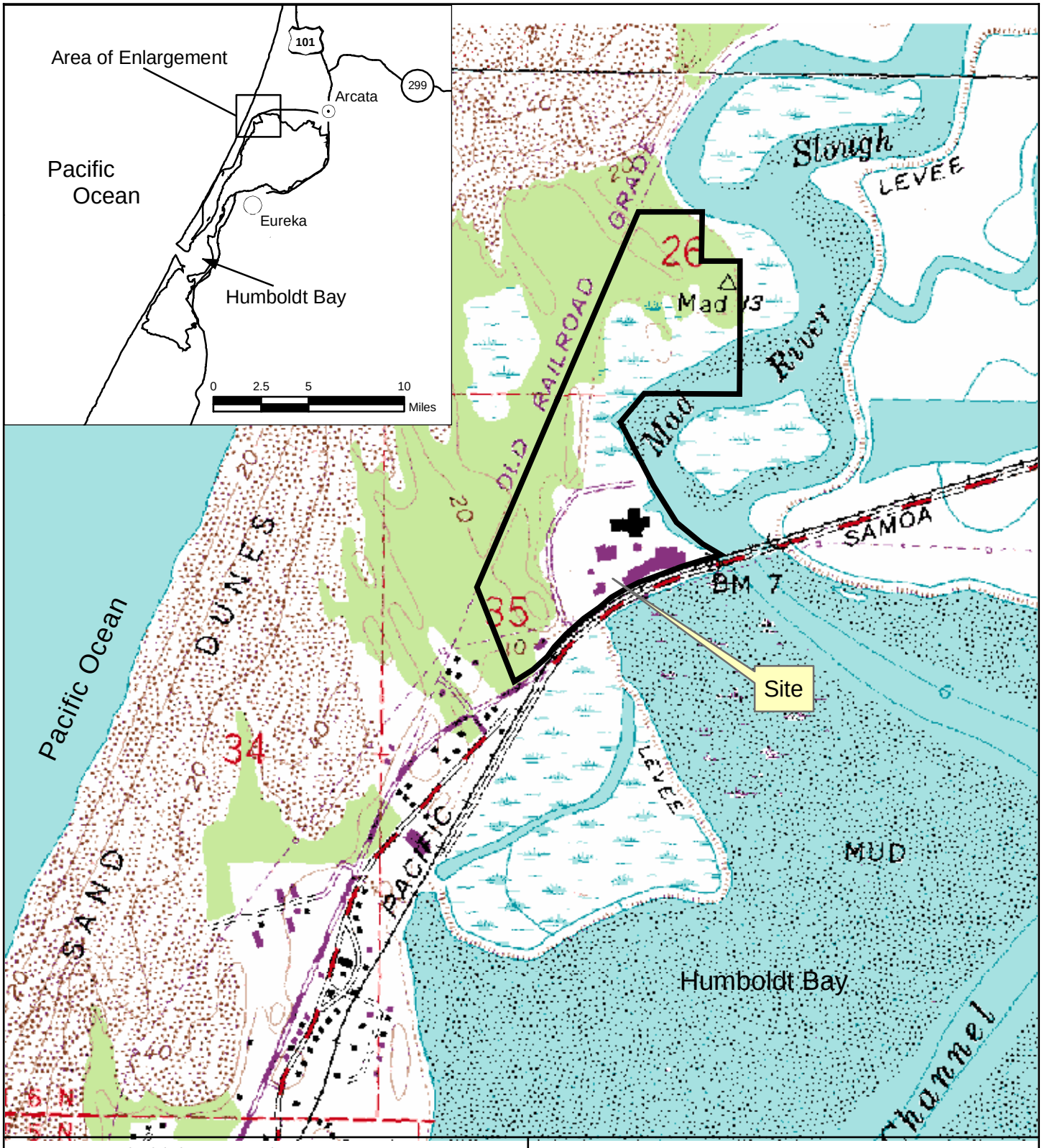
NOTES:

TCDD	Tetrachlorodibenzo-p-dioxin
PeCDD	Pentachlorodibenzo-p-dioxin
HxCDD	Hexachlorodibenzo-p-dioxin
HpCDD	Heptachlorodibenzo-p-dioxin
OCDD	Octachlorodibenzo-p-dioxin
TCDF	Tetrachlorodibenzofuran
PeCDF	Pentachlorodibenzofuran
HxCDF	Hexachlorodibenzofuran
HpCDF	Heptachlorodibenzofuran
OCDF	Octachlorodibenzofuran
TEQ	Toxicity equivalency.
bgl	Below ground level.
pg/g	Picograms per gram.
--	Not applicable
ND	Not detected at or above the laboratory reporting limit shown in [ ].
[ ]	Indicates the reporting limit.
J	Concentration detected was below the calibration range.
1.	Depth below apparent baked clay layer encountered in borings TP-2, TP-3 and TP-4.
2.	Calculated by multiplying the congener concentration by its TEF
3.	NDs were assigned a concentration of 0 pg/g to calculate TEQ.
4.	Composite sample.
5.	Boring TP-1A was located approximately 24 inches northeast of boring TP-1
6.	Toxicity equivalency factor (unitless) from the World Health Organization, 1997 (WHO-97), adopted from F.X.R. van Leeuwen, 1997

Dioxins and furans were analyzed using EPA Method 1613.

FIGURES

H:\Projects\030229-SPI\fig1_arcata



Source: USGS 24k Digital Raster Graph,
Eureka Quadrangle, Year - 1972

Site Boundary

0 500 1,000 2,000
Feet
Approximate Scale

N

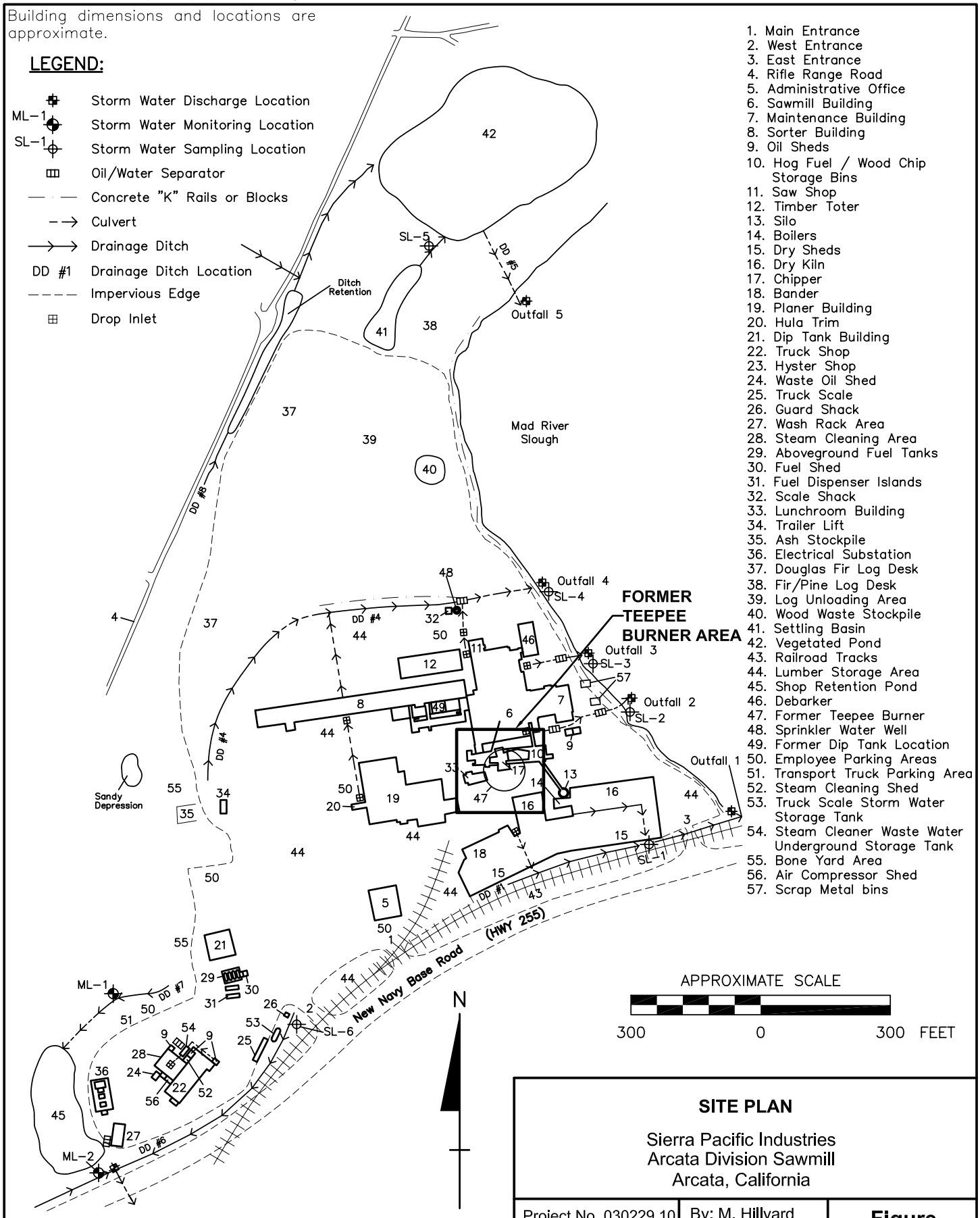
LOCATION MAP

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Project No. 030229	By: I.Pryor	**Figure 1**
Date: 6/6/03	Checked: O.Plocher	

MFG, Inc.
consulting scientists and engineers

J:\030229\Task 10\Teepee Report\Site Plan.dwg PLOT SCALE 1:1



NOTE:
Site plan modified from Plate 2B in *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*, dated January 30, 2003, prepared by Environet Consulting.

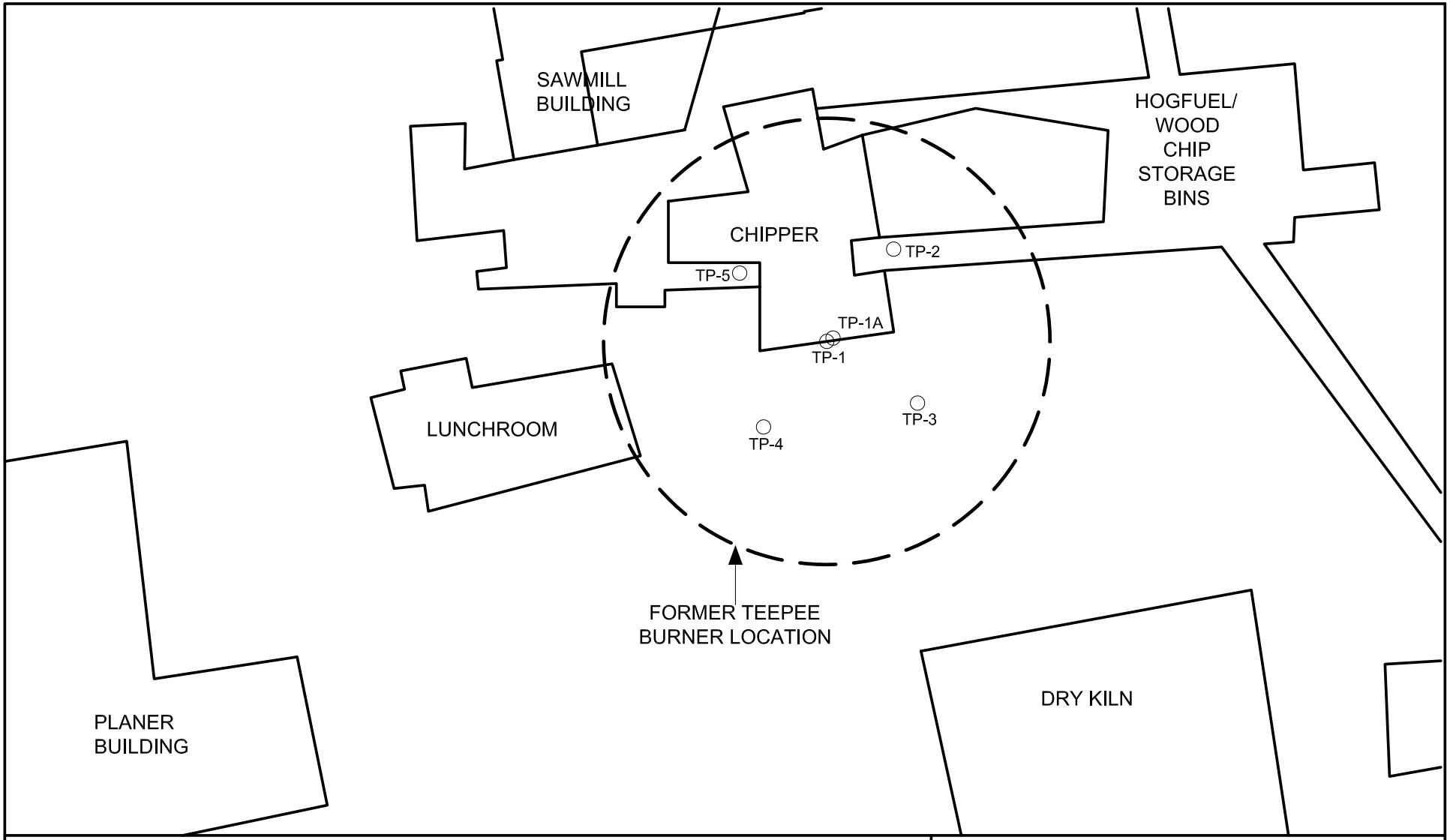
SITE PLAN

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Project No. 030229.10	By: M. Hillyard	**Figure 2**
Date: 7/3/03	Checked: CGS	

MFG, Inc.
consulting scientists and engineers

J:\030229\Task 10\Teepee Report\samplinglocs.dwg PLOT SCALE 1:1



LEGEND

TP-1 — APPROXIMATE LOCATION AND DESIGNATION OF SOIL BORING

N

0 15 30

APPROXIMATE SCALE

NOTE:
Site plan modified from Plate 2B in *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California,* dated January 30, 2003, prepared by Environet Consulting.

