M E M O R A N D U M

TO: R. D. Abendroth - Seattle
N. P. Lesh (info)- Portland

DATE: January 22, 1981

FROM: Neil Gallagher - Portland

SUBJECT: Woodtreating Chemicals (Koppers Company)

Woodtreating has leased since 1967 the Southwest half of what was formerly the TBA Tire Warehouse. Time Oil leases the facility to them and bills them for Handling Charge. The facilities consist of Warehouse space, one 38,000 tank, three 20,000 gallon tanks, one 13,000 tank, one 7,000 gallon tank, one 1,400 gallon heating tank, one 5 HP Motor and 2-1/2 x 3" Gilbarco positive suction pump. In addition, Woodtreating purchased and we installed three 8,000 gallon tanks, one 6,000 gallon and one 3,000 gallon. The tanks are used for raw materials, such as three different solvents, and finished products for shipping. All the tanks are manifolded to a central location and hoses are used for transferring and moving all the products. The heating tank is equipped with four 480V - 115 15W x 12' heating coils. Woodtreating sends in by tank car and by truck, all the raw materials. All products going out go in either bulk truck and trailer or in 55 gallon drums. Formulas are furnished to Time Oil Company by Woodtreating from their main office in St. Louis, Missouri. The finished products are in two different categories. LST Type, that is the lighter product, and Concentrates that are heavier and are usually put in drums.

To mix the raw materials a formulated amount (see attached formula sheet) is charged to the heating tank. The heating coils can be turned on manually or by a timed control switch. Normally the timer is set to come on at 1:00 A.M. or 2:00 A.M. in the morning and the products are hot enough to mix at 7:00 A.M., and if needed the tank is charged again and the heat turned on manually. This way two batches can be made up in one eight hour day. To mix a 30" x 4' a 80 mesh screen is placed in the top opening of the heating tank and the hot material is rotated from the bottom of the heating tank and goes back down in thru the screen.

Wax that comes in 71b. slabs is broken up and melted down in the screen first. Then Penta that comes in 50 lb. bags is then poured into the screen and also dissolved. If the product is LST Type the heating tank is then pumped to one of the other tanks and more solvents are added and the product is then circulated in the tank from top to bottom for approxiamately four hours. Concentrates are either pumped into drums or pumped to a storage tank, for later shipment or drumming. It normally takes from one to two hours to add the wax and Penta, depending on consisting of the solvents and heat.

Penta is a very hazardous material and must be handled with many safety precautions. Full face masks and respirators must be worn, gloves, boots and rain gear must also be worn. It takes approxiamately two minutes to fill a 55 gallon drum and two men usually handle this operation. After filling bungs must be tightened, labels and stencils applied, and drums moved from filling area. For 10 drums the elapsed time will be close to one hour for two men. When product goes by truck and trailer, one hour is usually allowed for 7,000 gallons. The wax and Penta come into the warehouse on pallets, therefore a forklift is also an additional piece of equipment along with a floor jack and barrel trucks.

The billing consists of $615.00 per month for Facility Rental, $.0124 per gallon for LST Type of product, $.03715 per gallon for Concentrates and $.619 per gallon for filling drums, (see attached copy of billing). The average billing for the period of July 1, 1980 to December 31, 1980 has been $1,514.57, a total of 82,243 net gallons of LST Type, 45,016 gallons of Concentrates and 41,910 gallons drummed for the same period; a charge also of $.75 per drum of additive that is brought in and shipped is charged. This has been very nil for the last six months. During this same period we have received 83,482 gallons of Solvents, 1,960 bags of Penta, 10,010 lbs of wax, and 720 empty drums. All this material has to be unloaded and stored, but there is no charge for receipts.

Woodtreating is given an inventory at the end of each month (see attached copy). Due to the many different raw materials and finished product, this takes constant supervision on my part.

One pint of each batch of product mixed is mailed to St. Louis. As of January 1, 1981, a new Handling Charge will be applied (see attached copy).

All employees complain of working in this warehouse. Even with masks on, Penta causes your nose and eyes to run. The solvents have a very obnoxious odor and some employees this causes nauseau, and stomach upset.

M E M O R A N D U M

August 17,1981

TO: R.D. Abendroth Seattle

FROM: John Denham Seattle

SUBJECT: WOOD TREATING (KOPPERS COMPANY)

Original 1967 agreement appears to have been suitable to both customer (Koppers) and operator (TOC) for many years and when it was amended, continued that way. I see nothing wrong with the wording of the agreement as amended. I cannot comment on the monitary rates charged for services performed.

Tankage furnished by TOC conforms with requirements in August 1,1970 amended schedule. The additional tanks in use (3-8000 gal, 1-6000 gal and 1-3000 gal) apparently belong to Koppers Company.

The problems I note are all related to execution of the agreement by TOC. They concern employee safety and health during the operation and compliance with Oregon State Regulations at the work site. There have been a number of discrepancies reported since 1971. One "Notice of Correction", signed by Newt, is on file. It shows correction of those 6 discrepancies found by the Oregon State Health Department on September 29,1980.

Inspection Date	Inspection By	Discrepancies Noted
May 29, 1971	TOC	37
January 19, 1977	TOC	13
October 13, 1977	OR. Health Dept.	7
February 28, 1978	TOC	17
March 26, 1979	TOC	22
September 29, 1980	OR. Health Dept.	6
	Total	102

I will be conducting the annual crane inspections in Portland on August 21st so will inspect the wood treating operation again while I am there and present its current status.

JPD/mm

TOLS001181

S. WOOD TREATING OPERATION (NORTHWEST TERMINAL) - PORTLAND

5/29/71 FED. REG. PAGE NO.	SAFETY STANDARDS OR REGULATIONS ALLEGEDLY VIOLATED	DESCRIPTION OF ALLEGED VIOLATIONS
1. 10472	1910.22(a)(3)	Splintered crossmembers exist by north door area. Repair needed. Every working place shall be kept free from splinters or loose boards.
2. 10472	1910.22(b)(2)	Permanent aisles and passageways not marked. Marking with yellow paint needed. Permanent aisles and passageways shall be appropriately marked. Sufficient safe operating clearances should be allowed for aisles and wherever turns or passage must be made.
3. 10473	1910.23(c)(1)	Walkways between tanks 20001, 20002, 20003 do not have standard railings or toeboards. Existing railings are less than 42 inches high. Minor construction needed. Every open sided floor or platform 4 feet or more above ground level shall be guarded by a standard railing. Standard pipe railing consists of top rail, intermediate rail, and posts of nominal 1 1/2 inch pipe anchored to withstand a 200 pound load. Top of top rail shall be 42 inches above walkway. Post spacing is not more than 8 feet on center. Toeboard is 4 inch nominal height from its top edge to walkway, securely fastened, and with not more than 1/4 inch clearance above walkway. Any substantial material may be used for toeboard - either solid or with openings not over 1 inch in greatest dimension.
4. 10475	1910.24(h)	Fixed stair railing on south stairs is too high and has a sizeable overhang at the ends. Repair needed. Standard railings shall be provided on the open sides of all exposed stairways. Railing vertical height shall be not more than 34 inches nor less than 30 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread. Rail ends shall not overhang terminal posts.

5/29/71 FED. REG. PAGE NO.	SAFETY STANDARDS OR REGULATIONS ALLEGEDLY VIOLATED	DESCRIPTION OF ALLEGED VIOLATIONS
5. 10476	1910.25(c)(2)(i)(h)	Bucket shelf on wooden stepladder is broken. Repair needed. Where bucket shelves are provided, they shall be constructed to support a load of 25 pounds and so fastened that they can be folded up when ladder is closed.
6. 10481	1910.26(a)(1)(iii)	Section of metal ladder has bent side rails and rungs missing. Replacement needed. Spacing of rungs shall be on 12 inch centers.
7. 10484	1910.27(d)(1)(iii)	Cage on tank 38009 does not extend above roof. Modification needed. Cages shall extend a minimum of 42 inches above the top of the landing, unless other acceptable protection is provided.
8. 10485	1910.27(d)(3)	Ladder extensions atop tanks 5006, 10002, 20001, 20002, 20003 are too short. Modification needed. The side rails of ladder extensions shall extend 3 1/2 feet above parapets and landings.
9. 10495	1910.36(b)(6)	Dock exit facilities lights do not work. Cover missing from one junction box. Repair needed. In every building equipped for artificial illumination, adequate and reliable illumination shall be provided for all exit facilities.
10. 10496	1910.37(q)	No building exit signs exist. Standard illuminated exit signs bearing word "exit" in letters not less than 6 inches high and 3/4 inches wide shall be at each exit, red in color. Standard directional signs with arrow indicating direction to nearest exit shall be placed where nearest exit is not immediately apparent. Words "fire exit" should appear below panel. Size and colors of directional signs are attached.
11. 10496	1910.37(q)(4)	
12. 10496	1910.37(q)(5)	
13. 10496	1910.37(q)(6)	
14. 10496	1910.37(q)(8)	
15. 10597	1910.144(a)(1)(i)(d)	

5/29/71 FED. REG. PAGE NO.	SAFETY STANDARDS OR REGULATIONS ALLEGEDLY VIOLATED	DESCRIPTION OF ALLEGED VIOLATIONS
16. 10533	1910.106(a)(36)(b)(2)(vii)(c)(1)	Tanks have no dikes around them. Installation needed. The volumetric capacity of the diked area shall not be less than the greatest amount of liquid that can be released from the largest tank within the diked area, assuming a full tank.
17. 10536	1910.106(a)(36)(c)(3)	Quick coupling pipe cap missing from one line allowing product to leak. Maintenance needed. Joints shall be made liquid tight.
18. 10536	1910.106(a)(36)(c)(4)	Some tank farm pipelines are not substantially supported. Maintenance needed. Adequate supports are needed to protect piping system against physical damage and excessive stresses arising from settlement, vibration, expansion, or contraction.
19. 10536	1910.106(a)(36)(c)(5)	Not all tank farm pipelines are painted. Maintenance needed. All piping for flammable or combustible liquids shall be painted or otherwise protected against external corrosion.
20. 10538	1910.106(a)(36)(d)(5)(vi)(e)	Wax, penta, and drums are warehoused closer than 3 feet to overhead beams or obstructions. Rewarehousing needed. No pile shall be closer than 3 feet to the nearest beam.
21. 10539	1910.106(a)(36)(d)(7)(i)(a)	No fire extinguishers are located outside north warehouse room doors. Installation needed. At least one portable fire extinguisher having a rating of not less than 12-B units shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage.
22. 10539	1910.106(a)(36)(e)(3)(iv)(a)	No means exists for prompt and safe disposal of spills at tank 13001. Area is completely saturated.

5/29/71 FED. REG. PAGE NO.		SAFETY STANDARDS OR REGULATIONS ALLEGEDLY VIOLATED	DESCRIPTION OF ALLEGED VIOLATIONS
			Emergency drainage systems shall be provided to direct flammable or combustible liquid leakage and fire protection water to a safe location.
23.	10540	1910.106(a)(36)(e)(9)(iii)	Excess trash, paper on warehouse floor and in open top containers. Clean up needed. Combustible waste material and residues in a building or unit operating area shall be kept to a minimum, stored in covered metal receptacles and disposed of daily.
24.	10541	1910.106(a)(36)(f)(3)(iv)(a)	Bonding cables are missing from some tank car loading stands. Installation needed. Bonding facilities for protection against static sparks during the loading of tank vehicles through open domes shall be provided.
25.	10541	1910.106(a)(36)(f)(3)(v)	No static protection exists at tank car loading stands. Installation needed. Tank car loading facilities shall be protected against stray currents by bonding the pipe to at least one rail and to the rack structure if of metal.
26.	10602	1910.157(a)(5)	Two portable fire extinguishers in warehouse are not mounted. Mounting needed. Portable extinguishers shall be installed on hangers or brackets supplied, mounted in cabinets or set on shelves so top of extinguisher is not more than 5 feet above floor.
27.	10603	1910.157(c)(3)	Fire extinguisher size and placement is inadequate. Extinguishers needed. Maximum travel distance to extinguishers shall not exceed 50 feet for type operation.
28.	10603	1910.157(d)(2)(i)	Unmounted portable fire extinguishers are not inspected monthly. Inspection needed. Extinguishers shall be inspected monthly to insure they are in their designated places, that they have not been activated or tampered with, and to detect any obvious physical damage.

	5/29/71 FED. REG. PAGE NO.	SAFETY STANDARDS OR REGULATIONS ALLEGEDLY VIOLATED	DESCRIPTION OF ALLEGED VIOLATIONS
29.	10603	1910.157(d)(3)(i)	Unmounted portable fire extinguishers are not maintained or recharged annually. Maintenance needed. At regular intervals, not more than 1 year apart, extinguishers shall be thoroughly examined and/or recharged or repaired to insure operability and safety.
30.	10603	1910.157(d)(3)(iv)	Portable fire extinguishers are not tagged. Tags needed. Each extinguisher shall have a durable tag securely attached to show the maintenance or recharge date and the initials or signature of the person who performs this service.
31.	10612	1910.176(f)	No bumper blocks exist at end of railroad tracks in yard. Installation needed. Bumper blocks shall be provided on spur railroad tracks where a rolling car could enter a work or traffic area.
32.	10613	1910.177(d)(1)	No sprinkler system exists. Installation needed. Warehouses containing commodities having combustible packaging shall be protected with automatic sprinkler system.
33.	10613	1910.177(f)(1)	Several lights do not work in warehouse interior. Repair needed. Heating, lighting, and service equipment shall be maintained in accordance with good practice.
34.	10616	1910.178(m)(5)	Emergency brake does not work on fork lift truck. Battery cable wiring is frayed showing bare wires. Repair needed. Brakes shall be set when truck is unattended. If at any time a powered industrial truck is found to be in need of repair, it shall be taken out of service until it has been restored to a safe operating condition.
35.	10617	1910.178(p)(1)	

5/29/71 FED. REG. PAGE NO.	SAFETY STANDARDS OR REGULATIONS ALLEGEDLY VIOLATED	DESCRIPTION OF ALLEGED VIOLATIONS
36. 10700	1910.310(i)(4)	Front working space at north wall electrical control center is less than 3 feet. Rewarehousing needed. The working space in front of panels shall be not less than 3 feet.
37. 10700	1910.310(o)	Electric circuits at north end of warehouse are not marked to indicate purpose. Identification needed. Circuits shall be legibly marked. Marking shall be of sufficient durability to withstand the environment involved.

SPECIFICATIONS FOR ACCIDENT PREVENTION SIGNS

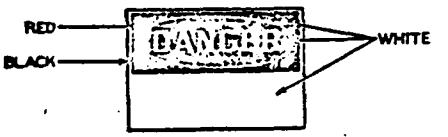


Fig. J-1
Danger Sign

TABLE J-1—STANDARD PROPORTIONS FOR DANGER SIGNS

Sign size, inches Height Width	Black rectangular panel, inches Height Width	Red oval, inches Height Width	Word danger, height inches	Maximum space available for sign wording, inches
		HORIZONTAL PATTERN		
7 x 10	3¼ x 9⅜	2⅞ x 8½	1 3/16	2¾ x 9⅜
10 x 14	4⅝ x 13⅜	4⅛ x 11⅞	2 1/16	4¼ x 13⅜
14 x 20	6½ x 19⅜	5¾ x 17	2⅜	6¼ x 19⅜
20 x 28	9¼ x 27⅜	8¼ x 23⅛	4⅛	9½ x 27⅜
		UPRIGHT PATTERN		
10 x 7	2⅝ x 6⅜	2⅛ x 5⅞	1 1/16	6⅜ x 6⅜
14 x 10	3¼ x 9⅜	2⅞ x 8½	1 3/16	9½ x 9⅜
20 x 14	4⅝ x 13⅜	4⅛ x 11⅞	2 1/16	14 x 13⅜
28 x 20	6½ x 19⅜	5¾ x 17	2⅜	20¼ x 19⅜

Colors: Red, black, and white.

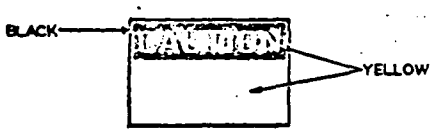


Fig. J-4
Caution Sign

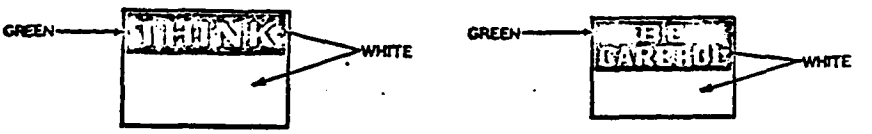
TABLE J-2—STANDARD PROPORTIONS FOR CAUTION SIGNS

Sign size inches height width	Black rectangular panel, inches height width	Word "Caution" height of letter, inches	Maximum space available for sign wording below panel inches height width
	HORIZONTAL PATTERN		
7 x 10	2¼ x 9⅜	1⅝	3¼ x 9⅜
10 x 14	3¼ x 13⅜	2¼	5½ x 13⅜
14 x 20	3¼ x 19⅜	2¼	9 x 19⅜
20 x 28	4¼ x 27⅜	3¼	14½ x 27⅜
	UPRIGHT PATTERN		
10 x 7	1⅝ x 6⅜	1⅛	7 x 6⅜
14 x 10	2¼ x 9⅜	1⅝	10½ x 9⅜
20 x 14	3¼ x 13⅜	2¼	15½ x 13⅜
28 x 20	3¼ x 19⅜	2¼	24 x 19⅜

Colors: The standard color of the background shall be yellow; and the panel black with yellow letters. Any letters used against the yellow background shall be black.

TOLS001188

BZTO104(e)038009



(NOTE: The words "Think" and "Be Careful," given here, are only illustrations. Other wordings may be used.)

Fig. J-5
Safety Instruction Signs

TABLE J-3—STANDARD PROPORTIONS FOR SAFETY INSTRUCTION SIGNS

Sign size, inches, height, width	Green rectangular panel, inches, height, width	Word "Think" height of letters, inches	Maximum space available for sign wording below panel, inches height, width	Sign size, inches height, width	Green panel, inches, height, width	Word "Be" height of letters, inches	Word "Careful" height of letters, inches	Maximum space available for sign wording below panel, inches, height, width
7 x 10	2¾ x 9⅝	1⅜	3⅛ x 9⅝	7 x 10	3⅜ x 9⅝	1¾	1 3/16	2⅛ x 9⅝
10 x 14	3¼ x 13⅜	2¼	5⅛ x 13⅜	10 x 14	4¼ x 13⅜	1¾	2 5/16	4 x 13⅜
14 x 20	3⅝ x 19⅛	2¾	9 x 19⅛	14 x 20	6¼ x 19⅛	2⅛	3⅛	6 x 19⅛
20 x 28	4⅝ x 27⅜	3¼	14⅛ x 27⅜	20 x 28	9⅛ x 27⅜	3⅛	4⅝	9¼ x 27⅜

Colors: The standard color of the background shall be white; and the panel green with white letters. Any letters used against the white background shall be black.

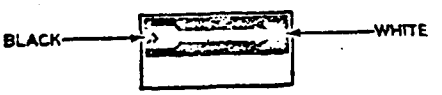


Fig. J-6
Directional Signs

Table J-4—Standard Proportions for Directional Signs

Sign size, inches height width	Black rectangular panel, inches height width	White arrow, inches: Overall length	Arrow head height width	Arrow shaft height	Arrow tail height width	Maximum space for sign wording below panel height
6⅛ x 14	3¼ x 13⅜	12⅝	2⅝ x 3	1⅛	2⅝ x 3⅛	2⅛ x 13⅜
9 x 20	4⅝ x 19⅛	16⅝	3⅜ x 4⅛	1⅝	3⅛ x 4⅛	3⅛ x 19⅛
12 x 28	6 x 27⅜	26⅝	5⅛ x 5⅛	2⅛	4⅛ x 6	4⅜ x 27⅜
15 x 36	7⅛ x 35⅛	34⅛	6⅛ x 6⅛	2⅝	6⅛ x 7⅛	6¼ x 35⅛

Colors: The standard color of the background shall be white; and the panel black with white directional symbol. Any letters used against the white background shall be black.

TOLS001189

BZTO104(e)038010

PORTLAND TERMINAL

MONTHLY INSPECTION

FOR

Tosco Oil Co.
Property Number

1705 N. Burgard Portland Oregon
Street Address, City

1-19-77
Date of Inspection

Signature of Area Representative

TOLS001190

Received by Seattle Safety Office 2/20/77
Date

Revised: 1-77

BZTO104(e)038011

OREGON TERMINAL INSPECTION SHEET

WT

The following references are to the Oregon Safety Code

ANSWER EACH QUESTION BY PLACING ✓ MARK IN APPROPRIATE BLOCK.	Yes	No	N/A
GENERAL			
Is a Safety Program being conducted? (1-2-17)	X		
Has each lost time injury been investigated and corrective action taken? (1-2-18)	X		
✓ Are good housekeeping methods observed in all operations? (1-4-1)	X	1-19 X	
Are working and storage areas and passageways free of unnecessary obstructions? (1-4-2)	X		
Are all materials which might cause a workman to slip removed from floors or other treading surfaces? (1-4-3)	X		
Are operational working surfaces as level as practical and free of debris? (1-4-5)	X		
Has accumulated scrap, waste material or debris been removed? (1-4-8)	X		
Have flammable wastes, such as oily rags, been placed in suitable containers? (1-4-9)	X		
WORKING AREAS			
Are all places of employment clean, orderly, and in a sanitary condition? (2-2-2)	X		
Are floors free from protruding nails, splinters, holes, or loose boards? (2-2-5)	X		
✓ Are permanent aisles marked in areas where mechanical handling equipment is used? (2-2-8)	X	1-19 X	
✓ Are floor load plates installed in buildings used for storage? (2-2-10)	X	1-19 X	5-26 6-12 X
Does a $6\frac{1}{2}$' vertical clearance exist in work areas, aisles, passageways and stairways? (2-2-20)	X		
Are means of access and egress free from slipping and tripping hazards, debris, obstructions and projections? (2-2-24)	X		
Is there sufficient illumination for safe access and egress? (2-2-24-d)	X		
Is not less than 3 ft. of clear space maintained in front of electrical panels? (2-2-25)	X		

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	Yes	No	N/A
Are aisles, passageways and walkways a minimum of 22" wide? (2-2-26)	X		
Are vehicle aisles and passageways at least 2' wider than the vehicles used? (2-2-27-a)	X		
RAILINGS			
Are elevated walkways at least 22" wide and equipped with standard handrails? (2-2-28)	X		
Are fixed inclined walkways at least 22" wide, equipped with handrails, and inclined less than 24°? (2-2-29)	X		
Are inclined walkways coated with an anti-slip surface or cleats not more than 18" apart? (2-2-30)	X	8-10 9-20 X	10-19
✓ Do all platforms over 4' high have standard railings and toeboards on all open sides except at stairway or fixed ladder entrances? (2-2-35)	X	1-19 X	
Do stairways conform to the following standard: (2-3-19)			
Less than 44" wide:			
Both sides enclosed - handrail on right side decending?	X		
One side open - stair rail on open side?	X		
Both sides open - stair rail on each side?	X		
Over 44" wide and less than 88" wide:	1-19 2-24 4-28 10-19		
Handrail on each enclosed side and stair rail on each open side?	X		X
Over 88" wide:			
Handrail on each enclosed side, stair rail on each open side and midway of width?	X		
Do standard railings have top rail 36" - 44" high and smooth surfaced, intermediate rail half way between top rail and floor, and no railing overhang at either end? (2-3-21)	X		
Are stair railings 30" - 34" high? (2-3-22)	X		
Are wood railings of 2" x 4" stock with posts spaced not to exceed 6'? (2-3-24)	X		

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	Yes	No	N/A	
Are structural steel railings, posts, and intermediate rails of 2" x 2" x 3/4" angles with posts spaced not to exceed 8 ft.? (2-3-26)	X			
Will top rail withstand a load of at least 200 lb. applied in any direction at any point? (2-3-27)	X	10-19 * X		
Are handrails a minimum of 2" in diameter if wood, and a minimum of 1½" in diameter if metal pipe? (2-3-33)	X	1-19 2-24 X		
Do all handrails and railings have at least a 3" clearance from any other object? (2-3-35)	X			
FIXED INDUSTRIAL STAIRS				
Will fixed stairs carry a minimum concentrated load limit of 1000 lbs. safely? (2-4-5)	X			
Do stairways have a minimum width of 22"? (2-4-6)	X			
Are stairs installed at an angle of between 30° and 50°? (2-4-7)	X			
Are stair treads reasonably slip-resistant? (2-4-8)	X			
Are stairway platforms not less than the width of stairway and a minimum of 30" in length measured in the direction of travel? (2-4-12)	X			
Do fixed industrial stairs have a vertical clearance of 7'? (2-4-16)	X			
Do stairs having treads of less than 9" wide also have open risers? (2-4-17)	X		5-26 8-10 X	7-1 9-2
Are open grating treads used for outside stairs? (2-4-18)	X			
PIERS AND WHARVES	1-19 2-24			
Are handholds provided on portable dockboards to permit safe handling? (2-5-4)	X		X	
Do open sides of piers and wharves more than 4' above the water have bull rail of not less than 6" x 6" timber on 3" blocking and standard handrails? (2-5-16)	X			
Are ladders provided from low water mark to dock floor for each 400 feet of wharf? (2-5-17)	X		1-19 2-24 X	

*Being repaired - Dock

WT

	Yes	No	N/A
Is effective footwear worn where workmen are exposed to foot injury conditions? (7-5-1)	5-26 X	1-19 X	
Does safety-toe footwear meet ANSI Standard 41.1-1967? (7-5-3) 1-19,	2-24 X	X	
Are gloves worn when appropriate? (7-5-5)	X		
Are employees provided with life jackets at all times while working on or over water? (7-7-1)	X		
Are life jackets USCG approved and listed in Pamphlet CG-190, Section 160.053? (7-7-3)	X		
Are ring buoys with at least 90 feet of line provided for emergency rescue operations? (7-7-5)	X		
Is safety skiff provided with good oars, with oarlocks securely fastened to gunwales, one boat hook and one life ring with not less than 90 feet of line attached? (7-7-7)	X		10-19 X
VEHICLES		6-12 7-15 8-10 9-20	
Are all vehicles kept in safe operating condition? (8-1-8)	X	X	
Have vehicle operators been instructed to not stand or pass under an elevated portion of a vehicle whether loaded or empty? (8-1-18)	X		
Have employees been instructed to not remain or work under loads of materials being moved? (8-1-19)	X		
Do spotted railroad cars have their wheels blocked to prevent moving while being loaded? (8-1-27)	X		
Are bumper blocks provided on spur railroad tracks? (8-1-28)	X		
STORAGE AREAS			
Are bags and bundles stored in tiers, stacked, blocked, and limited in height to make them stable? (9-2-4)	X		
Are storage areas kept free from accumulated materials that constitute hazards from tripping, slipping, fire, explosion, or pest harborage, including control of vegetation? (9-2-6)	X		
Are aisles and passageways kept clear to provide for free and safe movement of material handling equipment and employees? (9-2-7)	X		

WT

	Yes	No	N/A
Are ladders stored in a horizontal position sufficiently supported to avoid sagging? (19-2-113)	X		
Are ladders carried on vehicles securely fastened in position to minimize chafing and road shock effect? (19-2-114)	X		
Do the rungs of portable metal ladders have antiskid surfaces? (19-3-6)	X		4-28 X
✓ Do fixed ladders have a minimum concentrated live load capacity of 200 pounds? (19-4-1(a))	X	1-19 2-24 X	5-26
Are rungs a minimum diameter of 3/4" for metal ladders and 1 1/8" for wood ladders? (19-4-3)	X		
Is distance between rungs and/or steps less than 12" and uniform throughout ladder length? (19-4-4)	X		
Is minimum clear length of rungs 16"? (19-4-5)	X		
Is distance from rung centerline to nearest object in back of ladder not less than 7"? (19-4-21)	X		
Are cages provided on ladders more than 20 feet in length? (19-4-29)		X	1-19 X
✓ Do cages extend a minimum of 42" above top of landing? (19-4-30)	X	1-19, 10-19 X	2-24;
✓ Do cages extend down ladder to a point not less than 7 feet nor more than 8 feet above ladder base? (19-4-31)	X	1-19, 10-19 X	2-24
Are all ladders maintained in a safe condition? (19-4-51)	X		
MACHINE GUARDING			
Do grinder guards cover spindle end, nut and flange projections? (20-2-2)	X		
Are work rests adjusted closely to the wheel with a maximum opening of 1/8"? (20-2-4)	X		
Is angular exposure of grinding wheel periphery less than 90°? (20-3-3)	X		
Are abrasive wheel flanges at least 1/3 the diameter of the wheel? (20-4-1)	X		

WT

	Yes	No	N/A
FLAMMABLE AND COMBUSTIBLE LIQUIDS			
Are storage tanks equipped with pressure vacuum venting devices? 22-055(c)(2)(iv)(f)	X		
✓ Does each tank venting device have stamped on it the opening pressure, the pressure at which the valve reaches the full open position, and the flow capacity at the full open position, expressed in cubic feet per hour of air at 60°F and at a pressure of 14.7 p.s.i.a.? 22-055(c)(2)(v)(h)		1-19 X	
✓ Is a slope provided of not less than 1% away from the tank toward the drainage system? 22-055(c)(2)(vii)(b)(1) 5-26,	6-12 7-15 X	1-19 X	
Do earthen walls 3 feet or more in height have a flat section at the top not less than 2 feet wide? 22-055(c)(2)(vii)(c)(3)	X		
Are loose combustible materials, empty or full drums or barrels prohibited from being within the diked area? 22-055(c)(2)(vii)(c)(6)	X		
✓ Is each diked area containing two or more tanks subdivided by intermediate curbs, not less than 18" in width, to prevent spills from endangering adjacent tanks within diked area? 22-055(c)(2)(vii)(c)(7)		1-19 X	
Are connections for all tank openings vaportight and liquid-tight? 22-055(c)(2)(viii)(a)	X		
Are external valves on tanks made of steel? 22-055(c)(2)(viii)(b)	X		
Are openings for gaging provided with a vaportight cap or cover? 22-055(c)(2)(viii)(d)	X		
Are vent pipes from underground storage tanks not less than 12 feet above ground level? 22-055(c)(3)(iv)(a)	X		
Are underground storage tank vent pipes not less than 1 1/4" inside diameter? 22-055(c)(3)(iv)(b)	X		
Are openings for manual gaging of underground storage tanks provided with liquidtight cap or cover? 22-055(c)(3)(v)(b)	X		
Is piping system substantially supported and protected against excessive stresses from settlement, vibration, expansion, or contraction? 22-055(d)(4)	X		
Is storage area fenced and free of weeds, debris and other combustible material not necessary to the storage? 22-055(e)(6)(iv)	X		

WT

	Yes	No	N/A
Are warning signs posted on dock? (Reference: 46 CFR 151.45-2(e)(1))	X		
COLOR CODING		8-10	5-26 6-12 7-15 9-20
Are the following fire protection devices painted red? (28-5-1)			
Fire Buckets or Pails	X	X	X
Fire Exit Signs	X	X 5-26	
Fire Extinguishers	X		
Fire Hose Locations	X		
Fire Hydrants (Industrial)	X		
Have all safety cans or other portable containers of flammable liquids been painted red with yellow lettering naming the contents? (28-5-2)	X	6-12 7-15 X	
Are all danger signs painted red? (28-5-4)	X	5-26 X	
Are all stop buttons or electrical switches used for emergency stopping of machinery painted red? (28-5-6)		X	
Are all dangerous parts of machines or parts of energized equipment painted orange? (28-5-7)	8-10 X	X	
Is yellow the basic color for marking physical hazards such as: striking against, stumbling, falling, tripping and caught-in-between? (28-5-8)	X	8-10 X	
Is green the basic color used for designating "Safety" and the location of first aid equipment (other than fire fighting equipment)? (28-5-9)		X	
Is blue the basic color used for designating caution, warning against the starting, use of, or movement of equipment under repair or being worked on? (28-5-10)		X	
Are black, white or a combination of these two the basic colors used for traffic and housekeeping markings? (28-5-12)	1-19, 2-24 10-19 X	1-19 X	
The following references are to TITLE 33 of the Code of Federal Regulations:			
Are cargo hoses long enough to allow vessel movement to its mooring limits without placing a strain on hoses or transfer piping system? 156.120 (b)	X		
Does each cargo hose support prevent strain on its coupling? 156.120(c)	X		

BZTO104(e)038018

C T SYSTEM

C T Corporation System
The Corporation Trust Company
C T Law Technology, Inc.

SERVICE OF PROCESS TRANSMITTAL FORM

TO: C T CORPORATION SYSTEM
(C T Office)
Seattle, Washington
(City) (State)
C T Corporation System
FROM: (Originating Agent)
O.H. Young
Per nw
Portland, Oregon 97204
(City) (State)
DATE: 4/7/78 VIA: First Class Mail

TO: Legal Dept.
Time Oil Co.
2737 West Commodore Way
Seattle, Washington 98199
(Authorized Recipient)

VIA: [xx] Certified First Class Mail
[ ] Messenger

RE: PROCESS SERVED IN OREGON
(Jurisdiction)

FOR TIME OIL CO. WASHINGTON
(Name of Company) (Domestic State)

Enclosed are copies of legal process served upon the statutory agent of the above company as follows:

1. Title of Action: In the Matter of the Alleged Violation of the Oregon Safe employment Act. BY: Time Oil Co.

2. Document(s) Served: Citation and Notice of Penalty Citation No. D7255 024 78

3. Court: Before the State of Oregon Workers' Compensation Department

4. Nature of Action:

Violation of above act are alleged at workplace at 12005 N. Burgard, Portland, Oregon, Oct. 13, 1977. No penalty.

5. On Whom Process was Served:

Received by C T Corporation System, Portland, Oregon

6. Date and Hour of Service:

Regular Mail 4/7/78

7. Appearance or Answer Due:

Notice of Correction card due May 8, 1978

8. Plaintiff's Attorney(s):

No atty.

9. Remarks:

Original Citation & Notice of Correction Card were sent to:
Mr. Newton P. Lash, Vice-President, Time Oil Co.,
12005 North Burgard, Portland, Oregon 97203

cc: Legal Dept.; Time Oil Co. Suite 200; 5150 Wilshire Blvd.; Los Angeles, CA 90036

RECEIVED AND FORWARDED ON 4-12-78 (Date)

KINDLY ACKNOWLEDGE RECEIPT BY SIGNING THE CARBON COPY AND RETURNING IT TO ➡

Done 9/14/78 RH

BY: C T CORPORATION SYSTEM

Per Thomas McDougal/cb
Thomas McDougal, Jr.
Assistant Vice President
(Address)
1218 Third Avenue
Seattle, Washington 98101

cb

NJ291—12-76 50M Sets

TOLS001198

BZTO104(e)038019

Regular mail
4-2-78

BEFORE THE STATE OF OREGON WORKERS' COMPENSATION DEPARTMENT
ACCIDENT PREVENTION DIVISION
Labor and Industries Building
Salem, Oregon 97310

In the Matter of the Alleged Violation)
of the OREGON SAFE EMPLOYMENT ACT.)
By:
Tire Oil Co.

CITATION AND NOTICE OF PENALTY

To:
Mr. Newton P. Lash, Vice-President
Tire Oil Co,
12005 North Burgard
Portland, Oregon 97203

Employer I.D. No.:
Citation No.: 521536-3-009
Date Issued: D7253-024-78
April 6, 1978

An inspection of a workplace under your ownership, operation or control located at or near
12005 North Burgard, Portland, Oregon
and described as follows:
petroleum products wholesale
was conducted on
October 13, 1977
On the basis of the inspection it is alleged that you have violated the Oregon Safe Employment Act, ORS Chapter 654, as alleged on the attached Exhibit "A" and incorporated herein by reference.

The penalty for all violations is:
NONE

The "Notice of Correction" card must be received by:
May 8, 1978

THE LAW REQUIRES THAT A COPY OF THIS CITATION BE PROMPTLY POSTED IN A CONSPICUOUS MANNER ABOUT YOUR WORKPLACE AND IN A SUFFICIENT NUMBER OF PLACES TO INFORM YOUR WORKERS OF THE FACTS. IT SHALL BE PROMINENTLY POSTED FOR A PERIOD OF 3 DAYS OR UNTIL THE VIOLATION IS CORRECTED, WHICHEVER OCCURS LAST.

EMPLOYER: SEE REVERSE SIDE OF THIS FORM FOR RIGHTS AND RESPONSIBILITIES REGARDING THIS CITATION

ACCIDENT PREVENTION DIVISION

Sanction Officer

23219:mh

RIGHTS OF EMPLOYEES

Any employee or representative of employees who believes that any period of time fixed in this Citation for the correction of alleged violations is unreasonable has the right to request a hearing by submitting a letter to the Workers' Compensation Department, Safety Hearings Clerk, Hearings Division, Labor and Industries Building, Salem, Oregon 97310, within 20 days of your employer's receipt of this Citation.

cc: Corporation System

TOLS001199

BZTO104(e)038020

EMPLOYER'S RIGHT TO REQUEST AN EXTENSION OF COMPLIANCE TIME

If, for reasons beyond your control, you cannot correct an alleged violation before the date required, request an extension of time by writing:

Workers' Compensation Department
ACCIDENT PREVENTION DIVISION
204 Labor and Industries Building
Salem, Oregon 97310

The request must reach A.P.D. before the date correction is required for the violation. It must specify the estimated date of correction, provide justification for the extension, and indicate alternate safeguards for your employees' protection until the violation is corrected.

"NOTICE OF CORRECTION" CARD

The enclosed "Notice of Correction" card must be used to report correction of the alleged violation(s), and MUST be received by the Accident Prevention Division, Labor and Industries Building, Salem, Oregon 97310, by the date indicated on the front of the Citation. However, each alleged violation must be corrected by the date indicated on Exhibit "A" of the Citation. Failure to correct an alleged violation by the ordered date may result in an additional citation with penalties for each day the violation is uncorrected.

PAYMENT OF PENALTY

Payment of penalty is due 16 days after receipt of the Citation, unless the Citation is appealed. Payment should be made by check or money order, made payable to the Workers' Compensation Department, and sent with a copy of the "Payment of Penalty" form to:

Workers' Compensation Department
FISCAL SECTION
Labor and Industries Building
Salem, Oregon 97310

EMPLOYER'S APPEAL RIGHTS

If you wish to contest any violation, penalty, or correction date, you may appeal this citation. Your appeal must be in writing, be signed, include your name, address, telephone number, citation number, date received, and specify each item contested, and reason for appeal. The appeal must be received by the Department within 20 days of your receipt of the Citation. If you do not appeal, this Citation becomes a final order of the Workers' Compensation Department. Send your appeal to:

Workers' Compensation Department
ACCIDENT PREVENTION DIVISION
204 Labor and Industries Building
Salem, Oregon 93710

If you have any questions regarding this Citation, please call your local Accident Prevention Division Office located in the following cities:

Portland: 229-5230 Salem: 378-3274 Coos Bay: 269-9393 Bend: 389-4545
Beaverton: 641-3434 Eugene: 686-7562 Medford: 776-6030 Pendleton: 276-9175

EXHIBIT "A"

Employer Name: Time Oil Co. Date Issued: April [illegible], 1978

Employer I.D. No.: 321536-3-309 Citation No.: [illegible]

Item No.	Standard Allegedly Violated OAR Chap. 437	Description of Alleged Violation /674	Date Correction Required	Penalty
1.	22-011(2)	Although the following employees were exposed to known health hazards they were inadequately informed as to the nature of the hazards, the measures taken to prevent and control such hazards, or the proper methods of utilizing such control measures. Employee / Location — Hazard 1. Don Stell - Mixing Area — Pentachlorophenol 2. David Wood Mixing Area — Pentachlorophenol Within the compliance deadline the firm must undertake one of the following: A. Provide adequate information or training to affected employees by internal efforts and/or by the firm's Workmen's Compensation carrier, or. B. In cooperation with the Occupational Health Section prepare, develop and obtain approval of an employee information program. This program shall be designed to insure that employees are adequately informed of the health hazards to which they are exposed and the measures necessary to control such exposures. (Complied with at time of inspection). FIRST INSTANCE VIOLATION——————$25.00	N/A	SUSPENDED
2.	22-069 (4)(b)(1)	There were no written standard operating procedures governing the selection and use of respirators. FIRST INSTANCE VIOLATION-$0.00	5-6-78	SUSPENDED
3.	22-069 (4)(e)(3) (1)	Don Stell and David Wood, who were wearing respirators, had full beards which interferred with an effective face seal. (Complied with at time of inspection). FIRST INSTANCE VIOLATION——————$0.00	N/A	SUSPENDED
4.	7-3-1 & 7-2-1	Boots and raingear made of material impervious to pentachlorophenol were not provided to employees during mixing and filling operations when it was possible for this substance to come in contact with the employees skin. FIRST INSTANCE VIOLATION——————$15.00	5-6-78	SUSPENDED

Page 1 of 2 Pages — Total Penalty: NONE

WCB 1221 (Rev. 1/76)

TOLS001201

BZTO104(e)038022

EXHIBIT "A"

Employer Name: Time Oil Co. Date Issued: April 6, 1978

Employer I.D. No.: 521336-3-009 Citation No.: 07255-024-78

Item No.	Standard Allegedly Violated OAR Chap. 437 /436	Description of Alleged Violation	Date Correction Required	Penalty
5.	7-3-6	Adequate eye protection was not provided for employees during mixing and filling operations as evidenced by the safety glasses provided that did not prevent splashes from coming up under the bottom rim and entering their eyes. FIRST INSTANCE VIOLATION——————$35.00	5-6-78	SUSPENDED
6.	23-060(12)	There was no eye wash fountain in the warehouse area where pentachlorophenol was handled. FIRST INSTANCE VIOLATION——————$25.00	5-6-78	SUSPENDED
7.	23-015 (1)(a)	In the warehouse area where pentachlorophenol was stored and mixed there was no warning sign or other equally effective means of calling attention to such hazards at their location where the hazards exist. FIRST INSTANCE VIOLATION——————$0.00	4-20-78	SUSPENDED

Page 2 of 2 Pages Total Penalty NONE

WCB 1221 (Rev. 1/76)

TOLS001202

BZTO104(e)038023

MONTHLY INSPECTION

FOR

Texaco Oil Co. Portland Ore.
Location

2-28-78
Date of Inspection

Signature of Inspector

TOLS001203

BZTO104(e)038024

OREGON TERMINAL INSPECTION SHEET

WT

The following references are to the Oregon Safety Code

ANSWER EACH QUESTION BY PLACING ✓ MARK IN APPROPRIATE BLOCK.	Yes	No	N/A
GENERAL			
Is a Safety Program being conducted? (1-2-17)	X		
Has each lost time injury been investigated and corrective action taken? (1-2-18)	X		
Are good housekeeping methods observed in all operations? (1-4-1)	X	2-28 X	
Are working and storage areas and passageways free of unnecessary obstructions? (1-4-2)	X		
Are all materials which might cause a workman to slip removed from floors or other treading surfaces? (1-4-3)	X		
Are operational working surfaces as level as practical and free of debris? (1-4-5)	X		
Has accumulated scrap, waste material or debris been removed? (1-4-8)	X		
Have flammable wastes, such as oily rags, been placed in suitable containers? (1-4-9)	X		
WORKING AREAS			
Are all places of employment clean, orderly, and in a sanitary condition? (2-2-2)	X		
Are floors free from protruding nails, splinters, holes, or loose boards? (2-2-5)	X	2-28 X	
Are permanent aisles marked in areas where mechanical handling equipment is used? (2-2-8)	X	2-28 X	
Are floor load plates installed in buildings used for storage? (2-2-10)	X		2-28 X
Does a 6½' vertical clearance exist in work areas, aisles, passageways and stairways? (2-2-20)	X	2-28 X	
Are means of access and egress free from slipping and tripping hazards, debris, obstructions and projections? (2-2-24)	X		
Is there sufficient illumination for safe access and egress? (2-2-24-d)	X	2-28 X	
Is not less than 3 ft. of clear space maintained in front of electrical panels? (2-2-25)	X		

TOLS001204

BZTO104(e)038025

WT

	Yes	No	N/A
Are aisles, passageways and walkways a minimum of 22" wide? (2-2-26)	X		
Are vehicle aisles and passageways at least 2' wider than the vehicles used? (2-2-27-a)	X		
		2-28	
RAILINGS			
✓ Are elevated walkways at least 22" wide and equipped with standard handrails? (2-2-28)	X	X	
Are fixed inclined walkways at least 22" wide, equipped with handrails, and inclined less than 24°? (2-2-29)	X		
Are inclined walkways coated with an anti-slip surface or cleats not more than 18" apart? (2-2-30)		X	
		2-28	
✓ Do all platforms over 4' high have standard railings and toeboards on all open sides except at stairway or fixed ladder entrances? (2-2-35)	X	X	
Do stairways conform to the following standard: (2-3-19)			2-28
Less than 44" wide:			
Both sides enclosed - handrail on right side decending?	X		X
One side open - stair rail on open side?	X		
Both sides open - stair rail on each side?	X		
Over 44" wide and less than 88" wide:			2-28
Handrail on each enclosed side and stair rail on each open side?	X		X
Over 88" wide:			2-28
Handrail on each enclosed side, stair rail on each open side and midway of width?	X		X
		2-28	
✓ Do standard railings have top rail 36" - 44" high and smooth surfaced, intermediate rail half way between top rail and floor, and no railing overhang at either end? (2-3-21)	X	X	
Are stair railings 30" - 34" high? (2-3-22)	X		
Are wood railings of 2" x 4" stock with posts spaced not to exceed 6'? (2-3-24)	X		

All tanks and walkways are being coated at this time.

WT

	Yes	No	N/A
Are structural steel railings, posts, and intermediate rails of 2" x 2" x 3/4" angles with posts spaced not to exceed 8 ft.? (2-3-26)	X		
Will top rail withstand a load of at least 200 lb. applied in any direction at any point? (2-3-27)	X		
Are handrails a minimum of 2" in diameter if wood, and a minimum of 1½" in diameter if metal pipe? (2-3-33)	X		
Do all handrails and railings have at least a 3" clearance from any other object? (2-3-35)	X		
FIXED INDUSTRIAL STAIRS			
Will fixed stairs carry a minimum concentrated load limit of 1000 lbs. safely? (2-4-5)	X		
Do stairways have a minimum width of 22"? (2-4-6)	X		
Are stairs installed at an angle of between 30° and 50°? (2-4-7)	X		
Are stair treads reasonably slip-resistant? (2-4-8)	X		
Are stairway platforms not less than the width of stairway and a minimum of 30" in length measured in the direction of travel? (2-4-12)	X	2-28 X	
Do fixed industrial stairs have a vertical clearance of 7'? (2-4-16)	X		
Do stairs having treads of less than 9" wide also have open risers? (2-4-17)	X		
Are open grating treads used for outside stairs? (2-4-18)		X	
PIERS AND WHARVES			
Are handholds provided on portable dockboards to permit safe handling? (2-5-4)	X		
Do open sides of piers and wharves more than 4' above the water have bull rail of not less than 6" x 6" timber on 3" blocking and standard handrails? (2-5-16)	X	2-28 X	
Are ladders provided from low water mark to dock floor for each 400 feet of wharf? (2-5-17)	X		2-28 X

TOLS001206

BZTO104(e)038027

WJ

	Yes	No	N/A
Are there an adequate number of 2A rated fire extinguishers for wood, cloth, paper and rubber fires in building areas? (3-2-19)	X		
Are there adequate number of 12B rated fire extinguishers available for flammable liquids, gases and grease fires in operational areas? (3-2-20)	X		
✓ Are the fire extinguishers inspected monthly to insure they are in their designated places and to detect any obvious physical damage? (3-2-36)	X	2-28 X	
Are fire extinguishers maintained at regular intervals not exceeding one year? (3-2-38)	X		
Are fire extinguishers, while being recharged, replaced by spare extinguishers during the period they are gone? (3-2-39)	X		
Does each fire extinguisher have a durable tag securely attached showing the maintenance or recharge date and the initials or signature of the person who performed the service? (3-2-41)	X		
Is each hose station equipped with an approved rack securely fastened in position? (3-3-10)		X	
Is approved hose valve provided at each outlet for attachment of hose? (3-3-11)	X	2-28 X	
Are nozzles provided for each hose not larger than ½"? (3-3-14)	X		
Is straightway check valve installed in each fire department connection as near as practicable to point where connection joins system? (3-3-25)	X		
Are hose connections equipped with standard caps, properly secured and easily removable? (3-3-27)	X	2-28 X	
Are hose connections identified by a sign having raised letters of at least 1" reading "STANDPIPE"? (3-3-30)		X	
Does sign on hose connection indicate portion of area served? (3-3-31)		X	
ELECTRICAL EQUIPMENT			
Are walkways or work spaces clear of any electrical cords? (4-2-6)	X		

	Yes	No	N/A
PIPING SYSTEMS			
Are all piping systems positively identified with name of contents? (5-5-5)		2-28 X	
Have all piping systems been color coded? (5-5-7)	X		
HAND HELD TOOLS			
Are tools being used for their intended purpose? (6-1-3)	X		
Have defective tools been removed from service? (6-1-5)	X		
When not in use, are tools put away to avoid a hazardous condition? (6-1-6)	X		
Are hand tools, used in an explosive or flammable atmosphere, of the spark resisting type? (6-2-6)	2-28 X	X	
Do flexible cords used outdoors have weather-resistant insulation and connection? (6-3-1C)	X		
Do workmen shut off compressed air before coupling or uncoupling air hoses? (6-3-14)	X		
Are workmen using compressed air for cleaning equipped with eye protection? (6-3-20)	X		
PERSONAL PROTECTIVE EQUIPMENT			
Is protective equipment maintained in a sanitary and reliable conditions? (7-1-8)	X		
Is there an inspection and maintenance system for personal protective equipment? (7-1-12)	X	2-28 X	
Has clothing that has been saturated with flammable liquids been properly cleaned before reuse? (7-2-4)	X		
Do hard hats meet ANSI Standard Z89.1-1969? (7-3-2)	X		
Is eye protection worn when there is a reasonable probability of injury that can be prevented by its use? (7-3-6)	X		
Do eye protectors meet the minimum requirements: adequate for danger, comfort, correct fit, no undue interference, durable, capable of being disinfected, easily cleaned, ease of repair? (7-3-8)	X		
Are ear protectors worn in applicable areas? (7-3-13)			X

BZTO104(e)038029

WT

	Yes	No	N/A
Is effective footwear worn where workmen are exposed to foot injury conditions? (7-5-1)	X	2-28 X	
Does safety-toe footwear meet ANSI Standard 41.1-1967? (7-5-3)	X	2-28 X	
Are gloves worn when appropriate? (7-5-5)	X		
Are employees provided with life jackets at all times while working on or over water? (7-7-1)	X		
Are life jackets USCG approved and listed in Pamphlet CG-190, Section 160.053? (7-7-3)	X		
Are ring buoys with at least 90 feet of line provided for emergency rescue operations? (7-7-5)	X		
Is safety skiff provided with good oars, with oarlocks securely fastened to gunwales, one boat hook and one life ring with not less than 90 feet of line attached? (7-7-7)	X	2-28 X	
VEHICLES			
Are all vehicles kept in safe operating condition? (8-1-8)	X		
Have vehicle operators been instructed to not stand or pass under an elevated portion of a vehicle whether loaded or empty? (8-1-18)	X		
Have employees been instructed to not remain or work under loads of materials being moved? (8-1-19)	X		
Do spotted railroad cars have their wheels blocked to prevent moving while being loaded? (8-1-27)	X		
Are bumper blocks provided on spur railroad tracks? (8-1-28)	X		
STORAGE AREAS			
Are bags and bundles stored in tiers, stacked, blocked, and limited in height to make them stable? (9-2-4)	X		
Are storage areas kept free from accumulated materials that constitute hazards from tripping, slipping, fire, explosion, or pest harborage, including control of vegetation? (9-2-6)	X		
Are aisles and passageways kept clear to provide for free and safe movement of material handling equipment and employees? (9-2-7)	X		

WT

	Yes	No	N/A
Is proper drainage provided? (9-2-8)	X		
Are all solvent waste, oily rags, and flammable liquids kept in fire resistant covered containers? (9-2-11)	X		
Are lights, fire control devices, aisles, exits, and electrical switch panels free of stored materials? (9-2-12)	X		
Are all material stacks placed on level and solid supports in order to be stable and self-supporting? (9-2-18)	X		
✓ Are there warning signs to indicate clearance limits? (9-3-4)		2-28 X	
MACHINES			
Are there one or more methods of machine guarding provided to protect the operator from such hazards as nip points, rotating or reciprocating parts, flying chips and sparks at the point of operation? (10-2-1)	X		
✓ Are fan blade guard openings no larger than ½" when fan is less than 7 feet above floor? (10-2-8)	3-29 X	2-28 X	
Are machines in fixed locations securely anchored to prevent walking or moving? (10-2-10)	X		
Before service, adjustment or cleanup, has the machine been locked out so that accidental restarting is impossible? (10-2-11)	X		
Are machines and other equipment stopped while being lubricated (unless moving parts are guarded not allowing access to moving parts)? (10-2-12)	X		
Are any pulleys less than 7' from the floor or working area guarded? (10-8-19)	X		
Are pulleys kept in proper alignment to keep belts from running off? (10-8-81)	X		
Are frequent inspections of belts made to insure they are in good repair? (10-8-86)	X		
DOCK CRANE			
Is clearly legible rating chart securely affixed to crane? (11-5-6)	X		

WT

	Yes	No	N/A
Are ladders stored in a horizontal position sufficiently supported to avoid sagging? (19-2-113)	X		
Are ladders carried on vehicles securely fastened in position to minimize chafing and road shock effect? (19-2-114)	X		2-28 X
Do the rungs of portable metal ladders have antiskid surfaces? (19-3-6)	X	2-28 X	
Do fixed ladders have a minimum concentrated live load capacity of 200 pounds? (19-4-1(a))	X		
Are rungs a minimum diameter of 3/4" for metal ladders and 1 1/8" for wood ladders? (19-4-3)	X		
Is distance between rungs and/or steps less than 12" and uniform throughout ladder length? (19-4-4)	X		
Is minimum clear length of rungs 16"? (19-4-5)	X		
Is distance from rung centerline to nearest object in back of ladder not less than 7"? (19-4-21)	X		
Are cages provided on ladders more than 20 feet in length? (19-4-29)		X	
Do cages extend a minimum of 42" above top of landing? (19-4-30)		2-28 X	
Do cages extend down ladder to a point not less than 7 feet nor more than 8 feet above ladder base? (19-4-31)	X		
Are all ladders maintained in a safe condition? (19-4-51)	2-28 X	X	
MACHINE GUARDING			
Do grinder guards cover spindle end, nut and flange projections? (20-2-2)	X		
Are work rests adjusted closely to the wheel with a maximum opening of 1/8"? (20-2-4)	X		
Is angular exposure of grinding wheel periphery less than 90°? (20-3-3)	X		
Are abrasive wheel flanges at least 1/3 the diameter of the wheel? (20-4-1)	X		

WT

	Yes	No	N/A
FLAMMABLE AND COMBUSTIBLE LIQUIDS			
Are storage tanks equipped with pressure vacuum venting devices? 22-055(c)(2)(iv)(f)	X		
Does each tank venting device have stamped on it the opening pressure, the pressure at which the valve reaches the full open position, and the flow capacity at the full open position, expressed in cubic feet per hour of air at 60°F and at a pressure of 14.7 p.s.i.a.? 22-055(c)(2)(v)(h)		X	
✓ Is a slope provided of not less than 1% away from the tank toward the drainage system? 22-055(c)(2)(vii)(b)(1)	3-29 X	2-28 X	
Do earthen walls 3 feet or more in height have a flat section at the top not less than 2 feet wide? 22-055(c)(2)(vii)(c)(3)			
Are loose combustible materials, empty or full drums or barrels prohibited from being within the diked area? 22-055(c)(2)(vii)(c)(6)	X		
✓ Is each diked area containing two or more tanks subdivided by intermediate curbs, not less than 18" in width, to prevent spills from endangering adjacent tanks within diked area? 22-055(c)(2)(vii)(c)(7)		2-28 X	
Are connections for all tank openings vaportight and liquid-tight? 22-055(c)(2)(viii)(a)	X		
Are external valves on tanks made of steel? 22-055(c)(2)(viii)(b)	X		
Are openings for gaging provided with a vaportight cap or cover? 22-055(c)(2)(viii)(d)	X		
Are vent pipes from underground storage tanks not less than 12 feet above ground level? 22-055(c)(3)(iv)(a)	X		
Are underground storage tank vent pipes not less than 1 1/4" inside diameter? 22-055(c)(3)(iv)(b)	X		
Are openings for manual gaging of underground storage tanks provided with liquidtight cap or cover? 22-055(c)(3)(v)(b)	X		
✓ Is piping system substantially supported and protected against excessive stresses from settlement, vibration, expansion, or contraction? 22-055(d)(4)	X	2-28 X	
Is storage area fenced and free of weeds, debris and other combustible material not necessary to the storage? 22-055(e)(6)(iv)	X		

WI

	Yes	No	N/A
SIGNS			
Are "DANGER" signs used only where an immediate hazard exists? (28-1-5)		X	
Are "CAUTION" signs used only to warn against potential hazards or to caution against unsafe practices? (28-1-8)		X	
Are "SAFETY" instruction signs used where there is a need for general instructions and suggestions relative to safety measures? (28-1-10)		X	
Are red, black, and white colors of opaque, glossy nature used for "DANGER" signs? (28-2-2)		X	
Do "CAUTION" signs have yellow background, black panel and yellow letters? (28-2-3)		X	
Do "SAFETY INSTRUCTION" signs have white background, green panel and white letters? (28-2-5)	X		
Do "DIRECTIONAL" signs have white background, black panel and white directional symbol? (28-2-6)		X	
Do "TRAFFIC" regulatory signs conform to paragraph 6B-5 through 6B-11 of Uniform Traffic Control Devices in ANSI Standard D6.1-1971? (28-2-7)		X	
Do "INFORMATIONAL" signs have white background, blue panel and white letters? (28-2-8)	X		
Is wording of any sign easily read and concise? (28-3-1)	X	2-28 X	
Are "Do Not Start" tags used on power equipment as a temporary means to warn of hazardous condition? (28-4-3-(a))	X		
Are "Defective Equipment" tags placed on damaged ladders and arrangements made for ladder repair or removal from workplace? (28-4-3-(b))	X		
Are employees instructed that "Danger" tags indicate immediate danger and that special precautions are necessary? (28-4-8)	X		
Are employees instructed that "Caution" tags indicate possible hazard against which proper precautions must be taken? (28-4-10)	X		
Are "Out of Order" tags used to indicate a piece of equipment is out of order and to attempt to use it might present a hazard? (28-4-11)	X		

Original to Portland Terminal file

MEMORANDUM

April 6, 1979

TO: Robert Abendroth — Seattle
Neil Gallagher — Portland
Newt Lesh — Portland
Jim Mason (info) — Seattle

FROM: John Denham — Seattle

SUBJECT: REPORT OF SAFETY INSPECTION AT THE PORTLAND TERMINAL

Attached is a list of items I noticed as needing correction during the annual inspection conducted March 26-30, 1979.

Recommend corrections be made.

JPD/sab

Attachment - as

TOLS001214

BZTO104(e)038035

4. Floor aisle markings nearly obliterated. Repainting needed.

5. Several lights out. Replacement needed.

6. Floor near PENTA operation and floor fan are caked with product. Steam cleaning needed.

7. Pump at new tank car unloading location has no cover over journal. Cover needed.

8. Metal siding on rear of building is damaged in two locations under windows. Repair needed.

9. Wood treating tanks are not diked. Dike needed.

10. Tanks are rusted, very dirty, and some bear indication of leaks. Maintenance, repair and painting needed.

E. BELL TERMINAL

1. Several blank flanges at pump manifold area do not have bolts in every hole. Bolts needed.

2. Main pipeline is not painted. Pipeline should be painted white.

3. Bolts missing from manholes on tanks 1506 and 1507. Maintenance needed.

4. Bottom of ladder damaged on tank 1507. Repair needed.

5. Several bolts are missing from coupling and reducer near open 6" valve north of tank 80408. Maintenance needed.

F. NORTHWEST TERMINAL

1. Several cargo hoses at southwest corner within diked area do not have ends blanked off. Installation of blanks needed.

2. Weeds growing along diked wall in southwest corner. Removal needed.

3. Dike at southwest corner needs attention in that it is wearing down and all out of shape. Maintenance needed.

4. "Reference Height" and "Fill To Height" are not marked on tanks. Marking needed.

5. Walkway atop tank 38017 is not treated with "Suretred" or equivalent. Maintenance needed.

6. "Suretred" appears to be wearing very, very thin on most tanks. Maintenance needed.

7. Bob, in gaugers equipment shack atop tank 9509, is badly worn and therefore cannot give accurate measurement. Replacement needed.

8. Dike crossover at north end of pumphouse does not have platform of 30" length in direction of travel. Replacement needed.

OREGON TERMINAL INSPECTION SHEET

The following references are to the Oregon Safety Code

ANSWER EACH QUESTION BY PLACING ✓ MARK IN APPROPRIATE BLOCK.	Yes	No	N/A
GENERAL			
Is a Safety Program being conducted? (1-2-17)	X		
Has each lost time injury been investigated and corrective action taken? (1-2-18)	X		
Are good housekeeping methods observed in all operations? (1-4-1)	X		
Are working and storage areas and passageways free of unnecessary obstructions? (1-4-2)	X		
Are all materials which might cause a workman to slip removed from floors or other treading surfaces? (1-4-3)	X		
Are operational working surfaces as level as practical and free of debris? (1-4-5)	X		
Has accumulated scrap, waste material or debris been removed? (1-4-8) (Yard area)		X	
Have flammable wastes, such as oily rags, been placed in suitable containers? (1-4-9) (TBA warehouse and shop)		X	
WORKING AREAS			
Are all places of employment clean, orderly, and in a sanitary condition? (2-2-2)	X		
Are floors free from protruding nails, splinters, holes, or loose boards? (2-2-5)	X		
Are permanent aisles marked in areas where mechanical handling equipment is used? (2-2-8) (TBA & wood treating warehouses)		X	
Are floor load plates installed in buildings used for storage? (2-2-10) (TBA & wood treating warehouses)		X	
Does a $6\frac{1}{2}$' vertical clearance exist in work areas, aisles, passageways and stairways? (2-2-20)	X		
Are means of access and egress free from slipping and tripping hazards, debris, obstructions and projections? (2-2-24)	X		
Is there sufficient illumination for safe access and egress? (2-2-24-d)	X		
Is not less than 3 ft. of clear space maintained in front of electrical panels? (2-2-25) (General maintenance warehouse)		X	

TOLS001216

BZTO104(e)038037

	Yes	No	N/A
Are aisles, passageways and walkways a minimum of 22" wide? (2-2-26)	X		
Are vehicle aisles and passageways at least 2' wider than the vehicles used? (2-2-27-a)	X		
RAILINGS			
Are elevated walkways at least 22" wide and equipped with standard handrails? (2-2-28)	X		
Are fixed inclined walkways at least 22" wide, equipped with handrails, and inclined less than 24°? (2-2-29) (TBA warehouse)		X	
Are inclined walkways coated with an anti-slip surface or cleats not more than 18" apart? (2-2-30) (TBA warehouse)		X	
Do all platforms over 4' high have standard railings and toeboards on all open sides except at stairway or fixed ladder entrances? (2-2-35) (Wood treating tanks)		X	
Do stairways conform to the following standard: (2-3-19)			
Less than 44" wide:			X
Both sides enclosed - handrail on right side decending?			
One side open - stair rail on open side?	X		
Both sides open - stair rail on each side?(Dike crossovers)		X	
Over 44" wide and less than 88" wide:			
Handrail on each enclosed side and stair rail on each open side?			X
Over 88" wide:			
Handrail on each enclosed side, stair rail on each open side and midway of width?			X
Do standard railings have top rail 36" - 44" high and smooth surfaced, intermediate rail half way between top rail and floor, and no railing overhang at either end? (2-3-21) (Dike crossovers)		X	
Are stair railings 30" - 34" high? (2-3-22) (TBA warehouse stairs)		X	
Are wood railings of 2" x 4" stock with posts spaced not to exceed 6'? (2-3-24) (Wharf railing)		X	

	Yes	No	N/A
Is ramp at dock end formed on hard ground and as smooth as possible? (2-5-32)	X		
Are intake pipelines blinded and valves closed and locked before workmen enter hazardous commodity area? (2-6-21)	X		
EGRESS			
Are building fire exits sufficient for prompt escape of occupants? (2-7-10)	X		
Do exits permit unobstructed egress? (2-7-14)	X		
Are fire exits always unlocked when building is occupied? (2-7-15)	X		
Are automatic sprinkler systems in proper operating condition? (2-7-26)			X
Are means of egress a minimum of 22" in width? (2-7-30)	X		
Do building doors swing with exit travel? (2-7-39)(Office)		X	
Are doors, stairs, passages, and other components of means of egress built and installed in a workmanlike manner? (2-7-63)	X		
Is a sign reading "Exit", with an arrow designating direction, placed in every location where direction of travel to nearest exit is not readily apparent? (2-7-80) (Office)		X	
Is illuminated surface of every exit sign of a value of not less than 5-foot candles? (2-7-81) (Office)		X	
Does every exit sign have the word "Exit" in letters not less than 6" high with stroke of letters not less than 3/4" wide? (2-7-83)	X		
FIRE EXTINGUISHERS			
Are portable fire extinguishers maintained in fully charged, operable condition and kept in their designated places at all times when not being used? (3-2-1)	X		
Are extinguishers conspicuously located, readily accessible and immediately available along normal paths of travel? (3-2-2)	X		
Are extinguishers under 40 lbs. weight installed so that top of extinguishers are less than 5 feet above floor? (3-2-6) (Wood treating and maintenance warehouses).		X	

	Yes	No	N/A
Is effective footwear worn where workmen are exposed to foot injury conditions? (7-5-1) (Dock)		X	
Does safety-toe footwear meet ANSI Standard 41.1-1967? (7-5-3)		X	
Are gloves worn when appropriate? (7-5-5)	X		
Are employees provided with life jackets at all times while working on or over water? (7-7-1)	X		
Are life jackets USCG approved and listed in Pamphlet CG-190, Section 160.053? (7-7-3)	X		
Are ring buoys with at least 90 feet of line provided for emergency rescue operations? (7-7-5)		X	
Is safety skiff provided with good oars, with oarlocks securely fastened to gunwales, one boat hook and one life ring with not less than 90 feet of line attached? (7-7-7)		X	
VEHICLES			
Are all vehicles kept in safe operating condition? (8-1-8) (Winch truck) (Fork lift)		X	
Have vehicle operators been instructed to not stand or pass under an elevated portion of a vehicle whether loaded or empty? (8-1-18)	X		
Have employees been instructed to not remain or work under loads of materials being moved? (8-1-19)	X		
Do spotted railroad cars have their wheels blocked to prevent moving while being loaded? (8-1-27)			X
Are bumper blocks provided on spur railroad tracks? (8-1-28)	X		
STORAGE AREAS			
Are bags and bundles stored in tiers, stacked, blocked, and limited in height to make them stable? (9-2-4)	X		
Are storage areas kept free from accumulated materials that constitute hazards from tripping, slipping, fire, explosion, or pest harborage, including control of vegetation? (9-2-6) (Fan & floor in wood treating warehouse)		X	
Are aisles and passageways kept clear to provide for free and safe movement of material handling equipment and employees? (9-2-7)	X		

X

PORTLAND

M E M O R A N D U M

October 2, 1980

TO: R.D. Abendroth — Seattle
Robert Abendroth — Seattle
Jim Mason (info) — Seattle

FROM: John Denham — Seattle

SUBJECT: INSPECTION OF PENTACLOROPHENOL OPERATION

I was advised today that one Janeen Robertson, an Industrial Hygienist from the Oregon State Accident Prevention Division (Portland) inspected subject operations on September 29-30, 1980. It is my understanding from Neil Gallagher that this inspection was triggered by other than company employees. Operational deficiencies noted were six in number and are to be listed in a letter supposedly forthcoming within the next two weeks. Deficiencies are:

a. Employees are not adequately informed of health hazards.

b. Employer must enforce wearing of safety garmets.

c. Label storage tanks with name of contents.

d. Put name (Mixed Aliphatic Ketones) of ingredients on WK60 solvent drums.

e. Change word on warning sign to read "Pentaclorophenol".

f. Revise cover on "eye wash" to provide accessibility.

Neil advises I am to receive copy of letter when received. Letter will probably stipulate a 7 or 14 day correction time being allotted for each deficiency dependent on severity.

Discussion of this subject with Neil indicates he has all the necessary capability to correct the deficiencies listed. I know of no further action that need be taken at this time.

JPD/mf

NOTICE OF CORRECTION

In the matter of the alleged violation of the Oregon Safe Employment Act by: Time Oil Co.

Employer ID .No. 521536-3-009

FALSIFICATION OF THIS CARD IS SUBJECT TO A PENALTY OF UP TO $1,000 (ORS 654.991(3))

I certify that the alleged violations described on Citation No. R0906-011-81 issued by the Workers' Compensation Department on November 17, 1980 have been corrected in full.

Signed N. P. Lick

Title V. Pres.

Dated 11/25/80

Form 808 Rev. 8/79

SP*62463-434

This correction notice must be received by the Workers' Compensation Department on or before: Date: DEC 3 1980

FROM:

John Hancock Patriot

U.S.Postage 10¢

WORKERS' COMPENSATION DEPARTMENT
ACCIDENT PREVENTION DIVISION
204 LABOR AND INDUSTRIES BUILDING
SALEM, OREGON 97310

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TOLS001221

BZTO104(e)038042

C T SYSTEM

C T Corporation System
The Corporation Trust Company
C T Law Technology, Inc.

SERVICE OF PROCESS TRANSMITTAL FORM

TO: Legal Dept.
Time Oil Co.
2737 West Commodore Way
Seattle, Wash. 98199
(Authorized Recipient)

TO: C T CORPORATION SYSTEM
(C T Office)
SEATTLE, WASH.
(City) (State)

FROM: C T CORPORATION SYSTEM
(Originating Agent)

Per O. H. YOUNG

NW
Portland, Oregon 97204
(City) (State)

DATE: 11/18/80 VIA: First Class Mail

VIA: [X] Certified First Class Mail
[ ] Messenger

RE: PROCESS SERVED IN OREGON
(Jurisdiction)

FOR TIME OIL CO. (Name of Company) WASH. (Domestic State)

ENCLOSED ARE COPIES OF LEGAL PROCESS RECEIVED BY THE STATUTORY AGENT OF THE ABOVE COMPANY AS FOLLOWS:

1. **TITLE OF ACTION:** In the Matter of the Alleged Violation of the Oregon Safe Employment Act.
By: TIME OIL CO.

2. **DOCUMENT(S):** Citation and Notice of Penalty and Exhibit "A" – Citation # R0906 011 81

3. **COURT:** Before the State of Oregon Workers' Compensation Dept.

4. **NATURE OF ACTION:** Alleges violations of above act. Date: 9/29/80
Place: 12005 N. BURGARD, PORTLAND, OREGON
Amount of Penalty: $45.00

5. **BY WHOM PROCESS WAS RECEIVED:** C T CORPORATION SYSTEM in Portland, Oregon via regular mail
on 11/18/80 postmarked: 11/17/80

6. **DATE AND HOUR OF SERVICE:** See above

7. **APPEARANCE OR ANSWER DUE:** ( ) Notice of Corrections Card Due:
(x) NONE

8. **PLAINTIFF'S ATTORNEY(S):** No Attorney

9. **REMARKS:**
CC; Legal Dept.
Time Oil Co., Suite 200
2737 Wilshire Blvd.
Los Angeles, Calif. 90036

TOLS001222

KINDLY ACKNOWLEDGE RECEIPT BY SIGNING
THE CARBON COPY AND RETURNING IT TO →

rec 11/21/80
RH

RECEIVED AND FORWARDED ON 11/20/80 (Date)

BY: C T CORPORATION SYSTEM

Per Thomas McDougal

THOMAS MCDOUGAL
1218 THIRD AVENUE
(Address)
SEATTLE, WASHINGTON 98101

CT 304B (Rev. A) - 200 - 9/80

BEFORE THE STATE OF OREGON WORKERS' COMPENSATION DEPARTMENT
ACCIDENT PREVENTION DIVISION
Labor and Industries Building
Salem, Oregon 97310

Regular mail
11-18-80

In the Matter of the Alleged Violation)
of the OREGON SAFE EMPLOYMENT ACT.)

CITATION AND NOTICE
OF PENALTY

By:
Tlegal Dept.
Time Oil Co.
2737 West Commodore Way
Seattle, Wash. 98199

To:
Hall Wallis, Assistant Manager
Time Oil Co.
PO Box 03117
St. Johns Station
Portland, OR 97203

Employer I.D. No.:
Citation No.: 521536-3-009
Date Issued: AC906-011-81
November 17, 1980

An inspection of a workplace under your ownership, operation or control located at or near
12005 N. Burgard, Portland, OR
and described as follows:
wholesale of petroleum products,
was conducted on
September 23, 1980.

On the basis of the inspection it is alleged that you have violated the Oregon Safe Employment Act, ORS Chapter 654, as alleged on the attached Exhibit "A" and incorporated herein by reference.

The penalty for all violations is:
$45.00.

THE LAW REQUIRES THAT A COPY OF THIS CITATION BE PROMPTLY POSTED IN A CONSPICUOUS MANNER ABOUT YOUR WORKPLACE AND IN A SUFFICIENT NUMBER OF PLACES TO INFORM YOUR WORKERS OF THE FACTS. IT SHALL BE PROMINENTLY POSTED FOR A PERIOD OF 3 DAYS OR UNTIL THE VIOLATION IS CORRECTED, WHICHEVER OCCURS LAST.

EMPLOYER: SEE REVERSE SIDE OF THIS FORM FOR RIGHTS AND RESPONSIBILITIES REGARDING THIS CITATION.

ACCIDENT PREVENTION DIVISION

Sanction Officer

L3866:lm
12/3/80

RIGHTS OF EMPLOYES

Any employe or representative of employes who belives that any period of time fixed in this Citation for the correction of alleged violations is unreasonable has the right to request a hearing by submitting a letter to the Workers' Compensation Board, Safety Hearings Supervisor, Hill Creek Office Park, 555 - 13th St. N.E., Salem, Oregon 97310, within 20 days of your employer's receipt of this Citation.

CC: Legal Dept.
Time Oil Co.
2737 Wilshire Blvd.
Los Angeles, Calif. 90036
11/20/80

cc:
C. T. Corporation System
Time Oil Co., Attn: John Denham, PO Box 24447, Terminal [illegible], WA 98124
1218 THIRD AVENUE
SEATTLE, WASHINGTON 98101

TOLS001223

nc 11/21/80
RH

BZTO104(e)038044

EMPLOYER'S RIGHT TO REQUEST AN EXTENSION OF COMPLIANCE TIME

If, for reasons beyond your control, you cannot correct an alleged violation before the date required, request an extension of time by writing to:

Workers' Compensation Department
ACCIDENT PREVENTION DIVISION
204 Labor and Industries Building
Salem, Oregon 97310

The request must specify the name and address of the employer, the location of the place of employment, the citation number, the item number(s) of the violation, facts which show that the employer has made an effort to correct the violation by the date set for correction, all available interim steps being taken to safeguard employes during the extended period and a statement that a copy of the request has been posted and, if appropriate, served on the authorized representative of the affected employes, and certification of the date upon which such posting or service was made. Failure to submit all of the required information may be grounds for denial of the request.

"NOTICE OF CORRECTION" CARD

The enclosed "Notice of Correction" card must be used to report correction of the alleged violation(s), and MUST be received by the Accident Prevention Division, Labor and Industries Building, Salem, Oregon 97310, by the date indicated on the front of the Citation. However, each alleged violation must be corrected by the date indicated on Exhibit "A" of the Citation. If a violation is appealed, the notice of correction card must be returned on all items that are not appealed along with a statement advising which items have been appealed. Failure to correct an alleged violation by the ordered date may result in an additional citation with penalties for each day the violation is uncorrected.

PAYMENT OF PENALTY

Payment of penalty is due 21 days after receipt of the Citation, unless the Citation is appealed. Payment should be made by check or money order, made payable to the Workers' Compensation Department, and sent with a copy of the "Payment of Penalty" form to:

Workers' Compensation Department
FISCAL SECTION
Labor and Industries Building
Salem, Oregon 97310

EMPLOYER'S APPEAL RIGHTS

If you wish to contest any violation, penalty, or correction date, you may appeal this Citation. Your appeal must be in writing, be signed, include your name, address, telephone number, citation number, date received, and specify each item contested, and reason for appeal. The appeal must be received by the Department within 20 days of your receipt of the Citation. If you do not appeal, this Citation becomes a final order of the Workers' Compensation Department. Send your appeal to:

Workers' Compensation Board
Safety Hearings Supervisor
Mill Creek Office Park
555 - 13th Street N. E.
Salem, Oregon 97310

If you have any questions regarding this Citation, please call your local Accident Prevention Division Office located in the following cities:

Portland West: 643-0110 Portland East: 239-8600 Salem: 378-3274
Eugene: 686-7562 Bend: 389-4545 Medford: 776-6030

EXHIBIT "A"

Employer Name: Time Oil Co.

Date Issued: November 17, 1980

Employer I.D. No.: 521536-1-005

Citation No.: R0906-011-01

Item No.	Standard Allegedly Violated OAR Chap. 437	Description of Alleged Violation	Date Correction Required	Penalty
1.	22-011(2)	Employes working in the pentachlorophenol mixing area were not adequately informed of the known health hazards associated with the material. Although the employes were familiar with the need for the provided personal protective equipment, they were not adequately informed as to the following: (a) Short term health effects. (b) Long term health effects. (c) Symptoms of over-exposure.	12-1-80	$10.00
2.	7-2-1	Employes were provided with but did not always wear clothing impermeable to pentachlorophenol, while working in the mixing area.	11-24-80	$10.00
3.	22-015(2)(b)	The following storage tanks, located behind the pentachlorophenol mixing area, were not labeled with information identifying their contents, the hazards presented by the contents and necessary handling precautions: (a) The Timbertox 40 concentrate tank which contains pentachlorophenol. (b) The Chevron 325 solvent tank which contains Napathlenes and paraffins. (c) The KB-3 tank which contains aliphatic ketones. (d) The B-11 tank. (e) The Dog Bottoms solvent tank which contains [illegible] high boilers.	11-24-80	NONE
4.	22-015(2)(a)	The warning labels on the 35 gallon drums of Kopper & Chemical Co. WK-60 solvent were inadequate in that the common chemical names of the hazardous components were not listed. WK-60 solvent contains aliphatic ketones.	11/20/80 11-24-80	NONE

Page ____ of ____ Pages

Total Penalty

1218 [illegible]
SEATTLE, WASHINGTON 98101

TOLS001225

436-1221 (Rev. 1/76)

BZTO104(e)038046

EXHIBIT "A"

Employer Name: Time Oil Co.

Date Issued: November 17, 1980

Employer I.D. No.: 521136-3[illegible]

Citation No.: R0506-011-81

Item No.	Standard Allegedly Violated OAR Chap. 437	Description of Alleged Violation	Date Correction Required	Penalty
3.	22-015(1)(a) XX	The warning sign for the pentachlorophenol area was inaccurate as the area was identified as a phenol exposure area. Phenol and pentachlorophenol are not the same chemical compound.	11-24-80	[illegible]
4.	22-060(12) 22-011(1)	The portable emergency eyewash located in the pentachlorophenol area was not immediately available for use. It was covered with plastic which was so securely taped that it was not easily removable.	11-24-80	$25.00

This citation contains those violations not requiring laboratory analysis. A second citation relating to this inspection may follow when the results of laboratory tests are completed.

cc: Legal Dept.
Time Oil Co., Suite 200
2737 Wilshire Blvd.
Los Angeles, Calif. 90057

TOLS001226

11/20/80

[illegible]
1216 THIRD AVENUE
SEATTLE, WASHINGTON 98101

Total Penalty $45.00

436-1221 (Rev. 1/76)

BZTO104(e)038047

BEFORE THE STATE OF OREGON WORKERS' COMPENSATION DEPARTMENT
ACCIDENT PREVENTION DIVISION
Labor and Industries Building
Salem, Oregon 97310

In the Matter of the Alleged Violation of the OREGON SAFE EMPLOYMENT ACT.
By: Time Oil Co.

CITATION AND NOTICE OF PENALTY

To:
Neil Willis, Assistant Manager
Time Oil Co.
PO Box 03117
St. Johns Station
Portland, OR 97203

Employer I.D. No.:
Citation No.: 521526-1-009
Date Issued: AC906-011-31
November 17, 1980

An inspection of a workplace under your ownership, operation or control located at or near
12005 N. Burgard, Portland, OR
and described as follows:
wholesale of petroleum products,
was conducted on
September 29, 1980.
On the basis of the inspection it is alleged that you have violated the Oregon Safe Employment Act, ORS Chapter 654, as alleged on the attached Exhibit "A" and incorporated herein by reference.

The penalty for all violations is:
$45.00.
THE LAW REQUIRES THAT A COPY OF THIS CITATION BE PROMPTLY POSTED IN A CONSPICUOUS MANNER ABOUT YOUR WORKPLACE AND IN A SUFFICIENT NUMBER OF PLACES TO INFORM YOUR WORKERS OF THE FACTS. IT SHALL BE PROMINENTLY POSTED FOR A PERIOD OF 3 DAYS OR UNTIL THE VIOLATION IS CORRECTED, WHICHEVER OCCURS LAST.

EMPLOYER: SEE REVERSE SIDE OF THIS FORM FOR RIGHTS AND RESPONSIBILITIES REGARDING THIS CITATION

ACCIDENT PREVENTION DIVISION

Sanction Officer

L3066:lm
12/3/80

RIGHTS OF EMPLOYES

Any employe or representative of employes who belives that any period of time fixed in this Citation for the correction of alleged violations is unreasonable has the right to request a hearing by submitting a letter to the Workers' Compensation Board, Safety Hearings Supervisor, Mill Creek Office Park, 555 - 13th St. N.E., Salem, Oregon 97310, within 20 days of your employer's receipt of this Citation.

cc:
C. T. Corporation System
Time Oil Co., Attn: John Bonham, PO Box 24447, Terminal Annex, Seattle, WA 98124

BZTO104(e)038048

EMPLOYER'S RIGHT TO REQUEST AN EXTENSION OF COMPLIANCE TIME

If, for reasons beyond your control, you cannot correct an alleged violation before the date required, request an extension of time by writing to:

Workers' Compensation Department
ACCIDENT PREVENTION DIVISION
204 Labor and Industries Building
Salem, Oregon 97310

The request must specify the name and address of the employer, the location of the place of employment, the citation number, the item number(s) of the violation, facts which show that the employer has made an effort to correct the violation by the date set for correction, all available interim steps being taken to safeguard employes during the extended period and a statement that a copy of the request has been posted and, if appropriate, served on the authorized representative of the affected employes, and certification of the date upon which such posting or service was made. Failure to submit all of the required information may be grounds for denial of the request.

"NOTICE OF CORRECTION" CARD

The enclosed "Notice of Correction" card must be used to report correction of the alleged violation(s), and MUST be received by the Accident Prevention Division, Labor and Industries Building, Salem, Oregon 97310, by the date indicated on the front of the Citation. However, each alleged violation must be corrected by the date indicated on Exhibit "A" of the Citation. If a violation is appealed, the notice of correction card must be returned on all items that are not appealed along with a statement advising which items have been appealed. Failure to correct an alleged violation by the ordered date may result in an additional citation with penalties for each day the violation is uncorrected.

PAYMENT OF PENALTY

Payment of penalty is due 21 days after receipt of the Citation, unless the Citation is appealed. Payment should be made by check or money order, made payable to the Workers' Compensation Department, and sent with a copy of the "Payment of Penalty" form to:

Workers' Compensation Department
FISCAL SECTION
Labor and Industries Building
Salem, Oregon 97310

EMPLOYER'S APPEAL RIGHTS

If you wish to contest any violation, penalty, or correction date, you may appeal this Citation. Your appeal must be in writing, be signed, include your name, address, telephone number, citation number, date received, and specify each item contested, and reason for appeal. The appeal must be received by the Department within 20 days of your receipt of the Citation. If you do not appeal, this Citation becomes a final order of the Workers' Compensation Department. Send your appeal to:

Workers' Compensation Board
Safety Hearings Supervisor
Mill Creek Office Park
555 - 13th Street N. E.
Salem, Oregon 97310

If you have any questions regarding this Citation, please call your local Accident Prevention Division Office located in the following cities:

Portland West: 643-0110 Portland East: 239-8600 Salem: 378-3274
Eugene: 686-7562 Bend: 389-4545 Medford: 776-6030

EXHIBIT "A"

Employer Name: Time Oil Co.

Employer I.D. No.: 521536-3-009

Date Issued: November 17, 1980

Citation No.: 80906-011-81

Item No.	Standard Allegedly Violated OAR Chap. 437	Description of Alleged Violation	Date Correction Required	Penalty
1.	22-011(2)	Employee working in the pentachlorophenol mixing area were not adequately informed of the known health hazards associated with the material. Although the employee were familiar with the need for the provided personal protective equipment, they were not adequately informed as to the following: (a) Short term health effects. (b) Long term health effects. (c) Symptoms of over-exposure.	12-1-80	$10.00
2.	7-2-1	Employee were provided with but did not always wear clothing impermeable to pentachlorophenol, while working in the mixing area.	11-24-80	$10.00
3.	22-015(2)(b)	The following storage tanks, located behind the pentachlorophenol mixing area, were not labeled with information identifying their contents, the hazards presented by the contents and necessary handling precautions: (a) The Timberton 40 concentrate tank which contains pentachlorophenol. (b) The Chevron 325 solvent tank which contains naphthalene and paraffins. (c) The MB-3 tank which contains aliphatic ketones. (d) The 5-11 tank. (e) The Exx Bottoms solvent tank which contains Exx alcohol high boilers.	11-24-80	NONE
4.	22-015(2)(a)	The warning labels on the 55 gallon drums of Koppers's Chemical Co. MK-60 solvent were inadequate in that the common chemical names of the hazardous components were not listed. MK-60 solvent contains aliphatic ketones.	11-24-80	NONE

Page ___ of ___ Pages

Total Penalty

436-1221 (Rev. 1/76)

TOLS001229

BZTO104(e)038050

EXHIBIT "A"

Employer Name: Time Oil Co.

Employer I.D. No.: 521536-3-009

Date Issued: November 17, 1980

Citation No.: 80586-011-81

Item No.	Standard Allegedly Violated OAR Chap. 437	Description of Alleged Violation /436	Date Correction Required	Penalty
5.	22-015(1)(a)	The warning sign for the pentachlorophenol area was inaccurate as the area was identified as a phenol exposure area. Phenol and pentachlorophenol are not the same chemical compound.	11-24-80	NONE
6.	22-045(12) 22-011(1)	The portable emergency eyewash located in the pentachlorophenol area was not immediately available for use. It was covered with plastic which was so securely taped that it was not easily removable.	11-24-80	$35.00
		This citation contains those violations not requiring laboratory analysis. A second citation relating to this inspection may follow when the results of laboratory tests are completed.		
			Total Penalty	$45.00

Page 2 of 3 Pages

436-1221 (Rev. 1/76)

TOLS001230

BZTO104(e)038051

TIME OIL CO.
SEATTLE, WASHINGTON

CHECK REQUEST

DATE: November 21, 1980

ISSUE CHECK TO COVER THE FOLLOWING:

PAYEE: Workers' Compensation Department $ $45.00
FISCAL SECTION

ADDRESS: Labor and Industries Building
Salem, Oregon 97310

REASON FOR PAYMENT:

Penalty for violations
12005 N. Burgard, Portland, OR
Sept. 23, 1980

REQUESTED BY: John L. Denham CHARGE ACCOUNT NO.

PAYMENT SCHEDULE

TODAY (or) ☐

SPECIFY DATE 11/26/80 ☐

CHECK #

VOUCHER #

APPROVED

PLEASE RETURN CHECK TO MARILEE FREDERICKSEN FOR MAILING.

TOLS001231

BZTO104(e)038052

TIME OIL CO.

P.O. BOX 24447 TERMINAL ANNEX SEATTLE, WASHINGTON 98124

PAY TO THE ORDER OF

11-21-80

AMOUNT

$ *45.00*

WORKERS' COMPENSATION DEPT.
FISCAL SECTION
LABOR AND INDUSTRIES BLDG.
SALEM, OREGON 97310

BY _____

BY _____

TWO SIGNATURES REQUIRED

⑈125104483⑈ 60 981 159⑈

TIME OIL CO. 29209

INVOICE	REFERENCE NO.	AMOUNT	INVOICE	REFERENCE NO.	AMOUNT
	PENALTY FOR VIOLATIONS 12005 N. BURGARD, PORTLAND, OR. SEPT. 23, 1980				

CHECK DATE	11-21-80	DISCOUNT	
CHECK NO.	29209	TOTAL	$45.00

WHEN DETACHED AND PAID THIS CHECK BECOMES A RECEIPT IN FULL PAYMENT OF THE ITEMIZED ACCOUNT

TOLS001232

BZTO104(e)038053

M E M O R A N D U M

August 27,1981

TO: R.D. Abendroth Seattle

FROM: John Denham Seattle

SUBJECT: WOOD TREATING (KOPPERS COMPANY)

Reference last sentence of my August 17,1981 memo, copy attached.

My August 21,1981 inspection of this operation revealed the following deficiencies:

A. TANK FARM OUTSIDE WAREHOUSE

1. Tanks 20001 and 13001 are too close to warehouse. (relocation needed to distance at least five feet from building)

2. Tanks are rusted in many places. (cleaning and painting white needed)

3. No stairways, railings or walkways exist on horizontal tanks 3010, 6008, 8005, 8006 and 8007. (installation needed)

4. No ladder cages exist on tanks 20002, 20003, and 38009. Walkways and railings are damaged, missing or improper. (installation needed)

5. Several heating coils in 1400 gallon heating tank under platform do not work. (replacement needed)

6. Deck atop 1400 gallon heating tank is damaged, unsafe to walk on and permits vapors from this volatile mixture to readily escape into working area. (new metal deck needed)

7. No suction pipelines or manifold exist at rail car siding for unloading purposes. (installation needed)

8. No manifold system exists on incoming product lines for receipt, blending or storage purposes. (manifold needed)

9. Valves on tanks and lines are not maintained at all. (repair and testing or replacement needed)

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TOLS001233

BZTO104(e)038054

10. Valves, lines, pumps, hoses and tanks (in some places) are thickly covered with product. (steam cleaning badly needed)

11. Several valves in system are not chained and locked. (installation needed)

12. Valve at end of isolated line to tank 38009 is leaking product onto ground. (replacement valve needed)

13. Pipeline supports are improper and inadequate. (replacement needed)

14. Pipelines are not painted or identified as to product content. (maintenance needed)

15. Product identification is not on all tanks. (signs needed)

16. Ground area at end of pipelines is saturated with product about four inches deep. (dirt removal and replacement needed)

17. Pump journal cover is not secured to pump. (four sheetmetal screws needed)

18. Cargo hoses are not marked or recorded to show condition, manufacturer, dates inspected or pressure tested. Some are damaged. (repair and recording needed)

19. Weeds are prevalent in quantity within diked compound. Good fire hazard. (weed removal needed)

20. Rail car siding wheel bumpers are not fastened to track. (repair needed)

21. Fire extinguisher on platform by 1400 gallon heating tank is not tagged, has not been inspected for operational capability and is fixed so it can not work, even if needed. (replacement system needed)

22. No spill control system exists at rail car rack or within diked area. One was recommended in 1975, copy attached, but apparently not approved by management. (installation needed)

B. INSIDE WAREHOUSE

1. Operation is not isolated. Fumes generated during process can readily enter lube oil warehousing area and overcome any individual not wearing appropriate respiratory equipment. (wall needed in warehouse to isolate operation)

2. Ventilation inadequate even with doors open. (installatio of three - four foot sucker fans needed - one in south wall, one in east wall and one over 1400 gallon heating tank)

3. No spill control system exists in building. Now liquid can run all over area and out of doors at will. (floor sloping and drain installation needed)

4. Four ceiling joists are damaged severely from fork lift operation. (repair and/or replacement beams needed)

5. No clearance signs exist on beams to alert fork lift operators. (signs needed)

6. Lighting is inadequate for the work. Several bulbs are out but even with all lights on, only one candle power was recorded during middle of the day bright daylight. (additional lighting to a minimum of five foot candles needed. An assist to this would be to paint ceiling white)

7. Work area is caked with product and very very dirty. (steam cleaning needed badly)

8. Small floor fan thickly covered with product. Fire hazard. (cleaning needed)

9. No emergency deluge shower exists. Material handled can be injurious. (shower would help. Eyewash should be included on such a permanent hookup)

Nearly all of these deficiencies have been reported previously.

JPD/mm

Attachments

M E M O R A N D U M

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FROM: John Denham Seattle

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TOLS001237

BZTO104(e)038058

2. Ventilation inadequate even with doors open. (installation of three - four foot sucker fans needed - one in south wall, one in east wall and one over 1400 gallon heating tank)

3. No spill control system exists in building. Now liquid can run all over area and out of doors at will. (floor sloping and drain installation needed)

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Nearly all of these deficiencies have been reported previously.

JPD/mm

Attachments

TOLS001238

BZTO104(e)038059

M E M O R A N D U M

March 19, 1982

TO: Neil Wallis Portland

FROM: John Denham Seattle

SUBJECT: WOODTREATING OPERATION PERSONNEL REQUIREMENTS

The following is furnished in response to your question yesterday "Can you provide data showing requirement for two men on the job?"

Pentachlorophenol has toxic properties per extract from "Chemical Hazards of the Workplace" (encl. 1), "Occupational Health Guideline for Pentachlorophenol" (encl. 2) and the "Woodtreating Chemicals" book from Koppers Co., a copy of which is on file at your location.

The need for respirator use is repeated throughout the Koppers Co. book and is included in the Oregon State Accident Prevention Division inspection conducted October 13, 1977 (encl. 3).

OAR 437-22-069(4)(e)(3)(i) (encl. 4) states that where respirator wearer could be overcome by a toxic atmosphere, at least one additional man shall be present and that visual, voice or signal line communication shall be maintained between both individuals present.

In my opinion, above data fits the conditions under which two men are required on the job.

Encl. a/s

JPD/jam

Chemical Hazards of the Workplace

Nick H. Proctor, Ph.D.
Toxicologist
Kaiser Aluminum and Chemical Corporation
Oakland, California

James P. Hughes, M.D.
Medical Director
Kaiser Aluminum and Chemical Corporation
Oakland, California

J. B. Lippincott Company
Philadelphia *Toronto*

ENCL. 1

TOLS001240

BZTO104(e)038061

physical examination with emphasis on the liver and skin; liver function tests.

References

Principal

1. Kleinfeld, M., Messite, J., and Swencicki, R.: Clinical effects of chlorinated naphthalene exposure. J. Occup. Med., *14*:377, 1972.
2. Greenburg, L., Mayers, M. R., and Smith, A. R.: The systemic effects resulting from exposure to certain chlorinated hydrocarbons. J. Ind. Hyg. Toxicol., *21*:29, 1939.
3. Hygienic Guide Series: Chloronaphthalenes. Am. Ind. Hyg. Assoc. J., *27*:89, 1966.