FORMER TEEPEE BURNER SAMPLING LOCATIONS

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Project No. 030229.10	By: M. Hillyard	**Figure 3**
Date: 7/3/03	Checked: CGS	

MFG, Inc.
consulting scientists and engineers

APPENDIX A

Humboldt County Division of Environmental Health
Boring Permit

APR 1 2003

HUMBOLDT CO. DIVISION OF ENVIRONMENTAL HEALTH

HUMBOLDT COUNTY DIVISION of ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS UNIT
WELL and BORING PERMIT APPLICATION

Facility ID # 1NHU526 Permit # 27-E

Facility Name: Sierra Pacific Industries, Arcata Sawmill Division
Site Address: 2293 Samoa Road, Arcata, CA

Site Owner: Sierra Pacific Industries Telephone: 530-378-8000
Address: PO Box 496028 Redding, CA 96049-6028 AP#:

RP Name: Sierra Pacific Industries Telephone: 530-378-8000
Address: PO Box 496028 Redding, CA 96049-6028

Consultant: MFG, Inc. Telephone: 707-826-8430
Address: 1165 G. Street, Suite E Arcata, CA 95521 Reg.#/Type:

Driller: NA, hand augered Telephone:
Address: C-57 Lic.#:

# On-site		# Off-site	
Wells	Borings ✓7	Wells	Borings

Activity: ☑ Construct ☑ Destroy ☐ Repair/Modify Electrode Type:

Well Type: ☐ Monitoring Well ☐ Injection Well ☐ Vapor Extraction ☑ Geologic Boring
☐ Extraction Well ☐ Piezometer ☐ Vapor Point ☐ Soil Gas Survey
☐ Vadose Well ☐ Cathodic Protection ☐ Direct Push Boring ☐ Temporary Well Point

Investigation Type: ☑ Site Assessment ☐ Disposal Practice ☐ UST ☐ Other*
☐ Surface Contamination ☐ Surface Impoundment ☐ AST
*Specify:

Investigation Phase: ☐ Initial ☑ Subsequent ☐ Remediation ☐ Closure

Suspected Contaminants: PCP, TCP, Dioxin, Furan, TPH D, oil & grease

Disposal/Containment for Soil Cuttings: Ashbucry / 55-gallon drum
Disposal/Containment for Rinsate: Ashbucry / 55-gallon drum
Disposal/Containment for Development Water: NA

Permits will not be processed with out the following information:

☐ Scaled Construction Detail
☑ Detailed Site Plan
☐ Lead Agency Approval Letter
☐ Off Site Well Requirements:
  ☐ Legal Right of Entry
  ☐ Off Site Address/Location
  ☐ Encroachment Permit
  ☐ Coastal Zone Permit
☑ Appropriate Fees
☐ Copy of Workplan (if not on file at HCDEH)

Proposed Work Date: Apr. 3 '03

rev. 6/98

HUMBOLDT COUNTY DIVISION of ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS UNIT
WELL and BORING PERMIT APPLICATION

Facility ID # 1NHU526 **Permit #** 27-E

I hereby agree to comply with all laws, ordinances and regulations of the county of Humboldt and State of California pertaining to water well construction. I will contact the Humboldt County Hazardous Materials Unit at (707) 445-6215 five (5) working days prior to commencing this work. I will furnish to the County of Humboldt, Division of Environmental Health, and the owner a legible copy of the State Water Well Completion Report (form DWR 188) within fifteen (15) days after completion of work to obtain final approval of the well(s). I acknowledge that the application will become a permit ONLY after site approval by the Local Implementing Agency (HCDEH, NCRWQCB, DTSC, EPA). I understand this permit is not transferable and expires one hundred twenty (120) days from the date of issuance.

Certificates of Insurance:

☐ A currently effective General Liability Certificate of Insurance is on file with this office, endorsed to include the Humboldt County Division of Environmental Health as additional named insured.

☐ A currently effective Worker's Compensation Certificate of Insurance is on file with this office, endorsed to include the Humboldt County Division of Environmental Health as additional named insured.

_____ _____

Signature of Well Driller - no proxies - original signature only in blue ink Date

- **Well identification number and type must be affixed to exterior surface of security structure.**
- **The applicant is responsible for notifying Underground Services Alert at least 48 hours prior to the scheduled work date.**
- **A State of California Department of Water resources Well Completion Report (Form DWR 1-88) must be filed within 15 days of completion of work for all well completions and destructions.**
- **A licensed California C-57 Well Driller is required for all wells and direct push work.**

FOR OFFICE USE ONLY

Permit Approval: Norman Crawford **Date:** 4/1/2003

Fee: $116.00 **Date:** 4/1/2003 **Receipt:** 215399

Initial Inspection: _____ **Date:** _____

Final Inspection: _____ **Date:** _____

APPENDIX B

Boring Logs

ABBREVIATIONS / SYMBOLS USED IN BORING LOGS

GENERAL

PID - Photoionization Detector
OVM - Organic Vapor Meter
ppm - parts per million in air
sfc csg - surface casing
USCS - Unitied Soil Classification System
NGVD - National Geodetic Vertical Datum of 1929
NAVD - North American Vertical Datum of 1988
NA - Not Analyzed
slt - slight or slightly
bgl - below ground level
DTW - depth to water

COLORS

v - very
lt - light
dk - dark
yel - yellow/yellowish
brn - brown/brownish
red-brn - reddish brown
a.a. - as above
(10YR 4/6) - Munsell notation (hue value/chroma)

SAND GRAIN SIZE

VF - Very Fine
F - Fine
Med - Medium
Crs - Coarse

DENSITY / STIFFNESS

Med - Medium
V - Very

GEOLOGICAL CONTACTS

———— - Observed Contact
– – – – – - Inferred Contact

GEOTECHNICAL

L.L. - Liquid Limit in percent
P.I. - Plasticity Index in percent
K - Vertical Hydraulic Conductivity (permeability) in cm/sec

MOISTURE CONTENT

▼ - Observed top of saturated soil interval

NOTE:
Field soil logging procedures were performed in accordance with ASTM D-2488-93 (Visual-Manual Procedure).

EXPLANATION FOR BORING LOGS

MFG, Inc.
consulting scientists and engineers

MFG, Inc.

consulting scientists and engineers

LOG OF BORING TP-1

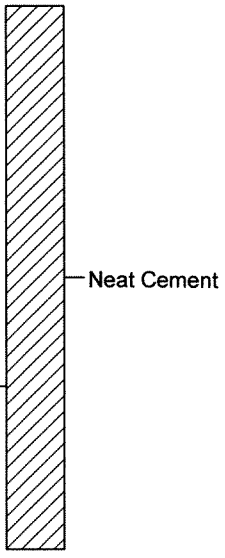
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

MFG Project No. 030229.10

Drilling Agency	: MFG, Inc.	Logged By	: Jason Triolo
Drilling Method	: Hand Auger	Reviewed By	: Christopher Spill, R.G.
Sampler Type	: Stainless Steel Trowel		
Sampling Method	: Grab Sample		
Ground Elevation	: Not Surveyed		

Date Started: April 3, 2003
Date Finished: April 3, 2003

Depth in Feet	DESCRIPTION	USCS	Sample Interval	Recovery (feet)	REMARKS
0	CONCRETE				
1	SAND: v dk grey (5Y 3/1); Med sand, some decomposed and burnt wood fragments, little F gravel, moist.	SW	1	0.5	Collected sample TP-1A at 0.75 to 1.25 ft bgl.
2	-few F gravel, wet.		2	0.5	Collected sample TP-1B at 2.0 to 2.5 ft bgl.
3	NOTE: 1. Drilling terminated at 2.5 ft bgl.				
4					
5					
6					



07-20-2003 J:\030229\Task 10\Teepee Report\Boring Logs\TP-1.BOR

MFG, Inc.

consulting scientists and engineers

LOG OF BORING TP-1A

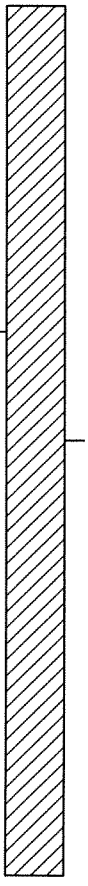
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

MFG Project No. 030229.10

Drilling Agency	: Fisch Environmental	Logged By	: Jason Triolo
Drilling Method	: Direct Push	Reviewed By	: Christopher Spill, R.G.
Sampler Type	: 2 1/4 inch-O.D., 4-foot long drive sampler		
Sampling Method	: PVC Liners		
Ground Elevation	: Not Surveyed		

Date Started: April 16, 2003
Date Finished: April 16, 2003

Depth in Feet	DESCRIPTION	USCS	Sample Interval	Recovery (feet)	REMARKS
0	CONCRETE				
1	SAND: black (10YR 2/1); Med sand, some wood fragments and F subangular gravel, moist.				
	-wet.				Collected sample TP-1A (0-1.0)A and B at 1.5 to 2.5 ft bgl.
2	-trace F subangular gravel and wood fragments.				
	-no gravel or wood fragments.	SW	1	3.25	Collected sample TP-1A (1-2.0)A and B at 2.5 to 3.5 ft bgl.
3					
4					
5					
6					



NOTES:
1. Boring TP-1A was located approximately 24 inches northeast of boring TP-1.
2. Drilling terminated at 4.0 ft bgl.

MFG, Inc.

consulting scientists and engineers

LOG OF BORING TP-2

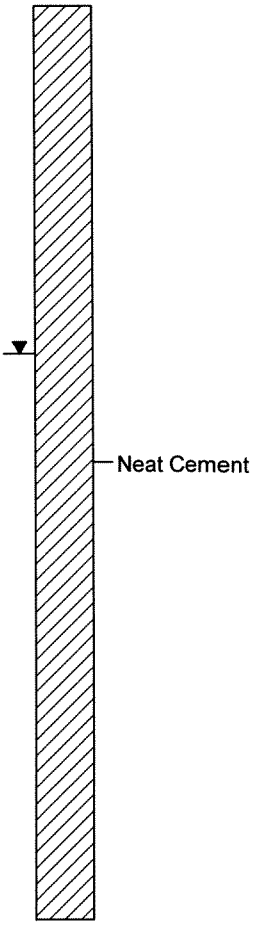
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

MFG Project No. 030229.10

Drilling Agency	: Fisch Environmental	Logged By	: Jason Triolo
Drilling Method	: Direct Push	Reviewed By	: Christopher Spill, R.G.
Sampler Type	: 2 1/4 inch-O.D., 4-foot long drive sampler		
Sampling Method	: PVC Liners		
Ground Elevation	: Not Surveyed		

Date Started: April 3, 2003
Date Finished: April 16, 2003

Depth in Feet	DESCRIPTION	USCS	Sample Interval	Recovery (feet)	REMARKS
0	CONCRETE				
	SAND: black (10YR 2/1); Med sand, trace subangular F gravel, moist.	SW	1	0.5	Collected soil sample TP-2A at 0.5 to 1.0 ft bgl on April 3, 2003.
1	BAKED CLAY: reddish brn (2.5YR 4/4); few subangular gravel, moist. -dry				Hand auger refusal at 1.0 ft bgl on April 3, 2003. Suspected base of former teepee burner.
	-wet.				
	SAND: v dk grey (10YR 3/1); Med sand, wet.				Collected sample TP-2 (0-0.5) at 1.7 to 2.2 ft bgl on April 16, 2003.
2					
3		SW	2	2.5	
4					Collected sample TP-2 (2.0-2.5) at 3.7 to 4.2 ft bgl on April 16, 2003.
5					
6					



NOTES:
1. Initial boring was advanced using a hand auger on April 3, 2003.
2. An offset boring was advanced using direct push drilling on April 16, 2003. The offset boring was located approximately 6 inches from the initial boring.
3. Drilling terminated at 4.2 ft bgl.

MFG, Inc.

consulting scientists and engineers

LOG OF BORING TP-3

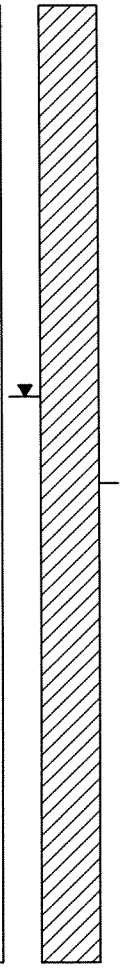
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

MFG Project No. 030229.10

Drilling Agency	: Fisch Environmental	Logged By	: Jason Triolo
Drilling Method	: Direct Push	Reviewed By	: Christopher Spill, R.G.
Sampler Type	: 2 1/4 inch-O.D., 4-foot long drive sampler		
Sampling Method	: PVC Liners		
Ground Elevation	: Not Surveyed		

Date Started: April 3, 2003
Date Finished: April 16, 2003

Depth in Feet	DESCRIPTION	USCS	Sample Interval	Recovery (feet)	REMARKS
0	CONCRETE				
1	SAND: black (10YR 2/1); Med sand, trace subangular F gravel and wood fragments, moist.	SW	1	0.5	Collected soil sample TP-3A at 0.5 to 1.0 ft bgl on April 3, 2003.
	BAKED CLAY: reddish brn (2.5YR 4/4); few subangular F gravel, moist. -dry				Hand auger refusal at 1.0 ft bgl on April 3, 2003. Suspected base of former teepee burner.
2	-wet.				
	SAND: v dk grey (10YR 3/1); Med sand, wet.	SW	2	2.5	Collected sample TP-3 (0-0.5) at 1.9 to 2.4 ft bgl on April 16, 2003.
3					
4					Collected sample TP-3 (2.0-2.5) at 3.9 to 4.4 ft bgl on April 16, 2003.
5					
6					



NOTES:
1. Initial boring was advanced using a hand auger on April 3, 2003.
2. An offset boring was advanced using direct push drilling on April 16, 2003. The offset boring was located approximately 6 inches from the initial boring.
3. Drilling terminated at 4.4 ft bgl.

MFG, Inc.

consulting scientists and engineers

LOG OF BORING TP-4

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

MFG Project No. 030229.10

Drilling Agency	: Fisch Environmental	Logged By	: Jason Triolo
Drilling Method	: Direct Push	Reviewed By	: Christopher Spill, R.G.
Sampler Type	: 2 1/4 inch-O.D., 4-foot long drive sampler		
Sampling Method	: PVC Liners		
Ground Elevation	: Not Surveyed		

Date Started: April 3, 2003
Date Finished: April 16, 2003

Depth in Feet	DESCRIPTION	USCS	Sample Interval	Recovery (feet)	REMARKS
0	CONCRETE				Collected soil sample TP-4A at 0.6 to 0.8 ft bgl on April 3, 2003.
	SAND: black (10YR 2/1); Med sand, trace F gravel, moist.	SW	1	0.2	Hand auger refusal at 0.8 ft bgl on April 3, 2003. Suspected base of former teepee burner.
1	BAKED CLAY: reddish brn (2.5YR 4/4); few subangular F gravel, moist. -dry -wet.				Collected sample TP-4 Chip at 1.25 ft bgl.
	SAND: v dk grey (10YR 3/1); Med sand, wet.				Collected sample TP-4 (0-0.5) at 1.5 to 2.0 ft bgl on April 16, 2003.
2					
3		SW	2	2.5	Collected sample TP-4 (2.0-2.5) at 3.5 to 4.0 ft bgl on April 16, 2003.
4					
5					
6					

Neat Cement

NOTES:
1. Initial boring was advanced using a hand auger on April 3, 2003.
2. An offset boring was advanced using direct push drilling on April 16, 2003. The offset boring was located approximately 6 inches from initial boring.
3. Drilling terminated at 4.0 ft bgl.

MFG, Inc.

consulting scientists and engineers

LOG OF BORING TP-5

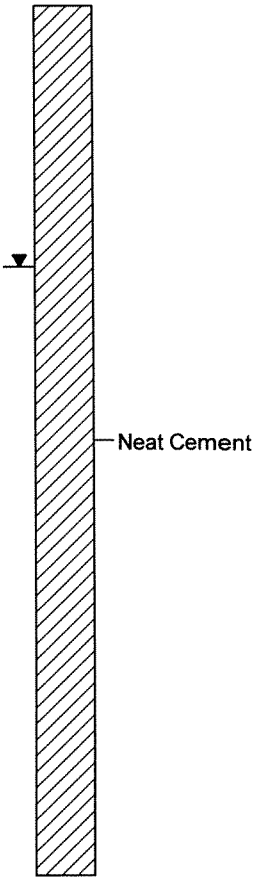
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

MFG Project No. 030229.10

Drilling Agency	: Fisch Environmental	Logged By	: Jason Triolo
Drilling Method	: Direct Push	Reviewed By	: Christopher Spill, R.G.
Sampler Type	: 2 1/4 inch-O.D., 4-foot long drive sampler		
Sampling Method	: PVC Liners		
Ground Elevation	: Not Surveyed		

Date Started: April 3, 2003
Date Finished: April 16, 2003

Depth in Feet	DESCRIPTION	USCS	Sample Interval	Recovery (feet)	REMARKS
0	CONCRETE				
	SAND: black to v dk grey (10YR 2/1); Med sand, trace F gravel, moist.	SW	1		Collected soil sample TP-5A at 0.5 to 0.7 ft bgl on April 3, 2003.
1					Hand auger refusal at 0.7 ft bgl on April 3, 2003.
	-wet.				
					Collected sample TP-5 (0-0.5) at 1.5 to 2.0 ft bgl on April 16, 2003.
	-v dk grey (10YR 3/1); Med sand.				
2			2	3.5	
3					Collected sample TP-5 (2.0-2.5) at 3.5 to 4.0 ft bgl on April 16, 2003.
4					
5					
6					



NOTES:
1. Initial boring was advanced using a hand auger on April 3, 2003.
2. An offset boring was advanced using direct push drilling on April 16, 2003. The offset boring was located approximately 18 inches from the initial boring. No baked clay layer was encountered in the offset location.
3. Drilling terminated at 4.0 ft bgl.

APPENDIX C

Laboratory Reports and Chain of Custody Records for Soil Samples

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

13 June 2003

MFG, Inc - Arcata
Attn: Matt Hillyard
1165 G. Street, Suite E
Arcata, CA 95521
RE: SPI Arcata Sawmill
Work Order: A304229

Enclosed are the results of analyses for samples received by the laboratory on 04/04/03 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nena M. Burgess For Sheri L. Speaks
Project Manager

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:29
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304229	04/04/2003 16:00	MFGARC	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-1A	A304229-01	Soil	04/03/03 09:30	04/04/03 16:00
TP-1B	A304229-02	Soil	04/03/03 10:00	04/04/03 16:00
TP-1A2	A304229-03	Soil	04/03/03 10:30	04/04/03 16:00
TP-2A	A304229-04	Soil	04/03/03 11:30	04/04/03 16:00
TP-3A	A304229-05	Soil	04/03/03 12:00	04/04/03 16:00
TP-4A	A304229-06	Soil	04/03/03 12:30	04/04/03 16:00
TP-5A	A304229-07	Soil	04/03/03 00:00	04/04/03 16:00

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc. 208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:29
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304229	04/04/2003 16:00	MFGARC	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		POL	NOTE
TP-1A (A304229-01)			**Sample Type: Soil**			**Sampled: 04/03/03 09:30**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD31610	04/09/03	04/14/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*70.2 %*	*23-140*		
TP-1B (A304229-02)			**Sample Type: Soil**			**Sampled: 04/03/03 10:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD31610	04/09/03	04/14/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*71.8 %*	*23-140*		
TP-2A (A304229-04)			**Sample Type: Soil**			**Sampled: 04/03/03 11:30**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD31610	04/09/03	04/14/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*66.9 %*	*23-140*		
TP-3A (A304229-05)			**Sample Type: Soil**			**Sampled: 04/03/03 12:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD31610	04/09/03	04/14/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:29
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304229	04/04/2003 16:00	MFGARC	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		POL	NOTE
TP-3A (A304229-05)			**Sample Type: Soil**			**Sampled: 04/03/03 12:00**			
Chlorinated Phenols by Canadian Pulp Method (cont'd)									
Pentachlorophenol	EnvCan	"	"	04/14/03	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*59.7 %*	*23-140*		
TP-4A (A304229-06)			**Sample Type: Soil**			**Sampled: 04/03/03 12:30**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD31610	04/09/03	04/14/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*69.4 %*	*23-140*		
TP-5A (A304229-07)			**Sample Type: Soil**			**Sampled: 04/03/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD31610	04/09/03	04/14/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*67.7 %*	*23-140*		

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:29
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304229	04/04/2003 16:00	MFGARC	

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD31610 - Solvent Extraction										
Blank (AD31610-BLK1)				Prepared: 04/09/03 Analyzed: 04/14/03						
2,4,6-Trichlorophenol	ND	1.0	mg/kg							
2,3,5,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,5-Tetrachlorophenol	ND	1.0	"							
Pentachlorophenol	ND	1.0	"							
Surrogate: Tribromophenol	*0.0950*		"	*0.124*		*76.6*	*23-140*			
LCS (AD31610-BS1)				Prepared: 04/09/03 Analyzed: 04/14/03						
2,4,6-Trichlorophenol	0.039	1.0	mg/kg	0.0500		78.0	20-99			
2,3,5,6-Tetrachlorophenol	0.023	1.0	"	0.0500		46.0	23-110			
2,3,4,6-Tetrachlorophenol	0.030	1.0	"	0.0500		60.0	21-97			
2,3,4,5-Tetrachlorophenol	0.033	1.0	"	0.0500		66.0	14-151			
Pentachlorophenol	0.020	1.0	"	0.0500		40.0	10-168			
Surrogate: Tribromophenol	*0.0950*		"	*0.124*		*76.6*	*23-140*			
LCS Dup (AD31610-BSD1)				Prepared: 04/09/03 Analyzed: 04/14/03						
2,4,6-Trichlorophenol	0.038	1.0	mg/kg	0.0500		76.0	20-99	2.60	50	
2,3,5,6-Tetrachlorophenol	0.015	1.0	"	0.0500		30.0	23-110	42.1	50	
2,3,4,6-Tetrachlorophenol	0.022	1.0	"	0.0500		44.0	21-97	30.8	50	
2,3,4,5-Tetrachlorophenol	0.032	1.0	"	0.0500		64.0	14-151	3.08	50	
Pentachlorophenol	0.017	1.0	"	0.0500		34.0	10-168	16.2	50	
Surrogate: Tribromophenol	*0.0820*		"	*0.124*		*66.1*	*23-140*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:29
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304229	04/04/2003 16:00	MFGARC	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
PQL	Practical Quantitation Limit

Alpha Analytical Laboratories Inc. 208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:29
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304229	04/04/2003 16:00	MFGARC	

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Default Report (not modified)

MFG, INC.

CHAIN-OF-CUSTODY RECORD AND REQUES

☐ Arcata Office
1165 G Street, Suite E
Arcata, CA 95521-5817
Tel: (707) 826-8430
Fax: (707) 826-8437

☐ Boulder Office
4900 Pearl East Circle
Suite 300W
Boulder, CO 80301-6118
Tel: (303) 447-1823
Fax: (303) 447-1836

☐ Irvine Office
17770 Cartwright Road
Suite 500
Irvine, CA 92614-5850
Tel: (949) 253-2951
Fax: (949) 253-2954

☐ Osburn Office
P.O. Box 30
Wallace, ID
83873-0030
Tel: (208) 556-6811
Fax: (208) 556-7271

☐ San Francisco Office
180 Howard Street, Suite 200
San Francisco, CA 94105-1617
Phone (415) 495-7110 – Fax (415

MFG - Per Drew
Run everything
Except
TP-1B2 - stay on hold
6 - can pulp Thurs AM
1 - Dioxin/Furan
4/8/03 - 11:00

3300

PROJECT NO: 030229.10 PROJECT NAME: SPI Arcata Sawmill

SAMPLER (Signature): J. Toto PROJECT MANAGER: Orrin Pitz

METHOD OF SHIPMENT: Alpha Staff pickup CARRIER/WAYBILL NO:

PAGE OF: 1 23 # of Laboratory

RECEIVED
JUN 19 2003
MFG, Inc.

SAMPLES

Field Sample Identification	Sample DATE	Sample TIME	Matrix*	Preservation HCl	HNO_3	H_2SO_4	COLD		FILTRATION*	Containers VOLUME (ml/oz)	TYPE*	NO.	PCP	Phen				HOL	RUSI	STAN	
TP-1A	4/3	9:30	SO								G	1	✓					✓			PCP/TCP Canadian Pulp
TP-1B	4/3	10:00											✓					✓			method 282.1
TP-1A2	4/3	10:30												✓				✓			
TP-1B2	4/3	11:00												✓				✓			Dioxin/Furan EPA 1613
TP-2A	4/3	11:30											✓					✓			
TP-3A	4/3	12:00											✓					✓			Please hold All
TP-4A	4/3	12:30											✓					✓			till notified by
TP-5A	4/3		↓				↓				↓	↓	✓					✓			MFG.