Supplemental

4. Irish, D. D.: Cyclic halogenated hydrocarbons. *In* Fassett, D. W., and Irish, D. D.(eds.): Toxicology, vol. 2. *In* Patty, F. A. (ed.): Industrial Hygiene and Toxicology. ed. 2, pp. 1343–1345, 2251–2252. New York: Interscience, 1963.
5. A.C.G.I.H.: Pentachloronaphthalene. Documentation of the TLVs for Substances in Workroom Air. ed. 3, p. 198. Cincinnati, 1976.
6. von Oettingen, W. F.: The Halogenated Aliphatic, Olefinic, Cyclic, Aromatic, and Aliphatic Aromatic Hydrocarbons, Including the Halogenated Insecticides, Their Toxicity and Potential Dangers. U.S. Public Health Service Publication No. 414, pp. 311–313. Washington, D.C.: U.S. Government Printing Office, 1955.

PENTACHLOROPHENOL

C_6Cl_5OH 1977 TLV 0.5 mg/m³

Synonyms: Penta; PCP; penchlorol; Satophen 20

Physical Form: Solid

Uses: Insecticide for termite control; preharvest defoliant; general herbicide; preservation of wood products, dextrins, starches

Exposure: Inhalation; skin absorption

Toxicology: Pentachlorophenol causes irritation of the eyes and upper respiratory tract; absorption results in an increase in metabolic rate and hyperpyrexia; prolonged skin exposure causes an acneform dermatitis.

Human exposure to dust or mist concentrations greater than 1 mg/m³ causes pain in the nose and throat, violent sneezing, and cough; 0.3 mg/m³ may cause some nose irritation; persons acclimated to pentachlorophenol can tolerate concentrations up to 2.4 mg/m³.[1,2] Pentachlorophenol readily penetrates the skin; systemic intoxication is cumulative and has been fatal.[2,3] Intoxication is characterized by weakness, anorexia, weight loss, and profuse sweating; there also may be headache, dizziness, nausea, vomiting, dyspnea, and chest pain.[1,4] In fatal cases, the body temperature is frequently extremely high, and death has occurred as early as three hours after the onset of symptoms.[3] The risk of serious intoxication is increased during hot weather.[4]

Prolonged exposure of workers has caused an acneform dermatitis; ten workers engaged in production of pentachlorophenol for five to ten months developed a widely disseminated skin eruption characterized by small and large furuncles, brown pigmentation, and some cicatrization; seven workers also developed severe bronchitis; all but one worker still showed signs of extensive acne more than a year after cessation of exposure, and four still complained of bronchitis.[5] On the skin, solutions of pentachlorophenol as dilute as 1 per cent may cause irritation if contact is repeated or prolonged.

The TLV was set at a level to prevent systemic toxicity.

Diagnosis: Signs and symptoms include irritation of eyes, nose, and throat with violent sneezing, cough; weakness; anorexia, weight loss; profuse sweating, high fever; dizziness, nausea, vomiting; dyspnea, chest pain; acneform or contact dermatitis.

Differential Diagnosis: Differentiate from other causes of conjunctivitis and mucous membrane irritation, such as viral infection of the upper respiratory tract and allergies.

Differentiate hyperpyrexia due to pentachlorophenol from heat stroke (hot, dry skin) and heat exhaustion (rectal temperature slightly elevated).

Differentiate chloracne from acne vulgaris. Acne vulgaris is usually transient and affects mostly the face, back, and chest. It is charac-

TOLS001241

BZTO104(e)038062

terized by oily skin, inflamed comedones, and cysts containing sebaceous matter and inflammatory exudate. There are no significant systemic effects.

Chloracne is usually persistent and affects the face, ears, neck, shoulders, arms, chest, and abdomen (especially around the umbilicus and on the scrotum). The skin is frequently dry with intense pruritis, noninflammatory comedones, and cysts containing sebaceous matter and keratin.

Special Tests: The analysis of urine for pentachlorophenol may be helpful in estimating the extent of absorption: rectal temperature may be markedly elevated.

Treatment: Institute appropriate procedures, such as removal from exposure and immediate flushing of eyes and skin with water. Treat with ice bath to reduce fever, administer oxygen, and infuse isotonic saline to replace fluid and electrolytes lost by sweating. If dermatitis occurs, see section in Chapter 5 on Treatment of Contact Dermatitis. If chloracne occurs, comedones should be expressed and cysts incised and drained. In severe cases, antibiotics may be indicated.

Medical Control: Preplacement and annual physical examination with emphasis on the cardiovascular system, eyes, upper respiratory tract, liver, kidneys and skin.

References

1. Hygienic Guide Series: Pentachlorophenol and sodium pentachlorophenate. Am. Ind. Hyg. Assoc. J., *31*:521, 1970.
2. A.C.G.I.H.: Pentachlorophenol. Documentation of the TLVs for Substances in Workroom Air, ed. 3, pp. 198–199. Cincinnati, 1976.
3. Hayes, W. J., Jr.: Clinical Handbook on Economic Poisons. Emergency Information for Treating Poisoning. U.S. Public Health Service Publication No. 476, pp. 97–100. Washington, D.C.: U.S. Government Printing Office, 1963.
4. Bergner, H., Constantinidis, P., and Martin, J. H.: Industrial pentachlorophenol poisoning in Winnipeg. Can. Med. Assoc. J., *92*:448, 1965.
5. Baader, E. W. and Bauer, H. J.: Industrial intoxication due to pentachlorophenol. Ind. Med. Surg., *20*:286, 1951.

TOLS001242

BZTO104(e)038063

Occupational Health Guideline for Pentachlorophenol

INTRODUCTION

This guideline is intended as a source of information for employees, employers, physicians, industrial hygienists, and other occupational health professionals who may have a need for such information. It does not attempt to present all data; rather, it presents pertinent information and data in summary form.

SUBSTANCE IDENTIFICATION

- Formula: C_6Cl_5OH
- Synonyms: PCP; penta
- Appearance and odor: Light brown solid with a pungent odor when hot.

PERMISSIBLE EXPOSURE LIMIT (PEL)

The current OSHA standard for pentachlorophenol is 0.5 milligram of pentachlorophenol per cubic meter of air (mg/m^3) averaged over an eight-hour work shift.

HEALTH HAZARD INFORMATION

- **Routes of exposure**

Pentachlorophenol can affect the body if it is inhaled, if it comes in contact with the eyes or skin, or if it is swallowed. It may enter the body through the skin.

- **Effects of overexposure**

Exposure to pentachlorophenol may cause irritation of the eyes and respiratory tract. Bronchitis has been reported to occur. Systemic effects from either a large exposure or repeated smaller exposures include weakness, loss of appetite, nausea, vomiting, shortness of breath, chest pain, excessive sweating, headache, and dizziness. In fatal cases the temperature is often very high and death may occur as early as three hours after the onset of symptoms. The risk of serious intoxication is greater in hot weather. Persons with decreased liver or kidney functions are more susceptible to poisoning from this chemical. Repeated exposure to pentachlorophenol may cause an acne-like skin rash and liver damage. Commercial pentachlorophenol may be contaminated with dioxin compounds which are much more toxic than pentachlorophenol.

- **Reporting signs and symptoms:**

A physician should be contacted if anyone develops any signs or symptoms and suspects that they are caused by exposure to pentachlorophenol.

- **Recommended medical surveillance**

The following medical procedures should be made available to each employee who is exposed to pentachlorophenol at potentially hazardous levels:

1. Initial Medical Examination:

—A complete history and physical examination: The purpose is to detect pre-existing conditions that might place the exposed employee at increased risk, and to establish a baseline for future health monitoring. Examination of the cardiovascular system, eyes, upper respiratory tract, liver, and kidneys should be stressed. The skin should be examined for evidence of chronic disorders. Analysis of the urine for pentachlorophenol may be helpful in estimating the extent of absorption.

2. Periodic Medical Examination: The aforementioned medical examinations should be repeated on an annual basis.

- **Summary of toxicology**

Pentachlorophenol dust and mist cause irritation of the eyes and upper respiratory tract; absorption results in an increase in metabolic rate and hyperpyrexia; prolonged skin exposure causes an acneform dermatitis. Human exposure to dust or mist concentrations greater than 1 mg/m^3 causes pain in the nose and throat, violent sneezing, and cough; 0.3 mg/m^3 may cause some nose irritation; persons acclimated to pentachlorophenol can tolerate concentrations up to 2.4 mg/m^3. Pentachlorophenol readily penetrates the skin; systemic intoxication is cumulative and has been fatal. Intoxication is characterized by weakness, anorexia, weight loss, and profuse sweating; there also may be headache, dizziness, nausea, vomiting, dyspnea, and chest pain. In fatal cases, the body temperature is frequently extremely high and

These recommendations reflect good industrial hygiene and medical surveillance practices and their implementation will assist in achieving an effective occupational health program. However, they may not be sufficient to achieve compliance with all requirements of OSHA regulations.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service Centers for Disease Control
National Institute for Occupational Safety and Health

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

ENCL. 2

TOLS001243

BZTO104(e)038064

death has occurred as early as 3 hours after the onset of symptoms. The risk of serious intoxication is increased during hot weather; persons with impaired liver or kidney function are more susceptible to the effects of pentachlorophenol. The dust, mist, and vapor cause eye irritation. Prolonged exposure of workers has caused an acneform dermatitis; 10 workers engaged in production of pentachlorophenol for 5 to 10 months developed a widely disseminated skin eruption characterized by small and large furuncles, brown pigmentation, and some cicatrization; 7 workers also developed severe bronchitis; all but 1 worker still showed signs of extensive acne more than a year after cessation of exposure, and 4 still complained of bronchitis. On the skin, solutions of pentachlorophenol as dilute as 1% may cause irritation if contact is repeated or prolonged.

CHEMICAL AND PHYSICAL PROPERTIES

- Physical data
  1. Molecular weight: 266.3
  2. Boiling point (760 mm Hg): 311 C (592 F) (decomposes)
  3. Specific gravity (water = 1): 2.0
  4. Vapor density (air = 1 at boiling point of pentachlorophenol): Not applicable
  5. Melting point: 182–190 C (360–374 F)
  6. Vapor pressure at 20 C (68 F): 0.00017 mm Hg
  7. Solubility in water, g/100 g water at 20 C (68 F): 0.002
  8. Evaporation rate (butyl acetate = 1): Not applicable
- Reactivity
  1. Conditions contributing to instability: None.
  2. Incompatibilities: Contact with strong oxidizers may cause fires and explosions.
  3. Hazardous decomposition products: Toxic gases and vapors (such as hydrogen chloride, chlorinated phenols, and carbon monoxide) may be released when pentachlorophenol decomposes.
  4. Special precautions: None.
- Flammability
  1. Not combustible
- Warning properties
  1. Odor Threshold: The AIHA *Hygienic Guide* states that pentachlorophenol has a characteristic odor. No quantitative information is available, however, concerning the odor threshold of this substance.
  2. Irritation Levels: The *Documentation of TLV's* states that "dusts are particularly irritating to the eyes and nose, in concentrations appreciably greater than 1 mg/m^3, but some irritation of the nose may occur at 0.3 mg/m^3. Hardened workers can tolerate up to 2.4 mg/m^3."
  3. Evaluation of Warning Properties: Through its irritant effects, pentachlorophenol can be detected within three times of the permissible exposure limit. For the purposes of this guideline, therefore, pentachlorophenol is treated as a material with good warning properties.

MONITORING AND MEASUREMENT PROCEDURES

- General

Measurements to determine employee exposure are best taken so that the average eight-hour exposure is based on a single eight-hour sample or on two four-hour samples. Several short-time interval samples (up to 30 minutes) may also be used to determine the average exposure level. Air samples should be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee).

- Method

An analytical method for pentachlorophenol is in the *NIOSH Manual of Analytical Methods*, 2nd Ed., Vol. 4, 1978, available from the Government Printing Office, Washington, D.C. 20402 (GPO No. 017-033-00317-5).

- Gleason, M. N., Gosselin, R. E., Hodge, H. C., and Smith, R. P.: *Clinical Toxicology of Commercial Products* (3rd ed.), Williams and Wilkins, Baltimore, 1969.

RESPIRATORS

- Good industrial hygiene practices recommend that engineering controls be used to reduce environmental concentrations to the permissible exposure level. However, there are some exceptions where respirators may be used to control exposure. Respirators may be used when engineering and work practice controls are not technically feasible, when such controls are in the process of being installed, or when they fail and need to be supplemented. Respirators may also be used for operations which require entry into tanks or closed vessels, and in emergency situations. If the use of respirators is necessary, the only respirators permitted are those that have been approved by the Mine Safety and Health Administration (formerly Mining Enforcement and Safety Administration) or by the National Institute for Occupational Safety and Health.
- In addition to respirator selection, a complete respiratory protection program should be instituted which includes regular training, maintenance, inspection, cleaning, and evaluation.

PERSONAL PROTECTIVE EQUIPMENT

- Employees should be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum), and other appropriate protective clothing necessary to prevent any possibility of skin contact with pentachlorophenol or liquids containing pentachlorophenol.
- If employees' clothing has had any possibility of being contaminated with pentachlorophenol or liquids containing pentachlorophenol, employees should change into uncontaminated clothing before leaving the work premises.

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• Clothing which has had any possibility of being contaminated with pentachlorophenol should be placed in closed containers for storage until it can be discarded or until provision is made for the removal of pentachlorophenol from the clothing. If the clothing is to be laundered or otherwise cleaned to remove the pentachlorophenol, the person performing the operation should be informed of pentachlorophenol's hazardous properties.

• Where there is any possibility of exposure of an employee's body to pentachlorophenol or liquids containing pentachlorophenol, facilities for quick drenching of the body should be provided within the immediate work area for emergency use.

• Non-impervious clothing which becomes contaminated with pentachlorophenol should be removed immediately and not reworn until the pentachlorophenol is removed from the clothing.

• Employees should be provided with and required to use dust- and splash-proof safety goggles where there is any possibility of pentachlorophenol or liquids containing pentachlorophenol contacting the eyes.

• Where there is any possibility that employees' eyes may be exposed to pentachlorophenol or liquids containing pentachlorophenol, an eye-wash fountain should be provided within the immediate work area for emergency use.

SANITATION

• Skin that becomes contaminated with pentachlorophenol should be immediately washed or showered with soap or mild detergent and water to remove any pentachlorophenol.

• Workers subject to skin contact with pentachlorophenol or liquids containing pentachlorophenol should wash with soap or mild detergent and water any areas of the body which may have contacted pentachlorophenol at the end of each work day.

• Eating and smoking should not be permitted in areas where pentachlorophenol or liquids containing pentachlorophenol are handled, processed, or stored.

• Employees who handle pentachlorophenol or liquids containing pentachlorophenol should wash their hands thoroughly with soap or mild detergent and water before eating, smoking, or using toilet facilities.

COMMON OPERATIONS AND CONTROLS

The following list includes some common operations in which exposure to pentachlorophenol may occur and control methods which may be effective in each case:

Operation	Controls
Formulation of preservatives, pesticides, and fungicides	Process enclosure; local exhaust ventilation; personal protective equipment
Application as a preservative for wood, starch, paint, adhesives, leather, latex, and oils; use in slime-algae control; use as a pesticide, herbicide, and snail control agent	Personal protective equipment
Manufacture of pentachlorophenol	Process enclosure; local exhaust ventilation; personal protective equipment

EMERGENCY FIRST AID PROCEDURES

In the event of an emergency, institute first aid procedures and send for first aid or medical assistance.

• **Eye Exposure**

If pentachlorophenol or liquids containing pentachlorophenol get into the eyes, wash eyes immediately with large amounts of water, lifting the lower and upper lids occasionally. Get medical attention immediately. Contact lenses should not be worn when working with this chemical.

• **Skin Exposure**

If pentachlorophenol or liquids containing pentachlorophenol get on the skin, immediately wash the contaminated skin using soap or mild detergent and water. If pentachlorophenol or liquids containing pentachlorophenol penetrate through the clothing, remove the clothing immediately and wash the skin using soap or mild detergent and water. If irritation is present after washing, get medical attention.

• **Breathing**

If a person breathes in large amounts of pentachlorophenol, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.

• **Swallowing**

When pentachlorophenol or liquids containing pentachlorophenol have been swallowed and the person is conscious, give the person large quantities of water immediately. After the water has been swallowed, try to get the person to vomit by having him touch the back of his throat with his finger. Do not make an unconscious person vomit. Get medical attention immediately.

• **Rescue**

Move the affected person from the hazardous exposure. If the exposed person has been overcome, notify someone else and put into effect the established emergency

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rescue procedures. Do not become a casualty. Understand the facility's emergency rescue procedures and know the locations of rescue equipment before the need arises.

SPILL AND DISPOSAL PROCEDURES

- Persons not wearing protective equipment and clothing should be restricted from areas of spills until cleanup has been completed.
- If pentachlorophenol is spilled, the following steps should be taken:

1. Ventilate area of spill.
2. Collect spilled material in the most convenient and safe manner and depost in sealed containers for reclamation or for disposal in a secured sanitary landfill. Liquid containing pentachlorophenol should be absorbed in vermiculite, dry sand, earth, or a similar material.

- Waste disposal method:

Pentachlorophenol may be disposed of in sealed containers in a secured sanitary landfill.

REFERENCES

- American Conference of Governmental Industrial Hygienists: "Pentachlorophenol," *Documentation of the Threshold Limit Values for Substances in Workroom Air* (3rd ed., 2nd printing), Cincinnati, 1974.
- American Industrial Hygiene Association: "Pentachlorophenol and Sodium Pentachlorophenate," *Hygienic GuideSeries*, Detroit, Michigan, 1970.
- Baader, E. W., and Bauer, H. J.: "Industrial Intoxication Due to Pentachlorophenol," *Industrial Medicine and Surgery*, 20:286-290, 1951.
- Bergner, H., et al.: "Industrial Pentachlorophenol Poisoning in Winnipeg," *Canadian Medical Association Journal*, 92:448-451, 1965.
- Christensen, H. E., and Luginbyhl, T. L. (eds.): *NIOSH Toxic Substances List*, 1974 Edition, HEW Publication No. 74-134, 1974.
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- Grant, W. M.: *Toxicology of the Eye* (2nd ed.), C. C. Thomas, Springfield, Illinois, 1974.
- Hayes, W. J., Jr.: *Clinical Handbook on Economic Poisons, Emergency Information for Treating Poisoning*, U.S. Public Health Service Publication No. 476, U.S. Government Printing Office, Washington, D.C., 1963.
- Hunter, D.: *Diseases of Occupations* (4th ed.), Little, Brown, Boston, 1969.
- International Labour Office: *Encyclopedia of Occupational Health and Safety*, McGraw-Hill, New York, 1971.
- Johnstone, R. T., and Miller, S. E.: *Occupational Disease and Industrial Medicine*, Saunders, Philadelphia, 1960.
- Patty, F. A. (ed.): *Toxicology*, Vol. II of *Industrial Hygiene and Toxicology* (2nd ed. rev.), Interscience, New York, 1963.
- Spector, W. S. (Vols. I, II), Negherbon, W. O. (Vol. III), Grebe, R. M. (Vol. IV), and Dittmer, D. S. (Vol. V) (eds.): *Handbook of Toxicology*, Saunders, Philadelphia, 1956-1959.
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RESPIRATORY PROTECTION FOR PENTACHLOROPHENOL

Condition	Minimum Respiratory Protection* Required Above 0.5 mg/m³
Particulate or Vapor Concentration	
2.5 mg/m³ or less	Any chemical cartridge respirator with an organic vapor cartridge(s) and dust, fume, and mist filter(s), including pesticide respirators which meet the requirements of this class.**
	Any supplied-air respirator.**
	Any self-contained breathing apparatus.**
25 mg/m³ or less	Any chemical cartridge respirator with a full facepiece, an organic vapor cartridge(s), and dust, fume, and mist filter(s), including pesticide respirators which meet the requirements of this class.
	A gas mask with a chin-style or a front- or back-mounted organic vapor canister and dust, fume, and mist filter, including pesticide respirators which meet the requirements of this class.
	Any supplied-air respirator with a full facepiece, helmet, or hood.
	Any self-contained breathing apparatus with a full facepiece.
150 mg/m³ or less	

**If eye irritation occurs, full-facepiece respiratory protective equipment should be used.

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CT SYSTEM

C T Corporation System
The Corporation Trust Company
C T Law Technology, Inc.

SERVICE OF PROCESS TRANSMITTAL FORM

TO: C T CORPORATION SYSTEM
(C T Office)
Seattle, Washington
(City) (State)

FROM: C T Corporation System
(Originating Agent)
Per O.H. Young
NW
Portland, Oregon 97204
(City) (State)

DATE: 4/7/78 VIA: First Class Mail

TO: Legal Dept.
Time Oil Co.
2737 West Commodore Way
Seattle, Washington 98199
(Authorized Recipient)

VIA: [xx] Certified First Class Mail
[ ] Messenger

RE: PROCESS SERVED IN OREGON
(Jurisdiction)

FOR TIME OIL CO. WASHINGTON
(Name of Company) (Domestic State)

Enclosed are copies of legal process served upon the statutory agent of the above company as follows:

1. Title of Action: In the Matter of the Alleged Violation of the Oregon Safe employment Act. BY: Time Oil Co.

2. Document(s) Served: Citation and Notice of Penalty Citation No. D7255 024 78

3. Court: Before the State of Oregon Workers' Compensation Department

4. Nature of Action:

Violation of above act are alleged at workplace at 12005 N. Burgard, Portland, Oregon, Oct. 13, 1977. No penalty.

5. On Whom Process was Served:

Received by C T Corporation System, Portland, Oregon

6. Date and Hour of Service:

Regular Mail 4/7/78

7. Appearance or Answer Due:

Notice of Correction card due May 8, 1978

8. Plaintiff's Attorney(s):

No atty.

9. Remarks:

Original Citation & Notice of Correction Card were sent to:
Mr. Newton P. Lash, Vice-President, Time Oil Co.,
12005 North Burgard, Portland, Oregon 97203

cc: Legal Dept.; Time Oil Co. Suite 200; 5150 Wilshire Blvd.; Los Angeles, CA 90036

RECEIVED AND FORWARDED ON 4-12-78 (Date)

BY: C T CORPORATION SYSTEM

KINDLY ACKNOWLEDGE RECEIPT BY SIGNING THE CARBON COPY AND RETURNING IT TO ➡

Done 9/14/78 TCH

Per Thomas McDougal/cb
Thomas McDougal, Jr.
Assistant Vice President
(Address)
1218 Third Avenue
Seattle, Washington 98101

cb

ENCL. 3

NJ291—12-76 50M Sets

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Regular mail
4-7-78

BEFORE THE STATE OF OREGON WORKERS' COMPENSATION DEPARTMENT
ACCIDENT PREVENTION DIVISION
Labor and Industries Building
Salem, Oregon 97310

In the Matter of the Alleged Violation)
of the OREGON SAFE EMPLOYMENT ACT.)
By:
Tire Oil Co.

CITATION AND NOTICE OF PENALTY

To:
Mr. Newton P. Lash, Vice-President
Tire Oil Co.
12005 North Burgard
Portland, Oregon 97203

Employer I.D. No.: 521536-3-009
Citation No.: D7255-024-78
Date Issued: April 6, 1978

An inspection of a workplace under your ownership, operation or control located at or near
North Burgard, Portland, Oregon
and described as follows:
petroleum products wholesale
was conducted on
October 13, 1977
On the basis of the inspection it is alleged that you have violated the Oregon Safe Employment Act, ORS Chapter 654, as alleged on the attached Exhibit "A" and incorporated herein by reference.

The penalty for all violations is:

The "Notice of Correction" card must be received by:

THE LAW REQUIRES THAT A COPY OF THIS CITATION BE PROMPTLY POSTED IN A CONSPICUOUS MANNER ABOUT YOUR WORKPLACE AND IN A SUFFICIENT NUMBER OF PLACES TO INFORM YOUR WORKERS OF THE FACTS. IT SHALL BE PROMINENTLY POSTED FOR A PERIOD OF 3 DAYS OR UNTIL THE VIOLATION IS CORRECTED, WHICHEVER OCCURS LAST.

EMPLOYER: SEE REVERSE SIDE OF THIS FORM FOR RIGHTS AND RESPONSIBILITIES REGARDING THIS CITATION

ACCIDENT PREVENTION DIVISION

Sanction Officer

RIGHTS OF EMPLOYEES

Any employee or representative of employees who believes that any period of time fixed in this Citation for the correction of alleged violations is unreasonable has the right to request a hearing by submitting a letter to the Workers' Compensation Department, Safety Hearings Clerk, Hearings Division, Labor and Industries Building, Salem, Oregon 97310, within 20 days of your employer's receipt of this Citation.

cc:
C. T. Corporation System

TOLS001249

BZTO104(e)038070

Regular mail
4-7-78

EXHIBIT "A"

Employer Name: Time Oil Co. Date Issued: April 6, 1978

Employer I.D. No.: 521536-3-009 Citation No.: D7255-024-78

Item No.	Standard Allegedly Violated OAR Chap. 437	Description of Alleged Violation /436	Date Correction Required	Penalty
1.	22-011(2)	Although the following employees were exposed to known health hazards they were inadequately informed as to the nature of the hazards, the measures taken to prevent and control such hazards, or the proper methods of utilizing such control measures. Employee / Location — Hazard 1. Don Stell - Mixing Area — Pentachlorophenol 2. David Wood Mixing Area — Pentachlorophenol Within the compliance deadline the firm must undertake one of the following: A. Provide adequate information or training to affected employees by internal efforts and/or by the firm's Workmen's Compensation carrier, or, B. In cooperation with the Occupational Health Section prepare, develop and obtain approval of an employee information program. This program shall be designed to insure that employees are adequately informed of the health hazards to which they are exposed and the measures necessary to control such exposures. (Complied with at time of inspection). FIRST INSTANCE VIOLATION——————$25.00	N/A	SUSPENDED
2.	22-069 (4)(b)(1)	There were no written standard operating procedures governing the selection and use of respirators. FIRST INSTANCE VIOLATION-$0.00	5-6-78	SUSPENDED
3.	22-069 (4)(e)(3) (1)	Don Stell and David Wood, who were wearing respirators, had full beards which interferred with an effective face seal. (Complied with at time of inspection). FIRST INSTANCE VIOLATION——————$0.00	N/A	SUSPENDED
4.	7-3-1 & 7-2-1	Gloves and rain-[illegible] of material impervious to pentachlorophenol were not provided to employees during mixing and filling operations when it was possible for this substance to come in contact with the employees skin. FIRST INSTANCE VIOLATION——————$15.00	5-6-78	SUSPENDED

Page 1 of 2 Pages Total Penalty NONE

WCB 1221 (Rev. 1/76)

TOLS001250

BZTO104(e)038071

EXHIBIT "A"

Employer Name: Time Oil Co. Date Issued: April 6, 1978

Employer I.D. No.: 521536-3-009 Citation No.: 07255-024-78

Item No.	Standard Allegedly Violated OAR Chap. 437	Description of Alleged Violation /436	Date Correction Required	Penalty
5.	7-3-6	Adequate eye protection was not provided for employees during mixing and filling operations as evidenced by the safety glasses provided that did not prevent splashes from coming up under the bottom rim and entering their eyes. FIRST INSTANCE VIOLATION——————$35.00	5-6-78	SUSPENDED
6.	22-060(12)	There was no eye wash fountain in the warehouse area where pentachlorophenol was handled. FIRST INSTANCE VIOLATION——————$25.00	5-6-78	SUSPENDED
7.	22-015 (1)(a)	In the warehouse area where pentachlorophenol was stored and mixed there was no warning sign or other equally effective means of calling attention to such hazards at their location where the hazards exist. FIRST INSTANCE VIOLATION——————$0.00	4-20-78	SUSPENDED

TOLS001251

Page 2 of 2 Pages Total Penalty NONE

WCB 1221 (Rev. 1/76)

BZTO104(e)038072

22-069 PROTECTIVE EQUIPMENT AND APPAREL

(1) Workmen are required to utilize all special protective equipment or apparel necessary during the period of exposure to harmful or hazardous conditions. Employers and employees shall familiarize themselves with the use, sanitary care and limitations of such equipment.

(2) All necessary protective equipment or apparel used shall be designed and/fabricated so that during use the design or fabrication will not constitute a hazard.

(2) (a) Personal protective equipment intended for reuse shall be of such quality as will permit sanitizing without impairment of protective efficiency.

(2) (b) Each employer shall provide the means for sanitization and maintenance of equipment, and only personal protective equipment which has been sanitized shall be issued to workmen after having been worn or used by another person, except that which is worn over outer clothing, and does not contact the skin of the wearer.

(3) In all operations where an extreme occupational health hazard will result from equipment failure, suitable personal protective equipment shall be provided at convenient locations throughout the work area. Additional equipment shall be kept in a location outside the area most likely to be affected, and readily available for emergency use.

(4) Respiratory Protection

(4) (a) Permissible practice

(4) (a) (1) The control of those occupational diseases caused by breathing air contaminated with harmful dust, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination.

This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and location ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to the following requirements.

ENCL. 4

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(4) (a) (2) Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protective program which shall include the requirements outlined in paragraph (b) of this section.

(4) (a) (3) The employee shall use the provided respiratory protection in accordance with instructions and training received.

(4) (b) Requirements for a minimal acceptable program.

(4) (b) (1) Written standard operating procedures governing the selection and use of respirators shall be established.

(4) (b) (2) Respirators shall be selected on the basis of hazards to which the worker is exposed.

(4) (b) (3) The user shall be instructed and trained in the proper use of respirators and their limitations.

(4) (b) (4) Where practicable, the respirators should be assigned to individual workers for their exclusive use.

(4) (b) (5) Respirators shall be regularly cleaned and disinfected. Those issued for the exclusive use of one worker should be cleaned after each day's use, or more often if necessary. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.

(4) (b) (6) Respirators shall be stored in a convenient, clean, and sanitary location.

(4) (b) (7) Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use.

(4) (b) (8) Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained.

(4) (b) (9) There shall be regular inspection and evaluation to determine the continued effectiveness of the program.

(4) (b) (10) Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local physician shall determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed periodically (for instance annually).

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(4) (b) (11) The respirator furnished shall provide adequate respiratory protection against the particular hazard as approved by the National Institute of Occupational Safety and Health. When NIOSH has not established approval mechanisms for a particular respiratory hazard, then other respirators may be accepted for use when proof of acceptable performance is made available.

(4) (c) Selection of Respirators. Proper selection of respirators shall be made according to the guidance of American National Standard Practices for Respiratory Protection Z88.2-1969.

(4) (d) Air Quality.

(4) (d) (1) Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall be of high purity. Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen. Breathing air shall meet at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1966. Compressed oxygen shall not be used in supplied-air respirators or in open circuit self-contained breathing apparatus that have previously used compressed air. Oxygen must never be used with air line respirators.

(4) (d) (2) Breathing air may be supplied to respirators from cylinders or air compressors.

(4) (d) (2) (i) Cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR Part 178).

(4) (d) (2) (ii) The compressor for supplying air shall be equipped with necessary safety and standby devices. A breathing air-type compressor shall be used. Compressors shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality.

A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in event of compressor failure, and alarms to indicate compressor failure and overheating shall be installed in the system. If an oil-lubricated compressor is used, it shall have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, the air from the compressor shall be frequently tested for carbon monixide to insure that it meets the specifications in sub-paragraph (1) of this paragraph.

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(4) (d) (3) Air line couplings shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of air line respirators with non-respirable gases or oxygen.

(4) (d) (4) Breathing gas containers shall be marked in accordance with American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, 248.1-1954; Federal Specification BB-A-1034a, June 21, 1968, Air Compressed for Breathing Purposes; or Interim Federal Specification GG-B-00675b, April 27, 1965, Breathing Apparatus, Self-Contained.

(4) (e) Use of Respirators.

(4) (e) (1) Standard procedures shall be developed for respirator use. These should include all information and guidance necessary for their proper selection, use, and care. Possible emergency and routine uses of respirators should be anticipated and planned for.

(4) (e) (2) The correct respirator shall be specified for each job. The respirator type is usually specified in the work procedures by a qualified individual supervising the respiratory protective program. The individual issuing them shall be adequately instructed to insure that the correct respirator is issued. Each respirator permanently assigned to an individual should be durably marked to indicate to whom it was assigned. This mark shall not affect the respirator performance in any way. The date of issuance should be recorded.

(4) (e) (3) Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

(4) (e) (3) (i) In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional man shall be present. Communications (visual, voice, or signal line) shall be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency.

(4) (e) (3) (ii) When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health, standby men must be present with suitable rescue equipment.

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(4) (e) (3) (iii) Persons using air line respirators in atmospheres immediately hazardous to life or health shall be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres or other and equivalent provisions for the rescue of persons from hazardous atmospheres shall be used. A standby man or men with suitable self-contained breathing apparatus shall be at the nearest fresh air base for emergency rescue.

(4) (e) (4) Respiratory protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspections shall be conducted by a qualified individual to assure that respirators are properly selected, used, cleaned, and maintained.

(4) (e) (5) For safe use of any respirator, it is essential that the user be properly instructed in its selection, use and maintenance. Both supervisors and workers shall be so instructed by competent persons. Training shall provide the men an opportunity to handle the respirator, have it fitted properly, test its face-piece-to-face seal, wear it in normal air for a long familiarity period, and, finally, to wear it in a test atmosphere.

(4) (e) (5) (i) Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses. Also, the absence of one or both dentures can seriously affect the fit of a facepiece. The worker's diligence in observing these factors shall be evaluated by periodic check. To assure proper protection, the facepiece fit shall be checked by the wearer each time he puts on the respirator. This may be done by following manufacturers' facepiece fitting instructions.

(4) (e) (5) (ii) Providing respiratory protection for individuals wearing corrective glasses is a serious problem. A proper seal cannot be established if the temple bars of eye glasses extend through the sealing edge of the full facepiece. As a temporary measure, glasses with short temple bars or without temple bars may be taped to the wearer's head. Systems have been developed for mounting corrective lenses inside full facepieces. When a workman must wear corrective lenses as part of the facepiece, the face and lenses shall be fitted by qualified individuals to provide good vision, comfort, and a gas-tight seal.

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(4) (e) (5) (iii) If corrective spectacles or goggles are required, they shall be worn so as not to affect the fit of the facepiece. Proper selection of equipment will minimize or avoid this problem.

(4) (f) Maintenance and care of respirators.

(4) (f) (1) A program for maintenance and care of respirators shall be adjusted to the type of plant, working conditions, and hazards involved, and shall include the following basic services:

(4) (f) (1) (i) Inspection for defects (including a leak check),

(4) (f) (1) (ii) Cleaning and disinfecting,

(4) (f) (1) (iii) Repair,

(4) (f) (1) (iv) Storage
Equipment shall be properly maintained to retain its original effectiveness.

(4) (f) (2) (i) All respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to assure that it is in satisfactory working condition.

(4) (f) (2) (ii) Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be fully charged according to the manufacturer's instructions. It shall be determined that the regulator and warning devices function properly.

(4) (f) (2) (iii) Respirators inspection shall include a check of the tightness of connections and the condition of the facepiece, headbands, valves, connecting tube, and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.

(4) (f) (2) (iv) A record shall be kept of inspection dates and findings for respirators maintained for emergency use.

(4) (f) (3) Routinely used respirators shall be cleaned and disinfected as frequently as necessary to insure that proper protection is provided for the wearer. Each worker should be briefed on the cleaning procedure and be assured that he will always receive a clean and disinfected respirator.

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Such assurances are of greatest significance when respirators are not individually assigned to workers. Respirators maintained for emergency use shall be cleaned and disinfected after each use.

(4) (f) (4) Replacement or repairs shall be done only by experienced persons with parts designed for the respirator. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

(4) (f) (5) (i) After inspection, cleaning, and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators placed at stations and work areas for emergency use should be quickly accessible at all times and should be stored in compartments built for the purpose. The compartments should be clearly marked. Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.

(4) (f) (5) (ii) Respirators should be packed or stored so that the facepiece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

(4) (f) (5) (iii) Instructions for proper storage of emergency respirators, such as gas masks and self-contained breating apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid.

(4) (g) Identification of gas mask canisters.

(4) (g) (1) The primary means of identifying a gas mask canister shall be by means of properly worded labels. The secondary means of identifying a gas mask canister shall be by a color code.

(4) (g) (2) All who issue or use gas masks falling within the scope of this section shall see that all gas mask canisters purchased or used by them are properly labeled and colored in accordance with these requirements before they are placed in service and that the labels and colors are properly maintained at all times thereafter until the canisters have completely served their purpose.

TOLS001258

BZTO104(e)038079

(4) (g) (3) On each canister shall appear in bold letters the following:

(4) (g) (3) (i) Canister for _____
(Name of atmospheric contaminant)
or
Type N Gas Mask Canister

(4) (g) (3) (ii) In addition, essentailly the following wording shall appear beneath the appropriate phrase on the canister label: "For respiratory protection in atmospheres containing not more than ----------percent by volume of _____
_____
(Name of atmospheric contaminant)

(4) (g) (3) (iii) All c[illegible]ld be placed on th[illegible]ces of the canis[illegible]

Rule (4)(g)(3)(iii) was repealed by WCD Admin. Order, Safety 4-1979; filed 5-21-79; EFFECTIVE 7-15-79.

(4) (g) (4) Canisters having a special high-efficiency filter for protection against radionuclides and other highly toxic particulates shall be labeled with a statement of the type and degree of protection afforded by the filter. The label shall be affixed to the neck end of, or to the gray stripe which is around and near the top of, the canister. The degree of protection shall be marked as the percent of penetration of the canister by a 0.3-micron-diameter dioctyl phthalate (DOP) smoke at a flow rate of 85 liters per minute.

(4) (g) (5) Each canister shall have a label warning that gas masks should be used only in atmospheres containing sufficient oxygen to support life (at least 16 percent by volume), since gas mask canisters are only designed to neutralize or remove contaminants from the air.

(4) (g) (6) Each gas mask canister shall be painted a distinctive color or combination of colors indicated in Table I-1. All colors used shall be such that they are clearly identifiable by the user and clearly distinguishable from one another. The color coating used shall offer a high degree of resistance to chipping, scaling, peeling, blistering, fading, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use. Appropriately colored pressure sensitive tape may be used for the stripes.

TOLS001259

BZTO104(e)038080

TABLE I-1

Atmospheric contaminants to be protected against	Colors assigned*
Acid gases	White
Hydrocyanic acid gas	White with ½-inch green stripe completely around the canister near the bottom.
Chlorine gas	White with ½-inch yellow stripe completely around the canister near the bottom.
Organic vapors	Black
Ammonia gas	Green
Acid Gases and Ammonia Gas	Green with ½-inch white stripe completely around the canister near the bottom.
Carbon monoxide	Blue
Acid gases and organic vapors	Yellow
Hydrocyanic acid gas and chloropicrin vapor	Yellow with ½-inch blue stripe completely around the canister near the bottom.
Acid gases, organic vapors, and ammonia gases	Brown
Radioactive materials, excepting tritium and noble gases	Purple (Magenta)
Particulates (dust, fumes, mists, fogs, or smokes) in combination with any of the above gases or vapors	Canister color for contaminant, as designated above, with ½-inch gray stripe completely around the canister near the top.
All of the above atmospheric contaminants	Red with ½-inch gray stripe completely around the canister near the top.

*Gray shall not be assigned as the main color for a canister designed to remove acids or vapors.

NOTE: Orange shall be used as a complete body, or stripe color to represent gases not included in this table. The user will need to refer to the canister label to determine the degree of protection the canister will afford.

TOLS001260

BZTO104(e)038081

M E M O R A N D U M

October 22, 1984

TO: Terry Henderson — Seattle
Neil Wallis (info) — Portland

FROM: John Denham — Seattle

SUBJECT: Copper Company

Was just advised by Bill Baldwin from Pittsburg that name of Coppers attorney to contact is Steve Tomko at 412-227-2925.

JPD/jam

TOLS001261

BZTO104(e)038082

Chem-Security Systems, Inc.

JJ3-1966

or 1912

Bill Van Dyke

TOLS001262

BZTO104(e)038083

Mtg c̄ Ed Chiang EPA
2/14/85

1. Obtain & fill out waste profile sheet from Chem Security

PCP contaminated soil
Clean up of contaminated site @ 12005 N Burgess

Dmelds NA
C Soil
Contaminated soil (pentachlorophenol 1820 %) ppm, 71 ppm tetra
trace amounts of chlorinated chemicals other less than 1 ppm
F ✓ bulk solid 260 cu yds
1 time job
G USEPA code U242

2. ask by fax - do U need a sample - possible delay significant need
ask if expedite - we will hand carry to Ed
U can send by mgr - he wait & get back to Chem Sec
we then contact Chem Sec & determine movement date

JPA 3 Contact DEQ Chang - Janet B4 refill & show test results - reasoning etc

JPA Make sample uniform manifest & send to Neil done 3/11/85
re dirt

TOLS001263

BZTO104(e)038084

GC/MS instrument

Lab costs
Neil W 2 get quote

pick Labs analytes
(2) Coffey Labs 254-1794 John Long $100 1st 2d $75
* (3) NW Testing Labs 288-7086 Charles Lane $75 ea
(1) MEI Charlton 228-9663 Don Valley $250 1st & 2 & 3 samples
(4) CZ lab (penta related)
get prices

EB - soil removal, trans & disposal 15 yds/trk - $4500/trip
NW $4250 13 trk loads

Wind like lab analysis for penta & tetra on ~~this soil~~ one soil sample
using RCRA extraction method 3540, analyzing that
extract by GC/MS method 625.

GC method 4 penta & tetra and gives acceptable reproducibility
EPA test method 604

10-25% difference
per Rick Gates

TOLS001264

BZTO104(e)038085

M E M O R A N D U M

February 22, 1985

TO: Robert Abendroth — Seattle
Neil Wallis — Portland

FROM: John Denham — Seattle

SUBJECT: PENTACHLOROPHENOL OPERATION

Per incoming telecon with Bill Baldwin, this date, he and Don Marion from Koppers Co. will be coming out here in early March. Don Marion is to call soon with finalized date of arrival.

The thought occurs that this may be an opportunity to agree on cost sharing arrangements as we should be in a better position to have actual costs by that time.

JPD/ch

M E M O R A N D U M

April 5, 1985

TO: File
Neil Wallis (info) Portland

FROM: John Denham Seattle

SUBJECT: WOODTREATING - SOIL SAMPLING

On April 2, 1985, Bill Baldwin (Koppers Co.) called to coordinate results of his contact with Koppers geologists. Bill requested sampling per attached drawing.

On April 4, 1985, Robert Abendroth approved this action being accomplished and paid for by TOC.

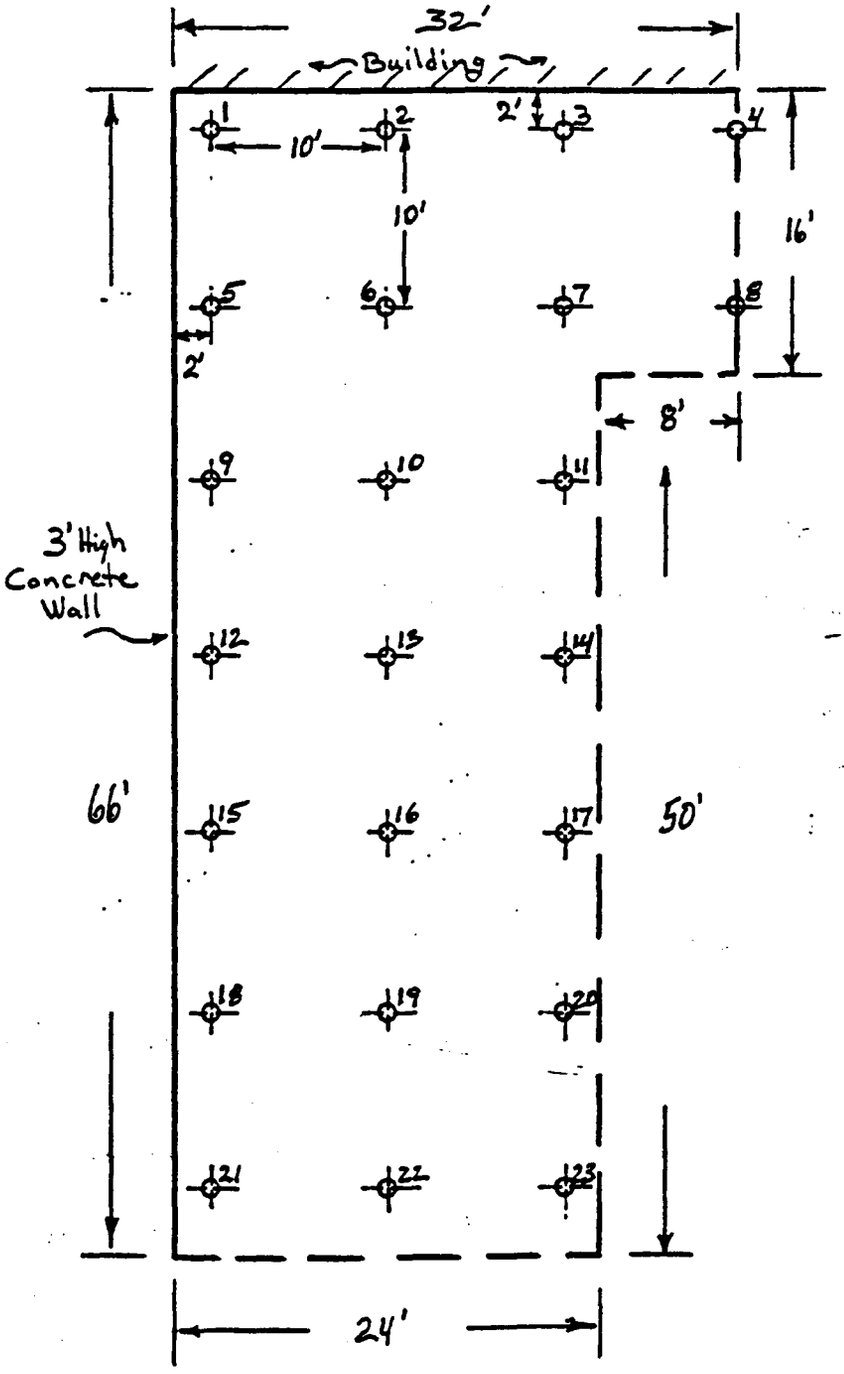
Matter is being coordinated with Neil Wallis to locate soil sampling equipment and a laboratory which can handle this sizeable job.

Attachment a/s

JPD/ch

NORTHWEST TERMINAL WOODTREATING SOIL SAMPLING PLAN

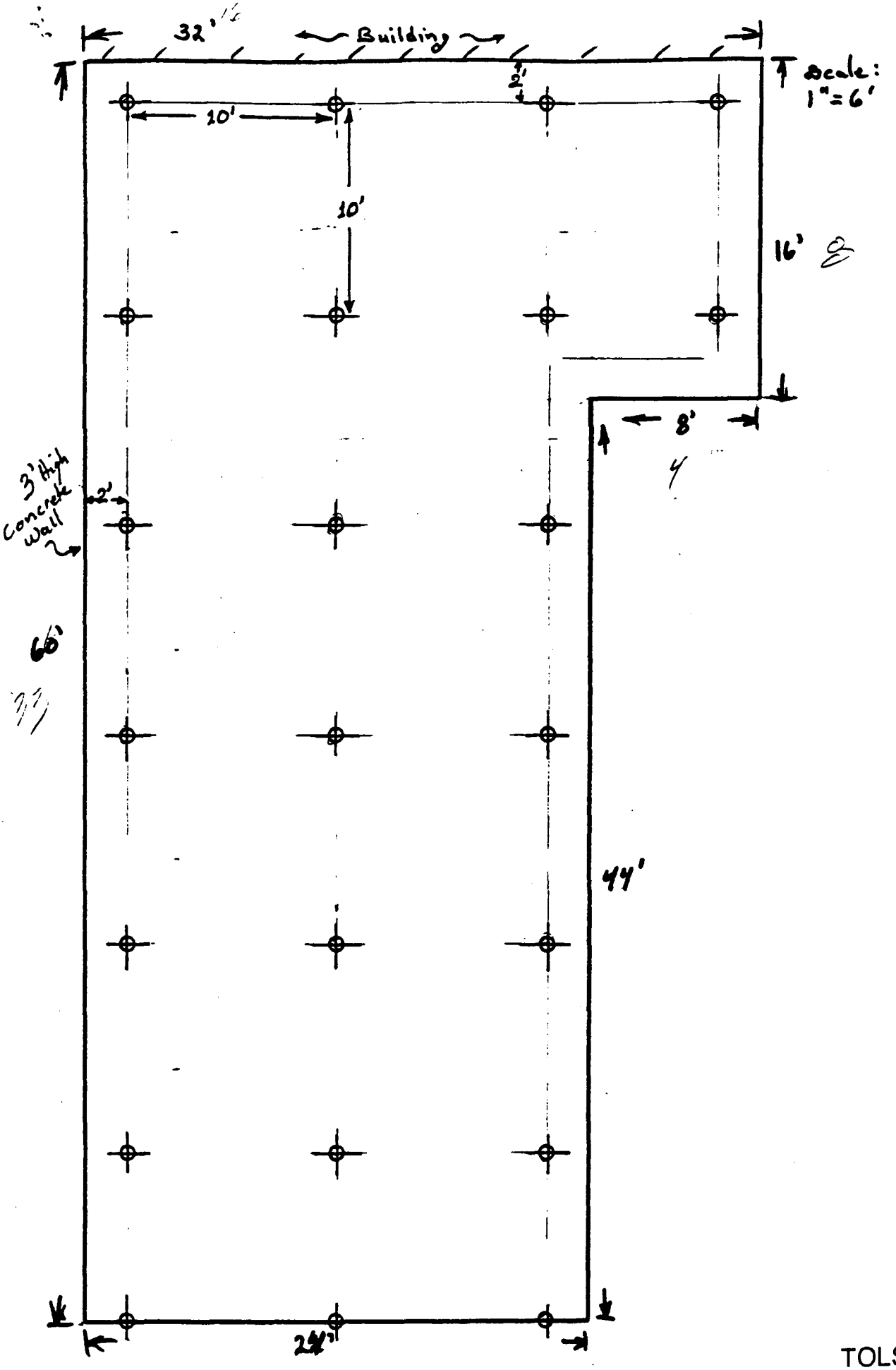
Scale: 1" = 10'



1. Drill 23 holes and obtain samples from each.
2. On holes 2, 3, 4, 6 & 7:
   a. Sample at 6", 1', 2', 3', 5', 10' and 15' levels.
   b. Analyze samples at 1', 2', 3', 5' & 10' levels (25 analyses). Also analyze holes 2,3 & 6 at 15' level.
   c. Hold remaining samples at 40 degrees F.
3. On all other holes:
   a. Sample at 6", 1', 2', 3', 5' and 10' levels.
   b. Analyze samples at 6", 1', 2' & 3' levels (72 analyses).
   c. Hold remaining samples at 40 degrees F.

TOLS001267

BZTO104(e)038088



TOLS001268

BZTO104(e)038089

M E M O R A N D U M

June 11, 1985

TO:	Robert Abendroth	Seattle
	Bill Baldwin	Pittsburgh
	Don Marion	Pittsburgh
	Neil Wallis	Portland
FROM:	John Denham	Seattle

SUBJECT: NORTHWEST TERMINAL WOODTREATING SITE

This is a status update regarding cleanup of soil at our Portland Oregon terminal where the Pentachlorophenol operation existed.

Following Don Marion and Bill Baldwin's March 13, 1985 visit, the following occurred:

a. On April 2, Bill B called to coordinate results of his contact with Koppers geologists. Bill requested sampling per enclosure 1. On April 4, Robert A agreed with this action. On April 5, Neil W was tasked to locate a firm to accomplish soil sampling and a laboratory which could handle this sizable soil analysis within a reasonable time frame at the lowest possible costs.

b. After a diligent search, it was learned there was only one firm in the area that had the capability to do this job - Riedel Environmental Services, Inc. On April 25, Riedel submitted their cost of $18,600 (enclosure 2). I asked for a cost breakdown. Riedel submitted it on May 18 (enclosure 3). Drilling cost of $7,544 is actual fee of drilling contractor Sweet and Edwards out of Kelso (I verified this). Analytical cost of $4,956 is strictly the laboratory charge for processing 96 samples from 16 holes at 6 six samples per hole. (Note this is 7 less holes than Bill B requested but covers a larger 80' x 80' area). Method of analysis is GC/MS, which is the only one allowed by EPA/DEQ. Cost to analyze each sample is $51.63. Labor cost of $3,985 includes taking nine additional composite surface samples (3 on northeast, 3 on east and 3 on south) outside bermed area to determine soil contamination boundaries, taking the 96 samples mentioned above, drawing the drilling plan, preparing the contour map which shows location of contamination at the various depths, supervision of entire job on site by a qualified hydrologist and writing the report. Other direct costs of $2,115 cover decontamination of equipment between the taking of each sample, sample jars, safety gear used, drums for and disposal of decontamination solvent used for all equipment decontamination and the bentonite used to plug all holes drilled.

c. Contract with Northwest Vacuum Truck Service was negotiated (enclosure 4). Certificate of insurance coverage (enclosure 5) and contract bond (enclosure 6) were obtained from contractor. An "approved" transporter was obtained (Gresham Transfer Service).

d. Disposal request for contaminated soil was approved by DEQ (Enclosure 7).

e. Hazardous Waste Manifests with appropriate instructions were obtained (enclosure 8).

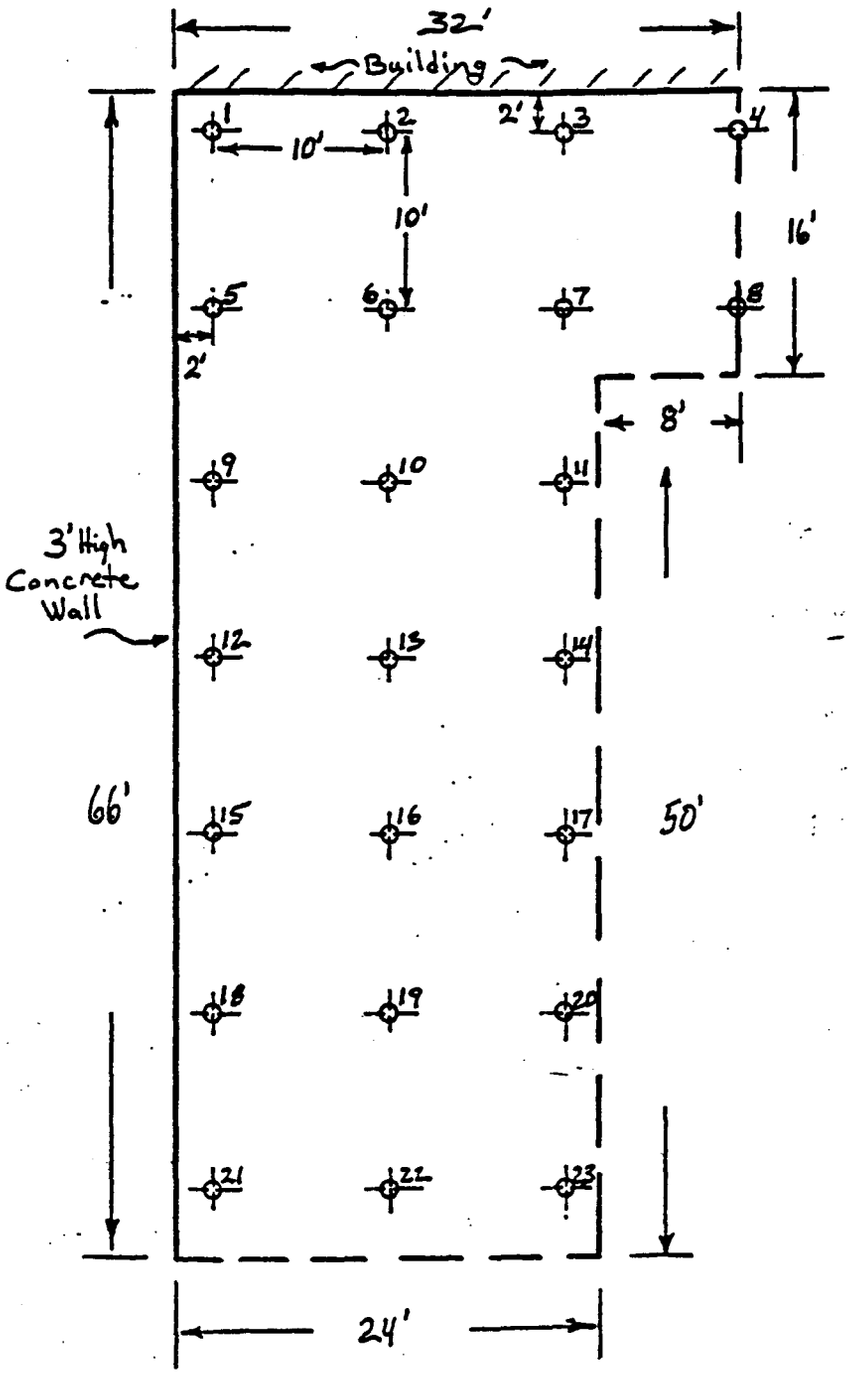
f. The required "Waste Transportation and Disposal Agreement" was obtained from Chem-Security Systems, operators of the Arlington disposal facility (enclosure 9). I disagreed with item 2(b) on page 17 (in that it limited disposal on this tender to only one movement) and item 10(c) on page 20 (in that there was no price break after 250 tons as was originally quoted). Telecon contact with their offices resulted in satisfactorily worded replacement pages for agreement, which arrived today and are included in enclosure 9.

At this point in time, everything seems to be "go". All arrangements have been made to start the first phase of digging, hauling and disposing on June 24, 1985. I will be on site. Plan is to remove and dispose of several truck loads of soil, stop, have sampling and analyses done, then repeat as needed. This approach takes advantage of lower disposal costs (prior to July 1) and the conduct of the expensive sampling and analysis only one time. Current known costs for first phase are $53,000 plus $18,600 = $71,600.

JPD/ch

NORTHWEST TERMINAL WOODTREATING SOIL SAMPLING PLAN

Scale: 1" = 10'



1. Drill 23 holes and obtain samples from each.
2. On holes 2, 3, 4, 6 & 7:
   a. Sample at 6", 1', 2', 3', 5', 10' and 15' levels.
   b. Analyze samples at 1', 2', 3', 5' & 10' levels (25 analyses). Also analyze holes 2,3 & 6 at 15' level.
   c. Hold remaining samples at 40 degrees F.
3. On all other holes:
   a. Sample at 6", 1', 2', 3', 5' and 10' levels.
   b. Analyze samples at 6", 1', 2' & 3' levels (72 analyses).
   c. Hold remaining samples at 40 degrees F.

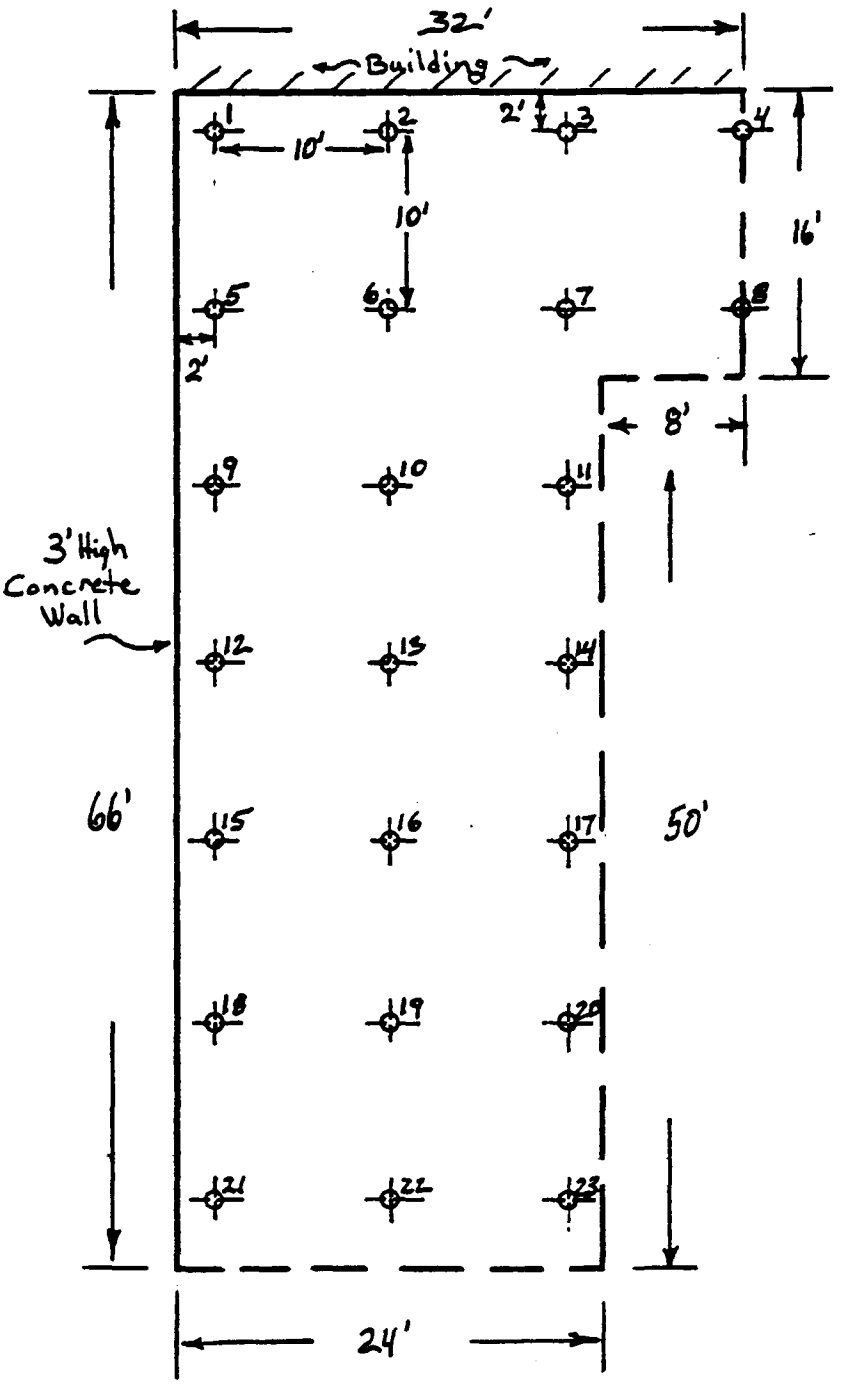
ENCL. 1

TOLS001271

BZTO104(e)038092

NORTHWEST TERMINAL WOODTREATING SOIL SAMPLING PLAN

Scale: 1" = 10'



1. Drill 23 holes and obtain samples from each.
2. On holes 2, 3, 4, 6 & 7:
   a. Sample at 6", 1', 2', 3', 5', 10' and 15' levels.
   b. Analyze only 1' & 3' samples
   c. Hold remaining samples at 40 degrees F.
3. On all other holes:
   a. Sample at 6", 1', 2', 3', 5' and 10' levels.
   b. Analyze only 6" and 1' samples.
   c. Hold remaining samples at 40 degrees F.

TOLS001272

BZTO104(e)038093

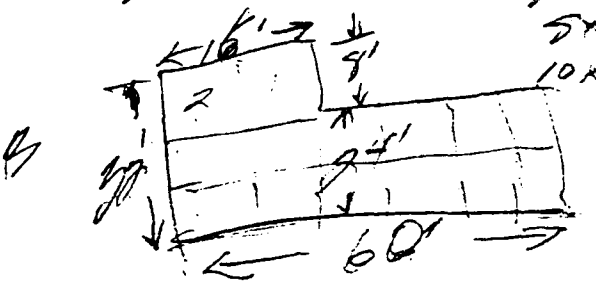
Bill Baldwin
Apr 2, '85

① 10' spacing
grid pattern

Go down 15' next to bldg
sample @ 15', 10', 5', 3', 2'
1', #6"
analyze 1' # 3' only
hold others

② other areas
10', 5', 3', 2', 1', #6"
analyze 6" # 1' only
hold others

2' from perimeter
5x8
10x12



TOLS001273

"Imagineering a cleaner world"

RIEDEL
ENVIRONMENTAL SERVICES, INC.

☒ Portland Division
Foot of N. Portsmouth Ave.
P.O. Box 5007
Portland, OR 97208
(503) 286-4656

☐ St. Louis Division
529 Spirit of St. Louis Blvd.
Chesterfield, MO 63017
(314) 532-7660

☐ San Francisco Division
230 Cutting Blvd.
Richmond, CA 94802
(415) 234-7400
or (415) 398-5351

☐ Seattle Division
801 Fairview Ave. No.
P.O. Box 1730
Seattle, WA 98111
(206) 622-2900

April 25, 1985

Mr. Neil Wallis
Time Oil Company
P. O. Box 03137
12005 N. Burgard Street
Portland, OR 97203

Dear Neil:

Thank you for the opportunity to visit your plant and discuss with you the pentachlorophenol sampling requirements you have at your northwest terminal wood treating site.

We propose that an initial composite sample survey be initiated to accurately define the boundaries of the PCP contamination zone. These surface samples would be collected to establish the actual area to be sampled later by coring at depth, and are warranted since the data indicates contamination at a site outside of your original proposed sampling plan. This task would be performed at a time and materials rate. It would be expected to be quite nominal relative to the core sampling, and will minimize the possibility of having to remobilize the drill rig to modify or extend the core sampling procedure in the future.

We will also review the sampling plan and, with DEQ approval, design a sampling plan that will meet their requirements while minimizing the number of holes needed. This task would also be billed at a time and materials rate and may utilize a triangular sampling matrix to improve coverage.

Riedel Environmental Services is prepared to perform the actual sampling and analysis including grid layout, drilling, sampling at six depths, analysis for PCP, decontamination of personnel and equipment, PCP concentration contour analysis, report and background level determination. The estimate for this task is $18,600, would require five days on site, and is based on an estimated sample area of 80' x 80'. If preliminary composite samples indicate a different area, this bid will be revised accordingly. If tetrachlorophenol analyses are also required, analytical costs will increase this bid by $5,000.

On the basis of the above results, RES can prepare an estimate for removal and disposal of the contaminated soils. We can also include monitoring or observation wells if required.

Encl. 2

TOLS001274

BZTO104(e)038095

Please contact either myself or Rick Gariepy if you have any questions or would like additional information.

Sincerely,

RIEDEL ENVIRONMENTAL SERVICES, INC.

John H. Ruddick
Microbiologist

JHR:kps

"Imagineering a cleaner world"

☑ Portland Division
Foot of N. Portsmouth Ave.
P.O. Box 5007
Portland, OR 97208
(503) 286-4656

☐ St. Louis Division
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(415) 234-7400
or (415) 398 5351

☐ Seattle Division
801 Fairview Ave. No.
P.O. Box 1730
Seattle, WA 98111
(206) 622 2900

RIEDEL
ENVIRONMENTAL SERVICES, INC.

May 18, 1985

Mr. Neil Wallis
Time Oil Co.
P. O. Box 03137
12005 N. Burgard
Portland, OR 97203

Dear Neil:

The cost breakdown on our bid for sampling and analysis of PCP contaminated soil at your facility is as follows:

Drilling	$ 7,544
Analytical	4,956
Labor	3,985
Other Direct	2,115
	$18,600

If you have any questions, please don't hesitate to contact me.

Sincerely,

John Ruddick
Microbiologist

JR:kps

ENCL. 3

TOLS001276

BZTO104(e)038097

CONTRACT

The parties to this agreement are Time Oil Co. (hereinafter termed owner) and Northwest Vacuum Truck Service, Inc. (hereinafter termed contractor) whereas:

Owner has a volume of earthen material located in Portland, Oregon and owner is desirous of having that material removed.

Contractor is willing to undertake that task upon the terms and conditions set forth below.

Therefore, in consideration of the agreements contained herein, the parties agree as follows:

1. Contractor agrees to remove the material from its present location, load it into suitable transportation vehicles and transport it to a disposal facility approved by the Oregon Department of Environmental Quality.

2. The material to be removed by contractor is generally set forth on the drawing labeled exhibit 1, attached hereto and incorporated by this reference. Prior to work under this agreement, a representative of owner will meet with contractor at the site and the extent of the material to be removed will be more specifically delineated at that time.

3. The commencement date for work will be February 21, 1985 or such other date as may be agreed upon by the parties following coordination with the Department of Environmental Quality and the authorized disposal facility. Work is intended to be divided into two phases. First phase consists of material removal to an agreed upon depth. Then there will be a several day delay while additional tests are conducted to determine if further removal is required. If so, phase two removal actions are to be effected. Should there be any need to continue removal, above process is to be repeated until ultimate removal is accomplished.

4. For each day worked, owner agrees to pay contractor the sum of 1200 dollars for labor and equipment pertaining to soil removal plus 600 dollars for each truckload of soil transported. A day worked shall be one wherein earth moving equipment, necessary to perform the work, has been utilized to the fullest, reasonably possible, extent for a period of not less than 8 hours. Truck shall be a standard 18 yard rated capacity vehicle. Payment will be made upon completion of the work and receipt by owner of written acknowledgement from the approved disposal facility that all material removed and transported by contractor has been received at that facility.

5. Contractor indemnifies and agrees to defend and hold owner harmless from any and all costs, claims, liabilities and damages arising out of contractors work under this contract.

6. Contractor hereby declares that it is engaged as an independent contractor and agrees to perform the work as independent contractor and not as an employee of owner. Contractor has and hereby retains the right to exercise full control and supervision of the work and full control over the employment, direction, compensation and discharge of all persons assisting in the work.

Encl. 4

TOLS001277

BZTO104(e)038098

7. Contractor agrees at its expense to obtain all governmental permits, licenses and approvals and comply with all laws, rules, regulations and requirements now or hereafter existing necessary for the accomplishment of the work to be performed by contractor under this agreement.

8. Contractor especially acknowledges its understanding that portions of the material to be removed, transported and disposed of under this agreement have been found to contain commercial pentachlorophenol in concentrations ranging from 0 ppm to 1820 ppm. Contractor agrees to take all necessary precautions for the protection of persons and property that may be required or prudent in the removal and transportation of that material.

9. Contractor agrees to maintain workmans' compensation insurance in the form and amounts required by the laws of the state of Oregon and broad form comprehensive public liability insurance with minimum limits of $1 million per person and $1 million per accident for bodily injury and $500,000 per accident for property damage. Contractor shall promptly deliver to owner certificates of said insurance, naming owner as an additional insured before commencing work and such certificate shall provide that said insurance shall not be cancelled prior to 30 days by written notice to owner.

10. Contractor agrees that before commencement of any work hereunder, it will promptly furnish owner with a faithful performance bond in an amount to 53,000 dollars guaranteeing completion of all work and performance of all obligations undertaken by contractor under this agreement.

11. The nature, validity and interpretation of this contract shall be governed by the laws of the state of Washington.

Dated this 19th day of February 1985.

OWNER
Time Oil Co.

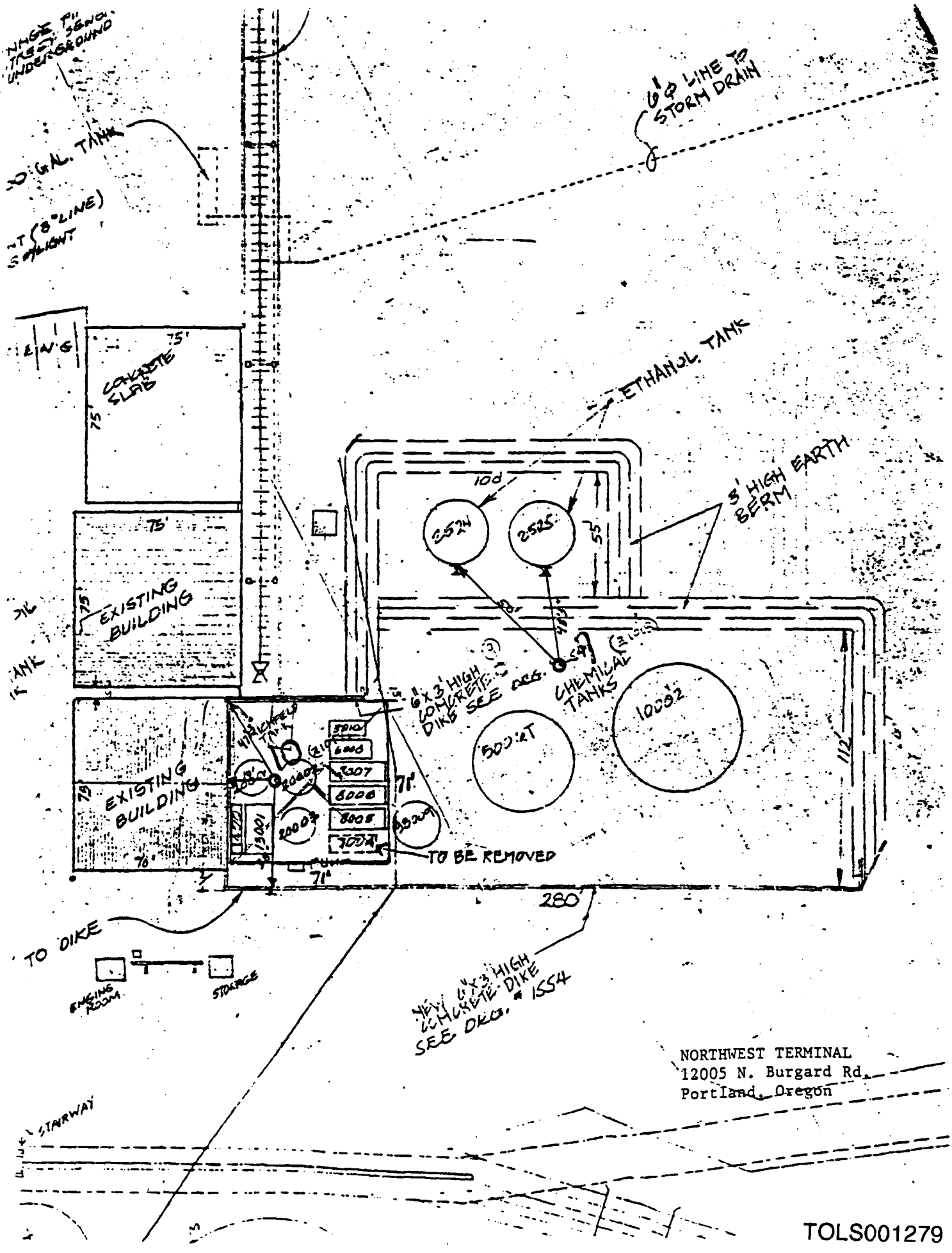
by John P. Denham
John P. Denham
Environmental Manager

CONTRACTOR
Northwest Vacuum Truck Service Inc.

by John H. Somes
John H. Somes
General Manager

TOLS001278

BZTO104(e)038099


6" LINE TO STORM DRAIN
ETHANOL TANK
5' HIGH EARTH BERM
CONCRETE SLAB
EXISTING BUILDING
EXISTING BUILDING
6'X3' HIGH CONCRETE DIKE SEE DRG.
CHEMICAL TANKS
TO BE REMOVED
TO DIKE
ENGINE ROOM
STORAGE
NEW 6'X3' HIGH CONCRETE DIKE SEE DRG. # 1554
NORTHWEST TERMINAL
12005 N. Burgard Rd.
Portland, Oregon
TOLS001279
BZTO104(e)038100

Encl. 5

SAIF CORPORATION

INSURING COMPANY:
☐ SAIF CORPORATION
☐ SAIF CORPORATION OF OREGON

Certificate of Coverage

Date of Issue: FEBRUARY 25, 1985

This certifies that NW VACUUM TRUCK SERVICE INC., *Policy No.* 426329, *is insured with SAIF, with a policy period ending date of* JUNE 30, 1985, *and is complying with the Oregon Workers' Compensation Law to provide for payment of compensation to subject Oregon workers.*

TO: TIME OIL CO,
2737 W. COMMODORE WAY
SEATTLE, WASHINGTON 98199

ATTN: JOHN DENHAM

Michael J. Dora

Michael J. Dora
Director
Underwriting Division

F1220 1/84

BZTO104(e)038101

TOLS001280

Marsh & McLennan

Marsh & McLennan, Incorporated
Marsh & McLennan Building
720 Olive Way
Seattle, Washington 98101
Telephone (206) 223-1240

March 5, 1985

Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199

Attention: John Denham

Insured Northwest Vacuum Truck Service, Inc.

Company and Policy No. Safeco

Various - See attached certificate

Coverage

Location Post Office Box 24402
Seattle, Washington 98124

( ) Policy enclosed

(xx) Certificate ~~xxxxxxxxxxxxx~~ enclosed

( ) Premium invoice enclosed for

( ) Premium invoice will be mailed to you by the Insuror

( ) Mortgage or Loss Payable clause enclosed

( ) Contract of Sale clause enclosed

( ) Please return for cancellation, Policy No.

( )

Sincerely yours,

MARSH & McLENNAN, INCORPORATED

By Jackie Starr
Account Representative

Enclosures
mf
cc: Northwest Vacuum Truck Service, Inc.
Attn Mr. Steve Skeel

Certificate of Insurance

acord

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES LISTED BELOW.

NAME AND ADDRESS OF AGENCY

MARSH & McLENNAN, INCORPORATED
MARSH & McLENNAN BUILDING
720 OLIVE WAY
SEATTLE, WASHINGTON 98101
(206) 223-1240

NAME AND ADDRESS OF INSURED

NORTHWEST VACUUM TRUCK SERVICE, INC.
POST OFFICE BOX 24402
SEATTLE, WASHINGTON 98124

COMPANIES AFFORDING COVERAGES

COMPANY LETTER A — SAFECO
COMPANY LETTER B
COMPANY LETTER C
COMPANY LETTER D
COMPANY LETTER E

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)	EACH OCCURRENCE	AGGREGATE
A	GENERAL LIABILITY [X] COMPREHENSIVE FORM [X] PREMISES—OPERATIONS [X] EXPLOSION AND COLLAPSE HAZARD [X] UNDERGROUND HAZARD [X] PRODUCTS/COMPLETED OPERATIONS HAZARD [X] CONTRACTUAL INSURANCE [X] BROAD FORM PROPERTY DAMAGE [X] INDEPENDENT CONTRACTORS [X] PERSONAL INJURY	CP 842833	05/30/85	BODILY INJURY	$	$
				PROPERTY DAMAGE	$	$
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 500,	$ 500,
				PERSONAL INJURY		$
A	AUTOMOBILE LIABILITY [X] COMPREHENSIVE FORM [X] OWNED [X] HIRED [X] NON-OWNED	BA 842833 A	05/30/85	BODILY INJURY (EACH PERSON)	$	
				BODILY INJURY (EACH ACCIDENT)	$	
				PROPERTY DAMAGE	$	
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 500,	
A	EXCESS LIABILITY [X] UMBRELLA FORM [ ] OTHER THAN UMBRELLA FORM	UL 842833	05/30/85	BODILY INJURY AND PROPERTY DAMAGE COMBINED	$1,000,	$1,000,
	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY			STATUTORY		
					$	(EACH ACCIDENT)
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES

As respects the operations of the Insured.

Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will endeavor to mail 20 days written notice to the below named certificate holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company.

ACCOUNT EXECUTIVE: Jo Ann Crook

NAME AND ADDRESS OF CERTIFICATE HOLDER

Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199
Attention: John Denham

DATE ISSUED March 5, 1985 (mf)

MARSH & McLENNAN, INCORPORATED

By: John C. Day
AUTHORIZED REPRESENTATIVE

(John C. Day)

ACORD 25 (1-79)

TOLS001282

BZTO104(e)038103

CONTRACT BOND

Bond No. H 34156

KNOW ALL MEN BY THESE PRESENTS, That we, NORTHWEST VACUUM TRUCK SERVICE, INC.

5555 NORTH CHANNEL - BLDG. 43 - PORTLAND, OREGON 97217

called the Principal, and HERITAGE INSURANCE COMPANY OF AMERICA, A ILLINOIS corporation, called the Surety, are held and firmly bound unto TIME OIL CO.

called the owner in the sum of FIFTY THREE THOUSAND AND NO/100THS Dollars ($ 53,000.00**), for the payment whereof said Principal and Surety bind themselves firmly by these presents.

WHEREAS, the Principal has, by written Agreement, dated MARCH 12, , 19 85, entered into a Contract with the Owner for REMOVAL OF EARTHEN MATERIAL OWNED BY OWNER FROM ITS PRESENT LOCATION, LOAD IT INTO SUITABLE TRANSPORTATION VEHICLES AND TRANSPORT IT TO A DISPOSAL FACILITY APPROVED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY.

a copy of which is by reference made a part hereof;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That if the Principal shall faithfully perform the Contract, and indemnify and save harmless the Owner from all loss, cost or damage which Owner may suffer by reason of any lien arising out of claim for labor or materials utilized in the construction under said Contract, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 12TH day of MARCH, 19 85.

NORTHWEST VACUUM TRUCK SERVICE, INC.
Principal

By: S M Steel

HERITAGE INSURANCE COMPANY OF AMERICA

By: J.C. Baumann
J.C. BAUMANN
Attorney-in-fact

ENCL. 6

TOLS001283

BZTO104(e)038104

HERITAGE INSURANCE COMPANY OF AMERICA

LINCOLNWOOD, ILLINOIS

Power of Attorney

PRINCIPAL NORTHWEST VACUUM TRUCK SERVICE, INC. EFFECTIVE DATE MARCH 12, 1985

DBA _____ AMOUNT OF BOND $ 53,000.00

POWER NO. H 34156

KNOW ALL MEN BY THESE PRESENTS: That the Heritage Insurance Company, a Corporation in the State of Illinois, having its principal office in Lincolnwood, Illinois, pursuant to the following resolution, adopted by the Board of Directors of the said Company on the 9th day of March, 1979, to wit:

"The President, or any Vice-President, or other officer designated by the Board of Executive Committee shall have authority, severally, to make, execute and deliver a power of attorney constituting as Attorney-in-Fact such persons, firms or corporations as such officers may select from time to time."

does hereby make, constitute and appoint J.T. Kohoutek, C.J. Huffman and/or J.C. Baumann of Seattle in the State of Washington, its true and lawful attorney(s)-in-fact, with full power and authority hereby conferred in its name, place and stead, to sign, execute, acknowledge and deliver in its behalf, and its act and deed, as follows:

The obligation of the Company shall not exceed the sum of five hundred thousand ($500,000.00) dollars.

and to bind Heritage Insurance Company thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of the Heritage Insurance Company, and all the acts of said Attorney(s) pursuant to the authority herein given, are hereby ratified and confirmed.

IN WITNESS WHEREOF, the Heritage Insurance Company has caused these presents to be signed by its President and/or its Vice-President, and its Corporate Seal to be hereto affixed.

HERITAGE INSURANCE COMPANY OF AMERICA

SEAL

Vincent M. Giacinto, President

State of Illinois } SS:
County of Cook }

On this 9th day of March, 1979, before the subscriber, a Notary Public of the State of Illinois in and for the County of Cook duly commissioned and qualified, came V. M. Giacinto of the Heritage Insurance Company, to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation, and that the resolution of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my official seal at Lincolnwood, Illinois, the day and year above written.

NOTARY PUBLIC COOK COUNTY, ILL.

Notary Public

JOSEPH D. UDONI
NOTARY PUBLIC, State of Illinois
Qualified in State of Illinois
Commission Expires March 4, 1984

State of Illinois } SS:
County of Cook }

CERTIFICATE

I, the undersigned, Secretary of *HERITAGE INSURANCE CO.* a stock corporation of the State of Illinois, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Resolution of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, at Lincolnwood, Illinois. Dated this 12TH day of MARCH A.D., 19 85

SEAL

Secretary

H-73

TOLS001284

BZTO104(e)038105

REC' T.O.C. PORTLAND 5/16/85

CHEM-SECURITY SYSTEMS, INC. DISPOSAL REQUEST

REFERENCE: E13588 (WASTE PROFILE SHEET NO.)

SUBJECT:

WASTE STREAM NAME: PCP contaminated soil

PHYSICAL STATE
LIQUID ☐ SOLID ☒ SEMISOLID ☐

U242 (EPA WASTE CODE)

GENERATOR NAME: TIME OIL CO. ORD009597543 (EPA GENERATOR I.D. NUMBER)

FACILITY ADDRESS	MAILING ADDRESS
Time Oil Co	Same
12005 N. Burgard Rd.	
Portland, Or	

GENERATOR CONTACT PERSON NAME: John P. Denham Tel. No. (206) 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards (NOW) ____ (ANNUAL)

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4.

No free liquid allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie (NAME (PRINT))

J Craig M. McKenzie (SIGNATURE)

4-29-85 (DATE)

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
On May 14 1985
By Edward L. Chiang
Solid Waste Division
Hazardous Waste Operations

RE: HW4.10 I

COMMENTS:

TOLS001285

CSSI-6000 (1/85)

ENCL. 7

BZTO104(e)038106

CHEM-SECURITY SYSTEMS, INC.

NATIONAL RESPONSE CENTER: 1-800-424-8802
OREGON ACCIDENT RESPONSE CENTER: 1-800-452-0311

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0404. Expires 7-31-85

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No.

2. Page 1 of | Information in the shaded areas is not required by Federal law.

GENERATOR

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name | 6. US EPA ID Number

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number
ORD 089 452 353

G. State Facility's ID

H. Facility's Phone
503-454-2643

11. US DOT Description (*Including Proper Shipping Name, Hazard Class, and ID Number*)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/ Waste No.
a.						
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a.
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name | Signature | Date: Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

TOLS001286

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Date: Month Day Year

EPA Form 8700-22 (3-84)

ORIGINAL - RETURN TO GENERATOR

BZTO104(e)038107

4.0 MANIFEST REQUIREMENTS

When hazardous waste is transported from the generator's location to the Arlington Facility, the Oregon DEQ, U.S. DOT and EPA require proper manifesting. Beginning September 20, 1984, these agencies required use of a uniform hazardous waste manifest form (Exhibit 7a) and, where necessary, a continuation sheet (Exhibit 7b).

Each load of chemical waste shipped to the Arlington Facility must be accompanied by one or more properly completed uniform manifests. All copies of manifests and continuation sheets must be legible. If manifest forms are needed by the generator, treater or transporter, they can be obtained by contacting the appropriate Chem-Security Systems sales office. When the transporter arrives at the Arlington Facility, the manifest(s) and other shipping paper(s) must be presented to the site receiving clerk for verification.

4.1 WHEN TO USE THE CONTINUATION SHEET

The continuation sheet must be used if:

- o More than two transporters are used to transport the waste, or;
- o More space is required for U.S. DOT description and related information in Section 11 of the manifest.

4.2 GENERATOR SUPPLIED INFORMATION REQUIRED ON MANIFESTS

To meet all the applicable current regulations on manifesting of hazardous waste to the Arlington Facility, and to help us efficiently and speedily handle waste loads, the items described below are needed on a properly completed manifest. A sample completed manifest is shown in Exhibit 7c. States other than Oregon may require other information (see Exhibit 7d).

TOLS001287

BZTO104(e)038108

Continuation Sheet Section #	Manifest Section #	
21	1	Generator's EPA identification number and annually unique manifest document number (preprinted on CSSI supplied manifest forms, must be added on continuation form).
22	2	Number of pages used (manifest) and page number of this sheet (continuation sheet).
23	3-4	Generator's name, mailing address (address where manifest records are kept), and telephone number. The continuation sheet requires name only.
24-27	5-8	Name and EPA identification number of each transporter.
O and Q	D and F	Phone number of each transporter.
None	9, 10, H	Name, address, EPA identification number, and phone number of the designated disposal facility (preprinted on manifests and continuation sheets provided by CSSI).
28	11	DOT proper shipping name, hazard class, identification number (49 CFR Parts 172.101, 172.202, and 172.203); and, a. Designation of whether the waste is hazardous material (check "HM" column), or b. Designation, if the waste is a hazardous substance (write "RQ" instead of a check in the "HM" column) and listing of the

TOLS001288

BZTO104(e)038109

constituent making the waste a hazardous substance after the proper shipping name, if it is not part of the proper shipping name.

29 12 Enter the number of containers for each waste and the appropriate abbreviation from the table below for type of container.

DM = Metal drums, barrels, kegs
DW = Wooden drums, barrels, kegs
DF = Fiberboard or plastic drums, barrels, kegs
TP = Tanks portable
TT = Cargo tanks (tank trucks)
TC = Tank cars
DT = Dump truck
CY = Cylinders
CM = Metal boxes, cartons, cases (including roll-offs)
CW = Wooden boxes, cartons, cases
CF = Fiber or plastic boxes, cartons, cases
BA = Burlap, cloth, paper, or plastic bags

30-31 13-14 Enter the total quantity of waste at 13 and the unit of measure abbreviation from the table below at 14. The quantity should be as precise as possible.

G = Gallons (liquids only)
P = Pounds
T = Tons (2,000 pounds)
Y = Cubic yards
L = Liters (liquids only)
K = Kilograms
M = Metric tons (1,000 kg)
N = Cubic meters

TOLS001289

BZTO104(e)038110

R	I	EPA waste number (if the waste is hazardous under RCRA).
S	J	Oregon Department of Environmental Quality's approved waste description, per Generator's Waste Profile Sheet description - "Waste Name" and physical state.
32	15	Please enter Waste Profile Sheet number(s) here. If an alternate facility is designated, information and identification number must appear here. Generators may use this space to indicate special transportation treatment, storage or disposal information.
None	16	Generator's Certification. Generator must read, sign by hand, and date this section. Please include this person's title along with printed/ typed name in the space provided.

For each lab pack drum, an itemized list of each waste container placed in the drum showing waste description and volume, must be stapled to the manifest. This list should be readily identifiable with a specific drum through a drum numbering or other system.

For certain PCB wastes, the following additional information is required:

- For any PCB article, the date each item was placed in storage for disposal should be written in Section 15 (this date must also appear on the article container).
- For each less than 500 ppm PCB liquid container or transformer waste write in PCB concentration on the manifest in Section 15, and staple to the manifest a lab analysis signed by a qualified analyst.
- For drained and flushed transformers, a statement that each unit was drained and flushed in accordance with 40 CFR 761 must be signed by a responsible representative of the generator and stapled to the manifest.

TOLS001290

BZTO104(e)038111

- o For full transformers or empty ones requiring flushing at Arlington, if it is not possible for the generator to determine the exact gallonage of PCB transformers, a designation of "estimated" volume should be stated on the manifest.
- o For each container of PCB capacitors a list of manufacturer name, serial number, and KVAR for each capacitor inside must be stapled to the manifest.

4.3 TRANSPORTATION INFORMATION

Continuation Sheet #	Manifest Section #	
33-34	17-18	Enter the name of the person accepting on behalf of the transporter. That person must sign, acknowledging acceptance of the waste. Use 17 for first transporter, 18 for second, and use continuation sheet for additional transporters.

4.4 TSD SUPPLIED INFORMATION

Continuation Sheet Section #	Manifest Section #	
35	19	The authorized representative of the designated facility must note in this space any significant discrepancy between waste described and waste actually received (see Section 9.1).
None	20	The person accepting waste on behalf of the facility must acknowledge acceptance of the waste by signing and entering date of receipt.

TOLS001291

BZTO104(e)038112

4.5 MANIFEST COPIES

The manifest consists of at least the number of copies which will provide the generator, each transporter, and the Arlington Facility with one copy for their records and an additional copy to be returned to the generator. On CSSI pre-printed manifest forms the use of each copy is designated at the bottom center. After the first transporter signs the manifest, the generator keeps one copy of the manifest and the remaining copies and the original remain with the transporter to accompany the shipment to the disposal facility or to another transporter or treater.

A signed copy of the manifest for loads of waste accepted at the Arlington Facility will be returned to the generator attached to the invoice for the waste shipment.

4.6 UNMANIFESTED WASTES

Wastes that arrive at the facility without manifests or approved Waste Profile Sheets may be returned to the generator as required under 40 CFR Part 262, State of Oregon requirements, and compliance policy.

TOLS001292

BZTO104(e)038113

CHEM-SECURITY SYSTEMS, INC

EXHIBIT 7a

NATIONAL RESPONSE CENTER 1-800-424-8802
OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. 01297 | 2. Page 1 of | Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name | 6. US EPA ID Number

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number
ORD 089 452 353

G. State Facility's ID

H. Facility's Phone
503-454-2643

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a.					
b.					
c.					
d.					

GENERATOR

J. Additional Descriptions for Materials Listed Above
a.
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information Waste Profile Sheet Number(s)
a.
b.
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name | Signature | Date: Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

TOLS001293

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Date: Month Day Year

EPA Form 8700-22 (3-84)

BZTO104(e)038114

CHEM-SECURITY SYSTEMS, INC.

EXHIBIT 7b

Please print or type
(Form designed for use on elite (12-pitch) typewriter)

Form Approved. OMB No. 2000-0404, Expires 2-31-86

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.	Manifest Document No.	22. Page	Information in the shaded areas is not required by Federal law.

23. Generator's Name	L. State Manifest Document Number
	M. State Generator's ID
24. Transporter _____ Company Name / 25. US EPA ID Number	N. State Transporter's ID
	O. Transporter's Phone
26. Transporter _____ Company Name / 27. US EPA ID Number	P. State Transporter's ID
	Q. Transporter's Phone

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.							
b.							
c.							
d.							
e.							
f.							
g.							
h.							
i.							

GENERATOR

S. Additional Descriptions for Materials Listed Above		T. Handling Codes for Wastes Listed Above
a.	e.	
b.	f.	
c.	g.	
d.	h.	
	i.	

32. Special Handling Instructions and Additional Information — Waste Profile Sheet Number(s)

a.	e.	h.
b.	f.	i.
c.	g.	
d.		

TRANSPORTER

33. Transporter _____ Acknowledgement of Receipt of Materials		Date
Printed/Typed Name	Signature	Month Day Year
34. Transporter _____ Acknowledgement of Receipt of Materials		Date
Printed/Typed Name	Signature	Month Day Year

FACILITY

35. Discrepancy Indication Space

TOLS001294

BZTO104(e)038115

CHEM-SECURITY SYSTEMS, INC.

EXHIBIT 7c

NATIONAL RESPONSE CENTER 1-800-424-8802
OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type
Form designed for use on elite (12-pitch) typewriter

Form Approved OMB No 2000-0404 Expires 7 31 86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: O.R.D.0.0.0.0.1.2.3.4.5 — Manifest Document No.: 01297
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
X Y Z COMPANY
123 Main Street, Process, Oregon

4. Generator's Phone (503) 555-1234

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: CHEM-SECURITY SYSTEMS, INC.
6. US EPA ID Number: O.R.D.0.8.9.4.5.2.3.5.3
C. State Transporter's ID
D. Transporter's Phone: 503/454-2643

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone: 503-454-2643

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a.	RQ	Waste Hydrofluoric acid solution corrosive material UN 1790	0 0 1	TT	3 0 0 0	G	D002
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
a. Hydrofluoric Acid Etchant waste, liquid
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information — Waste Profile Sheet Number(s)
a. D85311
b.
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: John Jones — Signature: — Date: Month 9 Day 2 0 Year 8 4

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Robert Smith — Signature: — Date: Month 9 Day 2 0 Year 8 4

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Date: Month Day Year

GENERATOR — TRANSPORTER — FACILITY

EPA Form 8700-22 (3-84)

-34c-

ORIGINAL - RETURN TO GENERATOR

TOLS001295

BZTO104(e)038116

CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269 • Portland, Oregon 97207-1269 • (503) 223-1912
CSSI

May 28, 1985

Neil E. Wallis
Time Oil Company
2737 W. Commodore Way
Seattle, Washington 98199

Dear Mr. Wallis:

Enclosed are two copies of our Waste Transportation and Disposal Agreement. Please sign both copies and return both copies to me at the above address. I will then forward your fully-executed copy. We appreciate your business and look forward to serving your hazardous waste needs.