TOTAL NUMBER OF CONTAINERS 8

LABORATORY COMMENTS/CONDITION OF SAMPLES

Cooler Temp:

RELINQUISHED BY: SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME	RECIEVED BY: SIGNATURE	PRINTED NAME	COMPANY
J. Toto	J. Toto	MFG	4/4/03	11:00 am	Sheri Speaks	Sheri Speaks	Alpha 4/4/03 16:00 LABORATORY

*KEY Matrix: AQ - aqueous WA - nonaqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass T - teflon B - brass OT - other Filtration: F - filtered U - unfiltered

DISTRIBUTION: PINK: Field Copy YELLOW: Laboratory Copy WHITE: Return to Originator

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

13 June 2003

MFG, Inc - Arcata
Attn: Matt Hillyard
1165 G. Street, Suite E
Arcata, CA 95521
RE: SPI Arcata Sawmill
Work Order: A304444

Enclosed are the results of analyses for samples received by the laboratory on 04/17/03 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nena M. Burgess For Sheri L. Speaks
Project Manager

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:26
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304444	04/17/2003 15:30	MFGARC	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-1A (0-1.0) (A)	A304444-01	Soil	04/16/03 00:00	04/17/03 15:30
TP-1A (0-1.0) (B)	A304444-02	Soil	04/16/03 00:00	04/17/03 15:30
TP-1A (1-2.0) (A)	A304444-03	Soil	04/16/03 00:00	04/17/03 15:30
TP-1A (1-2.0) (B)	A304444-04	Soil	04/16/03 00:00	04/17/03 15:30
TP-2 (0-0.5)	A304444-05	Soil	04/16/03 00:00	04/17/03 15:30
TP-2 (2.0-2.5)	A304444-06	Soil	04/16/03 00:00	04/17/03 15:30
TP-3 (0-0.5)	A304444-07	Soil	04/16/03 00:00	04/17/03 15:30
TP-3 (2.0-2.5)	A304444-08	Soil	04/16/03 00:00	04/17/03 15:30
TP-4 (0-0.5)	A304444-09	Soil	04/16/03 00:00	04/17/03 15:30
TP-4 (2.0-2.5)	A304444-10	Soil	04/16/03 00:00	04/17/03 15:30
TP-5A (0-0.5)	A304444-11	Soil	04/16/03 00:00	04/17/03 15:30
TP-5A (2.0-2.5)	A304444-12	Soil	04/16/03 00:00	04/17/03 15:30
TP-4 Chip	A304444-13	Soil	04/16/03 00:00	04/17/03 15:30

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:26
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304444	04/17/2003 15:30	MFGARC	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		POL	NOTE
TP-1A (0-1.0) (A) (A304444-01)		**Sample Type: Soil**				**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*81.5 %*	*23-140*		
TP-1A (1-2.0) (A) (A304444-03)		**Sample Type: Soil**				**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*87.1 %*	*23-140*		
TP-2 (0-0.5) (A304444-05)		**Sample Type: Soil**				**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*89.5 %*	*23-140*		
TP-2 (2.0-2.5) (A304444-06)		**Sample Type: Soil**				**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:26
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304444	04/17/2003 15:30	MFGARC	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		POL	NOTE
TP-2 (2.0-2.5) (A304444-06)			**Sample Type: Soil**			**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method (cont'd)									
Pentachlorophenol	EnvCan	"	"	04/28/03	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*70.2 %*	*23-140*		
TP-3 (0-0.5) (A304444-07)			**Sample Type: Soil**			**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*82.3 %*	*23-140*		
TP-3 (2.0-2.5) (A304444-08)			**Sample Type: Soil**			**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*96.0 %*	*23-140*		
TP-4 (0-0.5) (A304444-09)			**Sample Type: Soil**			**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*90.3 %*	*23-140*		
TP-4 (2.0-2.5) (A304444-10)			**Sample Type: Soil**			**Sampled: 04/16/03 00:00**			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

RECEIVED
JUN 1 8 2003
MFG, Inc.

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:26
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304444	04/17/2003 15:30	MFGARC	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		POL	NOTE
TP-4 (2.0-2.5) (A304444-10)			**Sample Type: Soil**			**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*82.3 %*	*23-140*		
TP-5A (0-0.5) (A304444-11)			**Sample Type: Soil**			**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*71.0 %*	*23-140*		
TP-5A (2.0-2.5) (A304444-12)			**Sample Type: Soil**			**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
Pentachlorophenol	"	"	"	"	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*79.8 %*	*23-140*		
TP-4 Chip (A304444-13)			**Sample Type: Soil**			**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method									
2,4,6-Trichlorophenol	EnvCan	AD32918	04/24/03	04/28/03	1	ND mg/kg		1.0	
2,3,5,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,6-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	
2,3,4,5-Tetrachlorophenol	"	"	"	"	"	ND "		1.0	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:26
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304444	04/17/2003 15:30	MFGARC	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT		POL	NOTE
TP-4 Chip (A304444-13)		**Sample Type: Soil**				**Sampled: 04/16/03 00:00**			
Chlorinated Phenols by Canadian Pulp Method (cont'd)									
Pentachlorophenol	EnvCan	"	"	04/28/03	"	ND "		1.0	
Surrogate: Tribromophenol	"	"	"	"		*62.9 %*	*23-140*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:26
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304444	04/17/2003 15:30	MFGARC	

SourceResult

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD32918 - Solvent Extraction										
Blank (AD32918-BLK1)				Prepared: 04/24/03 Analyzed: 04/28/03						
2,4,6-Trichlorophenol	ND	1.0	mg/kg							
2,3,5,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,5-Tetrachlorophenol	ND	1.0	"							
Pentachlorophenol	ND	1.0	"							
Surrogate: Tribromophenol	*0.0820*		"	*0.124*		*66.1*	*23-140*			
LCS (AD32918-BS1)				Prepared: 04/24/03 Analyzed: 04/28/03						
2,4,6-Trichlorophenol	0.021	1.0	mg/kg	0.0250		84.0	20-99			
2,3,5,6-Tetrachlorophenol	0.013	1.0	"	0.0250		52.0	23-110			
2,3,4,6-Tetrachlorophenol	0.015	1.0	"	0.0250		60.0	21-97			
2,3,4,5-Tetrachlorophenol	0.019	1.0	"	0.0250		76.0	14-151			
Pentachlorophenol	0.012	1.0	"	0.0250		48.0	10-168			
Surrogate: Tribromophenol	*0.115*		"	*0.124*		*92.7*	*23-140*			
Matrix Spike (AD32918-MS1)	**Source: A304444-07**			Prepared: 04/24/03 Analyzed: 04/28/03						
2,4,6-Trichlorophenol	0.020	1.0	mg/kg	0.0250	ND	80.0	20-99			
2,3,5,6-Tetrachlorophenol	0.022	1.0	"	0.0250	ND	88.0	23-110			
2,3,4,6-Tetrachlorophenol	0.023	1.0	"	0.0250	ND	92.0	21-97			
2,3,4,5-Tetrachlorophenol	0.017	1.0	"	0.0250	ND	68.0	14-151			
Pentachlorophenol	0.020	1.0	"	0.0250	ND	80.0	10-168			
Surrogate: Tribromophenol	*0.111*		"	*0.124*		*89.5*	*23-140*			
Matrix Spike Dup (AD32918-MSD1)	**Source: A304444-07**			Prepared: 04/24/03 Analyzed: 04/28/03						
2,4,6-Trichlorophenol	0.021	1.0	mg/kg	0.0250	ND	84.0	20-99	4.88	50	
2,3,5,6-Tetrachlorophenol	0.022	1.0	"	0.0250	ND	88.0	23-110	0.00	50	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:26
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304444	04/17/2003 15:30	MFGARC	

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD32918 - Solvent Extraction										
Matrix Spike Dup (AD32918-MSD1)	**Source: A304444-07**			Prepared: 04/24/03 Analyzed: 04/28/03						
2,3,4,6-Tetrachlorophenol	0.020	1.0	"	0.0250	ND	80.0	21-97	14.0	50	
2,3,4,5-Tetrachlorophenol	0.018	1.0	"	0.0250	ND	72.0	14-151	5.71	50	
Pentachlorophenol	0.022	1.0	"	0.0250	ND	88.0	10-168	9.52	50	
Surrogate: Tribromophenol	*0.122*		"	*0.124*		*98.4*	*23-140*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Nena M. Burgess For Sheri L. Speaks
Project Manager

6/13/03

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:26
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304444	04/17/2003 15:30	MFGARC	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
PQL	Practical Quantitation Limit

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 06/13/03 10:26
Project No: 030229.10
Project ID: SPI Arcata Sawmill

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A304444	04/17/2003 15:30	MFGARC	

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Default Report (not modified)

MFG, INC.

CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS

COC No. 43305

☑ Arcata Office
1165 G Street, Suite E
Arcata, CA 95521-5817
Tel: (707) 826-8430
Fax: (707) 826-8437

☐ Boulder Office
4900 Pearl East Circle
Suite 300W
Boulder, CO 80301-6118
Tel: (303) 447-1823
Fax: (303) 447-1836

☐ Irvine Office
17770 Cartwright Road
Suite 500
Irvine, CA 92614-5850
Tel: (949) 253-2951
Fax: (949) 253-2954

☐ Osburn Office
P.O. Box 30
Wallace, ID
83873-0030
Tel: (208) 556-6811
Fax: (208) 556-7271

☐ San Francisco Office
180 Howard Street, Suite 200
San Francisco, CA 94105-1617
Phone (415) 495-7110 – Fax (415) 495-7107

☐ Seattle Office
19203 36th Avenue W.
Suite 101
Lynnwood, WA 98036-5707
Tel: (425) 921-4000
Fax: (425) 921-4040

PROJECT NO: 030229.10 PROJECT NAME: SPI Arcata Sawmill PAGE: 1 OF: 2

SAMPLER (Signature): PROJECT MANAGER: Orrin Plocher DATE: 4/16/03

METHOD OF SHIPMENT: Alpha staff pickup CARRIER/WAYBILL NO: DESTINATION: Alpha Analytical

Field Sample Identification	Sample DATE	Sample TIME	Sample Matrix*	Preservation HCl	Preservation HNO_3	Preservation H_2SO_4	Preservation COLD	Preservation	FILTRATION*	Containers VOLUME (ml/oz)	Containers TYPE*	Containers NO.	Analysis Request: Constituents/Method — PCP/PCP 2811 Canadian Rule	Analysis Request: Constituents/Method — Pentachlorophenol (Furan) EPA 1613	Handling HOLD	Handling RUSH	Handling STANDARD	Remarks
TP-1A(0-1.0)(A)	4/16		SO				X			4oz	G	1	✓					A3044444-1
TP-1A(0-1.0)(B)														✓				-2
TP-1A(1-2.0)(A)												1	✓					-3
TP-1A(1-2.0)(B)														✓				-4
TP-2 (0-2.5)													✓					-5
TP-2 (2.0-2.5)													✓					-6
TP-3 (0-0.5)													✓					-7
TP-3 (2.0-2.5)													✓					-8
TP-4 (0-0.5)													✓					-9
TP-4 (2.0-2.5)													✓					-10

TOTAL NUMBER OF CONTAINERS 10

LABORATORY COMMENTS/CONDITION OF SAMPLES

Cooler Temp:

RECEIVED
JUN 19 2003
MFG, Inc.

RELINQUISHED BY: SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME	RECIEVED BY: SIGNATURE	PRINTED NAME	COMPANY
	Jason Trolo	MFG, Inc	4/17/03	12:00		T DALY	Alpha Labs
	T DALY	Alpha Labs	4/17/03	15:30		S. Speaks	Alpha Labs
						4-17-03 15:30	LABORATORY

*KEY Matrix: AQ - aqueous NA - nonaqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass T - teflon B - brass OT - other Filtration: F - filtered U - unfiltered

DISTRIBUTION: PINK: Field Copy YELLOW: Laboratory Copy WHITE: Return to Originator

MFG, INC.

CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS

COC No. 43295

☑ Arcata Office
1165 G Street, Suite E
Arcata, CA 95521-5817
Tel: (707) 826-8430
Fax: (707) 826-8437

☐ Boulder Office
4900 Pearl East Circle
Suite 300W
Boulder, CO 80301-6118
Tel: (303) 447-1823
Fax: (303) 447-1836

☐ Irvine Office
17770 Cartwright Road
Suite 500
Irvine, CA 92614-5850
Tel: (949) 253-2951
Fax: (949) 253-2954

☐ Osburn Office
P.O. Box 30
Wallace, ID
83873-0030
Tel: (208) 556-6811
Fax: (208) 556-7271

☐ San Francisco Office
180 Howard Street, Suite 200
San Francisco, CA 94105-1617
Phone (415) 495-7110 – Fax (415) 495-7107

☐ Seattle Office
19203 36th Avenue W.
Suite 101
Lynnwood, WA 98036-5707
Tel: (425) 921-4000
Fax: (425) 921-4040

☐ _____
_____

PROJECT NO: 030229.10 PROJECT NAME: SPI Arcata Saw mill PAGE: 2 OF: 2

SAMPLER (Signature): J.T. PROJECT MANAGER: Orrin Plocher DATE: 4/16/03

METHOD OF SHIPMENT: Alpha staff pickup CARRIER/WAYBILL NO: _____ DESTINATION: Alpha Analytical

SAMPLES

Field Sample Identification	Sample DATE	Sample TIME	Matrix*	Preservation HCl	Preservation HNO_3	Preservation H_2SO_4	Preservation COLD	Preservation	FILTRATION*	Containers VOLUME (ml/oz)	Containers TYPE*	Containers NO.
TP-5A(0-0.5)	4/16		SO				X			4oz	G	1
TP-5A(2.0-2.5)	4/16		SO				X			4oz	G	1
~~TP-5A(4.0)~~ TP-4 chip	4/16		SO							4oz	G	1

TOTAL NUMBER OF CONTAINERS 3

ANALYSIS REQUEST

Constituents/Method	Handling HOLD	Handling RUSH	Handling STANDARD	Remarks
PAH/TPH 8270 (Canadian Protocol)				A30444-11
EPA 413				12
				13

RECEIVED
JUN 19 2003
MFG, Inc.

LABORATORY COMMENTS/CONDITION OF SAMPLES Cooler Temp:

RELINQUISHED BY: SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME	RECIEVED BY: SIGNATURE	PRINTED NAME	COMPANY
J.T.	Jason Trivelo	MFG, Inc	4/17/03	12:00	T Daly	T DALY	Alpha Labs
T Daly	T DALY	Alpha Labs	4/17/03	1530	S. Speaks	S. Speaks 4-17-03 1530	Alpha Labs LABORATORY

*KEY Matrix: AQ - aqueous NA - nonaqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass T - teflon B - brass OT - other Filtration: F - filtered U - unfiltered

DISTRIBUTION: PINK: Field Copy YELLOW: Laboratory Copy WHITE: Return to Originator

FRONTIER
ANALYTICAL LABORATORY

June 18, 2003

FAL Project ID: 1697 Addendum B

Mr. Jason Triolo
MFG, Inc.
180 Howard Street, Suite 200
San Francisco, CA 94105-1617

Dear Mr. Triolo,

Enclosed is the amended report for Frontier Analytical Laboratory project **1697**. This corresponds to Alpha Analytical Laboratories, Inc. subcontract order #A304229. The one solid sample received on 4/11/03 was extracted and analyzed by EPA Method 1613 for tetra through octa chlorinated dibenzo dioxins and furans. The sample was received outside the recommended temperature range. Alpha Analytical Laboratories was notified and analysis continued per the method. Alpha Analytical Laboratories, Inc. requested a turnaround time of 14 days for project **1697**. Frontier Analytical Laboratory successfully fulfilled this request. The report was amended to include MS/MSD data as well as to customize the analytical data sheets to include all the MFG, Inc. requested reporting information The pagination for the entire project has the suffix "B" signifying the report has been amended.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains the project-sample tracking log, qualifier reference guide, ML/MDL form and the analytical results. The Sample Receipt section contains a copy of the chain of custody, sample login form and sample photo.

If you have any questions regarding project **1697**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush
Director of Operations

RECEIVED
JUN 19 2003
MFG, Inc.

FRONTIER ANALYTICAL LABORATORY
5172 Hillsdale Circle • El Dorado Hills, CA 95762
Tel (916) 934-0900 • Fax (916) 934-0999
dioxin@frontieranalytical.com

Frontier Analytical Laboratory

Project-Sample Tracking Log

FAL Project ID: 1697

Received on: 04/11/03 **Project Due:** 04/28/03 **Storage:** R-1

FAL Sample ID	Client Project ID	Client Sample ID	Requested Method/s	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
1697-01-SA	A304229	A304229-03 TP-1A2	1613	Soil	4/3/03	12:00 AM	04/02/04

RECEIVED
JUN 19 2003
MFG, Inc.

FRONTIER ANALYTICAL LABORATORY

Qualifier Reference Guide

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J‡	Analyte concentration is below calibration range
M	Maximum possible concentration
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection
-	Analyte Not Detected

‡ "J" values are equivalent to DNQ (detected but not qualified) for California Toxics Rule (CTR)/National Pollutant Discharge Elimination System (NPDES) samples

EPA Method 1613/8290 Solid MDL
(Sox/SDS Extraction)

FRONTIER ANALYTICAL LABORATORY

Analyte	ML	MDL
2,3,7,8-TCDD	0.500	0.132
1,2,3,7,8-PeCDD	2.50	0.223
1,2,3,4,7,8-HxCDD	2.50	0.346
1,2,3,6,7,8-HxCDD	2.50	0.381
1,2,3,7,8,9-HxCDD	2.50	0.343
1,2,3,4,6,7,8-HpCDD	2.50	0.318
OCDD	5.00	1.20
2,3,7,8-TCDF	0.500	0.100
1,2,3,7,8-PeCDF	2.50	0.232
2,3,4,7,8-PeCDF	2.50	0.217
1,2,3,4,7,8-HxCDF	2.50	0.114
1,2,3,6,7,8-HxCDF	2.50	0.106
1,2,3,7,8,9-HxCDF	2.50	0.117
2,3,4,6,7,8-HxCDF	2.50	0.147
1,2,3,4,6,7,8-HpCDF	2.50	0.140
1,2,3,4,7,8,9-HpCDF	2.50	0.155
OCDF	5.00	0.498

Project **1370**, Extracted 11/04/02; analyzed 11/08/02. Based on 10g sample, pg/g.

EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 1697-01-MB
Client ID: Method Blank
Matrix: Solid
Extraction Batch No.: 1682

Date Extracted: 4/11/03
Date Received: NA
Amount: 10.00 g
% Solids: NA

ICal: pcddfal1-3-8
GC Column: db5
Units: pg/g
MS/MSD Batch No.: 1653

Acquired: 14-APR-03
WHO TEQ: 0.00

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	0.386		-					
1,2,3,7,8-PeCDD	-	1.07		-					
1,2,3,4,7,8-HxCDD	-	1.15		-					
1,2,3,6,7,8-HxCDD	-	1.20		-	Total Tetra-Dioxins	-	0.386		0
1,2,3,7,8,9-HxCDD	-	1.04		-	Total Penta-Dioxins	-	1.07		0
1,2,3,4,6,7,8-HpCDD	-	0.995		-	Total Hexa-Dioxins	-	1.20		0
OCDD	-	1.37		-	Total Hepta-Dioxins	-	0.995		0
2,3,7,8-TCDF	-	0.315		-					
1,2,3,7,8-PeCDF	-	1.04		-					
2,3,4,7,8-PeCDF	-	0.991		-					
1,2,3,4,7,8-HxCDF	-	0.251		-					
1,2,3,6,7,8-HxCDF	-	0.295		-					
2,3,4,6,7,8-HxCDF	-	0.316		-					
1,2,3,7,8,9-HxCDF	-	0.398		-	Total Tetra-Furans	-	0.315		0
1,2,3,4,6,7,8-HpCDF	-	0.422		-	Total Penta-Furans	-	1.04		0
1,2,3,4,7,8,9-HpCDF	-	0.474		-	Total Hexa-Furans	-	0.398		0
OCDF	-	1.18		-	Total Hepta-Furans	-	0.474		0

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	78.0	25.0 - 164	
13C-1,2,3,7,8-PeCDD	70.2	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	73.5	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	83.0	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	79.3	23.0 - 140	
13C-OCDD	71.8	17.0 - 157	
13C-2,3,7,8-TCDF	79.2	24.0 - 169	
13C-1,2,3,7,8-PeCDF	78.5	24.0 - 185	
13C-2,3,4,7,8-PeCDF	79.6	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	78.4	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	79.3	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	79.4	29.0 - 147	
13C-1,2,3,7,8,9-HxCDF	75.1	28.0 - 136	
13C-1,2,3,4,6,7,8-HpCDF	79.9	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	95.6	26.0 - 138	
13C-OCDF	81.8	17.0 - 157	

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	91.8	35.0 - 197

RECEIVED
JUN 19 2003

Analyst: [signature]
Date: 6/17/03

Reviewed by: DPV
Date: 6/18/2003

EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 1697-01-OPR | Date Extracted: 4/11/03 | ICal: pcddfal1-3-8 | Acquired: 14-APR-03
Client ID: OPR | Date Received: NA | GC Column: db5
Matrix: Solid | Amount: 10.00 g | Units: ng/mL | WHO TEQ: NA
Extraction Batch No.: 1682 | % Solids: NA | MS/MSD Batch No.: 1653

Compound	Conc	QC Limits
2,3,7,8-TCDD	9.88	6.70 - 15.8
1,2,3,7,8-PeCDD	50.7	35.0 - 71.0
1,2,3,4,7,8-HxCDD	52.0	35.0 - 82.0
1,2,3,6,7,8-HxCDD	52.0	38.0 - 67.0
1,2,3,7,8,9-HxCDD	48.4	32.0 - 81.0
1,2,3,4,6,7,8-HpCDD	53.0	35.0 - 70.0
OCDD	103	78.0 - 144
2,3,7,8-TCDF	10.3	7.50 - 15.8
1,2,3,7,8-PeCDF	47.0	40.0 - 67.0
2,3,4,7,8-PeCDF	48.1	34.0 - 80.0
1,2,3,4,7,8-HxCDF	47.1	36.0 - 67.0
1,2,3,6,7,8-HxCDF	49.7	42.0 - 65.0
2,3,4,6,7,8-HxCDF	48.8	39.0 - 65.0
1,2,3,7,8,9-HxCDF	49.5	35.0 - 78.0
1,2,3,4,6,7,8-HpCDF	49.7	41.0 - 61.0
1,2,3,4,7,8,9-HpCDF	51.1	39.0 - 69.0
OCDF	97.7	63.0 - 170

Internal Standards	% Rec	QC Limits
13C-2,3,7,8-TCDD	90.3	20.0 - 175
13C-1,2,3,7,8-PeCDD	80.9	21.0 - 227
13C-1,2,3,4,7,8-HxCDD	85.0	21.0 - 193
13C-1,2,3,6,7,8-HxCDD	94.3	25.0 - 163
13C-1,2,3,4,6,7,8-HpCDD	84.8	26.0 - 166
13C-OCDD	74.2	13.0 - 198
13C-2,3,7,8-TCDF	89.7	22.0 - 152
13C-1,2,3,7,8-PeCDF	90.7	21.0 - 192
13C-2,3,4,7,8-PeCDF	89.8	13.0 - 328
13C-1,2,3,4,7,8-HxCDF	92.0	19.0 - 202
13C-1,2,3,6,7,8-HxCDF	88.8	21.0 - 159
13C-2,3,4,6,7,8-HxCDF	87.0	17.0 - 205
13C-1,2,3,7,8,9-HxCDF	85.5	22.0 - 176
13C-1,2,3,4,6,7,8-HpCDF	87.8	21.0 - 158
13C-1,2,3,4,7,8,9-HpCDF	104	20.0 - 186
13C-OCDF	83.7	13.0 - 198

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	99.7	31.0 - 191

RECEIVED
JUN 19 2003
MFG, Inc.

Analyst: [signature]
Date: 6/17/03

Reviewed by: DN
Date: 6/18/2003

EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 1697-01-SA
Client ID: A304229-03 TP-1A2
Matrix: Solid
Extraction Batch No.: 1682

Date Extracted: 4/11/03
Date Received: 4/11/03
Amount: 10.70 g
% Solids: 71.0

ICal: pcddfal1-3-8
GC Column: db5
Units: pg/g
MS/MSD Batch No.: 1653

Acquired: 14-APR-03
WHO TEQ: 181

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	10.2	-		10.2					
1,2,3,7,8-PeCDD	47.6	-		47.6					
1,2,3,4,7,8-HxCDD	44.2	-		4.42					
1,2,3,6,7,8-HxCDD	517	-		51.7	Total Tetra-Dioxins	203	-		16
1,2,3,7,8,9-HxCDD	177	-		17.7	Total Penta-Dioxins	545	-		11
1,2,3,4,6,7,8-HpCDD	4370	-		43.7	Total Hexa-Dioxins	3480	-		8
OCDD	5170	-		0.517	Total Hepta-Dioxins	7050	-		2
2,3,7,8-TCDF	5.38	-	F	0.538					
1,2,3,7,8-PeCDF	2.99	-		0.150					
2,3,4,7,8-PeCDF	3.11	-		1.56					
1,2,3,4,7,8-HxCDF	2.89	-		0.289					
1,2,3,6,7,8-HxCDF	4.20	-		0.420					
2,3,4,6,7,8-HxCDF	5.49	-		0.549					
1,2,3,7,8,9-HxCDF	0.967	-	J	0.0967	Total Tetra-Furans	111	-	*	18
1,2,3,4,6,7,8-HpCDF	102	-		1.02	Total Penta-Furans	60.9	-	D,M	13
1,2,3,4,7,8,9-HpCDF	4.06	-		0.0406	Total Hexa-Furans	144	-		9
OCDF	188	-		0.0188	Total Hepta-Furans	220	-		4

Internal Standards	% Rec	QC Limits
13C-2,3,7,8-TCDD	92.9	25.0 - 164
13C-1,2,3,7,8-PeCDD	91.2	25.0 - 181
13C-1,2,3,4,7,8-HxCDD	103	32.0 - 141
13C-1,2,3,6,7,8-HxCDD	95.0	28.0 - 130
13C-1,2,3,4,6,7,8-HpCDD	107	23.0 - 140
13C-OCDD	88.3	17.0 - 157
13C-2,3,7,8-TCDF	98.5	24.0 - 169
13C-1,2,3,7,8-PeCDF	104	24.0 - 185
13C-2,3,4,7,8-PeCDF	105	21.0 - 178
13C-1,2,3,4,7,8-HxCDF	109	26.0 - 152
13C-1,2,3,6,7,8-HxCDF	108	26.0 - 123
13C-2,3,4,6,7,8-HxCDF	100	29.0 - 147
13C-1,2,3,7,8,9-HxCDF	98.2	28.0 - 136
13C-1,2,3,4,6,7,8-HpCDF	102	28.0 - 143
13C-1,2,3,4,7,8,9-HpCDF	115	26.0 - 138
13C-OCDF	92.8	17.0 - 157

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	97.2	35.0 - 197

Qual

* = Dilution

Acquired: 17-APR-03

F = DB225 Confirmation

Acquired: 16-APR-03

Analyst: [signature]
Date: 6/17/03

RECEIVED
JUN 19 2003
MFG, Inc.