Please feel free to call if you have any questions.

Sincerely,

CHEM-SECURITY SYSTEMS, INC.

Joyce Johnson

Joyce Johnson
Inside Sales Representative

JJ:lh
Enclosures

ENCL. 9

TOLS001296

BZTO104(e)038117

WASTE TRANSPORTATION AND DISPOSAL AGREEMENT

On this 24th day of May, 19 84, the parties, Time Oil Co., a Washington corporation with its principal offices at 2737 W. Commodore Way, Seattle, WA 98199 (hereinafter called "Generator"), and CHEM-SECURITY SYSTEMS, INC., a Washington corporation with its principal offices at 10602 N. E. 38th Place, Kirkland, Washington 98033 (hereinafter called "Disposer"), have agreed as follows:

1. WASTE PRODUCTS. The term "Waste Products" refers to those solid, liquid, semi-solid, or contained gaseous materials which are generally described in, and which have physical, chemical, biological or radioactive constituents, characteristics and properties within the specifications stated in, the Supplemental Information Document. The term "Waste Products" also includes containers described in the Supplemental Information Document, if they are to be supplied by the Generator. The term "unit of Waste Products" refers to a single whole container of Waste Products (such as a barrel, drum, box, or tanker load).

   Materials and containers shall be considered nonconforming: (i) if they are not in accordance with the warranties, descriptions, specifications or limitations stated in this agreement and the Supplemental Information Document, or (ii) if they have material constituents or components, not specifically identified in the Supplemental Information Document, (a) which materially increase the nature or extent of the hazard and risk undertaken by CSSI in agreeing to handle, load, transport, store, treat or dispose of the Waste Products, or (b) for whose storage, treatment or disposal the Disposal Facility is not designed or permitted.

2. SUPPLEMENTAL INFORMATION DOCUMENT. Where "the Supplemental Information Document" is referred to in this Agreement, the parties understand that such term refers to each single entire document, in that form specified in Exhibit A, (which exhibit is attached hereto and made part hereof), containing the information therein required and executed by the Generator and Disposer. Each Supplemental Information Document shall be numbered in chronological sequence. A Supplemental Information Document, prepared and executed as herein required, shall be considered incorporated into this Agreement and part hereof as of the date and time of Document execution. It is the intention of the parties that each Supplemental Information Document, when incorporated into this Agreement, constitutes a separate undertaking, individually enforceable.

Form No. WMI-55-B (Rev. 10/10/84)
c 1980, WASTE MANAGEMENT, INC.

A Supplemental Information Document, or any amendment thereto, shall be executed, on behalf of Disposer or Generator, only by such persons appointed as authorized agents of the parties for such purposes, which persons are identified, by name or specific position title, in Exhibit B. attached hereto and made part hereof. Either party may, by notice to the other, amend its list of authorized agents, which shall constitute an amendment to Exhibit B at the time such notice is received.

At any time during the term of a Supplemental Information Document, upon the written request of Disposer, the Generator shall: (a) supply an updated written description of the Waste Products or a written certification that the description previously supplied remains true and accurate; or, (b) supply a written certification that a particular load of Waste Products delivered to Disposer constituted a representative sample of the Waste Products described in the Supplemental Information Document; or, (c) supply a representative sample of the Waste Products together with a written certification of the sample's representativeness; or, (d) allow Disposer access to the Waste Products at Generator's facility for the purpose of obtaining one or more representative samples. Forms to be used in providing written Waste Products descriptions, recertifications of previous descriptions, or certifications of representative Waste Products samples shall be supplied by Disposer.

3. TENDER OF DELIVERY. Generator shall tender delivery of the Waste Products to Disposer at those times and places, in those quantities, and in the manner specified in the Supplemental Information Document. Generator shall, at the same time and place, tender to Disposer those completed documents, shipping papers or manifests as are required, for lawful transfer of the Waste Products to Disposer, by valid and applicable statutes, ordinances, orders, rules or regulations of the federal, state, or local governments, including, but not limited to, the Hazardous Materials Transportation Act, the Toxic Substances Control Act and the Resource Conservation and Recovery Act of 1976.

Tender of delivery shall be considered non-conforming if not in accordance with this Section and the specifications of the Supplemental Information Document, or if not preceded by such notification as required by Section 16 (f).

4. DISPOSER RIGHT TO INSPECTION UPON TENDER. Disposer shall have the right, but not the obligation, to inspect, sample, analyze, or test any tendered Waste Products before accepting such products. Failure or refusal of the Generator to provide Disposer with access to any tendered or delivered Waste Products, prior to Disposer's acceptance, shall be deemed a non-conforming tender or delivery of all of the Waste Products tendered or delivered at that time and place. Disposer's

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exercise of, or failure to exercise, its right hereunder shall not operate to relieve Generator of its responsibility or liability under this Agreement.

5. DISPOSER RIGHTS ON IMPROPER DELIVERY. If the Waste Products, any unit thereof, or the tender of delivery fail in any respect to conform to this Agreement, including the requirements of the Supplemental Information Document, Disposer may, at its exclusive option, (i) reject all Waste Products tendered; or, (ii) accept all Waste Products tendered; or, (iii) accept any unit or units of Waste Products and reject the rest. Provided, however, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other tendered container, would be visibly apparent, Disposer's option shall be limited to accepting or rejecting the particular non-conforming unit.

Rejection of the Waste Products must be within a reasonable time after their tender or delivery, not to exceed twenty-four (24) hours. In rejecting any Waste Products, Disposer shall orally notify the Generator of the manner in which the Waste Products or the tender of delivery are non-conforming, such notice to be followed by written notice within five (5) business days.

6. ACCEPTANCE OF WASTE PRODUCTS. Disposer shall accept any Waste Products which are in conformance with, and which have been tendered in conformance with, this Agreement, including the Supplemental Information Document, and may accept, as provided in Section 5, non-conforming Waste Products. If transportation is to be provided by Disposer, Disposer shall evidence its acceptance by removing such Waste Products from the place of tender. If transportation to the Storage or Disposal Facility is to be provided by Generator, Disposer shall evidence its acceptance by written notice to the Generator, such as through signing shipping papers or the manifest tendered with the Waste Products.

Failure of Disposer to reject the Waste Products, or any unit thereof, as provided in Section 5 shall be deemed acceptance of all tendered Waste Products not so rejected.

Upon acceptance of the Waste Products Disposer shall be precluded from rejecting those Waste Products accepted and, if acceptance of any unit of Waste Products was made with actual knowledge of a non-conformity, Disposer shall be precluded from revoking its acceptance of such unit because of such non-conformity. Acceptance of the Waste Products, or any unit thereof, does not, however, impair, or operate as a waiver of, any right or remedy available to Disposer, including revocation of acceptance, in the event the Waste Products or

their tender are later discovered to be non-conforming.

7. REVOCATION OF ACCEPTANCE. Disposer may, at any time before the condition of the Waste Products has been materially changed (such as by treatment, processing or disposal), revoke its acceptance of any unit or units of Waste Products discovered to be non-conforming.

Discovery by Disposer that any unit of the Waste Products is non-conforming for any reason shall be considered discovery that all units of such Waste Products, accepted at the same time as the non-conforming unit, are non-conforming for the same reasons. Provided, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other accepted container, would be visibly apparent, Disposer's option shall be limited to revoking acceptance of the particular non-conforming unit.

Revocation must occur within a reasonable time after Disposer actually discovers or should have discovered the non-conformity. In revoking its acceptance of any Waste Products, Disposer shall notify the Generator of the manner in which the Waste Products are non-conforming.

7a GENERATOR'S OPTIONS IN EVENT OF REJECTION OF REVOCATION OF ACCEPTANCE.
In the event Disposer rejects or revokes its acceptance of Waste Products, and at such time the Waste Products are in Disposer's possession or control, Generator may, within five (5) business days after receipt of notice, notify Disposer of Generator's intent to test the Waste Products, to verify the alleged non-conformity, or to correct any improper containerization, marking or labeling. Generator may, if lawfully permitted, direct Disposer to arrange for such testing or corrections, pursuant to Generator's instructions and at Generator's cost. All testing or corrections must be completed within twenty-one (21) days of Generator's receipt of the rejection or revocation notice. During the period of any testing or corrections, the duty of Disposer with respect to the Waste Products shall be that of a bailee for hire.

Upon mutual agreement of the parties that the Waste Products or any unit are not conforming for the reasons specified in Disposer's notice, the notice of rejection or revocation as to such Waste Products or unit shall be deemed null and void as of the time of its original issuance.

8. DISPOSER OPTIONS AS TO RIGHTFULLY REJECTED OR REVOKED WASTE PRODUCTS.
If Disposer rejects or revokes its acceptance of all or any units of Waste Products, and at such time the Waste Products

are in Disposer's possession or control, Disposer and Generator shall, in good faith, attempt to amend the Supplemental Information Document to provide for handling of the non-conforming materials. If the parties cannot, within a reasonable time after rejection or revocation (including any time provided for correction or testing in Section 7a), agree on necessary amendments, Generator shall make prompt arrangements for the removal of the non-conforming materials from the Storage or Disposal Facility to another lawful place of disposition.

Generator agrees to pay Disposer its reasonable expenses and charges for handling, loading, stowing, preparing for transport, transporting, storing and caring for any Waste Products returned to Generator pursuant to this Section.

9. LOADING AND TRANSPORTATION OF WASTE PRODUCTS. If the Supplemental Information Document specifies that Disposer is to provide loading or transportation services, Disposer shall load or stow and transport Waste Products to the Storage or Disposal Facility herein specified. In the aforesaid event, as between the parties, selection of transportation vehicles or vessels, times of travel and routes shall be solely determined by Disposer unless otherwise specified in the Supplemental Information Document. In selecting transportation vehicles or vessels compatible with the Waste Products, Disposer shall rely on Generator's description of the Waste Products.

10. STORAGE AND DISPOSAL. Disposer shall dispose of the Waste Products at the particular facility or facilities, referred to herein as "the Disposal Facility", identified in the Supplemental Information Document. Disposer shall utilize those general storage, treatment, and disposal methods specified in the Supplemental Information Document; however, as between the parties, Disposer shall be solely responsible for determining the specific times and techniques for storage, processing, treatment and disposal of the Waste Products. In determining such techniques, Disposer shall rely on Generator's description of the Waste Products.

If the Supplemental Information Document specifies that Disposer is to provide interim storage of the Waste Products at a "Storage Facility", prior to transportation of the Waste Products to the Disposal Facility, Disposer shall store such Waste Products at such Storage Facility for a period not to exceed ninety (90) days, unless some other period is specified in the Supplemental Information Document.

Disposer may use, distribute or sell any of the Waste Products, or any component or residue thereof, unless otherwise specified in the Supplemental Information Document.

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11. TITLE TO WASTE PRODUCTS. At the time Disposer accepts the Waste Products and takes possession and control thereover, title, risk of loss and all other incidents of ownership to the Waste Products shall be transferred from the Generator and vested in Disposer.

A justified revocation of acceptance by Disposer revests title to the Generator, including risk of loss and all other incidents of ownership, at the time such revocation of acceptance is communicated to the Generator.

12. TERM. The term of this Agreement shall be as specified in the Supplemental Informtion Document, to commence on the date of execution of such Document, as provided in Section 2.

13. RIGHT TO TERMINATE. Either party may terminate this Agreement if the other party (i) has been adjudicated a bankrupt, or (ii) has filed a voluntary petition in bankruptcy, or (iii) has made an assignment for the benefit of creditors, or (iv) a receiver has been appointed for such party. Termination pursuant to this paragraph shall be effective for performance remaining under any and all Supplemental Information Documents.

The Generator may terminate this Agreement, with respect to performance remaining under an identified Supplemental Information Document, if, at any time after execution of such document, the specified Storge or Disposal Facility fails to obtain, or maintain as valid, any license, permit or approval required to allow lawful acceptance and storage, treatment, processing and disposal of the Waste Products at such Facility.

Termination as provided above, or as allowed by Section 22, shall be by notice from the terminating party to the other party, specifying the reason therefor and the effective date thereof, which shall be not less than five (5) days after the date of the notice.

Either party may terminate this Agreement without cause, with respect to performance remaining under an identified Supplemental Information Document, by notice from the terminating party to the other party specifying the effective date of termination which shall be not less than thirty (30) days after receipt of the notice by the non-terminating party.

The right of terminating hereunder is in addition to, and not in lieu of, any right of a party to cancel this Agreement for breach of its terms or conditions.

14. COMPENSATION. For all of the Waste Products transported, stored and disposed of by Disposer, the Generator shall pay Disposer a fee, determined in accordance with the Supplemental Information Document. Disposer shall measure the Waste Products, for the purpose of computing fees, at the time and

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place, and in the manner, specified in the Supplemental Information Document. Disposer determinations so made shall govern unless proved to be in error by Generator.

Fees specified in the Supplemental Information Document shall not be altered during the term of this Agreement except as follows:

(a) Disposer may, on the first day of any calendar quarter, with thirty (30) days written notice to Generator, increase or decrease fees specified in the Supplemental Information Document. If any Waste Products, to which such fee alterations apply, are delivered to Disposer more than thirty days after Generator's receipt of this notice, Generator shall be deemed to have accepted such fee alterations and the Supplemental Information Document shall be deemed amended in such respect.

(b) If legislation or regulations, first implemented after date of execution of the Supplemental Information Document, impose taxes, tariffs, fees, surcharges or other charges upon the transportation, storage, processing, treatment or disposal of the Waste Products, the Generator shall reimburse the Disposer for such charges upon the Disposer's submission of an invoice stating that such charges have been levied or paid.

The Disposer shall submit statements to the Generator which shall be paid by the Generator not later than thirty (30) days from date of receipt. Disposer shall retain copies of such statements for a period of at least five (5) years as a record of disposal.

15. DISPOSER WARRANTIES. Disposer warrants and represents to the Generator that:

(a) Disposer understands the currently known hazards and risks which are presented to human beings, property and the environment in the handling, transportation, storage, treatment, processing and disposal of the Waste Products as they have been described by the Generator in the Supplemental Information Document; and,

(b) Disposer is engaged in the business of transportation, storage and disposal of industrial and other wastes, and has developed the requisite expertise for the handling, transportation, storage, treatment, processing, and diposal of such; and,

(c) Disposer will handle, load, stow, transport, store, treat, process, and dispose of the Waste Products in a safe and workmanlike manner and in full compliance with all valid and applicable statutes, ordinances, orders,

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rules and regulations of the federal, state and local governments in whose jursidictions such activities are performed under this Agreement; and,

(d) Any and all vehicles or vessels, Waste Products containers and personnel to be provided by Disposer in the performance of this Agreement have obtained or will obtain all permits, licenses, certificates or approvals required to comply with valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments.

(e) The Storage or Disposal Facility (or Facilities) described in the Supplemental Information Document has been issued, as of the date of execution of such Document, all permits, licenses, certificates or approvals, required by valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in which such Facility is located, necessary to allow such Facility to accept and store, treat, process and dispose of the Waste Products as described by the Generator in such Document. Disposer shall provide Generator with reasonable advance notice if any such permit, license, certificate or approval is to expire and not be renewed during the term of a Supplemental Information Document, or becomes the subject of judicial or administrative action seeking revocation or suspension. Such notice shall also be provided if Disposer determines not to seek any necessary permit, license, certificate or approval which becomes required after execution of a Supplemental Information Document.

16. GENERATOR WARRANTIES. The Generator warrants and represents to Disposer that:

(a) The description of the Waste Products in the Supplemental Information Document is true and correct in all material respects, fairly advises Disposer of the hazards and risks known by the Generator to be incident to the handling, transportation, storage, treatment, processing and disposal of the Waste Products, and is otherwise in full compliance with all materials description requirements of valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdictions such Waste Products are to be handled, transported, stored, treated, processed or disposed; and,

(b) Waste Products tendered to Disposer will conform to the descriptions and specifications contained in the Supplemental Information Document; and,

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(c) If Generator receives information, during the term of any Supplemental Information Document, that Waste Products described in such Document, or some component of such Products, present or may present a hazard or risk to persons or the environment, which was not disclosed in the Supplemental Information Document, Generator shall promptly report such information to Disposer. Such information shall include, but not be limited to, any relevant notification of substantial risk required to be given by Generator pursuant to Section 8 (e) of the Toxic Substances Control Act;

(d) If any load of Waste Products, tendered to Disposer for transportation in a single transportation vehicle, contains a reportable quantity of one or more hazardous substances, as provided in Section 102 of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or regulations adopted thereunder, Generator will, prior to tendering such load to Disposer, provide the person in charge of the Disposer transport vehicle with written notice that the load contains a reportable quantity of such hazardous substance(s), identifying the known or estimated quantity of each such hazardous substance present.

(e) Generator will prepare the Waste Products for transportation and tender to Disposer in accordance with all valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdiction such Waste Products are to be tendered to Disposer pertaining to: (i) container specifications for any container not supplied by Disposer; and, (ii) marking and labeling of all containers.

(f) If regulations promulgated or revised under Section 3001 of the Resource Conservation and Recovery Act of 1976 (P. L. 94-580) identify the Waste Products as "hazardous waste," either by characteristics or listing, the Generator, prior to tendering any Waste Products to Disposer has filed or will file with the appropriate governmental agency the preliminary notification required by Section 3010(a) of the above Act, and provide Disposer with evidence thereof.

(g) The Generator has sole title to Waste Products which will be tendered to Disposer, and is under no legal restraint, statutory, regulatory, administrative or judicial, which prohibits the transfer of possession or title to such Waste Products to Disposer.

17. INDEMNIFICATION. Disposer agrees to indemnify and save harmless the Generator, its present and future officers or

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directors (or officials), employees and agents, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by Disposer, or any negligent or willful act or omission of Disposer, its employees or subcontractors in the performance of this Agreement.

The Generator agrees to indemnify and save harmless Disposer, its present and future officers, directors, employees, agents, subcontractors and assignees, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by the Generator, or any negligent or willful act or omission of Generator, its employees or agents in the performance of this Agreement.

18. INSURANCE. Disposer shall procure and maintain, at its expense, during the term of this Agreement, at least the following insurance:

	COVERAGE	LIMITS
(a)	Worker's Compensation	Statutory
(b)	Employer's Liability	$500,000 each occurence
(c)	Public Liability (bodily injury & property damage)	$15,000,000 combined single limit
(d)	Automobile Liability (bodily injury & property damage)	$15,000,000 combined single limit

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Public Liability Insurance shall include coverage for completed operations and contractual liability under this Agreement with respect to sudden and accidental occurrences.

Each contract of insurance, and certificate of insurance, shall provide that said insurance shall not be cancelled or materially altered until at least ten (10) days after written notice is received by the Generator. Disposer agrees to furnish insurance with the above requirements, to the Generator before Disposer commences work hereunder.

In the event Disposer is required by law to obtain environmental impairment liability insurance for non-sudden and accidental occurrences at the Disposal Facility, Disposer shall furnish Generator with a copy of the certificate of insurance provided to the regulatory agency imposing the insurance requirement.

19. CONFIDENTIALITY. Disposer and Generator shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement, except as is necessary to perform this Agreement, (and then only on a confidential basis satisfactory to both parties), any information (including any technical information, experience or data) regarding either party's plans, programs, plants, processes, products, costs, equipment, operations or customers which may come within the knowledge of the parties, their officers or their employees in the performance of this Agreement, without in each instance securing the prior written consent of the other party.

Disposer shall also treat as confidential and shall not disclose to others, except as required by law, information relating to the chemical composition of the Waste Products or the quantity of Waste Products delivered to it by Generator.

Generator shall also treat as confidential and shall not disclose to others, except as required by law, this form of Agreement and the Supplemental Information Document.

Nothing above, however, shall prevent either Disposer or Generator from disclosing to others or using in any manner information which either party can show:

(a) Has been published and has become part of the public domain other than by acts, omissions or fault of Disposer or Generator or their employees; or

(b) Has been furnished or made known to Disposer or Generator by third parties (other than those acting directly or indirectly for or on behalf of Disposer or

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Generator) as a matter of legal right without restrictions on its disclosure; or

(c) Was in either party's possession prior to the disclosure thereof by Generator or Disposer to each other.

Provided, however, neither party shall release, or cause or allow the release of, information to the communications media, except as required by law, concerning the existence or terms of this Agreement or any Supplemental Information Document, including identification of the Generator of the Waste Products, identification of the Disposal Facility receiving the Waste Products, or the general description, characteristics or constituents of the Waste Products, without in each instance securing the prior written consent of the other party.

The foregoing obligations shall survive the termination or expiration of the Agreement.

20. WORK ON GENERATOR'S PREMISES. Generator agrees to provide Disposer, its employees and subcontractors a safe working environment for any work, in performance of this Agreement, which must be undertaken on premises owned or controlled by the Generator. While its employees or subcontractors are on Generator's premises, Disposer will maintain strict work discipline and effect its work in compliance with governmental laws or regulations pertaining to occupational safety and health. Disposer, its employees and subcontractors shall also comply with the Generator's safety procedures while on the Generator's premises, provided such procedures have been specified in the Supplemental Information Document or are attached thereto.

21. INSPECTIONS. The Generator shall have the right to inspect and obtain, at its expense, copies of all written licenses, permits or approvals, issued by any governmental entity or agency to Disposer or its subcontractors which are applicable to the performance of this Agreement and for which no claim of business confidentiality or trade secret is asserted; to inspect and test, at its own expense, transportation vehicles or vessels, containers or disposal facilities provided by Disposer; and to inspect the handling, loading, transportation, storage, treatment, processing or disposal operations conducted by Disposer in the performance of this Agreement. Such inspections are encouraged by Disposer, but shall not operate to relieve Disposer of its responsibility or liability under this Agreement.

22. EXCUSE OF PERFORMANCE. The performance of this Agreement, except for the payment of money for services already rendered, may be suspended by either party in the event the delivery or

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transportation of Waste Products by Generator, or transportation, storage, treatment, processing or disposal of Waste Products by Disposer are prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include, but not be limited to, acts of God, acts of war, riot, fire, explosion, accident, flood, or sabotage; lack of adequate fuel, power, raw materials, labor or transportation facilities; governmental laws, regulations, requirements, orders or actions; breakage or failure of machinery or apparatus; national defense requirements; injunctions or restraining orders; labor trouble, strike, lockout or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgement).

The party asserting a right to suspend performance under this Section must, within a reasonable time after he has knowledge of the effective cause, notify the other party of the cause for suspension, the performance suspended, and the anticipated duration of suspension. Upon receipt of such notice advising of a material or indefinite suspension of performance, and if such suspension substantially impairs the value of this Agreement to him, a party may, within a reasonable time (not to exceed thirty days), terminate this Agreement as provided in Section 13. If such notice of termination is not provided, this Agreement will lapse with respect to any performance suspended hereunder.

The party asserting a right to suspend performance hereunder shall advise the other party when the suspending event has ended, and when performance will be resumed.

Provided, if title to Waste Products has been transferred to Disposer, Disposer may not suspend performance of this Agreement with respect to such Waste Products; however, if a performance-suspending event occurs after Disposer has taken title to Waste Products but before completion of performance, Disposer may delegate such performance to any other persons lawfully permitted to transport, store, treat or dispose of the Waste Products pursuant to Section 23. In the circumstances described above, the Generator hereby consents to any necessary delegations for which it receives written notice from Disposer.

23. DELEGATION AND ASSIGNMENT. Disposer may at any time, with the prior written consent of Generator, which consent shall not be unreasonably withheld, delegate, orally or in writing, the performance of the work, or any portion thereof, which is by this Agreement undertaken by Disposer. Any such delegation shall not operate to relieve Disposer of its responsibilities hereunder and, notwithstanding any such delegation, Disposer shall remain obligated to the Generator in these undertakings.

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Either party may, at any time, upon written notice to the other party, assign its rights under this Agreement.

24. INDEPENDENT CONTRACTOR. Disposer is and shall perform this Agreement as an independent contractor, and as such, shall have and maintain complete control over all of its employees, agents, and operations. Neither Disposer nor anyone employed by it shall be, represent, act, purport to act or be deemed to be the agent, representative, employee or servant of the Generator.

25. NOTICE. Any notice, communication or statement required or permitted to be given hereunder shall be in writing and deemed to have been sufficiently given when delivered in person or by registered or certified mail, postage prepaid, return receipt requested, to the address of the respective party below:

GENERATOR: Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

DISPOSER: CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269
Portland, Oregon 97207-1269

Either party may, by notice to the other, change the addresses and names above given.

26. ENTIRE AGREEMENT. This Agreement represents the entire understanding and agreement between the parties hereto relating to the transportation, storage, treatment, processing and disposal of Waste Products and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. No terms, conditions, prior course of dealings, course of performance, usage of trade, understandings, purchase orders, or agreement purporting to modify, vary, supplement or explain any provision of this Agreement shall be effective unless in writing, signed by representatives of both parties authorized to amend this Agreement.

In no event shall the preprinted terms or conditions found on any Disposer or Generator purchase or work order be considered an amendment or modification of this Agreement, even if such documents are signed by representatives of both parties: such preprinted terms or conditions shall be considered null and of no effect.

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27. WAIVER. Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be so expressed in writing and signed by the party to be bound.

28. MISCELLANEOUS. The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State specified in the Supplemental Information Document.

All paragraph headings herein are for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular sections to which they refer.

In the event of a conflict between the terms or conditions of this Agreement and those of the Supplemental Information Document, the terms and conditions of the Supplimental Information Document shall control.

29. SEPARABILITY. If any Section, subsection, sentence or clause of this Agreement shall be adjudged illegal, invalid or unenforceable, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of the Agreement as a whole or of any Section, subsection, sentence or clause hereof not so adjudged.

30. The covenants and agreements contained in this Agreement shall apply to, inure to the benefit of and be binding upon the parties hereto and upon their respective heirs, executors, administrators, assigns and successors in interest.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

DATE: JUNE 24, 1985

Time Oil Company

By: John L. Denham

Title: Environmental Mgr.

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

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EXHIBIT A

SUPPLEMENTAL INFORMATION DOCUMENT: NUMBER 85-001

This Document supplements, and is part of, that certain "Waste Transportation and Disposal Agreement," (hereinafter "the Agreement"), entered into by and between Time Oil Company, (hereinafter "the Generator"), and CHEM SECURITY SYSTEMS, INC., (hereinafter "Disposer"), on May 24, 1985. The provisions of this Document shall be incorporated into the Agreement.

1. DESCRIPTION OF WASTE PRODUCTS. The "Waste Products", to which the Agreement refers, are described in the "Generator's Waste Material Profile Sheet," Code Designation E13588, attached hereto and made part hereof.

   Containers are to be provided by Generator according to the following specifications:
   lined and plastic wrapped dump truck

2. TENDER OF WASTE PRODUCTS. Generator shall tender or deliver the above Waste Products to Disposer as follows:

   (a) Quantity of Waste Products to be Tendered Over Term.

   (1) Estimated.
   Volume listed in Section "F" of referenced Generator's Waste Material Profile Sheet(s) or in addenda for each profile sheet.

   (2) Guaranteed (if applicable).

   Not Applicable.

   (b) Maximum/Minimum Quantity of Waste Products Per Tender (if tendered in installments).

   Maximum: same as quantity listed in Section 2(a) above. or in addendum to waste profile sheet.

   (c) Place of Tender.
   Arlington, Oregon

   (d) Time and Frequency of Tender.
   8:00 a.m. to 4:30 p.m. weekdays, except holidays, weather permitting.

c 1984, WASTE MANAGEMENT, INC.
(Revised 10/10/84)

(e) Manner of Tender (including notification to Disposer). Uniform hazardous waste manifest. No free liquid may be present in waste.

3. WORK RULES/PROCEDURES AT GENERATOR'S PREMISES. Any specific rules or procedures required by Generator for workers on its premises must be noted here, or attached hereto and initialed by both parties.

4. LOADING AND TRANSPORTATION. The Waste Products are to be loaded (or stowed) on vehicles (or vessels) by Generator, and transported to the Storage Facility/Disposal Facility (circle one) by Generator. If the Waste Products are first transported to a Storage Facility, they will be reloaded (or stowed) on vehicles (or vessels) by N/A, and transported to the Disposal Facility by N/A. If Disposer is to provide transportation the following special transportation requirements (if any) shall apply, pursuant to the Generator's direction:

(a) Vehicles or Vessels.

dump truck

(b) Routes.

Not Applicable.

(c) Hours of Transportation.

Not Applicable.

5. STORAGE FACILITY. Disposer shall store the Waste Products at the following storage facility for a period not to exceed ____ days, from which facility the Waste Products will then be removed to the Disposal Facility: Not Applicable

(Revised 10/10/84)

(a) Name/Address of Storage Facility:

(b) Name/Address of Facility Permittee:

(c) Permit Number(s)/Initiation and Termination Date(s):

(d) Permitting Authority(ies):

6. DISPOSAL FACILITY. Disposer shall dispose of the above Waste Products at the following disposal facility (or facilities):

(a) Name/Address of Facility (Facilities):

The Arlington Facility
Star Route
Arlington, Oregon 97812

(b) Name/Address of Facility Permittee:

Chem-Security Systems, Inc.
P.O. Box 1866
Bellevue, Washington 98009-1866

(c) Permit Number(s)/Initiation and Termination Date(s):

State of Oregon - HW-1, initiated Aug. 26, 1980; continues pending issuance of new permit.

(d) Permitting Authority(ies):

Oregon Department of Environmental Quality.

7. DISPOSAL METHODS: Disposer shall utilize one or more of the following methods for the disposal of the Waste Products:
secure burial

8. EMERGENCY SERVICES: Disposer shall provide emergency transportation, storage or disposal services, with respect to the above Waste Products, pursuant to the following:
As required by site license or at Generator's request

9. RECLAMATION AND/OR SALE OF WASTE PRODUCTS. Disposer is authorized to reclaim, recover and sell, distribute or use the Waste Products, their components or residues, except as specified below:

Not Applicable.

10. COMPENSATION. The Generator shall compensate Disposer as follows:

(a) For Transportation, Storage and Disposal of Waste Products.

(b) For Transportation and Disposal of Waste Products. Per ton:

	Before July 1, 1985	Beginning July 1, 1985
250 tons per yr.	$110	$116
250-1500 tons per yr.	$100	$106

Fed. tax is $213 per dry wt. ton. Minimum billing is $200 per tender.

(c) For Disposal of Waste Products Only.

(d) Emergency Services.

Time and mateirals basis

(e) Measurement of Waste Products. Waste Products shall be measured by Disposer for the purpose of computing fees hereunder, at the time and place, and in the manner, as follows: Upon acceptance at the Arlington facility using:

facility scale

(Revised 10/10/84)

(f) Generator's Billing Address. Disposer shall submit its statements to:

Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

(g) Disposer Billing Address. Disposer will issue its billings from the following:

CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE
ARLINGTON, OREGON 97812

11. TERM. The term of the Agreement, with respect to the Waste Products covered in this Document, shall be as follows:

This Agreement shall commence on May 24, 1985 and shall remain in effect until terminated by either party with or without cause by thirty (30) days' advance written notice to the other party.

12. LAW TO GOVERN. The Agreement and this Supplemental Information Document shall be governed and construed in accordance with the laws of the State of Oregon.

13. MISCELLANEOUS CONDITIONS.

By their signatures hereto, the parties agree that this Supplemental Information Document shall be considered an attachment to, and part of, that certain "Waste Transportation and Disposal Agreement" identified above.

Date: JUNE 24, 1985

Time Oil Company

By: John L. Denham

Title: Environmental Mgr.

CHEM-SECURITY SYSTEMS, INC.

By: _____

Roger E. Nelson

Title: District Manager

(Revised 10/10/84)

EXHIBIT B

AUTHORIZED SIGNATORIES

This Exhibit, being attached to, and forming part of that certain "Waste Transportation and Disposal Agreement" entered into by the undersigned parties on May 24, 1985, establishes the identities of those persons authorized to execute Supplemental Information Documents on behalf of the parties, to-wit:

FOR GENERATOR:

FOR DISPOSER:

Regional Sales Manager	up to $ 50,000
District Manager or National Accounts Manager	up to $ 300,000
Regional Vice President or Regional Manager	up to $ 500,000
Senior Vice President	up to $1,000,000
President	over $1,000,000

Time Oil Company

By: John L. Denham

Title: Environmental Mgr.

Chem-Security Systems, Inc.

By: _____

Title: _____

(Revised 10/10/84)

TOLS001317

BZTO104(e)038138

CHEM-SECURITY SYSTEMS, INC. DISPOSAL REQUEST

RECEIVED MAY 15 1985

REFERENCE 12559 WASTE PROFILE SHEET NO.

SUBJECT:

WASTE STREAM NAME: PCP contaminated soil

PHYSICAL STATE: LIQUID ☐ SOLID ☒ SEMISOLID ☐ 0242 EPA WASTE CODE

GENERATOR NAME: TIRE OIL CO. ORD000259543 EPA GENERATOR I.D. NUMBER

FACILITY ADDRESS	MAILING ADDRESS
Tire Oil Co.	Same
12005 N. Burgard Rd.	
Portland, Or 97203-6493	

GENERATOR CONTACT PERSON NAME: John P. Denham Tel. No. 206 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards (NOW) ? (ANNUAL)

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4.

No free liquids allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie (NAME (PRINT))

(SIGNATURE)

4-29-85 (DATE)

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
On May 14, 1985
By Elizabeth Chang
Solid Waste Division
Hazardous Waste Operations

RE: HW4.10

COMMENTS:

TOLS001318

BZTO104(e)038139

Waste Management, Inc.

GENERATOR'S WASTE MATERIAL PROFILE SHEET

TSDR E13588

PO #[illegible] 2/20/85

A GENERAL INFORMATION

GENERATOR NAME: Time Oil Co.

TRANSPORTER: Gresham Transfer Inc.

FACILITY ADDRESS: 12005 N. Burgard Rd.
Portland, OR

TRANSPORTER PHONE: (503) 255-7900

GENERATOR USEPA I.D.: O R D 0 0 9 5 9 7 5 4 3

GENERATOR STATE I.D.:

TECHNICAL CONTACT: John P. Denham

TITLE: Environmental Manager

PHONE: (206) 285-2400

NAME OF WASTE: PCP contaminated soil

PROCESS GENERATING WASTE: Clean up of contaminated site at 12005 N. Burgard Road

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR: - -

~~ODOR: ☐ NONE ☐ MILD ☐ STRONG DESCRIBE~~

PHYSICAL STATE @ 70°F: ☒ SOLID ☐ SEMI-SOLID ☐ LIQUID ☐ POWDER

LAYERS: ☐ MULTILAYERED ☐ BI-LAYERED ☒ SINGLE PHASED

FREE LIQUIDS: ☐ YES ☒ NO

VOLUME: %

pH: ☐ < 2 ☐ 2-4 ☐ 4.1-6.9 ☐ 7 ☐ 7.1-10 ☐ 10.1-12.5 ☐ > 12.5 ☐ EXACT ☒ N/A

SPECIFIC GRAVITY: ☐ < .8 ☐ .8-1.0 ☒ 1.1-1.2 ☐ EXACT ☐ 1.3-1.4 ☐ 1.5-1.7 ☐ > 1.7

FLASH POINT: ☐ < 70°F ☐ 70°F-100°F ☐ 101°F-139°F ☐ 140°F-200°F ☐ > 200°F ☒ NO FLASH ☐ EXACT ☐ CLOSED CUP ☐ OPEN CUP

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Contaminated soil	%
pentachlorophenol	.1820 %
tetrachlorophenol	.0071 %
trace amounts of other	%
chlorinated chemicals less than	.0001 %
	%
Non-contaminated soil	99.81~~2~~ 08 %
	%
	%
	%

D METALS ☐ TOTAL (PPM) ☐ EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)	-0-	SELENIUM (Se)	-0-
BARIUM (Ba)	-0-	SILVER (Ag)	-0-
CADMIUM (Cd)	-0-	COPPER (Cu)	-0-
CHROMIUM (Cr)	-0-	NICKEL (Ni)	-0-
MERCURY (Hg)	-0-	ZINC (Zn)	-0-
LEAD (Pb)	-0-	THALLIUM (Tl)	-0-
CHROMIUM-HEX (Cr + 6)	-0-		

E OTHER COMPONENTS - TOTAL (PPM)

CYANIDES	-0-	PCB'S	-0-
SULFIDES	-0-	PHENOLICS	-0-

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? ☒ YES ☐ NO

PROPER SHIPPING NAME: Waste pentachlorophenol mixture

HAZARD CLASS: ORM-E I.D. NO: NA 2020 R.Q.: 10 lbs

METHOD OF SHIPMENT: ☐ BULK LIQUID ☒ BULK SOLID ☐ DRUM (TYPE/SIZE)

ANTICIPATED VOLUME: GALS. 260 CUBIC YARDS OTHER

PER: ☒ ONE TIME ☐ WEEK ☐ MONTH ☐ QUARTER ☐ YEAR ☐

G HAZARDOUS CHARACTERISTICS

REACTIVITY: ☒ NONE ☐ PYROPHORIC ☐ SHOCK SENSITIVE ☐ EXPLOSIVE ☐ WATER REACTIVE ☐ OTHER

OTHER HAZARDOUS CHARACTERISTICS: ☒ NONE ☐ RADIOACTIVE ☐ ETIOLOGICAL ☐ PESTICIDE MANUFACTURING WASTE ☐ OTHER

USEPA HAZARDOUS WASTE? ☒ YES ☐ NO

USEPA HAZARDOUS CODE(S): U242

STATE HAZARDOUS WASTE? ☒ YES ☐ NO

STATE CODE(S): U 242

H SPECIAL HANDLING INFORMATION

☐ ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE, AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

AUTHORIZED SIGNATURE	TITLE	DATE
John P. Denham	Environmental Manager	February 19, 1985

TOLS001319

BZTO104(e)038140

CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269 • Portland, Oregon 97207-1269 • (503) 223-1912
CSSI

June 7, 1985

Mr. John Denham
Time Oil Company
2737 N. Commodore Way
Seattle, Washington 98199

Dear John:

Enclosed are the two copies of replacement pages for our Supplemental Information Document that we discussed by phone today. Please replace them in the original contracts that you have and return both contracts to me.

If I can be of further assistance do not hestitate to call me.

Sincerely,

CHEM-SECURITY SYSTEMS, INC.

Joyce Johnson
Inside Sales Representative

Enclosure

M E M O R A N D U M

June 11, 1985

TO:	Robert Abendroth	Seattle
	Bill Baldwin	Pittsburgh
	Don Marion	Pittsburgh
	Neil Wallis	Portland
FROM:	John Denham	Seattle

SUBJECT: NORTHWEST TERMINAL WOODTREATING SITE

This is a status update regarding cleanup of soil at our Portland Oregon terminal where the Pentachlorophenol operation existed.

Following Don Marion and Bill Baldwin's March 13, 1985 visit, the following occurred:

a. On April 2, Bill B called to coordinate results of his contact with Koppers geologists. Bill requested sampling per enclosure 1. On April 4, Robert A agreed with this action. On April 5, Neil W was tasked to locate a firm to accomplish soil sampling and a laboratory which could handle this sizable soil analysis within a reasonable time frame at the lowest possible costs.

b. After a diligent search, it was learned there was only one firm in the area that had the capability to do this job - Riedel Environmental Services, Inc. On April 25, Riedel submitted their cost of $18,600 (enclosure 2). I asked for a cost breakdown. Riedel submitted it on May 18 (enclosure 3). Drilling cost of $7,544 is actual fee of drilling contractor Sweet and Edwards out of Kelso (I verified this). Analytical cost of $4,956 is strictly the laboratory charge for processing 96 samples from 16 holes at 6 six samples per hole. (Note this is 7 less holes than Bill B requested but covers a larger 80' x 80' area). Method of analysis is GC/MS, which is the only one allowed by EPA/DEQ. Cost to analyze each sample is $51.63. Labor cost of $3,985 includes taking nine additional composite surface samples (3 on northeast, 3 on east and 3 on south) outside bermed area to determine soil contamination boundaries, taking the 96 samples mentioned above, drawing the drilling plan, preparing the contour map which shows location of contamination at the various depths, supervision of entire job on site by a qualified hydrologist and writing the report. Other direct costs of $2,115 cover decontamination of equipment between the taking of each sample, sample jars, safety gear used, drums for and disposal of decontamination solvent used for all equipment decontamination and the bentonite used to plug all holes drilled.

c. Contract with Northwest Vacuum Truck Service was negotiated (enclosure 4). Certificate of insurance coverage (enclosure 5) and contract bond (enclosure 6) were obtained from contractor. An "approved" transporter was obtained (Gresham Transfer Service).

d. Disposal request for contaminated soil was approved by DEQ (Enclosure 7).

e. Hazardous Waste Manifests with appropriate instructions were obtained (enclosure 8).

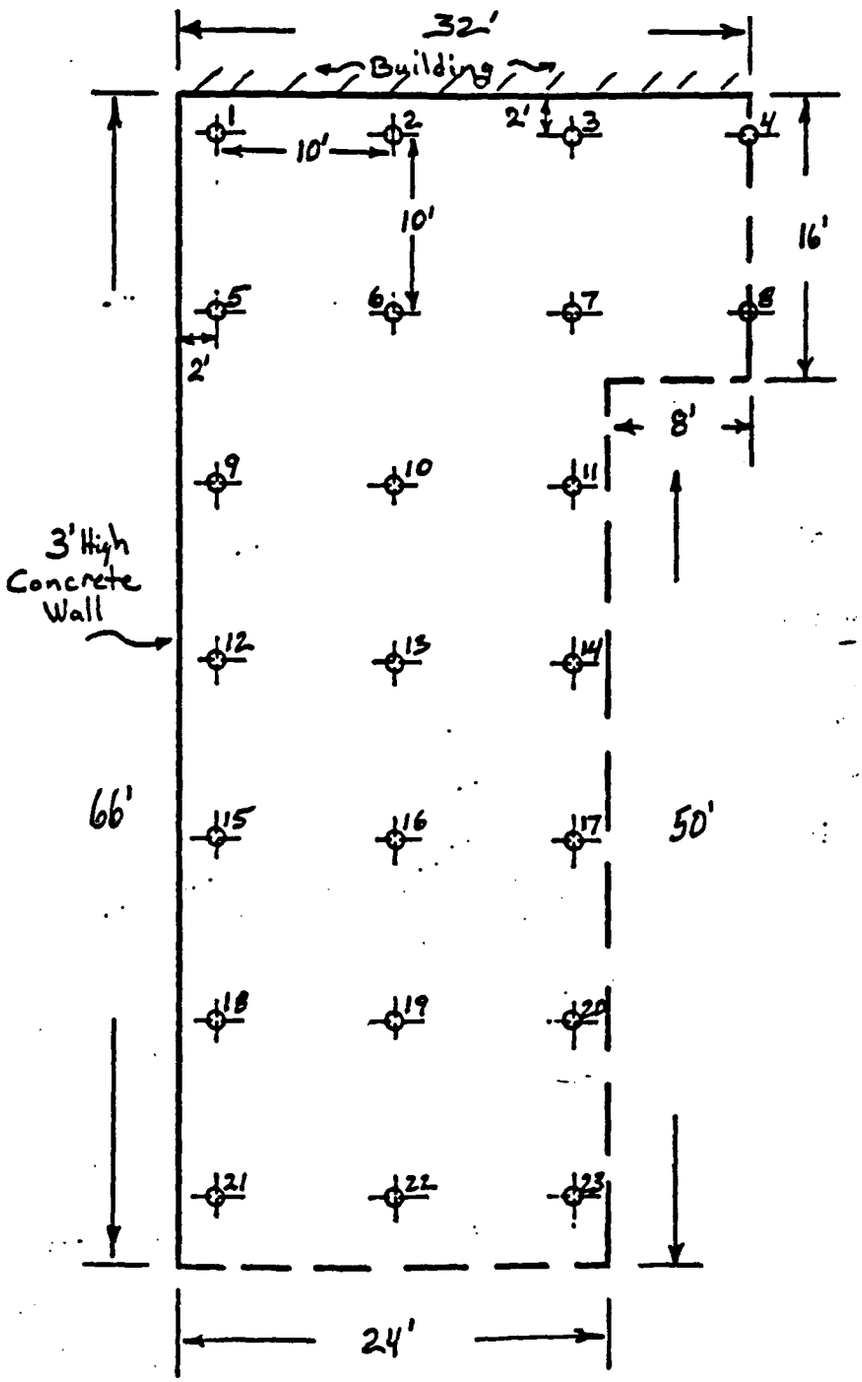
f. The required "Waste Transportation and Disposal Agreement" was obtained from Chem-Security Systems, operators of the Arlington disposal facility (enclosure 9). I disagreed with item 2(b) on page 17 (in that it limited disposal on this tender to only one movement) and item 10(c) on page 20 (in that there was no price break after 250 tons as was originally quoted). Telecon contact with their offices resulted in satisfactorily worded replacement pages for agreement, which arrived today and are included in enclosure 9.

At this point in time, everything seems to be "go". All arrangements have been made to start the first phase of digging, hauling and disposing on June 24, 1985. I will be on site. Plan is to remove and dispose of several truck loads of soil, stop, have sampling and analyses done, then repeat as needed. This approach takes advantage of lower disposal costs (prior to July 1) and the conduct of the expensive sampling and analysis only one time. Current known costs for first phase are $53,000 plus $18,600 = $71,600.

JPD/ch

NORTHWEST TERMINAL WOODTREATING SOIL SAMPLING PLAN

Scale: 1" = 10'



1. Drill 23 holes and obtain samples from each.
2. On holes 2, 3, 4, 6 & 7:
   a. Sample at 6", 1', 2', 3', 5', 10' and 15' levels.
   b. Analyze samples at 1', 2', 3', 5' & 10' levels (25 analyses). Also analyze holes 2,3 & 6 at 15' level.
   c. Hold remaining samples at 40 degrees F.
3. On all other holes:
   a. Sample at 6", 1', 2', 3', 5' and 10' levels.
   b. Analyze samples at 6", 1', 2' & 3' levels (72 analyses).
   c. Hold remaining samples at 40 degrees F.

ENCL. 1

TOLS001323

000617

BZTO104(e)038144

JUN 14 1985

MEMORANDUM

June 11, 1985

TO:	Robert Abendroth	Seattle
	Bill Baldwin	Pittsburgh
	Don Marion	Pittsburgh
	Neil Wallis	Portland
FROM:	John Denham	Seattle

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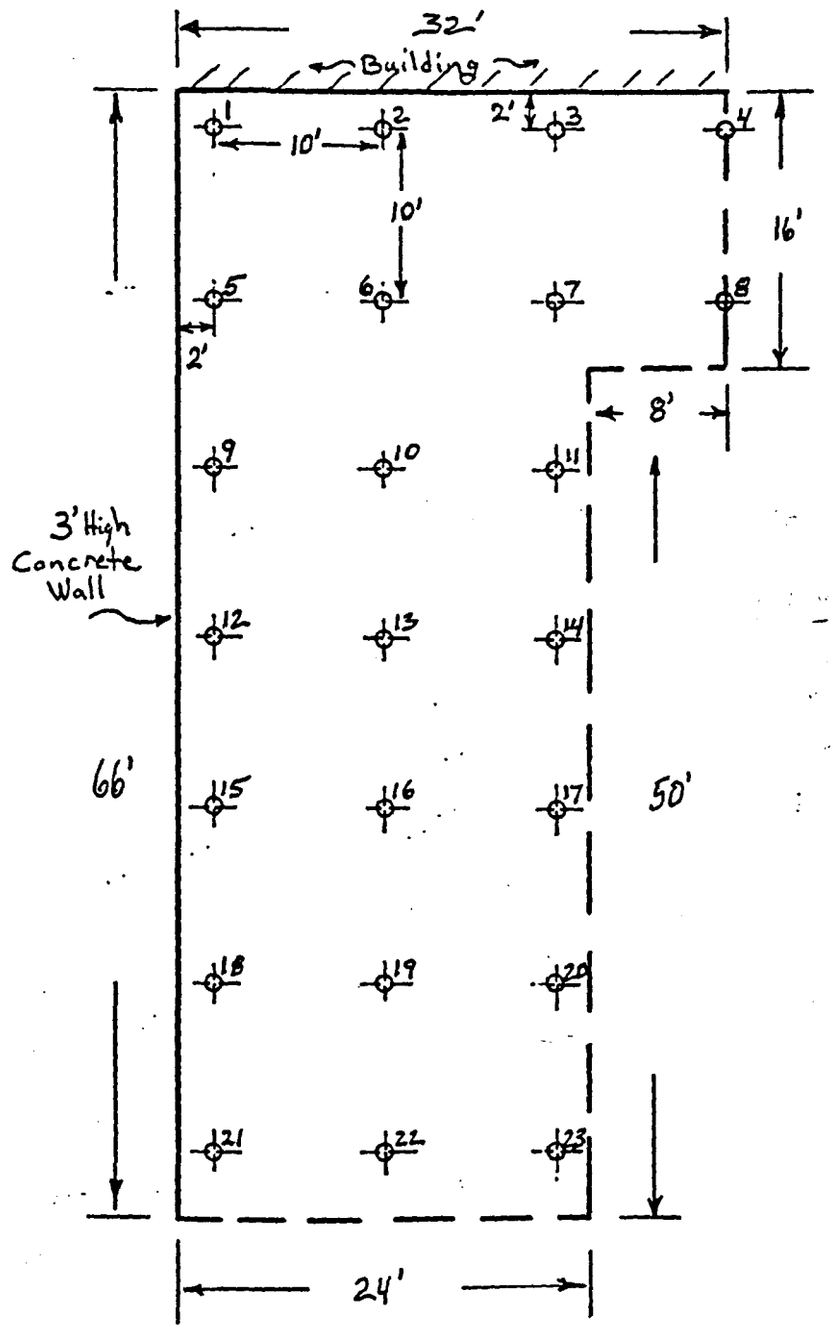
JPD/ch

NORTHWEST TERMINAL WOODTREATING SOIL SAMPLING PLAN

Scale: 1" = 10'



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3. On all other holes:
   a. Sample at 6", 1', 2', 3', 5' and 10' levels.
   b. Analyze samples at 6", 1', 2' & 3' levels (72 analyses).
   c. Hold remaining samples at 40 degrees F.

Encl. 1

TOLS001326

BZTO104(e)038147

"Imagineering a cleaner world"

☒ Portland Division
Foot of N. Portsmouth Ave
P.O. Box 5007
Portland, OR 97208
(503) 286-4656

☐ St. Louis Division
529 Spirit of St. Louis Blvd
Chesterfield, MO 63017
(314) 532-7660

☐ San Francisco Division
230 Cutting Blvd.
Richmond, CA 94802
(415) 234-7400
or (415) 398-5351

☐ Seattle Division
901 Fairview Ave. No.
P.O. Box 1730
Seattle, WA 98111
(206) 622-2900

RIEDEL
ENVIRONMENTAL SERVICES, INC.

April 25, 1985

Mr. Neil Wallis
Time Oil Company
P. O. Box 03137
12005 N. Burgard Street
Portland, OR 97203

Dear Neil:

Thank you for the opportunity to visit your plant and discuss with you the pentachlorophenol sampling requirements you have at your northwest terminal wood treating site.

We propose that an initial composite sample survey be initiated to accurately define the boundaries of the PCP contamination zone. These surface samples would be collected to establish the actual area to be sampled later by coring at depth, and are warranted since the data indicates contamination at a site outside of your original proposed sampling plan. This task would be performed at a time and materials rate. It would be expected to be quite nominal relative to the core sampling, and will minimize the possibility of having to remobilize the drill rig to modify or extend the core sampling procedure in the future.

We will also review the sampling plan and, with DEQ approval, design a sampling plan that will meet their requirements while minimizing the number of holes needed. This task would also be billed at a time and materials rate and may utilize a triangular sampling matrix to improve coverage.

Riedel Environmental Services is prepared to perform the actual sampling and analysis including grid layout, drilling, sampling at six depths, analysis for PCP, decontamination of personnel and equipment, PCP concentration contour analysis, report and background level determination. The estimate for this task is $18,600, would require five days on site, and is based on an estimated sample area of 80' x 80'. If preliminary composite samples indicate a different area, this bid will be revised accordingly. If tetrachlorophenol analyses are also required, analytical costs will increase this bid by $5,000.

On the basis of the above results, RES can prepare an estimate for removal and disposal of the contaminated soils. We can also include monitoring or observation wells if required.

Encl. 2

TOLS001327

BZTO104(e)038148

Please contact either myself or Rick Gariepy if you have any questions or would like additional information.

Sincerely,

RIEDEL ENVIRONMENTAL SERVICES, INC.

John H. Ruddick
Microbiologist

JHR:kps

"Imagineering a cleaner world"

RIEDEL
ENVIRONMENTAL SERVICES, INC.

☑ Portland Division
Foot of N. Portsmouth Ave
P.O. Box 5007
Portland, OR 97208
(503) 286-4656

☐ St. Louis Division
529 Spirit of St. Louis Blvd
Chesterfield, MO 63017
(314) 532-7660

☐ San Francisco Division
230 Cutting Blvd
Richmond, CA 94802
(415) 234-7400
or (415) 398-5351

☐ Seattle Division
901 Fairview Ave. No.
P.O. Box 1730
Seattle, WA 98111
(206) 622-2900

May 18, 1985

Mr. Neil Wallis
Time Oil Co.
P. O. Box 03137
12005 N. Burgard
Portland, OR 97203

Dear Neil:

The cost breakdown on our bid for sampling and analysis of PCP contaminated soil at your facility is as follows:

Drilling	$ 7,544
Analytical	4,956
Labor	3,985
Other Direct	2,115
	$18,600

If you have any questions, please don't hesitate to contact me.

Sincerely,

John Ruddick
Microbiologist

JR:kps

ENCL. 3

TOLS001329

BZTO104(e)038150

CONTRACT

The parties to this agreement are Time Oil Co. (hereinafter termed owner) and Northwest Vacuum Truck Service, Inc. (hereinafter termed contractor) whereas:

Owner has a volume of earthen material located in Portland, Oregon and owner is desirous of having that material removed.

Contractor is willing to undertake that task upon the terms and conditions set forth below.

Therefore, in consideration of the agreements contained herein, the parties agree as follows:

1. Contractor agrees to remove the material from its present location, load it into suitable transportation vehicles and transport it to a disposal facility approved by the Oregon Department of Environmental Quality.

2. The material to be removed by contractor is generally set forth on the drawing labeled exhibit 1, attached hereto and incorporated by this reference. Prior to work under this agreement, a representative of owner will meet with contractor at the site and the extent of the material to be removed will be more specifically delineated at that time.

3. The commencement date for work will be February 21, 1985 or such other date as may be agreed upon by the parties following coordination with the Department of Environmental Quality and the authorized disposal facility. Work is intended to be divided into two phases. First phase consists of material removal to an agreed upon depth. Then there will be a several day delay while additional tests are conducted to determine if further removal is required. If so, phase two removal actions are to be effected. Should there be any need to continue removal, above process is to be repeated until ultimate removal is accomplished.

4. For each day worked, owner agrees to pay contractor the sum of 1200 dollars for labor and equipment pertaining to soil removal plus 600 dollars for each truckload of soil transported. A day worked shall be one wherein earth moving equipment, necessary to perform the work, has been utilized to the fullest, reasonably possible, extent for a period of not less than 8 hours. Truck shall be a standard 18 yard rated capacity vehicle. Payment will be made upon completion of the work and receipt by owner of written acknowledgement from the approved disposal facility that all material removed and transported by contractor has been received at that facility.

5. Contractor indemnifies and agrees to defend and hold owner harmless from any and all costs, claims, liabilities and damages arising out of contractors work under this contract.

6. Contractor hereby declares that it is engaged as an independent contractor and agrees to perform the work as independent contractor and not as an employee of owner. Contractor has and hereby retains the right to exercise full control and supervision of the work and full control over the employment, direction, compensation and discharge of all persons assisting in the work.

Encl. 4

TOLS001330

BZTO104(e)038151

7. Contractor agrees at its expense to obtain all governmental permits, licenses and approvals and comply with all laws, rules, regulations and requirements now or hereafter existing necessary for the accomplishment of the work to be performed by contractor under this agreement.

8. Contractor especially acknowledges its understanding that portions of the material to be removed, transported and disposed of under this agreement have been found to contain commercial pentachlorophenol in concentrations ranging from 0 ppm to 1820 ppm. Contractor agrees to take all necessary precautions for the protection of persons and property that may be required or prudent in the removal and transportation of that material.

9. Contractor agrees to maintain workmans' compensation insurance in the form and amounts required by the laws of the state of Oregon and broad form comprehensive public liability insurance with minimum limits of $1 million per person and $1 million per accident for bodily injury and $500,000 per accident for property damage. Contractor shall promptly deliver to owner certificates of said insurance, naming owner as an additional insured before commencing work and such certificate shall provide that said insurance shall not be cancelled prior to 30 days by written notice to owner.

10. Contractor agrees that before commencement of any work hereunder, it will promptly furnish owner with a faithful performance bond in an amount to 53,000 dollars guaranteeing completion of all work and performance of all obligations undertaken by contractor under this agreement.

11. The nature, validity and interpretation of this contract shall be governed by the laws of the state of Washington.

Dated this 19th day of February 1985.

OWNER
Time Oil Co.

by John P. Denham
John P. Denham
Environmental Manager

CONTRACTOR
Northwest Vacuum Truck Service Inc.

by John H. Somes
John H. Somes
General Manager

TOLS001331

BZTO104(e)038152

CONTRACT BOND

Bond No. H 34156

KNOW ALL MEN BY THESE PRESENTS, That we, NORTHWEST VACUUM TRUCK SERVICE, INC.

5555 NORTH CHANNEL - BLDG. 43 - PORTLAND, OREGON 97217

called the Principal, and HERITAGE INSURANCE COMPANY OF AMERICA, A ILLINOIS corporation, called the Surety, are held and firmly bound unto TIME OIL CO.

called the owner in the sum of FIFTY THREE THOUSAND AND NO/100THS ---------- Dollars ($ 53,000.00**), for the payment whereof said Principal and Surety bind themselves firmly by these presents.

WHEREAS, the Principal has, by written Agreement, dated MARCH 12, , 19 85, entered into a Contract with the Owner for REMOVAL OF EARTHEN MATERIAL OWNED BY OWNER FROM ITS PRESENT LOCATION, LOAD IT INTO SUITABLE TRANSPORTATION VEHICLES AND TRANSPORT IT TO A DISPOSAL FACILITY APPROVED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY.

a copy of which is by reference made a part hereof;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That if the Principal shall faithfully perform the Contract, and indemnify and save harmless the Owner from all loss, cost or damage which Owner may suffer by reason of any lien arising out of claim for labor or materials utilized in the construction under said Contract, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 12TH day of MARCH, 19 85.

NORTHWEST VACUUM TRUCK SERVICE, INC.
Principal

By: S M Skeel

HERITAGE INSURANCE COMPANY OF AMERICA

By: J. C. Baumann
J. C. BAUMANN
Attorney-in-fact

ENCL. 6

TOLS001332

BZTO104(e)038153

HERITAGE INSURANCE COMPANY OF AMERICA

LINCOLNWOOD, ILLINOIS

Power of Attorney

PRINCIPAL NORTHWEST VACUUM TRUCK SERVICE, INC. EFFECTIVE DATE MARCH 12, 1985

DBA _____ AMOUNT OF BOND $ 53,000.00

POWER NO. H 34156

KNOW ALL MEN BY THESE PRESENTS: That the Heritage Insurance Company, a Corporation in the State of Illinois, having its principal office in Lincolnwood, Illinois, pursuant to the following resolution, adopted by the Board of Directors of the said Company on the 9th day of March, 1979, to wit:

"The President, or any Vice-President, or other officer designated by the Board of Executive Committee shall have authority, severally, to make, execute and deliver a power of attorney constituting as Attorney-in-Fact such persons, firms or corporations as such officers may select from time to time."

does hereby make, constitute and appoint J.T. Kohoutek, C.J. Huffman and/or J.C. Baumann of Seattle in the State of Washington, its true and lawful attorney(s)-in-fact, with full power and authority hereby conferred in its name, place and stead, to sign, execute, acknowledge and deliver in its behalf, and its act and deed, as follows:

The obligation of the Company shall not exceed the sum of five hundred thousand ($500,000.00) dollars.

and to bind Heritage Insurance Company thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of the Heritage Insurance Company, and all the acts of said Attorney(s) pursuant to the authority herein given, are hereby ratified and confirmed.

IN WITNESS WHEREOF, the Heritage Insurance Company has caused these presents to be signed by its President and/or its Vice-President, and its Corporate Seal to be hereto affixed.

HERITAGE INSURANCE COMPANY OF AMERICA

Vincent M. Giacinto, President

State of Illinois } SS:
County of Cook }

On this 9th day of March, 1979, before the subscriber, a Notary Public of the State of Illinois in and for the County of Cook duly commissioned and qualified, came V. M. Giacinto of the Heritage Insurance Company, to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation, and that the resolution of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my official seal at Lincolnwood, Illinois, the day and year above written.

Notary Public

JOSEPH D. UDONI
NOTARY PUBLIC, State of Illinois
Qualified in State of Illinois
Commission Expires March 4, 1984

State of Illinois } SS:
County of Cook }

CERTIFICATE

I, the undersigned, Secretary of *HERITAGE INSURANCE CO.* a stock corporation of the State of Illinois, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Resolution of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, at Lincolnwood, Illinois. Dated this 12TH day of MARCH A.D., 19 85

Secretary

H-73

TOLS001333

BZTO104(e)038154

Certificate of Insurance

ACORD

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES LISTED BELOW.

NAME AND ADDRESS OF AGENCY

MARSH & McLENNAN, INCORPORATED
MARSH & McLENNAN BUILDING
720 OLIVE WAY
SEATTLE, WASHINGTON 98101
(206) 223-1240

COMPANIES AFFORDING COVERAGES

COMPANY LETTER A: SAFECO
COMPANY LETTER B:
COMPANY LETTER C:
COMPANY LETTER D:
COMPANY LETTER E:

NAME AND ADDRESS OF INSURED

NORTHWEST VACUUM TRUCK SERVICE, INC.
POST OFFICE BOX 24402
SEATTLE, WASHINGTON 98124

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)	EACH OCCURRENCE	AGGREGATE
A	**GENERAL LIABILITY** [X] COMPREHENSIVE FORM [X] PREMISES—OPERATIONS [X] EXPLOSION AND COLLAPSE HAZARD [X] UNDERGROUND HAZARD [X] PRODUCTS/COMPLETED OPERATIONS HAZARD [X] CONTRACTUAL INSURANCE [X] BROAD FORM PROPERTY DAMAGE [X] INDEPENDENT CONTRACTORS [X] PERSONAL INJURY	CP 842833	05/30/85	BODILY INJURY	$	$
				PROPERTY DAMAGE	$	$
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 500,	$ 500,
				PERSONAL INJURY		$
A	**AUTOMOBILE LIABILITY** [X] COMPREHENSIVE FORM [X] OWNED [X] HIRED [X] NON-OWNED	BA 842833 A	05/30/85	BODILY INJURY (EACH PERSON)	$	
				BODILY INJURY (EACH ACCIDENT)	$	
				PROPERTY DAMAGE	$	
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 500,	
A	**EXCESS LIABILITY** [X] UMBRELLA FORM [ ] OTHER THAN UMBRELLA FORM	UL 842833	05/30/85	BODILY INJURY AND PROPERTY DAMAGE COMBINED	$1,000,	$1,000,
	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY			STATUTORY		
					$	EACH ACCIDENT
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES

As respects the operations of the Insured. TOLS001334

Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will endeavor to mail 20 days written notice to the below named certificate holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company.

ACCOUNT EXECUTIVE: Jo Ann Crook

NAME AND ADDRESS OF CERTIFICATE HOLDER

Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199
Attention: John Denham

DATE ISSUED March 5, 1985 (mf)

MARSH & McLENNAN, INCORPORATED

By: John C. Day
AUTHORIZED REPRESENTATIVE

(John C. Day)

ACORD 25 (1-79)

BZTO104(e)038155

Encl. 5

SAIF CORPORATION

INSURING COMPANY:
☐ SAIF CORPORATION
☐ SAIF CORPORATION OF OREGON

Certificate of Coverage

Date of Issue: FEBRUARY 25, 1985

This certifies that NW VACUUM TRUCK SERVICE INC., *Policy No.* 426329, *is insured with SAIF, with a policy period ending date of* JUNE 30, 1985, *and is complying with the Oregon Workers' Compensation Law to provide for payment of compensation to subject Oregon workers.*

TO: TIME OIL CO,
2737 W. COMMODORE WAY
SEATTLE, WASHINGTON 98199

ATTN: JOHN DENHAM

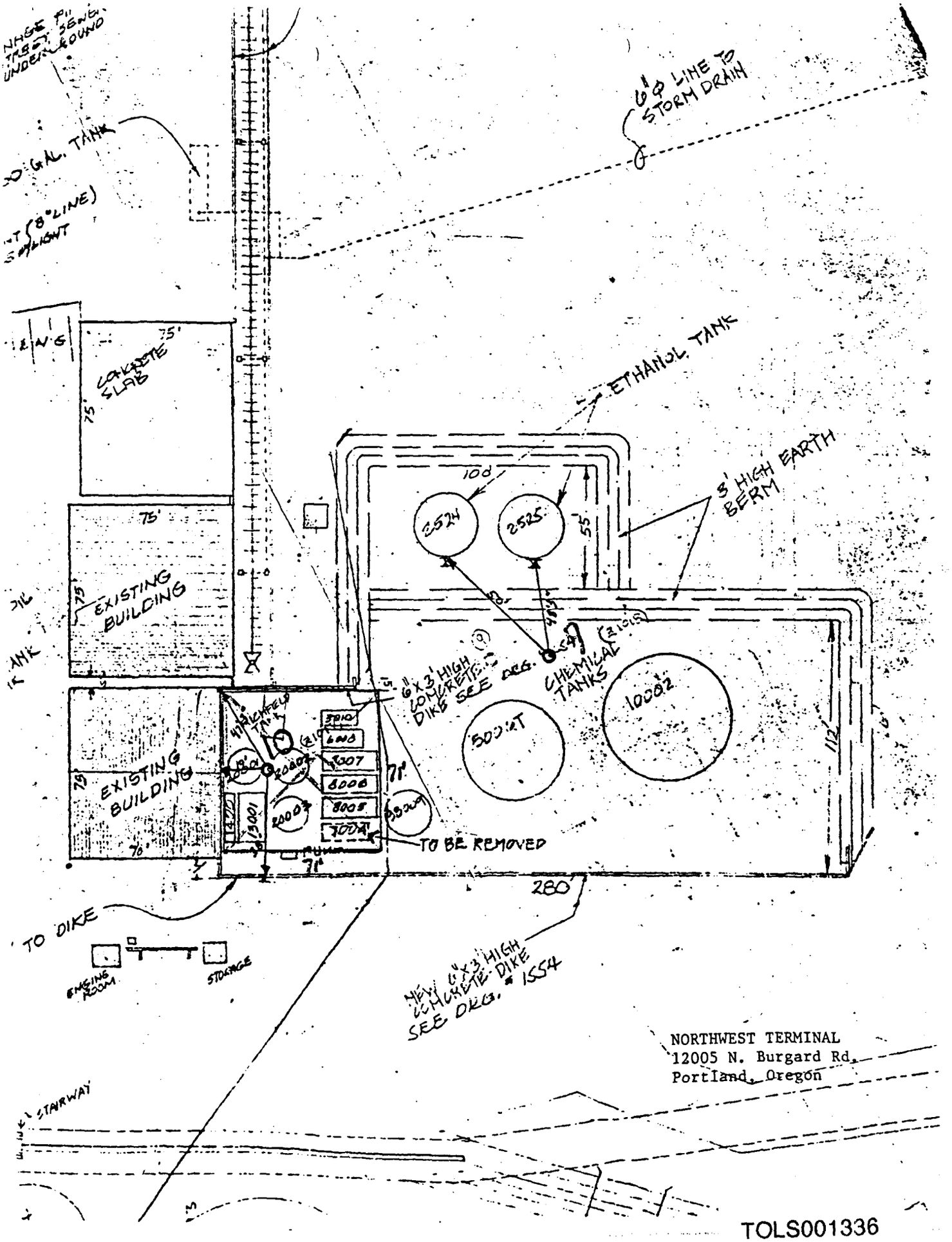
Michael J. Dora

Michael J. Dora
Director
Underwriting Division

F1220 1/84

TOLS001335

BZTO104(e)038156



NORTHWEST TERMINAL
12005 N. Burgard Rd.
Portland, Oregon

TOLS001336

BZTO104(e)038157

Marsh & McLennan

Marsh & McLennan, Incorporated
Marsh & McLennan Building
720 Olive Way
Seattle, Washington 98101
Telephone (206) 223-1240

March 5, 1985

Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199

Attention: John Denham

Insured Northwest Vacuum Truck Service, Inc.

Company and Policy No. Safeco

Various - See attached certificate

Coverage

Location Post Office Box 24402
Seattle, Washington 98124

( ) Policy enclosed

(xx) Certificate ~~xxxxxxxxxxxxxx~~ enclosed

( ) Premium invoice enclosed for

( ) Premium invoice will be mailed to you by the Insuror

( ) Mortgage or Loss Payable clause enclosed

( ) Contract of Sale clause enclosed

( ) Please return for cancellation, Policy No.

( )

Sincerely yours,

MARSH & McLENNAN, INCORPORATED

Jackie Starr

By Jackie Starr
Account Representative

Enclosures
mf
cc: Northwest Vacuum Truck Service, Inc.
Attn Mr. Steve Skeel

TOLS001337

REC' T.O.C. PORTLAND 5/16/85

CHEM-SECURITY SYSTEMS, INC) **DISPOSAL REQUEST**)

REFERENCE: E13588
WASTE PROFILE SHEET NO.

SUBJECT:

WASTE STREAM NAME: PCP contaminated soil

PHYSICAL STATE
LIQUID ☐ SOLID ☒ SEMISOLID ☐

U242
EPA WASTE CODE

GENERATOR NAME: TIME OIL CO.

ORD009597543
EPA GENERATOR I.D. NUMBER

FACILITY ADDRESS	MAILING ADDRESS
Time Oil Co.	Same
12005 N. Burgard Rd.	
Portland, Or	

GENERATOR CONTACT PERSON NAME: John P. Denham Tel. No. (206) 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards (NOW) 0 (ANNUAL)

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4.

No free liquid allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie
NAME (PRINT)

J Craig McKenzie
SIGNATURE

4-29-85
DATE

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
On May 14, 1985
By Edward L. Chiang
Solid Waste Division
Hazardous Waste Operations

COMMENTS:

RE: HW4.10 T

CSSI-6000 (1/85)

ENCL. 7

TOLS001338

BZTO104(e)038159

CHEM-SECURITY SYSTEMS, INC.

NATIONAL RESP[illegible]SE CENTER 1-800-424-8802
OREGON ACCID[illegible] RESPONSE CENTER 1-800-452-0311

Please print or type. (Forms designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2000-0404. Expires 7-31-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No.

2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name | 6. US EPA ID Number

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address | 10. US EPA ID Number

Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812 | **ORD 089 452 353**

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (*Including Proper Shipping Name, Hazard Class, and ID Number*)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	EPA/[illegible] Waste No.
a.						
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a.
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

GENERATOR

Printed/Typed Name	Signature	Date: Month	Day	Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date: Month	Day	Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date: Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date: Month	Day	Year

EPA Form 8700-22 (3-84)

ORIGINAL - RETURN TO GENERATOR

TOLS001339

BZTO104(e)038160

4.0 MANIFEST REQUIREMENTS

When hazardous waste is transported from the generator's location to the Arlington Facility, the Oregon DEQ, U.S. DOT and EPA require proper manifesting. Beginning September 20, 1984, these agencies required use of a uniform hazardous waste manifest form (Exhibit 7a) and, where necessary, a continuation sheet (Exhibit 7b).

Each load of chemical waste shipped to the Arlington Facility must be accompanied by one or more properly completed uniform manifests. All copies of manifests and continuation sheets must be legible. If manifest forms are needed by the generator, treater or transporter, they can be obtained by contacting the appropriate Chem-Security Systems sales office. When the transporter arrives at the Arlington Facility, the manifest(s) and other shipping paper(s) must be presented to the site receiving clerk for verification.

4.1 WHEN TO USE THE CONTINUATION SHEET

The continuation sheet must be used if:

- o More than two transporters are used to transport the waste, or;
- o More space is required for U.S. DOT description and related information in Section 11 of the manifest.

4.2 GENERATOR SUPPLIED INFORMATION REQUIRED ON MANIFESTS

To meet all the applicable current regulations on manifesting of hazardous waste to the Arlington Facility, and to help us efficiently and speedily handle waste loads, the items described below are needed on a properly completed manifest. A sample completed manifest is shown in Exhibit 7c. States other than Oregon may require other information (see Exhibit 7d).

TOLS001340

BZTO104(e)038161

Continuation Sheet Section #	Manifest Section #	
21	1	Generator's EPA identification number and annually unique manifest document number (preprinted on CSSI supplied manifest forms, must be added on continuation form).
22	2	Number of pages used (manifest) and page number of this sheet (continuation sheet).
23	3-4	Generator's name, mailing address (address where manifest records are kept), and telephone number. The continuation sheet requires name only.
24-27	5-8	Name and EPA identification number of each transporter.
O and Q	D and F	Phone number of each transporter.
None	9, 10, H	Name, address, EPA identification number, and phone number of the designated disposal facility (preprinted on manifests and continuation sheets provided by CSSI).
28	11	DOT proper shipping name, hazard class, identification number (49 CFR Parts 172.101, 172.202, and 172.203); and, a. Designation of whether the waste is hazardous material (check "HM" column), or b. Designation, if the waste is a hazardous substance (write "RQ" instead of a check in the "HM" column) and listing of the

TOLS001341

BZTO104(e)038162

constituent making the waste a hazardous substance after the proper shipping name, if it is not part of the proper shipping name.

29 12 Enter the number of containers for each waste and the appropriate abbreviation from the table below for type of container.

DM = Metal drums, barrels, kegs
DW = Wooden drums, barrels, kegs
DF = Fiberboard or plastic drums, barrels, kegs
TP = Tanks portable
TT = Cargo tanks (tank trucks)
TC = Tank cars
DT = Dump truck
CY = Cylinders
CM = Metal boxes, cartons, cases (including roll-offs)
CW = Wooden boxes, cartons, cases
CF = Fiber or plastic boxes, cartons, cases
BA = Burlap, cloth, paper, or plastic bags

30-31 13-14 Enter the total quantity of waste at 13 and the unit of measure abbreviation from the table below at 14. The quantity should be as precise as possible.

G = Gallons (liquids only)
P = Pounds
T = Tons (2,000 pounds)
Y = Cubic yards
L = Liters (liquids only)
K = Kilograms
M = Metric tons (1,000 kg)
N = Cubic meters

TOLS001342

BZTO104(e)038163

R	I	EPA waste number (if the waste is hazardous under RCRA).
S	J	Oregon Department of Environmental Quality's approved waste description, per Generator's Waste Profile Sheet description - "Waste Name" and physical state.
32	15	Please enter Waste Profile Sheet number(s) here. If an alternate facility is designated, information and identification number must appear here. Generators may use this space to indicate special transportation treatment, storage or disposal information.
None	16	Generator's Certification. Generator must read, sign by hand, and date this section. Please include this person's title along with printed/ typed name in the space provided.

For each lab pack drum, an itemized list of each waste container placed in the drum showing waste description and volume, must be stapled to the manifest. This list should be readily identifiable with a specific drum through a drum numbering or other system.

For certain PCB wastes, the following additional information is required:

- For any PCB article, the date each item was placed in storage for disposal should be written in Section 15 (this date must also appear on the article container).
- For each less than 500 ppm PCB liquid container or transformer waste write in PCB concentration on the manifest in Section 15, and staple to the manifest a lab analysis signed by a qualified analyst.
- For drained and flushed transformers, a statement that each unit was drained and flushed in accordance with 40 CFR 761 must be signed by a responsible representative of the generator and stapled to the manifest.

TOLS001343

BZTO104(e)038164

- o For full transformers or empty ones requiring flushing at Arlington, if it is not possible for the generator to determine the exact gallonage of PCB transformers, a designation of "estimated" volume should be stated on the manifest.
- o For each container of PCB capacitors a list of manufacturer name, serial number, and KVAR for each capacitor inside must be stapled to the manifest.

4.3 TRANSPORTATION INFORMATION

Continuation Sheet #	Manifest Section #	
33-34	17-18	Enter the name of the person accepting on behalf of the transporter. That person must sign, acknowledging acceptance of the waste. Use 17 for first transporter, 18 for second, and use continuation sheet for additional transporters.

4.4 TSD SUPPLIED INFORMATION

Continuation Sheet Section #	Manifest Section #	
35	19	The authorized representative of the designated facility must note in this space any significant discrepancy between waste described and waste actually received (see Section 9.1).
None	20	The person accepting waste on behalf of the facility must acknowledge acceptance of the waste by signing and entering date of receipt.

TOLS001344

BZTO104(e)038165

4.5 MANIFEST COPIES

The manifest consists of at least the number of copies which will provide the generator, each transporter, and the Arlington Facility with one copy for their records and an additional copy to be returned to the generator. On CSSI pre-printed manifest forms the use of each copy is designated at the bottom center. After the first transporter signs the manifest, the generator keeps one copy of the manifest and the remaining copies and the original remain with the transporter to accompany the shipment to the disposal facility or to another transporter or treater.

A signed copy of the manifest for loads of waste accepted at the Arlington Facility will be returned to the generator attached to the invoice for the waste shipment.

4.6 UNMANIFESTED WASTES

Wastes that arrive at the facility without manifests or approved Waste Profile Sheets may be returned to the generator as required under 40 CFR Part 262, State of Oregon requirements, and compliance policy.

TOLS001345

BZTO104(e)038166

CHEM-SECURITY SYSTEMS, INC

EXHIBIT 7a

NATIONAL RESPONSE CENTER 1-800-424-8802
OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. 01297 | 2. Page 1 of | Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name | 6. US EPA ID Number

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address | 10. US EPA ID Number

Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812 | **ORD 089 452 353**

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No
a						
b						
c						
d						

J. Additional Descriptions for Materials Listed Above
a.
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b.
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name | Signature | Date: Month Day Year

GENERATOR

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

TRANSPORTER

19. Discrepancy Indication Space

TOLS001346

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Date: Month Day Year

EPA Form 8700-22 (3-84)

BZTO104(e)038167

CHEM-SECURITY SYSTEMS, INC

EXHIBIT 7b

Please print or type
(Form designed for use on elite (12-pitch) typewriter)

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.	Manifest Document No.	22. Page	Information in the shaded areas is not required by Federal law.

23. Generator's Name	L. State Manifest Document Number
	M. State Generator's ID
24. Transporter _____ Company Name / 25. US EPA ID Number	N. State Transporter's ID
	O. Transporter's Phone
26. Transporter _____ Company Name / 27. US EPA ID Number	P. State Transporter's ID
	Q. Transporter's Phone

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.							
b.							
c.							
d.							
e.							
f.							
g.							
h.							
i.							

GENERATOR

S. Additional Descriptions for Materials Listed Above		T. Handling Codes for Wastes Listed Above
a.	e.	
b.	f.	
c.	g.	
d.	h.	
	i.	

32. Special Handling Instructions and Additional Information	Waste Profile Sheet Number(s)	
a.	e.	h.
b.	f.	i.
c.	g.	
d.		

33. Transporter _____ Acknowledgement of Receipt of Materials		Date
Printed/Typed Name	Signature	Month Day Year

34. Transporter _____ Acknowledgement of Receipt of Materials		Date
Printed/Typed Name	Signature	Month Day Year

35. Discrepancy Indication Space

TOLS001347

BZTO104(e)038168

CHEM-SECURITY SYSTEMS, INC. EXHIBIT 7c NATIONAL RESPONSE CENTER 1-800-424-8802
OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 7-31-85

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. 0.R.D.0.0.0.0.1.2.3.4.5 Manifest Document No. 01297
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
X Y Z COMPANY
123 Main Street, Process, Oregon
4. Generator's Phone (503) 555-1234

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: CHEM-SECURITY SYSTEMS, INC.
6. US EPA ID Number: 0.R.D.0.8.9.4.5.2.3.5.3
C. State Transporter's ID
D. Transporter's Phone: 503/454-2643

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone: 503-454-2643

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I Waste No.
a	RQ	Waste Hydrofluoric acid solution corrosive material UN 1790	001	TT	3000	G	D002
b							
c							
d							

GENERATOR

J. Additional Descriptions for Materials Listed Above
a. Hydrofluoric Acid Etchant waste, liquid
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. D85311
b.
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
John Jones		9 20 84

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Robert Smith		9 20 84

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)

EPA Form 8700-22 (3-84) -34c- ORIGINAL RETURN TO GENERATOR

TOLS001348

BZTO104(e)038169

CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269 • Portland, Oregon 97207-1269 • (503) 223-1912
CSSI

May 28, 1985

Neil E. Wallis
Time Oil Company
2737 W. Commodore Way
Seattle, Washington 98199

Dear Mr. Wallis:

Enclosed are two copies of our Waste Transportation and Disposal Agreement. Please sign both copies and return both copies to me at the above address. I will then forward your fully-executed copy. We appreciate your business and look forward to serving your hazardous waste needs.

Please feel free to call if you have any questions.

Sincerely,

CHEM-SECURITY SYSTEMS, INC.

Joyce Johnson

Joyce Johnson
Inside Sales Representative

JJ:lh
Enclosures

ENCL. 9

TOLS001349

BZTO104(e)038170

WASTE TRANSPORTATION AND DISPOSAL AGREEMENT

On this 24th day of May, 19 84, the parties, Time Oil Co., a Washington corporation with its principal offices at 2737 W. Commodore Way, Seattle, WA 98199 (hereinafter called "Generator"), and CHEM-SECURITY SYSTEMS, INC., a Washington corporation with its principal offices at 10602 N. E. 38th Place, Kirkland, Washington 98033 (hereinafter called "Disposer"), have agreed as follows:

1. WASTE PRODUCTS. The term "Waste Products" refers to those solid, liquid, semi-solid, or contained gaseous materials which are generally described in, and which have physical, chemical, biological or radioactive constituents, characteristics and properties within the specifications stated in, the Supplemental Information Document. The term "Waste Products" also includes containers described in the Supplemental Information Document, if they are to be supplied by the Generator. The term "unit of Waste Products" refers to a single whole container of Waste Products (such as a barrel, drum, box, or tanker load).

   Materials and containers shall be considered nonconforming: (i) if they are not in accordance with the warranties, descriptions, specifications or limitations stated in this agreement and the Supplemental Information Document, or (ii) if they have material constituents or components, not specifically identified in the Supplemental Information Document, (a) which materially increase the nature or extent of the hazard and risk undertaken by CSSI in agreeing to handle, load, transport, store, treat or dispose of the Waste Products, or (b) for whose storage, treatment or disposal the Disposal Facility is not designed or permitted.

2. SUPPLEMENTAL INFORMATION DOCUMENT. Where "the Supplemental Information Document" is referred to in this Agreement, the parties understand that such term refers to each single entire document, in that form specified in Exhibit A, (which exhibit is attached hereto and made part hereof), containing the information therein required and executed by the Generator and Disposer. Each Supplemental Information Document shall be numbered in chronological sequence. A Supplemental Information Document, prepared and executed as herein required, shall be considered incorporated into this Agreement and part hereof as of the date and time of Document execution. It is the intention of the parties that each Supplemental Information Document, when incorporated into this Agreement, constitutes a separate undertaking, individually enforceable.

Form No. WMI-55-B (Rev. 10/10/84)
c 1980, WASTE MANAGEMENT, INC.

BZTO104(e)038171

exercise of, or failure to exercise, its right hereunder shall not operate to relieve Generator of its responsibility or liability under this Agreement.

5. DISPOSER RIGHTS ON IMPROPER DELIVERY. If the Waste Products, any unit thereof, or the tender of delivery fail in any respect to conform to this Agreement, including the requirements of the Supplemental Information Document, Disposer may, at its exclusive option, (i) reject all Waste Products tendered; or, (ii) accept all Waste Products tendered; or, (iii) accept any unit or units of Waste Products and reject the rest. Provided, however, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other tendered container, would be visibly apparent, Disposer's option shall be limited to accepting or rejecting the particular non-conforming unit.

Rejection of the Waste Products must be within a reasonable time after their tender or delivery, not to exceed twenty-four (24) hours. In rejecting any Waste Products, Disposer shall orally notify the Generator of the manner in which the Waste Products or the tender of delivery are non-conforming, such notice to be followed by written notice within five (5) business days.

6. ACCEPTANCE OF WASTE PRODUCTS. Disposer shall accept any Waste Products which are in conformance with, and which have been tendered in conformance with, this Agreement, including the Supplemental Information Document, and may accept, as provided in Section 5, non-conforming Waste Products. If transportation is to be provided by Disposer, Disposer shall evidence its acceptance by removing such Waste Products from the place of tender. If transportation to the Storage or Disposal Facility is to be provided by Generator, Disposer shall evidence its acceptance by written notice to the Generator, such as through signing shipping papers or the manifest tendered with the Waste Products.

Failure of Disposer to reject the Waste Products, or any unit thereof, as provided in Section 5 shall be deemed acceptance of all tendered Waste Products not so rejected.

Upon acceptance of the Waste Products Disposer shall be precluded from rejecting those Waste Products accepted and, if acceptance of any unit of Waste Products was made with actual knowledge of a non-conformity, Disposer shall be precluded from revoking its acceptance of such unit because of such non-conformity. Acceptance of the Waste Products, or any unit thereof, does not, however, impair, or operate as a waiver of, any right or remedy available to Disposer, including revocation of acceptance, in the event the Waste Products or

are in Disposer's possession or control, Disposer and Generator shall, in good faith, attempt to amend the Supplemental Information Document to provide for handling of the non-conforming materials. If the parties cannot, within a reasonable time after rejection or revocation (including any time provided for correction or testing in Section 7a), agree on necessary amendments, Generator shall make prompt arrangements for the removal of the non-conforming materials from the Storage or Disposal Facility to another lawful place of disposition.

Generator agrees to pay Disposer its reasonable expenses and charges for handling, loading, stowing, preparing for transport, transporting, storing and caring for any Waste Products returned to Generator pursuant to this Section.

9. LOADING AND TRANSPORTATION OF WASTE PRODUCTS. If the Supplemental Information Document specifies that Disposer is to provide loading or transportation services, Disposer shall load or stow and transport Waste Products to the Storage or Disposal Facility herein specified. In the aforesaid event, as between the parties, selection of transportation vehicles or vessels, times of travel and routes shall be solely determined by Disposer unless otherwise specified in the Supplemental Information Document. In selecting transportation vehicles or vessels compatible with the Waste Products, Disposer shall rely on Generator's description of the Waste Products.

10. STORAGE AND DISPOSAL. Disposer shall dispose of the Waste Products at the particular facility or facilities, referred to herein as "the Disposal Facility", identified in the Supplemental Information Document. Disposer shall utilize those general storage, treatment, and disposal methods specified in the Supplemental Information Document; however, as between the parties, Disposer shall be solely responsible for determining the specific times and techniques for storage, processing, treatment and disposal of the Waste Products. In determining such techniques, Disposer shall rely on Generator's description of the Waste Products.

If the Supplemental Information Document specifies that Disposer is to provide interim storage of the Waste Products at a "Storage Facility", prior to transportation of the Waste Products to the Disposal Facility, Disposer shall store such Waste Products at such Storage Facility for a period not to exceed ninety (90) days, unless some other period is specified in the Supplemental Information Document.

Disposer may use, distribute or sell any of the Waste Products, or any component or residue thereof, unless otherwise specified in the Supplemental Information Document.

TOLS001352

BZTO104(e)038173

place, and in the manner, specified in the Supplemental Information Document. Disposer determinations so made shall govern unless proved to be in error by Generator.

Fees specified in the Supplemental Information Document shall not be altered during the term of this Agreement except as follows:

(a) Disposer may, on the first day of any calendar quarter, with thirty (30) days written notice to Generator, increase or decrease fees specified in the Supplemental Information Document. If any Waste Products, to which such fee alterations apply, are delivered to Disposer more than thirty days after Generator's receipt of this notice, Generator shall be deemed to have accepted such fee alterations and the Supplemental Information Document shall be deemed amended in such respect.

(b) If legislation or regulations, first implemented after date of execution of the Supplemental Information Document, impose taxes, tariffs, fees, surcharges or other charges upon the transportation, storage, processing, treatment or disposal of the Waste Products, the Generator shall reimburse the Disposer for such charges upon the Disposer's submission of an invoice stating that such charges have been levied or paid.

The Disposer shall submit statements to the Generator which shall be paid by the Generator not later than thirty (30) days from date of receipt. Disposer shall retain copies of such statements for a period of at least five (5) years as a record of disposal.

15. DISPOSER WARRANTIES. Disposer warrants and represents to the Generator that:

(a) Disposer understands the currently known hazards and risks which are presented to human beings, property and the environment in the handling, transportation, storage, treatment, processing and disposal of the Waste Products as they have been described by the Generator in the Supplemental Information Document; and,

(b) Disposer is engaged in the business of transportation, storage and disposal of industrial and other wastes, and has developed the requisite expertise for the handling, transportation, storage, treatment, processing, and diposal of such; and,

(c) Disposer will handle, load, stow, transport, store, treat, process, and dispose of the Waste Products in a safe and workmanlike manner and in full compliance with all valid and applicable statutes, ordinances, orders,

TOLS001353

BZTO104(e)038174

(c) If Generator receives information, during the term of any Supplemental Information Document, that Waste Products described in such Document, or some component of such Products, present or may present a hazard or risk to persons or the environment, which was not disclosed in the Supplemental Information Document, Generator shall promptly report such information to Disposer. Such information shall include, but not be limited to, any relevant notification of substantial risk required to be given by Generator pursuant to Section 8 (e) of the Toxic Substances Control Act;

(d) If any load of Waste Products, tendered to Disposer for transportation in a single transportation vehicle, contains a reportable quantity of one or more hazardous substances, as provided in Section 102 of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or regulations adopted thereunder, Generator will, prior to tendering such load to Disposer, provide the person in charge of the Disposer transport vehicle with written notice that the load contains a reportable quantity of such hazardous substance(s), identifying the known or estimated quantity of each such hazardous substance present.

(e) Generator will prepare the Waste Products for transportation and tender to Disposer in accordance with all valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdiction such Waste Products are to be tendered to Disposer pertaining to: (i) container specifications for any container not supplied by Disposer; and, (ii) marking and labeling of all containers.

(f) If regulations promulgated or revised under Section 3001 of the Resource Conservation and Recovery Act of 1976 (P. L. 94-580) identify the Waste Products as "hazardous waste," either by characteristics or listing, the Generator, prior to tendering any Waste Products to Disposer has filed or will file with the appropriate governmental agency the preliminary notification required by Section 3010(a) of the above Act, and provide Disposer with evidence thereof.

(g) The Generator has sole title to Waste Products which will be tendered to Disposer, and is under no legal restraint, statutory, regulatory, administrative or judicial, which prohibits the transfer of possession or title to such Waste Products to Disposer.

17. INDEMNIFICATION. Disposer agrees to indemnify and save harmless the Generator, its present and future officers or

TOLS001354

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Public Liability Insurance shall include coverage for completed operations and contractual liability under this Agreement with respect to sudden and accidental occurrences.

Each contract of insurance, and certificate of insurance, shall provide that said insurance shall not be cancelled or materially altered until at least ten (10) days after written notice is received by the Generator. Disposer agrees to furnish insurance with the above requirements, to the Generator before Disposer commences work hereunder.

In the event Disposer is required by law to obtain environmental impairment liability insurance for non-sudden and accidental occurrences at the Disposal Facility, Disposer shall furnish Generator with a copy of the certificate of insurance provided to the regulatory agency imposing the insurance requirement.

19. CONFIDENTIALITY. Disposer and Generator shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement, except as is necessary to perform this Agreement, (and then only on a confidential basis satisfactory to both parties), any information (including any technical information, experience or data) regarding either party's plans, programs, plants, processes, products, costs, equipment, operations or customers which may come within the knowledge of the parties, their officers or their employees in the performance of this Agreement, without in each instance securing the prior written consent of the other party.

Disposer shall also treat as confidential and shall not disclose to others, except as required by law, information relating to the chemical composition of the Waste Products or the quantity of Waste Products delivered to it by Generator.

Generator shall also treat as confidential and shall not disclose to others, except as required by law, this form of Agreement and the Supplemental Information Document.

Nothing above, however, shall prevent either Disposer or Generator from disclosing to others or using in any manner information which either party can show:

(a) Has been published and has become part of the public domain other than by acts, omissions or fault of Disposer or Generator or their employees; or

(b) Has been furnished or made known to Disposer or Generator by third parties (other than those acting directly or indirectly for or on behalf of Disposer or

TOLS001355

BZTO104(e)038176

transportation of Waste Products by Generator, or transportation, storage, treatment, processing or disposal of Waste Products by Disposer are prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include, but not be limited to, acts of God, acts of war, riot, fire, explosion, accident, flood, or sabotage; lack of adequate fuel, power, raw materials, labor or transportation facilities; governmental laws, regulations, requirements, orders or actions; breakage or failure of machinery or apparatus; national defense requirements; injunctions or restraining orders; labor trouble, strike, lockout or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgement).

The party asserting a right to suspend performance under this Section must, within a reasonable time after he has knowledge of the effective cause, notify the other party of the cause for suspension, the performance suspended, and the anticipated duration of suspension. Upon receipt of such notice advising of a material or indefinite suspension of performance, and if such suspension substantially impairs the value of this Agreement to him, a party may, within a reasonable time (not to exceed thirty days), terminate this Agreement as provided in Section 13. If such notice of termination is not provided, this Agreement will lapse with respect to any performance suspended hereunder.

The party asserting a right to suspend performance hereunder shall advise the other party when the suspending event has ended, and when performance will be resumed.

Provided, if title to Waste Products has been transferred to Disposer, Disposer may not suspend performance of this Agreement with respect to such Waste Products; however, if a performance-suspending event occurs after Disposer has taken title to Waste Products but before completion of performance, Disposer may delegate such performance to any other persons lawfully permitted to transport, store, treat or dispose of the Waste Products pursuant to Section 23. In the circumstances described above, the Generator hereby consents to any necessary delegations for which it receives written notice from Disposer.

23. DELEGATION AND ASSIGNMENT. Disposer may at any time, with the prior written consent of Generator, which consent shall not be unreasonably withheld, delegate, orally or in writing, the performance of the work, or any portion thereof, which is by this Agreement undertaken by Disposer. Any such delegation shall not operate to relieve Disposer of its responsibilities hereunder and, notwithstanding any such delegation, Disposer shall remain obligated to the Generator in these undertakings.