Reviewed by: DN
Date: 6/18/2003

EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 1653-10-MS/MSD
Client ID: MTS-50 MTS1202-44
Matrix: Solid
Extraction Batch No.: 1682

Date Extracted: 3/27/03
Date Received: 3/17/03
Sample Amount: 1.11 g
MS Amount: 1.02 g
MSD Amount: 1.07 g

ICal: PCDDFAL1-3-8
GC Column: db5
Units: pg
MS/MSD Batch No.: 1653

MS Acquired: 31-MAR-03
MSD Acquired: 31-MAR-03
WHO TEQ: NA
% Solids: NA

Compound	Amount Spiked	Sample Amount	MS Amount	MSD Amount	% RSD	Qual
2,3,7,8-TCDD	200	-	196	185	5.77	
1,2,3,7,8-PeCDD	1000	-	989	919	7.34	
1,2,3,4,7,8-HxCDD	1000	-	956	919	3.95	
1,2,3,6,7,8-HxCDD	1000	-	971	943	2.93	
1,2,3,7,8,9-HxCDD	1000	-	854	843	1.30	
1,2,3,4,6,7,8-HpCDD	1000	15.0	1040	956	8.68	
OCDD	2000	-	2000	1910	4.60	
2,3,7,8-TCDF	200	-	197	187	5.21	
1,2,3,7,8-PeCDF	1000	-	937	917	2.16	
2,3,4,7,8-PeCDF	1000	-	951	930	2.23	
1,2,3,4,7,8-HxCDF	1000	-	949	909	4.31	
1,2,3,6,7,8-HxCDF	1000	-	947	903	4.76	
2,3,4,6,7,8-HxCDF	1000	-	959	930	3.07	
1,2,3,7,8,9-HxCDF	1000	-	956	950	0.630	
1,2,3,4,6,7,8-HpCDF	1000	-	954	923	3.30	
1,2,3,4,7,8,9-HpCDF	1000	-	1000	959	4.19	
OCDF	2000	-	1930	1860	3.69	

Internal Standards		% Rec	% Rec	% Rec	QC Limits
13C-2,3,7,8-TCDD	2000	88.0	89.6	39.8	25.0 - 150
13C-1,2,3,7,8-PeCDD	2000	80.9	83.3	38.8	25.0 - 150
13C-1,2,3,4,7,8-HxCDD	2000	92.0	90.6	43.0	25.0 - 150
13C-1,2,3,6,7,8-HxCDD	2000	93.3	93.6	44.3	25.0 - 150
13C-1,2,3,4,6,7,8-HpCDD	2000	68.5	70.5	34.8	25.0 - 150
13C-OCDD	4000	47.9	52.2	25.4	25.0 - 150
13C-2,3,7,8-TCDF	2000	87.3	90.7	41.9	25.0 - 150
13C-1,2,3,7,8-PeCDF	2000	86.5	88.2	41.4	25.0 - 150
13C-2,3,4,7,8-PeCDF	2000	92.3	89.0	42.0	25.0 - 150
13C-1,2,3,4,7,8-HxCDF	2000	87.1	88.7	42.2	25.0 - 150
13C-1,2,3,6,7,8-HxCDF	2000	85.3	85.1	41.6	25.0 - 150
13C-2,3,4,6,7,8-HxCDF	2000	77.2	80.3	40.0	25.0 - 150
13C-1,2,3,7,8,9-HxCDF	2000	68.5	76.9	36.3	25.0 - 150
13C-1,2,3,4,6,7,8-HpCDF	2000	71.3	75.7	36.6	25.0 - 150
13C-1,2,3,4,7,8,9-HpCDF	2000	80.6	80.7	37.8	25.0 - 150
13C-OCDF	4000	54.2	57.4	27.6	25.0 - 150
Cleanup Surrogate					
37Cl-2,3,7,8-TCDD	800	99.1	100	46.0	25.0 - 150

Analyst: [signature]
Date: 6/17/03

RECEIVED
JUN 1 9 2003
MFG, Inc.

Reviewed by: DN
Date: 6/18/2003

SUBCONTRACT ORDER

Alpha Analytical Laboratories, Inc.

A304229

1697 / 11°

SENDING LABORATORY:

Alpha Analytical Laboratories, Inc.
P.O. Box 1508 (208 Mason St.)
Ukiah, CA 95482
Phone: (707)468-0401
Fax: (707)468-5267
Project Manager: Sheri L. Speaks

RECEIVING LABORATORY:

Frontier Analytical Laboratory
5172 Hillsdale Circle
El Dorado, CA 95762
Phone :916-934-0900
Fax: 916-934-0999
Terms: Net 30

Analysis	Due	Expires	Comments
A304229-03 TP-1A2 [Soil] Sampled 04/03/03 00:00 Pacific			
Dioxins Full List	04/18/03 12:00	04/02/04 00:00	
Containers Supplied:			

☐ *Report to State*

System Name: _____ **Employed by:** _____

User ID: _____ **Sampler:** _____

System Number: _____

RECEIVED
JUN 19 2003
MFG, Inc.

Released By	Date	Received By	Date
Sheri Speaks	4-9-03	[illegible]	4/11/03 @ 0740
Released By	Date	Received By	Date

6/16

~~000Page1 of DD011~~ DI

MFG, INC.

CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS

COC No. 43300

☐ Arcata Office
1165 G Street, Suite E
Arcata, CA 95521-6817
Tel: (707) 826-8430
Fax: (707) 826-8437

☐ Boulder Office
4900 Pearl East Circle
Suite 300W
Boulder, CO 80301-6118
Tel: (303) 447-1823
Fax: (303) 447-1836

☐ Irvine Office
17770 Cartwright Road
Suite 500
Irvine, CA 92614-5850
Tel: (949) 253-2951
Fax: (949) 253-2954

☐ Osburn Office
PO Box 30
Wallace, ID
83873-0030
Tel: (208) 556-6311
Fax: (208) 556-7271

☐ San Francisco Office
180 Howard Street, Suite 200
San Francisco, CA 94105-1617
Phone (415) 495-7110 – Fax (415) 495-7107

☐ Seattle Office
18203 36th Avenue W.
Suite 101
Lynnwood, WA 98036-5707
Tel. (425) 921-4000
Fax. (425) 921-4040

PROJECT NO: 030229.10 PROJECT NAME: SPI Arcata Summit PAGE: 1 OF: 1

SAMPLER (Signature): J. Triolo PROJECT MANAGER: Orrin Pladner DATE: 4/3/03

METHOD OF SHIPMENT: Alpha Staff Pickup CARRIER/WAYBILL NO: _____ DESTINATION: Alpha Analytical Laboratory

Results to MFG, INC
Bill to: Sierra Pacific
ATTN: Gordie Amos

SAMPLES														ANALYSIS REQUEST						
	Sample			Preservation					Containers					Constituents/Method					Handling			Remarks
Field Sample Identification	DATE	TIME	Matrix*	HCl	HNO_3	H_2SO_4	COLD	FILTRATION*	VOLUME (ml/oz)	TYPE*	NO.	PCP/TCP Canadian Pulp 8041	Dioxins/furans 1613					HOLD	RUSH	STANDARD	
TP-1A	4/3	9:30	SO							G	1	✓						✓			PCP/TCP Canadian Pulp
TP-1B	4/3	10:00										✓						✓			Method 282.1
TP-1A2	4/3	10:30											✓					✓			
TP-1B2 - Hold pending	4/3	11:00											✓					✓			Dioxin/Furan EPA 1613
TP-2A	4/3	11:30										✓						✓			
TP-3A	4/3	12:00										✓						✓			Please hold AL
TP-4A	4/3	12:30										✓						✓			till notified by
TP-5A	4/3		↓				↓			↓	↓	✓						✓			MFG.
MFG, Inc.																					
				TOTAL NUMBER OF CONTAINERS							8	LABORATORY COMMENTS/CONDITION OF SAMPLES						Cooler Temp:			

RECEIVED
JUN 19 2003
MFG, Inc.

RELINQUISHED BY:					RECIEVED BY:		
SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME	SIGNATURE	PRINTED NAME	COMPANY
Triolo	J. Triolo	MFG	4/4/03	11:00 am	Sheri Speaks	Sheri Speaks	Alpha 4/4/03 16:00
							LABORATORY

*KEY: Matrix: AQ - aqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass T - tedlar B - brass OT - other Filtration: F - filtered U - unfiltered

DISTRIBUTION: PINK Field Copy YELLOW Laboratory Copy WHITE Return to Originator

FRONTIER ANALYTICAL LABORATORY

Frontier Analytical Laboratory

Sample Login Form

Project ID: **1697**

Client:	Alpha Analytical
Client Project ID:	A304229
Date Received:	04/11/03 TAT: 14
Time Received:	7:40 AM
Received By:	nmm
# of Samples Received:	1 # of Dups: 0
Storage Location:	R-1

Checklist	Yes	No	N/A	Comments
Method of Delivery:	X			Fed-Ex/UPS/**Courier**/Other
Shipping container received intact?	X			
Custody seals(s) present and intact?			X	
Method of cooling:	X			Ice/**Blue ice**/Dry ice/Other
Sample arrival temperature (C):	X			11 degrees C*
Sample containers intact?	X			
Chain of Custody present and complete?	X			
Return shipping container to client?		X		
Test for residual chlorine?			X	Thiosulfate added? no
Earliest sample hold time expiration:	X			Date: 4/2/04
Adequate Sample Volume?	X			

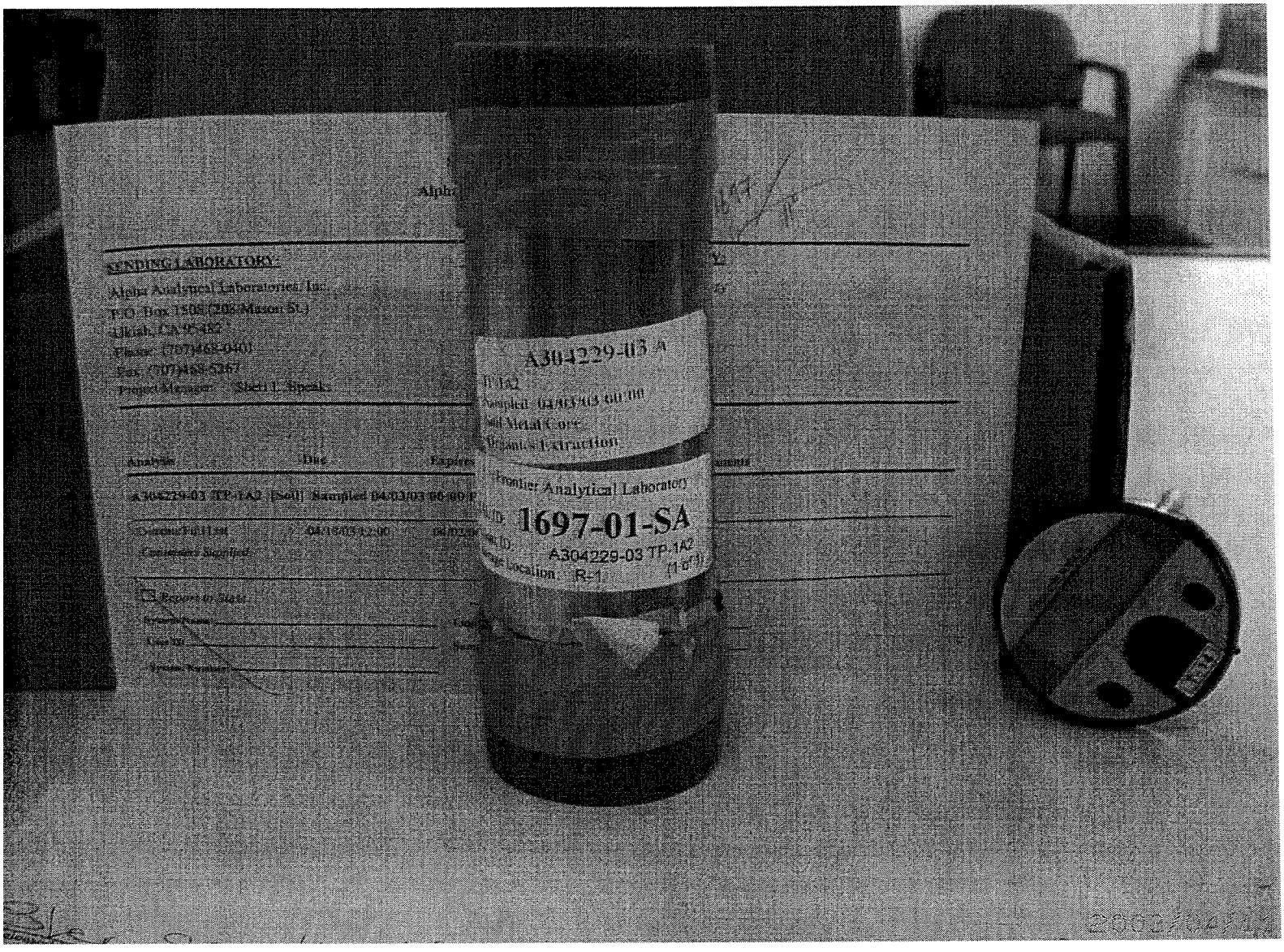
Anomalies or additional comments:

*sample received outside temperature range

RECEIVED
JUN 19 2003

RECEIVED
JUN 19 2003
MFG, Inc.

FRONTIER
ANALYTICAL LABORATORY



RECEIVED
JUN 19 2003
MFG, Inc.

FRONTIER
ANALYTICAL LABORATORY

June 18, 2003

FAL Project ID: 1723 Addendum B

Mr. Jason Triolo
MFG, Inc.
180 Howard Street, Suite 200
San Francisco, CA 94105-1617

Dear Mr. Triolo,

Enclosed is the amended report for Frontier Analytical Laboratory project **1723**. This corresponds to Alpha Analytical Laboratories, Inc. subcontract order #A304444. The two solid samples received on 4/22/03 were extracted and analyzed by EPA Method 1613 for tetra through octa chlorinated dibenzo dioxins and furans. Alpha Analytical Laboratories, Inc. requested a turnaround time of 14 days for project **1723**. Frontier Analytical Laboratory successfully fulfilled this request. The report was amended to include MS/MSD data as well as to customize the analytical data sheets to include all the MFG, Inc. requested reporting information The pagination for the entire project has the suffix "B" signifying the report has been amended.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains the project-sample tracking log, qualifier reference guide, ML/MDL form and the analytical results. The Sample Receipt section contains a copy of the chain of custody, sample login form and sample photo.

If you have any questions regarding project **1723**, please feel free to contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

RECEIVED
JUN 1 9 2003
MFG, Inc.

Bradley B. Silverbush
Director of Operations

FRONTIER ANALYTICAL LABORATORY
5172 Hillsdale Circle • El Dorado Hills, CA 95762
Tel (916) 934-0900 • Fax (916) 934-0999
dioxin@frontieranalytical.com

Frontier Analytical Laboratory

Project-Sample Tracking Log

FAL Project ID: 1723

Received on: 04/22/03 **Project Due:** 05/07/03 **Storage:** R-1

FAL Sample ID	Client Project ID	Client Sample ID	Requested Method/s	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
1723-01-SA	A304444	A304444-02 TP-1A (0-1.0)	1613	Soil	4/16/03	Not Provided	04/15/04
1723-02-SA	A304444	A304444-04 TP-1A (1-2.0)	1613	Soil	4/16/03	Not Provided	04/15/04

FRONTIER ANALYTICAL LABORATORY

Qualifier Reference Guide

A	Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
B	Analyte is present in Method Blank
C	Chemical Interference
D	Presence of Diphenyl Ethers
E	Analyte concentration is above calibration range
F	Analyte confirmation on secondary column
J‡	Analyte concentration is below calibration range
M	Maximum possible concentration
S	Sample acceptance criteria not met
X	Matrix interferences
*	Result taken from dilution or reinjection
-	Analyte Not Detected

‡ "J" values are equivalent to DNQ (detected but not qualified) for California Toxics Rule (CTR)/National Pollutant Discharge Elimination System (NPDES) samples

EPA Method 1613/8290 Solid MDL
(Sox/SDS Extraction)

FRONTIER ANALYTICAL LABORATORY

Analyte	ML	MDL
2,3,7,8-TCDD	0.500	0.132
1,2,3,7,8-PeCDD	2.50	0.223
1,2,3,4,7,8-HxCDD	2.50	0.346
1,2,3,6,7,8-HxCDD	2.50	0.381
1,2,3,7,8,9-HxCDD	2.50	0.343
1,2,3,4,6,7,8-HpCDD	2.50	0.318
OCDD	5.00	1.20
2,3,7,8-TCDF	0.500	0.100
1,2,3,7,8-PeCDF	2.50	0.232
2,3,4,7,8-PeCDF	2.50	0.217
1,2,3,4,7,8-HxCDF	2.50	0.114
1,2,3,6,7,8-HxCDF	2.50	0.106
1,2,3,7,8,9-HxCDF	2.50	0.117
2,3,4,6,7,8-HxCDF	2.50	0.147
1,2,3,4,6,7,8-HpCDF	2.50	0.140
1,2,3,4,7,8,9-HpCDF	2.50	0.155
OCDF	5.00	0.498

Project **1370**, Extracted 11/04/02; analyzed 11/08/02. Based on 10g sample, pg/g.

EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 1723-01-MB | Date Extracted: 4/24/03 | ICal: pcddfal1-3-8 | Acquired: 28-APR-03
Client ID: Method Blank | Date Received: NA | GC Column: db5
Matrix: Solid | Amount: 10.00 g | Units: pg/g | WHO TEQ: 0.00
Extraction Batch No.: 1711 | % Solids: NA | MS/MSD Batch No.: 1653

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	-	0.444		-					
1,2,3,7,8-PeCDD	-	1.05		-					
1,2,3,4,7,8-HxCDD	-	0.919		-					
1,2,3,6,7,8-HxCDD	-	0.959		-	Total Tetra-Dioxins	-	0.444		0
1,2,3,7,8,9-HxCDD	-	0.809		-	Total Penta-Dioxins	-	2.73		0
1,2,3,4,6,7,8-HpCDD	-	1.13		-	Total Hexa-Dioxins	-	0.959		0
OCDD	-	0.798		-	Total Hepta-Dioxins	-	1.13		0
2,3,7,8-TCDF	-	0.581		-					
1,2,3,7,8-PeCDF	-	0.413		-					
2,3,4,7,8-PeCDF	-	0.390		-					
1,2,3,4,7,8-HxCDF	-	0.229		-					
1,2,3,6,7,8-HxCDF	-	0.245		-					
2,3,4,6,7,8-HxCDF	-	0.359		-					
1,2,3,7,8,9-HxCDF	-	0.415		-	Total Tetra-Furans	-	0.581		0
1,2,3,4,6,7,8-HpCDF	-	0.346		-	Total Penta-Furans	-	1.18		0
1,2,3,4,7,8,9-HpCDF	-	0.338		-	Total Hexa-Furans	-	0.415		0
OCDF	-	1.24		-	Total Hepta-Furans	-	0.346		0

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	90.8	25.0 - 164	
13C-1,2,3,7,8-PeCDD	82.8	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	78.2	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	86.5	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	88.2	23.0 - 140	
13C-OCDD	71.7	17.0 - 157	
13C-2,3,7,8-TCDF	63.8	24.0 - 169	
13C-1,2,3,7,8-PeCDF	60.9	24.0 - 185	
13C-2,3,4,7,8-PeCDF	62.5	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	100	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	114	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	83.0	29.0 - 147	
13C-1,2,3,7,8,9-HxCDF	87.0	28.0 - 136	
13C-1,2,3,4,6,7,8-HpCDF	103	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	133	26.0 - 138	
13C-OCDF	87.5	17.0 - 157	

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	93.0	35.0 - 197

Analyst: [signature] Date: 6/17/03

RECEIVED
JUN 19 2003
MFG, Inc.

Reviewed by: DN Date: 6/18/2003

EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 1723-01-OPR | Date Extracted: 4/24/03 | ICal: pcddfal1-3-8 | Acquired: 28-APR-03
Client ID: OPR | Date Received: NA | GC Column: db5
Matrix: Solid | Amount: 10.00 g | Units: ng/mL | WHO TEQ: NA
Extraction Batch No.: 1711 | % Solids: NA | MS/MSD Batch No.: 1653

Compound	Conc	QC Limits
2,3,7,8-TCDD	10.2	6.70 - 15.8
1,2,3,7,8-PeCDD	54.9	35.0 - 71.0
1,2,3,4,7,8-HxCDD	52.0	35.0 - 82.0
1,2,3,6,7,8-HxCDD	52.6	38.0 - 67.0
1,2,3,7,8,9-HxCDD	48.4	32.0 - 81.0
1,2,3,4,6,7,8-HpCDD	53.8	35.0 - 70.0
OCDD	108	78.0 - 144
2,3,7,8-TCDF	11.5	7.50 - 15.8
1,2,3,7,8-PeCDF	51.5	40.0 - 67.0
2,3,4,7,8-PeCDF	52.1	34.0 - 80.0
1,2,3,4,7,8-HxCDF	51.9	36.0 - 67.0
1,2,3,6,7,8-HxCDF	52.9	42.0 - 65.0
2,3,4,6,7,8-HxCDF	53.1	39.0 - 65.0
1,2,3,7,8,9-HxCDF	52.6	35.0 - 78.0
1,2,3,4,6,7,8-HpCDF	51.3	41.0 - 61.0
1,2,3,4,7,8,9-HpCDF	52.9	39.0 - 69.0
OCDF	104	63.0 - 170

Internal Standards	% Rec	QC Limits
13C-2,3,7,8-TCDD	89.5	20.0 - 175
13C-1,2,3,7,8-PeCDD	75.7	21.0 - 227
13C-1,2,3,4,7,8-HxCDD	87.4	21.0 - 193
13C-1,2,3,6,7,8-HxCDD	93.8	25.0 - 163
13C-1,2,3,4,6,7,8-HpCDD	90.0	26.0 - 166
13C-OCDD	71.9	13.0 - 198
13C-2,3,7,8-TCDF	67.2	22.0 - 152
13C-1,2,3,7,8-PeCDF	66.5	21.0 - 192
13C-2,3,4,7,8-PeCDF	67.9	13.0 - 328
13C-1,2,3,4,7,8-HxCDF	98.6	19.0 - 202
13C-1,2,3,6,7,8-HxCDF	104	21.0 - 159
13C-2,3,4,6,7,8-HxCDF	91.0	17.0 - 205
13C-1,2,3,7,8,9-HxCDF	91.3	22.0 - 176
13C-1,2,3,4,6,7,8-HpCDF	112	21.0 - 158
13C-1,2,3,4,7,8,9-HpCDF	135	20.0 - 186
13C-OCDF	93.5	13.0 - 198

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	95.8	31.0 - 191

Analyst: _____
Date: 6/17/03

RECEIVED
JUN 19 2003
MFG, Inc.

Reviewed by: DPV
Date: 6/18/2003

EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 1723-01-SA
Client ID: A304444-02 TP-1A
Matrix: Solid
Extraction Batch No.: 1711

Date Extracted: 4/24/03
Date Received: 4/22/03
Amount: 10.06 g
% Solids: 74.8

ICal: pcddfal1-3-8
GC Column: db5
Units: pg/g
MS/MSD Batch No.: 1653

Acquired: 28-APR-03
WHO TEQ: 306

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	19.6	-		19.6					
1,2,3,7,8-PeCDD	89.5	-		89.5					
1,2,3,4,7,8-HxCDD	77.8	-		7.78					
1,2,3,6,7,8-HxCDD	835	-		83.5	Total Tetra-Dioxins	396	-		17
1,2,3,7,8,9-HxCDD	297	-		29.7	Total Penta-Dioxins	1160	-		10
1,2,3,4,6,7,8-HpCDD	6670	-		66.7	Total Hexa-Dioxins	7000	-		8
OCDD	6060	-		0.606	Total Hepta-Dioxins	10500	-		2
2,3,7,8-TCDF	11.1	-	F,*	1.11					
1,2,3,7,8-PeCDF	5.05	-		0.253					
2,3,4,7,8-PeCDF	5.62	-		2.81					
1,2,3,4,7,8-HxCDF	4.68	-		0.468					
1,2,3,6,7,8-HxCDF	7.37	-		0.737					
2,3,4,6,7,8-HxCDF	8.48	-		0.848					
1,2,3,7,8,9-HxCDF	1.83	-	J	0.183	Total Tetra-Furans	165	-	*	17
1,2,3,4,6,7,8-HpCDF	111	-		1.11	Total Penta-Furans	93.5	-		12
1,2,3,4,7,8,9-HpCDF	5.44	-		0.0544	Total Hexa-Furans	197	-		12
OCDF	198	-		0.0198	Total Hepta-Furans	354	-		4

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	93.7	25.0 - 164	
13C-1,2,3,7,8-PeCDD	79.1	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	99.4	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	98.2	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	118	23.0 - 140	
13C-OCDD	84.7	17.0 - 157	
13C-2,3,7,8-TCDF	93.6	24.0 - 169	*
13C-1,2,3,7,8-PeCDF	65.8	24.0 - 185	
13C-2,3,4,7,8-PeCDF	69.2	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	111	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	114	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	88.4	29.0 - 147	
13C-1,2,3,7,8,9-HxCDF	94.4	28.0 - 136	
13C-1,2,3,4,6,7,8-HpCDF	106	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	133	26.0 - 138	
13C-OCDF	90.8	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	103	35.0 - 197	

* = Dilution

Acquired: 5/2/03

F = DB225 Confirmation

Acquired: 4/30/03

Analyst: _____
Date: 6/17/03

RECEIVED
JUN 19 2003
MFG, Inc.