TOLS001356

BZTO104(e)038177

27. WAIVER. Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be so expressed in writing and signed by the party to be bound.

28. MISCELLANEOUS. The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State specified in the Supplemental Information Document.

All paragraph headings herein are for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular sections to which they refer.

In the event of a conflict between the terms or conditions of this Agreement and those of the Supplemental Information Document, the terms and conditions of the Supplimental Information Document shall control.

29. SEPARABILITY. If any Section, subsection, sentence or clause of this Agreement shall be adjudged illegal, invalid or unenforceable, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of the Agreement as a whole or of any Section, subsection, sentence or clause hereof not so adjudged.

30. The covenants and agreements contained in this Agreement shall apply to, inure to the benefit of and be binding upon the parties hereto and upon their respective heirs, executors, administrators, assigns and successors in interest.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

DATE: _____

Time Oil Company

By: _____

Title: _____

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

TOLS001357

BZTO104(e)038178

M E M O R A N D U M

August 1, 1985

TO: File

Seattle

FROM: John Denham

Seattle

SUBJECT: CONTRACT WITH CHEM-SECURITY SYSTEMS, INC.

Reference movement of dirt, contaminated with Pentachlorophenol from Northwest Terminal to Arlington.

A fee, in the amount of $3500, is due on receipt of invoice from the DEQ per OAR 340-102-065.

We moved 242.76 tons or 485,520 lbs. Conversion factor is 1 cubic foot = 62.4 lbs, therefore 7781 cubit feet was total moved. Fee for range of 5000 - 9999 cubic feet is $3500.

JPD/ch

TOLS001358

0242845

TIME OIL CO.

164487

INVOICE	REFERENCE NO.	AMOUNT
00000	060223	3,500.00

PAID

INVOICE	REFERENCE NO.	AMOUNT

CHECK DATE	06/11/86	DISCOUNT	.00
CHECK NO.	164487	TOTAL	3,500.00

WHEN DETACHED AND PAID, THIS CHECK BECOMES A RECEIPT IN FULL PAYMENT OF THE ITEMIZED ACCOUNT

164487

TIME OIL CO.

CITIBANK (NEW YORK STATE) N.A.
NORTH AMERICAN BANKING GROUP

P.O. BOX 24447 TERMINAL STATION SEATTLE, WASHINGTON 98124-0447

PAY TO THE ORDER OF

DEPT. OF ENVIRONMENTAL QUALITY
ATTN: TASCA CHARGE
P.O. BOX 1760
PORTLAND OR 97207

NET PROTECTED AMOUNT	NET AMOUNT
$*****3,500.00	$*****3,500.00

BY

VOID AFTER 6 MONTHS

BY

TWO SIGNATURES R

TOLS001359

BZTO104(e)038180

Remit and Make Checks Payable to:
Department of Environmental Quality
Attn: Fiscal Office
P.O. Box 1760
Portland, Oregon 97207

FOR DEQ USE ONLY
Date Received:
Amount Received:
Bank No.:

TO: TIME OIL COMPANY, N BURGARD BRANCH
2737 WEST COMMODORE WAY
SEATTLE, WA 98199
ATTN: JOHN DENHAM

INVOICE

Number: HW87-187
Date: 06/02/86

PERMIT NUMBER	ITEM OR REFERENCE	AMOUNT DUE	DATE DUE
	EPA ID: ORD009597543 CUBIC FEET GENERATED IN 1985: 5[illegible] LOCATION: 12005 N. BURGARD PORTLAND HAZARDOUS WASTE GENERATOR FEE FOR JULY 1, 1986 TO JUNE 30, 1987	$3500	07/01/86

JUN 11 REC'D

CO. DIV. VEND INV. PO. DUE % MO. DIST ATTACHED — AUTH PRICE REC/SIG

PAID

NOTE: Please return pink copy of this invoice with your remittance to ensure proper credit. DEQ

A/P VOUCHER — TIME OIL CO.

CO. 1 DIV. 3 AUTH.
VENDOR 0242845 PRICE
INV. REC. SIG.
P.O. 888888
DUE 6-11-86
% MO. 7
DIST. ATTACHED
EXTENSIONS CHECKED
ACCOUNTING
REG. NO. 060223

DIV.	ACCT.	FUNCT.	PROP.	GALLONS	DISC. %	AMOUNT
3	657	60	123			1700.00
3	120	09		No Rebilling		1700.00

POSTED
JUN 11 1986
TIME OIL CO.

REG. TOTAL $3500.00

TOLS001360

BZTO104(e)038181

M E M O R A N D U M

July 8, 1986

TO: File

FROM: John Denham

SUBJECT: NORTHWEST TERMINAL MONITORING WELL RESULTS

All seven operational wells (A, B, D, E, F, H and I) were sampled in May 1986 by Century Environmental Sciences. Analysis results showed pentachlorophenol (PCP) in well "I" only. Concentration was 2.2 parts per billion (ppb). The Oregon drinking water standard for PCP is 1010 ppb, the aquatic toxicity threshold for coho salmon is 30 ppb and the EPA Recommended Maximum Contaminant Level (RMCL) is 220 ppb. Since concentration of PCP at Northwest Terminal is significantly less than these levels, conclusion may be drawn that there is no groundwater contamination problem.

JPD/ch

John Ruddick
6/6/86

Portland Wood Treating

Well	
A	No Detectable
B	"
D	"
E	"
F	"
H	"
I	2.2
4	25 not precise

QC

Fld blank	ND
duplicate of B	ND
Spike recovery	130%

TOLS001362

BZTO104(e)038183

M E M O R A N D U M

September 2, 1986

TO: File

FROM: Fred Proby

SUBJECT: AUGUST 20 - 21, 1986 ACTIVITIES AT NORTHWEST TERMINAL

Samples collected in July 1985, after excavation of surface soil from woodtreating area, identified four shallow "hot spots" where pentachlorophenol (penta) is found at the surface but not the 2 or 4 feet depths (attachment 1). Contamination in the former penta mixing area has been found to the 12 foot depth. On August 20, the shallow "hot spots" were consolidated and relocated to the mixing area to simplify treatment of contaminated soil.

Work was accomplished by Jack Each Construction Co. of Portland, (503) 289-5547, using a front-end loader with a 4 cubic yard bucket (attachments 2 and 3). The same piece of equipment was used to load rubble from the concrete wall onto a truck for disposal at a near-by landfill.

After soil relocation, the previous sample points were staked out (points J through Z) and surface elevations determined by rod and level survey (attachment 4). Cross sections drawn from these elevations show the depth of excavation and the shape and height of the pile (attachments 5-9).

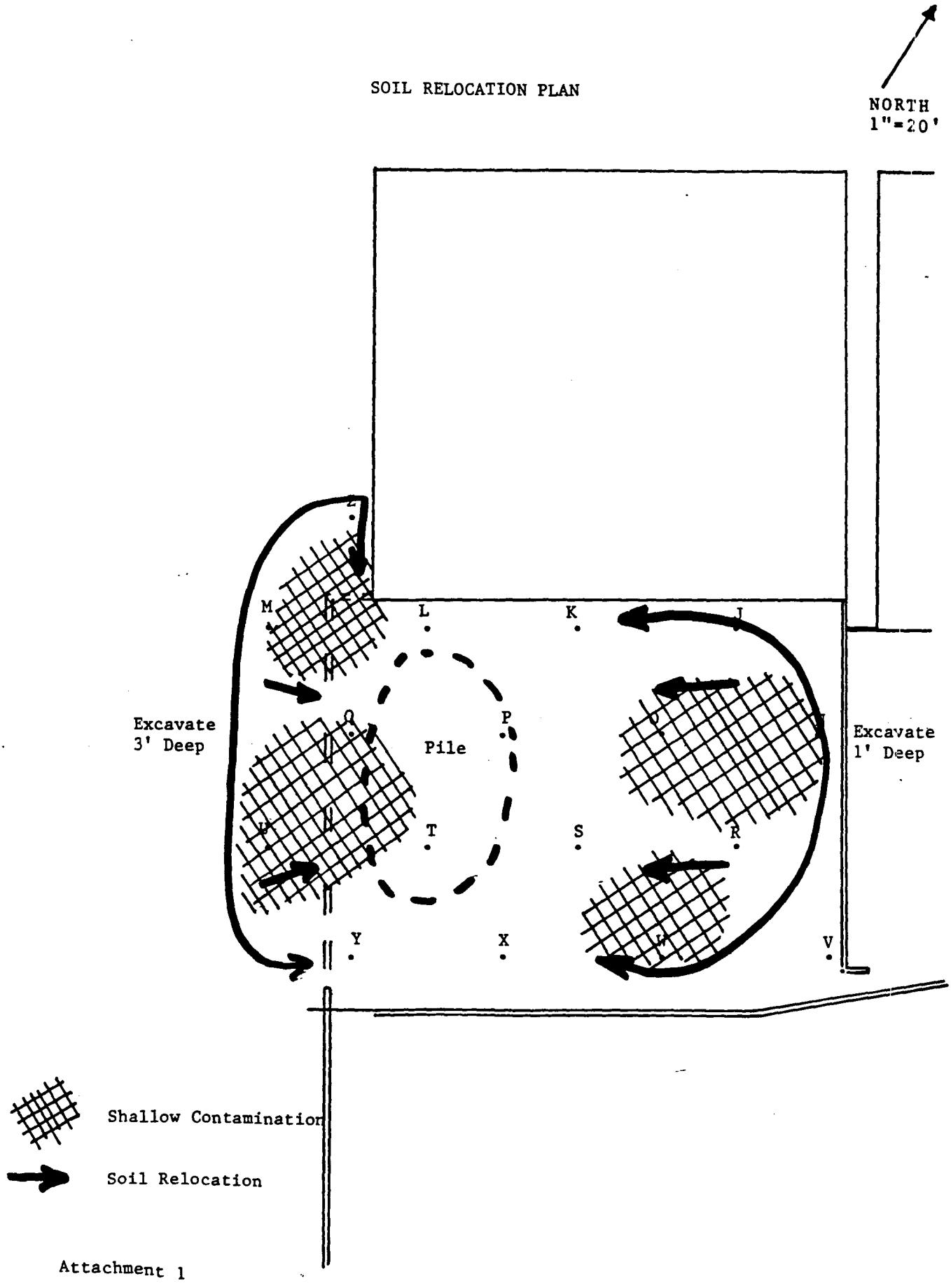
On August 22 - 25, SRH Associates, Inc. [John Ruddick, (503) 232-0824] collected surface soil samples at points "J" through "Z". Additional samples were collected at points "T" and "Q", on the relocated soil pile, at a depth equivalent to the original surface.

Samples were also collected from six points (1 through 6) beneath the warehouse foundation. Holes were cut through the concrete floor by Concrete Coring Co. of Vancouver, WA, (206) 696-2521 (attachment 3). Samples were collected by SRH Associates, Inc. from just beneath the floor and at depths equivalent to the surface, 2 foot, 4 foot, 7 foot and 12 foot depths sampled in July, 1985. The floor of the warehouse is 3.4 feet above the original soil surface. Coordinates for all sample points are shown on attachment 10.

Attachments a/s

FLP/ch

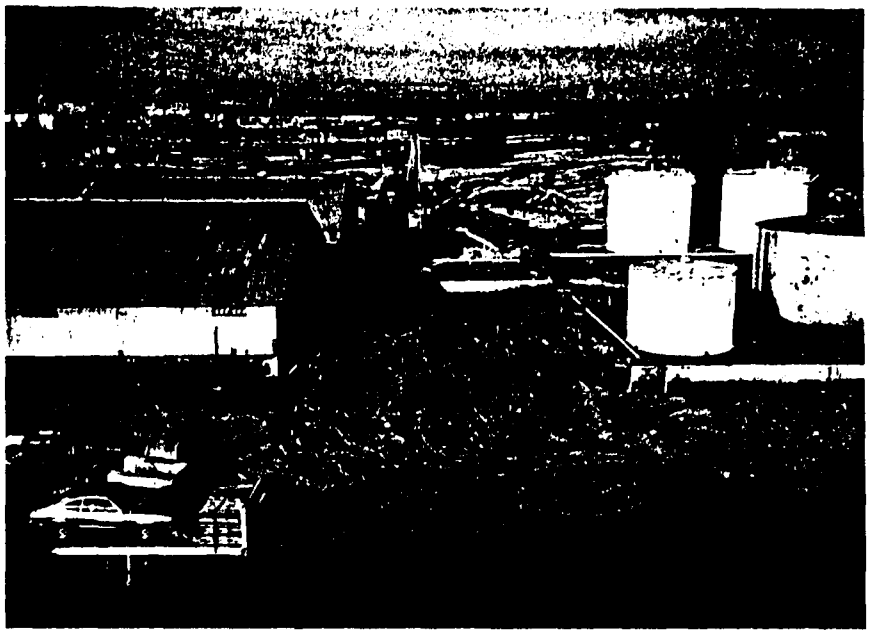
SOIL RELOCATION PLAN



Attachment 1

TOLS001364

BZTO104(e)038185



BZTO104(e)038186

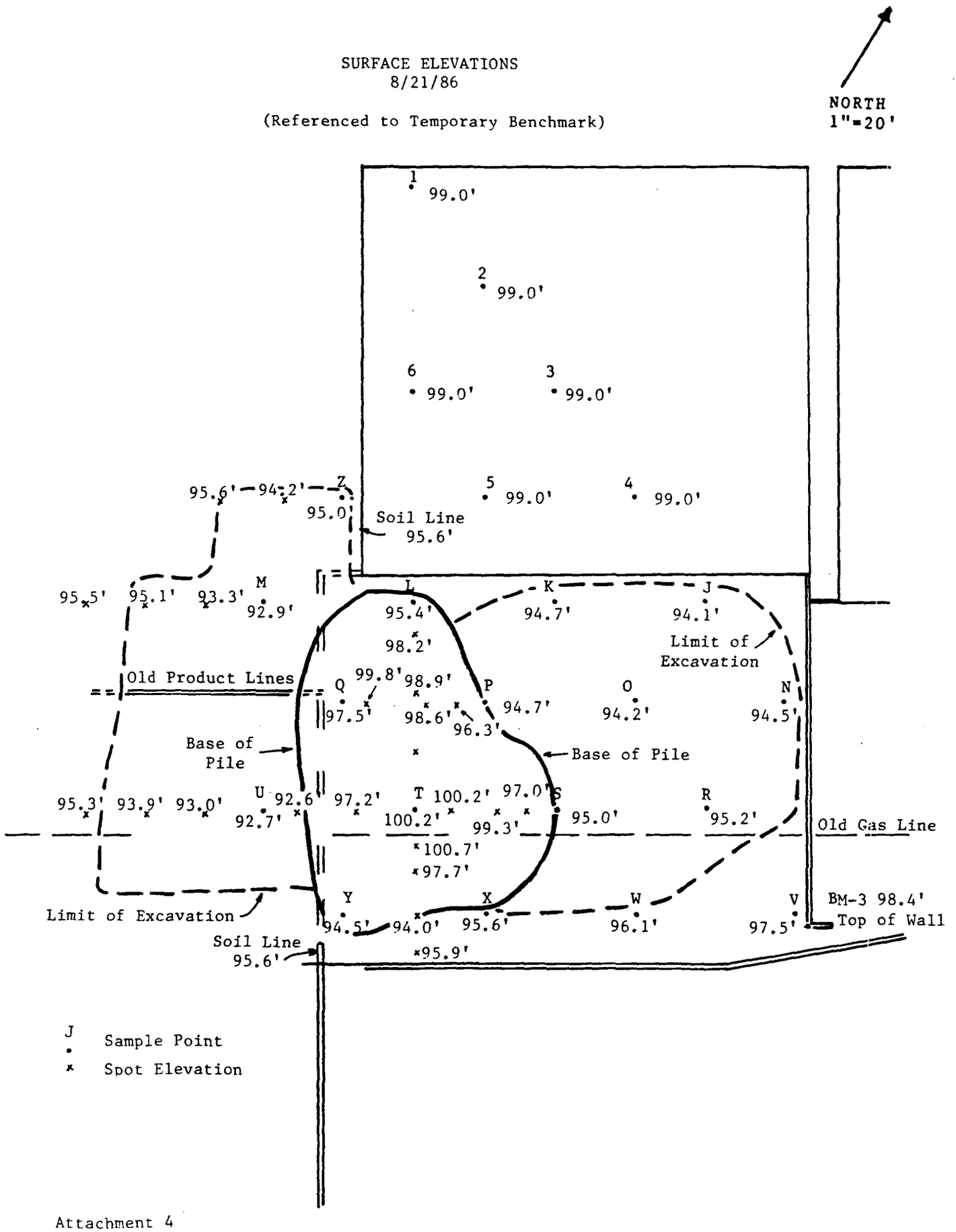
TOLS001365

Attach. 3

TOLS001366

SURFACE ELEVATIONS
8/21/86

(Referenced to Temporary Benchmark)



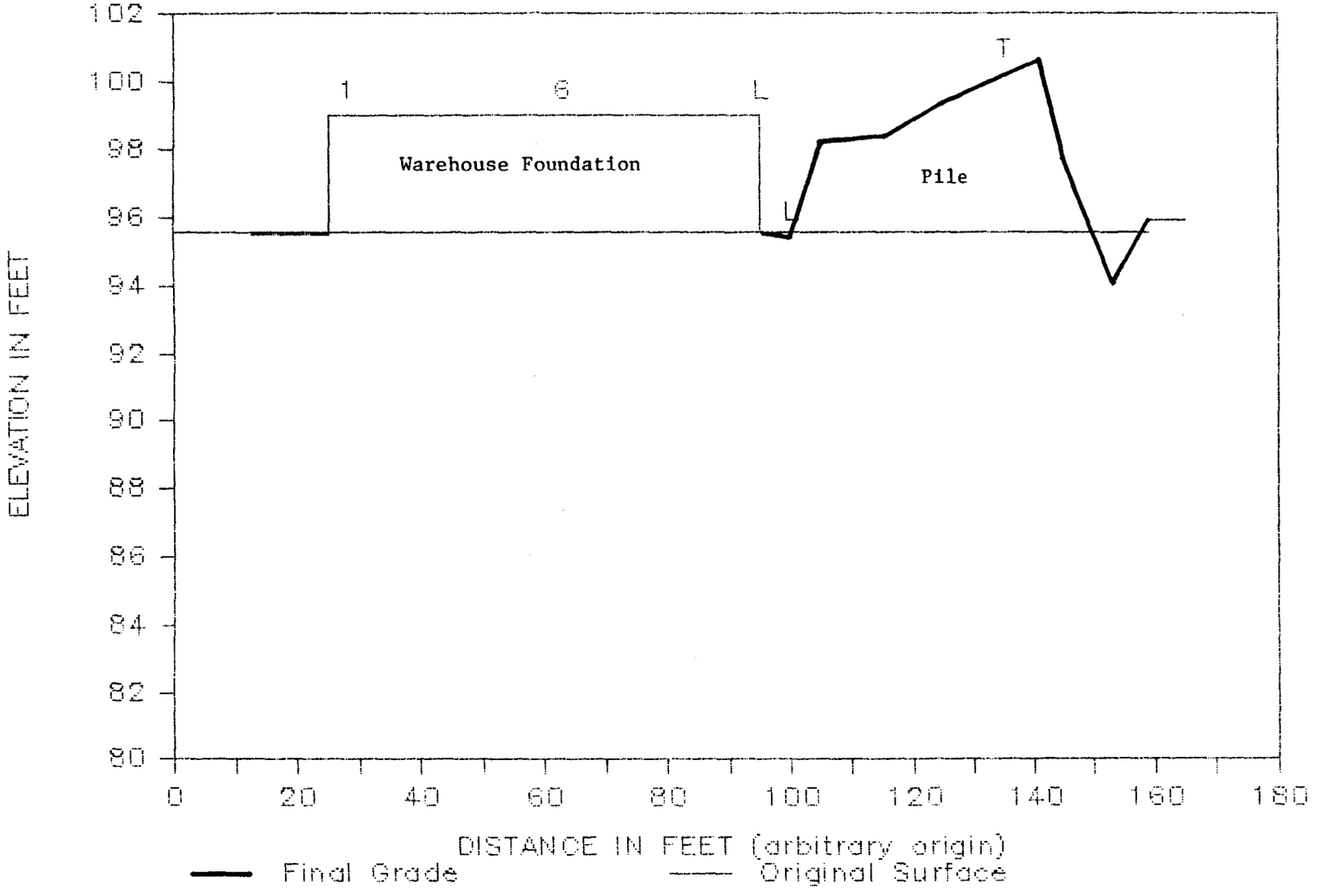
Attachment 4

TOLS001367

BZTO104(e)038188

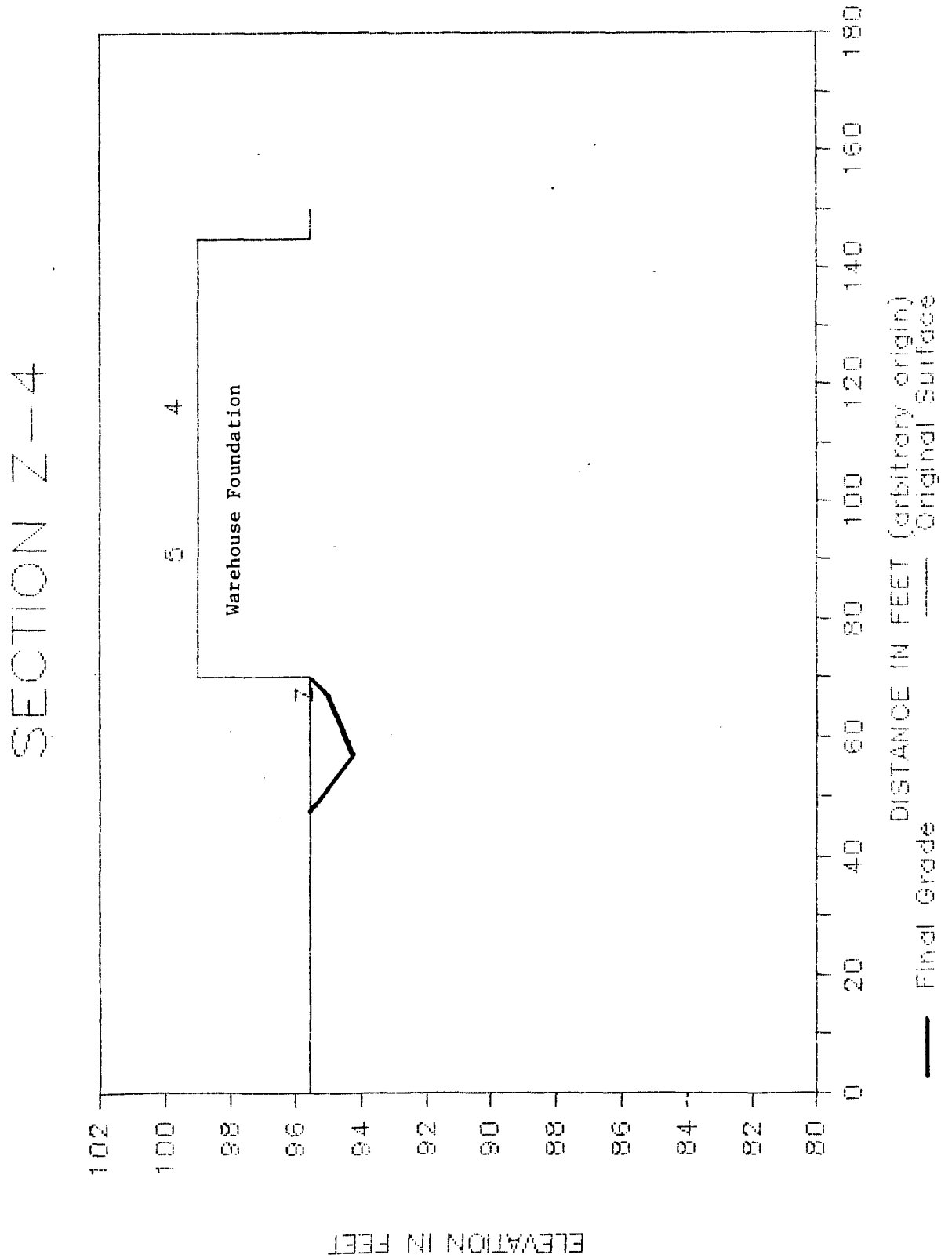
Attachment 5

SECTION 1-T

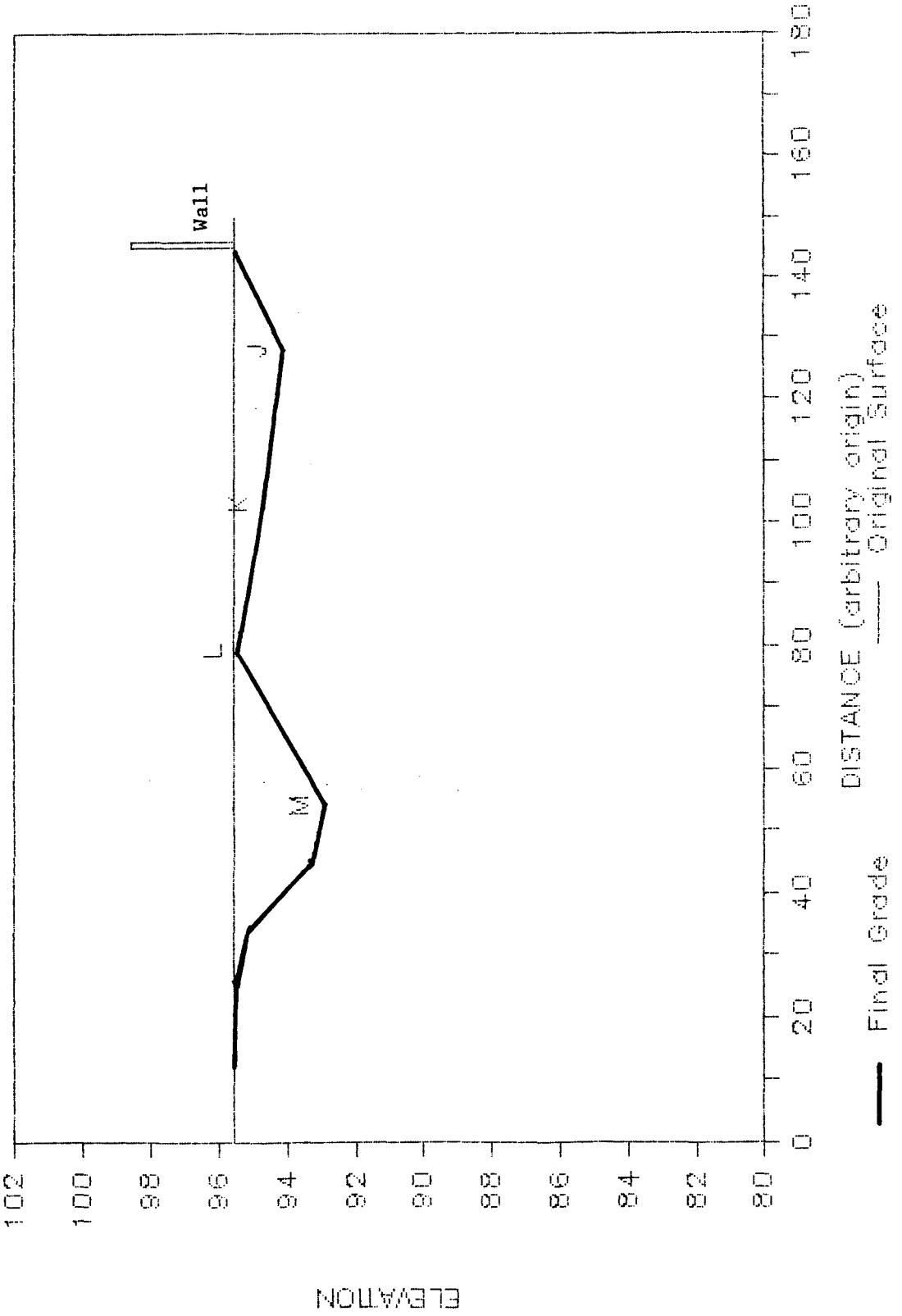


BZTO104(e)038189

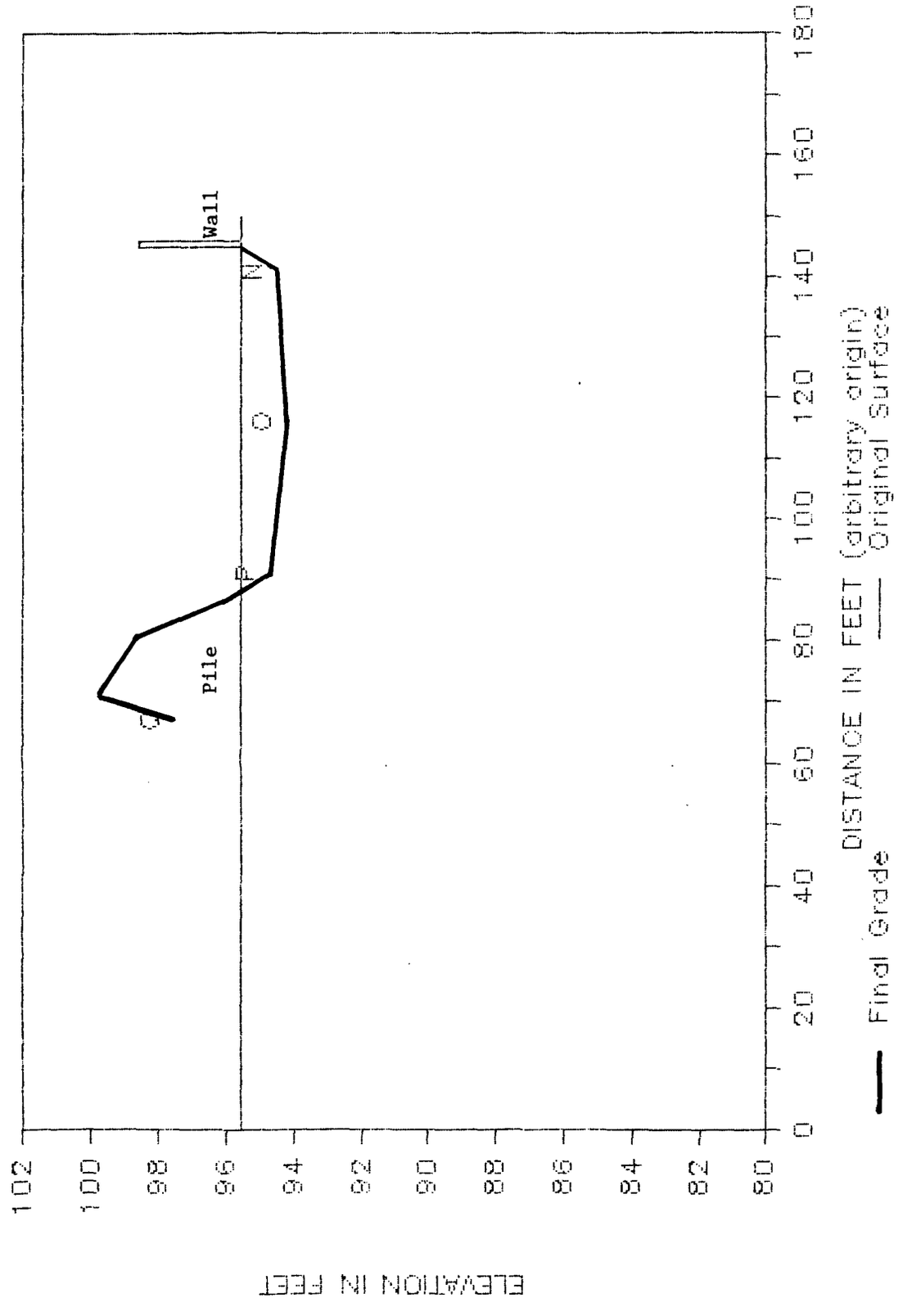
TOLS001368



Attachment 6

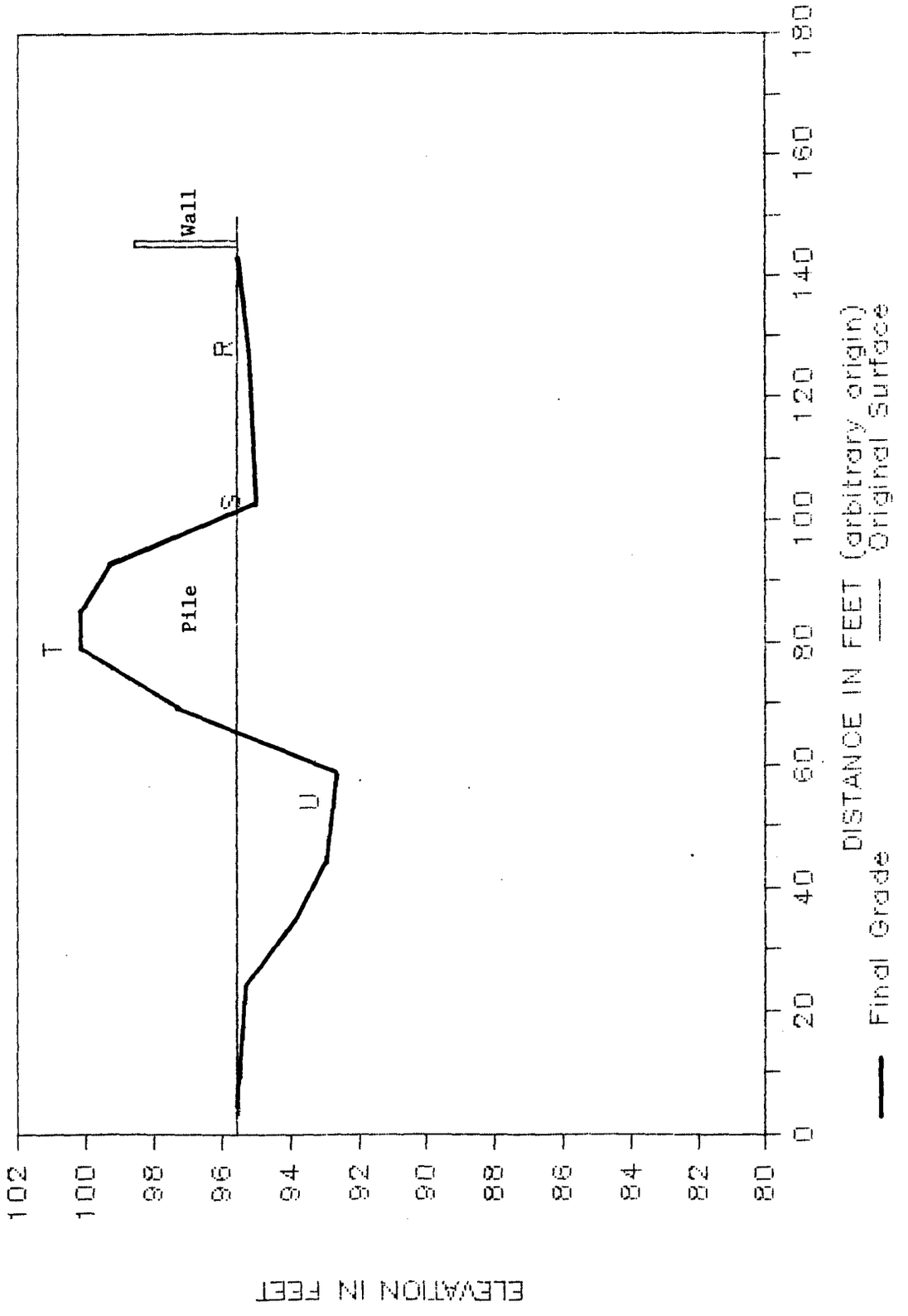


Attachment 7



TOLS001371

Attachment 8

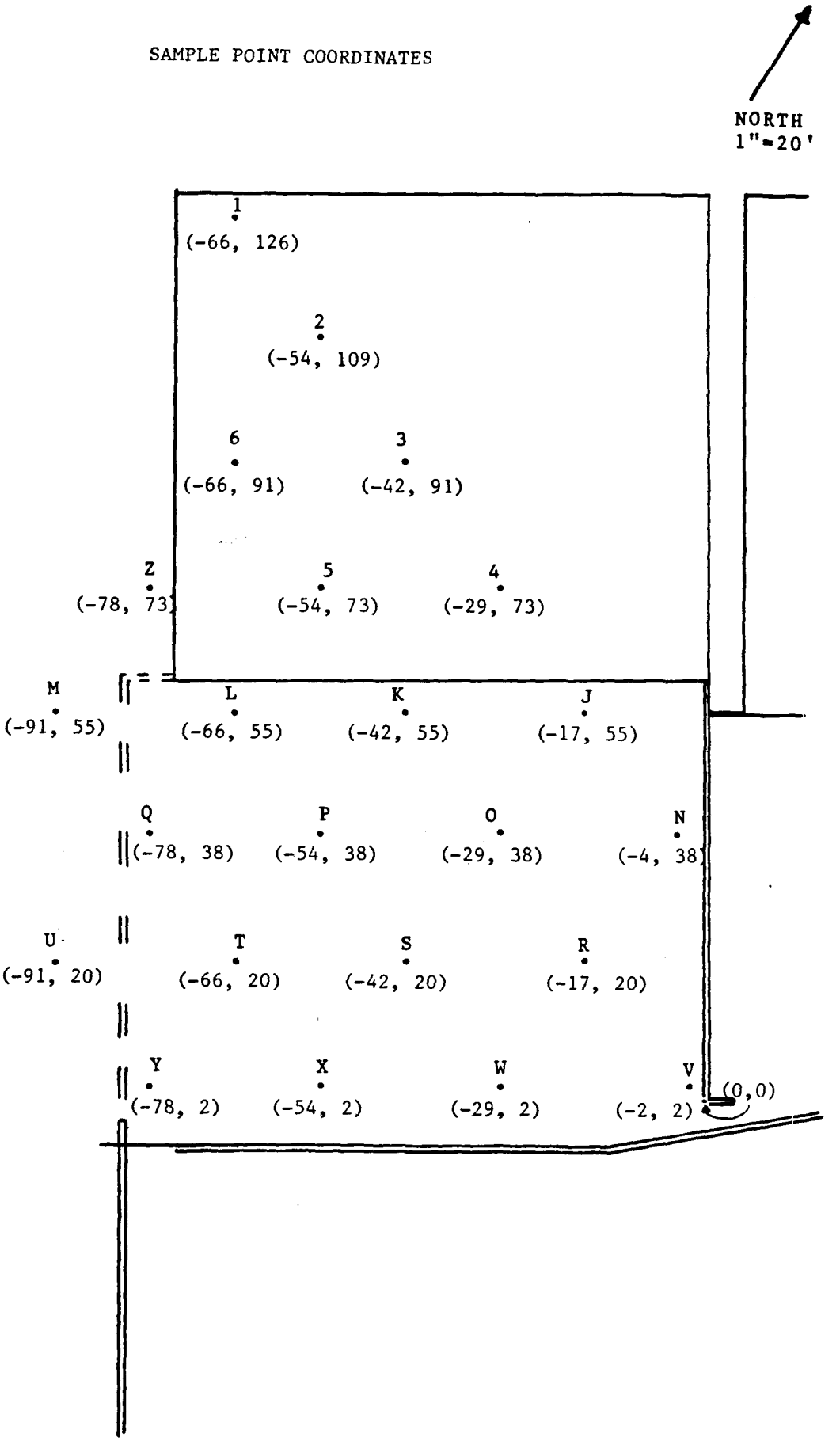


Attachment 9

TOLS001372

BZTO104(e)038193

SAMPLE POINT COORDINATES



Attachment 10

TOLS001373

BZTO104(e)038194

Phone 289-5547

INVOICE

JACK EATCH Construction Co.

P.O. BOX 17073
PORTLAND, OREGON 97217

INVOICE NO.
№ E 1805

Date August 25, 1986

copy from Nw Terminal

Time Oil Co.
P.O. Box 03137
Portland, Oregon 97203

CUSTOMER'S ORDER # _____

DESCRIPTION	
Work done at your facility plus dump fee.	
Loader 8 hrs. @ $85.00/hr.	$680.00
Flat bed by Day	$350.00
Dump Fee.	$435.00
	$1465.00

TOLS001374

BZTO104(e)038195

PURCHASE ORDER

TIME OIL CO.

P.O. BOX 24447 • TERMINAL ANNEX
2737 WEST COMMODORE WAY • SEATTLE, WASHINGTON 98124-0447
(206) 285-2400

No. 64261
PLACE THIS NUMBER ON YOUR INVOICE AND ALL CORRESPONDENCE

TO Concrete Coring Co.

P.O. Box 1848

Vancouver, WA 98668 #696-2521

DATE August 15, 1986

SHIP BY

V	QUANTITY	PART NO.	DESCRIPTION	LIST UNIT PRICE	NET UNIT PRICE	AMOUNT
			Cut six (6) holes, each 12 inches in diameter, through concrete floor of warehouse at 12005 N. Burgard, Portland, OR per attached drawing. Exact locations to be marked by Time.		$65.00	$390.00

Pd CK # 168553 9/10/86
MJ

FOR RESALE ☐ TAXABLE ☐

WASHINGTON STATE RESALE CERTIFICATE #C178-47526

TIME OIL CO.
BY John P. Denham

THIS PURCHASE IS EXPENSE OF: ☒ T.O.C. ☐ OTHER

DATE WANTED

IF T.O.C.

DEPARTMENT

SERVICE STATION (SHOW ADDRESS AND OPERATOR)

EXPLANATION

Access for soil sampling beneath penta warehouse. Authorized by RA 8/7/86 - JPD to have work done.

ACCOUNT NO. REQUESTED BY APPROVED BY

TAP-130 12/85

TOLS001375

BZTO104(e)038196

TIME OIL CO.

P.O. BOX 24447 • TERMINAL ANNEX
2737 WEST COMMODORE WAY • SEATTLE, WASHINGTON 98124-0447
(206) 285-2400

PURCHASE ORDER

No. 64261
PLACE THIS NUMBER ON YOUR INVOICE AND ALL CORRESPONDENCE

TO Concrete Coring Co.
P.O. Box 1848
Vancouver, WA 98668 #696-2521

DATE August 15, 1986
SHIP BY

V	QUANTITY	PART NO.	DESCRIPTION	LIST UNIT PRICE	NET UNIT PRICE	AMOUNT
			Cut six (6) holes, each 12 inches in			
			diameter, through concrete floor of			
			warehouse at 12005 N. Burgard, Portland, OR			
			per attached drawing. Exact locations to			
			be marked by Time.		$65.00	$390.00

FOR RESALE ☐ TAXABLE ☐
WASHINGTON STATE RESALE CERTIFICATE #C178-47526

TIME OIL CO.
BY John P. Denham

THIS PURCHASE IS EXPENSE OF: [X] T.O.C. ☐ OTHER

DATE WANTED

IF T.O.C.
DEPARTMENT
SERVICE STATION (SHOW ADDRESS AND OPERATOR)

EXPLANATION
Access for soil sampling beneath penta warehouse. Authorized by RA 8/7/86 - JPD to have work done.

ACCOUNT NO | REQUESTED BY | APPROVED BY

TAP-130 12/85

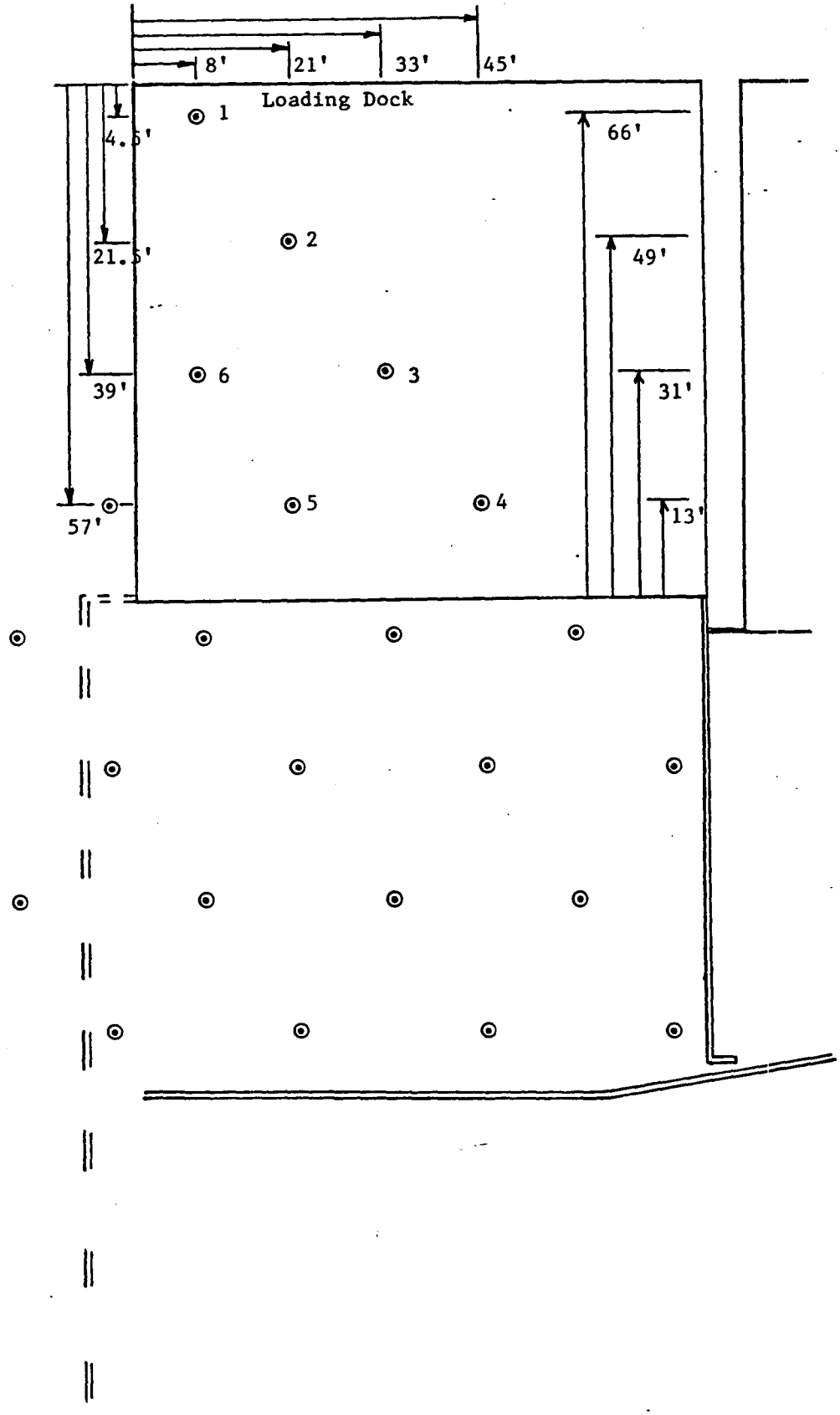
THE SYSTEMS PEOPLE Cascade (206) 641-8800

82512

TOLS001376

BZTO104(e)038197

SAMPLING PLAN FOR WAREHOUSE



TOLS001377

BZTO104(e)038198

CORING COMPANY
Concrete Cutting Company, Inc.
P.O. BOX 1848 VANCOUVER, WA 98668
(503) 285-9201 (206) 696-2521

PO3- 20807

• CORE DRILLING • DEMOLITION
• GROOVING & GRINDING • EPOXY INJECTION

TO: Time OIL
2730 W Commodore
Seattle WA
98124

JOB NAME: Time OIL
ADDRESS: 12005 N Burgard
CITY: Portland
CROSS STREET:

START DAY: Wens
DATE: 8-20
TIME: anytime after 10 am
SEE ON JOB: Fred or Neal
PHONE NO.: wallace
P.O.#:
LAID OUT:
MAP PAGE:
JOB #:
ORDERED BY:
DATE:
ORDER TAKEN BY:

QUOTATION ☐ **JOB ORDER** ☐

PERSON REQUESTING BID: Fred Proby (206)
PHONE NO: 285 2400
DATE QUOTED:
QUOTED BY:

	YES	NO		YES	NO
INSIDE WORK	☑	☐	PLASTIC	☐	☐
OVERTIME	☐	☐	EXTRA MAN	☐	☐
VACUUM	☐	☐	SCAFFOLDING	☐	☐

WATER 100 FT. POWER ____ FT.
TRK TO WORK OK FT. HT. OF WORK ____ FT.

ESTIMATED TIME:

CD:	ESS:	HAND SAW:	GRIND:	EPOXY INJEC:
SS:	WS:	DEMO:	GROOVE:	HAUL:

OTHER:

SPECIAL EQUIPMENT: OUT IN

QUANTITY	DESCRIPTION OF WORK	UNIT	PRICE
6	12" Ø floor 6" c/c		65 Per Hole

all job tickets must be signed!

CO ___ DIV ___ ☐ AUTH
VEND ___
INV ___ ☑ PRICE
PO ___
___ MO ___ ☐ REC/SIG
☐ DIST ATTACHED

RECEIVED AUG 18 1986

NO RETENTION

STAND-BY TIME WILL BE CHARGED AT $_____ PER HOUR.

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SERVING ALL OF OREGON, WASHINGTON, IDAHO & ALASKA
ORIGINAL

TOLS001378

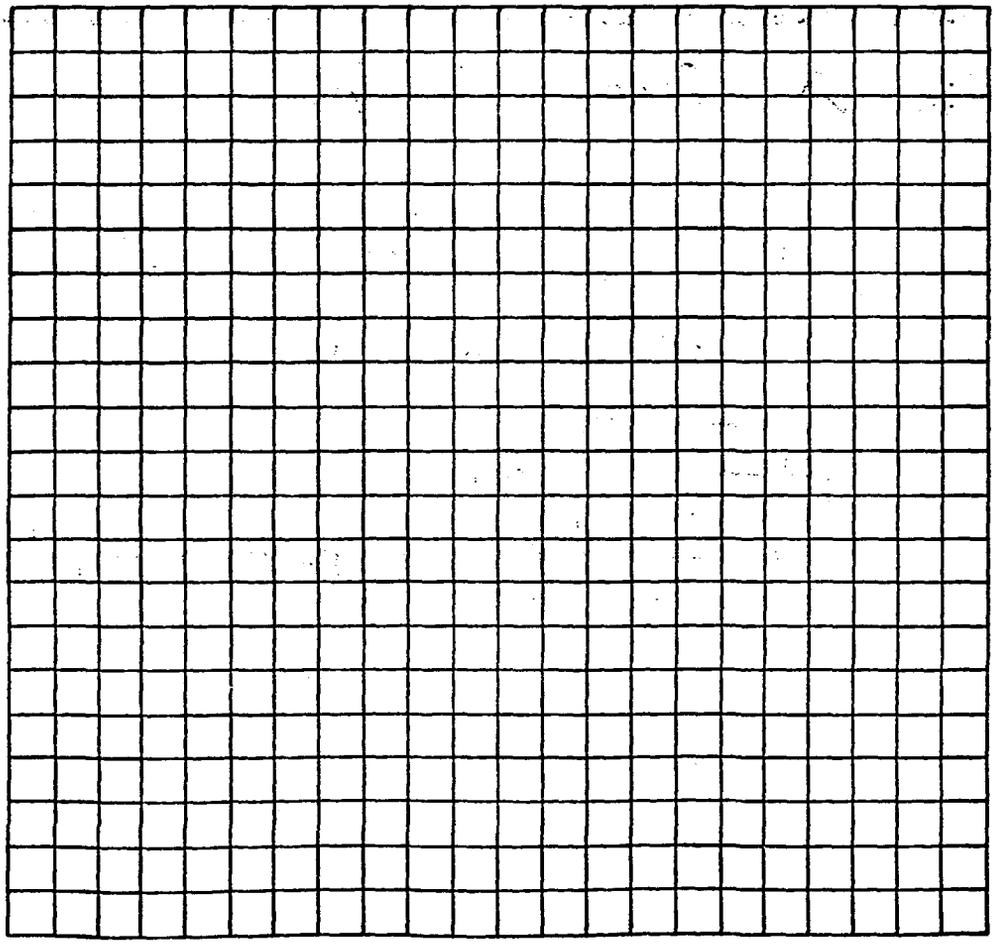
BZTO104(e)038199

QUOTED PRICES BASED ON THESE STANDARD CONDITIONS

1. Layout of work by others.
2. We cannot accept responsibility for damage to hidden hazards (buried conduits, pipe, structural steel, etc.).
3. Wet vacuum cleaners supplied at no additional charge, to be operated by others.
4. Union men available to operate all equipment as required.
5. Scaffolding supplied and erected by others.
6. Water available within 100' of work area.
7. Protection below work areas by others.
8. Parking for truck and generator available within 100' of work area.
9. Water and dust partitions by others.
10. Traffic control by others.
11. Inside minimums; Based on performing work on ground floor.
12. Outside minimums: Based on performing work at one job site.
13. Terms: Net 10 days end of month, the Customer hereby agrees to pay interest at the rate of 1½% per month upon the unpaid portion of the invoice. If action of suit is brought to collect any amount due or owing, Customer agrees to pay all costs of collection including reasonable attorney's fees.

WE ASSUME NO RESPONSIBILITY FOR LAYOUT

PRICES SUBJECT TO CHANGE IF CONDITIONS ON JOB VARY FROM THIS QUOTATION.



NW Terminal

Concrete Coring Co
Vancouver WA 696-2521 PO Box 1848 98668
Ernie

8/13 Machine - 2'x2' area while working
1" → 10" (12") 14" → 30"
Machine can be hand carried
10" Holes in 6" concrete = $55 ea take 4-6 hrs for 6 holes

Needs about 3-day notice

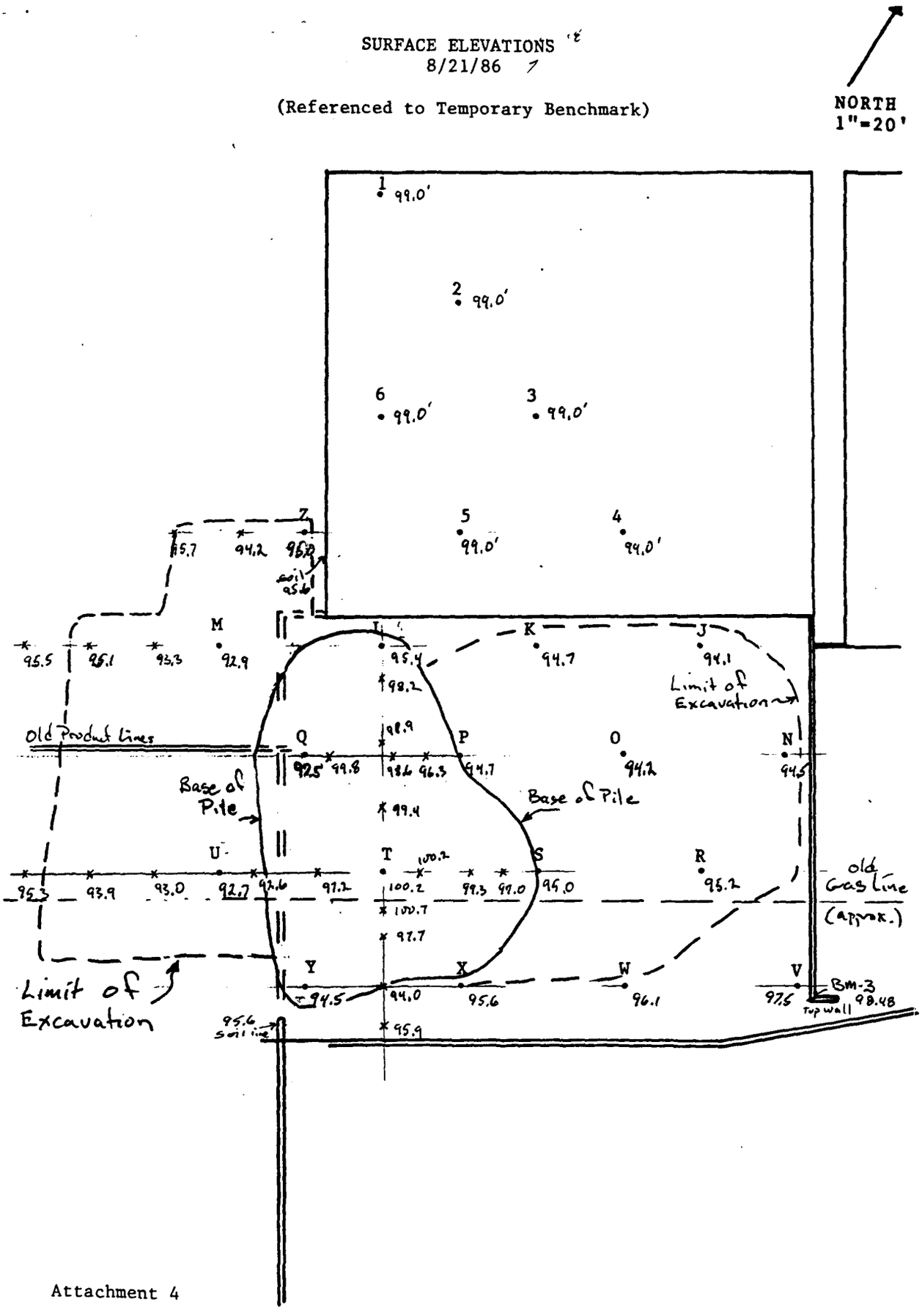
8/14 Kathy
Can start @ 1000 AM on 8/20
Cost $65/hole

TOLS001380

BZTO104(e)038201

SURFACE ELEVATIONS
8/21/86

(Referenced to Temporary Benchmark)

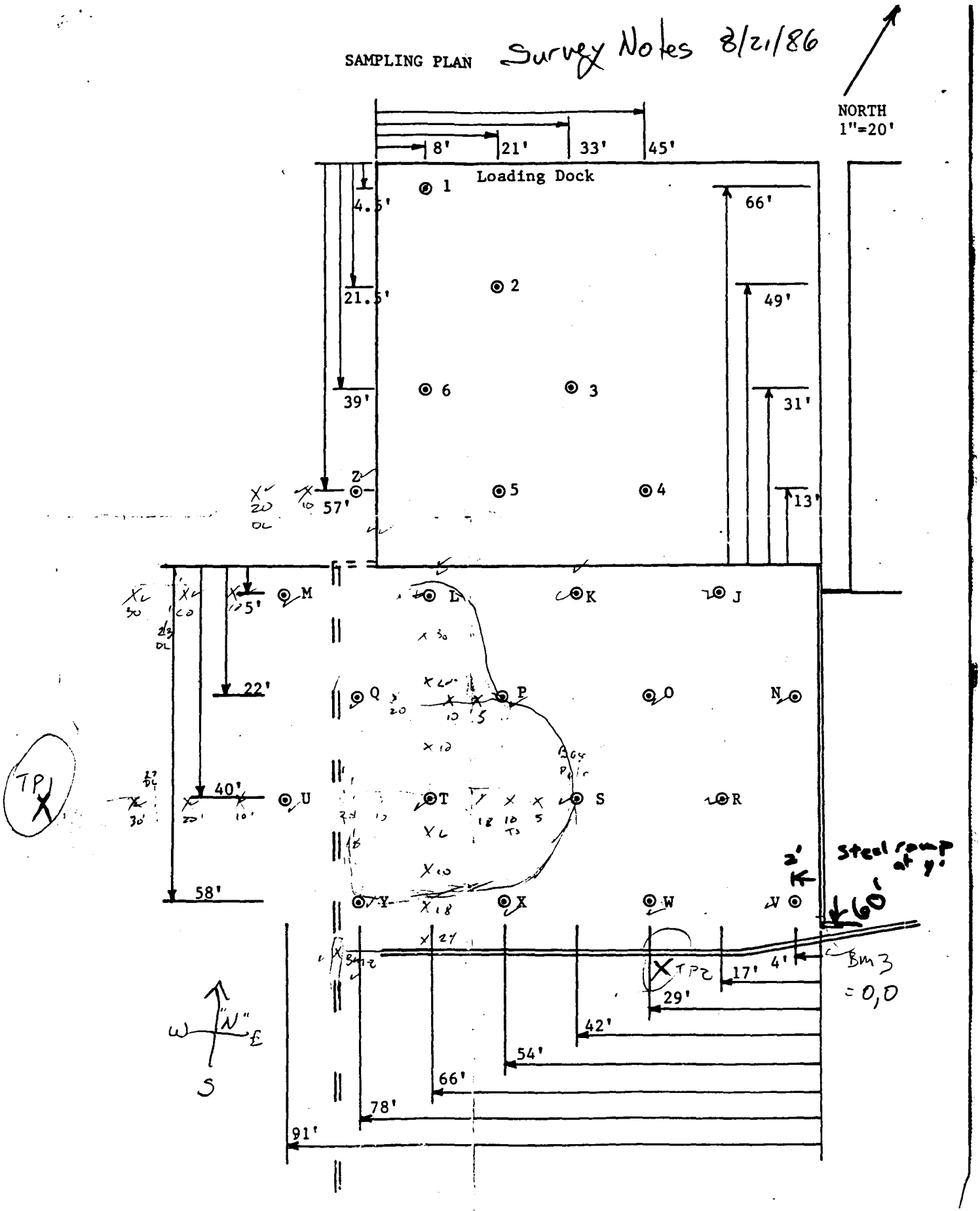


Attachment 4

TOLS001381

BZTO104(e)038202

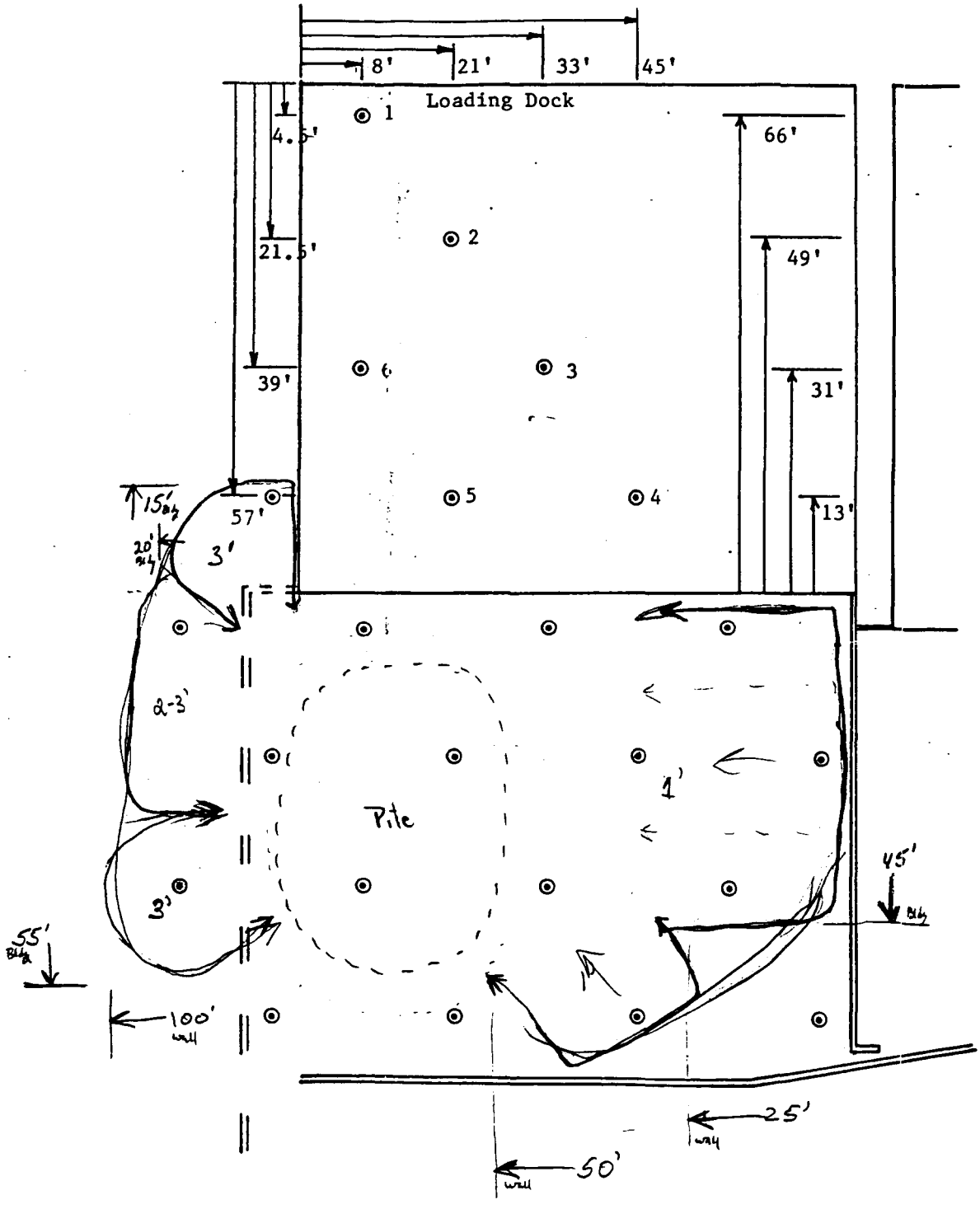
SAMPLING PLAN Survey Notes 8/21/86



TOLS001382

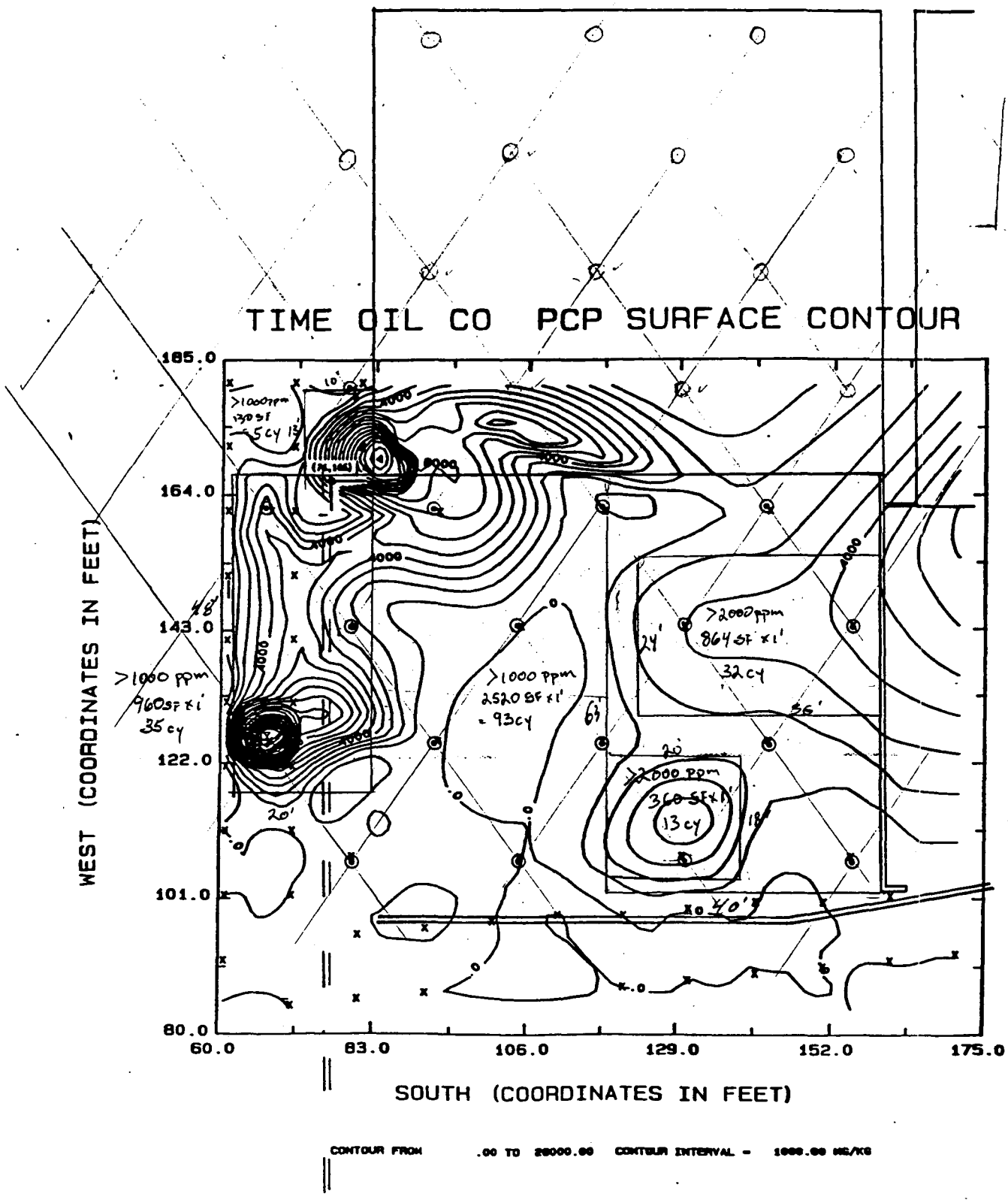
SOIL RELOCATION PLAN

~~SAMPLING PLAN FOR WAREHOUSE~~



TOLS001383

BZTO104(e)038204

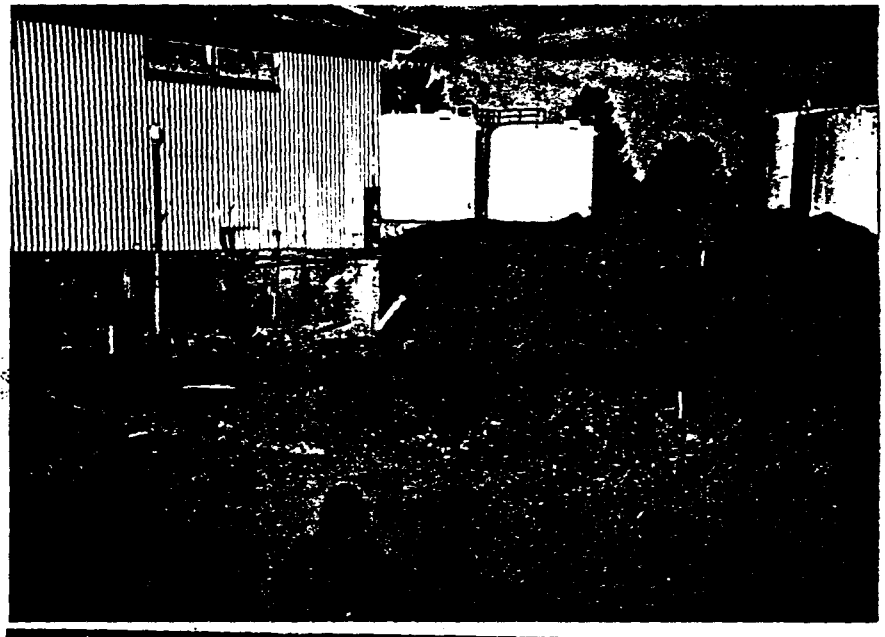


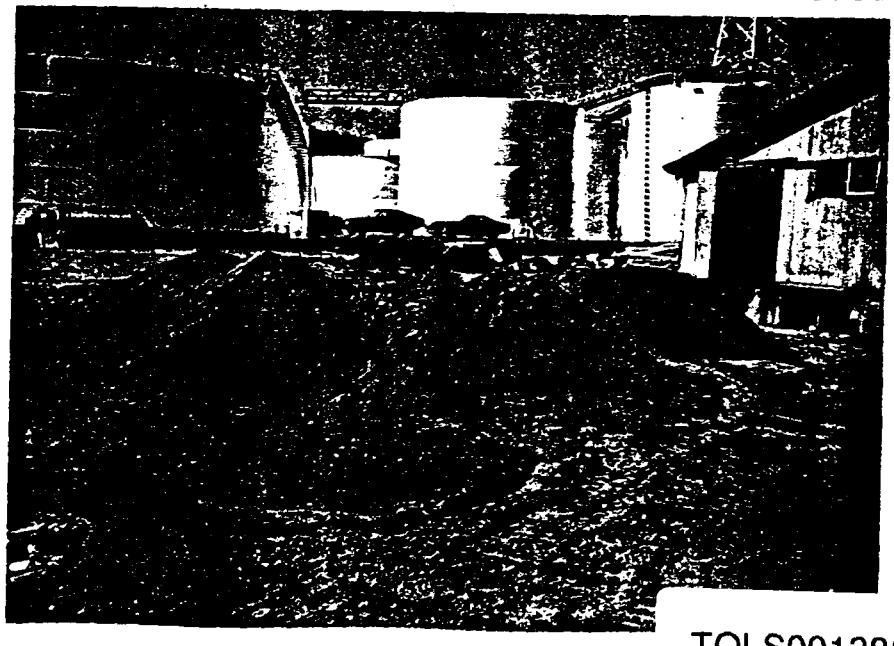
TOLS001384

BZTO104(e)038205

NW Terminal
Soil Relocation
8/20-21/86

TOLS001385





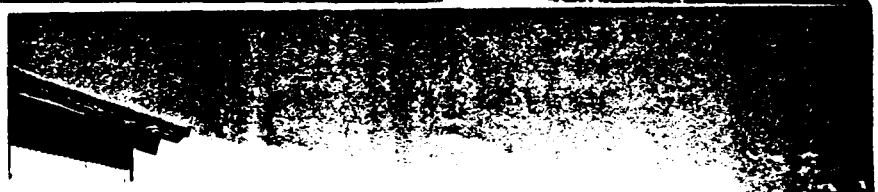
TOLS001386

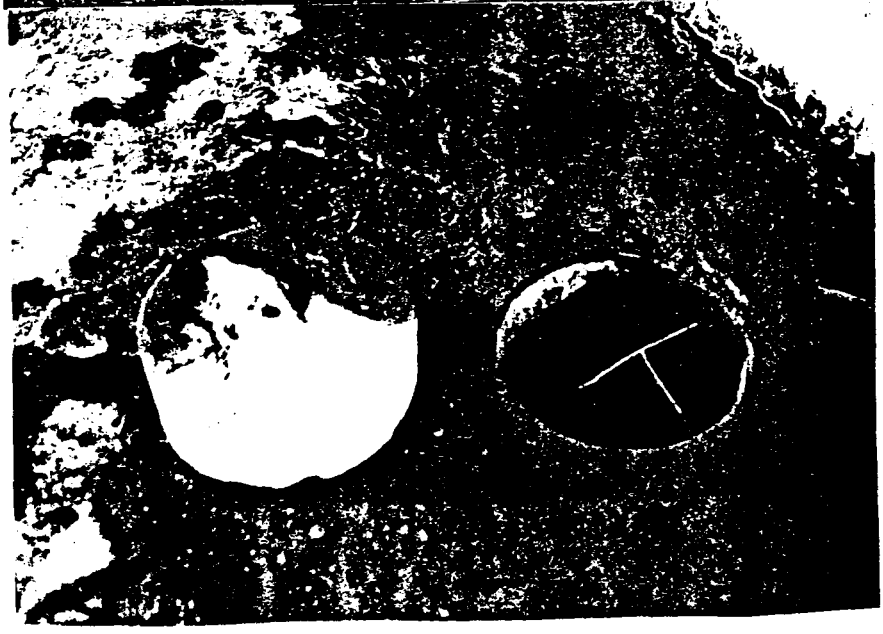
NW Terminal
8/21/86

NW Terminal
8/21/86

TOLS001387

BZTO104(e)038208





TOLS001388

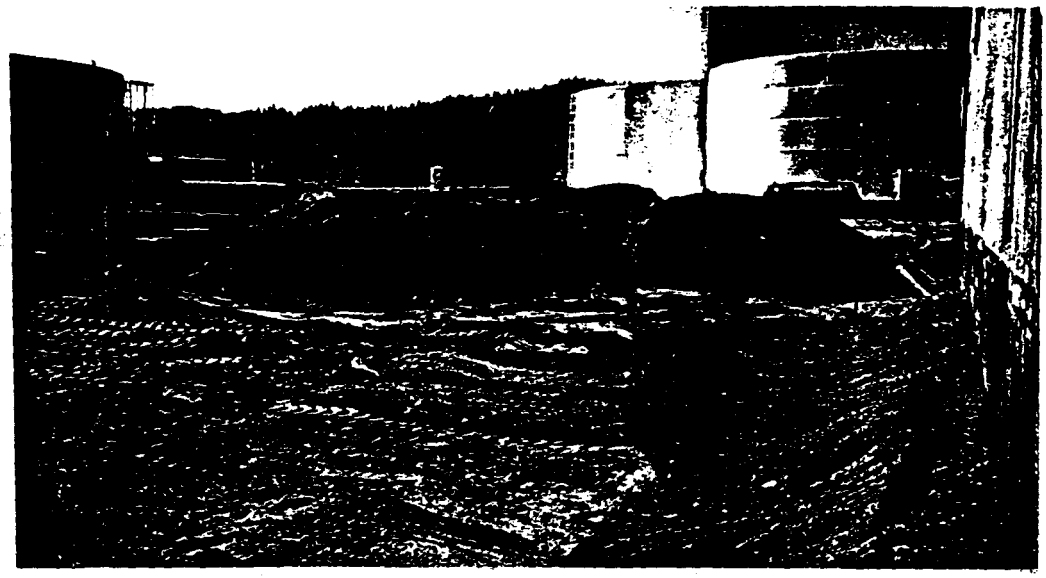
NW Terminal
8/20/86

NW Terminal
8/21/86

NW Terminal
8/20/86

TOLS001389

BZTO104(e)038210



TOLS001390

BZTO104(e)038211

NW Terminal
8/21/86

TOLS001391

BZTO104(e)038212

Photo to Video

Subject Soil Relocation / Sampling
Place XW Terminal
Date 8/20-21/86
Film

Give us your best shots!

9FJ CX19

TOLS001392

BZTO104(e)038213

Cross-Sections

M → J ✓

Dist	Elev
0	95.6
4	95.5
14	95.1
24	93.3
34 (M)	92.9
59 (L)	95.4
83 (K)	94.7
108 (J)	94.1
125	95.6
125	98.6
126	98.6
126	95.6
130	95.6

Add 20

Q → N ✓

Dist	Elev
47 (Q)	97.5
51	99.8
61	98.6
66	96.3
71 (P)	94.7
96 (O)	94.2
121 (N)	94.5
125	wall

Add 20

U → R ✓

Dist	Elev
0	95.6
4	95.3
14	93.9
24	93.0
34 (U)	92.7
39	92.6
49	92.2
59 (T)	100.2
65	100.2
73	99.3
78	97.0
83 (S)	95.0
108 (R)	95.2
125	wall

Add 20

Y → V

Dist	Elev
0	95.6
43	95.6 old wall
47 (X)	94.5
59	94.0
71 (X)	95.6
96 (W)	96.1
123 (V)	97.5
125 wall top	98.48

I-T ✓

0	95.6
5	95.6 white
5	99.0
8 (I)	99.0
42 (G)	99.0
75	99.0
75	95.6 white
75	98.6
80 (L)	95.4
85	98.2
95	98.4
105	99.4
115 (T)	100.2
121	wall
125	97.7
133	94.0
139	95.9
141	95.9 pipe
145	95.9

Add 20

Z → 4

0	95.6
27	95.6
37	94.2
47 (Z)	95.0
50	95.6 white
50	99.0
71 (5)	99.0
96 (4)	99.0
125	99.0 white
125	95.6
130	95.6

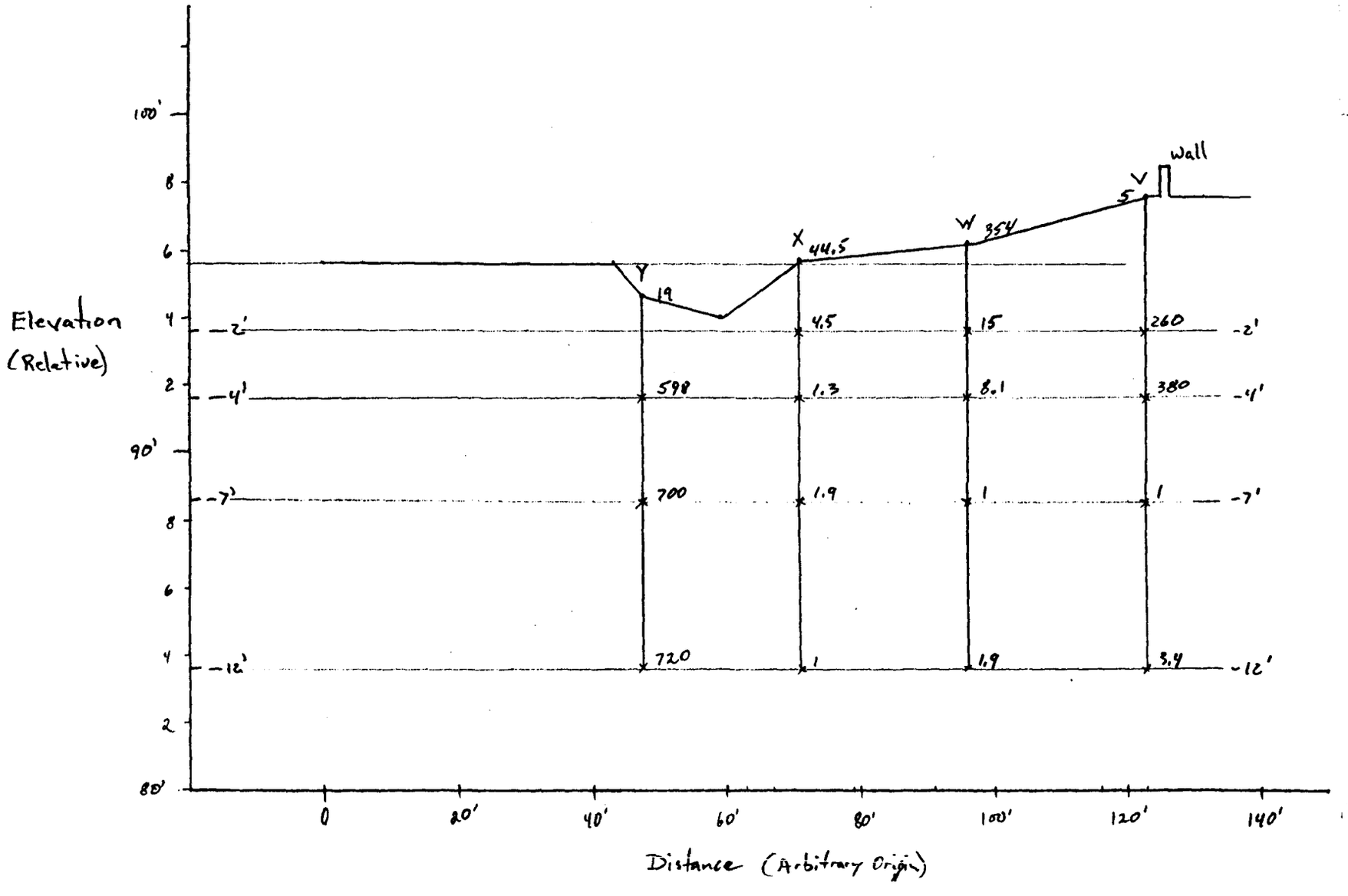
Add 20

Original soil lines dash

I-T	95-165	95.6' new origin
U-R	0-145	95.6'
Q N	0-145	95.6'
M J	0-145	95.6
Z-4	0-70	95.6'
Y-V	0-145	95.6'

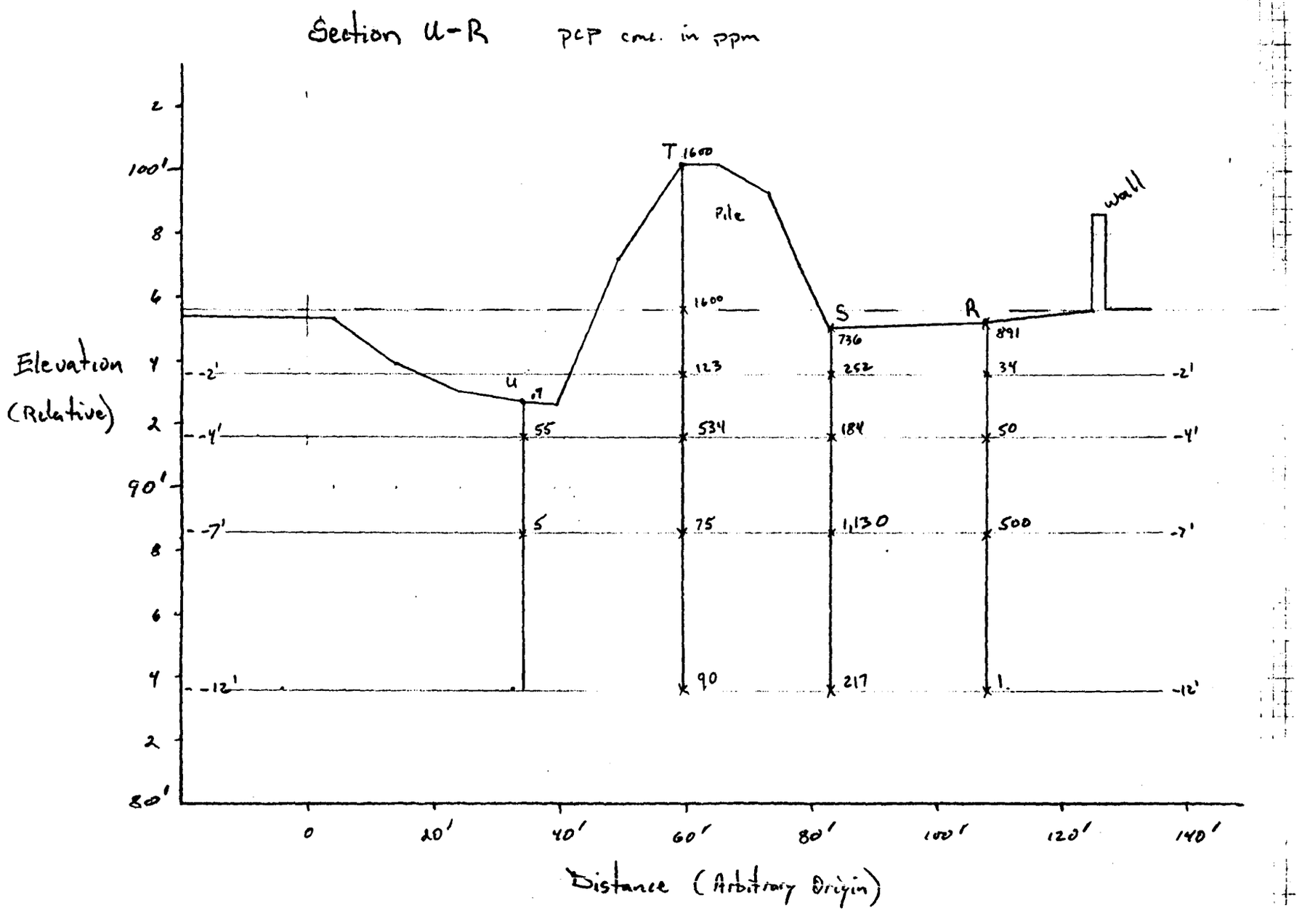
TOLS001393

Section Y-Y pcp Conc. in ppm



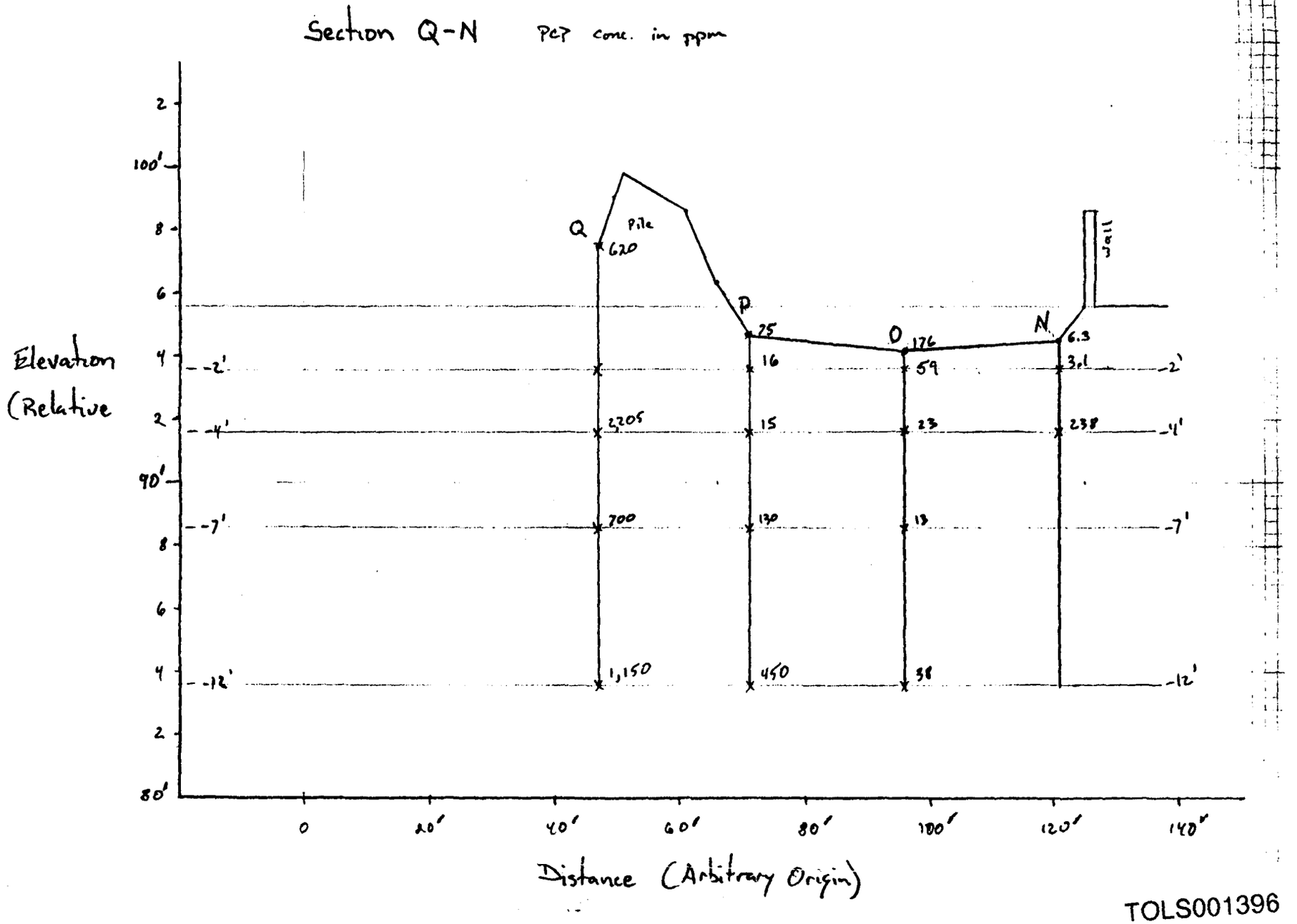
BZTO104(e)038215

TOLS001394



TOLS001395

BZT0104(e)038216



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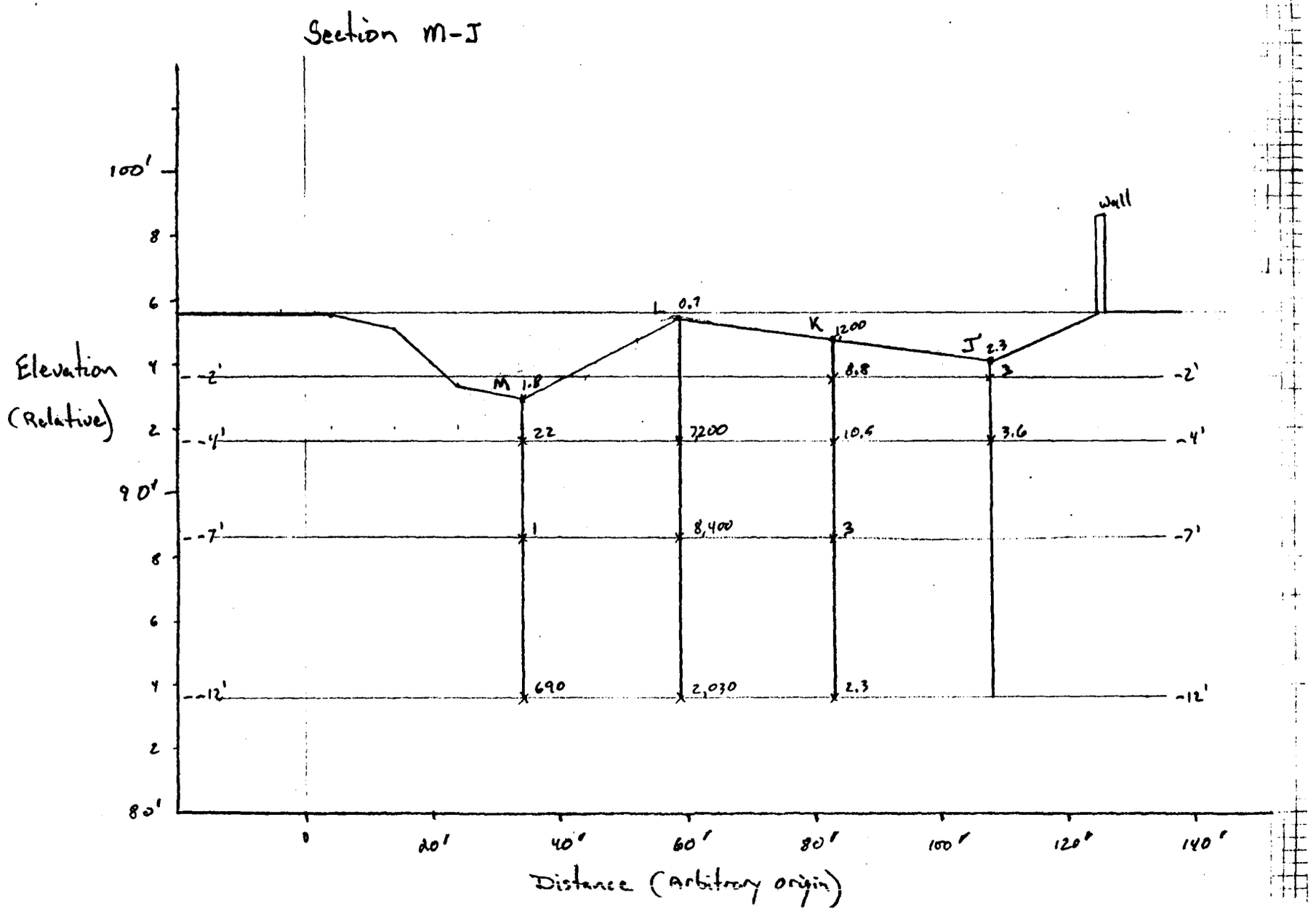
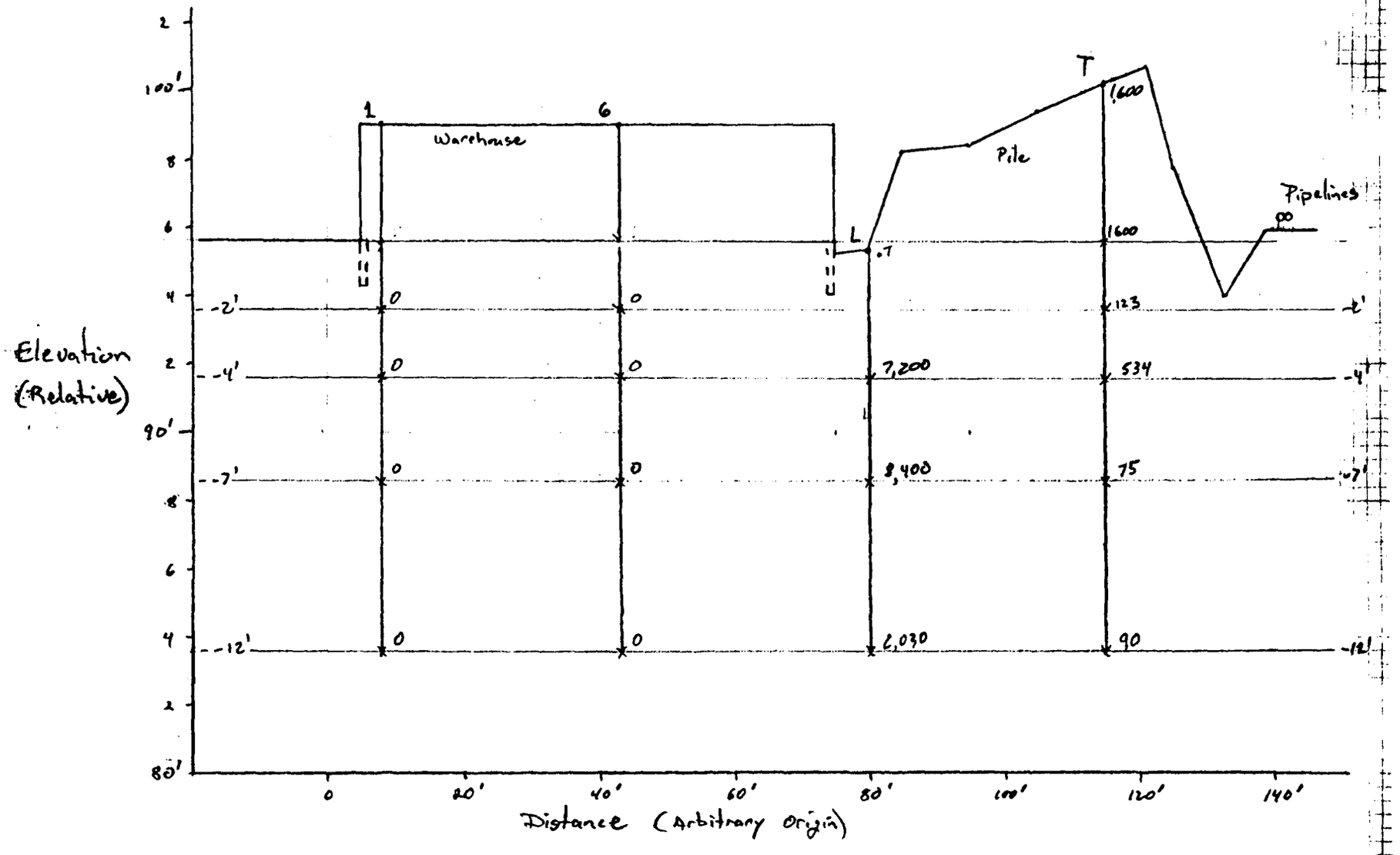
TOLS001396



BZTO104(e)038218

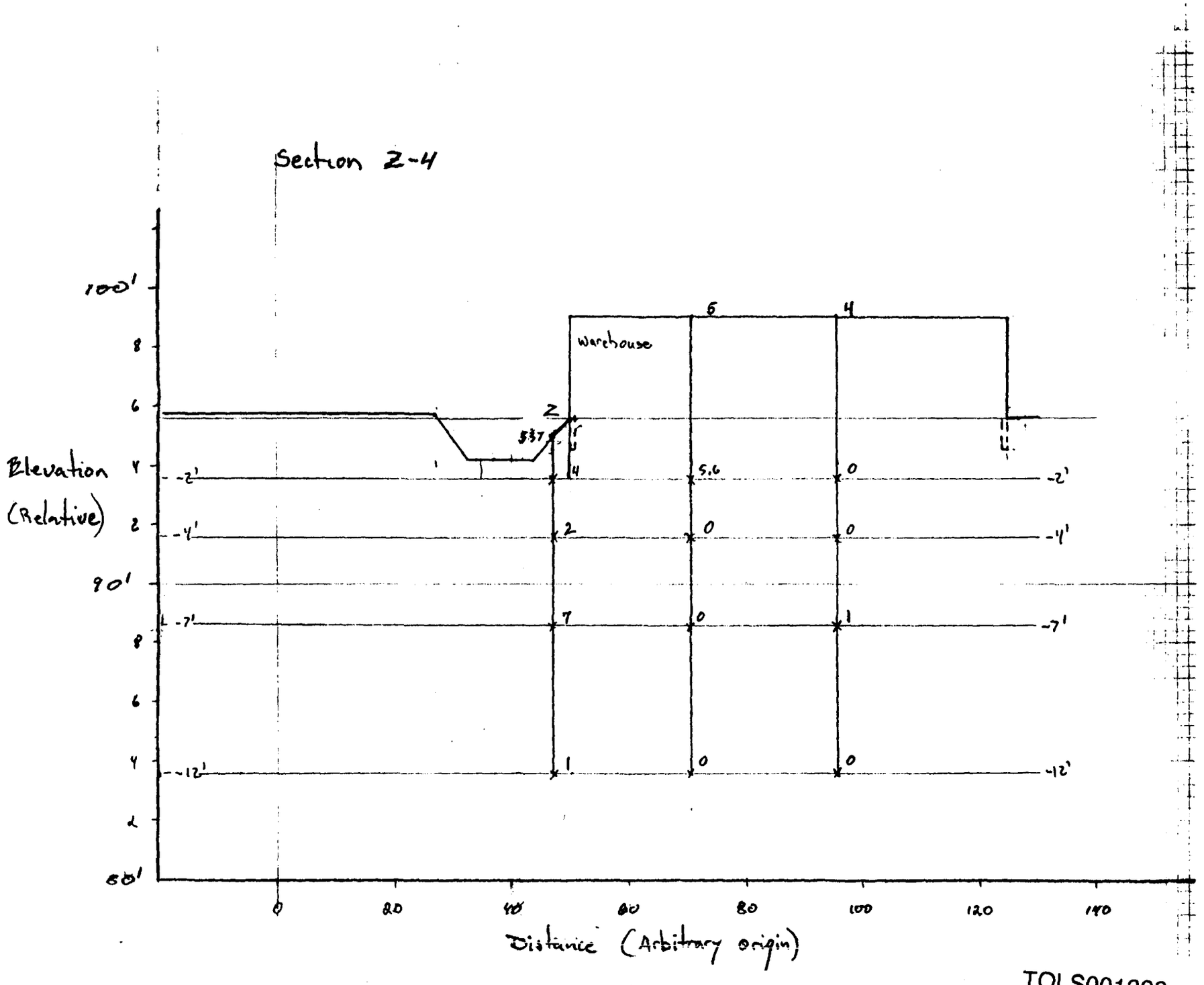
TOLS001397

Section 1-T pcp conc. in ppm



TOLS001398

BZTO104(e)038219

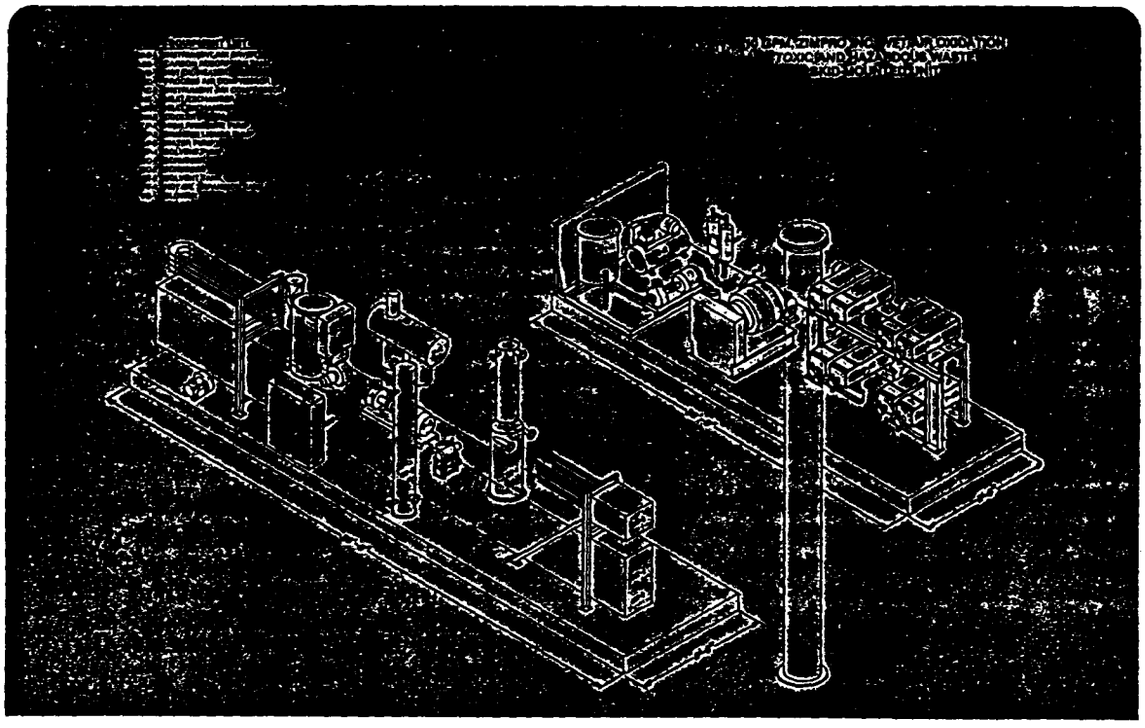


BZTO104(e)038220

TOLS001399

GEOTECHNICAL SERVICES
P.O. BOX 19553
IRVINE, CA 92713
714-854-8200
415-932-6338

ZIMPRO
Hazardous & Toxic Waste Treatment



Skid-mounted, portable unit destroys cyanides, phenols, other toxic wastes.

Skid-mounted wet air oxidation units built by Zimpro Inc. offer an ideal solution to toxic and hazardous wastewater treatment problems.

The units employ proven technology that virtually eliminates phenols, cyanides, chlorinated hydrocarbons, and other toxic compounds from wastewater. Yet, the units are portable, designed to treat small flows of up to 10 gallons per minute (2.3 cu m/hr), and require only about 800 square feet (74 sq m) when fully set up.

The WAO process.

Wet air oxidation was developed by Zimpro Inc. and has been applied to industrial wastewaters and sludges worldwide.

It is an aqueous-phase reaction between oxygen in air which is mixed with the wastes, and the organic fraction of the waste. The process is kept under pressures of between 1500 and 2500 psig (103-172 bar), and the reaction occurs at relatively low temperatures of 450-600° F (232-315° C).

Organic compounds are reduced to short-chain organics that are bio-degradable.

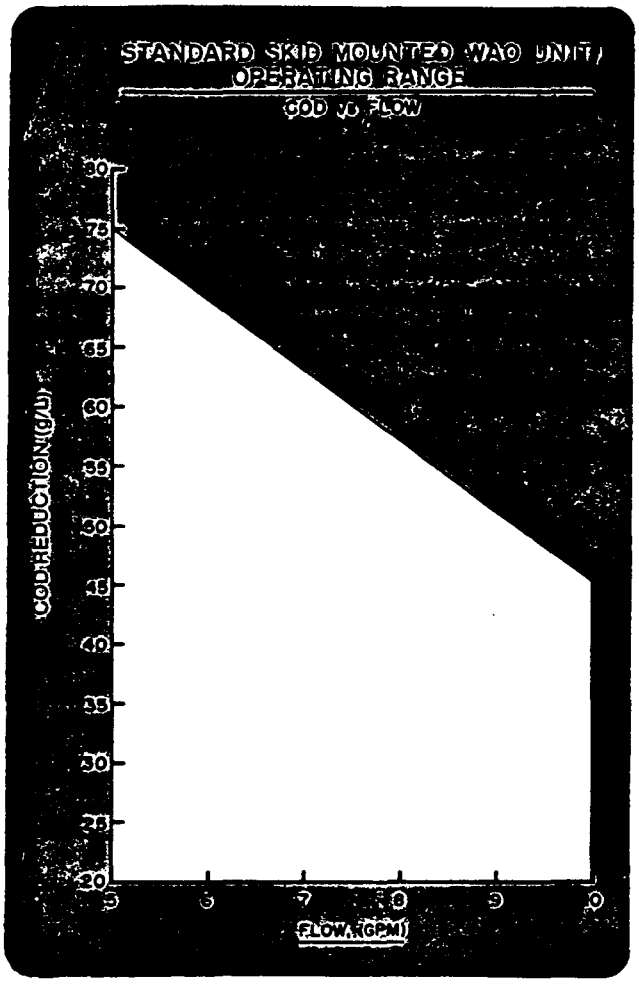
Because wet air oxidation is autogenous on wastes with low COD content, the process is extremely well-suited to wastes too dilute to incinerate economically, yet too toxic to treat biologically or dispose of on land.

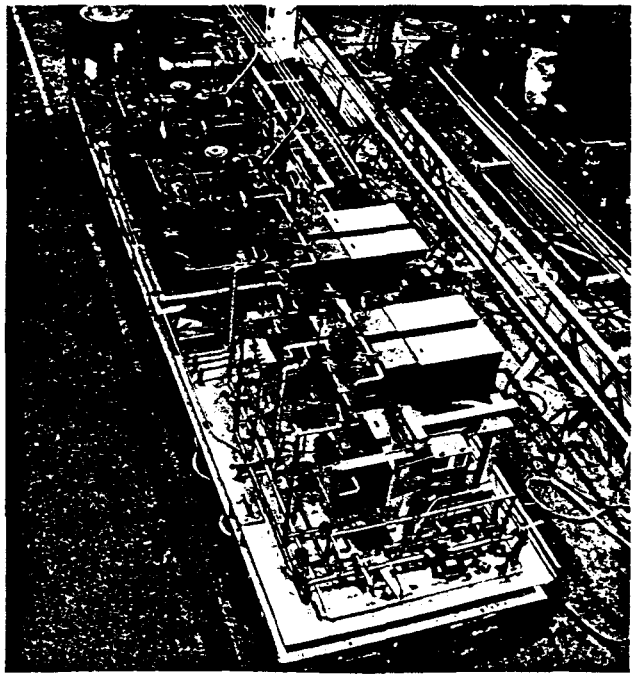
Skid-mounted units.

The Zimpro Inc. skid-mounted units are delivered to the job-site on three truck trailers, and the two equipment skids and the pressure vessel are bolted to concrete pads. Depending upon location,

(cont.)

TOLS001400





Skid-mounted units are manufactured by Zimpro Inc. at Rothschild, WI

construction of pre-engineered 30' x 46' (9.1 x 14 m) building may be desirable.

Following installation of a few pre-fabricated inter-skid pipes and connection to wastes and utility sources, the unit is ready for operation.

The units are available in various materials of construction, established by wastewater characteristics.

Once operating, costs of just pennies per gallon are common.

Specifications: Toxic and hazardous waste skid-mounted unit.

Maximum Flow Rate: 10 gpm (2.3 cu m/hr).
Available Materials of Construction:
316 SS., Carpenter-20, Incoloy/Inconel, Hasteloys, Titanium, or other alloys as required.
Instrumentation: Electronic, small case.
Electrical Enclosures: NEMA I-A (Gasketed).
Utilities:
Power=180 KW (440 volt, 3 phase, 60 hertz)
Fuel Oil=0-6 gallons per hour (0-0.02 cu m/hr)
Cooling Water=50-70 gpm, 25° F rise (11.4-15.9 cum/hr, 4° C rise).
Optional closed-loop cooling system available.
Operating Labor: 4 MH/8 hour

Typical toxic compounds destroyed over 99% by wet air oxidation.

(According to Zimpro Inc. research)

Acenaphthene; acrolein; acrylonitrile; 2-chlorophenol; 2,4-dimethylphenol; 2,4-dinitrotoluene; 1,2-diphenylhydrazine; 4-nitrophenol;, pentachlorophenol*; phenol; sodium cyanide; potassium thiocyanate; formic acid; N-nitrosodimethylamine; toluene; pyrene; malathion; 1,2-dichloroethane; chloroform; carbon tetrachloride; hexachlorocyclopentadiene; Aroclor 1254*; DDT*; 1,2-dichlorobenzene*; 2,4-dichloroaniline; 2,4,6-trichloroaniline.

*wet air oxidation with co-catalyst.

Make contact.

For more information about using skid-mounted wet air oxidation units at your waste generation, storage, or treatment site, contact:

Hazardous and Toxic Waste Treatment
Zimpro Inc.
Military Road
Rothschild, WI 54474
USA
(715) 359-7211

ZIMPRO INC.
ENVIRONMENTAL & ENERGY SYSTEMS
A SUBSIDIARY OF STERLING DRUG INC.
ROTHSCHILD, WISCONSIN 54474
PH. 715 / 359-7211 TELEX 29-0495

©Zimpro Inc. Form No. I-303 3/81 Litho U.S.A. PP 1000

TOLS001401

9/86

Discuss w/ John R.

Penta – JPD – Robert

(1) ✓ out covering area.
Scrape up & cap

John R.
(503) 232-0824

(2) does Penta dissolve in
HC (IDACON) – Jack
Bill [illegible] Tahoma Chem Co Inc
906 Short St. Steilacoom WA 98388
add diesel – extract
make asphalt

home 584-1537
office 83-1 565-9311
plant 673-3399

Highly soluable in HC.
Could prob. dissolve in asphalt
Could do leach test on hand-made batch of asphalt.

(3) Xperiment – can we
get penta out
a. Wash c̄ solvent (diesel) (sodium Hydroxide) } ✓
(extract c̄ heat)
b. Chem fix (blend c̄ soil & binds compounds c̄ resin } ✓
cap area to prevent
hydrologic static pressure
along bldg

ie, extend footing so
water couldn't diffuse
under wall & move
up to flow

✓ Zimpro – similar to peroxide hydrolysis of phenol
Not too easy to knock off chlorines

Zimpro method
Need to find out if process works on
soil. Currently designed to work on liquids.

TOLS001402

BZTO104(e)038223

PENTACHLOROPHENOL

CONTAMINATION

NORTHWEST TERMINAL

TOLS001403

BZTO104(e)038224

M E M O R A N D U M

September 30, 1986

TO:	R.D. Abendroth	(info)	Seattle
	Robert Abendroth		Seattle
	C. Edward Miller, Jr.	(info)	Los Angeles
	Al Schneider	(info)	Seattle
FROM:	John Denham		Seattle

SUBJECT: PENTACHLOROPHENOL CONTAMINATION - NORTHWEST TERMINAL

Attached is report of actions on above subject. This completes all activities per your direction as of this date and, as you requested, recommends future steps to eliminate contamination at this site, on-site.

Report is intended to:

a. Provide a means to gain DEQ approval of selected clean-up approach. At this point, we will have to have their approval, in writing, after you agree to proceed but before we can actually go ahead.

b. Provide an update to Koppers with the thought that it may encourage them to pay half the costs ($54,400) incurred to date. So far Koppers has not contributed anything.

c. Serve as thorough documentation, by third party observations, that TOC is actively pursuing this voluntary clean-up, should future litigation occur.

d. Provide TOC management with status update.

Attachment a/s

JPD/ch

PENTACHLOROPHENOL

CONTAMINATION

AT

TIME OIL COMPANY

NORTHWEST TERMINAL

12005 NORTH BURGARD ROAD

PORTLAND, OREGON

OCTOBER 1, 1986

PREPARED FOR:

TIME OIL COMPANY
2737 WEST COMMODORE WAY
SEATTLE, WASHINGTON

PREPARED BY:

SRH ASSOCIATES, INC.
123 N.E. THIRD AVENUE, SUITE 230
PORTLAND, OREGON 97232
(503) 232-0824

TOLS001405

BZTO104(e)038226

SECTION I

HISTORY

Section I provides a sequential summary of those activities relating to pentachlorophenol (PCP) operations within the Time Oil Company Northwest Terminal located at 12005 North Burgard Road in Portland, Oregon. The information was gathered from Time Oil files at the firm's Seattle headquarters. Data was extracted from reports, memos and other correspondence from Time employees, the Oregon Department of Environmental Quality (DEQ), the US Environmental Protection Agency (EPA) and private consultants.

BACKGROUND

Agreement with Koppers Company, Inc. (1967-1982)

On March 1, 1967, Time Oil Company reached an agreement with the Koppers Company, whereby Time would provide the storage, handling and distribution of Koppers owned specialty woodtreating chemicals, including PCP. The operating area included a warehouse building and an adjacent tank farm area (about 70' x 70') with an earthern surface. This small site was to become known collectively as the woodtreating chemicals area. Early in 1981, Time notified Koppers of their intent to terminate the agreement on March 31, 1982. Time and Koppers jointly agreed to immediately cease all PCP operations at the site, to remove all products, to clean all tanks and pipelines, to remove and dispose of all tanks and pipelines, to effect clean up of whatever contamination existed and to do it all within existing regulatory guidelines.

Various Site Inspections (1971-1984)

A summary of in-house site inspections, over the ten year period (1971-1981), identified the following problems related to the PCP operation.

- No spill control system in warehouse. Spilled liquid was able to run unrestricted through the warehouse area and drain out through doors. Sloping of the warehouse floor and installation of drains was recommended.

TOLS001407

BZTO104(e)038228

- o Floor of warehouse work area caked with product. Steam cleaning recommended.
- o No warning signs were posted which call attention to hazards in the area where PCP was stored and mixed.
- o Ground near end of pipelines saturated with product to a depth of 12 inches.

During February 1983, Time contracted with the AM-Test Corporation to conduct a fish bioassay test on the site soil. Analysis resulted in a finding of the soil (only) being toxic at the 100 and 1000 ppm levels.

On a subject matter completely unrelated to the pentachlorophenol operation and Time/Koppers planned actions, the DEQ conducted an inspection of the entire Northwest Terminal facility on October 25, 1984. On that date, the DEQ advised their intent to collect soil samples throughout the facility. It is because of this latter DEQ advisory that the following soil test results are included since two samples were taken from the woodtreating chemicals area.

On December 12, 1984, DEQ personnel collected twelve soil samples from the entire facility. Splits of each sample were provided to Time. DEQ analytical results were received by Time on January 24, 1985. The DEQ samples were analyzed for EPA Priority Pollutants and for other substances identifiable through GC/MS scan, with a specific interest in lead content. No samples were found to have lead concentrations above the detection limit. The samples were also analyzed for fourteen pesticides, but no concentrations above the detection limit were found. Non-priority GC/MS scans indicated the presence of low concentrations of petroleum hydrocarbons in three of the twelve samples. In the analysis for EPA Priority Pollutants, ten of twelve samples were found to contain either no concentrations of any organics above the detection limit, or only trace amounts of polynuclear aromatics. One sample, taken from the woodtreating chemicals tank farm, contained 515 ppm of PCP and 12 ppm of tetrachlorophenol (TCP). The second sample from this area contained 1820 ppm of PCP and 71 ppm of TCP.

Sample splits, which had been provided to Time, were then submitted to Coffey Laboratories for analysis in order to confirm DEQ findings. Results of these analyses were received on March 15, 1986 and showed no PCP concentrations higher than 275 ppm. No pentachlorophenol was detected in any sample outside of the woodtreating chemicals area.

INITIAL CLEAN UP EFFORTS

Proposal for Removal of Contaminated Soil (1983)

In October of 1983, pending completion of site tank and pipeline

TOLS001408

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physical removal, plans were made to excavate and dispose of soil to a depth below that where PCP contamination was found to exist. This was to be a three phase effort, fully coordinated with the DEQ and the disposal facility. Phase I consisted of initial soil removal and its transport to an authorized disposal facility. Phase II involved a thorough investigation to determine the extent of PCP contamination and its degree of concentration. Phase III was to remove and dispose of any remaining soil which was detected, by laboratory analysis, to be contaminated above acceptable limits.

On November 1, 1983, a delay in Phase I of the planned removal occurred because ownership of the hazardous waste facility at Arlington changed and some period of time was needed for the new management to reach full operational status. Further, an agreement from the new owners (Chemical Waste Management) to accept the soil at Arlington prior to any excavation was absolutely essential to ensure that Time did not become classified as a hazardous waste storage facility.

Removal and Disposal of Contaminated Soil (February - June, 1985)

On February 4, 1985, Time reiterated to the DEQ, its intent to excavate PCP-contaminated soil and dispose of it at an approved disposal facility. On February 19, Time executed a contract with Northwest Vacuum Truck Service, Inc. for removal and transport of the contaminated soil. On May 14, the DEQ granted approval for disposal of the PCP-contaminated soil at the Arlington landfill. On June 24, an agreement covering disposal was reached with Chem-Security Systems, Inc., operator of the Arlington facility.

Between June 25 and June 28, 1985, 288 cubic yards (242.76 tons) of soil were removed and shipped to Arlington. The soil was excavated to a depth of 2 to 4 feet below grade in the northwest corner of the woodtreating chemicals tank farm.

Soil Sampling (June - July, 1985)

On June 28, 1985, following completion of contaminated soil excavation, Time retained Riedel Environmental Services to perform sampling and analysis of the remaining soil. Samples of surface soils were initially collected from 22 locations around the perimeter of the woodtreating chemicals tank farm area. Three composite samples were formed and analyzed, showing PCP concentrations of up to 860 ppm. Samples of the soil from 81 individual sample sites surrounding the woodtreating tank farm area were then collected and analyzed for PCP. The results indicated that the contamination was localized to the west and south of the warehouse with little or no contamination occurring to the east of the site.

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Soil was then collected from fourteen locations at depths of 0, 2, 4, 7 and 12 feet below the surface on a triangular grid across the tank farm area. Samples were taken by the split spoon technique using a hollow stem auger drill rig, and analyses were performed in accordance with EPA procedure #8040 (SW-846). Contaminant contour maps were developed from the data which showed a maximum PCP concentration of 26,500 ppm at the surface in the area where the loading of trucks had occurred. This finding of soil contamination caused an increase of the site size to about 70' x 140'. A second focus of contamination was at the southwest corner of the warehouse. The vertical column of contamination at the second location extended to the lowest sampling interval (12-14 feet below the surface), which was noted as being in the saturated zone at the time of sampling. The highest concentration at this depth was 2,030 ppm.

The two focal points of contamination are indicated on the surface contour isopleth map generated by Riedel and presented as Figure I-1 of this report. Figure I-2 indicates the 12 foot contaminant isopleth. (Note: the southwest corner of the warehouse is indicated by the reference mark at coordinates (76,166)).

600 ppm Chlorophenol Toxicity Level Interpretation (June, 1985)

On June 28, 1985, Time received a letter from the DEQ laboratory, concerning previous interpretations by the agency, that 600 ppm of total chlorophenols in soil represented the hazardous waste threshold. This conclusion was based on extraction and bio-toxicity tests peformed by DEQ. The letter stated, however, that this was only used as guidance and did not necessarily reflect specific clean up requirements.

Removal of Concrete Wall (November, 1985)

Time retained Riedel Environmental Services in November, 1985 to remove and decontaminate a concrete wall which stood along the west perimeter of the woodtreating chemicals tank farm area. The intent of the removal of the wall was to allow for easy sample analysis, contaminant containment and future removal of the contaminated soil adjacent to the wall. This project included wall steam cleaning, subsequent testing of the wall for residual PCP and wall demolition following certification of decontamination to background levels of PCP. The wall was broken into pieces by Riedel and disposed of by Time.

Classification of Contaminated Soil as Hazardous Waste (December, 1985)

On December 10, 1985, the EPA Region X office advised Time that soil contaminated with leaked PCP had been reclassified (from U242)

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to a hazardous waste bearing number F027. Referring to a moratorium on landfilling of such wastes, the EPA letter stated that at that time there were "no commercial hazardous waste facilities in the United States that would accept waste designated as F027." EPA also suggested that Time consult with the DEQ before continuing with clean-up operations at the site.

Wells 1, 2, 3 and 4 Installation (November, 1985)

Pending resolution of acceptable disposal techniques for contaminated soil containing PCP, Time concentrated on determination of possible groundwater contamination.

In November, 1985, Time again retained Riedel Environmental Services to install four groundwater monitoring wells near the southwest corner of the warehouse building. Wells 1, 2 and 3 were placed in 16-inch (O.D.) 45° slant borings which penetrated soil beneath the building to a vertical depth of 14 feet. Well 4 was installed in a 16-inch (O.D.) vertical hole drilled to a depth of 50 feet. Samples for PCP analysis were taken to advance and further earlier analyses, particularly to determine if contamination existed beneath the woodtreating chemicals warehouse.

Samples from the slant borings indicated PCP concentrations as high as 116,000 ppm at 2.5 to 4 feet below the surface, with surface concentrations ranging from 65.3 to 1,690 ppm. The concentrations generally decreased with depth. The vertical boring (Well #4) showed concentrations descreasing with depth from 574 ppm at 18.5 to 20 feet below the soil surface to a low of 1.59 ppm at 43.5 to 45 feet below the surface. The conclusion of this report was that contamination exists below the southwest corner of the woodtreating warehouse floor, although the horizontal limits of contamination were not definable with the existing data.

Geologic logging of the soil at Well #4 indicated a minor layer of low permeability about 18 to 35 feet below the surface. The well was completed by installing 4-inch PVC well casing and screen to a depth of 40 feet in the 16-inch auger hole and sand packing the well annulus to within 6 feet of the surface. A well construction diagram is shown in Figure I-3. The geologic log of this boring is shown in Figure I-4. A well construction diagram of the slant borings is shown in Figure I-5.

Installation of Well Points (February - May, 1986)

In February, 1986, in order to identify groundwater flow direction and gradient beneath the Northwest Terminal facility, Time installed well points at three locations surrounding the woodtreating chemicals warehouse and tank farm area. Two of the wells (A and B) were installed to a depth of 20 feet. Two wells were installed at a depth of 8 feet at location C (see Figure I-6).

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Water level measurements were taken on nine occasions between February 28 and March 11 in Wells A, B, C_1, C_2 and 4. The data collected indicated an unexpectedly lower water level in well 4 as compared with the other well locations.

To further investigate this unusual circumstance, three additional well points, four observation pits and a river level reference point were installed by Time in late March, 1986. Wells E and F were driven to depths of 20 and 19 feet, respectively, while Well G was driven to a depth of 13 feet where advancement of the point was halted by cobbles. Well C_2 was removed, and Well C_1 was henceforth known simply as Well C. Water levels in Well 4 and Wells A-G were again measured repeatedly over a period of several days. The data confirmed earlier indications that a water table depression existed in the area of Well 4.

A detailed evaluation of the boring log data for Well 4 showed that a series of clay lenses and silty sands had been penetrated by the bore hole between the depths of 18.5 and 35 feet.

Gravelly sand lies above this zone and medium to fine sand predominates below it. The clay lenses appear to have formed a zone of relatively low permeability separating a perched upper water bearing zone from a lower aquifer. This zone of low permeability was apparently breached by the installation of Well 4. The boring was drilled with a 16-inch diameter auger while the well consisted of 4-inch PVC pipe. The annulus was filled with coarse sand, violating the integrity of the low permeability layer and providing a potential pathway for water from the upper perched water bearing zone to flow down the hole to the lower aquifer, creating a depression in the natural groundwater flow. This appeared to have altered the natural direction of groundwater flow (toward the Willamette River) within a zone of influence surrounding Well 4.

Although the observed water table depression could represent a strong, natural vertical gradient in the vicinity of Well 4, the influence of this well on adjacent wells indicated a strong probability of an induced groundwater sink caused by an unsealed annulus of Well 4. This conclusion was reached by Time upon evaluation of the piezometric surface of the perched water, which indicated that wells in close proximity to Well 4 were apparently influenced by Well 4, showing water level depressions, while wells distant from Well 4 were unaffected.

Additional Groundwater Monitoring Wells and Well 4 Abandonment (May, 1986)

At Time's direction, three additional groundwater monitoring wells (D, H and I) were installed by Riedel in early May, 1986. The purpose of these wells was to further define the upper piezometric surface and to obtain data on groundwater quality.

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In an effort to reinstate natural groundwater flow patterns in the area and to eliminate possible intercommunication between upper and lower water bearing zones, Well 4 was removed by overdrilling and the hole sealed on May 14, 1986. Prior to choosing this method of abandonment, Time evaluated several possibilities, including pressure grouting and two different overdrilling processes, with input from Hart Crowser and Associates, Century Environmental Sciences and Riedel.

Groundwater Sampling (April - May, 1986)

Time retained Century Environmental Sciences to perform groundwater sampling and analysis of the wells and well points at the Northwest Terminal facility. In April, 1986, Century measured static water levels in Well 4, in Wells A-C and Wells E-G. These measurements again showed that the water level in Well 4 was lower than in surrounding wells. Samples collected from each well were analyzed and .0061 ppm, .0026 ppm and .0014 ppm of PCP were detected in Wells 4, B and F, respectively.

On May 28, following abandonment of Well 4, a second group of groundwater samples were collected from Wells A, B, D, E, F, H and I. The locations of these wells is indicated in Figure 6. The analytical results showed PCP in a concentration just slightly above the detection level (.0002 ppm) in Well I. Other wells contained no detectable levels of PCP.

Additional Soil and Groundwater Sampling (August, 1986)

In August, 1986, Time retained SRH Associates to perform additional sampling and analysis of soil and groundwater at the Northwest Terminal facility. Based on previous contour map determinations, Time re-graded the surface of the woodtreating chemicals tank farm area, gathering all suspected contaminated surface soil in a centralized area, reducing the area to about 60' x 60'. SRH then collected surface soil samples from the same 14 locations in the tank farm area which had been sampled earlier by Riedel, drilled six holes through the warehouse floor and sampled soil from beneath the building. Samples were collected from the surface of the soil underlying the concrete floor of the warehouse as well as the same five subsurface intervals sampled by Riedel in 1985. These borings were made in an effort to determine the extent of contamination underlying the warehouse.

SRH also collected groundwater samples for PCP analysis and pH, and made measurements of static water levels from all monitoring wells in existence. The results of these analyses are supplied in Section III of this report.

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SUMMARY

During the duration of the agreement between Time and Koppers, pentachlorophenol and probably some tetrachlorophenol were released into the sandy soil adjacent to the woodtreating chemical warehouse. This material may have been released in combination with various hydrocarbon solvents used as a part of the process. The primary cause for these releases appears to have been intermittent spillage from hoses and mixing vessels during end product formulation and transfer operations, rather than a one-time spill event.

Upon investigation of these findings, Time and Koppers terminated their agreement, ceased all pentachlorophenol operations and began clean up operations at the site.

In investigating the extent of soil contamination, Time has obtained assistance from several consulting firms and clean up contractors, and has analyzed sufficient soil samples to determine the vertical and horizontal extent of contamination. The contamination is localized in the northwest corner of the woodtreating chemicals tank farm, with some slight penetration below the warehouse. An estimated 2,000 cubic yards of soil, a portion of which extends down to the first water bearing zone, is contaminated.

Time has installed an extensive water well monitoring network at the site and is continuously acquiring data on the flow directions and rates of flow of the first water bearing zone, as well as on water quality and PCP concentrations. Early data indicates that gross contamination of the groundwater has not occurred outside of the contaminated zone. PCP can barely be detected in wells in, or immediately adjacent to, the contaminant zone. Groundwater flow is generally in the direction of the Willametter River. Vertical gradients in the vicinity of the contaminant zone have not been determined at this time.

Time attempted to minimize the risk of contaminant migration by disposing of some material at Chemical Waste Management's Arlington facility. This effort was thwarted due to a moratorium on landfilling of PCP subsequently disallowing further such disposal. Time has consolidated the bulk of the contaminated soil into one spot within the woodtreating chemicals tank farm area to facilitate containment and minimize the risk of off-site migration.

Time has now retained SRH Associates to identify available alternatives to destroy or immobilize the PCP contaminated soil and is presently evaluating additionally generated data regarding groundwater quality and soil contamination.

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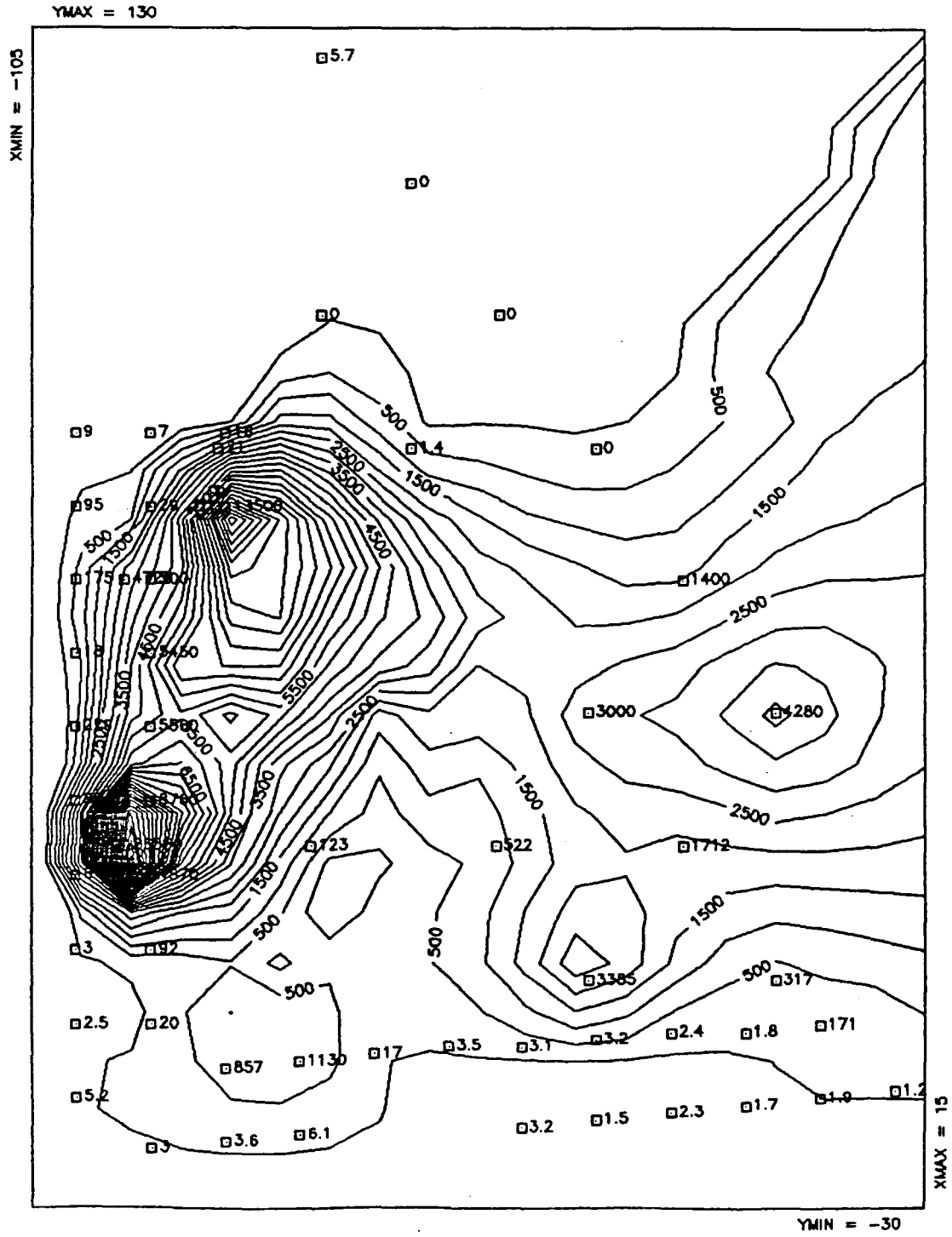
FIGURE I-1



TIME OIL CO – ORIGINAL SURFACE PCP CONTOURS

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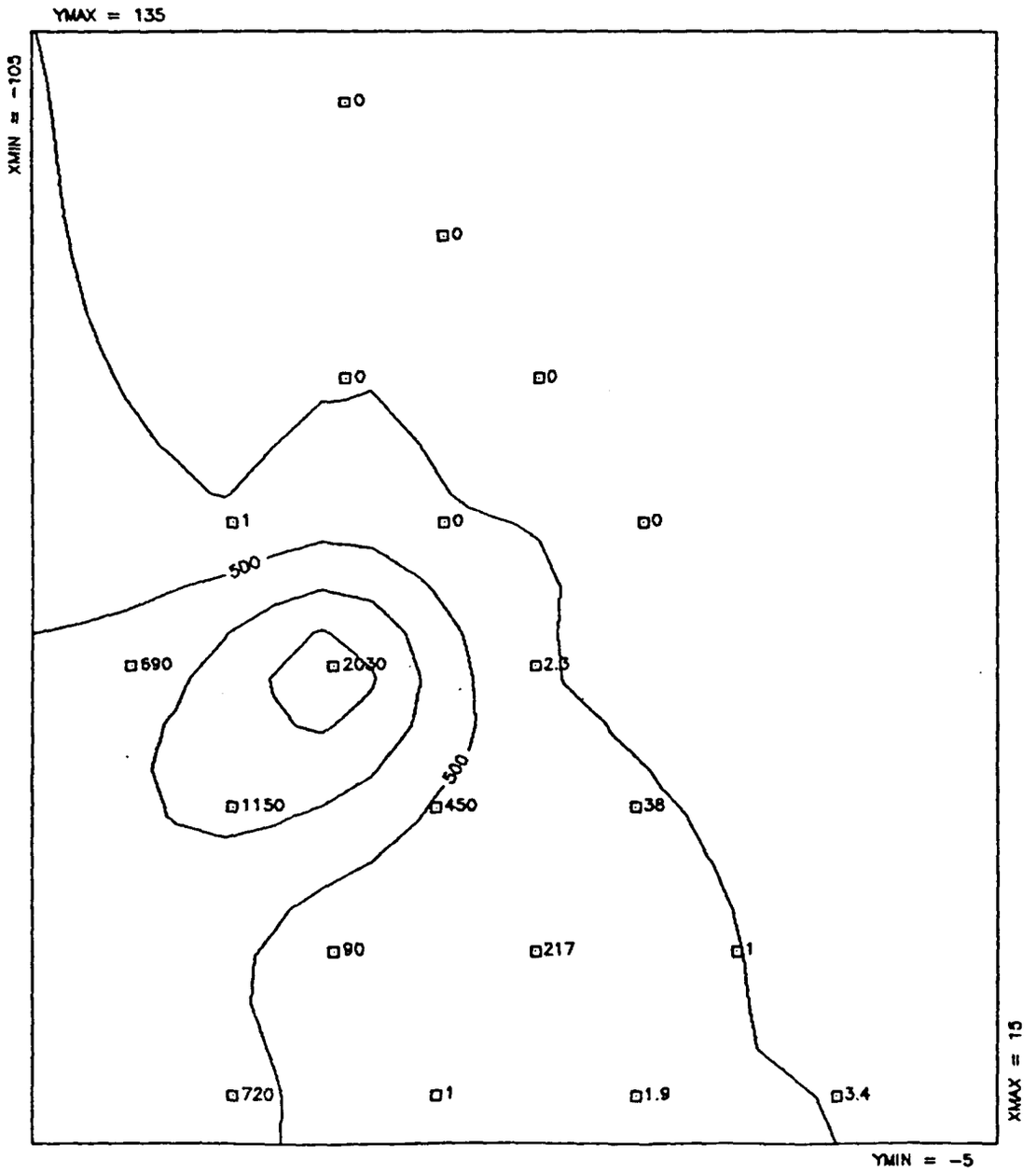
FIGURE I-2



TIME OIL CO – ORIGINAL 12 FOOT PCP CONTOUR

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FIGURE I-3

CONSTRUCTION DIAGRAM FOR

WELL 4

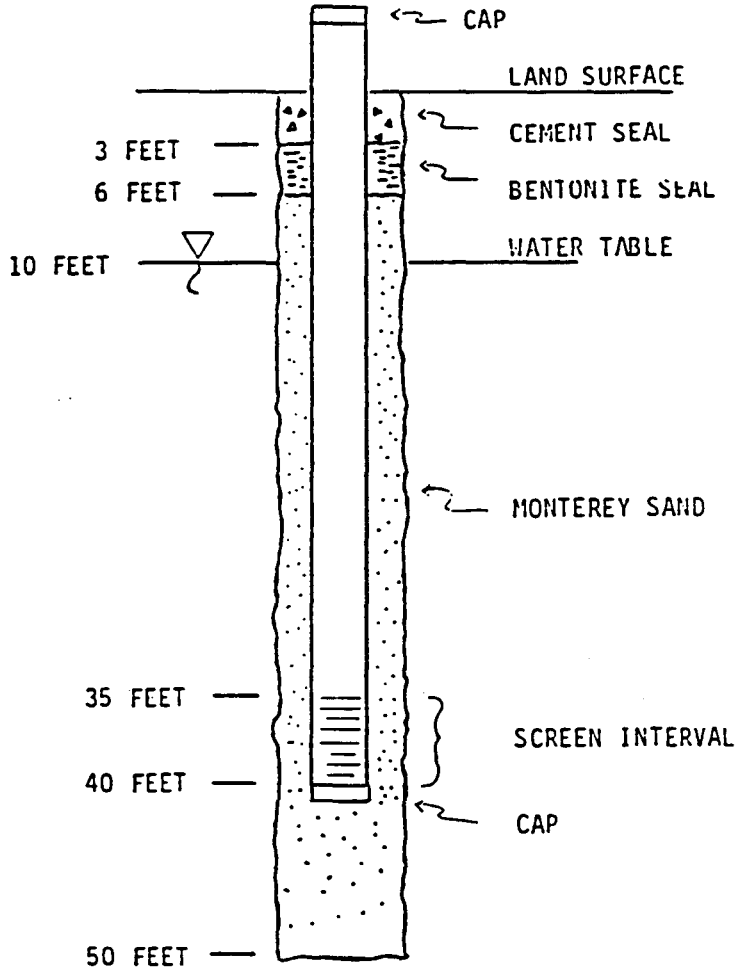

FIGURE I-4

BORING LOG WELL 4

Depth in Feet	Soil Description
0 - 1-1/2	Light brown gravelly sand, moderately compacted, moist (shovel sample)
3-1/2 - 5	Dark brown gravelly sand, moderately compacted, moist, split spoon sample (S.S. sample)
8-1/2 - 10	Light brown gravelly sand, in contact with blue gray gravelly sand, moderately compacted, moist (S.S. sample)
10 - 13	Gravelly sand
13-1/2 - 15	Light blue gray gravelly sand, moderate compaction, saturated (S.S. sample)
15 - 18-1/2	Gravelly sand
18-1/2 - 20	Light blue gray gravelly silty sand with a clay lens, moderately compacted, saturated (S.S. sample)
20 - 23-1/2	Gravelly silty sand with clay lens
23-1/2 - 25	Light gray gravelly silty fine sand with minor clay lens, moderately compacted, saturated (S.S. sample)
25 - 28-1/2	Fine sand
28-1/2 - 30	Light gray medium to fine sand, 3-1/2" thick clay lens, saturated (S.S. sample)
30 - 32-1/2	Medium to fine sand with clay lenses
32-1/2 - 35	Light gray medium to fine sand, minor clay lenses, saturated (S.S. sample)
35 - 37-1/2	Medium to fine grained sand
37-1/2 - 39	Light gray medium to fine sand (S.S. sample)
39 - 42-1/2	Light gray medium to fine sand
42-1/2 - 45	Light gray medium sand grading to fine sand with depth, minor clay lens (S.S. sample)
45 - 47-1/2	Fine sand, saturated
47-1/2 - 49	Light gray sandy silt grading to light gray silty fine sand (S.S. sample)

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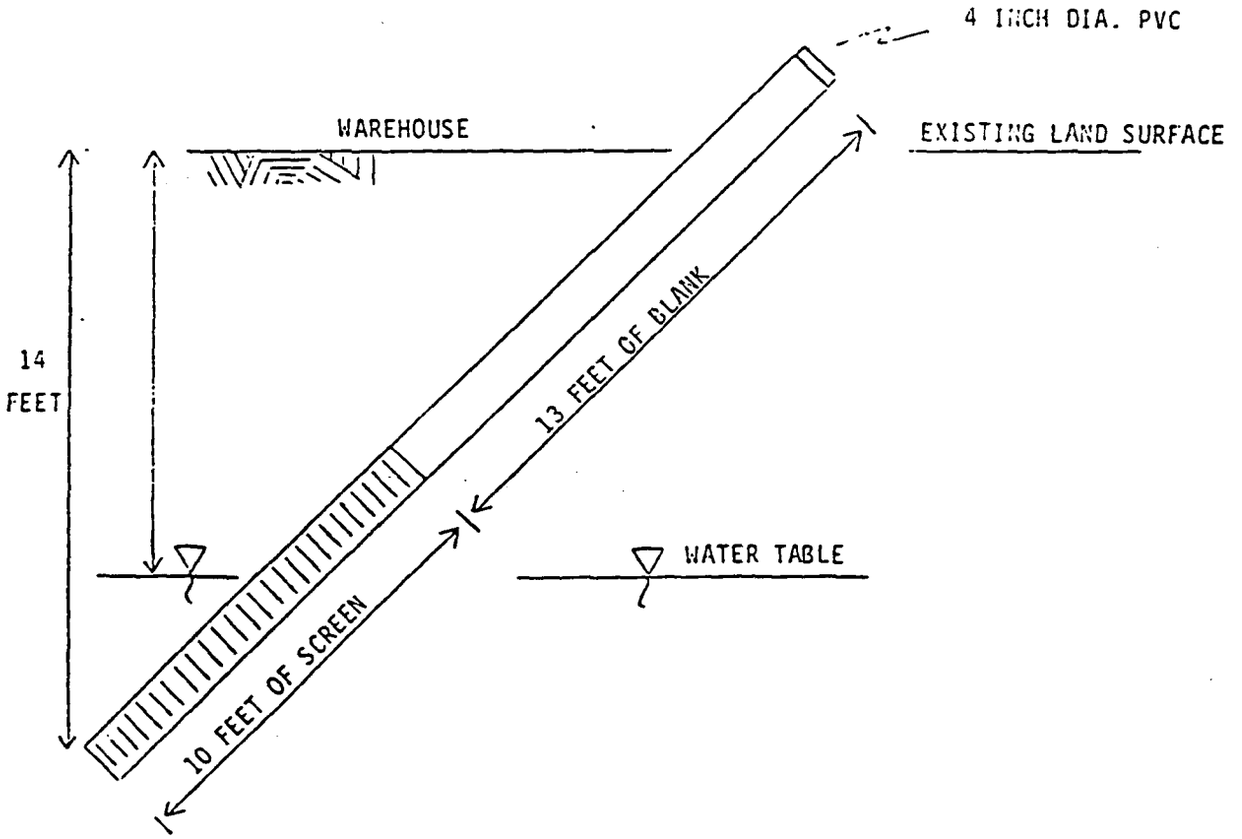
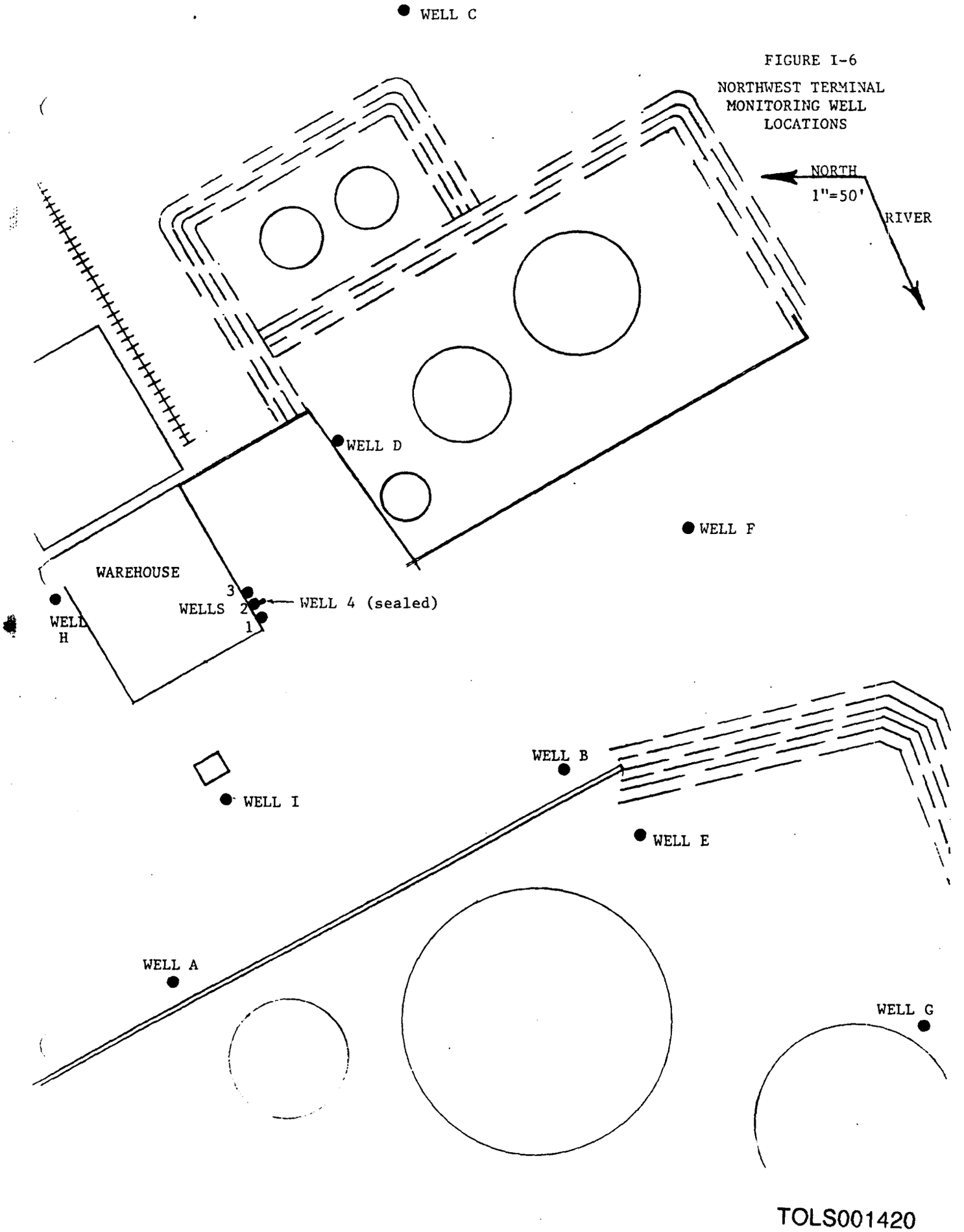
FIGURE I-5

CONSTRUCTION DIAGRAM FOR

WELLS 1, 2 AND 3





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SECTION II

REMEDIAL ALTERNATIVE ASSESSMENT

INTRODUCTION

A small portion of Time's 45 acre property at 12005 N. Burgard Road in Portland, Oregon has been identified as being contaminated with pentachlorophenol (PCP). Contamination at this site has been found to extend to approximately 70' x 140' in area and to depths of about 15 feet below the surface in one spot. The site was used for the formulation and storage of woodtreating chemicals under an agreement between Time and Koppers from 1967 until 1982. In addition to pentachlorophenol, a number of hydrocarbon solvents and petroleum products were used in this process.

Concentrations of PCP, ranging from below detectable limits to 116,000 ppm, have been detected in the soil, with concentrations generally decreasing with depth and distance from the southwest corner of the woodtreating chemicals warehouse. Concentration data has been used to generate equiconcentration isopleths which indicate that soil contamination is generally restricted to the upper 3 feet of soil, with the exception of a major vertical column of contamination located at the corner of the warehouse.

Perched groundwater underlies the site at a depth of approximately 13 feet below the surface. This water appears to be continuous with and potentially discharging to, the Willamette River. The surface soil consists predominantly of medium-grained sands with occasional minor clay lenses and/or gravels. The soil is characteristically homogeneous from the surface to the perched water table. A layer of somewhat lower permeability underlies the perched water and consists of silty sands with clay lenses. Fine-grained sands predominate below this layer.

Concentrations of PCP in groundwater below the known contaminated zone have not exceeded .044 ppm. Most wells indicate no detectable concentrations of PCP, and outside of the contaminated zone, concentrations have not exceeded .003 ppm in any well. Contamination does not appear to have migrated extensively from the known contaminated zone. Analyses of groundwater are continuing on a quarterly basis.

A water well monitoring network consisting of shallow wells and well points has been installed to monitor the upper perched water. A total of nine vertical and three slanted (45°) wells have been installed and are regularly sampled for pH and PCP plus being measured for static water levels.

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Time is concerned with potential off-site migration of PCP from this source and is determined to eliminate this risk by remediating the site. Due to an existing ban on the land disposal of soil containing pentachlorophenol, excavation and landfilling is not an available remediation alternative (the material at Time has recently been designated by the EPA as RCRA-listed waste F027 vs. its previous U242 designation). Time does not desire to either leave the material in place without corrective action, cap the contaminated area without first eliminating the contamination or excavate and store the waste on site due to the long-term risks associated with these alternatives. Time has performed emergency phase stabilization and containment measures to minimize the risks of contaminant migration.

The following discussion identifies and describes several remedial alternatives which are potentially capable of destroying or immobilizing PCP in sandy soils such as those found at Time. Comments are made regarding soil and groundwater treatment, economics, availability and technical feasibility. This discussion is not intended to represent an indepth feasibility analysis of remediation options, but rather presents a summary review of options which Time may wish to investigate in greater detail.

ALTERNATIVES

The following alternatives were identified during the preliminary evaluation as remedial methods potentially capable of achieving effective results at Time:

Adsorption onto Polymers or Activated Carbon
Biodegradation
Capping in Place
Chemical Reduction
Closure in Place with Monitoring (No Remedial Actions)
Encapsulation
Excavation and Disposal
High Temperature, Catalyzed Oxidation
Incineration
In-Situ Soil Washing and Surface-Mounted Soil Washing
In-Situ Thermal Extraction and Surface-Mounted Thermal Extraction
Sodium Dehalogenation

Of these listed alternatives, excavation and disposal, capping in place, and closure in place are either unavailable due to the regulatory moratorium on landfilling of F027 material, or do not satisfy Time's requirements for long-term risk reduction. The remaining alternatives are discussed below.

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Adsorption Onto Polymers or Activated Carbon

Should contaminating PCP, at some point, be removed from the soil by soil washing, thermal extraction or other processes, final treatment of the recovered wastes will be required. Although not a destructive process, sorption of the recovered PCP onto carbon or other polymeric substrates utilizing hydrophobic interactions as a sorptive process, will reduce the volume of PCP contaminated material.

Activated carbon and a variety of organic and silicaceous polymeric adsorbents have been utilized to bind PCP and other phenols. The sorptive process, however, is usually reversible under appropriate conditions (usually temperature elevation or through the use of non-polar solvents) and therefore may not be suitable for long term stabilization of PCP wastes under uncontrolled conditions.

These sorbents may be used to concentrate PCP from a waste stream (i.e. soil washing eluates or thermal extraction scrubber liquors) which could then be recycled or disposed of as a non-hazardous waste. The adsorbent may then be regenerated for reuse and the concentrated PCP solutions so generated, collected for disposal by destructive methods such as incineration or chemical decomposition. Such an approach may be a logical consideration for the Time site.

Biodegradation

Biodegradation of man-made compounds has been observed for many years and the results of aerobic sewage treatment systems have been documented in detail. Aerobic landfarming of oily wastes from the petroleum industry has also been in general use for years. Biodegradation occurs under essentially two basic conditions: aerobic (respiratory) and anaerobic (fermentative). Many compounds have been observed to be degraded, either partially or completely to carbon dioxide and water, by one or both of these pathways.

Pentachlorophenol has been observed to undergo degradation by bacteria and fungi. Although PCP degradation has been observed under aerobic conditions, it occurs at a more rapid rate and with fewer complications under anaerobic conditions.

In addition to the biodegradation of pentachlorophenol in soil, it has been documented that fungal enzymes promote the binding of PCP to humic acids in soils, resulting in immobilization of the PCP.

Bench scale studies by SRH Associates scientists have indicated that, under controlled conditions, PCP can be degraded in both aerobic and anaerobic soil environments. Controlling conditions for biodegradation include soil porosity, pH, moisture content, inorganic nutrients (including nitrogen, phosphorus and potassium,

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Eh (oxidation reduction potential), microbial populations and PCP concentrations. Elevated concentrations of PCP are inhibitory or toxic to microbial populations, even under conditions of acclimatization.

The application of biodegradation to the treatment of soils from the site is severely limited due to the existence of high concentration material. PCP degradation, even under optimal conditions, ceases when PCP concentrations are in excess of 1000 ppm. Typically 500 ppm is considered the maximum effective limit. Between 500 and 1000 ppm, degredation effectiveness decreases. Since some material at the site contains PCP in excess of 1000 ppm, not all of the material would be considered ammenable to this treatment without significant dilution or pretreatment to reduce the contaminant concentrations. A large amount of the soil contains PCP at low concentrations however and may be treatable if it can be successfully isolated from the high concentration material found nearby.

Biodegradation may be performed either in-situ or in surface-mounted fermentation reactors. Due to the highly permeable soil at Time, the shallow groundwater table and the possible adsorption of PCP in co-contaminating hydrocarbons which tend to immobilize the PCP, in-situ degradation is considered to present an excessive risk of PCP migration to off-site locations. Additionally, generation of anaerobic conditions in sandy soils is highly difficult. Should a biological process be initiated in-situ, significant risk of PCP mobilization through partial decomposition, preferential degradation of stabilizing hydrocarbon absorbents, or bio-emulsification of the PCP could be expected. For these reasons a surface-mounted fermenter would be the preferred method for soil treatment at the site.

A surface reactor may be used to directly treat a soil/water suspension, or may be used to treat extracted and diluted contaminants removed from the soil by other technologies. A surface fermenter allows for control of pH, nutrients, Eh, and other critical parameters, as well as preventing the release and migration of waste or waste products.

Nutrients, pH and Eh control are parameters that are easily controlled once optimal process conditions have been identified by bench and pilot scale studies. Co-metabolities or other nutrient augmentation is also easily regulated. Fermenters capable of handling soils such as those found at Time are commercially available, but may be constructed on site for considerable less cost. The requirements of this equipment vary with the amount of material to be treated, the reaction kinetics and the degree of control required.

Much debate currently exists over the benefits obtained by using PCP acclimated, commercially available bacterial preparations to promote degradation vs. using cultures of indigenous bacteria obtained from the site. There is considerable evidence to support

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the use of indigenous microorganisms. The effect on the overall cost of the project is similar for both methods. Effective preparations range from $20 to $50 per pound of material. Microbial requirements depend on a variety of soil and waste-specific parameters that have not yet been determined at the site.

Costs not directly associated with the on-site remediation include bench and pilot scale tests, engineering, permitting, chemical, biological and physical analyses, agency negotiations, waste delisting and management. These costs are expected to be similar for all of the alternative technologies evaluated here.

Chemical Reduction

Oxidation and reduction reactions have been utilized to destroy organic wastes under a variety of circumstances. Due to its high degree of chlorination, PCP is not readily oxidized by such mild oxidants as ozone or hydrogen peroxide. Stronger oxidants present such a great hazard in and of themselves as to be unsuitable for treating wastes (See High Temperature Catalyzed Oxidation).

PCP is, however, readily reduced by sodium borohydride solutions. Staiff (1981) and Sweeney (1981) have both demonstrated the use of catalyzed metal powders and/or borohydride solutions in the oxidation of chlorinated aryls. In-situ techniques have been demonstrated, however competition from reducible soil components may severely limit the reaction, requiring retreatment. This soil reduction chemistry must be identified to allow for proper selection and application of reducing agents.

Reduction, either in-situ or in surface-mounted reactors, has realistic potential for remediating the contamination at Time. The low organic content of the naturally occuring sands in the area, their homogeneity, the low trafficability of the soil, and the nature of the contaminants all support this alternative. Bench and pilot analyses would be required to determine the reduction potential and the products of reduction formed by this process. If technically successful, implementation costs should be moderate.

Encapsulation

One method of encapsulation of organic material is through the application of sorbents to the contaminated soil. Sorbents may include carbon granules, polymeric materials or substances in which the waste is soluble. All sorbents must be insoluble in water, inert and not readily degradable in order to achieve long term stabilization of the wastes in question.

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Pentachlorophenol is readily adsorbed by activated carbon granules and is soluble (absorbed) in a variety of organic substances including high molecular weight hydrocarbons such as tar or asphalt. Since both of these materials meet the criteria listed above for acceptable sorbents, they offer a feasible alternative for PCP immobilization. Additionally, both materials are capable of sorbing any petroleum hydrocarbons which may exist in the soil in addition to PCP.

An attractive alternative for immobilization of Time's wastes is the admixing of the PCP contaminated soil with asphalt to form a structurally sound paving material which could then be used to seal the soil surface in the vicinity of the woodtreating chemicals tank farm. This alternative would require an analysis of the leachability of the wastes from the surfacing material and a determination of the structural integrity of the asphalt so produced at various levels of waste incorporation.

High Temperature, Catalyzed Oxidation

PCP is not ordinarily oxidized by readily available, easily handled oxidizers such as ozone or hydrogen peroxide. Although permanganate, dichromate or other strong oxidizers have been reported to successfully oxidize PCP, their cost, side reactions with soil components, and the environmental hazards generated by them restrict their use in treating contaminated soils. Zimpro has developed a process, commonly referred to as wet air oxidation, which has been successful in destroying phenols and other hazardous compounds in aqueous media.

The Zimpro, Wetox and other processes based on this same principle, employ high temperature and elevated pressures in an oxygen enriched aqueous environment to oxidize and thereby destroy hazardous organics. PCP and other extensively chlorinated organics are refractile to this process without the addition of suitable catalysts which can facilitate the dechlorination of these compounds, rendering them retreatable. Once dechlorinated, the resulting intermediates have increased susceptibility to oxidation by the wet air oxidation process and are degraded to either carbon dioxide and water or to non-toxic biodegradable intermediates.

All wet air oxidation processes are provided as packaged systems by the supplier. Included are the reactor, reagents and operators. Additional support and feasibility testing of representative media can ordinarily be negotiated. Cost of the system, which is provided on a lease basis, is variable dependent upon the volume of material to be treated, the size of the required reactor and the type of process necessary.

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Incineration

Incineration represents a tested and proven method for the destruction of chlorinated hazardous wastes, including PCP. Several types of incineration capacity exist in the U.S. Ordinary incineration, which is not acceptable for chlorinated organics, does not incorporate the appropriate acid scrubbers needed to produce an acceptable air discharge from wastes such as PCP. High efficiency incinerators, (often referred to as "6 nine" incinerators, based on their destruction and removal efficiencies) are capable of treating pentachlorophenol in high concentrations. Incinerators of this type are available in the U.S. as both fixed and mobile units. However, there is not sufficient capacity at this time in either type of unit, to satisfy domestic demands. Although most incinerators can handle liquids, few are equipped to handle solids such as contaminated soil.

Incineration can easily satisfy Time's objectives of reducing long term risk related to the contamination found on site. However, since no small mobile units are available nearby, Time must either absorb significant mobilization, siting and permitting costs or ship its waste to a fixed unit. The attendant risks in shipping must be weighed against those associated with leaving the soil on site.

The nearest incinerator for solid hazardous wastes such as those at the Time facility, is located in Deer Park, TX and is operated by Rollins Environmental. A primary concern with disposal by this alternative is cost. Rollins current price for incineration of contaminated soils is approximately $0.50 per pound. Based on Time's estimate of 2000 cubic yards of contaminated soil, incineration costs may approach $2.5 million. This figure does not include excavation, shipping and other associated costs. For comparison purposes, this amount is on the order of five times the cost of landfilling, if this alternative were available to Time.

In-Situ Soil Washing and Surface Mounted Soil Washing

Removal of contaminants from soil may be accomplished through extraction with a variety of elutriating solutions. The choice of the proper solution must be based on the physico-chemical nature of the contaminants, the effect of the elutriate on the soil geochemistry and its permeability, plus the method by which the eluted contaminants are to be treated for destruction or disposal. Ordinarily, aqueous solutions of acids, bases, surfactants or other compounds are selected (US EPA, 1982).

The effect of washing contaminated soils with water alone, or with mixtures of non-ionic surfactants was investigated by Science Applications International Corp. Their findings indicate that surfactants greatly increased the effectiveness of soil washing when the contaminant of concern was either PCP or a high boiling

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oil fraction. With pentachlorophenol alone, or when used in conjunction with other chlorinated phenols, plain water provided effective washing of the contaminants from a relatively sandy soil (83% sand, 10% silt and clay).

Since the contaminants at Time initially appear to be refractile to natural elution with precipitation or groundwater, surfactants appear to be desirable at this site. The use of alkaline solutions, while ordinarily effective with phenols, may be ineffective at Time due to the possibility of co-contamination with oils or hydrocarbon solvents. Extraction with other hydrocarbon solvents, while likely to effectively extract the contaminating PCP from the soil, will result in the formation of a hydrocarbon contaminated soil requiring an additional purification step.

Two means of applying soil washing methodologies have been identified: in-situ techniques and surface-mounted techniques, (including batch or continuous flow apparatus). In-situ techniques involve the treatment of soil without excavation and provide for the application of the elutriating solvent to the soil surface and recovery of the eluate by using recovery wells in the treatment zone. Surface-mounted systems involve the use of batch extraction tanks or counter-current extraction columns which extract the contaminants under controlled conditions.

In-situ techniques are effective in extracting contaminants only where the soil geology is known to be uniform and where the permeability is high enough to permit adequate percolation of the elutriating solutions through the soil. Additionally, in cases where the distance from the lower limit of the contaminants to groundwater (or alternatively to either a natural or induced low permeability soil layer) is great, excessive amounts of solution are required. Control is reduced and the potential for uncontrolled release of the eluate is great. The technique is well suited for situations where contamination is not generally accessible by ordinary excavation techniques (i.e. below buildings, in developed or heavily utilized areas).

The in-situ process is generally implemented by applying the solution through trickle irrigation or infiltration galleries, and recovering the product through judiciously placed recovery wells. The recovered eluate is treated and, if possible, recycled. A thorough evaluation of all waste components and soil chemistry must be performed to facilitate the selection of a proper surfactant, determine application rates, evaluate recovery potential and to provide information regarding eluate characteristics for the determination of treatment alternatives.

Surface mounted processes are indicated where the distance to groundwater, extraction requirements or heterogeneity of the soil (i.e. channelling, lenses, etc.) require a higher degree of control on the process. In these cases, soil is excavated by suitable procedures and placed into batch or countercurrent continuous extractors. Batch extractors usually involve the

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submersion and agitation of batches of contaminated soil in large tanks fitted with a filtration stage to separate the cleaned soil from the eluate. This step is usually repeated until a suitable clean-up standard is achieved.

Countercurrent extractors involve the introduction of contaminated soil into an upwardly moving extraction bed while the elutriating solution is introduced at the top of the bed and allowed to migrate downwards. In this latter process, the cleanest soil (already partially extracted) contacts the cleanest solvent just prior to exiting the column at the top. This continuous process has the advantage of generating less spent solvent requiring subsequent treatment than does the batch process. It requires a higher degree of process control but is generally less labor and energy intensive than a batch process. A continuous process also allows for the fitting of a second solvent stage to elute any residual surfactant from the treated soil where water was used.

The cost of soil washing is expected to be moderate, however this process does not address the final destruction and/or disposal of the recoverd solutions. These solutions, containing PCP, water, surfactants, and possibly hydrocarbons, must be treated by incineration, biodegradation, immobilization, recycling or by chemical processes prior to completion of the project. The extraction process and the treatment process should be determined in conjunction with one another in order to maximize their mutual effectiveness.

In-Situ Thermal Extraction and Surface Mounted Thermal Extraction

Thermal extraction processes involve the introduction of heat to the contaminated soil mass to increase the vapor pressure of the contaminants, rendering them sufficiently volatile to allow their recovery as a vapor. As might be expected, these processes work best with relatively volatile contaminants that tend to remain free, rather than binding to soil components. Additionally, the processes work best in friable or loose-grained soils which allow free permeation of the vapors and their subsequent release to the recovery system.

Coia (1985) has presented a system for recovery of volatiles from contaminated soils using an in-situ process. This system consists of a network of thermal injection wells and extraction wells connected to injection and extraction blowers, respectively. Although the system was intended for extraction of TCE from glacial sands, any compound that can be brought to exert a significant vapor pressure can be recovered with this system.

A similar system utilizing a modified drilling rig has been developed by ATW Calweld. This firm, a manufacturer of drilling equipment has modified the kelly of a drilling rig to incorporate several channels which allow the introduction of hot air, steam and various chemicals, if appropriate. The equipment rapidly

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agitates the soil while applying heat and volatilizes contaminants which are then recovered in a negative pressure hood surrounding the surface of the rig. Contaminant vapors are drawn off to a cyclone and scrubber system. Although the device has only been demonstrated on hydrocarbon spills (gasoline and diesel oil), ATW Calweld suggests that the process is applicable to lower volatility compounds such as pentachlorophenol.

Thermal extraction in surface units has been advanced by several firms. American Toxic Disposal in Waukegan illinois, has operated a 10-ton-per-day unit which has successfully removed PCB's from contaminated soils and sludges. This system has been demonstrated to the EPA and is currently being used to treat material containing PCB's in Gary, Indiana.

As with soil washing techniques, thermal extraction techniques do not destroy contaminants, which must be recovered and treated or immobilized by other techniques. The process does, however, result in a volumetric reduction of the contaminated soil by 10 to 100 fold, allowing consideration of incineration as a final destruction alternative.

Thermal extraction processes are viable candidates for treating Time's contaminated soils since the soil at Time is friable and loose-grained. A preliminary consideration to be addressed before selecting this process is the degree of volatility of the contaminants in the matrix found at Time. Since moisture does not present a major deterrent to thermal processes, saturated material may also be successfully treated.

Sodium Dehalogenation

Both Acurex and the Franklin Institute have developed processes whereby soils are extracted (similar to Soil Washing, above) and subjected to dehalogenation using sodium based proprietary compounds. Although the process has been primarily utilized for PCB destruction, it appears to be ammenable to chlorinated phenols as well.

The Acurex process is less stable and more sensitive to interference from water than is the Franklin Institute process, which uses a specially modified sodium/polyethylene glycol complex. The Franklin Institute process has been applied directly to soils in an in-situ operation.

These procedures have been used primarily in the destruction of PCB oils and have only recently been used to treat contaminated soils. PCP has not been treated by this process. Adaptation to the Time site may be possible but should be pursued only if other demonstrated technologies do not prove successful in pilot demonstrations.

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SUMMARY

Twelve alternative processes have been identified for isolation, immobilization, separation and/or destruction of PCP contaminated soil found at Time. The selection of any one or a combination of these alternatives requires additional characterization of the wastes found at the site. Among the additional data that may be required are:

- Adsorption Isotherms of Wastes on Soil and Carbon
- Biodegradability of Waste Constituents (Half-life and Rate Constant)
- Biodegradation Products
- Bioinhibition Threshold Concentration of Waste Constituents
- Characterization of Co-contaminants (if any)
- Climatic Conditions
- Determination of Soil pH
- Determination of Soil Particle Size Distribution
- Groundwater Parameters (Flow Rates, Storage Coefficient)
- Organic Carbon and Octanol/Water Partition Coefficients of Waste Components
- Oxidation/Reduction Potentials of Waste Constituents
- Required Clean-up Levels
- Soil Microflora
- Soil Moisture Content
- Soil Nutrient Concentrations (N, P & K ratios)
- Soil Organic Matter
- Soil Oxygen Concentration
- Soil Permeability
- Soil Temperature
- Surfactant Solvation Efficiency (for Each Waste Constituent)
- Trafficability of Soil and Site
- Waste Constituent Vapor Pressure Curves

While other information may be needed for each specific alternative, some of the above data may also be necessary, depending on method selected.

It should be remembered that separatory procedures such as soil washing or thermal extraction will require additional disposal or destructive treatment processes as a final step. Surface mounted separatory or treatment processes will require excavation, containment and storage steps prior to implementation.

A recommended course of action for the determination and selection of a remedial technique for the Time site involves additional definition of the waste constituents, clarification of soil parameters, further definition of groundwater conditions and determination of site specific conditions listed above. Following

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these determinations, the specific questions of technical feasibility of the various alternatives listed above can be addressed.

With this information, alternatives may then be selected with a greater degree of confidence and further pursued by performing bench scale tests to evaluate their applicability to the contaminated soils found at Time. Bench scale conditions can then be scaled up to pilot level demonstrations, either on-site or at supplier's test facilities. Finally, these data may then be used to develop and obtain required treatment permits from appropriate State/Federal agencies. The generally accepted approach to selecting an operational treatment procedure is to evaluate the most logical alternative first and if it proves unsatisfactory due to site specific or economic factors, evaluate the next logical option.

RECOMMENDATIONS

Based on existing information, the following is recommended:

a. Select the "Surface Mounted Soil Washing" technique as the most logical remedial approach.

b. Perform bench scale and pilot level evaluations.

c. Determine necessary destruction steps of recovered extracts.

d. Ascertain technical permitting and economic feasibility of technique for final disposal action.

e. Compare results with repeat step by step examination of next most logical remedial approaches which are: "Surface Mounted Thermal Extraction" and "In-Situ Thermal Extraction".

Bench scale evaluations of a surface mounted, countercurrent soil washing process involve the excavation of contaminated soils, temporary storage of the soils on an impervious slab, extraction of the contaminants with an aqueous solution of nonionic surfactants, removal of the surfactants by countercurrent washing with water, recovery and treatment of the rinsates, their analysis and on-site placement of the purified soils. The contaminated rinsates would then be subjected to a destruction step that can only be determined based on the constituents in the recovered extracts, but may include chemical reduction, incineration, biodegradation or other processes outlined earlier. A schematic drawing of a proposed process is shown in Figure II-1.

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The actual process consists of the physical excavation of contaminated soil using classical techniques and the temporary storage of the excavated soils on an impervious, protected surface. Material from this location would be transferred to an infeed hopper connected to a primary extractor or soil washer. The soil would be introduced into the lower section of the extractor via a screw feed auger. Once in the extractor, the soil would be agitated and conveyed upwards while extracting solvent [an aqueous solution of nontoxic, nonionic detergents (surfactants)] is introduced into the top of the extractor. The extraction would take place in a countercurrent fashion, producing a cleaned soil product and contaminated elutriate in a continuous process.

Cleaned soil would then be subject to rinsing with clean water in a secondary extractor, operated similarly to the primary extractor, to reduce or eliminate residual surfactant concentrations, allowing the soil to be returned to the site. The contaminated fluids would be stored, tested and treated to effect ultimate disposal. Analytical decision points are noted as diamonds in Figure II-1. There are three. It is possible that surfactant solutions with suitably low or undetectable levels of PCP could be discharged to the sanitary sewer.

The process can easily be modelled in bench scale experiments and the technical feasibility of the process can be accurately determined. The nature and required concentrations of the surfactants, soil retention times, elution rates and contaminant loading factors can all be determined to allow approximation of full scale process operating parameters. Following determination of these parameters, scale up protocols and economic feasibility may accurately be determined.

Soil washing is recommended since it has been successfully applied to soils contaminated with PCP in pilot studies on similar soil types and does not use hazardous materials which may interact with or be retained by the soil. The process should be directed towards a surface, rather than in-situ technology to improve process control and to minimize the chance of uncontrolled releases to the environment. Residual surfactants may be eliminated from the soil using only water, and surfactants can be modified to remove PCP as well as co-contaminating hydrocarbons, which may also be present.

The aqueous extracts so produced may be subjected to a variety of concentrating and destructive steps to remove the entrained PCP and hydrocarbons, placing a wider array of treatment alternatives at Time's disposal.

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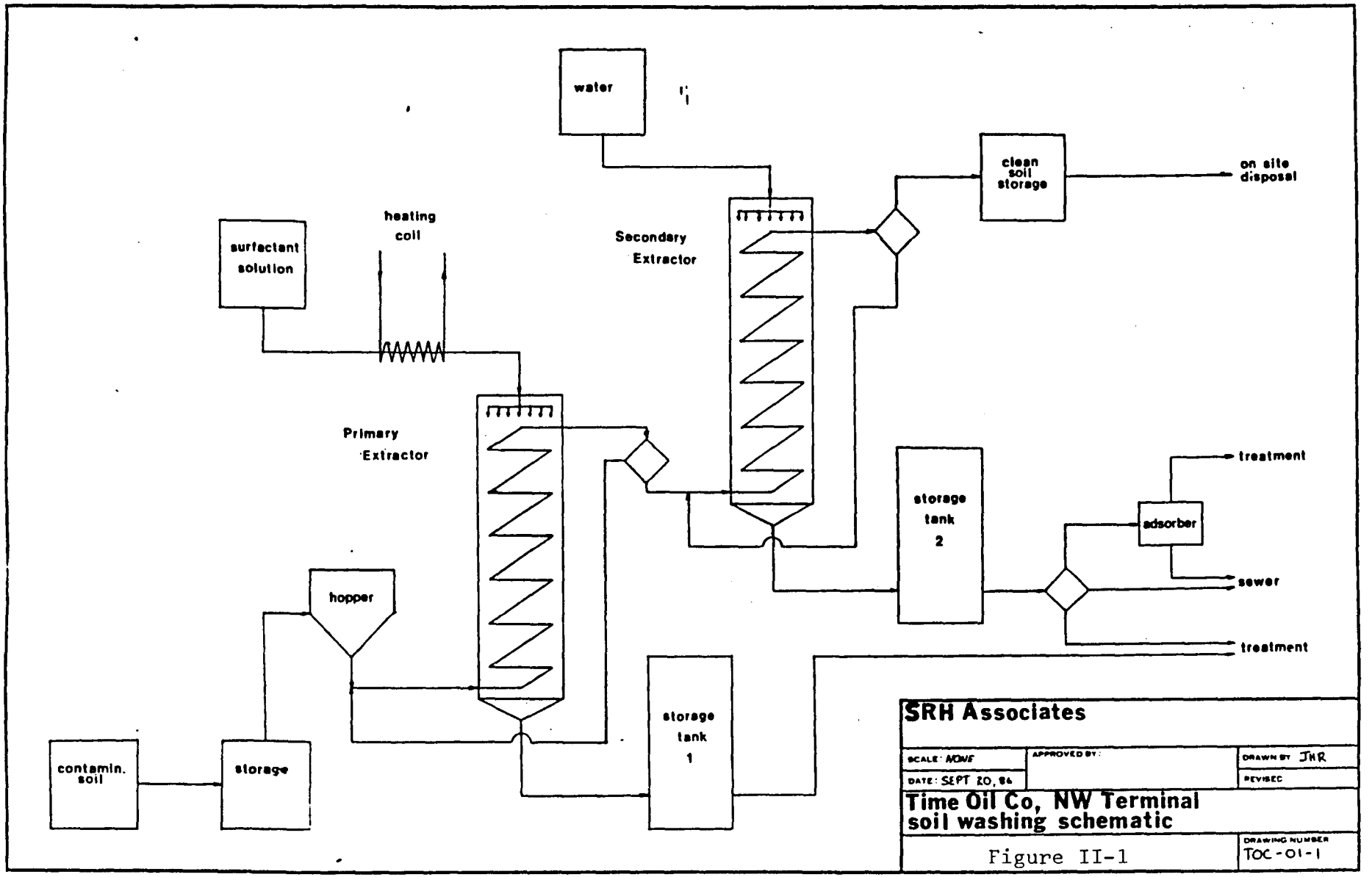

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EXECUTIVE SUMMARY

On March 1, 1967, Time Oil Co. and Koppers Company entered into an agreement wherein Time would provide certain labor and services connected with the receipt, storage, handling and blending of specified woodtreating products, including pentachlorophenol. All products were owned by Koppers. The site selected for this activity included a warehouse and tank farm on a small (70' x 70') portion of Time's 45 acre Northwest Terminal located at 12005 North Burgard Road in Portland, OR.

The operation started up and continued routinely until January 28, 1981. Time then advised Koppers of its election to terminate the project effective March 31, 1982, the scheduled agreement expiration date. Various in-house inspections had indicated the possibility of soil contamination. Subsequent bioassay tests confirmed the existence of pentachlorophenol in the soil adjacent to the warehouse. Both companies concurred to close the site. Operations ceased. Orderly phase out actions were established and begun.

It is noteworthy that this entire closure effort was jointly planned and undertaken by the two companies to voluntarily correct what both felt may become a future problem.

By February 1985, on hand product inventory had been blended off and shipped out. All tanks and piping had been cleaned, with cleaning wastes being shipped to Arlington. Piping and tanks had been disassembled, removed and scrapped. In short, the site was cleared to ground level.

Soil clean-up began. Following coordination with the DEQ, the Arlington landfill and local contractors, some 242 tons of soil were shipped to Arlington. A sampling matrix was prepared and more than 150 soil samples were collected and analyzed for PCP. Concentration isopleths were generated, which depicted remaining contamination locations and degrees of contamination, the highest of which was 116,000 ppm. Isopleths showed site size had now expanded to about 70' x 140' in area. The concrete wall along the western edge of the site was removed, decontaminated and disposed of to facilitate removal of this newly discovered increased area of soil contamination. To aid in reducing the physical size of this newly defined area, the extremities of site soil were centralized to the one spot having the highest known contaminant concentration. Soil relocation actions were based on previously plotted contour determinations. They were successful in that the area was reduced to about 60' x 60'.

At the end of 1985, the EPA advised Time that soil contaminated with leaked PCP had been reclassified as hazardous waste (number F027) and that there were currently no hazardous waste facilities in the U.S. that would accept this waste.

Pending resolution of EPA/DEQ acceptable disposal methods for PCP contaminated soil, efforts were directed toward the determination of possible groundwater contamination. Fourteen wells were installed and developed during 1986. Two were subsequently closed due to inefficient operation. Remaining wells have been repeatedly sampled and those samples analyzed for PCP. Concentrations have not exceeded .044 ppm at the highest reading. While well water analysis is scheduled to continue quarterly until the project is completed, to ensure no groundwater migration goes undetected, there appears to be no real groundwater problem.

Since there was no regulatory relief in sight, which would permit off-site disposal of PCP contaminated soil, Time initiated an assessment of on-site remedial alternatives. Recommended actions are:

a. Select the "Surface Mounted Soil Washing" technique as the most logical remedial approach.

b. Perform bench scale and pilot level evaluations.

c. Determine necessary destruction steps of recovered extracts.

d. Ascertain technical permitting and economic feasibility of technique for final disposal action.

e. Compare results with repeat step by step examination of next most logical remedial approaches which are: "Surface Mounted Thermal Extraction" and "In-Situ Thermal Extraction".

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SECTION III

ANALYSIS RESULTS

INTRODUCTION

During August of 1986, Time retained SRH Associates to collect samples of surface and subsurface soil and groundwater from the Time Facility located in Portland, Oregon. The samples were analyzed for pentachlorophenol (PCP) in an effort to further existing data concerning past releases of this chemical from a woodtreating chemicals formulating operation at this site.

Samples of surface soils were collected from an earthen tank farm area located south of the woodtreating chemicals warehouse and from six locations below the concrete floor of the warehouse itself. Additional samples were taken from five other depths below the warehouse floor from the same holes as the surface samples. Groundwater was sampled at seven existing monitoring wells surrounding the woodtreating chemicals area and was analyzed for PCP and pH. Static water levels were determined in these wells and at a monitoring station for the measurement of Willamette River water elevations located on the Northwest Terminal Facility pier.

SURFACE SOIL SAMPLING AND ANALYSIS

Following the contaminated soil relocation to one pile, surface soils were collected from 17 locations in the woodtreating tank farm area. The locations were identical to those sampled by Riedel Environmental Services during initial samplings performed in 1985. Samples were obtained from 2 to 3 inches below the soil surface to reduce the risk of contamination arising during set up procedures at the sample site.

Additionally, six locations inside the warehouse were sampled by coring through the concrete with abrasive saws. The six locations were selected by Time and represent an extension of the triangular sampling grid employed by Riedel in the 1985 study. Samples were obtained from an interval of 3.5 to 5.5 feet below the lower

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surface of the concrete using split spoon samplers. The sampling procedure used will be described in the next (Subsurface Samples) part. The selected depth was chosen to position the samples at the same true elevation as the surface samples taken from the tank farm area. Samples of soil from 2 to 6 inches below the lower surface of the concrete floor were obtained and held for possible future analysis.

Samples were obtained using stainless steel sampling spoons which had been previously cleaned with sequential washings of laboratory detergent, tap water, hexane, tap water, trisodium phosphate and sodium carbonate in water, tap water and distilled water (3X). Samples were screened through 0.10 inch stainless steel mesh which had been similarly cleaned. The screened material was allowed to fall directly from the screens into pre-washed 8 ounce glass jars fitted with screw cap closures and teflon liners. The containers had been cleaned to EPA specifications and were not opened prior to receiving the sampled material.

Samples were field logged and containers were marked with the date, time, location, sample code, requested analyses and other relevant data. Lids were replaced with care being taken to ensure that no interference with the hermetic seal occurred. Tamper indicating seals were applied, chain of custody and analysis request forms were completed and the samples placed on ice prior to transport to the laboratory. Samples were delivered to the laboratory within 48 hours of collection in all cases. No preservatives were added to soil samples.

Samples were extracted in the laboratory using method number 3540, Soxhlet Extraction, as described in EPA publication SW 846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. The extract so obtained was analyzed for pentachlorophenol by method 8040, Phenols, as described in EPA publication SW 846. Field and laboratory duplicates were analyzed and spiked sample recovery efficiencies were determined. Laboratory blanks were analyzed. No field blanks of soil were submitted. All quality control results indicated acceptable performance of sampling and analysis.

The results of the surface soil samples are listed, along with the X and Y coordinates of their respective sampling locations, in Table III-1. The coordinates are referred to a temporary bench mark located at the end of a concrete wall at the southeast corner of the woodtreating tank farm area. The coordinates are given in feet. The X axis is aligned in an approximately northeast - southwest plane while the Y axis is aligned in an approximately northwest - southeast plane at at 90° to the X axis.

The results listed in Table III-1 were subjected to Kriging analysis to generate lines of equal concentration (equiconcentration isopleths). A .95 smoothing ratio and a search radius of 213 feet was used for generation of the contours which are shown in Figures III- 1 to III-4. The sample sites and their respective concentrations are indicated. The contours are to

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scale (1" = 20 feet) and can be overlaid on the associated plan drawing of the sampled area. (Figure III-5).

The results indicate that the bulk of the surface contamination exists in a pile of material located in the vicinity of sample point S. Additional contamination is located to the east of point S, continuing to approximately the concrete wall bordering the tank farm on the east. The strong focal point of contamination located at point K has generated a broad area of calculated contamination on the Kriging generated contour maps. Due to the lack of supporting high concentrations of PCP adjacent to point K, it is concluded that this contour is primarily artifactual, generated by the data reducing program in response to the single very high concentration detected at K. It is more likely that K represents a small focus of high concentration, rather than the large area implied by the contours.

Most contamination that had been previously detected to the west of the woodtreating tank farm area appears to have been removed during recent excavation activities performed by Time. This is reflected by the low results found at points M and U.

Two locations beneath the warehouse floor were found to contain low levels of PCP. Borings 1 and 5 contained 5.7 and 1.4 ppm of PCP, respectively. It should be noted, however, that despite stringent efforts to prevent contamination, blowing winds and "dust devils" were noted during sampling and were observed picking up soil from the tank farm area and warehouse floor. Because of these concerns, the low levels noted in these samples are probably a result of field contamination.

SUBSURFACE SAMPLES

Samples were obtained from six depths below the lower surface of the concrete floor in the woodtreating chemicals warehouse. Six locations, determined by Time and located at extensions of the triangular sampling grid developed by Riedel, were sampled. The approximately 6 inch thick concrete floor was cored using an abrasive wheel. Twelve inch diameter holes were cut. The surface of the concrete within a 6 foot radius of the hole was swept clean and covered with .005 inch thick polyethylene film to minimize contamination from residue found in the warehouse.

The upper 2 to 3 inches of soil in the hole was removed to eliminate contamination with cuttings generated during the coring and set up operations. A sample was subsequently obtained using the technique given above, from the exposed surface of the hole. The holes were designated as numbers 1 through 6. The surface sample was collected and held for future analysis.

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Following collection of the surface sample, the hole was advanced using a hand operated, 2 1/2 inch (O.D.) continuous flight auger. Samples were obtained at the following intervals below the upper surface of the concrete floor using a 2 inch (O.D.) split spoon sampler:

3.5	to	5.5 feet	(	0)
5.5	to	7.5 feet	(	2)
7.5	to	9.5 feet	(	4)
10.5	to	12.5 feet	(	7)
15.5	to	17.5 feet	(	12)

Since the upper surface of the concrete floor was 3.5 feet above the surrounding soil surface, the five depths listed above were equivalent to the 0 to 2 foot, 2 to 4 foot, 4 to 6 foot, 7 to 9 foot and 12 to 14 foot intervals sampled in the woodtreating tank farm area by Riedel in 1985.

Samples were taken by removing the drill from the bore hole and inserting the split spoon sampler into the bore hole taking care not to dislodge any material from the surface or walls of the hole. The sampler was driven into the soil using a 20 lb. hammer. Hand drilling and driving of the penetrometer/sampler was required due to the inaccessibility of the site to conventional drill rigs and to the low overhanging roof of the warehouse.

Samples were extruded by gently tapping the soils out of the sampler onto stainless steel screens, which were cleaned as indicated above. The samples were screened, placed into jars, labelled, logged and handled as described above. Samplers were cleaned after each use, using the decontamination procedures described above. The drilling equipment was decontaminated between holes and prior to leaving the site. All decontamination water was impounded in D.O.T. 17 E drums until proper disposal requirements could be established based on analytical results.

During drilling, saturated conditions were encountered at the 12 foot interval in all holes. No groundwater samples were taken from any location. All soil samples consisted of medium grained grey - brown to blue sands. Cobbles were encountered in holes number 1 and 2 at a depth of approximately 3 feet below the floor surface. The cobbles were associated with a minor clay lens approximately 2 inches thick.

Following drilling, holes were abandoned through the addition of bentonite pellets to a depth of 13 feet below the concrete floor. The remainder of the hole was filled with bentonite grout to the surface. The concrete core plugs removed during coring of the warehouse floor were replaced in the hole and bedded with bentonite in accordance with Time's request.

The samples were refrigerated and shipped to the laboratory for PCP analysis as outlined above. The results, together with the X and Y coordinates of the sample points, are presented in Tables

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III-1 through III-4. The data from these analyses have been combined with the results obtained by Riedel at the sample locations labelled J through Z in 1985, for the nominal sampling depths 2, 4, 7 and 12, to generate concentration isopleths at these depths.

The data listed in these tables was analyzed by Kriging analysis according to the procedure given above. The results of the contouring are shown in Figures III-1 through III-4. Figure III-5 shows the sample locations on a plan drawing of the woodtreating chemicals warehouse. Figure III-6 incorporates the X and Y coordinates of the sample locations on this drawing.

The results indicate that contamination is restricted to the woodtreating tank farm area with virtually no contamination being found beneath the central and northern portions of the warehouse. There is significant PCP contamination below the surface of the southwest corner of the warehouse, which appears to be continuous with a vertical column of contamination located immediately adjacent to this area in the tank farm.