Reviewed by: DN
Date: 6/18/2003

EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 1723-02-SA | Date Extracted: 4/24/03 | ICal: pcddfal1-3-8 | Acquired: 28-APR-03
Client ID: A304444-04 TP-1A | Date Received: 4/22/03 | GC Column: db5
Matrix: Solid | Amount: 10.07 g | Units: pg/g | WHO TEQ: 21.2
Extraction Batch No.: 1711 | % Solids: 81.6 | MS/MSD Batch No.: 1653

Compound	Conc	DL	Qual	WHO Tox	Compound	Conc	DL	Qual	#Hom
2,3,7,8-TCDD	1.25	-		1.25					
1,2,3,7,8-PeCDD	4.96	-		4.96					
1,2,3,4,7,8-HxCDD	4.47	-		0.447					
1,2,3,6,7,8-HxCDD	57.1	-		5.71	Total Tetra-Dioxins	49.3	-		13
1,2,3,7,8,9-HxCDD	21.2	-		2.12	Total Penta-Dioxins	93.5	-		10
1,2,3,4,6,7,8-HpCDD	524	-		5.24	Total Hexa-Dioxins	504	-		8
OCDD	495	-		0.0495	Total Hepta-Dioxins	838	-		2
2,3,7,8-TCDF	2.39	-	F	0.239					
1,2,3,7,8-PeCDF	1.09	-	J	0.0547					
2,3,4,7,8-PeCDF	1.33	-	J	0.663					
1,2,3,4,7,8-HxCDF	0.880	-	J	0.0880					
1,2,3,6,7,8-HxCDF	1.36	-	J	0.136					
2,3,4,6,7,8-HxCDF	1.40	-	J	0.140					
1,2,3,7,8,9-HxCDF	-	0.337		-	Total Tetra-Furans	38.1	-		18
1,2,3,4,6,7,8-HpCDF	8.58	-		0.0858	Total Penta-Furans	14.3	-		8
1,2,3,4,7,8,9-HpCDF	-	0.623		-	Total Hexa-Furans	15.0	-		7
OCDF	13.5	-		0.00135	Total Hepta-Furans	22.6	-		2

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	80.4	25.0 - 164	
13C-1,2,3,7,8-PeCDD	73.9	25.0 - 181	
13C-1,2,3,4,7,8-HxCDD	86.0	32.0 - 141	
13C-1,2,3,6,7,8-HxCDD	88.8	28.0 - 130	
13C-1,2,3,4,6,7,8-HpCDD	86.6	23.0 - 140	
13C-OCDD	69.7	17.0 - 157	
13C-2,3,7,8-TCDF	67.2	24.0 - 169	
13C-1,2,3,7,8-PeCDF	62.4	24.0 - 185	
13C-2,3,4,7,8-PeCDF	59.8	21.0 - 178	
13C-1,2,3,4,7,8-HxCDF	98.9	26.0 - 152	
13C-1,2,3,6,7,8-HxCDF	116	26.0 - 123	
13C-2,3,4,6,7,8-HxCDF	76.1	29.0 - 147	
13C-1,2,3,7,8,9-HxCDF	89.1	28.0 - 136	
13C-1,2,3,4,6,7,8-HpCDF	101	28.0 - 143	
13C-1,2,3,4,7,8,9-HpCDF	119	26.0 - 138	
13C-OCDF	85.5	17.0 - 157	

Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	90.5	35.0 - 197	

F = DB225 Confirmation

Acquired: 4/30/03

Analyst: _____
Date: 6/17/03

RECEIVED
JUN 19 2003
MFG, Inc.

Reviewed by: DN
Date: 6/18/2003

EPA Method 1613
PCDD/F

FRONTIER ANALYTICAL LABORATORY

FAL ID: 1653-10-MS/MSD
Client ID: MTS-50 MTS1202-44
Matrix: Solid
Extraction Batch No.: 1682

Date Extracted: 3/27/03
Date Received: 3/17/03
Sample Amount: 1.11 g
MS Amount: 1.02 g
MSD Amount: 1.07 g

ICal: PCDDFAL1-3-8
GC Column: db5
Units: pg
MS/MSD Batch No.: 1653

MS Acquired: 31-MAR-03
MSD Acquired: 31-MAR-03
WHO TEQ: NA
% Solids: NA

Compound	Amount Spiked	Sample Amount	MS Amount	MSD Amount	% RSD	Qual
2,3,7,8-TCDD	200	-	196	185	5.77	
1,2,3,7,8-PeCDD	1000	-	989	919	7.34	
1,2,3,4,7,8-HxCDD	1000	-	956	919	3.95	
1,2,3,6,7,8-HxCDD	1000	-	971	943	2.93	
1,2,3,7,8,9-HxCDD	1000	-	854	843	1.30	
1,2,3,4,6,7,8-HpCDD	1000	15.0	1040	956	8.68	
OCDD	2000	-	2000	1910	4.60	
2,3,7,8-TCDF	200	-	197	187	5.21	
1,2,3,7,8-PeCDF	1000	-	937	917	2.16	
2,3,4,7,8-PeCDF	1000	-	951	930	2.23	
1,2,3,4,7,8-HxCDF	1000	-	949	909	4.31	
1,2,3,6,7,8-HxCDF	1000	-	947	903	4.76	
2,3,4,6,7,8-HxCDF	1000	-	959	930	3.07	
1,2,3,7,8,9-HxCDF	1000	-	956	950	0.630	
1,2,3,4,6,7,8-HpCDF	1000	-	954	923	3.30	
1,2,3,4,7,8,9-HpCDF	1000	-	1000	959	4.19	
OCDF	2000	-	1930	1860	3.69	

Internal Standards		% Rec	% Rec	% Rec	QC Limits
13C-2,3,7,8-TCDD	2000	88.0	89.6	39.8	25.0 - 150
13C-1,2,3,7,8-PeCDD	2000	80.9	83.3	38.8	25.0 - 150
13C-1,2,3,4,7,8-HxCDD	2000	92.0	90.6	43.0	25.0 - 150
13C-1,2,3,6,7,8-HxCDD	2000	93.3	93.6	44.3	25.0 - 150
13C-1,2,3,4,6,7,8-HpCDD	2000	68.5	70.5	34.8	25.0 - 150
13C-OCDD	4000	47.9	52.2	25.4	25.0 - 150
13C-2,3,7,8-TCDF	2000	87.3	90.7	41.9	25.0 - 150
13C-1,2,3,7,8-PeCDF	2000	86.5	88.2	41.4	25.0 - 150
13C-2,3,4,7,8-PeCDF	2000	92.3	89.0	42.0	25.0 - 150
13C-1,2,3,4,7,8-HxCDF	2000	87.1	88.7	42.2	25.0 - 150
13C-1,2,3,6,7,8-HxCDF	2000	85.3	85.1	41.6	25.0 - 150
13C-2,3,4,6,7,8-HxCDF	2000	77.2	80.3	40.0	25.0 - 150
13C-1,2,3,7,8,9-HxCDF	2000	68.5	76.9	36.3	25.0 - 150
13C-1,2,3,4,6,7,8-HpCDF	2000	71.3	75.7	36.6	25.0 - 150
13C-1,2,3,4,7,8,9-HpCDF	2000	80.6	80.7	37.8	25.0 - 150
13C-OCDF	4000	54.2	57.4	27.6	25.0 - 150
Cleanup Surrogate					
37Cl-2,3,7,8-TCDD	800	99.1	100	46.0	25.0 - 150

Analyst: [illegible]
Date: 6/17/03

RECEIVED
JUN 19 2003
MFG, Inc.

Reviewed by: DN
Date: 6/18/2003

SUBCONTRACT ORDER

Alpha Analytical Laboratories, Inc.

A304444

1723/4°

FRONTIER ANALYTICAL LABORATORY

SENDING LABORATORY:	RECEIVING LABORATORY:
Alpha Analytical Laboratories, Inc.	Frontier Analytical Laboratory
P.O. Box 1508 (208 Mason St.)	5172 Hillsdale Circle
Ukiah, CA 95482	El Dorado, CA 95762
Phone: (707)468-0401	Phone :916-934-0900
Fax: (707)468-5267	Fax: 916-934-0999
Project Manager: Sheri L. Speaks	**Terms: Net 30**

Analysis	Due	Expires	Comments
A304444-02 TP-1A (0-1.0) (B) [Soil] Sampled 04/16/03 00:00 Pacific			
Dioxins Full List	05/01/03 12:00	04/15/04 00:00	
Containers Supplied:			
4 oz. jar (A)			
A304444-04 TP-1A (1-2.0) (B) [Soil] Sampled 04/16/03 00:00 Pacific			
Dioxins Full List	05/01/03 12:00	04/15/04 00:00	
Containers Supplied:			
4 oz. jar (A)			

☐ *Report to State*

System Name: _____ **Employed by:** _____

User ID: _____ **Sampler:** _____

System Number: _____

Bill Direct to & Results
Sierra Pacific
Attn Gordie Amos
PO. Box 1266
Eureka, CA
95502

RECEIVED
JUN 19 2003
MFG. Inc.

RECEIVED
JUN 19 2003

Sheri Speaks 4-18 03 — 4/22/03 @ 0800

Released By	Date	Received By	Date
Released By	Date	Received By	Date

6/18/03 JEP ✓

Frontier Analytical Laboratory

Sample Login Form

Project ID: **1723**

Client:	MFG, Inc.
Client Project ID:	A304444
Date Received:	04/22/03 TAT: 14
Time Received:	8:00 AM
Received By:	nmm
# of Samples Received:	2 # of Dups: 0
Storage Location:	R-1

Checklist	Yes	No	N/A	Comments
Method of Delivery:	X			Fed-Ex/UPS/**Courier**/Other
Shipping container received intact?	X			
Custody seals(s) present and intact?			X	
Method of cooling:	X			Ice/**Blue ice**/Dry ice/Other
Sample arrival temperature (C):	X			4 degrees C
Sample containers intact?	X			
Chain of Custody present and complete?	X			
Return shipping container to client?	X			
Test for residual chlorine?			X	Thiosulfate added? no
Earliest sample hold time expiration:	X			Date: 4/15/04
Adequate Sample Volume?	X			

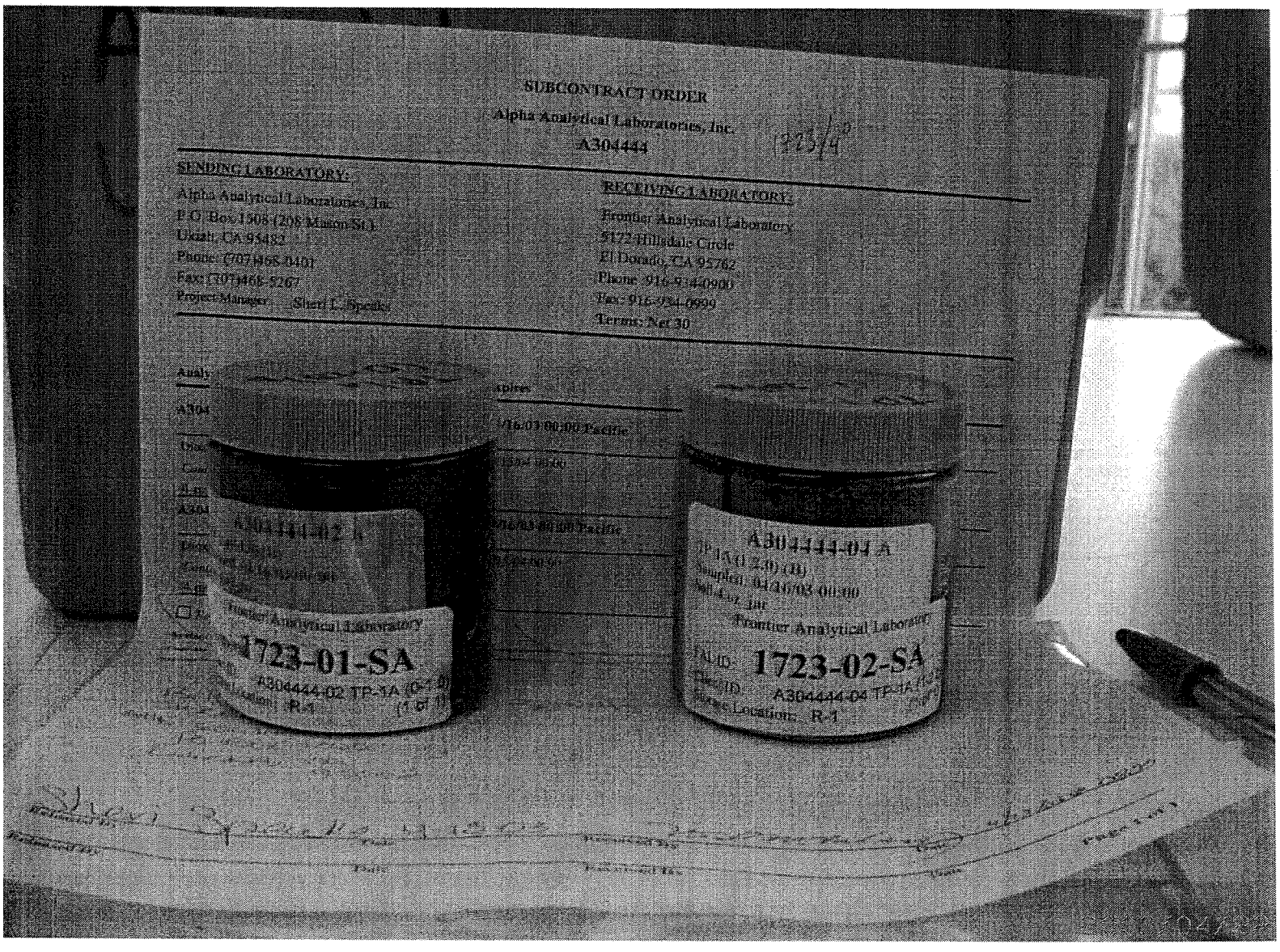
Anomalies or additional comments:

RECEIVED

JUN 1 9 2003

MFG, Inc.

FRONTIER
ANALYTICAL LABORATORY



RECEIVED
JUN 1 9 2003
MFG, Inc.