Excavations in the woodtreating tank farm area have perturbed the original conditions of the site, and therefore the surface and 2 foot contours are not expected to be representative of conditions existing prior to the movement of soil. This can be seen by the distortion of the vertical column of contamination at the surface and two foot intervals, due to the fact that soil at these sites had been removed and replaced with soils from other areas within the woodtreating tank farm. A computer generated topographic grid net of the woodtreating tank farm and warehouse area can be seen in Figure III-7.

The 4, 7 and 12 foot contours reflect the strong vertical plume of PCP contamination which decreases to about 2000 ppm at the 12 foot depth. A minor lobe of this plume appears to extend to the southeast into the lower corner of the woodtreating tank farm area at or around the seven foot interval. The vertical plume appears to widen and diffuse to the south at the 12 foot contour, presumedly due to the presence of groundwater at or near this sampling depth.

GROUNDWATER ANALYSES

The nine vertical groundwater monitoring points at Time (See Figure I-6, Section I) were measured for static water levels and tested for pH and PCP. The three slant borings located at the southwest corner of the warehouse were not examined. The wells, which had been previously installed by Time employees or other contractors, consist of 1 1/4 and 2 inch (I.D.) stainless steel well points and 2 inch (I.D.) PVC screen and casing.

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The water level elevations in the wells, labelled A through I, were measured to the nearest .01 foot from the top edge of the casing at a scribed mark located on the north side of the casing. A Fisher M-Scope previously calibrated against a steel tape was used to obtain the measurements. Standing bore volumes of well water were calculated based on these measurements and well construction drawings provided by Time. A measurement of the Willamette River water elevation relative to a mark located by Time on its unloading pier was also taken.

Stainless steel weighted bailers were used to remove at least 4 standing bore volumes of water prior to collecting representative samples of groundwater. The bailers had been previously cleaned by the procedure described above, and were re-cleaned after each well was sampled. The purged water was collected into D.O.T. 17 E drums until proper disposal could be determined based on analytical results.

The samples were dispensed directly from the bailer into two 1 liter amber glass bottles fitted with screw cap closures and teflon liners for PCP analysis. Samples were adjusted to pH 2 with 1:1 Sulfuric Acid in distilled water and checked with pH paper prior to refrigeration and delivery to the lab. Samples for pH analyses were dispensed directly into 250 ml polyethylene wide mouthed bottles without preservatives. pH analyses were performed within 2 hours of sample collection using a silver-silver chloride reference electrode standardized against two NBS traceable reference buffer solutions. Samples were logged, labelled, sealed and transferred to the laboratory within 6 hours of collection. Analyses for PCP were performed as above, except that the sample was not filtered prior to analysis, and was extracted by method 3510, Separatory Funnel Liquid - Liquid Extraction, as described in EPA publication SW 846.

The results of the groundwater investigation are shown in Table III-6. Wells C and G were dry and could not be sampled. The pH ranged from 6.53 to 6.91. The only well showing detectable PCP was well D, in which .044 ppm was detected. Well D is located southeast of the woodtreating chemicals warehouse.

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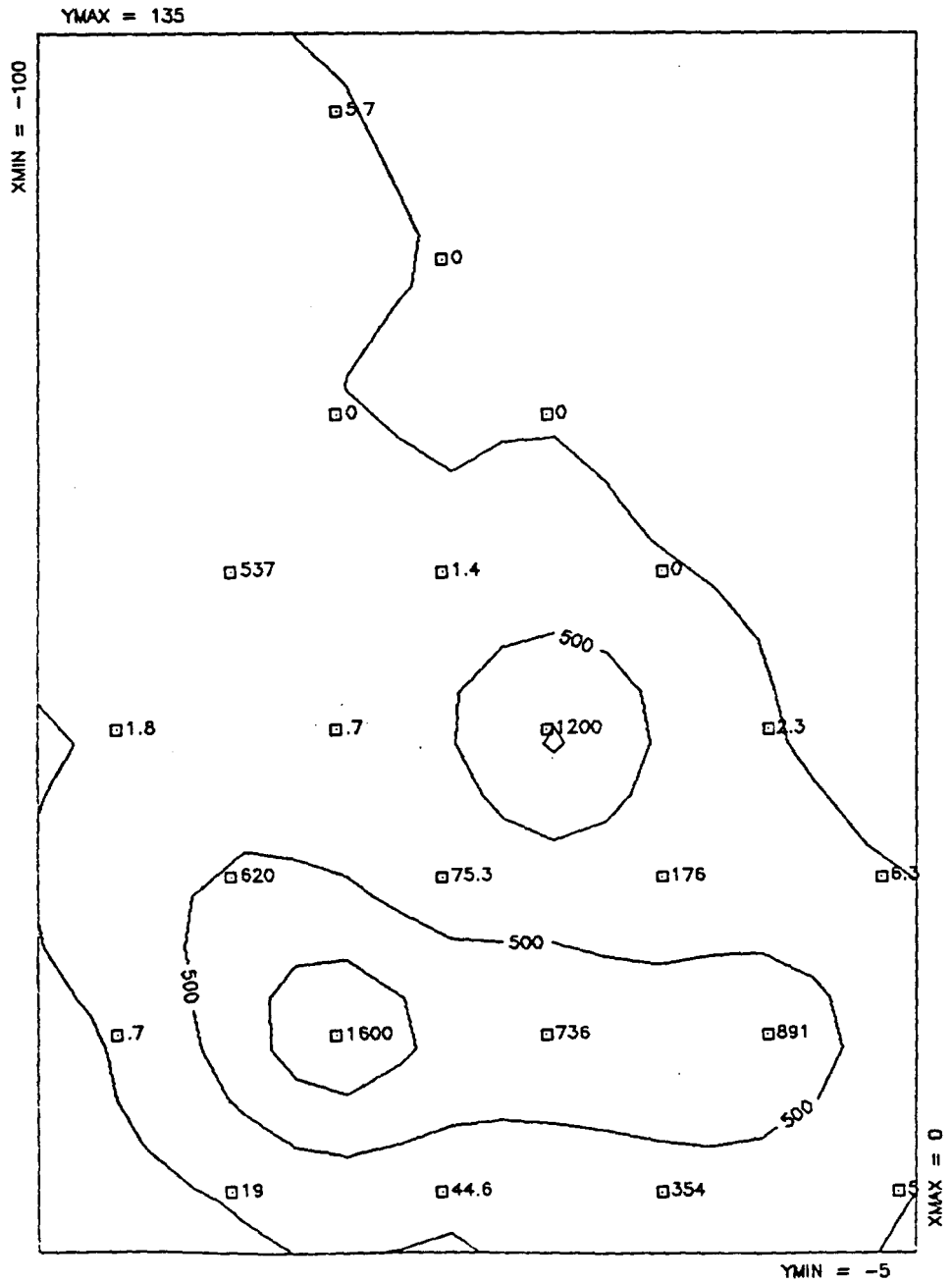
FIGURE III-1



TIME OIL CO - SURFACE PCP CONTOURS

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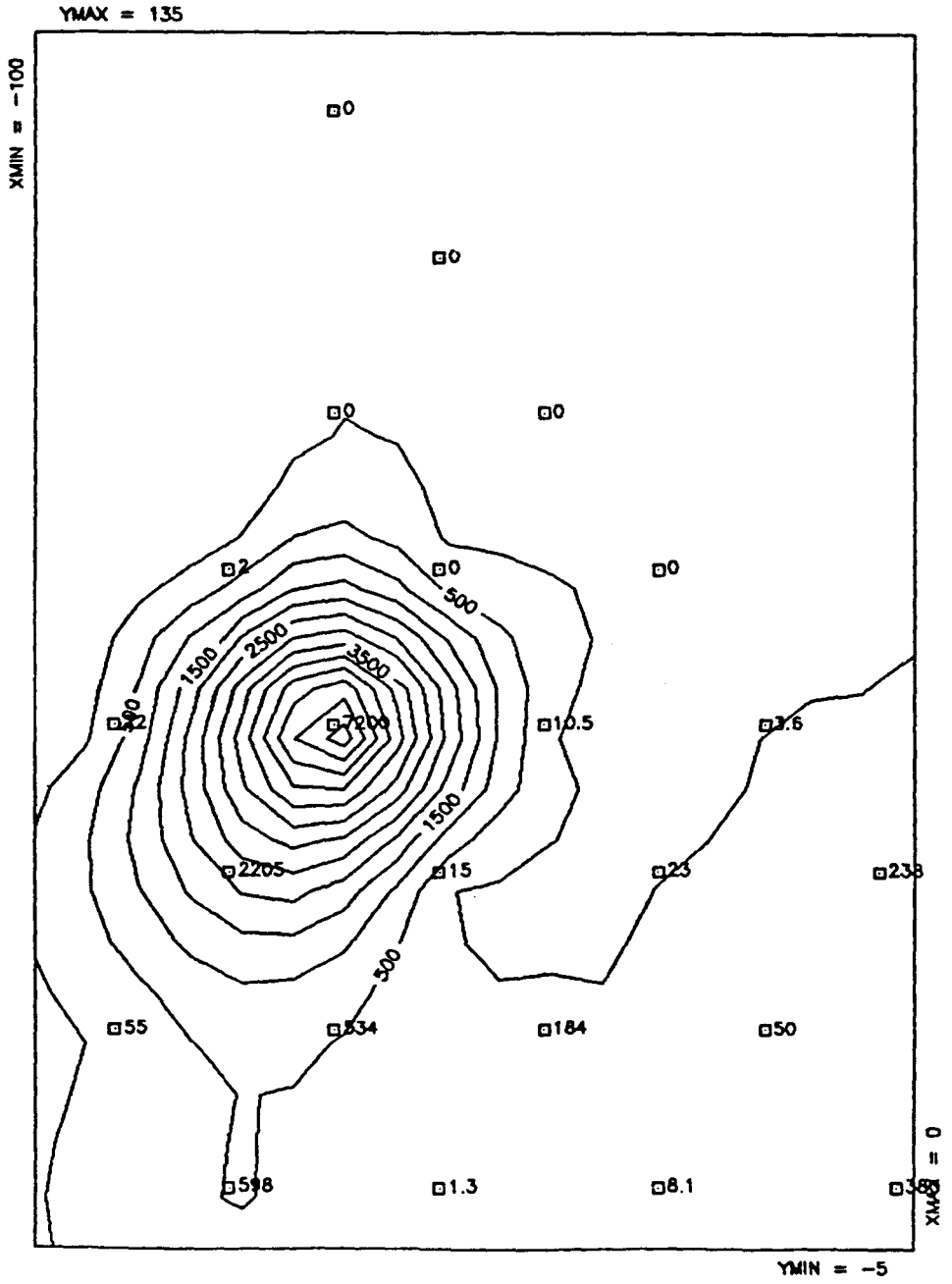
FIGURE III-2



TIME OIL CO - 4 FOOT PCP CONTOURS

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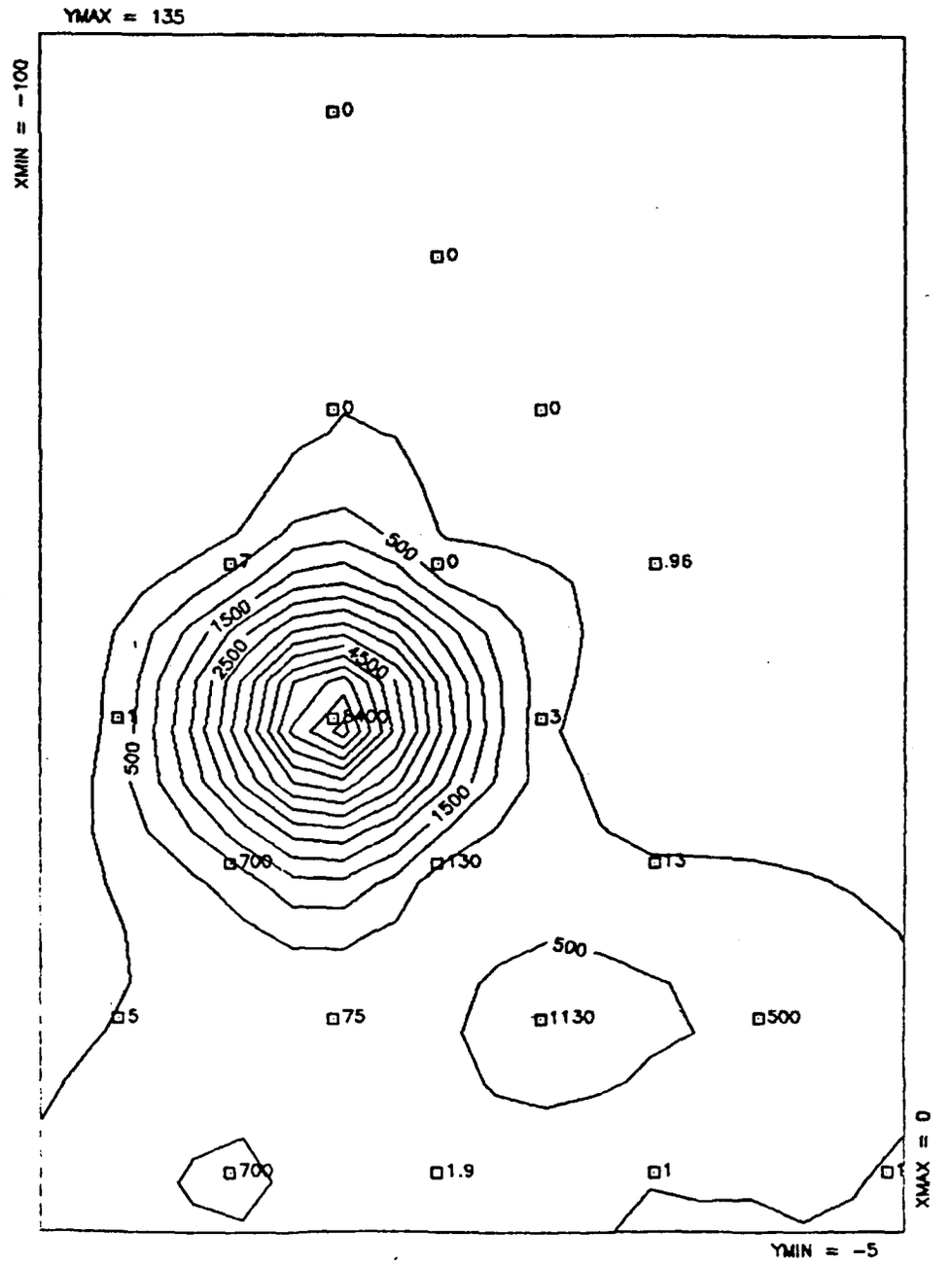
FIGURE III-3



TIME OIL CO - 7 FOOT PCP CONTOURS

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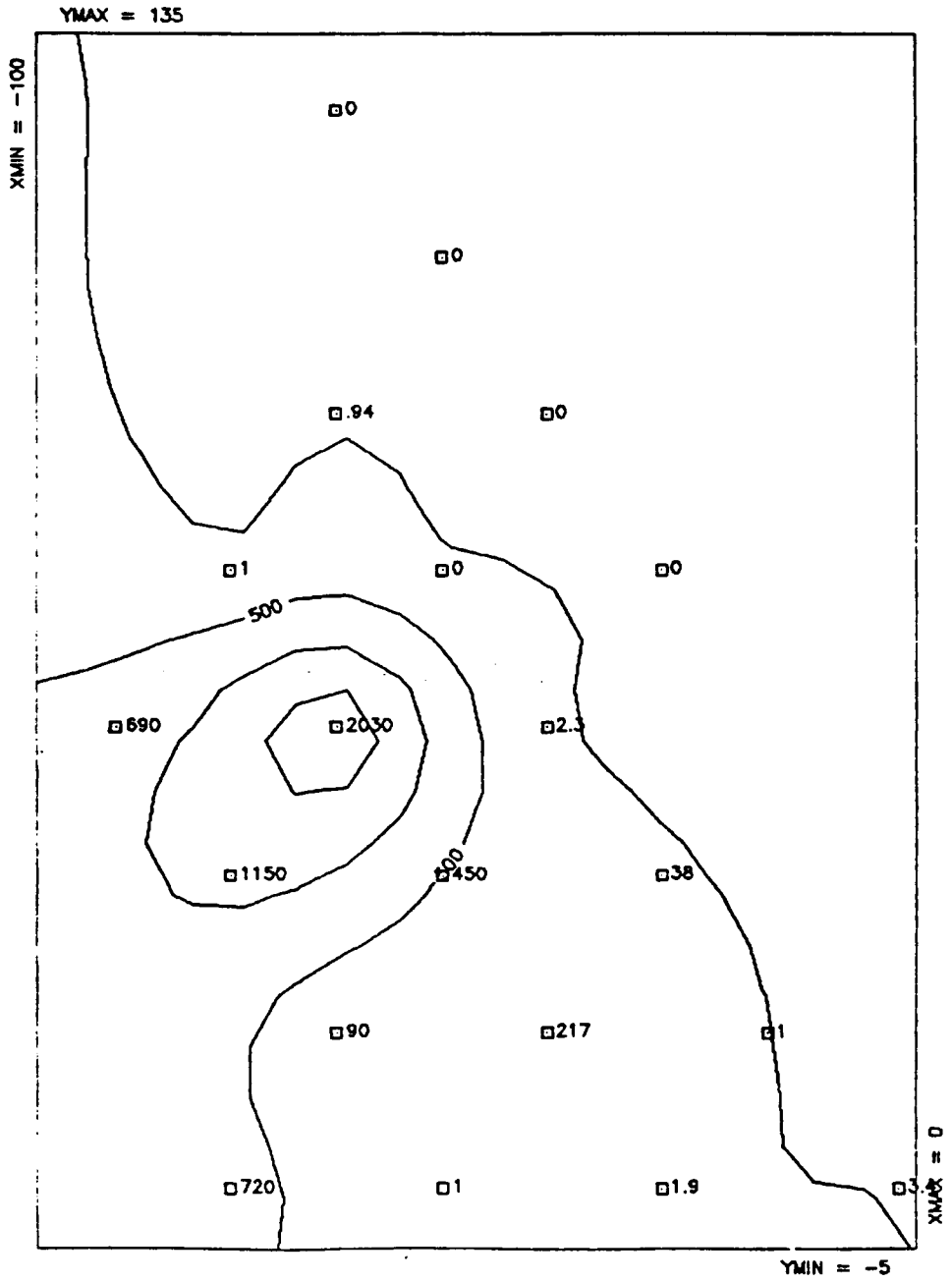
FIGURE III-4



TIME OIL CO – 12 FOOT PCP CONTOURS

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FIGURE III-5

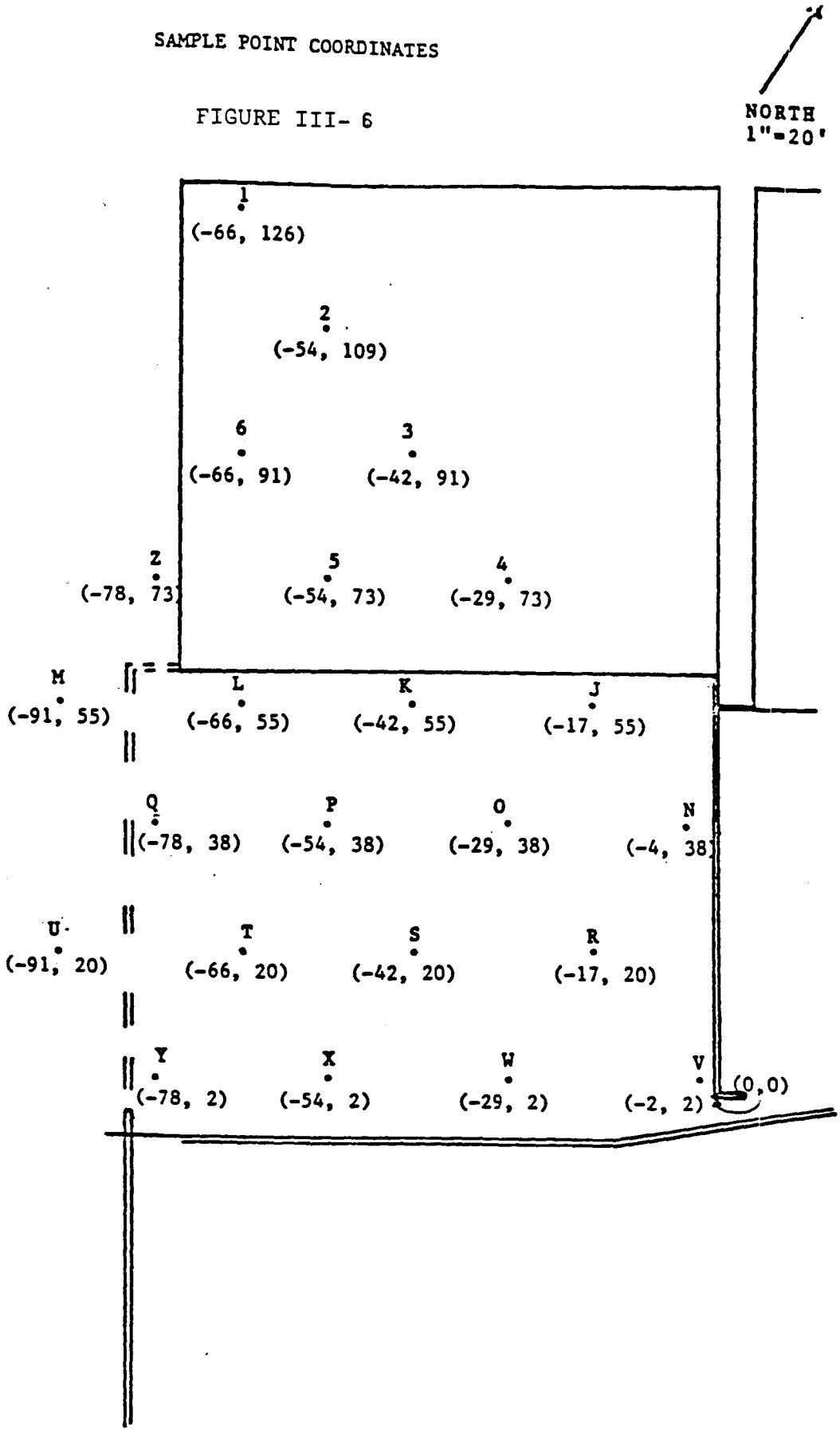
SAMPLE POINT LOCATIONS

TOLS001450

BZTO104(e)038271

SAMPLE POINT COORDINATES

FIGURE III- 6



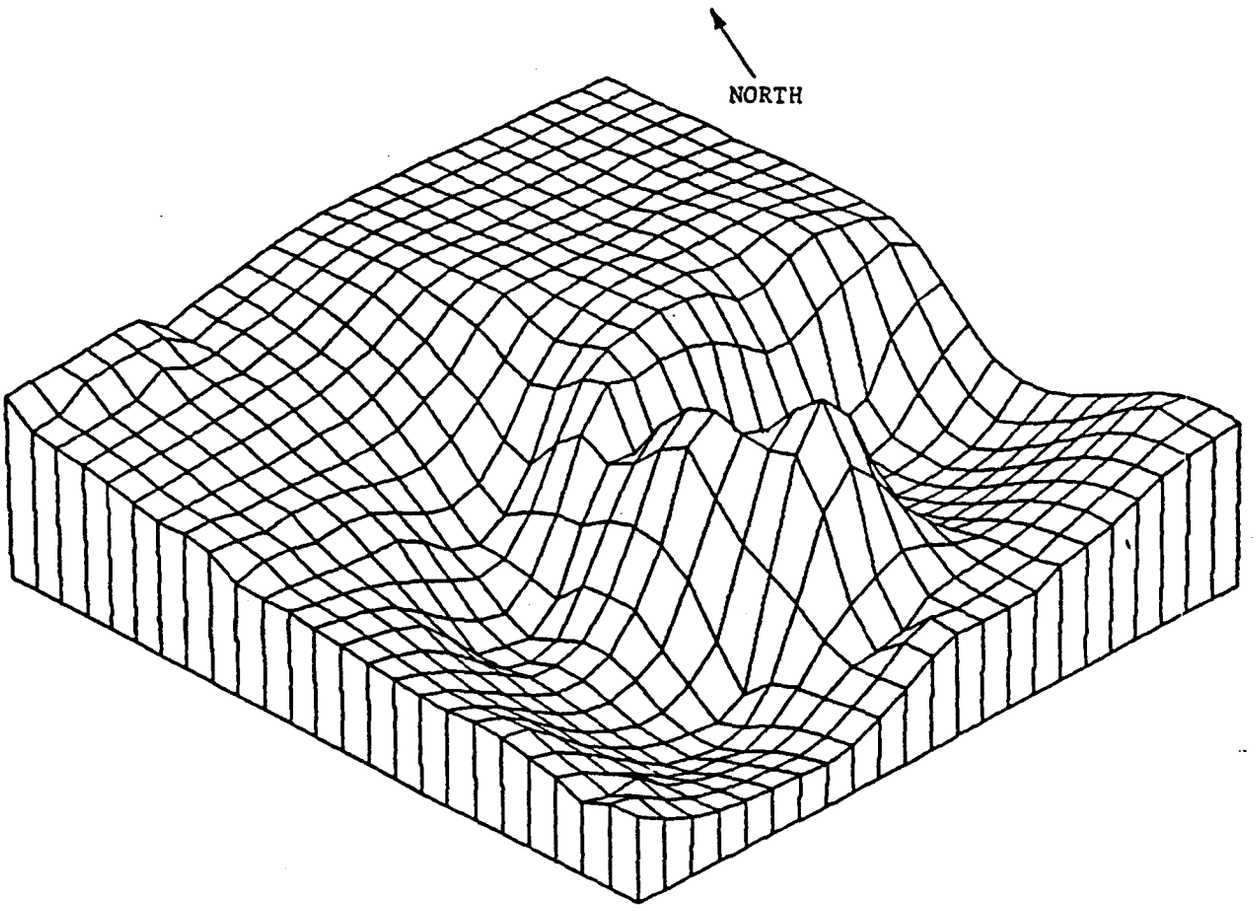
TOLS001451

BZTO104(e)038272

FIGURE III- 7

APPROXIMATE SURFACE TOPOGRAPHY

WOOD TREATING CHEMICALS AREA



TIME OIL CO. - TOPOGRAPHY

TABLE III-1

TIME OIL CO.

COORDINATES - SURFACE PCP CONTOUR

CODE	X	Y	[PCP]
J	-17	55	2.3
K	-42	55	1200
L	-66	55	0.7
M	-91	55	1.8
N	-4	38	6.3
O	-29	38	176
P	-54	38	75.3
Q	-78	38	620
R	-17	20	891
S	-42	20	736
T	-66	20	1600
U	-91	20	0.7
V	-2	2	5
W	-29	2	354
X	-54	2	44.5
Y	-78	2	19
Z	-78	73	537
6	-66	91	0
5	-54	73	1.4
4	-29	73	0
3	-42	91	0
2	-54	109	0
1	-66	126	5.7

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

TABLE III-2

TIME OIL CO.

COORDINATES - 2 FOOT PCP CONTOURS

CODE	X	Y	[PCP]
J	-17	55	3
K	-42	55	8.8
M	-91	55	87
N	-4	38	3.1
O	-29	38	59
P	-54	38	16
R	-17	20	34
S	-42	20	252
T	-66	20	123
U	-91	20	44
V	-2	2	260
W	-29	2	15
X	-54	2	4.5
Z	-78	73	14
6	-66	91	0
5	-54	73	5.6
4	-29	73	0
3	-42	91	0
2	-54	109	0
1	-66	126	0

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

TABLE III-3

TIME OIL CO.

COORDINATES - 4 FOOT PCP CONTOURS

CODE	X	Y	[PCP]
J	-17	55	3.6
K	-42	55	10.5
L	-66	55	7200
M	-91	55	22
N	-4	38	238
O	-29	38	23
P	-54	38	15
Q	-78	38	2205
R	-17	20	50
S	-42	20	184
T	-66	20	534
U	-91	20	55
V	-2	2	380
W	-29	2	8.1
X	-54	2	1.3
Y	-78	2	598
Z	-78	73	2
6	-66	91	0
5	-54	73	0
4	-29	73	0
3	-42	91	0
2	-54	109	0
1	-66	126	0

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

TABLE III-4

TIME OIL CO.

COORDINATES - 7 FOOT PCP CONTOURS

CODE	X	Y	[PCP]
K	-42	55	3
L	-66	55	8400
M	-91	55	1
O	-29	38	13
P	-54	38	130
Q	-78	38	700
R	-17	20	500
S	-42	20	1130
T	-66	20	75
U	-91	20	5
V	-2	2	1
W	-29	2	1
X	-54	2	1.9
Y	-78	2	700
Z	-78	73	7
6	-66	91	0
5	-54	73	0
4	-29	73	0.96
3	-42	91	0
2	-54	109	0
1	-66	126	0

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

TABLE III-5

TIME OIL CO.

COORDINATES - 12 FOOT PCP CONTOURS

CODE	X	Y	[PCP]
K	-42	55	2.3
L	-66	55	2030
M	-91	55	690
O	-29	38	38
P	-54	38	450
Q	-78	38	1150
R	-17	20	1
S	-42	20	217
T	-66	20	90
V	-2	2	3.4
W	-29	2	1.9
X	-54	2	1
Y	-78	2	720
Z	-78	73	1
6	-66	91	0.94
5	-54	73	0
4	-29	73	0
3	-42	91	0
2	-54	109	0
1	-66	126	0

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

TABLE III-6

TIME OIL CO.

GROUNDWATER ANALYTICAL RESULTS

(AUGUST 29, 1986)

WELL NUMBER	STATIC WATER LEVEL (FT BELOW TOP OF CASING)	pH	[PCP] (ppm)
MW-A	14.06	6.80	N.D.
MW-B	15.07	6.70	N.D.
MW-C	DRY	N.A.	N.A.
MW-D	14.48	6.53	.044
MW-E	15.22	6.54	N.D.
MW-F	15.44	6.57	N.D.
MW-G	DRY	N.A.	N.A.
MW-H	11.28	6.91	N.D.
MW-I	14.75	6.77	N.D.
RIVER	25.70	N.A.	N.A.

NOTES:

[PCP] = CONCENTRATION OF PENTACHLOROPHENOL
ppm = PARTS PER MILLION
N.A. = NOT AVAILABLE
N.D. = NOT DETECTED

IV. LABORATORY REPORTS

BZTO104(e)038280

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1986
Log #A860825-F

SRH Associates, Inc.
P.O. Box 14005
Portland, Oregon 97214
Attention: John Ruddick

Analysis Requested: Pentachlorophenol

Sample Location: Time Oil Co., Portland Terminal

SAMPLE ID	RESULTS
J-0 - Surface-N.E. Tank Farm	2.3
K-0 - Surface-N. Tank Farm	2964
L-0 - Surface-N.W. Tank Farm	0.7
M-0 - Surface-N.W. Tank Farm	1.8
N-0 - Surface-E. Tank Farm	6.3
0-0 - Surface-N.E. Central Tank Farm	176
P-0 - Surface-N. Central Tank Farm	75.3
Q-0 - Surface-N.W. Central Tank Farm	620
R-0 - Surface-E. Central Tank Farm	891
S-0 - Surface-S.E. Central Tank Farm	736
T-0 - Surface-N. Central Tank Farm	1600
U-0 - Surface-W. Central Tank Farm	0.7
V-0 - Surface-S.E. Tank Farm	5.0
W-0 - Surface-S. Tank Farm	354
X-0 - Surface-S. Tank Farm	44.6
Y-0 - Surface-S.W. Tank Farm	19
Z-0 - Surface-N.W. Roadway	537
1-S - Boring #1, Warehouse Loading Dock, Surface Below Concrete	1.2
1-0 - Boring #1, Warehouse Loading Dock, 3.5 ft. Below Concrete	5.7
5-0 - Boring #5, S.W. Inside Warehouse #5, 3'4" - 5'4" Below Concrete	1.4

Results in mg/kg

REPORT CONTINUES

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

TOLS001460

BZTO104(e)038281

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1986
Log #A860825-F

SRH Assocates, Inc.
Page Two

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

Sample Location: Time Oil Co., Portland Terminal

SAMPLE ID	RESULTS
5-2 - Boring #5, S.W. Inside Warehouse 5'4" - 7'4" Below Concrete	5.6
5-4 - Boring #5, S.W. Inside Warehouse 7'4" - 9'4" Below Concrete	< 1
5.7 - Boring #5, S.W. Inside Warehouse 10'4" - 17'4" Below Concrete	< 1
5.12- Boring #5, S.W. Inside Warehouse 15'4" - 17'4" Below Concrete	< 1
6-0 - Boring #6, W. Central Inside Warehouse 3'5" - 5'5" Below Concrete	< 1
6-2 - Boring #6, W. Central Inside Warehouse 5'5" - 7'5" Below Concrete	< 1
6-4 - Boring #6, W. Central Inside Warehouse 7'5" - 9'5" Below Concrete	< 1
6-7 - Boring #6, W. Central Inside Warehouse 10'5" - 12'5" Below Concrete	< 1
6-12- Boring #6, W. Central Inside Warehouse 15'5" - 17'5" Below Concrete	0.94
D-2 - Waste Pile @ T-5, Duplicate of T-5	3420

Results in mg/kg

< denotes "less than"

REPORT CONTINUES

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

TOLS001461

BZTO104(e)038282

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1986
Log #A860825-F

SRH Assocates, Inc.
Page Three

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

Sample Location: Time Oil Co., Portland Terminal

SAMPLE ID	RESULTS
T-S - Waste Pile, Feet Below Top of Pile	1280
Q-S - Waste Pile, Feet Below Top of Pile	298
D-1 - Boring #6, Duplicate of G-S	< 1
4-0 - Boring #4, S.E. Warehouse 3'5" - 5'5" Below Concrete	< 1
4-2 - Boring #4, S.E. Warehouse 5'5" - 7'5" Below Concrete	< 1
4-4 - Boring #4, S.E. Warehouse 7'5" - 9'5" Below Concrete	< 1
4-7 - Boring #4, S.E. Warehouse 10'5" - 12'5" Below Concrete	0.96
4-12- Boring #4, S.E. Warehouse 15'5" - 17'5" Below Concrete	< 1
3-0 - Boring #3, E. Central Warehouse 3'5" - 5'5" Below Concrete	< 1
3-2 - Boring #3, E. Central Warehouse 5'5" - 7'5" Below Concrete	< 1
3-4 - Boring #3, E. Central Warehouse 7'5" - 9'5" Below Concrete	< 1
3-7 - Boring #3, E. Central Warehouse 10'5" - 12'5" Below Concrete	< 1
3-12- Boring #3, E. Central Warehouse 15'5" - 17'5" Below Concrete	< 1

Results in mg/kg

REPORT CONTINUES

This report is for the sole and exclusive use of the above client.
Samples are retained a maximum of 15 days from the date of this letter.

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1986
Log #A860825-F

SRH Assocates, Inc.
Page Four

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

Sample Location: Time Oil Co., Portland Terminal

SAMPLE ID	RESULTS	% Recovery
6-4 - Boring #6, W. Central Inside Warehouse 7'5" - 9'5" Below Concrete (Duplicate)	< 1	
4-4 - Boring #4, S.E. Warehouse 7'5" - 9'5" Below Concrete (Duplicate)	< 1	
3-12- Boring #3, E. Central Warehouse 15'5" - 17'5" Below Concrete (Duplicate)	< 1	
6-4 - Boring #6, W. Central Inside Warehouse 7'5" - 9'5" Below Concrete (Spike)	399	101
4-4 - Boring #4, S.E. Warehouse 7'5" - 9'5" Below Concrete (Spike)	373	96

Results in mg/kg

< denotes "less than"

Analysis by soxhlet extraction, capillary GC/FID, EPA Method 8040

Sincerely,

Susan M. Coffey

Susan M. Coffey,
President

SMC/gs

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1986
Log #A860826-C

SRH Assocates, Inc.
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Analysis Requested: Pentachloropnenol

Sample Location: Time Oil Co., Portland

Sample Date: 8/25/86

SAMPLE ID	RESULTS
2-0	< 1.0
2-2	< 1.0
2-4	< 1.0
2-7	< 1.0
2-12	< 1.0
1-2	< 1.0
1-4	< 1.0
1-7	< 1.0
1-12	< 1.0

Results in mg/kg

< denotes "less than"

Analysis by soxhlet extraction, capillary GC/FID, EPA Method 8040

Sincerely,

Susan M. Coffey

Susan M. Coffey
President

SMC/gs

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

TOLS001464

BZTO104(e)038285

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 5, 1986
Log # A860829-N
P.O. None

SRH Associates Incorporated
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Subject: Pentachlorophenol and pH Analysis

Sample Type: Ground Water
Sample Collected by: John Ruddick
Sample Collection Date: August 29, 1986

SAMPLE NAME	PENTACHLOROPHENOL	pH
MW-D	0.04 mg/L	6.53 SU
MW-E	< 0.01 mg/L	6.54 SU
MW-F	< 0.01 mg/L	6.57 SU
MW-H	< 0.01 mg/L	6.91 SU
MW-I	< 0.01 mg/L	6.77 SU

Pentachorophenol analysis by extraction and capillary GC/FID. The symbol "<" means less than and denotes none detected at or above the level indicated.

Sincerely,

Susan M. Coffey

Susan M. Coffey
President

SMC:hh

This report for the sole and exclusive use of the above named client. Samples are held for a maximum of 30 days from the date of this report.

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 9, 1986
Log #A860903-J

SRH Associates, Inc.
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Analyses Requested: Pentachlorophenol (PCP) and pH

SAMPLE ID	PCP*	pH
MWA, 9/3/86, 1030	< 0.01 mg/L	6.8 S.U.
MWA, 9/3/86, 1110	< 0.01 mg/L	6.7 S.U.

< denotes "less than"

* Analysis by extraction, capillary GC/FID, Method 604.

Approved by,
Susan M. Brillante
Susan M. Brillante,
Mgr., Organic Laboratories

Sincerely,
Susan M. Coffey
Susan M. Coffey,
President

SMC/gs

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

TOLS001466

BZTO104(e)038287

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 18, 1986
Log #A860916-F

SRH Associates, Inc.
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

SAMPLE ID	RESULTS
#20 55	< 0.3 mg/kg

Analysis by extraction, capillary GC/FID and comparison with solutions of standards.

Approved by,

Susan M. Brillante

Susan M. Brillante,
Mgr., Organic Laboratories

Sincerely,

Susan M. Coffey

Susan M. Coffey,
President

SMC/ps

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

TOLS001467

BZTO104(e)038288

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

October 1, 1986
Log #A860926-A

SRH Associates, Inc.
123 N.E. Third/Suite 230
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

SAMPLE ID	RESULTS
K-O, 9/26 0915, Soil	1200 mg/Kg

Analysis by EPA Method 8040, capillary GC/FID.

Approved by,

Susan M. Brillante

Susan M. Brillante,
Mgr., Organic Laboratories

Sincerely,

Susan M. Coffey

Susan M. Coffey,
President

SMC/gs

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

TOLS001468

BZTO104(e)038289

V. CHAIN OF CUSTODY

CHAIN OF CUSTODY RECORD (8040)

PROJ. NO.	SITE / LOCATION
1003	Time Oil Co

SAMPLERS: (Signature) [signature] / SRH

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT / PRESERVATIVE: Pentachlorophenol	AMOUNT / PRESERVATIVE: pH					SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
MWA	7/3/86	1030	BAILED	WATER	NEAR W TANK FARM	2	1L / [illegible]	[illegible]							
MWA	"	1030	↓	↓	" "	1	[illegible]	[illegible]							
MWB	"	1110	↓	↓	" "	2	1L / [illegible]	[illegible]							
MWB	"	1110	↓	↓	" "	1	[illegible]	[illegible]							

Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)
[signature]	9/3/86 1445	[signature]			
Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)
Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)	Date / Time	Remarks (attachments if necessary)	

TOLS001470

BZTO104(e)038291

CHAIN OF CUSTODY RECORD

PROJ. NO.	SITE/LOCATION
1003	Time Oil Co PDX

SAMPLERS: (Signature) John H Riddell

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE	PENTACHLOROPHENOL (8040)	pH				SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
MW-D	8/29	1600	Bailer	Water	SE Tank Farm	3	2x1 [illegible]		250 ml Ø						
MW-E	↓	1430	↓	↓	SW Tank Farm	↓	2x1 [illegible]		250 ml Ø						
MW-F	↓	1615	↓	↓	Roadway (S)	↓	2x1 [illegible]		250 ml Ø						
MW-H	↓	1500	↓	↓	Near Loading Dock	↓	2x1 [illegible]		250 ml Ø						
MW-I	↓	1650	↓	↓	Roadway (N)	↓	2x1 [illegible]		250 ml Ø						

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
John H Riddell / SRH	8/29/86 1800	Susan M Coffey Coffey Labs			
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

TOLS001471

BZTO104(e)038292

CHAIN OF CUSTODY RECORD

PROJ. NO.	SITE/LOCATION
1003	Time Oil Co - Portland

SAMPLERS: (Signature) John H Ruddick — SRH Assoc.

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	OZ AMOUNT/PRESERVATIVE (Pentachloro/Hexane)	SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
2-5	8/25	1130	GRAB	SOIL	NW Warehouse Hole 2 Surface	1	8/0			HOLD
2-0		1145	SPLIT SPOON		" " 3'5"-5'5"	1	8/0			
2-2		1450			" " 5'5"-7'5"	1	8/0			
2-4		1520			7'5"-9'5"	1	8/0			
2-7		1545			10'5"-12'5"	1	8/0			
2-12		1720			15'5"-17'5"	1	8/0			Saturated
1-2		1915	SPLIT SPOON		Hole 1 Outside Loading Dock 5'5"-7'5"	1	8/0			
1-4		1950			" 7'5"-9'5"	1	8/0			
1-7		2030			" 10'5"-12'5"	1	8/0			
1-12		2130			Hole 1 Outside Loading Dock 15'4"-17'4"	1	8/0			SAT-RATED Possible contam. during sampling JHR

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
[signature] -SRH	8/26/86 1225				
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
				8/26 1226	[signature]
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

TOLS001472

BZTO104(e)038293

CHAIN OF CUSTODY RECORD

PROJ. NO.	SITE/LOCATION
1003	Timbroil Co - Portland Terminal

SAMPLERS: (Signature) [signature] SRH Assoc.

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE (Ounces) Pentachlorophenol (8040)						SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
J-0	8/23	1015	GRAB	SOIL	SURFACE - NE-TANK FARM	1	8/0								
K-0		1030			" - N "	1	8/0								
L-0		1045			" - NW "	1	8/0								
M-0		1055			" - NW "	1	8/0								
N-0		1105			" - E "	1	8/0								
Ø-0		1110			" - NE CENTRAL "	1	8/0								
P-0		1115			" - N CENTRAL "	1	8/0								
Q-0		1120			" - NW CENTRAL "	1	8/0								
R-0		1125			" - E CENTRAL "	1	8/0								
S-0		1130			" - SE CENTRAL "	1	8/0								
T-0		1135			" - N CENTRAL "	1	8/0								
U-0		1140			" - W CENTRAL "	1	8/0								
V-0		1145			" - SE "	1	8/0								
W-0		1150			" - S "	1	8/0								
X-0		1200			" - S "	1	8/0								

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
[signature] / SRH	8/25/86 1045				
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
				8/25 1051	[signature]
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

TOLS001473

BZTO104(e)038294

CHAIN OF CUSTODY RECORD (8040)

PROJ. NO.: 1003 | SITE/LOCATION: Time Oil Co - Portland Terminal

SAMPLERS (Signature): [signature] SRH Assoc

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE (0=NONE)	P=NITRIC ACID; H=HCl	SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
6-2	8/24	11:40	SPLIT SPOON	SOIL	BORING #6 @ CONTACT BTWN WASTE & NATIVE 5'-7.5" BELOW CONCRETE	1	0				
6-4	"	12:00	"	"	7.5"-9.5" " " "	1	0				
6-7		12:30			10'-12.5" " " "	1	0				
6-12		14:20			15'5"-17'5" " " "	1	0				SATURATED SAMPLE ONLY PART RECOVERED
D-2	8/24	15:30	GRAB	SOIL	WASTE PILE @ T-S DUPLICATE OF T-S	1	0				
T-S		15:30			WASTE PILE FEET BELOW TOP OF PILE	1	0				
Q-S		16:15			WASTE PILE FEET BELOW TOP OF PILE	1	0				
2-1	8/24	10:50	GRAB	SOIL	BORING #6 DUPLICATE OF 6-S	1	0				
4-5	8/24	16:10	SPLIT SPOON	SOIL	BORING #4 SE WASTE SURFACE BELOW CONCRETE	1	0				HOLD
4-0		1650			BORING #4 SE WASTE 5'-5.5' BELOW CONCRETE	1	0				
4-2		1715			5.5'-7.5" " " "	1	0				
4-4		1745			7.5'-9.5" " " "	1	0				
4-7		1820			10'-12.5" " " "	1	0				

Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)
[signature] SRH	8/25/92 1045				
Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)
				8/25 1051	[signature]
Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)	Date / Time	Remarks (attachments if necessary)	

13

BZTO104(e)038295

TOLS001474

CHAIN OF CUSTODY RECORD

PROJ. NO.	SITE/LOCATION
1003	Time Oil Co - PDX Terminal

SAMPLERS: (Signature) [signature] SRH Assoc.

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE (Ø = None)						SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
4-12	8/24	1900	Split Spoon	Soil	Boring #4 SE Wash 15'5"-17'5" Below Concrete	1	8/0								Saturated Samples
3-5	8/24	1915	Grab	Soil	Boring #3 E-Central Wash Surface Below Concrete	1	8/0								HOLD
3-0	↓	1955	Split Spoon	↓	3.5"-5'5" " "	1	8/0								
3-2		2010			5.5"-7.5" " "	1	8/0								
3-4		2015			7'5"-9'5" " "	1	8/0								
3-7		2025			10'5"-12'5" " "	1	8/0								
3-12		2100			15'5"-17'5" " "	1	8/0								Sat'd Sample

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
[signature] SRH	8/25/84 1045				
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
				8/25 1051	[signature]
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

TOLS001475

BZTO104(e)038296

CHAIN OF CUSTODY RECORD 50401

PROJ. NO.	SITE/LOCATION
1003	TIME OIL CO – PORTLAND TERM.

SAMPLERS: (Signature) John H [signature] – SRH ASSOC.

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE (ONLY FOR NONE)							SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
Y-0	8/23	1205	GRAB	SOIL	SURFACE – SW TANK FARM	1	8/0									
Z-0	"	1210	"	"	SURFACE – NW ROADWAY	1	8/0									
1-S	8/23	1255	GRAB	SOIL	BORING #1 WAREHOUSE LOADING DOCK SURFACE BELOW CONCRETE	1	8/0									
1-0		1635	SPLIT SPOON	"	3.5 FT BELOW WAREHOUSE LOADING DOCK CONCRETE BORING #1	1	8/0									HIT CONCRETE OR ASPHALT
5-S	8/23	~~1035~~ 1655	GRAB	SOIL	BORING #5 SW INSIDE WASE SURFACE BELOW CONCRETE	1	8/0									HOLD
5-0	↓	1710	SPLIT SPOON	↓	BORING #5 3.0-5.4' BELOW CONCRETE	1	8/0									
5-2	↓	1745	↓	↓	BORING #5 SW INSIDE WASE 5.4-7.4' " "	1	8/0									
5-4	↓	1805	↓	↓	BORING #5 7.4-9.4' " "	1	8/0									
5-7	↓	1825	↓	↓	BORING #5 10.4-12.4 " "	1	7/0									
5-12	↓	1900	↓	↓	BORING #5 15.4-17.4' " "	1	8/0									Saturated Sample JHR
6-S	8/24	1050	GRAB	SOIL	BORING #6 W CENTRAL INSIDE WASE SURFACE BELOW CONCRETE	1	8/0									HOLD
6-0	8/24	1130	SPLIT SPOON	SOIL	BORING #6 " 3.5" to 5.5" BELOW CONCRETE	1	8/0									

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
John H [signature] SRH	8/25/86 1045				
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
				8/25 1051	[signature]
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

12

TOLS001476

BZTO104(e)038297

VI. ANALYSIS REQUESTS

CLIENT ANALYSIS REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME SHR ASSOCIATES TELEPHONE# 232 0824

ADDRESS 123 NW 3RD SUITE 230 PURCHASE ORDER # VERBAL

ADDRESS PO BOX 14005 LAB PRICE QUOTE # $60/sample

CITY/STATE/ZIP PORTLAND OR 97205 BILLING ADDRESS: SAME

ATTENTION Jon Puddick

SAMPLE COLLECTION DATE 9/3/86 DUE DATE ASAP RUSH

SAMPLE COLLECTED BY J.R. Ratliff DELEVERED BY J Puddick

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTA BY EPA 8040 (SW846)
(DONT FILTER — DECANT WATER OFF ANY SEDIMENT)

ID	FieldID	Date	Time	Media	Pres	cntnr	Analysis requested	MDL
	MWA	9/3/86	1030	WATER	1:1 H_2SO_4 to pH 2	25A 1L amber glass	PENTACHLOROPHENOL	
	MWA	"	1030	"	NONE	250 ml plastic	pH	
	MWB	"	1110	"	1:1 H_2SO_4 to pH 2	25A 1L amber glass	PENTACHLOROPHENOL	
	MWB	"	1110	"	NONE	250 ml plastic	pH	

Relinquished by: J.R. Ratliff / SRH Date 9/3/86 Time 1450 Received for Coffey Labs by: M. Schultz

SAMPLE INTEGRITY COMMENTS:

LAB LOG # 860903-J LOGGED IN BY: DATE: TIME:

\clom\form\log\login.log

TOLS001478

BZTO104(e)038299

CLIENT
ANALYSIS
REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME SRI Associate TELEPHONE# 232-0824

ADDRESS 123 NE 3rd Ste 230 PURCHASE ORDER # VERBAL

ADDRESS 14005 LAB PRICE QUOTE # [redacted]

CITY/STATE ZIP Portland OR 97214 BILLING ADDRESS:

ATTENTION John Ruddick

SAMPLE COLLECTION DATE 8/29/86 DUE DATE ASAP RUSH

SAMPLE COLLECTED BY J. Ruddick DELIVERED BY JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):

Penta by EPA 8040 (SW-846)

SID/FIELD ID	Date	Time	Media	Preservative	Analysis requested	MDL
MW-D	8/29	1600	Ground Water	1:1 Nitric Acid	2 x 1 Liter Glass	Pentachlorophenol (EPA 8040)
MW-E		1430				
MW-F		1615				
MW-H		1500				
MW-I		1650				
MW-D		1600		None	250 ml Plastic	pH
MW-E		1430				
MW-F		1615				
MW-H		1500				
MW-I		1650				

Relinquished by: J. H. Ruddick Date 8/29/86 Time 1800 Received for Coffey Labs by: Susan M Coffey

SAMPLE INTEGRITY COMMENTS:

LAB LOG # A860829 N 1-10 LOGGED IN BY: S Coffey DATE: 8-29-86 TIME: 1755

TOLS001479

BZTO104(e)038300

CLIENT ANALYSIS REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME: SRH ASSOCIATES
TELEPHONE#: 503 232 0824
ADDRESS: 123 NE 3RD STE 230
PURCHASE ORDER #: VERBAL
ADDRESS: PO BOX 14005
LAB PRICE QUOTE #: 60.00/SAMPLE
CITY/STATE/ZIP: PORTLAND OR 97214
BILLING ADDRESS:
ATTENTION: JOHN RUDDICK
SAMPLE COLLECTION DATE: 8/23/86
DUE DATE: 9/2/86
RUSH:
SAMPLE COLLECTED BY: J RUDDICK
DELIVERED BY: JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTACHLOROPHENOL BY EPA 8040 (SW 846)

Lab #	Date	Time	Media	Pres	Cntnr	Analysis requested	MD
A-0	8/23	1125	Soil	None	8oz Glass	Pentachlorophenol (EPA 8040)	
S-0		1130					
T-0		1135					
U-0		1140					
V-0		1145					
W-0		1150					
X-0		1200					

Relinquished by: John H Ruddick
Date: 8/25/86
Time: 1045
Received for Coffey Labs by: [signature]

CLIENT SPECIFICITY COMMENTS:

LAB LOG: LOGGED IN BY: DATE: TIME:

TOLS001480

BZTO104(e)038301

CLIENT
ANALYSIS
REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME SRH Associates TELEPHONE# 503 232 0824

ADDRESS 123 SE 3rd STE 230 PURCHASE ORDER # Verbal

ADDRESS PO Box 14005 LAB PRICE QUOTE # 60.00/sample

CITY/STATE/ZIP Portland OR 97214 BILLING ADDRESS:

ATTENTION John Ruddick

SAMPLE COLLECTION DATE 8/24/86 + 8/23 DUE DATE 9/2/86 RUSH

SAMPLE COLLECTED BY J Ruddick DELIVERED BY JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
Pentachlorophenol by EPA 8040 (SW 846)

Client ID	Date	Time	Matrix	Preservative	Analysis requested	MDL
4-4	8/24	1745	Soil	None	8oz Glass	Pentachlorophenol (EPA 8040)
4-7	8/24	1020				
J-0	8/23	1015				
K-0		1030				
L-0		1045				
M-0		1055				
N-0		1105				
Ø-0		1110				
P-0		1115				
Q-0		1120				

Relinquished by:	Date	Time	Received for Coffey Labs by:
John H Ruddick / SRA	8/25/86	1045	Steven L. Lloyd

SAMPLE INTEGRITY COMMENTS:

LAB LOG LOGGED IN BY: DATE: TIME:

TOLS001481

BZTO104(e)038302

CLIENT
ANALYSIS
REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME: SRH Associates TELEPHONE# 503 232 0824
ADDRESS: 123 SE 3rd Ste 230 PURCHASE ORDER # Verbal
ADDRESS: PO Box 14005 LAB PRICE QUOTE # 60.00/sample
CITY/STATE/ZIP: Portland OR 97214 BILLING ADDRESS:
ATTENTION: John Ruddick
SAMPLE COLLECTION DATE: 8/25/86 DUE DATE: 9/2/86 RUSH:
SAMPLE COLLECTED BY: J Ruddick DELIVERED BY: JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTACHLORO PHENOL BY EPA 8040 (SW 846)

LAB #	Date	Time	Media	Res/Cntnr	Analysis requested	MDL
6-4	8/24	1200	Soil	None / 8oz Glass	Penta (EPA 8040)	
6-7		1230				
6-12		1420				
D-2		1530				
T-5		1530				
Q-5		1615				
D-1		1050				
4-5		1610			(HOLD)	
4-0		1650				
4-2		1715				

RELEASED BY: Jeff Riddick / SRH Date: 8/25/86 Time: 1045 Received for Coffey Labs by: Steven Kuhaya

SAMPLE INTEGRITY COMMENTS:

LAB LOG LOGGED IN BY: DATE: TIME:

TOLS001482

BZTO104(e)038303

CLIENT ANALYSIS REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME: SRH Associates TELEPHONE#: 503 232 0824

ADDRESS: 123 NW 3rd STE 230 PURCHASE ORDER #: VERBAL

ADDRESS: PO Box 14005 LAB PRICE QUOTE #: 60.00/sample

CITY/STATE/ZIP: Portland OR 97214 BILLING ADDRESS:

ATTENTION: John Ruddick

SAMPLE COLLECTION DATE: 8/25/86 DUE DATE: 9/2/86 RUSH:

SAMPLE COLLECTED BY: J Ruddick DELIVERED BY: JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTACHLOROPHENOL BY EPA 8040 (SW 846)

LAB #	Date	Time	Media	# Containers	Analysis requested	MDL
6-S	8/24	1050	Soil	Nmo 80z glass	Penta (EPA 8040)	(HOLD)
6-0		1130				
4-12		1900				
3-S		1915				(HOLD)
3-0		1955				
3-2		2010				
3-4		2015				
3-7		2025				
3-12		2100				
6-2		1140				

RELINQUISHED BY: John Ruddick / SRH Date: 8/25/86 Time: 1045 Received for Coffey Labs by:

SAMPLE INTEGRITY COMMENTS:

LAB LOG LOGGED IN BY: DATE: TIME:

TOLS001483

BZTO104(e)038304

CLIENT
ANALYSIS
REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME SRH Associates TELEPHONE# 503 232 0824

ADDRESS 123 NE 3rd STE 230 PURCHASE ORDER # Verbal

ADDRESS PO Box 14005 LAB PRICE QUOTE # 60.00/sample

CITY/STATE/ZIP Portland OR 97214 BILLING ADDRESS:

ATTENTION John Ruddick

SAMPLE COLLECTION DATE 8/25/86 DUE DATE 9/2/86 RUSH

SAMPLE COLLECTED BY J Ruddick DELIVERED BY JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTACHLOROPHENOL BY EPA 8040 (SW 846)

LAB ID	Date	Time	Media	Preservative	Container	Analysis requested	MDL
2-5	8/25	1130	Soil	None	Glass 8oz	Penta by EPA 8040 (HOLD)	
2-0		1145				Run	
2-2		1450				Run	
2-4		1520				Run	
2-7		1545				Run	
2-12		1720				Run	
1-2		1915				Run	
1-4		1950				Run	
1-7		2030				Run	
1-12		2130				Run	

RELINQUISHED BY: Date 8/26 Time 1125 Received for Coffey Labs by

SAMPLE INTEGRITY COMMENTS:

LAB LOG # LOGGED IN BY: DATE: TIME:

TOLS001484

BZTO104(e)038305

CLIENT
ANALYSIS
REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME SRH ASSOCIATES TELEPHONE# 503 232 0824

ADDRESS 123 NE 3RD STE 230 PURCHASE ORDER # VERBAL

ADDRESS PO BOX 14005 LAB PRICE QUOTE # 60.00/SAMPLE

CITY/STATE ZIP PORTLAND OR 97214 BILLING ADDRESS:

ATTENTION JOHN RUDDICK

SAMPLE COLLECTION DATE 8/23/86 DUE DATE 9/2/86 RUSH

SAMPLE COLLECTED BY J RUDDICK DELIVERED BY JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTACHLOROPHENOL BY EPA 8040 (SW 846)

ID	Date	Time	Media	Pres	cntnr	Analysis requested	MDL
Y-0	8/23	1205	SOIL	NONE	802 Glass	PENTACHLOROPHENOL (EPA 8040)	
Z-0		1210					
1-S		1255				(HOLD)	
1-0		1635					
5-S		1655				(HOLD)	
5-0		1710					
5-2		1745					
5-4		1805					
5-7		1825					
5-12		1900					

Relinquished by: John H Ruddick | Date 8/25 | Time 1045 | Received for Coffey Labs by: Steven L. Thompson

SAMPLE INTEGRITY COMMENTS.

LAB LOG # | LOGGED IN BY: | DATE: | TIME:

TOLS001485

BZTO104(e)038306

REPAID_____
ART DEPOSIT_____
(FOR RELEASE_____
ILL_____

LOG#_____

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

LOGIN TIME_____

OMPANY NAME SRH ASSOC. TELEPHONE# 232-0824

DDRESS 123 NW 3RD PURCHASE ORDER # VERBAL

DDRESS STE 230 LAB PRICE QUOTE #_____

ITY/STATE/ZIP PORTLAND OR 97232 BILLING ADDRESS:

TTENTION JOHN RUDDICK

AMPLE COLLECTION DATE 9/26/86 DUE DATE MONDAY AFTERNOON 9/29/86 RUSH_____

AMPLE COLLECTED BY J RUDDICK DELIVERED BY JHR

IENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):

D	Field ID	Date	Time	Media	Pres	btl	Analysis Requested	MDL
(	K-O	9/26	0915	SOIL	NONE	8oz GLASS	PENTACHLOROPHENOL (EPA 8040)	

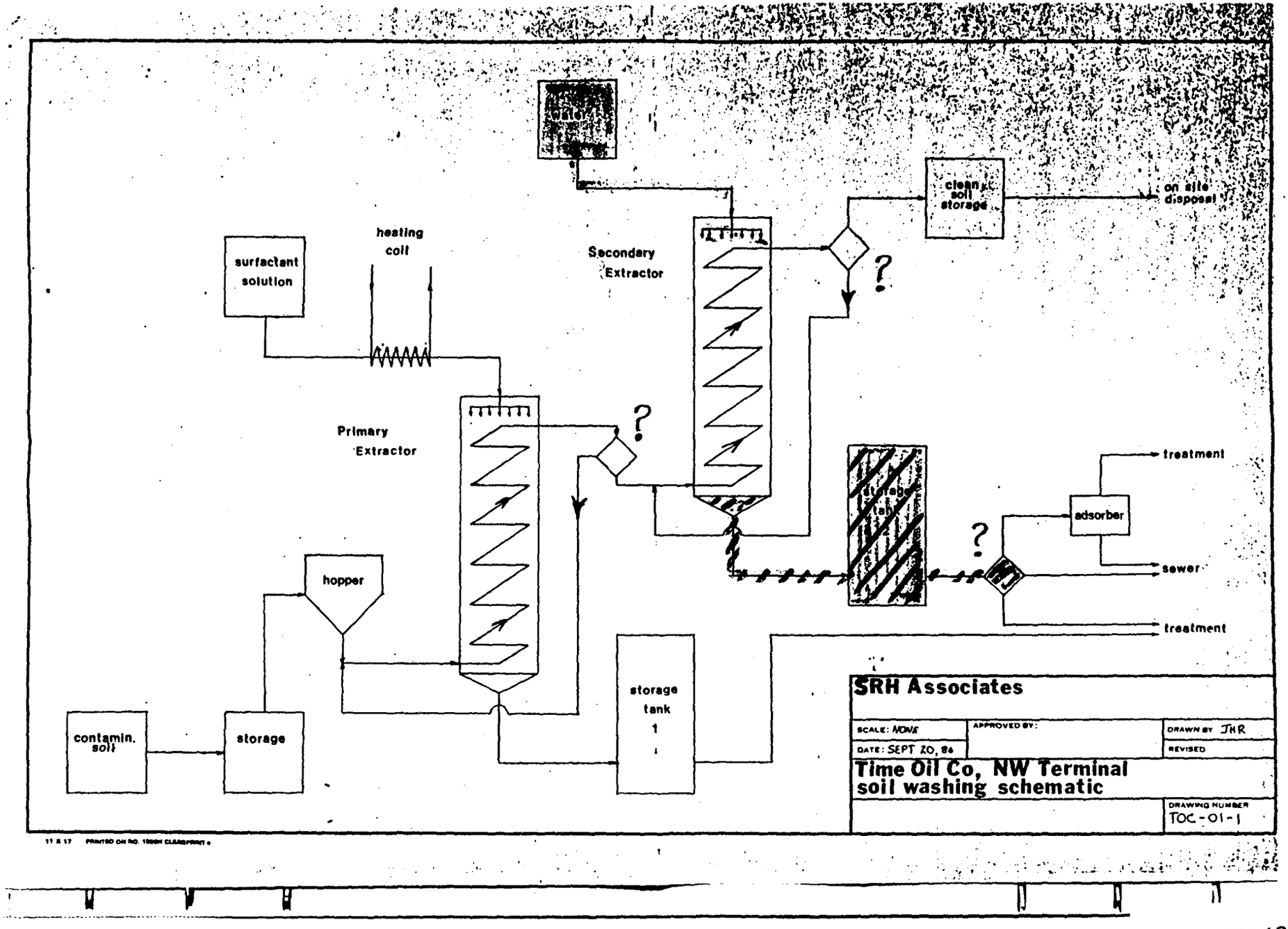
(IPLE INTEGRITY COMMENTS

Relinquished by:	Date	Time	Received for Coffey Labs by
	9/26/86	0950	Mary L Howell

wp\clom\form\log\request.log

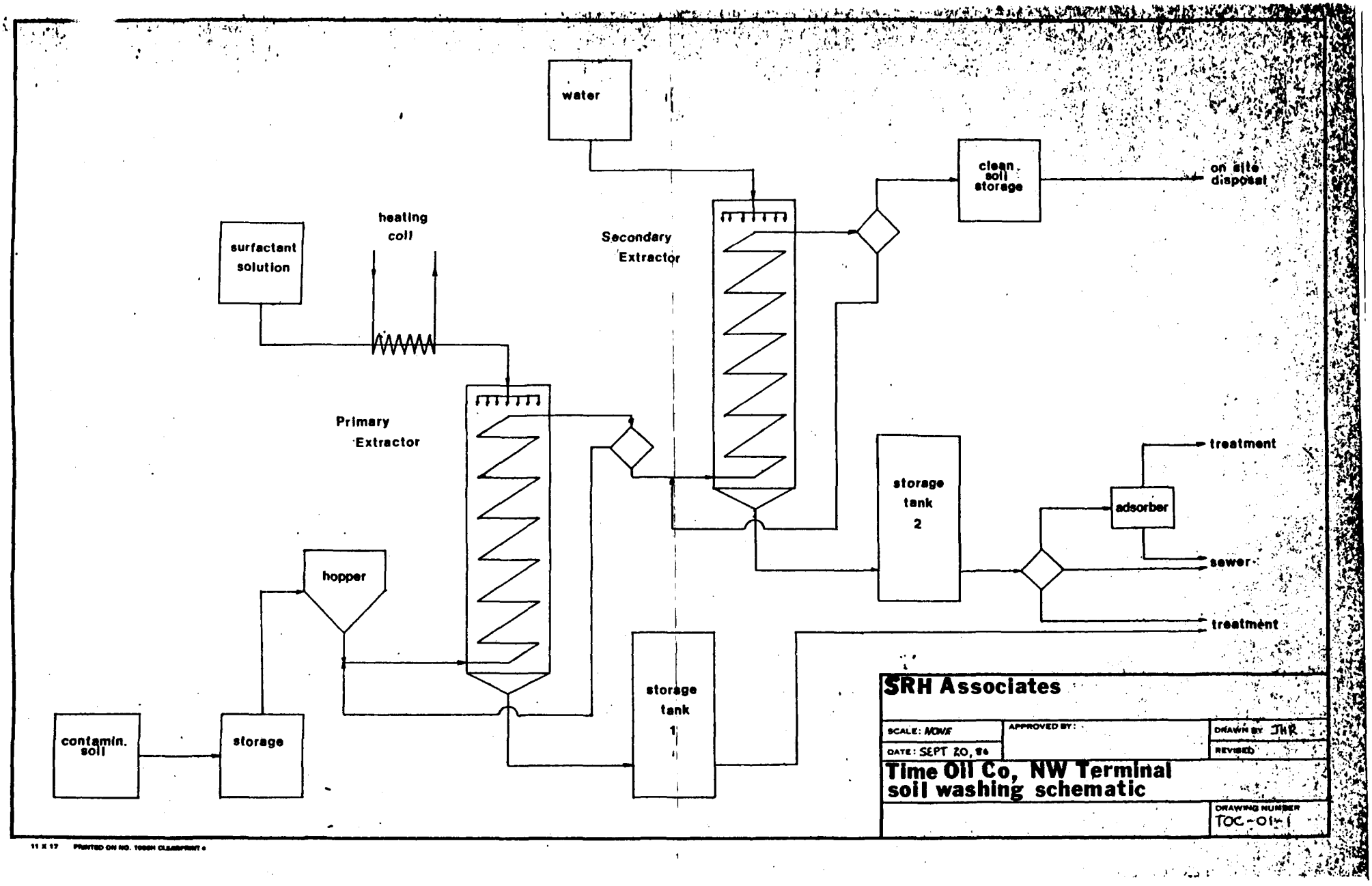
TOLS001486

BZTO104(e)038307

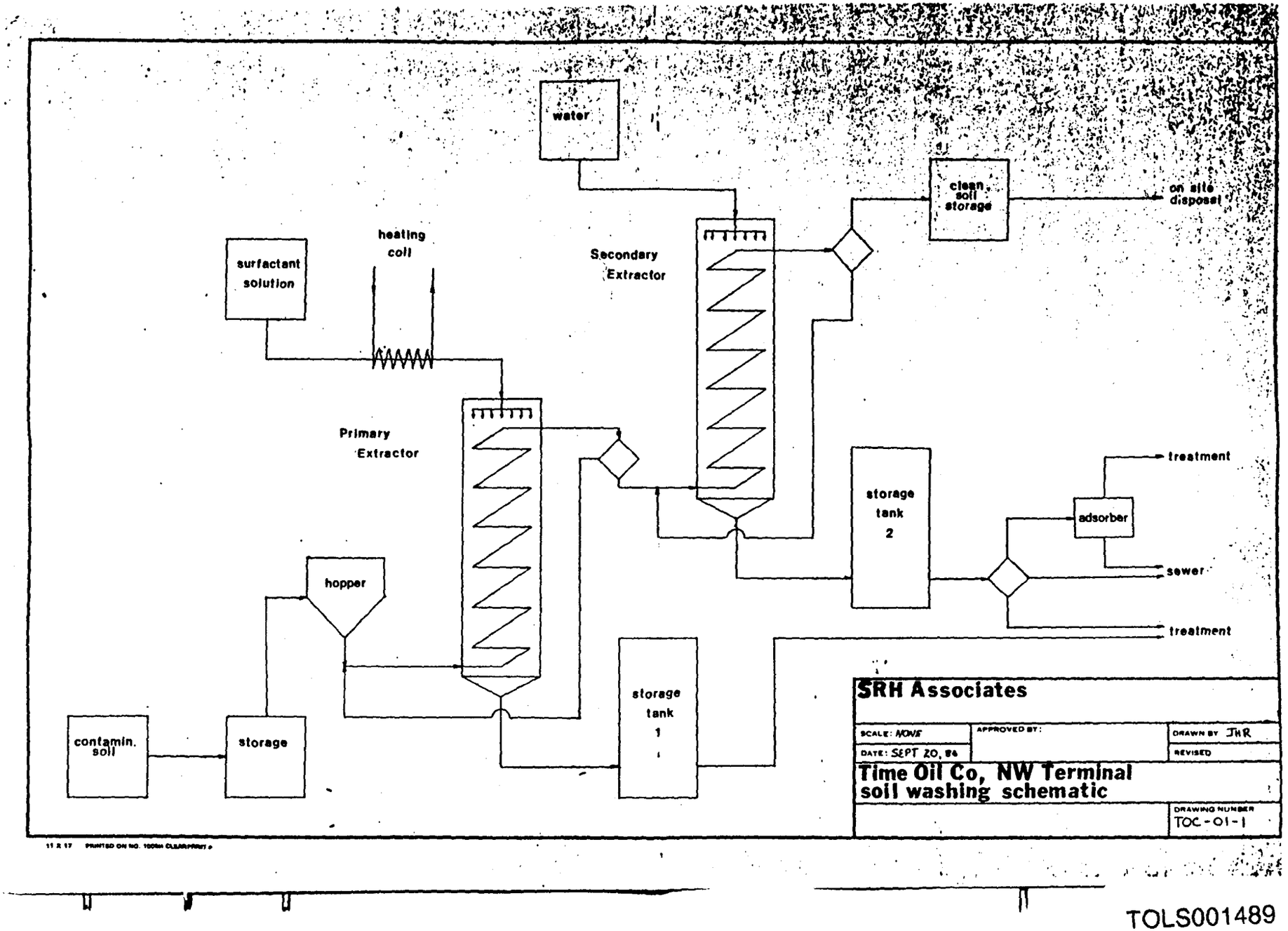


BZTO104(e)038308

TOLS001487



BZTO104(e)038309



TOLS001489

BZTO104(e)038310

M E M O R A N D U M

Aug 18, 1989

TO: Fred Proby Seattle

FROM: Kevin Murphy Seattle

SUBJECT: ECOVA - NORTHWEST TERMINAL

On Thursday June 29, 1989, I questioned Mark Anderson about the costs for the analysis of the samples taken during the investigation of the contamination discovered in the borrow area at Northwest terminal. Twelve soil and water samples were sent to Ecova's lab in Redmond via Federal Express on June 29. Two soil and two water samples were analyzed on a priority basis to ascertain what we were encountering in the field. The remaining 8 samples were held for analysis at a later time. Mark told me that the normal charges would be charged for the "quick and dirty" rushed analysis. The remaining samples and additional samples collected Friday would be analyzed by the lab techs after hours. Our cost for these analyses would be around $25.00 each, essentially the cost of the time of the lab technician. On July 3, John Ennis, an Ecova lab technician, told me that he and some summer college student help would be doing the analysis on the remaining samples when they could get into the lab. They would be analyzed in the evenings and, as Mark had indicated, the cost of the analysis would be calculated by the time that was taken in the lab. This was how they were able to give us the low price and the quick turn around.

M E M O R A N D U M

October 18, 1989

TO: Robert Abendroth Seattle

FROM: Fred Proby Seattle

SUBJECT: CONTAMINATED SOIL AT NORTHWEST TERMINAL

Per your request, I have evaluated procedures and alternatives for handling soil excavated during construction of a pump pit at the Northwest Terminal from October 11 to 13, 1989. I understand from Neil that approximately 100 cubic yards have been excavated and piled at the rear of the terminal. Due to the degree of weathering, Neil could not tell for certain whether the soil was primarily contaminated with diesel or gasoline.

Normally, we would want "suspect" soil to be piled on visqueen as it is excavated. What I've been able to learn so far does not justify immediately rehandling the soil to put it on plastic.

The first thing that needs to be done is to determine if, and with what, the soil is contaminated. We will need to collect representative samples and analyze them for total petroleum hydrocarbons (gasoline and diesel) and benzene, toluene, xylene and ethylbenzene. I can accomplish this during my Ecova inspection next week. The cost for analysis will be approximately $1,000 depending on how many samples it takes to represent the piles of soil.

Note: RA Soil to Composite Don't exceed $150.00 FP

The concentrations of contaminants then need to be compared with levels regulated by the Oregon Department of Environmental Quality to determine what constraints they might impose. The state's rules are in transition at the present moment and I am no longer sure of what they will and will not allow.

Once we know what contaminants, if any, we are dealing with and their concentrations then a disposal or treatment plan can be developed. For low levels of gasoline, simple aeration next spring should be sufficient. Diesel may require a more active "landfarming" approach.

With your concurrence, I will collect the necessary samples and get them to a lab for analysis.

MEMORANDUM

July 23, 1990

TO: File Seattle

FROM: Fred Proby Seattle

SUBJECT: REVISED ECOVA REQUEST FOR ADDITIONAL PENTA CLEANUP FUNDS

By letter dated July 10, 1990 (attachment 1) ECOVA requested reimbursement for $96,905 in expenses that were charged to "Task 651 Experimental Operations". In our last meeting on the NW Terminal project (5/15/90), ECOVA mentioned that such a task existed and that they would research it and report to us. That meeting and this present letter are the only occasions on which this task has ever been identified to me.

I have summarized ECOVA's monthly listing of hours and costs charged to this task in a single spreadsheet (attachment 2). John Kinsella provided the job descriptions in the column labeled "Duties Performed". The field crew (Borthen, Schweigel and Lombard) account for 52.5% ($50,835) of the total. The next largest charge is for project management at 26.4% ($25,615), most of which is Bill Mahaffey, who is also the Senior Microbiologist. Laboratory, engineering and administrative personnel make up the remainder of the labor.

ECOVA's letter states that task 651 was set up by Bill Mahaffey in November of 1989. Approximately 43% of the charges to the task ($41,605) occurred that month, including what appears to be several days of overtime for the field crew. Bill's November 30, 1989 progress report described the work being performed that month but made no mention of costs. My October 31, 1989 letter to Bill was very explicit that "expenses incurred without written authorization by Time will not be reimbursed." Accordingly, I was confident that the work described in the November progress report was not considered by ECOVA to be out-of-scope. In fact, one of the tasks performed in November involved cleaning up the "experimental" soil batch initiated by Dave Edwards that was conducted from August 22 through September 29, 1989 and which resulted in incompletly treated soil being discharged. ECOVA agreed that removing this soil from the disposal pit was to be done at their expense.

In his January 1990 progress report, Bill Mahaffey described the work they had been doing, but made no mention of it being outside of the scope of work. The majority of ECOVA's efforts revolved around soil washing, which is part of the original project design. I viewed the work being done in November and December as fine-tuning that design.

The main question that comes to mind is, "Did Bill Mahaffey intend, when he established this task, to request reimbursement from Time Oil?" If he did, then why didn't he inform me of it, especially after having just been reminded of the need for written authorization? If he did not expect Time to pay for this as extra work, then why are we now being asked to reimburse ECOVA? If the soil had turned out to be treatable as originally expected, then would ECOVA still be asking for reimbursement of this five months worth of work? Finally, this task 651 is a new twist in ECOVA's request for additional money that has not previously been negotiated. Why is it being brought out at this late stage?

A meeting with ECOVA is scheduled for tomorrow (7/24) at which these questions will be raised.

ECOVA

July 10, 1990

Mr. Joe Sanzo
Environmental Manager
TIME OIL COMPANY
2737 West Commodore Way
Seattle, WA 98119-1233

P.N. 821401

Dear Mr. Sanzo:

This letter is a summary of the issues discussed at our last meeting and of a detailed project evaluation. The following items are presented below:

- Out of Scope Experimental Operations
- Change Orders
- Ongoing Maintenance Costs

An explanation of each of these, together with associated costs is presented below.

A. EXPERIMENTAL OPERATIONS

ECOVA has completed a detailed analysis of the charges placed against our Job Number 821401, "Time Oil Northwest Terminal". Attached is a month by month accounting of the costs incurred which are identified as being part of Task 651 - Experimental Operations, the task established by Bill Mahaffey in the month of November 1989. Prior to November 1989, we conclude that efforts occurring on the site were within the work scope.

The following summarizes the activities occurring on the site during the time between November 1989 and March 1990 when the Experimental Operations task was in effect. The original description of the activities is to be found in the monthly reports prepared for Time Oil by the Project Manager.

A.1 November 1989

Soil was loaded into tanks T1, T2, and T3 for slurry phase processing. Both physical problems with settlement of the

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Attach. 1

sand sized particles, and biodegradation rate changes were observed, leading the project team to carry out experiments with soil washing. Observations of solvent films and odors were made, and soil washing was observed in some cases to not reduce the PCP concentrations as had the original treatability studies.

A.2 December 1989

The 38K Bio-reactor was set up for running thinner slurries and materials from T1 and T3 tanks were introduced. Bench scale soil washing tests were carried out using a spiral classifier, as was a bench scale silt processing bioreactor. Concern that there is an impact of the newly encountered solvents was voiced and further study on the PCP contents of the silt fraction was started.

A.3 January 1990

Soil washing feasibility tests continued with evidence being gathered that the solvents were interfering with the washing step by not allowing a reduction below 17 ppm in the experiments conducted.

A.4 February 1990

Cleanup to 0.5 ppm appears to be prevented by the solvent interferences as reported in the February monthly report.

A.5 March 1990

Site activities are suspended with only routine maintenance work and site support going on in Portland. In summary, we believe that ECOVA invested considerable time and effort in attempting to solve the problem of solvent interference during this effort.

COST OF TASK 651 - EXPERIMENTAL OPERATIONS

Enclosed as Attachment A is a summary of monthly costs charged to Task 651 for the months of November 1989 to March 1990 inclusive. Detail for each month is also included. These charges are for efforts required to respond to the new conditions encountered at the site, for which ECOVA is requesting reimbursement.

Labor charges incurred for the period totaled $93,650. Expenses related to Task 651 totaled $3,255 for the period.

B. CHANGE ORDERS

B.1 Negotiations with Oregon DEQ

To obtain an achievable cleanup standard, it will be necessary to negotiate this with the Oregon DEQ. ECOVA will support Time Oil in this effort on a Time and materials (T&M) basis. At this time, we estimate that $12,190 will be required for this task. This covers the costs of technical personnel (Mahaffey, Borthen and Kinsella) to provide information to Time and attend one meeting in Portland. Should the actual effort be more or less than the estimated amount our costs would be adjusted accordingly.

C. ONGOING OPERATIONS

At our last meeting, Time informed ECOVA that the site had an untidy appearance that needed attention. ECOVA responded immediately by dispatching our Engineer (Jim Borthen) to the site who carried out necessary work and prepared a written report that was subsequently forwarded to Time Oil. This work was performed at ECOVA's cost.

Based on Jim's inspection, we believe that routine (i.e., once a month) maintenance of the site is required during shutdown. In addition, we believe it is fair and reasonable to receive a monthly rental for the equipment not in use during shutdown. We propose the following nominal costs:

Monthly Maintenance Inspection:	$1,700
Monthly Equipment Rental:	$3,000
Total	**$4,700**

These costs would be billed monthly beginning July, 1990 and terminate upon resumption of cleanup operations. We recommend that this item be added to the project as a fixed priced change order, effective for a maximum of six-months.

D. OTHER ITEMS

There are other items that Time believes are appropriate additions to the Scope of work and price of the contract that will be required as we move forward with site cleanup. These are:

- System modification
- Mobilization costs for penta contamination
- Groundwater modeling study

- Solvent soil boring study
- Treatment of contaminated water in Tank-16804
- Soil dioxin testing

These items have not been costed at this time.

We look forward to discussing the details of this presentation and of establishing new cleanup criteria with the regulatory agency which will allow further progress on remediation of the site.

If you have any questions, please call either of us, or Rod Carr at 883-1900.

Sincerely,

Bill Mahaffey/mc

William B. Mahaffey, Ph.D.
Project Manager

John Kinsella/mc

John V. Kinsella, P.G.
Vice President, Operations

Attachments

cc: Rod Carr
Jim Borthen

SUMMARY SHEET - TIME OIL TASK 651 - EXPERIMENTAL OPERATIONS

MONTH	LABOR COST	EXPENSE COST	TOTAL MONTHLY COST
NOVEMBER 1989	$41,055	$550	$41,605
DECEMBER 1989	$16,020	$373	$16,393
JANUARY 1990	$23,350	$1,181	$24,531
FEBRUARY 1990	$8,250	$1,116	$9,366
MARCH 1990	$4,975	$35	$5,010
TOTALS	$93,650	$3,255	$96,905

TIME OIL NORTHWEST TERMINAL - TASK 651 EXPERIMENTAL OPERATIONS

MONTH: MARCH 1990

PERSONNEL	HOURS	RATE	EXTENS'N
BORTHEN	34	$50	$1,700
EDWARDS		$95	$0
MAHAFFEY		$95	$0
MARSHALL-NOLL		$40	$0
SCHWEIGEL	71	$40	$2,840
BRINKMANN		$40	$0
ENNIS	2	$60	$120
LOMBARD		$30	$0
MACMURCHIE		$40	$0
MAZIARZ		$70	$0
NEIDECKER	0.5	$70	$35
MONTOYA		$60	$0
SKOGERSON		$40	$0
CHERBERG	1	$30	$30
PAULSEN		$30	$0
LANCE		$60	$0
KINSELLA	2	$125	$250
MONTH SUBTOTAL	110.5		$4,975

ASSOCIATED EXPENSES

$4,975

TOLS001498

BZTO104(e)038319

TIME OIL NORTHWEST TERMINAL - TASK 651 EXPERIMENTAL OPERATIONS

MONTH: FEBRUARY 1990

PERSONNEL	HOURS	RATE	EXTENS'N
BORTHEN	21	$50	$1,050
EDWARDS		$95	$0
MAHAFFEY	15	$95	$1,425
MARSHALL-NOLL		$40	$0
SCHWEIGEL	50	$40	$2,000
BRINKMANN	11.5	$40	$460
ENNIS	19	$60	$1,140
LOMBARD		$30	$0
MACMURCHIE	18	$40	$720
MAZIARZ		$70	$0
NEIDECKER	1.5	$70	$105
MONTOYA		$60	$0
SKOGERSON	27	$40	$1,080
CHERBERG		$30	$0
PAULSEN		$30	$0
LANCE	4.5	$60	$270
KINSELLA		$125	$0
MONTH SUBTOTAL	167.5		$8,250

ASSOCIATED EXPENSES

$8,250

TOLS001499

BZTO104(e)038320

TIME OIL NORTHWEST TERMINAL - TASK 651 EXPERIMENTAL OPERATIONS

MONTH: JANUARY 1990

PERSONNEL	HOURS	RATE	EXTENS'N
BORTHEN	124	$50	$6,200
EDWARDS		$95	$0
MAHAFFEY	48	$95	$4,560
MARSHALL-NOLL		$40	$0
SCHWEIGEL	147	$40	$5,880
BRINKMANN	3	$40	$120
ENNIS	17	$60	$1,020
LOMBARD		$30	$0
MACMURCHIE	30.5	$40	$1,220
MAZIARZ	30	$70	$2,100
NEIDECKER		$70	$0
MONTOYA	10	$60	$600
SKOGERSON	30	$40	$1,200
CHERBERG	1	$30	$30
PAULSEN	14	$30	$420
LANCE		$60	$0
KINSELLA		$125	$0
MONTH SUBTOTAL	454.5		$23,350

ASSOCIATED EXPENSES

$23,350

TOLS001500

BZTO104(e)038321

TIME OIL NORTHWEST TERMINAL - TASK 651 EXPERIMENTAL OPERATIONS

MONTH: DECEMBER 1989

PERSONNEL	HOURS	RATE	EXTENS'N
BORTHEN	116	$50	$5,800
EDWARDS		$95	$0
MAHAFFEY	22	$95	$2,090
MARSHALL-NOLL		$40	$0
SCHWEIGEL	112	$40	$4,480
BRINKMANN		$40	$0
ENNIS	3	$60	$180
LOMBARD	36	$30	$1,080
MACMURCHIE	58	$40	$2,320
MAZIARZ		$70	$0
NEIDECKER	1	$70	$70
MONTOYA		$60	$0
SKOGERSON		$40	$0
CHERBERG		$30	$0
PAULSEN		$30	$0
LANCE		$60	$0
KINSELLA		$125	$0
MONTH SUBTOTAL	348		$16,020

ASSOCIATED EXPENSES

$16,020

TOLS001501

BZTO104(e)038322

TIME OIL NORTHWEST TERMINAL - TASK 651 EXPERIMENTAL OPERATIONS

MONTH: NOVEMBER 1989

PERSONNEL	HOURS	RATE	EXTENS'N
BORTHEN	175	$50	$8,750
EDWARDS	50	$95	$4,750
MAHAFFEY	132	$95	$12,540
MARSHALL-NOLL	6.5	$40	$260
SCHWEIGEL	192	$40	$7,680
BRINKMANN	5	$40	$200
ENNIS	19	$60	$1,140
LOMBARD	112.5	$30	$3,375
MACMURCHIE	55.5	$40	$2,220
MAZIARZ	2	$70	$140
NEIDECKER		$70	$0
MONTOYA		$60	$0
SKOGERSON		$40	$0
CHERBERG		$30	$0
PAULSEN		$30	$0
LANCE		$60	$0
KINSELLA		$125	$0
MONTH SUBTOTAL	749.5		$41,055

ASSOCIATED EXPENSES

$41,055

TOLS001502

BZTO104(e)038323

SUMMARY OF ECOVA COSTS 11/89 - 3/90 **NW Terminal Penta Cleanup - Task 651 "Experimental Operations"**

		Nov 89		Dec 89		Jan 90		Feb 90		Mar 90		TOTALS		
Person	Rate	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	DUTIES PERFORMED (per John Kinsella)
Borthen	50	175	8,750	116	5,800	124	6,200	21	1,050	34	1,700	470	23,500	On-site support for operations
Schweigel	40	192	7,680	112	4,480	147	5,880	50	2,000	71	2,840	572	22,880	On-site support for operations
Mahaffey	95	132	12,540	22	2,090	48	4,560	15	1,425		0	217	20,615	Sr. Microbiologist/Project Manager
MacMurchie	40	55.5	2,220	58	2,320	30.5	1,220	18	720		0	162	6,480	Laboratory (chem) support
Edwards	95	50	4,750		0		0		0		0	50	4,750	Project Manager
Lombard	30	112.5	3,375	36	1,080		0		0		0	149	4,455	On-site support for operations
Ennis	60	19	1,140	3	180	17	1,020	19	1,140	2	120	60	3,600	Laboratory (chem) support
Skogerson	40		0		0	30	1,200	27	1,080		0	57	2,280	Engineering support
Maziarz	70	2	140		0	30	2,100		0		0	32	2,240	Sr. Chemist for soil washing
Brinkmann	40	5	200		0	3	120	11.5	460		0	20	780	Laboratory (chem) support
Montoya	60		0		0	10	600		0		0	10	600	Engineering support
Paulsen	30		0		0	14	420		0		0	14	420	Laboratory (micro) support
Lance	60		0		0		0	4.5	270		0	5	270	Engineering/Hydrogeological
Marshall	40	6.5	260		0		0		0		0	7	260	Laboratory (micro) support
Kinsella	125		0		0		0		0	2	250	2	250	ECOVA Principal in Charge
Neidecker	70		0	1	70		0	1.5	105	0.5	35	3	210	Purchasing Manager - Procurement
Cherberg	30		0		0	1	30		0	1	30	2	60	Clerical/Administrative
Expenses			550		373		1,181		1,116		35	0	3,255	Other Direct Expenses
TOTALS		749.5	41,605	348	16,393	454.5	24,531	167.5	9,366	110.5	5,010	1,830	96,905	
			42.9		16.9		25.3		9.9		5.17			

BREAKDOWN:	Hours	Cost	Percent
On-site Operations	1,191	50,835	52.5%
Project Management	269	25,615	26.4%
Laboratory	262	11,540	11.9%
Engineering	104	5,390	5.6%
Administration	5	270	0.3%
Expenses		3,255	3.4%

40.7

BZT0104(e)038324

TOLS001503

MEMORANDUM

July 24, 1990

TO: John Kinsella ECOVA Corp.

FROM: Fred Proby Time Oil Co.

SUBJECT: NW PENTA PROJECT QUESTIONS ON "TASK 651" EXPENSES

The following questions are posed as a starting point for our discussion on ECOVA's request for reimbursement of $96,905 in expenses charged to the NW Terminal Penta project under "Task 651, Experimental Operations":

1. The first "experiments" mentioned as starting in November 1989 deal with soil washing. The tests on soil washing continued through December and January. Soil washing is part of the original project design.

   a. Why should Time view tests of that design as being out of the scope of work?

   b. It does not appear that ECOVA has actually tested the original design, which involved separating the larger particles from the fines in the washing stage. What rationale does ECOVA have for apparently departing from the original flow diagram?

2. The field crew charged all of their time in November 1989 to task 651, including what appears to be several days of overtime. The November 15 progress report states that the contaminated soil improperly discharged into the disposal pit was removed that month. This is a cost ECOVA agreed to absorb, so it should not have been included in a request for reimbursement.

   a. Are there other activities charged to task 651 that are not out-of-scope?

   b. Are there other tasks to which time and expenses have been charged since November 1989?

3. Was it ECOVA's intention, when task 651 was established, to request reimbursement as extra work?

   a. If so, then why was a written request for authorization not made, especially in light of Time's 10/31/89 letter reminding ECOVA of the need for written authorization before expenses are incurred?

   b. If not, then why is the request now being made?

   c. If the tests had shown that the treatment level could be reached, would ECOVA still be requesting reimbursement?

4. Task 651 was in existence at the time ECOVA requested reimbursement for expenses dating from March 1989 (a claim since abandoned). Why was this task not identified in ECOVA's March 23, 1990 analysis of the project?

7/24/90 FLP

ECOVA Status Meeting - New Bern

Charges:

There may be some hours charged to 651 that are "routine".
- John will re-evaluate

Soil washing:

- Tests in March(?) were done w/ an alkaline wash to strip out the solvents - original washing was w/ water.

Maintenance:

- Joe: ECOVA shut the job down, so Time shouldn't have to pay costs.
- John - if we can get things moving, I would push the issue of rent.
- Monthly supervision of site? - Fred & Joe will discuss

Conclusion:

letter #1 John will re-phrase his request in terms of the impact of solvents on project costs.

letter #2 Re-Start Proposal - John will provide cost est for:

1. Negotiations w/ DEQ
2. Revised Work Plan
3. Site maintenance
4. Dioxin Testing

TOLS001505

BZTO104(e)038326

MEMORANDUM

August 8, 1990

TO: Robert Abendroth Seattle

FROM: Joe Sanzo Seattle

SUBJECT: ECOVA EXTRA WORK ON NW PENTA PROJECT

Since February 1990, we have been negotiating with ECOVA to resolve a dispute over additional charges to the pentachlorophenol cleanup project at Northwest terminal. ECOVA initially claimed $280,437 in extra work, most of which we felt was unjustified. The sole area of extra work on which we have all agreed is that "solvents" have interfered with the treatment process as it was originally designed. These solvents are not addressed in the contract, so they create a legitimate out-of-scope situation.

After carefully reviewing all of ECOVA's charges to this project, we have identified $59,290 in labor and expenses that were incurred in ECOVA's attempt to resolve the solvent problem. This effort is described in ECOVA's August 7, 1990 letter (attachment 1).

ECOVA did not request a change order prior to initiating this work. Consequently, we are not obligated to reimburse them. ECOVA's stated reason for not requesting a change order is that they did not intend to request reimbursement if the "experiment" was a success in treating the soil to the contracted cleanup level (0.5 ppm penta). As it turned out, the solvents inhibited the treatment process to the point where ECOVA could only achieve a reduction to 17 ppm penta. This has placed them in a situation where they cannot comply with the contract.

To resolve this issue, ECOVA is asking Time for change orders to accomplish three things;

1. Retroactively reimburse the $59,290 in "experimental" costs.

2. Negotiations with the Oregon Department of Ecology to establish an acceptable cleanup level (cost yet to be established).

3. Re-design of the treatment system to effectively deal with the solvents (cost yet to be established).

ECOVA has negotiated in good faith and has admitted their problems with cost management that plagued the earlier stages of the project. The firm has taken significant steps to solve those problems. It is our opinion that the reimbursement for the experimental effort is justified and that the additional work proposed is necessary to complete the project. Accordingly, it is our recommendation that these change orders be issued so that the project can proceed.

E C O V A

Hand Delivered

August 7, 1990

Mr. Joe Sanzo
Environmental Manager
TIME OIL COMPANY
2737 West Commodore Way
Seattle, WA 98119-1233

P.N. 821401

Dear Mr. Sanzo:

This letter summarizes our reasons for seeking reimbursement of additional costs for the NW Terminal project. We believe that our request represents a genuine good faith effort on our behalf to reduce contaminant concentrations in the stockpiled soils. An explanation of the problems encountered and our subsequent activities aimed at solving those problems is presented below.

EXPERIMENTAL OPERATIONS

ECOVA has completed a detailed analysis of the charges placed against our Job Number 821401, "Time Oil Northwest Terminal". Attached is a month by month accounting of the costs incurred which are identified as being part of Task 651 - Experimental Operations. This task was established by Bill Mahaffey in November, 1989 together with those project activities which were a direct result of the solvent interference.

Our intention, when establishing Task 651, was to solve the problem of unanticipated chemicals and their impact on the treatment process. Had we been able to solve the problem and reach the original PCP cleanup level we would have proceeded with site cleanup.

Our July 10, 1990 letter had mistakenly included on-going project activities in November, December 1989, and January, 1990. Prior to November 1989, we conclude that efforts occurring on the site were by and large within the original project work scope. We do view the activities associated with treatment of Batches 4,5, and 6, which began in October, as experimental in nature. However, since Bill did not establish the experimental tasks until November, we have not passed these costs on to Time Oil.

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(212) 682-0882
(212) 661-7873 FAX

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The following summarizes the activities occurring on the site during the time between November 1989 and March 1990 when the Experimental Operations task was in effect. The original description of the activities is to be found in the monthly project reports.

October 1989

Soil was loaded into tanks T1, T2, and T3 (Batches 4,5, & 6) for experimental slurry phase processing (the "experimental" nature of these activities is believed to be justified as a direct result of the poor processing results obtained with Batch 3). This batch signaled problems with solvents and paraffinic material. As a result of miscommunication between the PM (Mahaffey) and site supervisor (Borthen) Batch 3 was discharged dirty. We decided that an experimental approach was warranted to try and resolve the poor treatment observed with the Batch 3 type material. Problems with biodegradation rate changes were observed, leading the project team to carry out experiments with soil washing.

November 1989

Soil washing experimental operations were evaluated during this period. Observations of solvent films and odors were made, and soil washing was observed in some cases to not reduce the PCP concentrations as had the original treatability studies.

December 1989

The 38K Bio-reactor was set up for running thinner slurries and materials from T1 and T3 tanks were introduced. Bench scale soil washing tests were carried out using a spiral classifier, as was a bench scale silt processing bioreactor. Concern that there is an impact of the newly encountered solvents was voiced and further study on the PCP contents of the silt fraction was started.

January 1990

Soil washing feasibility tests continued with evidence being gathered that the solvents were interfering with the washing step by not allowing a reduction below 17 ppm in the experiments conducted.

TOLS001508

BZTO104(e)038329

February 1990

Cleanup to 0.5 ppm appears to be prevented by the solvent interferences as reported in the February monthly report.

March 1990

Site activities are suspended with only routine maintenance work and site support going on in Portland. In summary, we believe that ECOVA invested considerable time and effort in attempting to solve the problem of solvent interference during this effort.

COST OF EXPERIMENTAL OPERATIONS

Enclosed as Attachment A is a summary of monthly costs charged to Task 651 for the months of November 1989 to January 1990 inclusive. We have included all project charges for the months of February and March, 1990 because we believe that all efforts during this time were impacted by the solvents. These charges are for efforts required to respond to the new conditions encountered at the site, for which ECOVA is requesting reimbursement.

Labor charges incurred for the period totaled $56,035. Expenses related to Task 651 totaled $3,255 for the period.

SUMMARY

The Northwest Terminal site soils were successfully excavated and stockpiled for treatment. Our existing contract anticipated the reduction of PCP concentrations in the stockpiled soils to below 0.5 ppm. Unfortunately, neither Time Oil or ECOVA were prepared to deal with over forty additional chemical compounds which were also present in the soil matrix.

These chemicals acted to suppress the biological activity of the treatment process, preventing us from achieving the PCP cleanup goal. In an effort to solve this problem, ECOVA initiated a series of laboratory and field experiments to deal with the additional chemicals.

Through a combination of alkaline washing and biotreatment both in the lab and field, we were able to reduce PCP concentrations to below 17 ppm. Had we been able to reach

the contracted cleanup level, we would have continued with site remediation. It was not our intention to seek reimbursement for these activities had we been successful.

We believe this work represents a significant breakthrough in the treatment of such a mixed waste stream. However, the additional chemicals prevented us from attaining the original PCP cleanup level of 0.5 ppm. The cost of performing this additional work was $59,290. We made a genuine effort to solve an out-of-scope problem under the original contract constraints. We believe that seeking reimbursement of these additional costs is fair and reasonable under these circumstances.

We halted our efforts in the Spring of 1990 and advised Time Oil that a negotiated cleanup level for the soil should be obtained from the Oregon DEQ. We believe that such a cleanup level can be negotiated that we will enable us to complete the project.

Sincerely,

John V. Kinsella, P.G.
Vice President, Operations

cc: Bill Mahaffey
Rod Carr

Attachments

B:821401\sanzo.ltr

ATTACHMENT A

TIME OIL COMPANY
SUMMARY OF ECOVA COSTS
11/89-3/90

PERSON	RATE	NOVEMBER 89		DECEMBER 89		JANUARY 90		FEBURARY 90		MARCH 90		TOTALS	
		HOURS	COST	HOURS	COST	HOURS	COST	HOURS	COST	HOURS	COST	HOURS	COST
BORTHEN	50	64	3200	57	2850	32	1600	21	1050	34	1700	208	10400
MAHAFFEY	95	107	10165	7	665	19	2755	15	1425	0	0	148	15010
MARSHALL	40	6.5	260	0	0	0	0	0	0	0	0	6.5	260
SCHWEIGEL	40	64	2560	0	0	33	1320	50	2000	71	2840	218	8720
BRINKMAN	40	5	200	0	0	3	120	11.5	460	0	0	19.5	780
ENNIS	60	19	1140	3	180	17	1020	19	1140	2	120	60	3600
LOMBARD	30	112.5	3375	36	1080	0	0	0	0	0	0	148.5	4455
MACMURCHIE	40	55.5	2220	58	2320	30.5	1220	18	720	0	0	162	6480
MAZIARZ	70	2	140	0	0	30	2100	0	0	0	0	32	2240
NEIDECKER	70	0	0	1	70	0	0	1.5	105	0.5	35	3	210
MONTOYA	60	0	0	0	0	10	600	0	0	0	0	10	600
SKOGERSON	40	0	0	0	0	30	1200	27	1080	0	0	57	2280
CHERBERG	30	0	0	0	0	1	30	0	0	1	30	2	60
PAULSEN	30	0	0	0	0	14	420	0	0	0	0	14	420
LANCE	60	0	0	0	0	0	0	4.5	270	0	0	4.5	270
KINSELLA	125	0	0	0	0	0	0	0	0	2	250	2	250
EXPENSES		0	550	0	373	0	1181	0	1116	0	35	0	3255
TOTALS		435.5	23810	162	7538	219.5	13566	167.5	9366	110.5	5010	1095	59290

TIMECOST.TBL

BZTO104(e)038332

M E M O R A N D U M

July 9, 1991

TO: ✓Richard Gordon — Seattle
H. Roger Holliday (info) — Seattle
Jock Streidl — Seattle

FROM: Fred Proby — Seattle

SUBJECT: DEQ NEGOTIATIONS ON NW TERMINAL PENTA CLEANUP

Oregon's hazardous waste cleanup rules provide for reimbursement of the state's costs when the Department of Environmental Quality is consulted for oversight of a voluntary cleanup. The DEQ has agreed to negotiate with us. However, the DEQ requires that before they commit staff time to review plans and proposals the voluntary party (Time Oil) must enter into a letter agreement and pay an advance deposit of $5,000. Attached is a letter that explains the background and sets forth the agreement for us to sign.

It was this requirement to pay $5,000 just to talk to the DEQ that caused us in September of 1989 to pursue the "non-involvement option" where we do a cleanup to published levels and sumbit final results to the DEQ. The applicable cleanup level for pentachlorophenol in Oregon is "background" which we interpreted to be the normal detection limit of 0.5 ppm. ECOVA believed, on the basis of their bench tests, that they could meet that level so we hired them to do the job. However, ECOVA's full-scale operations ran into additional chemicals that were not in the samples used for the bench test. It appears that these chemicals inhibit the attainment in the soil of a 0.5 ppm cleanup. The best they can do is 50 ppm.

It is therefore now necessary for us to negotiate a cleanup level that is higher than background. In theory, negotiations are not strictly required. We could push on and try to get DEQ to agree with a higher level after the fact. But that could be a very expensive gamble if they make us dig up the treated soil and run it through again. We will have a better chance of getting the DEQ to accept our results if they are involved in the process.

Accordingly, I request that you sign the attached Letter of Agreement and approve the attached check request.

C:\WP51\FLP\JULY91\PENTA$5K.MO

TOLS001512

BZTO104(e)038333

JUL 8 REC'D

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

July 5, 1991

Fred Proby
Environmental Specialist
Time Oil Co.
2737 West Commodore Way
Seattle, WA 98199-1233

Re: Voluntary Cleanup Agreement
Time Oil Co., Portland Terminal

Dear Mr. Proby:

Enclosed please find two signed, original copies of the Voluntary Cleanup Letter Agreement you requested. Please have both copies signed, retain one for your files, and return the other to me, along with the advance deposit (as specified in the agreement).

Once the signed agreement is received by the Department of Environmental Quality (DEQ), I will contact you to discuss the status of this project. It is my expectation that a complete summary of the work completed to date at the site will be provided to the Department for review. As I recall, you mentioned that ECOVA, the consulting firm working on this project for Time Oil, should be providing you with a report of this type by the end of July. Right now the Voluntary Cleanup Section (VCS) is managing 15 projects and several more, in addition to yours, are expected to begin work with the section within the next month. Therefore it is unlikely that VCS will be able to provide you with a preliminary review of site information before the latter part of August, at the earliest.

I would also like to formally note something which you and I previously discussed over the phone. In order for the Department to assist you with the selection of an appropriate cleanup remedy, it will be necessary for staff of VCS to completely understand and evaluate previous activities performed at the site for the purposes of site characterization. Prior to the selection of a remedy, the DEQ must determine that the full nature, extent and rate of migration of contamination at the site has been completely characterized. To perform this task VCS will evaluate information provided by Time Oil and their consultants, and any other additional pertinent information that may be available at DEQ or elsewhere. If necessary, the Department will request that additional site characterization or other activities be performed, before the

811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696

implementation of any additional cleanup measures. This may require additional soil sampling or the sampling of other media of concern. Further, prior to the selection of a cleanup remedy, the Department is required to provide notice of the cleanup action for receipt and consideration of public comment. Please consider this information carefully because the implementation of these items will likely impact your schedule for the completion of activities at your site.

The Department of Environmental Quality is looking forward to the opportunity to assist you with the resolution of any outstanding environmental issues surrounding your property. If you have any additional questions, or if I can be of any further assistance, please do not hesitate to contact me. I may be reached by phone at 503-229-6712.

Sincerely,

Michael E. Rosen, Manager
Voluntary Cleanup Section
Environmental Cleanup Division

MR:mr
Enclosure

cc: Norm King, ECD/DEQ, Policy and Program Development, w/o enclosure

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

July 5, 1991

MR. JOCK STREIDL, VICE PRESIDENT
TIME OIL CO.
2737 WEST COMMODORE WAY
SEATTLE, WA 98199-1233

SUBJECT: Voluntary Cleanup Agreement
Time Oil Co. Terminal, Portland Site

Dear Mr. Streidl:

This letter responds to your request to investigate and/or clean up contaminated property under the review and oversight of the Oregon Department of Environmental Quality (DEQ) Voluntary Cleanup Program. This letter also serves as an agreement between DEQ and the Time Oil Co. regarding DEQ review and oversight of the investigation and/or cleanup of hazardous substances at your property located at 12005 North Burgard Road, Portland, Oregon. DEQ agrees to review environmental documents submitted by you or on your behalf regarding the investigation and/or cleanup of the above-referenced site. Additional DEQ oversight details will be established upon review of the initial site data.

DEQ requires that persons seeking DEQ review and oversight of investigation and cleanup activities provide a minimum deposit of $5,000.00 as an advance against costs which DEQ will incur. The advance deposit must be in the form of a check payable to DEQ. When you have signed this letter to formalize your request, and your deposit has been received by DEQ, a sub-account of the Hazardous Substances Remedial Action Fund will be established to be drawn upon by DEQ as project costs are incurred.

DEQ project costs will include direct costs and indirect costs. Direct costs include site-specific expenses and legal costs. Indirect costs are defined as administrative, clerical and other overhead expenses allocable to DEQ's oversight of activities associated with your property. Review and oversight costs shall not include any unreasonable costs or costs not otherwise recoverable by DEQ under ORS 465.255.

DEQ will provide you with a monthly statement, a sample of which is attached. Because of the limited scope of work envisioned under this Letter Agreement, accounting details above the level of the sample attached will not be provided by DEQ. In the event project costs exceed the sub-account balance, DEQ will submit to you an invoice for any costs in excess of the advance. In the event project costs do not exceed the sub-account balance, DEQ will refund within 60 days of the close of the project any amount of the deposit remaining in excess of the actual costs, or will apply the remaining amount toward oversight of an administrative agreement for further action, if it is necessary.

811 SW Sixth Avenue
Portland, OR 97204-139(
(503) 229-5696

TOLS001515

DEQ-1

BZTO104(e)038336

Either DEQ or Time Oil Co. may terminate this Letter Agreement by giving 15 days advance written notice to the other. Only those costs incurred or obligated by DEQ prior to the effective date of any termination of this Letter Agreement shall be recoverable under this Agreement. Termination of this Letter Agreement will not affect any other right DEQ may have for recovery of costs under any applicable law.

Time Oil Co. shall hold DEQ harmless for any claims (including but not limited to claims of property damage or personal injury) arising from activities of the Time Oil Co. reviewed or overseen under this Letter Agreement.

This Letter Agreement is not and shall not be construed as an admission by Time Oil Co. of any liability under ORS 465.255 or any other law or as a waiver of any defense to such liability. This Letter Agreement is not and shall not be construed as a waiver, release or settlement of claims DEQ may have against the Time Oil Co. or any other person or as a waiver of any enforcement authority DEQ may have with respect to the Time Oil Co. Terminal Portland Site. DEQ may conduct an audit of all or portions of the investigation and cleanup activities associated with your property.

Michael Rosen is the DEQ Project Manager for the review and oversight of the investigation and cleanup activities associated with your property. Please refer all inquiries to Michael Rosen at 229-6712.

DEQ appreciates your interest in the Voluntary Cleanup Program and looks forward to working with you.

Sincerely,

Michael Downs

Michael J. Downs, Administrator
Environmental Cleanup Division

If the terms of this Letter Agreement are acceptable to the Time Oil Co., please have it executed by an authorized officer in the space provided below and return to us.

Accepted and agreed to this _____ day of_____, 19__.

By: _____

Title: _____

MR:m
VC\SM3725
Attachment
cc: Mike Rosen, VC, DEQ

TOLS001516

BZTO104(e)038337

SAMPLE ACCOUNTING SCHEDULE

Department of Environmental Quality
Accounting Schedule
COMPANY NAME

7/14/88 - 11/30/88

	Current Month (November, 1988)	To Date	
Beginning Balance			- 0 -
Receipts:	$ 0	$ 0	0
Expenditures:			
Personal Services & OPE	$ 0	$ 0	
Attorney General	0	0	
Travel Expenses	0	0	
Services and Supplies	0	0	
Professional Services	0	0	
Indirect Costs	0	0	
Total Operating Expenditures	$ 0	$ 0	0
Balance Due (of Available) at 11/30/88			$ 0

TOLS001517

BZTO104(e)038338

KOPPERS

Interoffice Correspondence

RECEIVED
OCT 19 1981
LOGGING

To D. F. Marion

From J. D. Hite

Location K/801

Location K/1001

Subject Time Oil Company

Date October 16, 1981

I believe it is extremely important that we not procrastinate in making decisions relative to our direction in serving our West Coast millwork business. Along with your evaluations of the Time Oil proposals, we must weigh the cost of servicing that business from St. Louis. The St. Louis production evaluation should include direct tank car or bulk truck delivery to customers from St. Louis as well as production of St. Louis and transportation to a bulk terminal on the West Coast for subsequent transport to customers. We should also look at drum production in St. Louis railing the product to the West Coast for inventory in a warehouse for final distribution to accounts from a contract warehouse.

Obviously, I hope that we are also looking for alternate production locations on the West Coast.

JDH:jw

John D. Hite
Ext. 2445

cc: K. E. Cogan
P. A. Goydan
J. D. Palmer

61

10/19/81 - J. Palmer -
① Will call Alexander and Toby.
② Will have Harold start looking at freight rates for bulk truck and rail movers for products as well as raw materials for St Louis production.

10/24/81 - J. Palmer -
Discussed situation. We will call both Alexander and Toby to obtain proposals for the period between Thanksgiving + Christmas

K43-REV. 5 100M 9-80

KOPPERS

Interoffice Correspondence

To D. F. Marion

Location K/801

Subject Time Oil Company - march

From J. D. Hite

Location K/1001

Date October 16, 1981

I believe it is extremely important that we not procrastinate in making decisions relative to our direction in serving our West Coast millwork business. Along with your evaluations of the Time Oil proposals, we must weigh the cost of servicing that business from St. Louis. The St. Louis production evaluation should include direct tank car or bulk truck delivery to customers from St. Louis as well as production of St. Louis and transportation to a bulk terminal on the West Coast for subsequent transport to customers. We should also look at drum production in St. Louis railing the product to the West Coast for inventory in a warehouse for final distribution to accounts from a contract warehouse.

Obviously, I hope that we are also looking for alternate production locations on the West Coast.

JDH:jw

John D. Hite
Ext. 2445

cc: K. E. Cogan
P. A. Goydan
J. D. Palmer

Western express $2200 - truck load
whole storey? check next week -

10/30 - John Palmer contacting Time & Marion checking with TOBY re: additional blending service.
Strusel - checking on frt rate from St. Louis to pacific northwest.
By wk of 11/23 / should have answer.

63

K43-REV. 5 100M 9-80

TOLS001519

BZTO104(e)038340

KOPPERS

NOV 18 1981

Interoffice Correspondence

To D. F. Marion

From John D. Palmer

Location K/801

Location St. Louis, Missouri

Subject TIME OIL COMPANY

Date ~~NOV 02 1981~~ October 29, 1981

The cost of servicing our West Coast Customers from St. Louis is as follows:

Truck loads of drums can be shipped from St. Louis to Portland, Oregon for a cost of approximately $37.00/drum which equates to $0.67/gallon.

The freight on bulk shipments of Woodtox Preprime by tankcar to Portland would add $0.47/gallon to the product. Using St. Louis manufacturing costs for Woodtox Preprime - T, and adding the freight the cost would be $2.11/gallon. (Present selling price at 21% margin on the west coast is $2.20/gallon).

If we manufactured Woodtox Preprime - T Concentrate and shipped it to a bulk location to be blended with mineral spirits, the final cost of Woodtox Preprime T Ready-to-Use would be $1.851/gallon excluding a blend fee. Assuming a blend and storage fee of $0.10/gallon the cost would still be cheaper than shipping direct to a customer.

John D. Palmer

JDP/pa

cc: Mr. Ken Cogan
Mr. J. D. Hite K/1001
11/17/81 Mr. Paul Goydan K/1001

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TOLS001520

KOPPERS

Interoffice Correspondence

To D. F. Marion

Location K/801

Subject Time Oil Company

From J. D. Hite

Location K/1001

Date October 16, 1981

I believe it is extremely important that we not procrastinate in making decisions relative to our direction in serving our West Coast millwork business. Along with your evaluations of the Time Oil proposals, we must weigh the cost of servicing that business from St. Louis. The St. Louis production evaluation should include direct tank car or bulk truck delivery to customers from St. Louis as well as production of St. Louis and transportation to a bulk terminal on the West Coast for subsequent transport to customers. We should also look at drum production in St. Louis railing the product to the West Coast for inventory in a warehouse for final distribution to accounts from a contract warehouse.

Obviously, I hope that we are also looking for alternate production locations on the West Coast.

JDH:jw

John D. Hite
Ext. 2445

cc: K. E. Cogan
P. A. Goydan
J. D. Palmer

61

TOLS001521

K43-REV. 5 100M 9-80

BZTO104(e)038342

Koppers Company, Inc., Wood Treating Chemicals Department
5137 Southwest Ave., St. Louis, MO 63110
Telephone 314-772-2200

Jim Dunson Info
Sh. File
K

11-9-81

KOPPERS

October 28, 1981

Mr. Neil Gallagher
TIME Oil Company
P. O. Box03117
St. John's Station
Portland, Oregon 97203

Dear Neil:

We are sending to you via surface UPS 100 each truck placards with the number 1993 printed on them.

New D.O.T. regulations have been issued requiring the use of number placards and WAS to be effective November 1, 1981. The effective date, however, has been put off until January 1, 1982.

All of the products you formulate for us fall into the "COMBUSTIBLE' catagory - - flash point over 100 degrees F.

When shipping containers of COMBUSTIBLE products containing less than 110 gallons, such as 55-gallon drums, it is not necessary to placard the truck.

A tanktruck, of course, is over 110 gallons so they must all be placarded. We are supplying the placards since it is the shipper's responsibility to supply appropriate placards to the trucker.

Use of the new placard is authorized now, but you can continue to use the old un-numbered style until December 31, 1981. Then the use of the number placard is mandatory.

Sometimes trucks are equipped with the "flip-type" metal placard but I doubt if many presently have the new numbered type. Placards should be offered/given to the truck driver in all cases and a notation made on the bill of lading: "Four Combustible Placards Tendered."

Neil, thanks for your cooperation in this transition, and if there are any questions whatsoever, please call.

Yours very truly,

TOLS001522

Harold P. Struessel

HPS/me

cc: Ken Luse - - Pam Armbruster - - J. D. Palmer
Don Danka - - Denise Jackson - - Joe Kusar - - Ken Cogan

63

BZTO104(e)038343

Koppers Company, Inc., Wood Treating Chemicals Department
5137 Southwest Ave., St. Louis, MO 63110
Telephone 314-772-2200

DR File

KOPPERS

October 27, 1981

Mr. Neil Gallagher
Time Oil Company
P. O. Box 03117
St. John's Station
Portland, Oregon 97203

Dear Neil:

We are sending to you today via surface UPS a quantity of each of the following NEW labels:

WOODTOX PRE-PRIME-T Ready To Use
WOODTOX PRE-PRIME-T Concentrate
WOODTOX 140-T Ready To Use
WOODTOX 140-T Concentrate
TIMBERTOX 40 Concentrate

Please return to us ALL of your existing stocks of these 5 labels.

The omosis statement under "First Aid" has been changed deleting the recommendation to induce vomiting with salty water. This is another Federal EPA mandate.

Any of these 5 products shipped after November 30, 1981 must bear the new revised label or we will be misbranding.

This was an emergency printing so we are not sending large quantities of these labels. If you feel you need more right away, please advise.

If there are any questions whatsoever about the use of these new labels, please call. THANKS.

Yours very truly,

Harold P. Struessel

HPS/me

cc: Ken Luse
J. D. Palmer
R. Armbruster
Don Danka
Denise Jackson
~~Joe Kusar~~
Ken Cogan

TOLS001523

BZTO104(e)038344

KOPPERS

JUL 0 6 1982

Interoffice Correspondence

To Ken Cogan — From Harold P. Struessel

Location CWC Division K-1001 — Location WTC - St. Louis, Mo.

Subject Tankcar Rates — Date June 30, 1982

You will recall we discussed the possibility of getting lower freight rates for tankcars of Penta concentrate to the West Coast because of the Portland, Oregon situation.

Negotiations with the BN have ended resulting in a new low rate for tankcars of Penta concentrate to the West Coast.

The BN had this commodity rate published in TCFB Tariff 3001-D, Supplement 360, Item6785-A effective 6/30/82. It covers Wood Preservative Liquid..... exceeding 10% but not exceeding 40% by weight of Penta.

In the past, the only rate applicable to such a shipment was $14.30/CWT. The new rates, based on a 60,000 lb. minimum in tankcars is:

From St. Louis, MO
To Northern West Coast - - - - $9.40/CWT
To Southern West Coast - - - - 8.97/CWT

We can also ship this commodity in drums in boxcars at the same rates with a 40,000 lb. minimum weight.

We can make shipments using these rates immediately. If additional information is needed, please call me.

Harold

Harold P. Struessel

HPS/me
cc: P. A. Goydan
J. Kusar
D. F. Marion
J. D. Palmer

63

K-5 REV. 2

TOLS001524

BZTO104(e)038345

Paul Goydan K/1001

KOPPERS

Interoffice Correspondence

To Joe Kusar — From Pam Armbruster

Location — Location

Subject Market Survey — Date Sept. 24, 1982

Copy to office - with minor corrections:

In addition to memo to home, please note the following:

The customer listings for Noxtanes and Lumber Coatings are not complete. This research would take me days of going through invoice files. This should be done, in the case you would need a listing for proper price notification, or notification such as the Survey letter of last month. If this is needed, please let me know.

The sales totals in the attached report indicate the following:

	Year Ending Gallons	Year Ending Dollars
Millwork	355,288	$780,672
Log Home Industry	3460	18,867
Greases (Remedial)	161,944	143,806
Sapstain Chemicals	8,294,546	676,880
Lumber Coatings	684,367	170,302
Penta Wood Treaters	59,425	74,051
		$1,938,629

The miscellaneous products, would make up the balance of $800,000, to give the year end totals around $2,700,000.

Pam

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K-5 REV. 2

TOLS001525

BZTO104(e)038346

WOOD TREATING CHEMICALS - MARKET SURVEY Sales Extrapolated for year Ending 1982

MILLWORK	Production Point	Warehouse Location	FOB Price	FOB Costs	Warehouse/ Gal. Costs	Competitive Product	Production Point	Selling Price	Remarks
East Coast									
Woodtox Preprime RTU Bulk			1.95	1.547	----	Penta 5% WR	Memphis	1.95/gal.	Bulk
Woodtox Preprime RTU Drums			2.90	2.155	----	Woodlife	Kalmazoo	1.97/gal.	Bulk
Woodtox Preprime Conc. Bulk	St.	St.	3.50	2.498	none sold '82	Penta 20% WR	Memphis	3.50/gal.	Bulk
Woodtox Preprime Conc. Drums	LOUIS	LOUIS	4.40	3.105	----				
Woodtox 140 RTU Bulk			1.93	1.473	-----	WRP-146 RTU	Kalmazoo	1.95/gal.	Bulk meets TTW572b.
Woodtox 140 RTU Drums			2.85	2.080	---				
Woodtox 140 Conc. Bulk			3.35	2.325	none sold '82				
Woodtox 140 Conc. Drums			4.05	2.932	---				
West Coast									
Woodtox Preprime RTU T Bulk			2.20	1.792	.0514	Penta 5% WR	Portland	2.15/gal.	Bulk
Woodtox Preprime RTU T Drums			3.45	2.262	.0514				
Woodtox Preprime Conc. T Bulk	PORTLAND	PORTLAND	3.60	2.997	none sold '82	Penta 20% WR	Portland	3.80/gal.	Bulk
Woodtox Preprime Conc. T Drums			4.75	3.468	.0514				
Woodtox 140 RTU T Bulk			2.10	1.634	none sold '82				
Woodtox 140 RTU T Drums			3.10	2.105	none sold '82				
Woodtox 140 Conc. Bulk			3.10	2.470	.0514				
Woodtox 140 Conc. Drums			4.25	2.941	none sold '82				
Tribucide P-75 RTU Drums	St. Louis	St. Louis	3.45	2.380	---				
Woodtreat WB Conc. Drums	St. Louis	St. Louis	22.33	11.003	---	Permatox IPB	Memphis	15.00	1-10 concentrate
						Woodlife II	Kalamazoo	2.00 (or less)	- is RTU product

Warehouse/gallon costs - based on RENT/ Material Handling, charges in warehouse contract, divided by the number of gallons sold, Blending fees at Newark, and Portland locations not included because they are absorbed in the Cost Standards of products produced at those locations.

TOLS001526

BZTO104(e)038347

WOOD TREATING CHEMICALS - MARKET SURVEY -- TO COMPETITIVE PRODUCTS

MILLWORK	Current Selling Price	Chapman Memphis, TN	Chapman Portland, OR	Roberts Consolidated Kalamazoo, Michigan *Oshkosh, Wis. blending	Remarks
East Coast					
Woodtox Preprime RTU Bulk	1.95	Penta 5% WR $1.95/gal. Bulk		Woodlife $1.97/gal.	Koppers has approximately 30% MILLW business nationwide. Roberts Consolidat controls the largestaccount: Anderson Corp. with a "special product" containing VM&P
Woodtox Preprime RTU Drums	2.90	Penta 20% WR $3.50/gal. Bulk			
Woodtox Preprime Conc. Bulk	3.50				
Woodtox Preprime Conc. Drums	4.40				
Woodtox 140 RTU Bulk	1.93			WRP-146 RTU meets TTW572b	naptha, and recently testing on new
Woodtox 140 RTU Drums	2.85			$1.95/gal.	water-based formulation containing Troysa
Woodtox 140 Conc. Bulk	3.35				no results are known.
Woodtox 140 Conc. Drums	4.05				
West Coast					
Woodtox Preprime RTU T Bulk	2.20		Penta 5% WR $2.15/gal. bulk		
Woodtox Preprime RTU T Drums	3.45		Penta 20% WR $3.80/gal. bulk		Our products are competitive in price, but due to penta content - manufacturers are looking for alternatives.
Woodtox Preprime Conc. T Bulk	3.60				
Woodtox Preprime Conc. T Drums	4.75				
Woodtox 140 RTU T Bulk	2.10				
Woodtox 140 RTU T Drums	3.10				
Woodtox 140 Conc. Bulk	3.10				
Woodtox 140 Conc. Drums.	4.25				
Tribucide P-75 RTU Drums	3.45				
Woodtreat WB Conc. Drums	22.33	Permatox IPB$15.00 1-10 dilution		Woodlife II - water based $2.00/gal or less	

*Attached customer lists by product

BZTO104(e)038348

TOLS001527

East Coast — MILLWORK

Woodtox Pre-Prime RTU	BULK		
Burton Enterprises (KSI Building Products)			
Caradco Corp			
Crestline			
Eagle Mfg. Co.			
Klein Co.			
Louisiana-Pacific - Ottawa, Ohio			
Marvin Windows			
Northern Sash & Door			
Rockdale Sash & Trim			
Sealrite Windows			
Vetter Mfg Co.			
Weather Shield		223476 gallons	$437,388
Woodtox Pre-Prime RTU	DRUMS		
Babcoc Co. Inc.			
Barcol Overdoor Co			
Cincinnati Floor			
Crescent Planing Mill			
Dahlgrens, Inc.			
Fimbel Door Corp.			
Heider Manufacturing			
Jamb Patio Doors			
Kentucky Indiana Lumber Co			
Mechanics Planning Mill			
Midwest Body			
Midwest Flooring			
Nudor Corp			
Plymouth Tube Co.			
Port Gibson Wood			
Riechers Body			
Sanford Woodworking			
Umbaugh Building Supply			
Vetter Mfg. Co			
Mahlfeld Mfg.			
Watling Ladder			
Weather Vane Windows			
Zimmerman Co. Inc.		12000 gallons	$15081
Woodtox Preprime Conc.	- DRUMS		
Bond Lumber & MillworkC			
Craftline			
Nolen Products			
North Anson Reel			
Raynor Manufacturing		880 gallons	$4871
Woodtox 140 RTU	- BULK		
New Idea - Div. Avco Corp.		4775 gallons	$7844
Woodtox 140 RTU	- DRUMS		
R & R Pallet		55	$380
Woodtox 140 Conc.	- DRUMS		
Jan Packing Co.		743	$3144

TOLS001528

BZTO104(e)038349

WEST COAST MILLWORK

Woodtox Preprime T RTU - BULK		
American Forest Products Co.		
Beaver Lumber Co.		
Bendix Forest Products		
Cascade Industries		
Clear Pine Molding		
Crown Zellerbach		
Sierra Pacific Ind.		
West Coast Mills	92193 gallons	$202548
Woodtox Preprime T RTU - DRUMS		
Cascade Industries		
Gunning Builders		
Nikkei Moulding		
Vancouver Door	4538 gallons	$15204
Woodtox Preprime T Concentrate - Drums		
Seaman Molding	1403 gallons	$6935
Woodtox 140 T Concentrate - Bulk		
Great Western Chemical	20342 gallons	$58011

TRIBUCIDE		
Webb Co.	3878 gallons	$14348
WOODTREAT WB CONC		
Crestline		
Wayne - Dalton Corp.	1005 gallons	$24918
	355288 gallons	$780,672

TOLS001529

BZTO104(e)038350

WOOD TREATING CHEMICALS - MARKET SURVEY - Sales Extrapolated for Year Ending 1982

LOG CABIN INDUSTRY	Production Point	Warehouse Location	FOB Price	FOB Costs	Warehouse / Gal Costs	Competitive Products	Production Point	Selling Price	Remarks
Woodtreat C8 Conc. 1-4 dilution			3.74	3.15	--	Moody Chemical Zinc/Copper Hydronaphe	Cleveland	14.00	1-10 dilution (1.27/gal)
Woodtreat C81 RTU Drums	St. LOUIS	ST. LOUIS	3.38	2.795	--	and Chapman's PQ-57 - $15.00	Memphis	15.00	1-10 dilution (1.36/gal)
Woodtreat WB Conc. Drums			22.33	11.001	--	same			

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BZTO104(e)038351

TOLS001530

WOOD TREATING CHEMICALS - MARKET SURVEY ---- TO COMPETITIVE PRODUCTS

LOG CABIN INDUSTRIES

	Selling Price	Chapman Memphis, TN	Chapman Portland, OR	Moody Chemical Cleveland, Ohio	Remarks
Woodtreat C8 Conc. 1-4 Dilution	3.74	PQ-57 Conc. (1-10 dilution) $15.00 (1.36rtg)	Same as east.	Zinc/Copper hydronapths $14.00/gallon $1.27/gallon RTU	Woodtreat WB has been found less effective then the penta products previously used. Believe they work as good as the Moody Hydronapths but are more expensive.
WoodtreatC81 RTU Drums	3.38				
Woodtreat WB Conc. Drums	22.33				

BZTO104(e)038352

TOLS001531

LOG HOME INDUSTRY

WOODTREAT C8 Concentrate - Drums		
Danner King		
Ward Cabin Co.		
Laminated Timber Structures	2310 gallons	$12930
WOODTREAT C81 RTU Drums		
Modern Log Homes		
Lok-N-Logs	1140	$5714
WOODTREAT WB - Conc.		
Am Wood	10 gallons	$223.00
	3460 gallons	$18,867.00

TOLS001532

BZTO104(e)038353

WOOD TREATING CHEM. SALES - MARKET SURVEY -- Sales Extrapolated for Year Ending 198-

REMEDIAL TREATMENTS	Production Points	Warehouse Location	FOB Price	FOB Costs	Warehouse/ Gallon Costs	Competitive Products	Production Points	Selling Price	Remarks
			5 gal. pails						
Tritox			.94	.6124	--	Osmose Osmoplastic	Buffalo, NY	1.01	
Polelife TF			.72	.5735	--	Osmoplastic TF Timpreg	Buffalo Memphis	.81 .75	
Polelife TB			.68	.55080	--	Osmoplastic B Timpreg. B	Buffalo Memphis	.81 .77	
Poletreat 15			.68	.5564	--	Pol-Nu 15-15 Pol-Nu 20-20	Memphis Memphis	.74 .78	
Woodtreat AA	ST. LOUIS	ST. LOUIS	.66	.5310	--	Pol-Nu (K-Ban)	Memphis	??	
Copper Treat 00	ST. LOUIS	ST. LOUIS	7.60	4.949	--				
Timbertox D-5	ST. LOUIS	ST. LOUIS	3.65	2.488	--				
Pole-Fume (Stauffers)			8.60	5.80	--				

Selling Price - less 10% Distributor Discounts.

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BZTO104(e)038354

TOLS001533

WOOD TREATING CHEMICALS - MARKET SURVEY - TO COMPETITIVE PRODUCTS

REMEDIAL TREATMENTS	Selling Price Per lb.	Osmose Buffalo, NY	Chapman Memphis, TN	Remarks
Tritox	.94	Osmoplastic $1.01		
Polelife TF	.72	Osmoplastic F .81	Timpreg .75	
Polelife TB	.68	Osmoplastic B	Timpreg B. .77	
Poletreat 15	.68		Pol Nu 1515 .74 Pol Nu 20-20 .78	
Woodtreat AA	.66		Pol Nu Price ?? (K-Ban)	
Copper Treat 00	7.60			
Timbertox D-5	3.65			
Pole-Fume - Stauffers	8.60			

BZTO104(e)038355

TOLS001534

REMEDIAL TREATMENTS

Copper Treat oo RTU	180 gallons	$1368
Woodtreat AA Monongahelia Power Northeast Utilities Potomac Edison	1680 lbs.	$1650
Timbertox D-5 RTU	None	
Pole-Life TF Pee Dee Electric	4320 lbs.	$3297
Tritox (Poletox) S Aspludhn Tree Expert	161946 lbs	$138859
Pole-Fume	495 gal.	$3918

Grease lbs. =	161,944 lbs.	$143,806
Liquid - gallons =	675 gallons	$5286

TOLS001535

61 1

BZTO104(e)038356

WOOD TREATING CHEMICALS - MARKET SURVEY - Sales Extrapolated for Year Ending 1982

SAPSTAIN CHEMICALS	Production Points	Warehouse Location	FOB Price	FOB Costs	Warehouse/ Gallon Costs	Competitive Products	Production Point	Selling Price	Remarks
Liquid Noxtane SS-1	ST. LOUIS	ST. LOUIS ENFIELD ATLANTA	7.90	5.396	Atlanta .14 Enfield .13	Chapman's PQ-8, PQ-10 P100 & P180	Memphis	15.00, 16.00 6.50/7.00	
Liquid Noxtane 1			6.15	4.50	"	Busan 1009 Same Chemtox .70/lb. Chemtox L.	Memphis Same FOB Valdosta	27.50/gal. Same 6.80/gal.	
Timbertreat 625 (55)			14.40	9.674	"	Ambricide Ambrite	Memphis	14.00 15.00	
Timbertreat 625 (5)			15.30	10.103	"	Same	Memphis	Same	
West Coast									
Liquid Noxtane SS - 1 Totes	NEWARK, CA	NEWARK, CA	8.25	5.75	.17/gal.	Chapman Same	Portland	15.00/16.00 5.50/5.80	
Liquid Noxtane SS-1 Drums			7.85	5.46	.17/gal.	Chapman Same	Portland	"	
Liquid Azide 200			11.85	6.18	.17/gal	Chapman Same	Portland	"	

Product Descriptions:
PQ-57 - Copper-8 - water dilutable (1-10) - Works in log home industry
PQ-8 Copper 8 - Emulsifiable (1-200) - Safest product available
PQ-10 Copper 8 + Penta Tetra (sold sawmills) (1-200) - Not too good
P100 - Sodium Tetra/phenylmercuric acetate (1-100) - Seems to work well
P180 - Sodium Penta or Sodium Potasium (1-100) - seems to work well

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TOLS001536

BZTO104(e)038357

	Selling Price	Chapman Memphis, TN	Chapman Portland, OR	Chemical Specialties Valdosta, GA	Buckman Labs Memphis, TN	Remarks
Liquid Noxtane SS-1	7.90	P100 $6.50, P180 $7.00 PQ-8 $15.00 (1-200 dilution)		Chemtox (Permatox 10S). 70/lb.	Busan 1009 $27.50/gallon	Chemical Specialties repacks all Chapman products. Price along Chapman's
Liquid Noxtane 1	6.15	PQ-10 $16.00 (1-200 Dilution		Chemtox L (Permatox 180)	(not being sold-due to failure at L-P)	
Timbertreat 625 (55)	14.40	Ambrocide 14.00		May repackage Chapman product		
Timbertreat 625 (5)	15.30	Ambrite 15.00				
WEST COAST						
Liquid Noxtane SS-1 Totes	8.25		P100 = 5.50 P180 = 5.80 PQ-8 $15.00 PQ10 - $16.00			P100 and P180 taking business away on west coast.
Liquid Noxtane SS-1 Drums	7.85					
Liquid Azide 200	11.85					

BZTO104(e)038358

TOLS001537

SAPSTAIN CUSTOMERS

EAST COAST

TIMBERTREAT625 Conc. (55)

Kimberley - Clark
Briggs Sawmill
Coastal Lumber
Columbia Supply
Conestoga Wood Specialties
Coulbourn Lumber
Dixon Lumber
Endeavor Lumber
Georgia - Pacific
Huber Corp.
Jones Lumber
Lyons Sawmill
Middle Tennessee
Miller Lumber
Sonford Products
Swett International
T&S Hardwoods
Ward Lumber
Koppers Plants

		Actual Gallons	
	Atlanta	1485	$21995
	Enfield	743	10993
	St. Louis	5033	65969
		7261	

X 161 RTU gallons

Ready-to-Use gallons 1,169,021 gal. $98,956.

TIMBERTREAT 625 Conc. (5)

Schaller Hardwoods
Southside Lumber
Suffolk, Forest Products

Atlanta	--	--
Enfield	8	120
St. Louis	75	1206
	13,363	$1326

LIQUID NOXTANE 1 (55)

Atlanta	7508	44804
Enfield	9323	60089
St. Louis	10890	63803
	27721	$168696

X 81 RTU gallons

Anderson Lumber
Ball Lumber
Beasley
Bemis Hardwoods
Benfield
Buckeye
Central Ash
Dallison Lumber
Daughtrey Brothers
Georgia - Pacific
Kimberly - Clark
Keadle Brothers
Jones Lumber
Middle Tennessee
Little Suwanee
Miller Lumber
Mitchell Lumber
Koppers Plants

2,245,401 $168,696

TOLS001538

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BZTO104(e)038359

SAPSTAIN CUSTOMERS

EAST COAST (Continues)-

LIQUID NOXTANE SS-1

	Actual Gallons	$
Atlanta	2310	18065
Enfield	3548	28743
St. Louis	4125	24597
	9983	$83604

X 101 RTU Gallons

1,008,283

Beasley Lumber
Continental Forest
Corbett Lumber
Elliott Sawmills
Georgia - Pacific
H&H Lumber
Jones Lumber
Kimberly Clar
Lewis Lumber
Link Taylor
Plumly Lumber
Red Hill Chip
Sheffield Lumber
Tollerson Lumber
Vaughan Basset
Webb Furniture
Weyerhaeuser
Williamston Supply
Wood Lawn Lumber
Koppers Plants

WEST COAST

LIQUID AZIDE 200 (shipped from west)

Dixon Lumber
Elkin Furniture
Mitchell Lumber
Thomasville Furniture
Vaughan Basset
Vaughan Furniture
Webb Furniture

West Coast customers

Cascade Industries
Reliable Hardware
Snider Lumber
Wickes Forest Products — 5528 gallons — $59087

TOLS001539

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BZTO104(e)038360

SAPSTAIN CUSTOMERS

WEST COAST Continued

LIQUID NOXTANE SS-1 TOTE BINS

Capitol Industrial Supply
Cascade Industrial Supply
Reliabe Hardware
Weyerhaeuser - all locations
Wickes Forest Industries
Yancey Lumber Co.

11385 $84198

LIQUID NOXTANE SS-1 DRUMS

Capitol Industrial Supply
Cascade Industrial Supply
Louisiana - Pacific
Reliable Hardware
Snider Lumber
Weyerhaeuser
Yancey Lumber

26565 181013

Sub Totals LNSS-1 37,950 $265,211
X 101 = 3,832,950

TOTAL Sapstain

8,294,546 $76,880

TOLS001540

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BZTO104(e)038361

WOODTREATING CHEMICALS - MARKET SURVEY - Sales Extrapolated for Year Ending 1982

LUMBER COATINGS East Coast	Production Point	Warehouse Location	FOB Price	FOB Costs	Warehouse Gallon/Costs	Competitive Products	Production Points	Selling Price	Remarks
End Sealer - Clear 53			3.00	2.179	--	Seal Tite 60	Memphis	Competitive	
End Sealer - Clear 5			4.85	3.697		and Chem Seal	Valdosta	"	Chapman has
End Sealer - Green 55			3.35	2.759					new Sealer on
End Sealer - Green 5			5.15	3.772					market -
End Sealer 55 Red			3.35	2.74					Sealtite Therm
End Sealer Red 5			5.15	3.753					Used in DryKiln
End Sealer Blue 55			3.65	2.462					without melting.
End Sealer Blue 5			5.25	3.575					Price $7.50/gal
West Coast									we have no
End Sealer Clear Totes			3.80	2.473	.17/gal.	Mobil Slur	N. California	Competitive	competitive
End Sealer Clear 55			3.30	2.336	.17/gal.				product.
End Sealer - Red 55			4.15	2.653	.17/gal.				
---Beam Sealer KLB 55	St. Louis	St. Louis	3.50	2.589		Thompson WS	Mississippi		
End Spray Yellow 5		St. L & E	7.40	4.461	.13/gal. E	Chapman ES	Memphis	Competitive	
End Spray Red Orange 55		St. Louis	8.30	4.333					
End Spray Green 55		St. Louis	6.85	4.943					
End Spray Green 5		St. L. & E	7.55	5.127	.13/gal. E				
End Spray Red 55		STL, E and A	7.50	4.567	.14/A and .13				
End Spray Red 5		STL & E	8.25	4.751	.13/gal. E				
Lumber Coat Yellow 55		STL/A/E	7.70	5.526	.14/A and .13	Millbrite 50 Clear	Memphis	5.75	Our products
Lumber Coat Yellow 3		"	9.95	6.511	.14/A and .13				competitive in
Lumber Coat Clear 3		"	6.00	3.307	"				Colors - but
Lumber Coat - Dry - Clear bags		"	86.40	59.63	"				most sales in
Lumber Coat - Dry - Yellow bags		"	160.00	125.68	"				Clear - Only
Lumbrella 25 Brown 55		"	7.45	5.53	"				competitive pro
Lumbrella 25 Cherry-tone (55)		"	7.55	4.635	"				uct is our
Lumbrella RW (55)		"	9.10	5.16	"				LumberCoat
Lumbrella RW (3)		"	8.85	6.766	"				Dry product
Lumbrella 33 Clear (55)		"	6.75	3.281	"				
Lumbrella 33 Clear (3)		"	7.20	4.870	"				
Lumbrella 33 Yellow (55)		"	7.45	4.88	"				
Lumbrella 33 Sherry Tone (55)		"	6.65	3.772	"				
Lumbrella 25 Golden Pine (55)		"	9.50	6.937	"				

BZTO104(e)038362

TOLS001541

LUMBER COATINGS

East Coast	Selling Price	Chapman Memphis	Chemical Specialties Valdosta, GA	Mobil Oil N. California	Remarks
End Sealer - Clear 53	3.00				
End Sealer - Clear 5	4.85	Seal Tite 60	Chem Seal	Mobil Shur	Pricing Competitive
End Sealer - Green 55	3.35	competitive	competitive	competitive	
End Sealer - Green 5	5.15				
End Sealer 55 Red	3.35				
End Sealer - Red 5	5.15				
End Sealer - Blue 55	3.65				
End Sealer Blue 5	5.25				
West Coast					
End Sealer Clear Totes	3.80				
End Sealer Clear 55	3.30				
End Sealer - Red 55	4.15				
Beam Sealer KLB 55	3.50				
End Spray Yellow 5	7.40				
End Spray RO 55	8.30	Chapman End Spray			
End Spray Green 55	6.85				
End Spray Green 5	7.55				
End Spray Red 55	7.50				
End Spray Red 5	8.25				
Lumber Coat Yellow 55	7.70				
Lumber Coat Yellow 3	9.95	Millbrite 50 Clear	Woodgard - Clear		
Lumber Coat Clear 3	6.00	5.75/gallon	$5.75/gallon		
Lumber Coat - Dry Clear Bags	86.40				
LumberiCoat - Dry Yellow Bags	160.00				
Lumbrella 25 Brown 25	7.45				
Lumbrella 25 Cherry - tone (55)	7.55				
Lumbrella RW 55	9.10				
Lumbrella RW 3	8.85				
Lumbrella 33 Clear (55)	6.75				
Lumbrella 33 Clear (3)	7.20				
Lumbrella 33 Yellow (55)	7.45				
Lumbrella 33 Cherry Tone 55	6.65				
Lumbrella 25 Golden Pine 55	9.50				

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BZTO104(e)038363

TOLS001542

ST COAST

LUMBER COATINGS

END SEALERS

Clear	53	2063	6789
	5	68	351
Green	55	2333	7801
	5	45	252
Red	55	990	3384
	5	38	210
Blue	55	2805	9510
	5	53	299
		8395 gallons	$28596

Cloud Co
Independent Stave
Lewis & Clark Sawmill
McIlvan Co.
Midwest Veneer
Missouri Valley Walnut
Perryville Stave
Raynor Manufacturing
Rich Wood
Sutton Products
Timber Export
Warford Mills
Washington Trade
Koppers Plants

END SEALERS - West Coast

Clear Totes		3708	11979
	55	3960	11091
Red	55	1568	5529
		9236	28599

Reliable Hardware
Capitol Industrial
Cascade Industrial
Great Western

BEAM SEALER

55's	3355	12439

Structural Wood
Koppers Company

20986	$69634

TOLS001543

BZTO104(e)038364

LUMBER COATINGS

END SPRAYS (1-12 dilution)

Yellow 5's	225	1544
Red/orange 55	248	1545
Green 55	248	1656
5's	853	5877
Red 55's	375	2865
5's	338	2439
	2287	15926
x 12 =	27,444	

Kimberly Clark
Georgia - Pacific
Augusta Wood Pres.
Mann & Parker
Tolleson Lumber
Perry Lumber
Continental Forest
Potomac Supply
Ramsey Lumber
Union Camp

TOLS001544

BZTO104(e)038365

LUMBER COATINGS

Lumber Coat Yellow (55)	180	719
(3)	243	1096
Clear (3)	122	473
	545	$2288
	X 51 RTU gallons = 27,795	

Lumber Coat - Dry - Clear Bags	387840 gallons	$41466
Lumber Coat - Dry - Yellow Bags	6464 gallons	$1372
Lumbrella 25 Brown 55	165	1280
Lumbrella 25 CT 55	825	4002
Lumbrella 33 R W (55)	1806	11138
Lumbrella 33 RW (3)	243	2235
Lumbrella Clear 55 (33)	825	611
Lumbrella 33 Clear 3	1458	10460
Lumbella 33 Yellow (55)	165	1175
Lumbrella CT (55)	825	4002
Lumbrella 25 Golden Pine 25	413	3569
	213837 RTU	$ 38472
Total	635,937 gallons	$84,742

SALES OUT OF WAREHOUSES (INCLUDED IN ABOVE TOTALS)

ATLANTA		
Lumber Coat Conc. Yellow (3 gal.)	12150 RTU Gal	1655
Lumber Coat Clear (3)	6197	710
Lumber Coat Dry Clear	290,880	31749
Lumbrella 33 C. (3)	8415	1887
	317,642	35,990
ENFIELD		
Lumber Coat Dry - Clear	96960	9717
Lumberlla 33 RW	2805	497
Lumbrella 33 Clear	24786	5013
Lumbrella CT 33	28050	4002
	152601	19223

Customers

Lumber Coat - Yellow

Continental Forest

Corbertt

Lumber Coat Dry

Balfour Lumber

Contental Forest

G-P

Ingream Lumber

Younce Lumber

Lumbrella Products

Coastal Lumber

Continental Forest Industries

G-P

Hallman

Harrison Lumber

Ingram Lumber

Potomac Supply

Union Camp.

TOLS001545

BZTO104(e)038366

WOODTREA[illegible] - MARKET SURVEY - Sales Extrapolated for Year Ending 1982

Penta Wood/Pressure Treaters	Production Points	Warehouse Location	FOB Price	FOB Costs	Warehouse/ Gal/Costs	Competitive Product	Production Point	Selling Price	Remarks
Penta Wood 5%	St. Louis	St. Louis	1.335	1.10	--	Simonsen 5%	Cabool	1.335	
Timbertox 71/2% RTU	St. Louis	St. Louis	1.35	1.18		Simonsen 7%	Cabool	1.35	

	Selling Price	Simonsen Cabool, MO	Idacon Houston TX	Chapman Memphis, TN	Remarks
Penta 5%	1.335 delivered	Simonsen 5% 1.335 delivered Simonsen WR Aqua-Conc. 30% 1-9 dilution 13.50/gal.	Idacon 32% 13.50/gal 1-9 dilution Idacon 5% Penta 1.31/gal. del.	Chapman Penta RTU 1.40/gallon (oil) Chapman Penta Emulsifiable Concen. 13.50/gal. 1-9 dilution with water	
Timbertox 7 1/2% Penta	1.35 delivered	Simonsen 7% 1.35/gal. delivered			

Have found 8 water penta plants	.30 T/L a year (4000 gal. conc. each)	120,000 gallons or	$1,620,000
34 oil penta plants	230 T/L a year (6000 gal. RTU each)	1,380000 gallons or	$1,842,300
			$3,462,300

We have sold todate - 59425 gallons and $74.051 of chemical - or now have 4% of this business.

BZTO104(e)038367

TOLS001546

cc: Don Marion

KOPPERS

Interoffice Correspondence

To Paul Goydan — From J. D. Palmer

Location K-1001 — Location St. Louis

Subject Time Oil Contract — Date 3-12-83

Attached is ~~etc~~ my corrections on the draft contract

Also Attached are various formula sheets w/ cost for Wdtx PP T.

I have made the assumption that the facility Rental is $800/mo. To arrive at a per gal cost I used 8000 gal/mo. and used a multiplier of 1.5 times that 10% as there is not an assigned overhead factor for St. Louis in any other calculation

Formula sheet # 1 is Wdtx PP RTU made in Portland with Raw materials using current costs from Time Oil (copy of Mar. invoice attached.

Formula sheet # 2 is Wdtx PP T Conc made in St Louis and shipped to Portland by rail car.

Formula sheet # 3 is Wdtx PP-T RTU blended from # 2 in Portland using the costs we discussed with Time Wed + Thurs.

Formula Sheet # 4 is an idea George and I put together last year for Wdtx 5 made so that it can be made into Wdtx PP-T RTU.

Formula sheet # 5 is Wdtx PP-T RTU blended from # 4 using costs from # 3

This formula # 4 + 5 need farther study please call + discuss

J Palmer

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K-6 REV. 2

TOLS001547

BZTO104(e)038368

D. Marron SEND COPY TO: N. WALLIS

KOPPERS

Interoffice Correspondence

To J.D. Palmer — From G.B. Mills

Location St. Louis, Missouri — Location St. Louis, Missouri

Subject Special Woodtox Preprime Concentrate for Time Oil Blending into Woodtox Preprime RTU — Date May 19, 1983

The current Woodtox Preprime Concentrate is limited in concentration to a 1 to 4 by volume dilution rate because it is at its maximum paraffin wax concentration for normal temperatures and slightly cooler (min. 40 ^{0}F) temperatures in respect to easy handling properties. It would not be economical to ship this product to Portland, Oregon for RTU blending purposes.

It was decided to develop a maximum concentration product by omitting the paraffin wax, and to add this component at the time of RTU letdown of the concentrate.

Blends were prepared and in testing it was found that the maximum feasible concentration formulation was as follows:

	Weight Percent
Penta	32.5
Oxobottoms	50.0
Nalco 6RJ 947	2.0
KB-3	15.5
	100.0

This formulation is a 1 to 7 v/v dilution concentrate using mineral spirits weighing 6.4 to 6.5 pounds per gallon.

Properties:

Lbs/gal @ 60 ^{0}F ---------- 8.77
Pour Point ---------- less than -10 ^{0}F
Color ---------- Amber
Flash Point (TCC) ---------- min. 150 ^{0}F

KS REV. 2 61

TOLS001548

BZTO104(e)038369

Special Woodtox Preprime Concentrate ----

Properties of 1 to 7 RTU Letdown (with incorporation of 0.75% w/w paraffin wax) :

Color ----------Light amber
Blooming ---------- Passes test
NWMA Water Repellency ----- 81.1 % Efficiency
Mill Primer Test:
PPG Primer ---------- Passes on drying and adhesion
Sherwin Williams Primer ---- " " " " "

Steel Wool Corrosion --------Passes test

Ready-to-Use Letdown Formulation:

	Weight Percent	Gallons
1 to 7 Concentrate	16.19	1.846
Paraffin Wax (125-130 mp)	0.75	0.100
Mineral Spirits (fast dry)	83.06	12.978
	100.00	14.924

Lbs/Gal = 6.76

In the present setup at Time Oil, the paraffin wax can easily be incorporated by adding directly to the kettle, adding sufficient mineral spirits to cover the coils, heating to minimum of 160 ^{0}F to dissolve the wax, and then adding the balance of the mineral spirits and concentrate, with no additional heat being required.

Samples are being prepared and can be furnished to salesmen for customer evaluation.

G.B. Mills

cc: P.A. Goydan
K. Cogan
D. Marion
W. Baldwin
H. Struessel
J. Kusar

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FROM:

Donald F. Marion
Koppers Company, Inc.
724 Koppers Building
Pittsburgh, PA 15219

Customer Number, if any:

TO:

N. Wallis
Time Oil Company
12005 N. Burgard Street
Portland, OR 97203

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Label 11-B, Jan. 1983 ★ U.S.G.P.O. 1982-384-133

EXPRESS MAIL NEXT DAY SERVICE

POST OFFICE TO ADDRESSEE

ORIGIN:

Initials of Receiving Clerk: ST

P.O. ZIP Code: 15219

Date in: 5-20 | Time in: 16:00

Return Receipt Service
- [ ] To Whom & Date Del
- [ ] To Whom, Date & Address of Del

Weight: 1 Lbs

Postage & Fees $ 9.35

B 11347295

SERVICE GUARANTEE: Domestic mailings under this service made at designated USPS facilities on or before a specified deposit time will be accepted for express shipment to a designated USPS delivery area having Express Mail service for next day delivery to an addressee or agent on or before the time specified by the USPS at mailing. USPS will refund upon application to the mailing office, the postage for any shipment made under this service and not meeting the service [illegible] delay or strike or work stoppage. See USPS Notice 63 for details.

INSURANCE COVERAGE: See USPS Notice 63 for exclusions of coverage. [illegible] Non-negotiable documents are [illegible] damage or rifling up to $500,000 per piece subject to a limit of $500,000 per occurrence. [illegible] are insured against loss damage [illegible] of $500.

- Signature is required upon delivery.
- Claims for delay, loss, damage or rifling must be made within 90 days. Claim forms may be obtained at the post office of mailing.
- This receipt must be presented when a claim is filed.

EXPRESS MAIL SERVICE

Customer Receipt

REMOVE COPIES 1 & 2

TOLS001550

BZTO104(e)038371

KOPPERS

Interoffice Correspondence

To Wayne Hartman — From W. J. Baldwin

Location K-1201 — Location K-927

Subject Time Oil Company — Date July 11, 1983

I realize you are extremely busy in Maryann's absence, however, due to impending need, I would appreciate your immediate attention to my June 1 correspondence, same subject. Please note that it has been suggested that the formulation information, on the left hand column of the draft label, be deleted. I concur with this comment and propose that a "." (period) be placed after "establishment number 33760-OR-01", the formulation information deleted and the label continue with "storage and disposal".

Upon receipt of your comments, I suggest that St. Louis initiate printing of this label so that there is no delay in the rail car shipment of this product to the West Coast.

W. J. Baldwin

WJB:cg

cc: J. D. Palmer - St. Louis
D. F. Marion
J. J. Kozak
G. B. Mills - St. Louis

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D. Marion K-724

KOPPERS

Interoffice Correspondence

To W. J. Baldwin — From Harold P. Struessel

Location F. P. Gr. K-927 — Location WTC - St. Louis, Mo.

Subject TIME OIL COMPANY — Date August 10, 1983

This is in reference to your memo of June 1, 1983 regarding the non-registered label for "PRE-PRIME 1-7 CONCENTRATE" to be used on shipments to TIME OIL COMPANY for further dilution to make WOODTOX.

Has this label been finalized? Were there any changes to the draft label attached to your June 1 memo?

We would like to get the typeset work, etc. done so we will have the label available for use when needed.

Harold P. Struessel

HPS/me

cc: M. S. Marino
G. Mills
J. D. Palmer
D. F. Marion
J. J. Kozak

Harold,
Copy of MS Marino's 7/28 note attached. The ball is in your court!

61

Bill B
8/15

cc MSM
G. Mills
JDP
DFM
JJK

TOLS001552

BZTO104(e)038373

To Don Marion
K-724
Time Oil Proposal

From J. D. Palmer
St Louis
3-6-84

Don, ~~this~~ previously discussed
The improvements at Time Oil will be the property of Time Oil.

Also the facilities will cost more than the $60,000 quoted to me.

We can lower the monthly fee by switching to a 5 year contract.

We also could pay a monthly fee based on actual costs whether they be higher or lower than $90,000.

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We need to have Ken Cogan or another engineer estimate the construction costs.
The following two pages will be helpful in estimating. One sheet is of the tank layout + piping. The other is of the truck loading rack

3/6/84 - Discuss with Ken Cogan and advise J.D. Palmer.
3/6/84 - Mail to Bose, CC to Ken Cogan Express mail today.

JP
Per KEC on 3/6/84.
3/7/84 - John Palmer will send to Bose + Cogan.

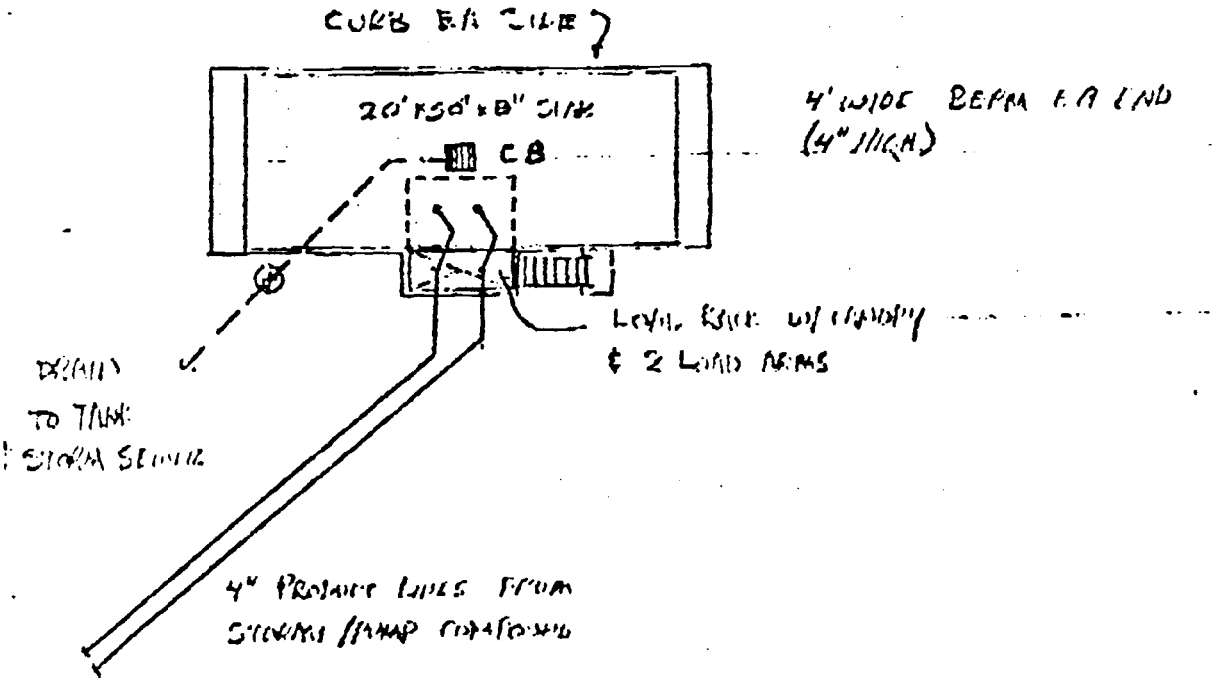
TOLS001553

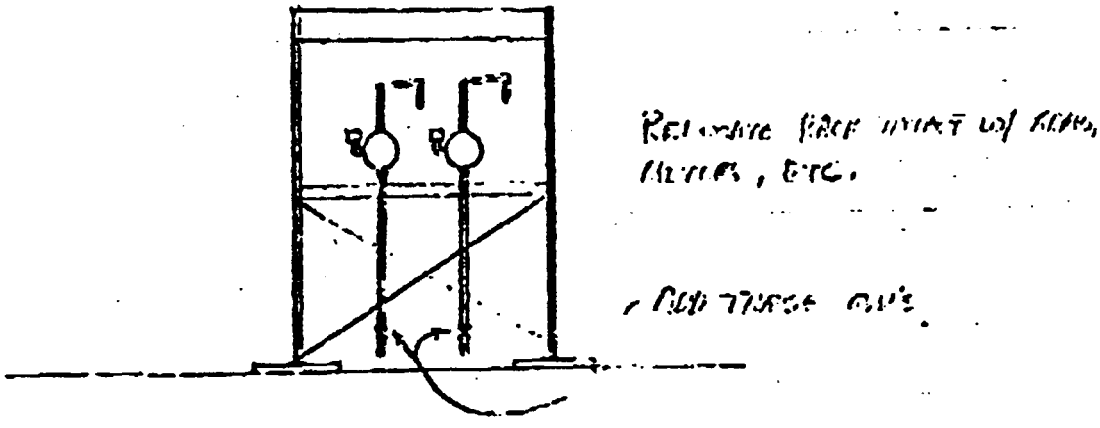
BZTO104(e)038374

Don Marion
K-724

1/25/84

LOAD RACK - WOODTREATING - NOTTARS



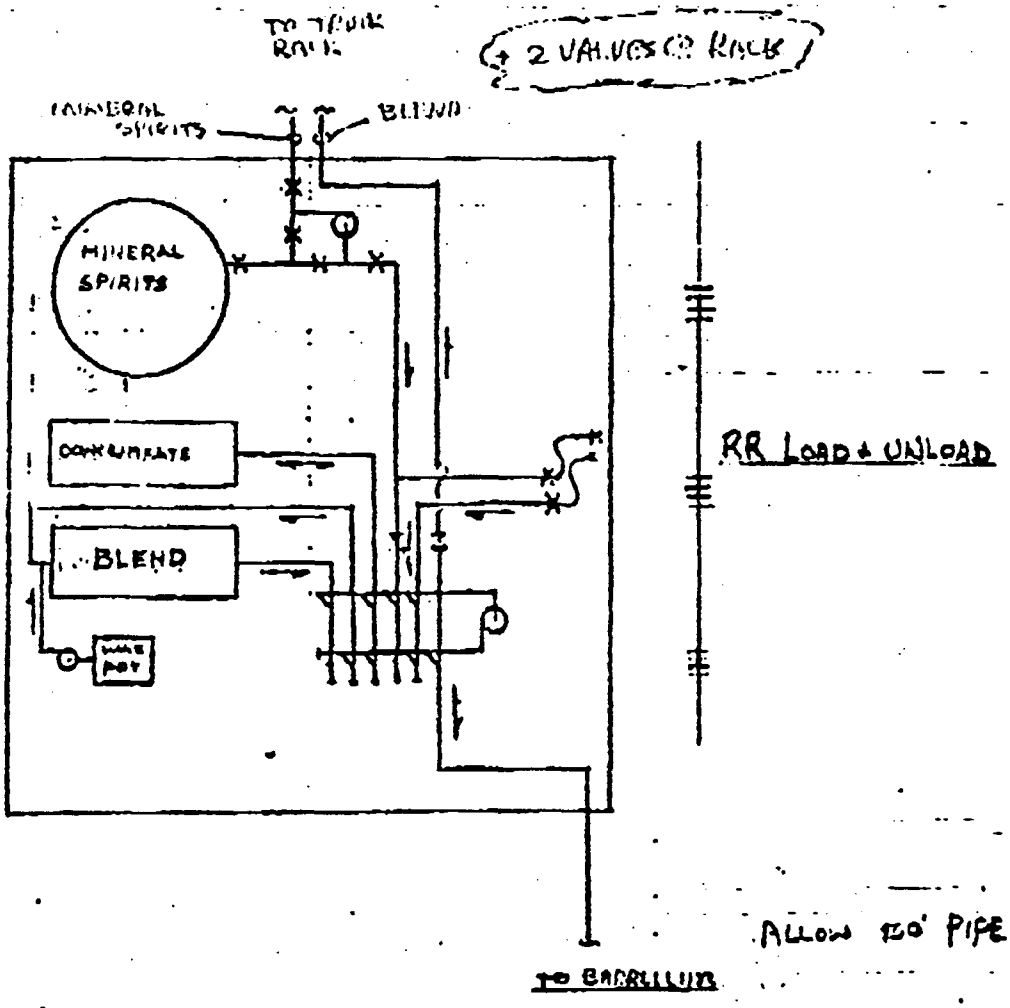


TOLS001554

BZTO104(e)038375

Don Merion

FLOW PLAN SCHEMATIC - WOODTREATING



TRANSFER OPERATIONS

RAIL CAR TO:	MINERAL SPIRITS CONCENTRATE
MINERAL SPIRITS TO:	BLEND TRUCK
CONCENTRATE TO:	BLEND BARRELLING
BLEND TO:	BARRELLING TRUCK ...
WAX POT TO:	BLEND

61

KOPPERS

Interoffice Correspondence

3 12 1984

To Frank Boge

Location Conley, GA

Subject Time Oil Modifications

From J.D. Palmer

Location St. Louis, MO

Date March 7, 1984

Ken Cogan has asked me to send you this diagram for the modifications at Time Oil in Portland.

Please estimate the costs of this project.

I need this information by Monday, March 12, as I have a meeting with John Hite to discuss these costs on Tuesday, March 13.

If you have any questions, please call me.

One sheet is the general flow diagram and the other is for a truck loading rack.

Thanks,

John

JDP/mp
cc: Ken Cogan
Don Marion
Encl.

61

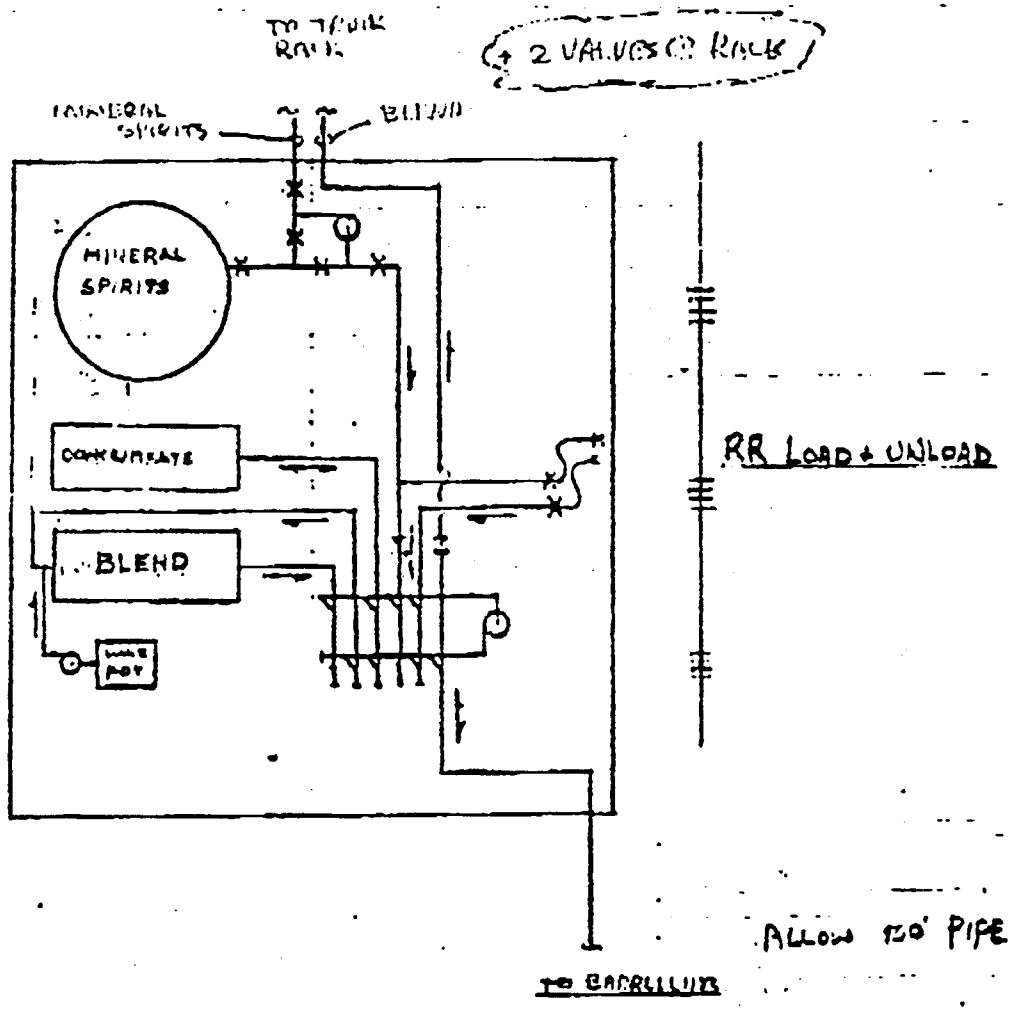
K 5 REV 2

TOLS001556

BZTO104(e)038377

Don Merion

FLOW PLAN SCHEMATIC - WOODTREATING



TRANSFER OPERATIONS

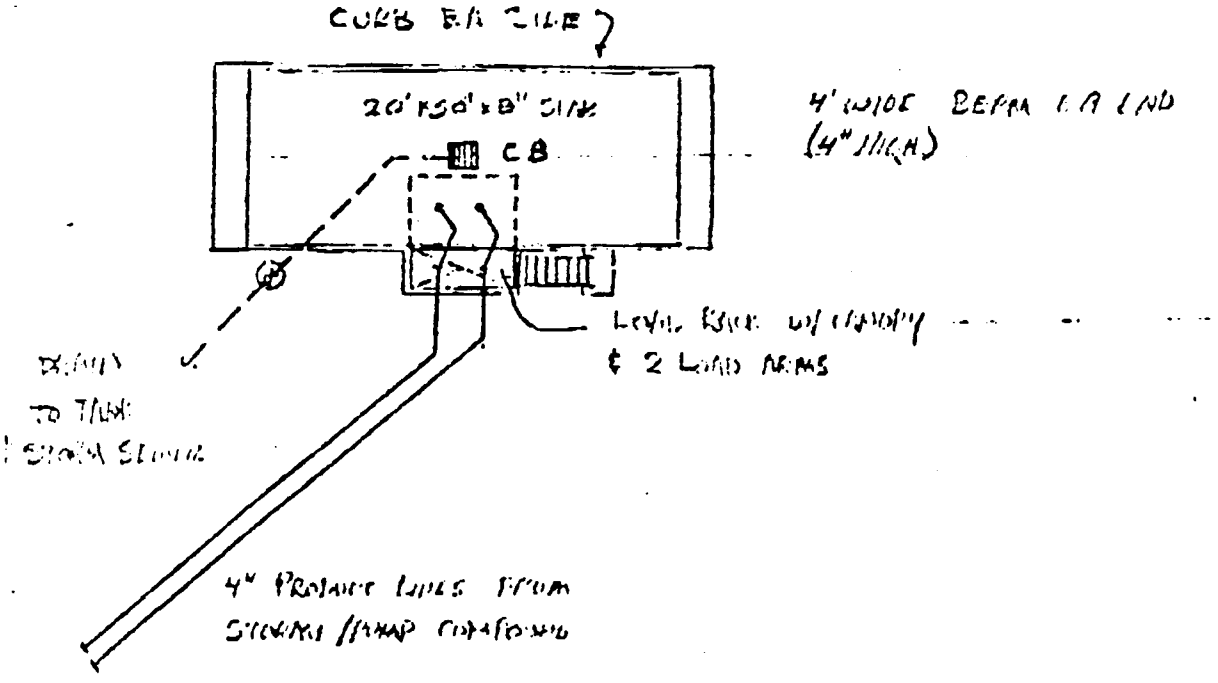
RAIL CAR TO:	MINERAL SPIRITS CONCENTRATE
MINERAL SPIRITS TO:	BLEND TRUCK
CONCENTRATE TO:	BLEND BARRELLING
BLEND TO:	BARRELLING TRUCK
WAX POT TO:	BLEND

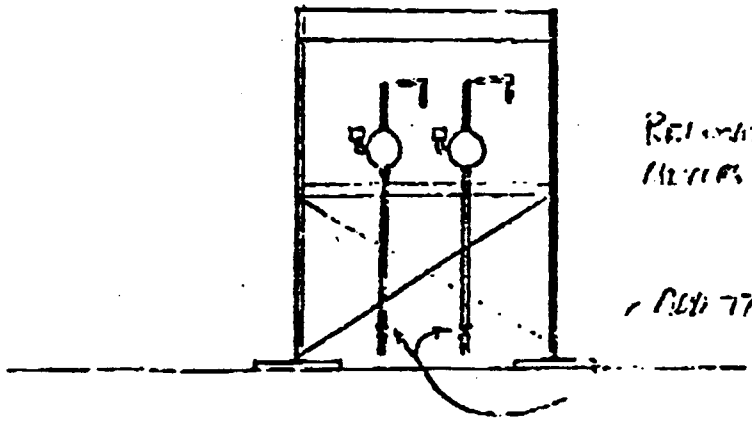
61

Don Marion
K-724

1/25/84

LOAD RACK - WOODTREATING - MOTORS





TOLS001558

BZTO104(e)038379

cc: W. Baldwin
G. Ringeling *
D. Marion - *
G. Mills *
T. Marr

*attachments

KOPPERS

MAR 29 1984

Interoffice Correspondence

To John Palmer

Location St. Louis, MO

Subject Profile sheet for Time Oil
Penta sludge FPE Req. #3

From Chuck Vita

Location Pittsburgh

Date March 28, 1984

Attached is the completed profile sheet (NWP-D39854) for the tank bottoms clean out at Time Oil in Portland. Please note that Mr. John Denham (Time Oil) has given me Time Oil's Portland, Oregon USEPA I.D. # for use in the clean-up.

Please review all attached information, and if you do not see any problems, follow the Waste Management instruction sheet that is attached to the profile sheet.

In addition to providing the technical information on the profile sheet, Bill Baldwin has informed me that George Mills has in his possession a representative sample of the Time Oil tank bottoms at the St. Louis plant. Please have George (or yourself) review and complete the certification document that accompanies the profile sheet.

The sample and profile sheet should be shipped together along with a short cover letter ASAP to:

Mr. Mike Zabel, Site Chemist
Chem-Security Systems, Inc.
(A Chemical Waste Mg't. Company)
Star Route
Arlington, OR 97812

Please send a photocopy of the profile sheet to:

Mr. Bill Van Dyke, District Sales Mg'r.
Chem-Security Systems, Inc.
(A Chemical Waste Mg't. Company)
P.O. Box 1269
Portland, OR 97207-1269

Also note that in addition to the MSDS for Penta (already attached) MSDS' for the other applicable chemical components should be attached for the landfill's reference.

If you have any questions regarding the above, please contact me at your earliest convenience. Thanks for your help.

Chuck Vita

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K-5 REV 2

PS: UPS pkg. #4 is required for penta shipped via UPS. Attached are specs. Can be obtained from Labelmaster (800) 621-5808.

TOLS001559

BZTO104(e)038380

KOPPERS

Interoffice Correspondence

MAR 29 1984

To Greg Ringeling — From Chuck Vita

Location K-801 — Location K-1201

Subject Time Oil Penta Tank Clean-Out FPE Req. #3 — Date March 28, 1984

The profile sheet and sample for the penta tank bottoms clean-out at Time Oil in Portland, Oregon should be received shortly by Chem-Security Systems (Chemical Waste Management).

The current rough estimate of the amount of waste is around 700 gallons, however, it could top off at around 1,700 gallons.

Please call the following firms for bid purposes:

1. Chem-Security Systems (Chemical Waste Management)
   Contact: Bill Van Dyke (503) 223-1912
   Note: Please have CSS bid removal, transportation, and disposal, separately.

2. Crosby & Overton
   Phone: (503) 283-1250

3. Wescomp Services, Inc.
   Contact: Paul Hopkins (503) 684-3066

Also, as a suggestion, Mr. Henry Rassi, the Superintendent of Koppers Organic Material Northwest Terminal, located in Portland (503) 286-3681 could be contacted to help develop further leads in this project.

Your help in the expedition of this clean-up project would be appreciated, if you have any questions, please call me at 2767.

Chuck Vita

Chuck Vita

CJV:cg
cc: W. J. Baldwin
J. D. Palmer - St. Louis
D. F. Marion - K-7
T. A. Marr
FILE - Portland (Time Oil) File
M. R. Urbassik

61

K-5 REV. 2

TOLS001560

BZTO104(e)038381

KOPPERS

Interoffice Correspondence

To Joe Kusar

Location K-750

Subject TIME OIL AGREEMENT

From D. W. May

Location K-750

Date June 13, 1984

JUN 1 4 1984

A complete report will be written in the near future providing the details of our decision concerning signing a contract to have Woodtox Preprime T manufactured at Time Oil Company. We have decided that it is in Koppers' best interest to produce this product in St. Louis. I project the sales of the product to be at 60,000 gallons in bulk, and an additional 10,000 to 20,000 gallons in drums for 1984. This small volume does not justify the $90,000 expense to have the material produced at Time Oil. We have decided to make bulk shipments direct from St. Louis and to find a low cost warehousing location for drum material on the West Coast. We will consider storing the drums at Jones Hamilton as well as manufacturing the product at Jones Hamilton and also look at potential warehouse sites nearer to the customer's plant.

One of the major drawbacks in manufacturing the product at St. Louis is the high freight cost of $0.65/gallon to move it in a bulk shipment to the customer's plant on the West Coast. The actual cost to produce in St. Louis based on the latest accounting procedures and estimated results of labor negotiations on the contract, etc., is $1.49/gallon. Including the $0.65 for freight, this gives a delivered cost to Koppers of $2.14 to the customer. Don Marion is going to concentrate on finding a way to reduce the freight cost since it represents approximately one third of the total delivered cost. Producing the product at Time Oil would have a cost of $1.92/gallon plus approximately $0.08/gallon freight to the customer, or a delivered cost of $2.00/gallon compared to $2.14 out of St. Louis with new economics. Due to the low volume sales of Woodtox Preprime T on the West Coast, there is only $0.12 absorption involved and is not the main factor for making the decision not to use Time Oil. The main factor was the low volume sales and the high cost ($90,000) to get the product made at Time Oil.

Before the decision becomes final, we wanted to give you and John Hite the opportunity to ask additional questions and/or change our decision. Please give us your final decision as soon as possible since it is essential that we get notice back to Time Oil.

D W May

D. W. May

61

DWM/mbm

cc: J. Hite
D. Marion
J. Palmer
J. Garrity

Don Marion
Don May
Joe Kusar

6/15 Get Harold and Fred Flury working on freight charges.

Good decision to Make in St Louis - Lets work hard on Freight.

J Hite

K-5 REV 2

TOLS001561

BZTO104(e)038382

SEATTLE
TACOMA
PORTLAND
STOCKTON
OAKLAND
SAN PEDRO
LOS ANGELES

2

TIME OIL COMPANY

12005 N. BURGARD, P. O. BOX 03117, ST JOHNS STATION, PORTLAND, OREGON 97203

October 26, 1970

RECEIVED
SEP 21 1983
[illegible]

Mr. Lowell E. Gutzler
Wood Treating Chemicals Co.
5137 Southwest Avenue
St. Louis, Missouri 63110

Dear Lowell:

Enclosed is an executed copy of the amended schedule to our Agreement dated August 1, 1970.

Sorry this was so long in getting back to you.

Regards.

Yours very truly,

Newton P. Lesh

Newton P. Lesh

NPL/s
Encl.

RECEIVED
SEP 21
WOOD TREATING CO.
ST. LOUIS
C. W.

TOLS001562

BZTO104(e)038383

SCHEDULE

TERMINAL:	TIDE OIL CO., Portland, Oregon
DATE OF AGREEMENT:	March 1, 1967
INITIAL TERM OF AGREEMENT:	March 1, 1967 to February 29, 1972.
OPERATOR:	TIDE OIL CO.
CUSTOMER:	WOOD TREATING CHEMICALS CO.
PRODUCTS TO BE STORED:	Mineral spirits with additives.
FACILITIES:	Operator will furnish Customer the following Facilities:
Storage Tanks:	Three (3) tanks with a shell capacity of approximately 20,570 gallons each, one (1) tank with a shell capacity of approximately 13,000 gallons, one (1) blending tank of approximately 1,500 gallons equipped with six (6) electric heating elements, together with warehouse space for storing approximately 100,000 pounds of additives on pallets in drums and bags. Additives being pentachlorophenol in bags and Customer's additive #316 in drums.
SERVICES:	
Storage and handling:	Operator shall receive the Products from tank cars and/or transport trucks and shall deliver such Products into storage tanks. Operator shall deliver the Products and commodities into transport trucks and/or tank cars. Transport trucks to be driver loaded. Operator shall receive additives from freight cars and/or trucks. Operator shall blend additives for mixing with mineral spirits at a temperature not to exceed 180°F.
CHARGES:	The only Charges for the Facilities and Services herein are the following: $440.00 per month to be billed in advance on the first day of each month and paid by Customer within 10 days after receipt of invoice. One-half cent (.005) per gallon on all liquid products received at the terminal with 200,000 gallons minimum receipts guaranteed annually, to be billed at the 1st of each month for the prior months' receipts and paid by Customer within 10 days after receipt of invoice, and plus - One-half cent (.005) per gallon on all liquid products shipped from the terminal with 200,000 gallons minimum shipments guaranteed annually to be billed at the 1st of each month for the prior months' shipments and paid by Customer within 10 days after receipt of invoice. Overtime and extra labor and cost of armed guards as specified in Sections B.3, D.9(a) and 13(c) of the Agreement to which this Schedule is annexed and of which it is a part.

TOLS001563

BZTO104(e)038384

AMENDED SCHEDULE

TERMINAL:	TIME OIL CO., Portland, Oregon.
DATE OF AGREEMENT:	March 1, 1967 August 1, 1970 amended schedule.
INITIAL TERM OF AGREEMENT:	April 1, 1967 to March 31, 1972.
OPERATOR:	TIME OIL CO.
CUSTOMER:	WOOD TREATING CHEMICALS CO.
PRODUCTS TO BE STORED:	Raw materials in bulk, drums and bags for wood preservatives. Finished products in bulk and drums. Also, such other raw materials and finished products specified by the Customer and accepted by the Operator.
FACILITIES:	Operator will furnish Customer the following facilities: Storage tanks - one (1) tank with a shell capacity of approximately 38,000 gallons, three (3) tanks with a shell capacity of approximately 20,570 gallons each, one (1) tank with a shell capacity of approximately 13,000 gallons, one (1) blending tank of approximately 1,500 gallons equipped with six (6) electric heating elements, together with warehouse space for storing approximately 100,000 pounds of raw or finished materials on pallets in drums and bags.
SERVICES: Storage and Handling	Operator shall receive the raw materials from railroad tank cars or freight cars and/or trucks and shall deliver such products into storage tanks and/or warehouse. Operator shall deliver the finished products into storage, trucks and/or railroad cars. Operator shall mix or blend products at a temperature not to exceed 180 deg. F.
HANDLING AND TRANSFER CHARGES:	The only charges for the facilities and services herein are the following: $615.00 per month to be billed in advance on the first day of each month and paid by Customer within 10 days after receipt of invoice. One cent (0.01) per gallon for blending and shipping pentapetroleum or LST type solutions shipped in tank cars, tank trucks or drums that can be bulk or tank blended. These products are Customer's products known as:

TOLS001564

BZTO104(e)038385

CHARGES: cont.

1. Woodtox Preprime RTU
2. Woodtox 140 RTU
3. Presstreat
4. Woodtox 109 RTU
5. Woodtox 109 w/o Penta

Other products of similar type solutions can be added from time to time by Customer upon written acceptance by the Operator.

Three cents (0.03) per gallon for blending and shipping concentrate type solutions in tank cars, tank trucks or drums. These products are Customer's products known as:

1. Timbertox 40 Concentrate
2. WR 340 Concentrate
3. Woodtox Preprime Concentrate
4. Woodtox 140 Concentrate
5. Inhibitor L
6. Penta Wood Preservative Concentrate

Other concentrate type solutions can be added from time to time by Customer upon written acceptance by the Operator.

Five cents (0.05) per gallon for filling 55 gallon drums.

One cent (0.01) per gallon for blending contaminated products returned to storage and/or blending Woodtox 109 w/o Penta to include Penta.

Seventy-five (0.75) cents for each 55 gallon drum of additives shipped that have been in storage and are shipped without blending with other products.

Blending, shipping and drum filling charges are to be invoiced by Operator to the Customer on the first day of each month for the shipments made during the previous month and Customer agrees to pay charges within 10 days after receipt of invoice.

Overtime and extra labor and cost of armed guards as specified in Sections B.3, D.9 (a) and 13 (c) of the Agreement to which this Schedule is annexed and which it is a part.

It is agreed by the parties hereto that the Schedule attached to the Agreement dated the 1st day of March, 1967, shall be superceded and replaced in its entirety by this Amended Schedule effective August 1, 1970.

It is further agreed that said Agreement dated the 1st day of March, 1967 is further amended as follows:

On Page 1, Section A.FACILITIES, Paragraph 2, line 7 after the word Agreement shall be added "Customer shall, however, inform Operator of any irregularities or deficiencies discovered during any such inspection."

TOLS001565

BZTO104(e)038386

On page 2, Paragraph 3, line 6. The amount $5.8125 shall be substituted for the amount of $4.25 stated therein.

On page 4, Paragraph 6, line 3. The word "similar" shall be deleted and after the word "cause" shall be added "beyond the control of Operator".

On page 5, Paragraph 8, line 2. The following shall be substituted for Paragraph 8 in its entirety. " Customer's representative shall have access to the truck and rail car loading rack, tanks and warehouse covered by this agreement, as a matter of course, but all other areas of Operator's terminal facilities shall be closed to Customer's representatives except when accompanied by a representative of Operator. While on Operator's terminal premises, Customer's representative shall comply at all times with any rules established from time to time by Operator in connection with the operation of the terminal."

On page 5, Paragraph 9. (a) wherever the amount of $2.71 is stated the amount of $3.875 shall be substituted therefor.

On page 8, Paragraph 13 (a), the following shall be substituted therefor:

"Performance of any obligation under this Agreement may be suspended by either party, in whole or in part, without liability, in the event of act of God, war, riot, fire, explosion, flood, drought, sabotage, inability to obtain fuel or power, accident, national, state, or other governmental laws, regulations, rules or orders, or any other circumstance of like nature beyond the reasonable control of such party, or labor trouble, strike, walkout, or injunction, whether or not any such delays within the reasonable control of such party, which delays, prevents, restricts or limits the performance of this agreement or the consumption, sale, use or end use of the products or any product manufactured or processed therefrom or therewith. The affected party shall invoke this provision by promptly notifying the other party of the nature and estimated duration of the suspension. At Customer's option, the period specified for processing and/or delivery of the products hereunder shall be extended by the period of delay occasioned by any such suspension and processing or deliveries not performed or made during any suspension period shall be performed or made during such extention, or the period specified for processing and/or delivery shall not be extended and the total contract quantity hereunder shall be reduced by the processing or deliveries not performed or made during such suspension and, in either event, the contract shall otherwise remain uneffected."

The following provisions are incorporated therein:

Disposal of waste shall be for the Customer's account but subject to Customer's prior approval of expenditures for that purpose.

Customer shall reimburse Operator for fines or penalties imposed upon Operator by a court of law and paid in full by Operator, which fines are for pollution, expressly prohibited by statute, proved in said court to have been caused solely by the correct, non-negligent performance by Operator of written instructions given by Customer to Operator under and pursuant to this Agreement. Customer shall also re-imburse Operator for all attorneys fees and costs of suit incurred in the defense of any suit brought against Operator for pollution proved to have been caused solely by the correct, non-negligent performance by Operator of written instructions given by Customer to Operator under and pursuant to this Agreement.

TOLS001566

BZTO104(e)038387

All other of the terms and provisions of said Agreement shall remain the same and in full force and effect.

Witness:

TIME OIL CO., Operator

By R. D. Abendroth
R. D. Abendroth, President

Witness:

WOOD TREATING CHEMICALS CO.

By Lowell E. Gutzler
Asst. Secretary

TOLS001567

BZTO104(e)038388

AGREEMENT

THIS AGREEMENT, made and entered into this 1st day of March, 1967, by and between TIME OIL CO. (hereinafter referred to as "Operator"), a corporation incorporated and existing under the laws of the State of Washington, and WOOD TREATING CHEMICALS CO. (hereinafter referred to a "Customer"), a corporation organized and existing under the laws of the State of Missouri.

WITNESSETH:

For and in consideration of the mutual covenants and conditions contained herein, it is agreed as follows:

A. FACILITIES.

1. Operator shall provide and furnish to Customer during the term of this Agreement facilities, storage tanks, blending tanks, equipment, improvements and warehouse space as set forth in the Schedule attached hereto and as set forth in this Agreement (all hereinafter called "Facilities").

2. Operator shall retain possession of the Facilities and shall keep and maintain the same in good order and repair and clean and fit for the storage and handling of the Products. Customer shall have the right to inspect the Facilities and the Products stored therein at all times during the hereinafter defined Regular Hours, and during other reasonable times, but no such inspection shall relieve Operator of any of its obligations under this Agreement. Operator shall advise Customer in writing in advance of any changes or alterations in or to the Facilities (excluding, however, maintenance and repairs) which are used for the receipt, storage, blending, handling or redelivery of the Products.

B. SERVICES.

1. Operator shall provide and furnish to Customer during the term of this Agreement any and all labor and services necessary or reasonably incidental to receive, store, handle, blend and redeliver the Products at, to and from the Facilities in a safe, efficient, clean and prompt manner (all hereinafter called the "Services").

TOLS001568

BZTO104(e)038389

2. Operator shall receive the Products from trucks and rail cars, store the same in the storage tanks, transfer such Products to the blending tanks as directed by Customer, and redeliver such Products into trucks and rail cars, as and when directed by Customer. Operator shall follow the procedures outlined in the booklet entitled "Monsanto Warehousing and Terminaling Unified Procedures" and all reasonable amendments thereof and additions thereto, applicable to the Products involved. A copy of such booklet is attached hereto as Exhibit A and made a part hereof. Operator shall keep complete and accurate records of the type and quantity of the Products received into, transferred out of, and remaining in said Facilities at all times and of all shipments of the Products made at Customer's request, and such records shall be open to inspection by Customer at all reasonable times. Operator shall make reports to Customer with respect to such receipts, shipments and inventories, at such times and in such manner as may be reasonably prescribed by Customer.

3. The Services shall be performed from 7:00 a.m. to 4:30 p.m., five days per week, Monday through Friday, except for the holidays hereinafter mentioned, herein called the "Regular Hours." The holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas. Upon the request of Customer, Operator shall perform such services beyond Regular Hours at an additional charge of $ 4.15 per man hour.

C. PAYMENTS. So long as Operator shall meet its obligations hereunder, Customer shall make payments to Operator during the term of this Agreement according to the Charges on the attached Schedule.

D. GENERAL.

1. Neither Operator, nor any person or party claiming by, through or under Operator, shall ever have or assert any right, title, claim, lien or interest in or to any of the Products.

2. In no event, anything in this Agreement to the contrary notwithstanding, does Operator intend to lease, sublease or assign to the Customer all or any part of the Facilities referred to herein, and neither this Agreement, nor any provision thereof, shall be so construed.

TOLS001569

BZTO104(e)038390

3. Operator shall indemnify and hold harmless Customer from and against any and all liabilities, claims, actions, damages, losses, costs or expenses arising out of injury to or death of any person or damage to or loss or destruction of any property, caused by or connected with: (a) any negligence, or wrongful act or omission of Operator, its employees or agents in the receipt, storage, handling or redelivery of the Products, or any of them; (b) the performance or nonperformance of any of its obligations or operations under this Agreement; or (c) any default of Operator hereunder.

4. Operator shall obtain and maintain, at its expense, during the term of this Agreement, the following insurance in insurance companies satisfactory to Customer:

(a) Workmen's compensation insurance in an amount equal to the limit of liability and in the form prescribed by the laws of Oregon, for all Operator's employees engaged in any operations under this Agreement. In the event that any employees are not protected by a workmen's compensation statute, Operator shall provide employer's liability insurance in an amount not less than $100,000 for injury to or for death of any one employee, and subject to the same limitation for each employee, in an amount not less than $300,000 on account of any one accident.

(b) Public liability insurance sufficient to cover the obligations assumed by Operator pursuant to Section D.3 of this Agreement and claims for injury to or death of persons or damage to property arising from any activities or operations of Operator under this Agreement in amounts of:

(i) not less than $150,000 for injury to or death of any one person and not less than $500,000 in respect to any one accident; and

(ii) not less than $100,000 for damage to or destruction of property on account of each accident.

TOLS001570

BZTO104(e)038391

Operator shall furnish Customer with certificates of insurance which certificates shall provide that the foregoing insurance coverage shall not be terminated or reduced without the insurance carrier first giving Customer ten (10) days' prior written notice thereof.

5. Operator shall be liable and responsible for any loss, destruction, spoilage, spillage, pollution, evaporation, shrinkage, line-loss, clingage, discoloration or contamination of, or damage to, any Products arising out of its receipt, storage, handling, blending, mixing or redelivery thereof, or of any of the Services performed or to be performed hereunder resulting from the negligence or wrongful act or omission of Operator, its employees, agents or representatives, or default of Operator under this Agreement.

6. In the event that the Facilities are partially or totally damaged or destroyed or become unfit by reason of fire, explosion, accident, casualty or any other similar cause, or if any of the Facilities are taken or condemned by eminent domain proceedings (all of the foregoing being hereinafter for convenience collectively called "Casualty") so that the same shall be rendered unsuitable or unavailable for the receipt, storage, handling and redelivery of any of the Products, Operator shall immediately notify Customer thereof. Not later than ten (10) days after the occurrence of such Casualty, Operator shall also notify Customer as to whether the Facilities will be restored to their former condition within a period of time not longer than six (6) months measured from the date of such Casualty. If such notice is not given, or if given and the Facilities are not restored by the end of said six (6) month period, Customer may terminate this Agreement at any time thereafter upon notice to Operator, and thereupon Customer shall be relieved of all duties and obligations hereunder.

7. (a) Losses of any Product for which Operator is responsible hereunder shall be determined monthly at the end of each month, commencing with the date of the first receipt of such Product by Operator hereunder, and also, at the time any abnormal loss occurs or is discovered. The extent of loss shall be computed by deducting the total withdrawals of such Product during the period for which the accounting

TOLS001571

BZTO104(e)038392

is made, plus the stock of such Product on hand at the end of such period, from the sum of the total receipts of such Product during such period plus the stock of such Product on hand at the beginning of such period.

(b) Operator shall not be liable for actual losses resulting from normal spillage and evaporation not in excess of the loss allowance hereinafter described. The term "loss allowance" shall mean actual losses resulting from normal spillage and evaporation not exceeding 3/4 of 1% per month of the aggregate of the receipts per month or 3/4 of 1% of the maximum amount of Products stored in any one month, whichever is greater, of any such Product as determined under Section D.9(b) of this Agreement.

8. While on Operator's terminal premises, Customer shall comply at all times with any and all rules established as of the date of this Agreement by Operator in connection with the operation of the terminal. A copy of such rules is attached hereto as Exhibit B to this Agreement. Such rules shall not hereafter be amended except by consent of Customer.

9. (a) If the average wage rate in effect at the terminal for all employees of Operator employed full or part time at the terminal as of the first day of any month shall exceed $2.71 per hour, then, with respect to such month, the handling and transfer charges set forth in the schedule(s) shall be increased by a percentage equal to 25 per cent (25%) of that percentage of $2.71 which the excess of the average wage rate of $2.71 constitutes. "Average wage rate" means the amount derived by dividing (a) the total of (i) the rates for the single-rate classifications of wage rates applicable to Operator's personnel and (ii) the mid-points or wage rates for all rate-range classifications applicable to Operator's personnel by (b) the

TOLS001572

BZTO104(e)038393

number of classifications applicable to Operator's personnel.

(b) The quantity of Product received into or withdrawn from storage tanks shall be determined by Operator's representatives by checking and gauging said tanks at the time of receipt or withdrawal of said Product. Customer may assist, supervise, or participate in all aspects of such checking and gauging, but in the absence of such participation, gauges taken by Operator shall be conclusive, unless such gauges are proven to be in error. However, quantities delivered to rail tank cars or transport trucks may be determined by reference to mutually acceptable calibration charts of the rail car or truck tanks. The cost of such work done by Operator's representatives or licensed inspectors shall be borne by Customer. In the event of any disagreement as to quantities of Products received, it shall, upon written notice of either party to the other, be submitted to one arbitrator to be appointed by the American Arbitration Association for hearing and decision, in Portland, Oregon, which decision shall be rendered within thirty (30) days from the date the case is submitted, and shall be final and binding upon the parties hereto. The cost and expense of the arbitrator shall be borne equally between the parties hereto and the law of Missouri shall govern the arbitration and award.

(c) If requested by Customer, Operator will take samples from rail tank cars, automotive tank trucks and storage tanks and deliver such samples to Customer and the cost of containers for such samples paid by Operator and the freight charges for deliveries thereof to Customer shall be reimbursed to Operator by Customer each month. Samples shall be taken in accordance with the procedure specified by Customer.

TOLS001573

BZTO104(e)038394

10. Without relieving Operator from any of its duties or obligations under this Agreement, for each day or portion thereof that:

(a) The Facilities are unsuitable for the receipt, storage, blending, handling or redelivery of any of the Products by reason of any Casualty or for any other similar or dissimilar reason, and/or

(b) Operator fails or refuses to provide and furnish the Services,

then, and in either event, the Charges set forth in the Schedule shall be suspended for such period or periods; furthermore, if Operator fails or refuses to redeliver any of the Products within five (5) days after Customer's request therefor, Customer shall have the right to enter upon the Facilities and remove such Products from the storage area.

11. Customer agrees to examine Operator's tanks, pipelines and equipment prior to Customer's acceptance and use of their Facilities hereunder and by such use agrees that said Facilities are acceptable for rendering of the Services referred to herein. Operator may substitute other suitable facilities in lieu of those which are designated hereunder provided Operator pays any costs incurred by Customer in regard to such substitution.

12. Customer shall use the Facilities furnished hereunder for the storage, blending and handling of only the Products and commodities specified in said Schedule; provided, however, that anything in this Agreement to the contrary notwithstanding, Customer shall not store and/or handle or cause to be stored and/or handled in any of these Facilities (a) any commodity other than those listed on such Schedule containing hydrogen sulphide or other corrosive materials, (b) any commodity other than those listed on such Schedule which would in any way be injurious to any of the Facilities, or (c) any commodity other than those listed on such Schedule which would render any of the Facilities unfit, after cleaning, for the proper storage and/or handling of water white oils. Customer shall be responsible for any damages resulting from the storage and/or handling in any of these Facilities of any commodity other than those listed in the Schedule which may not be stored and/or handled therein under the terms hereof.

TOLS001574

BZTO104(e)038395

13. (a) Subject to the terms of Sections 6 and 10 hereof, neither party shall be liable to the other for, and each shall be excused from, any failure of or delay in performance under this Agreement, caused by any acts of God or the public enemy, war, floods, storms, earthquake, lightning, or other act of the elements, accidental fires, explosion, strikes, labor disturbances, riots, insurrection, civil commotion, governmental acts or regulations, accidents, failure or delay of transportation or delivery facilities or supplies, failure or delay of manufacturers or persons from whom such party is obtaining machinery, equipment, materials or supplies to delivery the same, or any other cause beyond the control and without the fault or neglect of such party, whether similar or not to the foregoing causes. For each day or portion thereof that either party shall fail or be unable to perform by reason of any of the foregoing events, the said Charges set forth in the Schedule shall be suspended for such period or periods. Each party shall, in the event it shall fail or be unable to perform by reason of any of the foregoing events, promptly notify the other party thereof. Upon cessation of any such event, performance shall be resumed promptly and the other party shall be notified immediately thereof.

(b) Should the County or City, in which Operator's Facilities are located, or any othergovernment agency, local or federal, prohibit operation of any then existing Facilities used in performing this Agreement, or shall in any way deprive Operator of the right to use any such Facilities or any property in connection therewith, or shall require the construction of additional facilities to be used in performing this Agreement, this Agreement shall terminate at the option of Operator, unless Customer shall pay for the cost of replacing any such Facilities or property of

TOLS001575

BZTO104(e)038396

which Operator was deprived, or for the cost of construction of such additional facilities, or for any other expenses necessary to meet the requirements of such government agency.

(c) The cost of any Armed Guard Services and/or other protective services or facilities required by Customer or by any government agency shall be for the account of Customer.

14. Operator shall bill Customer monthly in advance and Customer agrees to pay Operator within 10 days after presentation of invoice. All payments hereunder shall be made to Operator at its office at 12005 N. Burgard St., P. O. Box 03117, Portland, Oregon 97203, or at such other place as Operator may notify Customer in writing.

15. Customer agrees promptly upon expiration or termination of this Agreement, to remove all of its Products, either bulk or packaged, from Operator's premises. All such Products not removed within 60 days after the expiration or termination of this Agreement may be sold at auction by Operator and Operator shall return to Customer the proceeds of any such sale, less the amount owed Operator by Customer under the terms of this Agreement and Operator's reasonable expenses in selling said Products.

16. (a) The initial term of this Agreement shall commence as of March 1, 1967 and, if not earlier terminated as herein provided, shall end on February 29, 1972. Upon the expiration of the initial term of this Agreement, this Agreement shall be automatically renewed for a term of five years, and automatically renewed thereafter for successive terms of five years each; provided, however, that either party, at its option, shall have the right to terminate this Agreement at the end of its initial term or at the end of any renewal term by furnishing written notice to the other party at least one year prior to the designated termination date.

TOLS001576

BZTO104(e)038397

16. (b) Provided that Customer may, at its option, terminate this Agreement at any time during the initial term of this Agreement by making a payment to Operator which is equal to Operator's total expenditures for storage, blending tanks, heating elements, warehouse improvements or improvements to any such Facilities which were expended by Operator for the purpose of furnishing storage or blending tanks and Facilities to Customer, less 20% of the total expenditures for each full year that this Agreement has been in full force and effect. The Operator represents that the amount expended covering the above is $_____.

(c) Should Operator fail or refuse to discharge any of its obligations under this Agreement, Customer may, at its option and in addition to any other remedies provided for herein, terminate this Agreement immediately upon giving notice to Operator.

17. Should Customer go into bankruptcy, voluntary or involuntary, or be placed in the hands of a receiver, State of Federal, then, and in any such event, the minimum monthly storage and handling charges for the whole unexpired term hereof together with all accrued charges, shall, at the option of Operator, become immediately due and payable. In any such event, Operator shall also have the right, at its option, to terminate this Agreement and, after giving 15 days' notice to Customer, Operator may sell all or any portion of such Products, at public or private sale, but Operator may not be purchaser at such sale or sales. Customer shall pay for and indemnify Operator against its reasonable expenses of such sale, including reasonable attorney's fees, incurred by Operator for the sale of Customer's Products as above provided, for storage, handling services or other amounts due and owing Operator. Any proceeds of such sale less any amounts due and owing from Customer to Operator under this Agreement and the reasonable expenses of such sale, shall be promptly remitted by Operator to Customer.

TOLS001577

BZTO104(e)038398

18. In the event Customer decides to reduce the quantity or eliminate the handling, blending or storage of any of the Products so that the Facilities are not used or required, Operator shall, at Customer's request, use all reasonable efforts, and otherwise cooperate with Customer, to find and make arrangements with another party or parties to utilize such unused or unrequired Facilities to the extent and as designated by Customer, Operator shall, however, have the right to establish reasonable fees and charges in connection with such arrangements. Customer shall be entitled to a credit against all fees (but not exceeding any amounts due from Customer) to the extent of payments made by such other party or parties pursuant to said arrangements.

19. Customer shall pay any and all taxes, charges and/or assessments on or with respect to the Products, Operator shall pay any and all taxes, charges and/or assessments on or with respect to the Facilities and/or Services.

20. Operator recognizes that Customer utilizes secret processes in its manufacturing and accordingly Operator agrees that it will not disclose or divulge, without the written consent of Customer the identities or quantities of Products which are received, blended, handled or redelivered by Operator hereunder or the names of customers to whom delivery of such Products or other products is scheduled or made.

21. Operator is not and shall not act or purport to act as an employee, agent or representative of Customer, but is and shall act as an independent contractor.

22. Operator shall obtain and maintain all legally required state and local licenses and permits required for construction, maintenance or operation of the Facilities and/or the Services or Operator's performance of this Agreement.

23. Operator agrees to assume liability for any demurrage on rail equipment or truck equipment, which occurs directly as a result of Operator's operations. Any demurrage accruing on rail equipment or truck equipment, through no fault of Operator shall be paid by Customer; provided, however, Operator shall, in good faith, furnish Customer with all evidence and information known to Operator with respect to the facts, circumstances and causes connected with rail or truck demurrage.

TOLS001578

BZTO104(e)038399

24. Except for any transfer or assignment, in whole or in part by Customer to the Monsanto Company or to any subsidiary company in which Customer owns or controls at least a 50% interest or to an associated company in which the Monsanto Company owns or controls at least a 50% interest, neither party shall transfer or assign this Agreement, or any of its rights hereunder, in whole or in part, without the prior written consent of the other party, and any attempt to do so without such consent shall be void. Subject to the foregoing, this Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

25. Except as otherwise provided in this Agreement, any notice required or permitted to be given under this Agreement shall be in writing and shall be sufficiently given when delivered in person or when deposited in the United States mails (registered or certified), postage prepaid, addressed as follows:

If to Operator, addressed to:	Time Oil Co. 5150 Wilshire Boulevard Los Angeles, California 90036
	and a copy to:
	12005 N. Burgard Street P. O. Box 03117 Portland, Oregon 97203
If to Customer, addressed to:	Wood Treating Chemicals Co. 5137 Southwest Avenue St. Louis, Mo. 63110 Attn: R. M. Morriss

or to such other address as may be specified from time to time in a written notice given by such party. Both parties agree to acknowledge in writing receipt of any notice delivered in person. Routine operating instructions, requests, directions and other similar routine communications shall not require a notice as above provided and may be given in such manner and to such persons as may be customary or practicable.

26. This Agreement constitutes the sole agreement between the parties pertaining to the Facilities and/or Services.

TOLS001579

BZTO104(e)038400

27. The section and paragraph headings in this Agreement are inserted for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular sections or paragraphs to which they refer.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first hereinabove written.

TIME OIL CO.

ATTEST: [signature] Asst. Secy

BY RD Chandler & Pies

WOOD TREATING CHEMICALS CO.

ATTEST:

BY_____

TOLS001580

BZTO104(e)038401

M E M O R A N D U M

August 27,1981

TO: R.D. Abendroth Seattle

FROM: John Denham Seattle

SUBJECT: WOOD TREATING (KOPPERS COMPANY)

Reference last sentence of my August 17,1981 memo, copy attached.

My August 21,1981 inspection of this operation revealed the following deficiencies:

A. TANK FARM OUTSIDE WAREHOUSE

1. Tanks 20001 and 13001 are too close to warehouse. (relocation needed to distance at least five feet from building)

2. Tanks are rusted in many places. (cleaning and painting white needed)

3. No stairways, railings or walkways exist on horizontal tanks 3010, 6008, 8005, 8006 and 8007. (installation needed)

4. No ladder cages exist on tanks 20002, 20003, and 38009. Walkways and railings are damaged, missing or improper. (installation needed)

5. Several heating coils in 1400 gallon heating tank under platform do not work. (replacement needed)

6. Deck atop 1400 gallon heating tank is damaged, unsafe to walk on and permits vapors from this volatile mixture to readily escape into working area. (new metal deck needed)

7. No suction pipelines or manifold exist at rail car siding for unloading purposes. (installation needed)

8. No manifold system exists on incoming product lines for receipt, blending or storage purposes. (manifold needed)

9. Valves on tanks and lines are not maintained at all. (repair and testing or replacement needed)

10. Valves, lines, pumps, hoses and tanks (in some places) are thickly covered with product. (steam cleaning badly needed)

11. Several valves in system are not chained and locked. (installation needed)

12. Valve at end of isolated line to tank 38009 is leaking product onto ground. (replacement valve needed)

13. Pipeline supports are improper and inadequate. (replacement needed)

14. Pipelines are not painted or identified as to product content. (maintenance needed)

15. Product identification is not on all tanks. (signs needed)

16. Ground area at end of pipelines is saturated with product about four inches deep. (dirt removal and replacement needed)

17. Pump journal cover is not secured to pump. (four sheetmetal screws needed)

18. Cargo hoses are not marked or recorded to show condition, manufacturer, dates inspected or pressure tested. Some are damaged. (repair and recording needed)

19. Weeds are prevalent in quantity within diked compound. Good fire hazard. (weed removal needed)

20. Rail car siding wheel bumpers are not fastened to track. (repair needed)

21. Fire extinguisher on platform by 1400 gallon heating tank is not tagged, has not been inspected for operational capability and is fixed so it can not work, even if needed. (replacement system needed)

22. No spill control system exists at rail car rack or within diked area. One was recommended in 1975, copy attached, but apparently not approved by management. (installation needed)

B. INSIDE WAREHOUSE

1. Operation is not isolated. Fumes generated during process can readily enter lube oil warehousing area and overcome any individual not wearing appropriate respiratory equipment. (wall needed in warehouse to isolate operation)

TOLS001582

BZTO104(e)038403

2. Ventilation inadequate even with doors open. (installation of three - four foot sucker fans needed - one in south wall, one in east wall and one over 1400 gallon heating tank)

3. No spill control system exists in building. Now liquid can run all over area and out of doors at will. (floor sloping and drain installation needed)

4. Four ceiling joists are damaged severely from fork lift operation. (repair and/or replacement beams needed)

5. No clearance signs exist on beams to alert fork lift operators. (signs needed)

6. Lighting is inadequate for the work. Several bulbs are out but even with all lights on, only one candle power was recorded during middle of the day bright daylight. (additional lighting to a minimum of five foot candles needed. An assist to this would be to paint ceiling white)

7. Work area is caked with product and very very dirty. (steam cleaning needed badly)

8. Small floor fan thickly covered with product. Fire hazard. (cleaning needed)

9. No emergency deluge shower exists. Material handled can be injurious. (shower would help. Eyewash should be included on such a permanent hookup)

Nearly all of these deficiencies have been reported previously.

JPD/mm

Attachments

TOLS001583

BZTO104(e)038404

MEMORANDUM

TO: R. D. Abendroth - Seattle
N. P. Lesh (info)- Portland

DATE: January 22, 1981

FROM: Neil Gallagher - Portland

SUBJECT: Woodtreating Chemicals (Koppers Company)

Woodtreating has leased since 1967 the Southwest half of what was formerly the TBA Tire Warehouse. Time Oil leases the facility to them and bills them for Handling Charge. The facilities consist of Warehouse space, one 38,000 tank, three 20,000 gallon tanks, one 13,000 tank, one 7,000 gallon tank, one 1,400 gallon heating tank, one 5 HP Motor and 2-1/2 x 3" Gilbarco positive suction pump. In addition, Woodtreating purchased and we installed three 8,000 gallon tanks, one 6,000 gallon and one 3,000 gallon. The tanks are used for raw materials, such as three different solvents, and finished products for shipping. All the tanks are manifolded to a central location and hoses are used for transferring and moving all the products. The heating tank is equipped with four 480V - 115 15W x 12' heating coils. Woodtreating sends in by tank car and by truck, all the raw materials. All products going out go in either bulk truck and trailer or in 55 gallon drums. Formulas are furnished to Time Oil Company by Woodtreating from their main office in St. Louis, Missouri. The finished products are in two different categories. LST Type, that is the lighter product, and Concentrates that are heavier and are usually put in drums.

To mix the raw materials a formulated amount (see attached formula sheet) is charged to the heating tank. The heating coils can be turned on manually or by a timed control switch. Normally the timer is set to come on at 1:00 A.M. or 2:00 A.M. in the morning and the products are hot enough to mix at 7:00 A.M., and if needed the tank is charged again and the heat turned on manually. This way two batches can be made up in one eight hour day. To mix a 30" x 4' a 80 mesh screen is placed in the top opening of the heating tank and the hot material is rotated from the bottom of the heating tank and goes back down in thru the screen.

Wax that comes in 71b. slabs is broken up and melted down in the screen first. Then Penta that comes in 50 lb. bags is then poured into the screen and also dissolved. If the product is LST Type the heating tank is then pumped to one of the other tanks and more solvents are added and the product is then circulated in the tank from top to bottom for approxiamately four hours. Concentrates are either pumped into drums or pumped to a storage tank, for later shipment or drumming. It normally takes from one to two hours to add the wax and Penta, depending on consisting of the solvents and heat.

Penta is a very hazardous material and must be handled with many safety precautions. Full face masks and respirators must be worn, gloves, boots and rain gear must also be worn. It takes approxiamately two minutes to fill a 55 gallon drum and two men usually handle this operation. After filling bungs must be tightened, labels and stencils applied, and drums moved from filling area. For 10 drums the elapsed time will be close to one hour for two men. When product goes by truck and trailer, one hour is usually allowed for 7,000 gallons. The wax and Penta come into the warehouse on pallets, therefore a forklift is also an additional piece of equipment along with a floor jack and barrel trucks.

The billing consists of $615.00 per month for Facility Rental, $.0124 per gallon for LST Type of product, $.03715 per gallon for Concentrates and $.619 per gallon for filling drums, (see attached copy of billing). The average billing for the period of July 1, 1980 to December 31, 1980 has been $1,514.57, a total of 82,243 net gallons of LST Type, 45,016 gallons of Concentrates and 41,910 gallons drummed for the same period; a charge also of $.75 per drum of additive that is brought in and shipped is charged. This has been very nil for the last six months. During this same period we have received 83,482 gallons of Solvents, 1,960 bags of Penta, 10,010 lbs of wax, and 720 empty drums. All this material has to be unloaded and stored, but there is no charge for receipts.

Woodtreating is given an inventory at the end of each month (see attached copy). Due to the many different raw materials and finished product, this takes constant supervision on my part.

One pint of each batch of product mixed is mailed to St. Louis. As of January 1, 1981, a new Handling Charge will be applied (see attached copy).

All employees complain of working in this warehouse. Even with masks on, Penta causes your nose and eyes to run. The solvents have a very obnoxious odor and some employees this causes nauseau, and stomach upset.

Time Oil Replacement Prospects

Union Chemical Vancouver
Norris Paint Salem

Zehrung Chemical ⇒ Rhodia Paint
Morrison Oil

Lilly-Miller ?

Lily blad

GATX Terminal Pat Geerdus

McClary ?

TOLS001586

BZTO104(e)038407

TO JOHN DENHAM

FROM: N. WALLIS / PORTLAND

TIME OIL CO.

P.O. BOX 24447
TERMINAL ANNEX
SEATTLE, WASHINGTON 98124
(206) 285-2400

SUBJECT SOIL SAMPLE / CHEM. SECURITY DATE: Feb. 19 '85

FOLD ↑

PER YOUR REQUEST ARE FINAL COPIES SENT TO CHEM SECURITY WITH THE SOIL SAMPLE ~~TAKEN~~ FROM WOODTREATING ~~AREA~~.

RETURN TO ⟶ SIGNED N Wallis

DATE SIGNED

2c THIS COPY FOR PERSON ADDRESSED

TOLS001587

BZTO104(e)038408

Waste Management, Inc.

GENERATOR'S WASTE MATERIAL PROFILE SHEET

WASTE PROFILE SHEET CODE: NWP E13588
TSDR

A GENERAL INFORMATION

GENERATOR NAME: Time Oil Co.
TRANSPORTER: Gresham Transfer Inc.
FACILITY ADDRESS: 12005 N. Burgard Rd. Portland, OR
TRANSPORTER PHONE: (503) 255-7900
GENERATOR USEPA I.D.: O R D 0 0 9 5 9 7 5 4 3
GENERATOR STATE I.D.:
TECHNICAL CONTACT: John P. Denham
TITLE: Environmental Manager
PHONE: (206) 285-2400
NAME OF WASTE: PCP contaminated soil
PROCESS GENERATING WASTE: Clean up of contaminated site at 12005 N. Burgard Road

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR

ODOR: ☐ NONE ☐ MILD ☐ STRONG DESCRIBE

PHYSICAL STATE @ 70°F: ☒ SOLID ☐ SEMI-SOLID ☐ LIQUID ☐ POWDER

LAYERS: ☐ MULTILAYERED ☐ BI-LAYERED ☒ SINGLE PHASED

FREE LIQUIDS: ☐ YES ☒ NO VOLUME %

pH: ☐ < 2 ☐ 2-4 ☐ 4.1-6.9 ☐ 7 ☐ 7.1-10 ☐ 10.1-12.5 ☐ > 12.5 ☐ EXACT ☒ N/A

SPECIFIC GRAVITY: ☐ < .8 ☐ .8-1.0 ☒ 1.1-1.2 ☐ 1.3-1.4 ☐ 1.5-1.7 ☐ > 1.7 ☐ EXACT

FLASH POINT: ☐ < 70°F ☐ 70°F - 100°F ☐ 101°F - 139°F ☐ 140°F - 200°F ☐ > 200°F ☒ NO FLASH ☐ EXACT ☐ CLOSED CUP ☐ OPEN CUP

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Contaminated soil	
pentachlorophenol	.1820
tetrachlorophenol	.0071
trace amounts of other	
chlorinated chemicals less than	.0001
Non-contaminated soil	99.812

D METALS ☐ TOTAL (PPM) ☐ EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)	-0-	SELENIUM (Se)	-0-
BARIUM (Ba)	-0-	SILVER (Ag)	-0-
CADMIUM (Cd)	-0-	COPPER (Cu)	-0-
CHROMIUM (Cr)	-0-	NICKEL (Ni)	-0-
MERCURY (Hg)	-0-	ZINC (Zn)	-0-
LEAD (Pb)	-0-	THALLIUM (Tl)	-0-
CHROMIUM-HEX (Cr + 6)	-0-		

E OTHER COMPONENTS - TOTAL (PPM)

CYANIDES	-0-	PCB'S	-0-
SULFIDES	-0-	PHENOLICS	-0-

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? ☒ YES ☐ NO

PROPER SHIPPING NAME: Waste pentachlorophenol mixture

HAZARD CLASS: ORM-E I.D. NO: NA 2020 R.Q.: 10 lbs

METHOD OF SHIPMENT: ☐ BULK LIQUID ☒ BULK SOLID ☐ DRUM (TYPE/SIZE)

ANTICIPATED VOLUME: GALS 260 CUBIC YARDS OTHER

PER: ☒ ONE TIME ☐ WEEK ☐ MONTH ☐ QUARTER ☐ YEAR ☐

G HAZARDOUS CHARACTERISTICS

REACTIVITY: ☒ NONE ☐ PYROPHORIC ☐ SHOCK SENSITIVE ☐ EXPLOSIVE ☐ WATER REACTIVE ☐ OTHER

OTHER HAZARDOUS CHARACTERISTICS: ☒ NONE ☐ RADIOACTIVE ☐ ETIOLOGICAL ☐ PESTICIDE MANUFACTURING WASTE ☐ OTHER

USEPA HAZARDOUS WASTE? ☒ YES ☐ NO

USEPA HAZARDOUS CODE(S): U242

STATE HAZARDOUS WASTE? ☒ YES ☐ NO

STATE CODE(S): U 242

TOLS001588

H SPECIAL HANDLING INFORMATION

☐ ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE, AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED

AUTHORIZED SIGNATURE TITLE DATE

E13588

WASTE PROFILE SHEET CODE

CERTIFICATION OF REPRESENTATIVE SAMPLE

GENERAL DIRECTIONS: IN ORDER TO DETERMINE WHETHER WE CAN ACCEPT THE SPECIAL WASTE DESCRIBED IN THE ABOVE NUMBERED PROFILE SHEET, WE MUST OBTAIN A REPRESENTATIVE SAMPLE OF THE WASTE. WE WILL ANALYZE THE SAMPLE TO VERIFY THE INFORMATION YOU HAVE PROVIDED US, SO IT IS PARTICULARLY IMPORTANT THAT THE SAMPLE BE TRULY REPRESENTATIVE. IN MOST CIRCUMSTANCES YOU WILL BE OBTAINING THE SAMPLE. HOWEVER, IN THOSE CASES IN WHICH WE OBTAIN THE SAMPLE, WE MUST ASK THAT ONE OF YOUR EMPLOYEES BE PRESENT TO DIRECT THE PARTICULAR SOURCE TO BE SAMPLED AND TO WITNESS THE SAMPLING. IN SUCH CASE, YOUR EMPLOYEE MUST SIGN THIS CERTIFICATION AS A WITNESS.

THIS CERTIFICATION MUST BE RETURNED, WITH THE REPRESENTATIVE WASTE SAMPLE, TO:

THE UNDERSIGNED CERTIFIES THAT HE/SHE OBTAINED A REPRESENTATIVE SAMPLE OF THE WASTE MATERIAL DESCRIBED IN THE "GENERATOR'S WASTE MATERIAL PROFILE SHEET" ABOVE REFERENCED, AND THAT THE FOLLOWING REPRESENTATIONS ARE TRUE AND CORRECT:

1. HOUR AND DATE OF SAMPLING: 0930 Hours, February 19, 1985
2. SOURCE FROM WHICH SAMPLE TAKEN: 12005 N. Burgard Road, Portland Oregon, pentachlorophenol area shown on attached plot plan..
3. EQUIPMENT AND SAMPLING METHOD USED: Shovel and can used. Surface, one foot and two foot representative samples obtained, mixed together and placed in can.
4. AMOUNT OF SAMPLE OBTAINED: One (1) gallon.
5. TYPE OF CONTAINER INTO WHICH SAMPLE WAS PLACED: New one gallon paint can.
6. THE SAMPLING EQUIPMENT USED, AND THE CONTAINER INTO WHICH THE SAMPLE WAS PLACED, WERE THEMSELVES UNCONTAMINATED BEFORE USE. Yes.
7. AT THE TIME OF SAMPLING I AFFIXED A LABEL TO THE CONTAINER IN THE FOLLOWING FORM WITH THE FOLLOWING INFORMATION (FILL IN THIS PORTION, INCLUDING YOUR SIGNATURE, JUST AS IT APPEARS ON THE LABEL YOU PREPARED):

GENERATOR: Time Oil Co.
WASTE NAME: Pentachlorophenol mixture.
SAMPLE HOUR/DATE: 0930 Hours, Feb. 19, 1985
PROFILE SHEET CODE: E 13588
SAMPLER SIGNATURE: Neil E. Wallis

WITNESS VERIFICATION: I WAS PERSONALLY PRESENT DURING THE SAMPLING DESCRIBED; I DIRECTED THE WASTE SOURCE TO BE SAMPLED; AND I VERIFY THE INFORMATION ABOVE NOTED.

WITNESS: John H. Somes

SIGNATURE: J. H. Somes

TITLE: General Manager

EMPLOYER: North West Vacuum Truck Service

DATE: February 19, 1985

SAMPLER NAME: Neil E. Wallis

SIGNATURE: Neil E. Wallis

TITLE: Terminal Manager

EMPLOYER: Time Oil Co.

DATE: February 19, 1985

LABORATORY REVIEW OF SAMPLING PROTOCOL

BASED UPON MY REVIEW OF THE ABOVE PROFILE SHEET, I CONCLUDE THAT THE ABOVE METHODOLOGY IS:

☐ ADEQUATE FOR YIELDING A REPRESENTATIVE SAMPLE.

☐ INADEQUATE FOR THE REASONS NOTED HEREON.

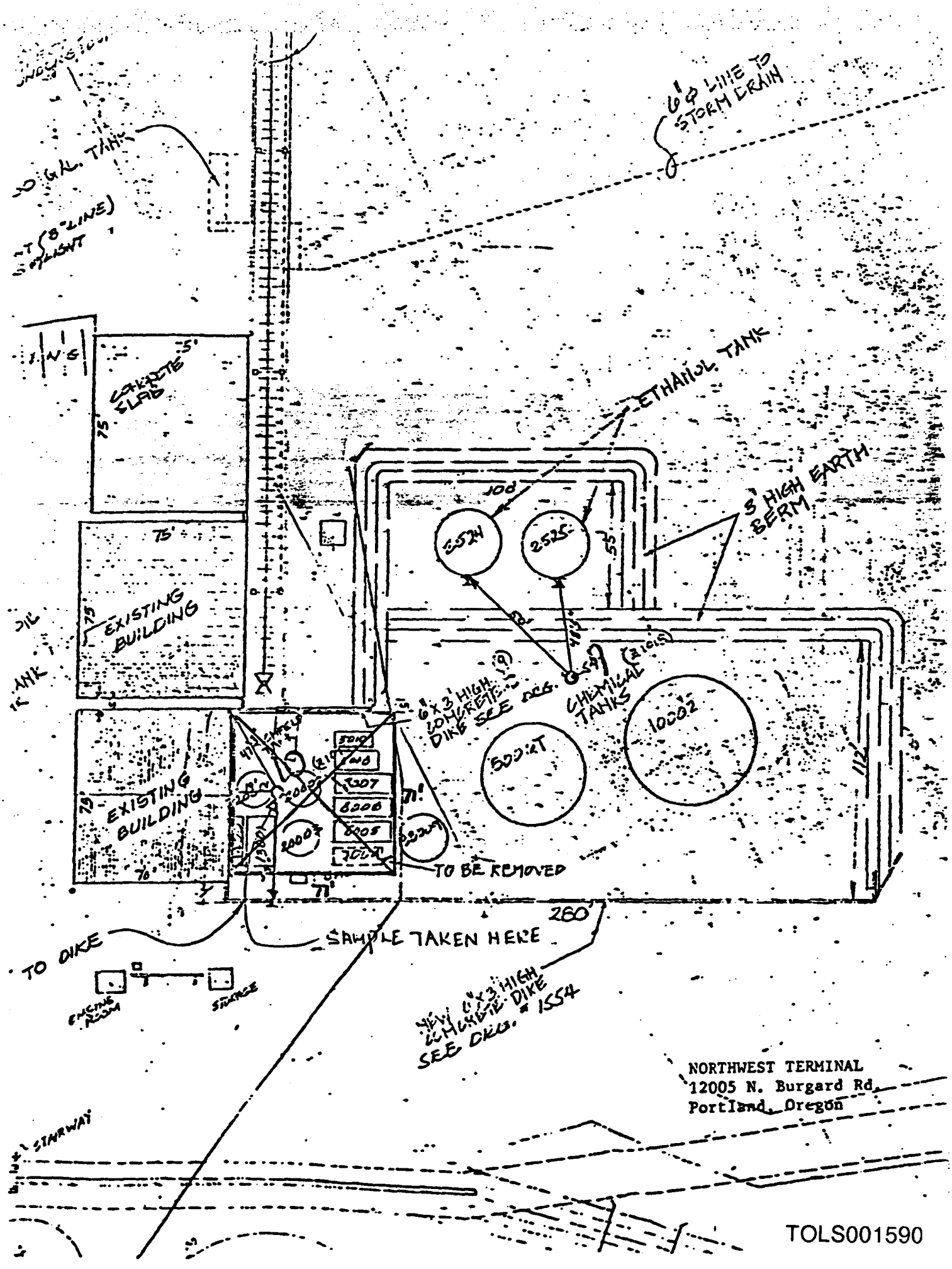
DATE:

LAB MGR:

FORM WM-51 (Rev 8/83)
© 1983 WASTE MANAGEMENT, INC

TOLS001589

BZTO104(e)038410



TOLS001590

BZTO104(e)038411

WJB - J Garrity

KOPPERS

Interoffice Correspondence

To: Jim Garrity
Location: St. Louis
Subject: Time Oil

From: William J. Baldwin
Location: K - 1350
Date: February 19, 1985

I am attaching the originally signed manifests i.e., numbers 70121 and 70201 used for the transportation of the pentachlorophenol waste from Time Oil to Chem-Security Systems, Inc., in Arlington, Oregon. Please maintain these manifests in your hazardous waste files for at least three (3) years.

William J. Baldwin

WJB/bml

Attachments

cc: Don Marion (w/o attachments)

K-5 REV. 2

TOLS001591

BZTO104(e)038412

KOPPERS

Interoffice Correspondence

To W. J. Baldwin — From D. F. Marion

Location K-1350 — Location K-750

Subject Time Oil Visit - October 9, 1985 — Date October 14, 1985

On October 9, 1985, Jim Garrity, Denise Burrell and I visited with Neil Wallis at Time Oil Company's terminal in Portland, Oregon. We discussed the clean-up efforts at the Portland terminal to date and reviewed where we would go in the future. At this time, Time Oil has disposed of nine truckloads of soil and incurred costs of $55,000 - $60,000. While visiting Neil Wallis, he made copies of the pentachlorophenol sampling and analysis report prepared by Riedel Environmental Services which is attached for everyone's review and comments. Neil indicated that a meeting with John Denham and John Ruddick of Riedel Environmental Services was to be held on Thursday, October 10, in Portland. After this meeting, Neil Wallis, John Denham and Bob Abbendroth would like to get together to determine the next steps in meeting allowable limits of PCP at the Portland Terminal. In addition, Bob Abbendroth would like to set up a meeting to finalize Koppers portion of the payment for services to clean up the Portland Terminal.

After you have had an opportunity to review the attached report, please give me a call to determine our options at this point in time. If you have any questions regarding the above information or attached report, please call me immediately.

Donald F. Marion

DFM/jls

Attachment 61

cc: J. F. Garrity
R. G. Hamilton
J. D. Hite
J. Kusar
R. J. Parry
T. Smith
M. R. Urbassik
A. S. Wells

K-5 REV. 2

Tune Oil Co Koppers Co, Inc.
10/9/85 - Neil Wallis, Denise Burrell, Jim Garrity,
$55,000 - $60,000 - [illegible] to date. Don Marion
9 T/L's - Disposed of to date.

Meeting Wallis, Dan [illegible] John Ruddick - 10/10/85.
Tune Oil → Riedel Environmental Services

** { Next step - determine options and allowable limits of PCP. }

** { Meeting Koppers Co, Inc, Tune Oil - in near future. (in St Louis) }

{ Bob Abendroth - W10 10/14/85 - Set up meeting to [illegible] progress report! }

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TOLS001593

BZTO104(e)038414

TIME OIL COMPANY
PORTLAND, OREGON

PENTACHLOROPHENOL SAMPLING & ANALYSIS

Prepared by
RIEDEL ENVIRONMENTAL SERVICES
P.O. Box 5007
Portland, Oregon 97208

October, 1985

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Introduction

Between 1967 and 197_ Time Oil Company operated a pentachlorophenol (PCP) facility at its North Portland, Oregon, terminal. This facility consisted of blending and storage operations used to prepare commercial pentachlorophenol solutions. The facility consisted of various storage and mixing tanks, a warehouse, a bermed, unpaved containment area, various pumps and a truck loading area.

The facility geography is essentially flat and is located less than 1/4 mile from the Willamette River. The soil is principally fine to medium sand with some silt. Ground water is reportedly found from 10 to 20 feet below the surface in this area. During June of 1985, a portion of visibly contaminated soil in the containment area was excavated and disposed of as a hazardous waste. This excavation left a depression in the northwest corner of the containment area sloping gradually to approximately four feet below the adjacent grade. Surface soil was disturbed during this process and, as such, surface sampling was not expected to be representative of conditions existing prior to excavation.

During the years of operation, several intermittent PCP discharges were known to occur, especially during mixing and transfer operations. These discharges resulted in soil contamination in and around the containment area. Initial site visits in April 1985 indicated visible PCP contamination of soils in this vicinity. A sampling plan for surface and subsurface soils extending through the vadose zone was designed and initiated in July 1985.

This sampling and analytical protocol was designed to estimate the spatial limits of PCP contaminant migration in the vadose zone of the soil in and immediately adjacent to the PCP containment area facility. As such, a systematical gridding array was used in lieu of random or other types of probability sampling. No attempt was made to sample underneath structures or paved areas. The protocol was not intended to determine the average concentration of PCP in soil at the facility since the area sampled was not expected to be homogeneous nor to represent a specific population of PCP concentrations. Therefore, statistical evaluations such as mean and standard deviation, have only academic significance in respect to these data.

However, since the origin points in the regular sampling arrays were randomly selected (i.e., a systematic random sampling procedure), there is no reason why some or all of this data could not be used for this purpose at a future time.

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Sampling

All sampling was performed in accordance with EPA publication SW846, "Test Methods for Evaluating Solid Waste". Surface soil sampling was achieved using a small trier and/or sampling scoop. Subsurface samples were obtained using a 6" continuous flight hollow stemmed auger fitted with a 2" split-spoon sampler. All sampling equipment was decontaminated between samples with a trisodium phosphate wash, water rinse, hexane wash and a triple rinse with distilled, deionized water. Auger flights were decontaminated by high pressure steam cleaning between bore holes.

Samples were obtained from two areas. Area 1 consisted of a peripheral surface margin surrounding the containment areas on all of the available sides (see Figure 1). Area 2 consisted of the area inside the containment wall. All samples from each site were placed in new 16-ounce wide-mouthed glass jars previously washed with laboratory cleaner, water rinsed, hexane washed, air dried and rinsed three times with distilled, deionized water, then fitted with teflon-lined caps under clean conditions. Samples were labelled with client identification, sample number, date, time, sampler's name, sample location, and other pertinent information. Containers were sealed and placed in portable, refrigerated ice chests for transportation to the laboratory. Samples were delivered to the laboratory by RES courier within 48 hours after collection. Chain of custody forms accompanied all samples from original field sampling to final analysis and are included in this report (Appendix A). A field log of each sample was generated on site during sampling and retained for future reference.

Preliminary surface sampling in Area 1 was performed by preparation of a composite sample obtained from sub-areas A, D and F by pooling grab samples taken with triers or spoons at 10-foot intervals, five feet away from the containment area.

Secondary surface sampling was conducted in Area 1 by obtaining individual grab samples using triers or spoons. The sample sites are numbered 1-81 and are indicated on Figure 1. Secondary samples were obtained in response to the detection of significant concentrations of PCP in preliminary composite samples from sub-areas A and D, above, and were used solely to estimate the limits of contamination beyond the containment area. As stated earlier, no attempt was made in this sampling and analytical protocol to determine average (mean) values of PCP contamination.

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Sampling in Area 1, peripheral samples, was performed to ascertain the surface margins of the contaminated area. It was arbitrarily assumed that the area within the containment walls was contaminated with PCP and the peripheral margins of this area established as consisting of the warehouse south wall, the east and west concrete walls and the southern edge of a pipeline transecting the containment area as indicated in Figure 1. Three concentric, 10-foot-wide marginal strips were staked out surrounding this boundary and are indicated by broken lines in Figure 1. These areas did not include areas inside the warehouse or below the asphalt paved railway siding located, respectively, on the north and northeast sides of the containment area. The 10 foot marginal strips were subdivided into areas A, B and C to the west, D, E and F to the south, and G, H, and I to the east (see Figure 1).

Sampling of Area 2, the containment area proper, was performed to evaluate PCP concentrations at the surface and at depth in subsoils to the saturated zone. Grab samples were obtained from a 2-foot x 2-inch split spoon sampler pressed through a 6-inch hollow-stem augered bore hole, and were placed in 16-ounce sample containers as previously described. Decontamination procedures, chain of custody, labelling and logging were identical to Area 1 samples. Auger flights were decontaminated at the completion of each coring to prevent cross contamination. Samples were taken at a mximum depth of 0, 2, 4, 7 and 12 feet below the surface elevation of the unexcavated portion of the containment area. Sampling at 17 feet, as originally planned, was not undertaken due to the detection of groundwater at approximately 12 feet.

Due to the sloping contour of the containment area caused by the excavation, the surface elevation below grade was measured from a string line pulled tightly between two unexcavated surface points and spanning the sampling point. Elevation of sampling site surfaces below this grade line was measured using a rigid ruler and is shown in Table I. Data from this table was used to calculate the actual auger depth below the surface required to obtain the split spoon samples to align all samples in the same respective horizontal plane. This data is listed in Table II and indicates the actual depth drilled below the surface required to obtain a sample at the nominal depth listed (0, 2, 4, 7, 12 or 17 feet). In cases where it was deemed practical, soil was hand excavated to the depth corresponding to the first sampling depth indicated and the sample obtained manually with a small trier or spoon.

The horizontal array of borings was selected to minimize the maximum distance from any given point in the sampling area to the nearest boring. To do this most effectively, a triangular grid was staked off. The array was based on a

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triangle with an east-west base of 25 feet and a north-south height of 18 feet. The maximum distance from any point on the grid to the nearest sample point in this case is 13.34 feet as opposed to 14.14 feet for a standard 20-foot x 20-foot rectangular array. This selection allowed for the placement of additional wells just outside the containment wall without increased cost, thereby improving coverage with fewer sampling points (reference: Parkhurst, D.F., Optimal Sampling Geometry for Hazardous Waste Sites; Environmental Science & Technology, 18 No. 7, p. 521 [1984]). The triangular grid is indicated on Figure 1. Bore holes are indicated by the symbol "B" and are labeled with alpha symbols J-Z. A table of samples so obtained is given in Table III.

Following sampling, borings were sealed with bentonite grout in accordance with state well sealing standards under the direction of a registered geologist. Decontamination water, collected into tubs, was analyzed and, following receipt of negative results for PCP, disposed of on site.

Results

Samples were analyzed by Coffee Laboratories, Portland, Oregon, using EPA SW-846 protocols. Soil samples were Sohxlet extracted using EPA protocol #3540. Procedure #8040 was utilized with electron capture quantification for PCP analysis. Results are expressed in milligrams of PCP per kilogram soil (ppm, dry weight). At sites where results could be expected to approach zero (based on results from adjacent sites), samples were held but not analyzed. The results are listed in Table IVA-E. Preliminary composite results are shown in Table IVF and confirm PCP contamination beyond the containment wall.

These tables list PCP concentrations at each sample site as well as the X and Y coordinates used to locate these sites on the plan drawing (Figure 1). These coordinates are tied to an arbitrary grid as shown on Figure 1. The northwest corner of the containment wall is located at coordinates X=76, Y=166 (76,166), for sake of reference. Each sampling depth is listed on a separate table. Copies of the laboratory reports are listed in Appendix B.

The coordinate data and concentration results were plotted using an interpolating contouring program (In-Situ Corp., Laramie WY). This package performs smoothed contouring of the data using a triangularization method and bivariate interpolation. Contours were generated from surface samples (regardless of elevation below grade) and 2-, 4-, 7- and 12-foot depths below grade. The contours are plotted on Figures IIA-E. These contour diagrams have been reduced and printed on mylar sheets in addition to the attached figures.

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TABLE I

TIME OIL CO. - PORTLAND, OREGON

Depth of Boring Site Surface Sample Below Grade
(Horiz. String Line)

Boring	Depth
J	0
K	6"
L	3'
M	0
N	0
O	0
P	1'8"
Q	2'6"
R	0
S	0
T	2'
U	0
V	0
W	0
X	2'
Y	3'
Z	0

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TABLE II

TIME OIL CO. - PORTLAND, OREGON

Actual Split-Spoon Sample Depths Below Grade

	Nominal Depth					
Boring	0	2	4	7	12	17
J	0	0-2'	2-4'	5-7'	10-12'	15-17'
K	NA	0-1 1/2	1 1/2-3 1/2	4 1/2-6 1/2	9 1/2-11 1/2	14 1/2-16 1/2
L	NA	NA	Surf (11")	2-4'	7-9'	12-14'
M	0	0-2'	2-4'	5-7'	10-12'	15-17'
N	0	0-2'	2-4'	5-7'	10-12'	15-17'
O	0	0-2'	2-4'	5-7'	10-12'	15-17'
P	NA	Surf (4")	0-2'	3-5'	8-10'	13-15'
Q	NA	NA	0-1 1/2	2 1/2-4 1/2	7 1/2-9 1/2	12 1/2-14 1/2
R	0	0-2'	2-4'	5-7'	10-12'	15-17'
S	0	0-2'	2-4'	5-7'	10-12'	15-17'
T	NA	Surf	0-2'	3-5'	8-10'	13-15'
U	0	0-2'	2-4'	5-7'	10-12'	15-17'
V	0	0-2'	2-4'	5-7'	10-12'	15-17'
W	0	0-2'	2-4'	5-7'	10-12'	15-17'
X	NA	Surf	0-2'	3-5'	8-10'	13-15'
Y	NA	NA	Surf (11")	2-4'	7- 9'	12-14'
Z	0	0-2'	2-4'	5-7'	10-12'	15-17'

NOTE:

Actual depths indicate depth of bottom of split-spoon.

NA = Not available

Surf = Surface sample obtained by hand excavation at depth indicated in parentheses

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TABLE III

TIME OIL CO. - PORTLAND, OREGON

Nominal Split-Spoon Sample Depths

Boring	0 Surface	2 0-2'	4 2-4'	7 5-7'	12 10-12'	17 15-17'
J	X	X	X	X	X	ND
K	-	X	X	X	X	ND
L	-	-	X	X	X	ND
M	X	X	X	X	X	ND
N	X	X	X	X	X	ND
O	X	X	X	X	X	ND
P	-	X	X	X	X	ND
Q	-	-	X	X	X	ND
R	X	X	X	X	X	ND
S	X	X	X	X	X	ND
T	-	X	X	X	X	ND
U	X	X	X	X	X	ND
V	X	X	X	X	X	ND
W	X	X	X	X	X	ND
X	-	X	X	X	X	ND
Y	-	-	X	X	X	ND
Z	X	X	X	X	X	ND

NOTE: X = Sample
- = Not available due to excavation
ND = Not sampled due to presence of groundwater

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TABLE IVA
TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Surface Contour Data

Sample #	Coordinates X	Coordinates Y	Concentration Mg/Kg
1	81	171	13500
2	71	171	29
3	71	161	500
4	71	151	5450
5	71	141	5560
6	71	131	8760
7	71	121	4870
8	71	111	92
9	71	101	20
10	81	181	16
11	71	181	7
12	61	181	9
13	61	171	95
14	61	161	175
15	61	151	18
16	61	141	229
17	61	131	88
18	61	121	6
19	61	111	3
20	61	101	2.5
21	61	91	5.2
37	81	95	857
38	91	96	1130
39	101	97	17
40	111	98	3.5
41	121	98	3.1
42	131	99	3.2
43	141	100	2.4
44	151	100	1.8
45	161	101	171
46	71	84	3
47	81	85	3.6
48	91	86	6.1
49	121	87	3.2
50	131	88	1.5
51	141	89	2.3
52	151	90	1.7
53	161	91	1.9
54	171	92	1.2

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	1400
K	117.5	161	N/A
L	92.5	161	N/A
M	67.5	161	4720
N	155	143	4280
O	130	143	3000
P	105	143	N/A
Q	80	143	N/A
R	142.5	125	1712
S	117.5	125	522
T	92.5	125	123
U	67.5	125	26550
V	155	107	317
W	130	107	3385
X	105	107	N/A
Y	80	107	N/A
Z	80	179	21

N/A = Not Available

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TABLE IVB

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Two Foot Contour Data

Core #	Coordinates X	Y	Concentration Mg/Kg
J	142.5	161	3
K	117.5	161	8.8
L	92.5	161	N/A
M	67.5	161	87*
N	155	143	3.1
O	130	143	59
P	105	143	16
Q	80	143	N/A
R	142.5	125	34
S	117.5	125	252
T	92.5	125	123
U	67.5	125	44
V	155	107	260
W	130	107	15
X	105	107	4.5
Y	80	107	N/A
Z	80	179	14*

N/A = Not Available
* = Data points omitted from contouring program to reduce extrapolation error

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TABLE IVC

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Four Foot Contour Data

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	3.6
K	117.5	161	10.5
L	92.5	161	7200
M	67.5	161	22
N	155	143	238
O	130	143	23
P	105	143	15
Q	80	143	2205
R	142.5	125	50
S	117.5	125	184
T	92.5	125	534
U	67.5	125	55
V	155	107	380
W	130	107	8.1
X	105	107	1.3
Y	80	107	598
Z	80	179	2

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TABLE IVD

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

7 Foot Contour Data

CORE #	COORDINATES X	COORDINATES Y	CONCENTRATION mg/kg
J	142.5	161	(NA)
K	117.5	161	3
L	92.5	161	8400
M	67.5	161	1
N	155	143	(NA)
O	130	143	13
P	105	143	130
Q	80	143	700
R	142.5	125	500
S	117.5	125	1130
T	92.5	125	75
U	67.5	125	5
V	155	107	1
W	130	107	1
X	105	107	1.9
Y	80	107	700
Z	80	179	7

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TABLE IVE

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

12 Foot Contour Data

CORE #	COORDINATES		CONCENTRATION
	X	Y	mg/kg
J	142.5	161	NA
K	117.5	161	2.3
L	92.5	161	2030
M	67.5	161	690
N	155	143	NA
O	130	143	38
P	105	143	450
Q	80	143	1150
R	142.5	125	1
S	117.5	125	217
T	92.5	125	90
U	67.5	125	NA
V	155	107	3.4
W	130	107	1.9
X	105	107	1.0
Y	80	107	720
Z	80	179	1.0

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TABLE IVF

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Preliminary Surface Composites

Area	PCP (mg/kg)
A	660
D	860
G	17

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The scale on the mylar prints is such that the contours are superimposable on Figure 1 (site plan). This allows for facile comparison of PCP concentration profiles at depth with surface features of the facility. A reference point on Figures 1 and 2(a-e) is located at (76,166) for ease of alignment.

Conclusions

As seen in Tables IVA-E, PCP concentrations range from 1 ppm to 26,550 ppm. Two foci of contamination are seen at the surface. One, located at coordinates (83,168) in the northwest corner of the containment area, is consistent with reported spillage at this corner of the warehouse. A second focus occurs just outside the containment wall to the west at coordinates (65,125). This site is consistent with reported minor spills during truck loading procedures at this site. Additional minor contamination sites occur at the surface in various positions throughout the sample area; however, no prominent concentration peaks are evident. This may be due, in part, to the partial excavation mentioned previously or to vehicle traffic or other activity in this area.

Additional contours at depth indicate penetration of PCP to the saturated zone at the northwest focus. No evidence of penetration of the "loading area" focus below 2 feet was observed. Note that the results of the 2-foot contouring fail to demonstrate a continuation of the foci found at the surface. This is due, in part, to the excavation which removed the 2-foot material and to the definition of surface samples as surface material regardless of relationship to elevation (i.e. surface samples are not equivalent to "Ø foot" samples). This phenomenon is indicated by the lack of sample sites on the 2-foot contour at boring sites L, M, Q, Y and Z. The lack of high PCP concentrations at boring site U, 2-foot contour, implies that no significant penetration occurred at this site and that PCP contamination at this site is restricted to narrowly distributed but high concentration surface contamination.

Contours at 4, 7 and 12 feet indicate penetration to the groundwater (encountered between 7 and 12 feet) with appreciable attenuation of PCP concentrations with increasing depth. The maximum concentration at 12 feet is 2030 ppm located at boring "L". Note that no samples were analyzed at boring sites "J" and "N" at 7- or 12-foot depths, since concentrations above these depths indicated that concentrations near zero could be expected. No sample was obtained at "U" due to loss of sample when groundwater was encountered.

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The slight tendency of the PCP plume to tail off to the south implies that groundwater flux may be diffusing the plume in this direction. This conclusion can only be substantiated by hydrogeologic evaluations of the site, however.

The contaminant plume may be restricted at the surface by the presence of the warehouse foundation. This structure could be expected to prevent diffusion of the PCP plume to the north by presenting a physical barrier to contaminant migration. No sampling was performed underneath the warehouse and this study cannot conclude that migration has occurred beyond the foundation base. Identification of concentrations of PCP beneath the building on contour plots is a function of the contouring program and may not be indicative of actual plume morphology in this area.

Summary

Significant PCP concentrations were detected in soil at Time Oil Co.'s north Portland operation. Contamination was pronounced at two focal sites, one at the northwest corner of the containment area and one at the west side of the containment area. Surface concentrations ranged from 1.2 mg/kg to 26,500 mg/kg. Sampling at depth indicated significant PCP concentrations at the northwest focus descending to the saturated zone and approximately 8-12 feet. Concentrations at 12 feet ranged from 1.0 mg/kg to 2,030 mg/kg. Analytical data from surface, 2-, 4- 7- and 12-foot samples were contoured and plotted and may be related to an area plan drawing of the same scale.

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FIGURE 1

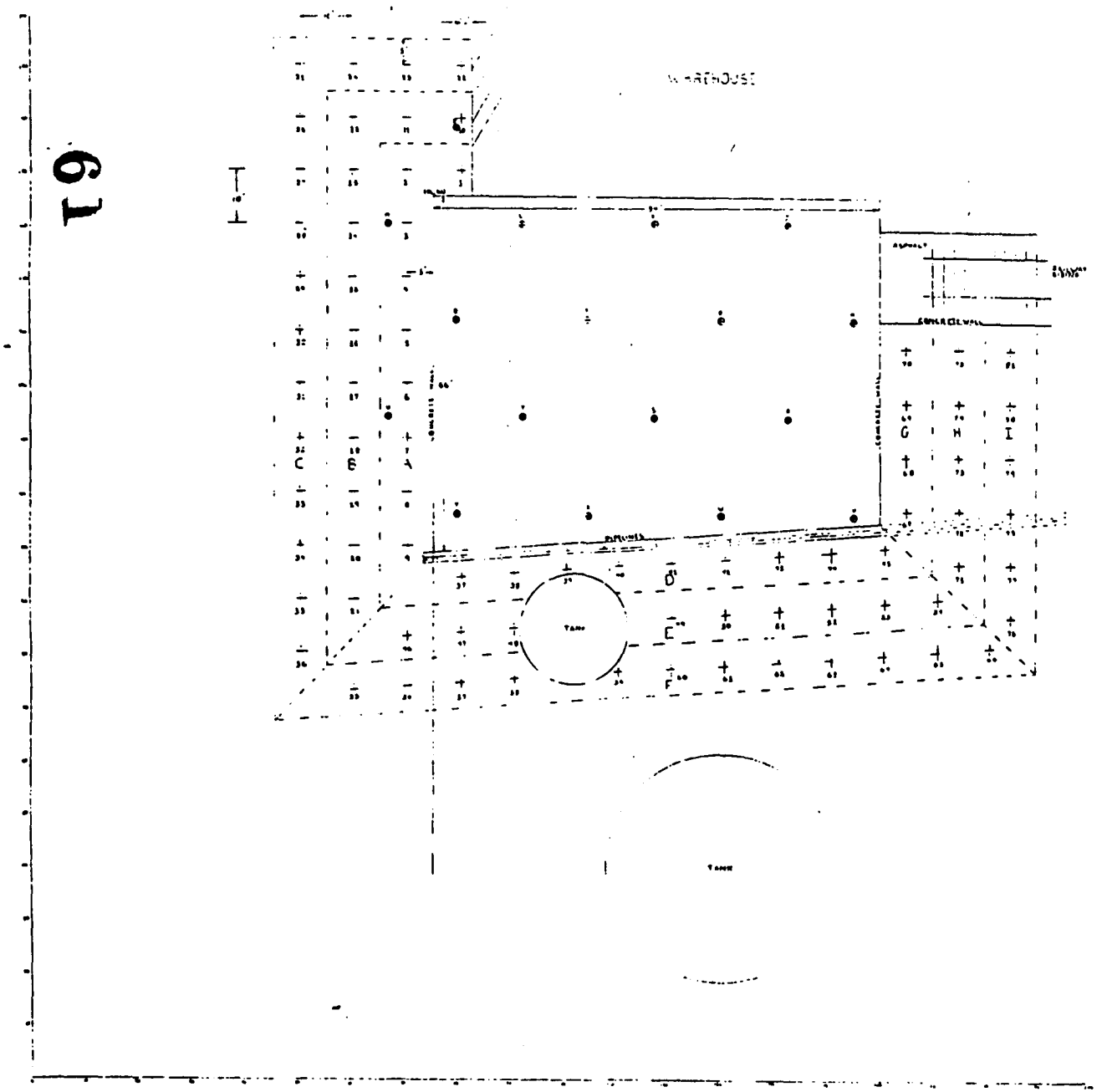

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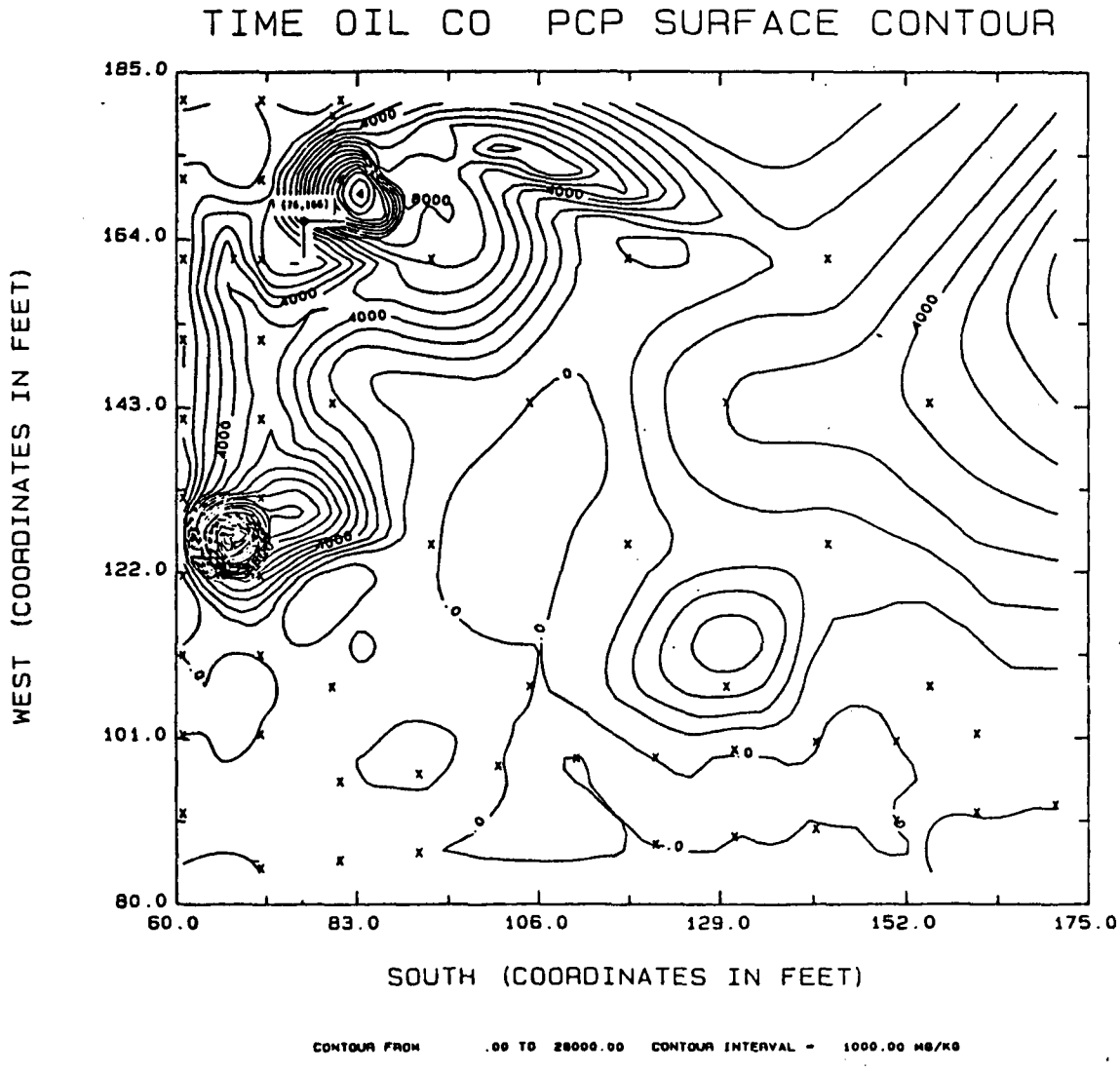
FIGURE 2A



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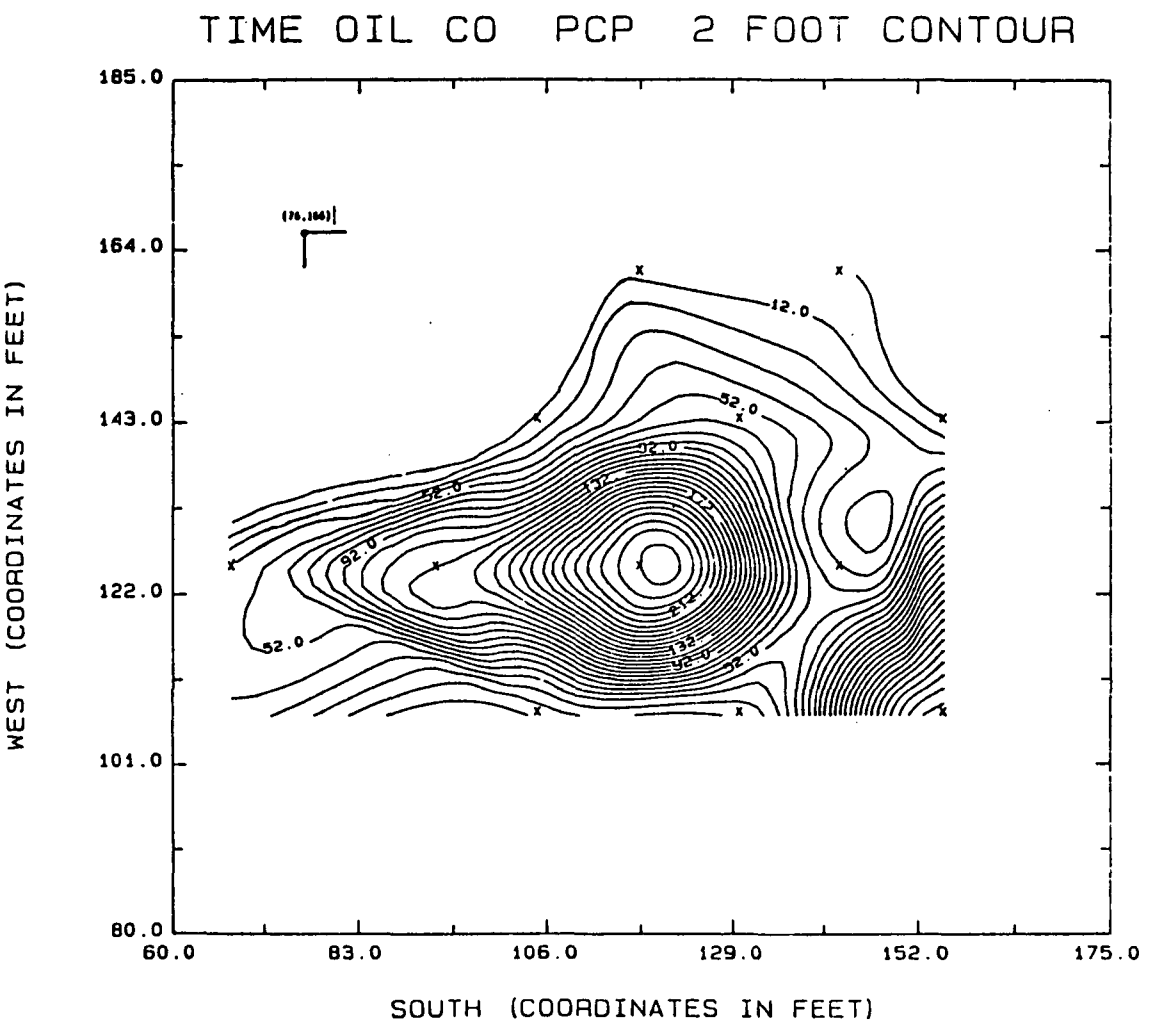
TOLS001611

FIGURE 2B



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TOLS001612

FIGURE 2C

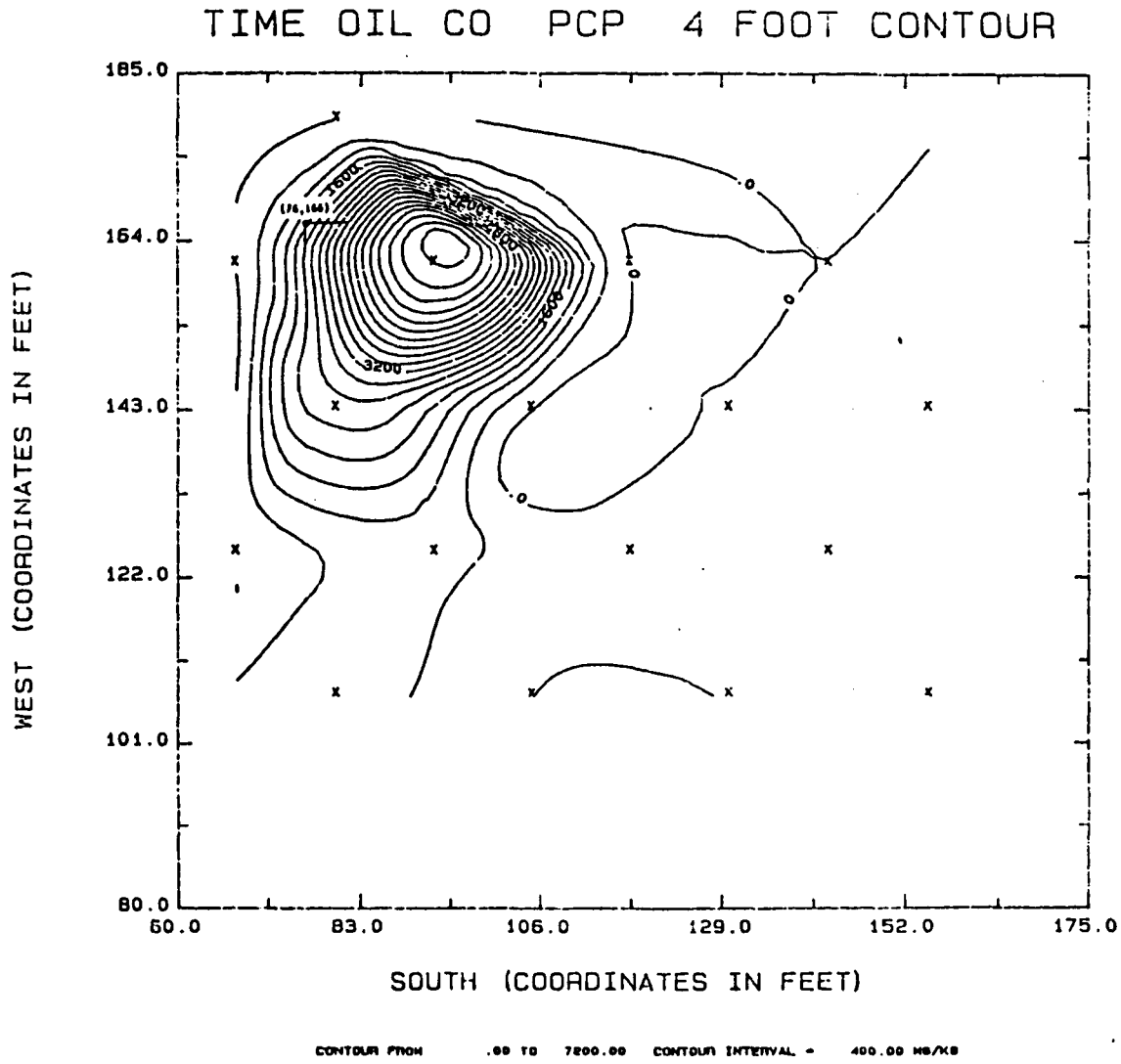

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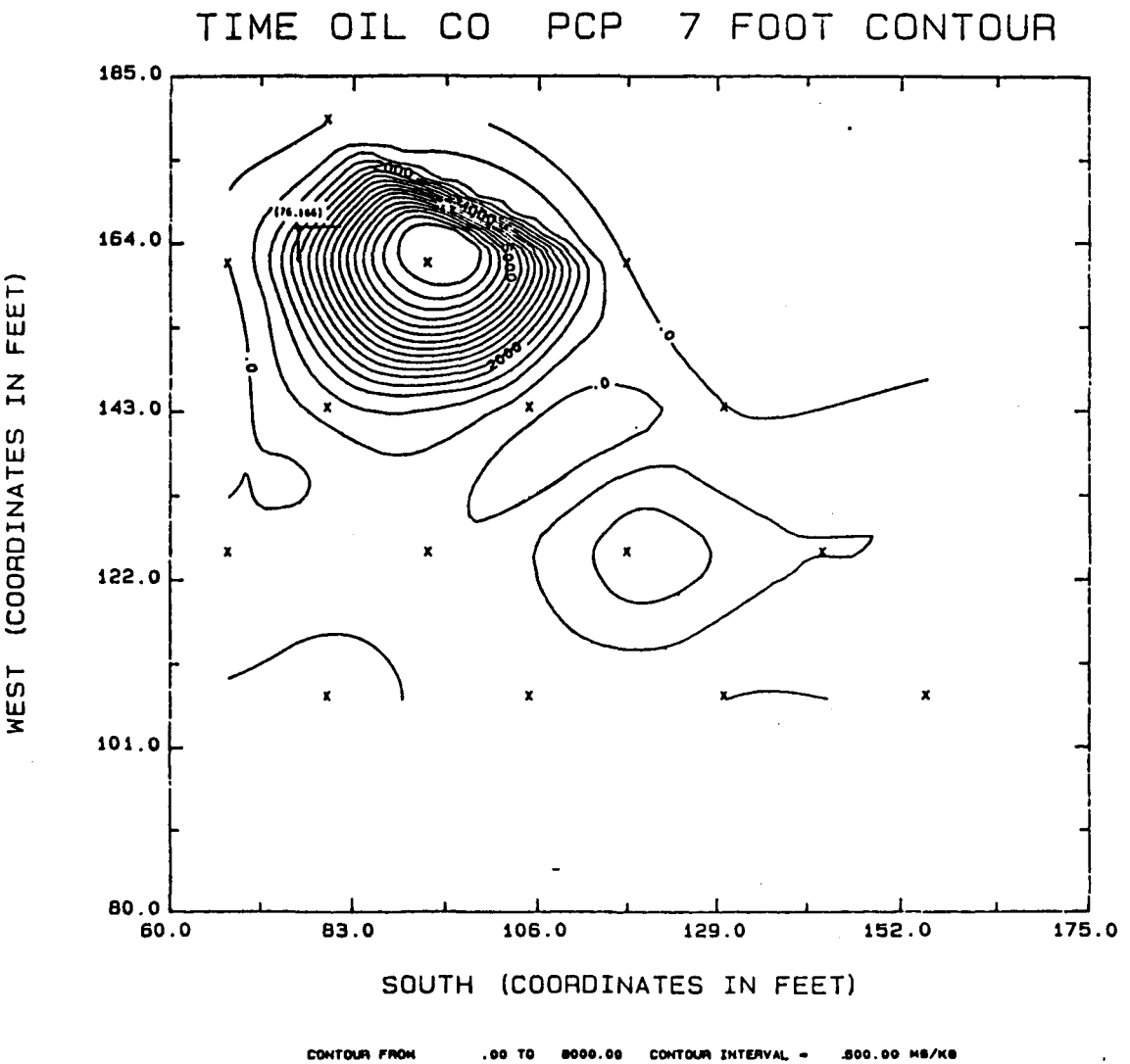
FIGURE 2 D



F9

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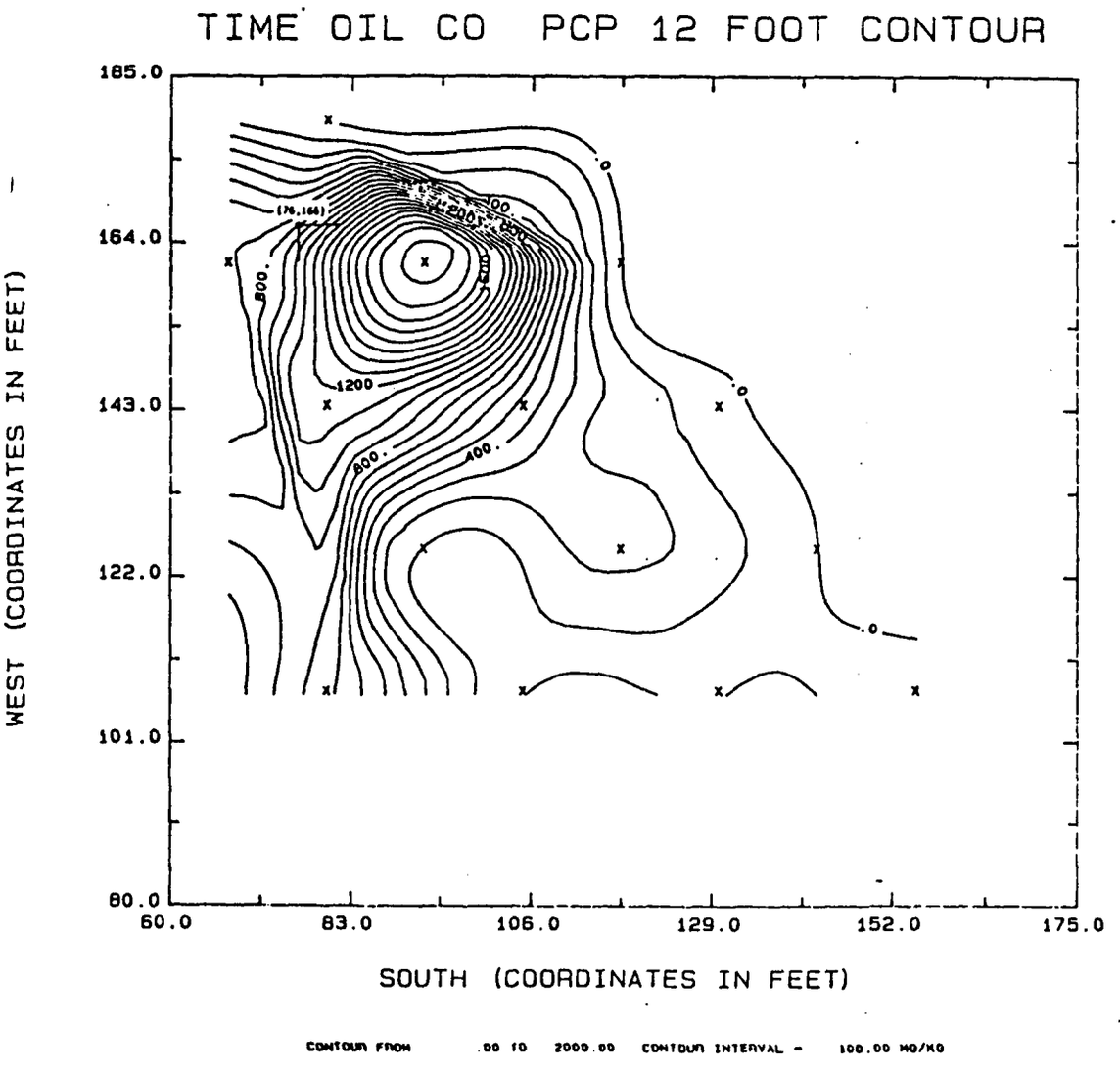
FIGURE 2E



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TOLS001615

EXPENDITURES

7/10/85	Northwest Vacuum Truck Service	9000.00] 243 tons
7/29/85	Chem-Security Systems	27270.88]
8/8/85	Environmental Emergency Services	500.00 - 1st round of sampling
12/5/85	Environmental Emergency Services	18741.55 - Riedel Report
		55512.43

Due:

DEQ per OAR 340-102-065	3500.00 (Tax on value)
* Riedel Environmental Services (Amendment 2)	25000.00
Whatever is necessary to finish job	??
	$84,012

3 under warehouse
1 outside
5 downgradient
] 3 soil samples plus one water

TOLS001616

PHONE 285-2400
CABLE ADDRESS: TIMOIL

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
SAN PEDRO
LOS ANGELES

PRODUCTS TIME TESTED

TIME OIL COMPANY

2737 W. COMMODORE WAY, P.O. BOX 24447, TERMINAL ANNEX, SEATTLE, WA 98124

February 19, 1986

Koppers Company, Inc.
Attn: Donald F. Marion
Forest Products Group
Koppers Building, Room 750
Pittsburgh, PA 15219

Dear Don:

This refers to our mutual problem of pentachlorophenol contamination at 12005 North Burgard Road in Portland Oregon.

During our January 23, 1986 meeting at your offices in Pittsburgh, you mentioned that Koppers would agree to paying half the clean-up costs incurred/committed to date and that further coordination between Koppers and Time would be appropriate for future committments. Time concurs with this approach.

In this light, the below accounting to date will be followed by an invoice two weeks from today unless we hear some objections from you before then.

EXPENDITURES

4/26/85	Chem-Security Systems (Laboratory Analysis of soil sample)	150.00
7/10/85	Northwest Vacuum Truck Service (Relocating 242.76 tons of soil to Arlington)	9,000.00
7/29/85	Chem-Security Systems (Receiving 243.30 tons of soil at Arlington)	27,270.88
8/8/85	Environmental Emergency Services (Obtain and analyze 3 composite samples)	500.00
12/5/85	Environmental Emergency Services (Primary sampling and analysis plus report)	18,741.55
		$55,662.43

TOLS001617

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COMMITTMENTS

workplan?

DEQ per OAR 240-102-065	3,500.00
* Riedel Environmental Services (Amendment 2)	25,000.00 +
	$84,162.43
	50% = $42,081.21

* Name change from Environmental Emergency Services

Should you have any questions regarding the above, please give me a call.

Sincerely,

Robert D. Abendroth

Robert D. Abendroth
Operations Manager

RDA/ch

TOLS001618

BZTO104(e)038439

TIME OIL CO.

INVOICE 091868

P.O.BOX 24447 TERM. STATION - SEATTLE WA 98124-0447
2737 WEST COMMODORE WAY - SEATTLE WA 98199-1233
PHONE (206) 285-2400

DATE 03/06/86
REF. 03-03028 JKJ

CUSTOMER #: 03/05505623

ACCOUNT:
KOPPERS COMPANY INC
ATTN: DONALD F. MARION
KOPPERS BUILDING ROOM 750
PITTSBURGH PA 15219

657 60 123 27831.21
120 9 14250.00

- -

TO CHARGE YOU FOR 1/2 OF THE FOLLOWING PER MUTUAL AGREEMENT IN REFERENCE TO CLEAN UP COSTS AT 12005 N. BURGARD RD., PORTLAND, OREGON.

EXPENDITURES

4/26/85 CHEM-SECURITY SYSTEMS (LABORATORY ANALYSIS OF SOIL SAMPLES)	150.00
7/10/85 NORTHWEST VACUUM TRUCK SERVICE (RELOCATING 242.76 TONS OF SOIL TO ARLINGTON)	9,000.00
7/29/85 CHEM-SECURITY SYSTEMS (RECEIVING 243.30 TONS OF SOIL AT ARLINGTON)	27,270.88
8/8/85 ENVIRONMENTAL EMERGENCY SERVICES (OBTAIN AND ANALYZE 3 COMPOSITE SAMPLES)	
12/31/85 ENVIRONMENTAL EMERGENCY SERVICES (PRIMARY SAMPLING AND ANALYSIS PLUS REPORT)	18,741.55
	55,662.43

COMMITTMENTS

DEQ PER OAR 240-102-065	3,500.00
*RIEDEL ENVIRONMENTAL SERVICES (ADMENDMENT 2)	25,000.00+
	84,162.43

50% = 42,081.21

*NAME CHANGE FROM ENVIRONMENTAL EMERGENCY SERVICES

INVOICE TOTAL $42,081.21

TOLS001619

SEE REVERSE SIDE FOR GENERAL TERMS AND CONDITIONS
TDP 190 REV. 8/82

ORIGINA

KOPPERS

INTEROFFICE CORRESPONDENCE

TO:	Mike Dworsky	**FROM:**	William J. Baldwin
LOCATION:	K - 19	**LOCATION:**	K - 1350
SUBJECT:	Time Oil Project 1221	**DATE:**	February 3, 1987

I am attaching correspondence dated January 14, 1987 from John Denham to Jay Sebbens which includes an update (October 1, 1986) on the above subject site as well as a proposal and cost estimate dated December 19, 1986 for bench scale evaluation of remedial work. After you have the opportunity to review the attached, let's discuss.

William J. Baldwin

WJB/bml

Attachment

cc: J. Sebbens (Without Attachment)

TOLS001620

K-64

000593

BZTO104(e)038441

KOPPERS

INTEROFFICE CORRESPONDENCE

TO:	Don Marion	**FROM:**	W. J. Baldwin
LOCATION:	K - 750	**LOCATION:**	K - 1350
SUBJECT:	Time Oil Company	**DATE:**	March 19, 1986

I am attaching a copy of J. K. Fu's March 10 correspondence to Dave Kerschner on the above subject. Overall, Mr. Fu reports that the information provided by Time Oil did not provide enough evidence regarding treatment of organically contaminated material. Furthermore, prior to paying the invoice, I would again suggest that we receive a copy of "Amendment 2" from the Riedel Environmental Services as well as a detailed work plan for Dave Kerschner's review.

William J. Baldwin

William J. Baldwin

WJB/bml

Attachment

cc: With Attachments

J. D. Hite
Templeton Smith
Dave Kerschner
Jim Garrity
R. G. Hamilton
A. S. Wells

206-285-240

8/8/86 - John Denham - Time Oil Co. Seattle, WA

- Continuing on with process - Everything on Amendment #2 completed.

When he mails information, after I get it, Call to review.

- Soil.

- Ground Water - Drilled Wells.

No ground water contaminated problem. Soil problem still exists.

Send check to John Denham - Time Oil Co.

TOLS001621

61

BZTO104(e)038442

KOPPERS

Interoffice Correspondence

RECEIVED

MAR 12 1986

ENVIRONMENTAL RESOURCES

To D. R. Kerschner

Location K-1940

Subject Response on Remedial Measures - Time Oil

From J. K. Fu

Location Monroeville

Date March 10, 1986

This is in response to the information you provided on evaluating the feasibility of a physical-chemical technology (ATW process) on removing PCP contamination at the Time Oil site. Overall, the information did not provide enough evidence regarding treatment of organically contaminated material. My specific comments are as follows:

1. The information provided described a process which can effectively reduce heavy metal migration in the subsurface environment. As you understand, PCP is an organic compound which behaves in a different manner than metal species. Under typical subsurface environmental conditions, PCP remains in the nonionic form. Several of the chemical processes utilized in the ATW technology (neutralization, precipitation) generally do not affect nonionic species.

2. The articles state that the chemical oxidation process can break down benzene ring structure but does not react with phenol. Phenol is a benzene derivative and as such the meaning of the statement is unclear. Additionally, phenol is present at the majority of the sites where PCP is present, and we would need a system which would deal with both constituents.

3. In ATW process, lime cycle ($CaO \longrightarrow Ca(OH)_2 \longrightarrow CaCO_3 \longrightarrow CaO$) is used to transform waste residue, clay and calcium oxide into limestone. The limestone is pH sensitive and can dissolve in low pH conditions. The waste can then be released to the environment. Additionally, the calcination temperature (1900~2400°F) utilized to convert limestone to calcium oxide would make the process energy intensive, and could make direct incineration of the waste a cost-competitive alternative.

4. The information indicates that in-situ biodegradation is cost-effective, but they did not provide examples and details on what they can do. The information we have from our past studies can provide much better information for this area.

61

K-5 REV. 2

TOLS001622

BZTO104(e)038443

5. The "chemical barrier" and "biodegradation barrier" combination may be useful if there is metal and organic contamination together. If there is only PCP contamination, the chemical barrier will not be needed and the process will become what we call "land treatment."

J. K. Fu

JKF:ss

61

PHONE 285-2400
CABLE ADDRESS: TIMOIL

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
SAN PEDRO
LOS ANGELES

PRODUCTS TIME TESTED

TIME OIL COMPANY

2737 WEST COMMODORE WAY
P.O. BOX 24447, TERMINAL STATION

SEATTLE, WASHINGTON 98199-1233
SEATTLE, WASHINGTON 98124-0447

August 8, 1986

Koppers Company, Inc.
Attn: Donald F. Marion
Koppers Building Room 750
Pittsburgh, PA 15219

Dear Don:

Per our telecon today, copy of amendment 2 to agreement with Riedel is attached.

Since EPA advised, in December 1985, that we could no longer remove contaminated dirt from the premises, we set aside the soil investigation and concentrated on learning if there was any ground water contamination and, if so, plume extent. We installed wells, developed them, had them sampled and analyzed. Results are favorable in that only .0022 ppm was found in one spot by corner of building. Map showing well locations is attached. We also determined water flow direction and checked water elevations several times.

Now we are attempting to somehow effect clean up of soil on site. Several areas are being investigated but we do not yet, in my opinion, have any really good solution. About the middle of next month, we should be in a more knowledgeable position regarding remedial actions. Still have more sampling to do under building if possible, more water measurements to be taken and more data to develop regarding available clean up processes. Will try to gather up everything by October 1 and send it along to you for your use.

Sincerely,

John P. Denham

John P. Denham
Environmental Manager

Enclosures a/s

JPD/ch

TOLS001624

BZTO104(e)038445

AMENDMENT 2
TIME OIL CO. - RIEDEL ENVIRONMENTAL SERVICES, INC.
SAMPLING AND ANALYSIS AGREEMENT
DATED JUNE 28, 1985

The work scope is amended to include the following:

1. Sandblasting and demolition of the impoundment wall (designated A in Figure 1). The cost of this procedure is estimated to be $5,568.01.

2. Drilling, sampling and installation of 3 monitoring walls angeled 45 degrees beneath the existing warehouse (listed as Wells 1, 2 & 3 in Figure 1). Also, the installation of a 40 foot vertical monitoring well, including sampling at 5 foot intervals, directly in front of the angled wells (listed as Well 4 in Figure 1). Analytical results for 12 PCP samples are included in the estimated cost of $12,667.07.

3. Drilling, sampling and installation of an additional 5, 20-foot monitoring wells (listed in Figure 1 as Wells 5, 6, 7, 8 & 9). Soil samples will be taken at 5 foot intervals and 5 analyses for PCP are included in the estimated cost of $6,595.50.

DATED this 5th day of November, 1985.

TIME OIL CO.

John Denham
Environmental Manager

RIEDEL ENVIRONMENTAL SERVICES, INC.

F.J. Bradach
President

RS:bw

TOLS001625

BZTO104(e)038446

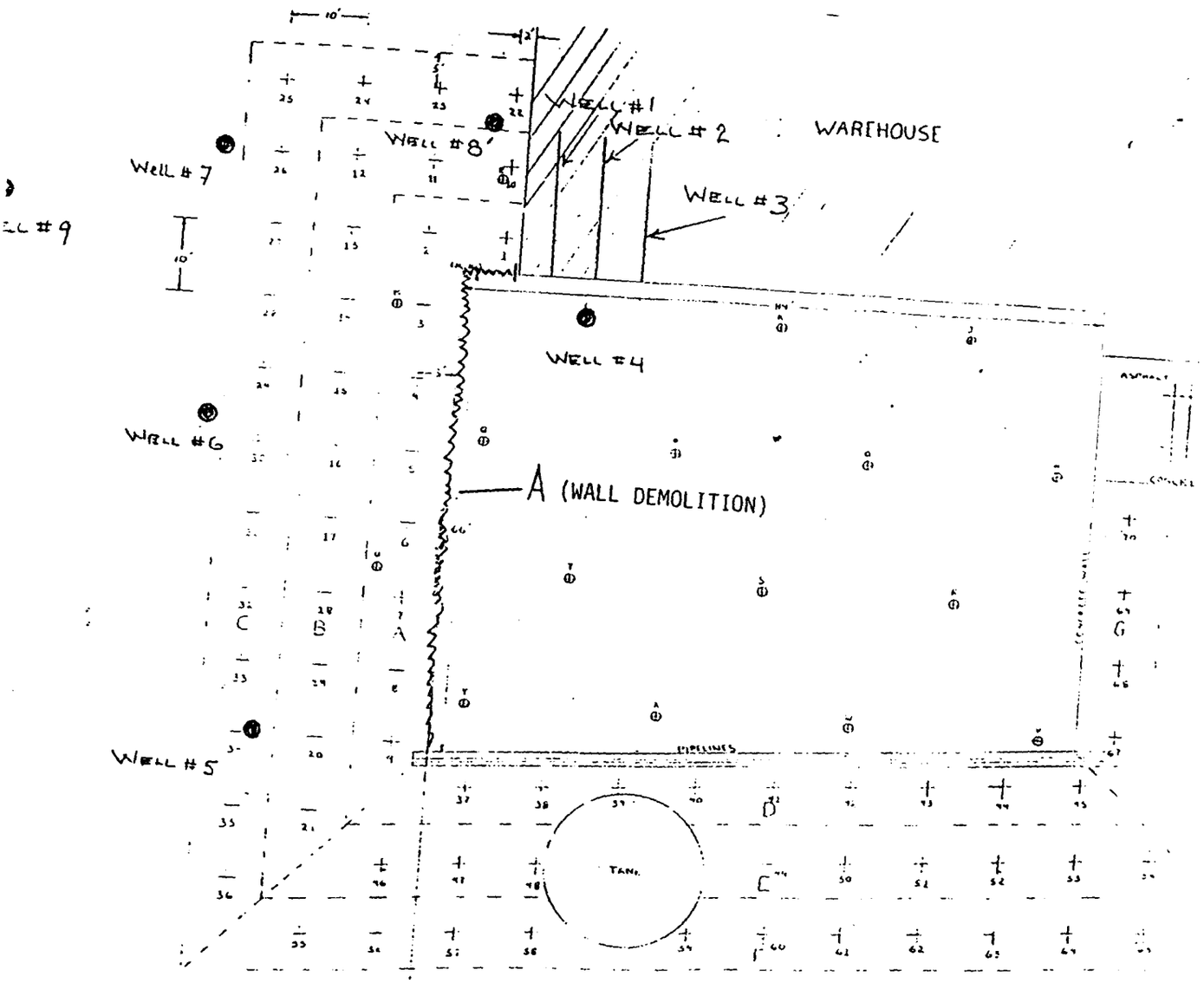


FIGURE 1

Location of Proposed Monitoring Wells

TOLS001626

KOPPERS

INTEROFFICE CORRESPONDENCE

TO:	Mike Dvorsky	**FROM:**	William J. Baldwin
LOCATION:	K - 19	**LOCATION:**	K - 1350
SUBJECT:	Time Oil Project 1221	**DATE:**	February 3, 1987

I am attaching correspondence dated January 14, 1987 from John Denham to Jay Sebbens which includes an update (October 1, 1986) on the above subject site as well as a proposal and cost estimate dated December 19, 1986 for bench scale evaluation of remedial work. After you have the opportunity to review the attached, let's discuss.

William J. Baldwin

William J. Baldwin

WJB/bml

Attachment

cc: J. Sebbens (Without Attachment)

61

TOLS001627

BZTO104(e)038448

TIME OIL COMPANY
PORTLAND, OREGON

PENTACHLOROPHENOL SAMPLING & ANALYSIS

Prepared by
RIEDEL ENVIRONMENTAL SERVICES
P.O. Box 5007
Portland, Oregon 97208

October, 1985

AP 860018

Introduction

Between 1967 and 197_ Time Oil Company operated a pentachlorophenol (PCP) facility at its North Portland, Oregon, terminal. This facility consisted of blending and storage operations used to prepare commercial pentachlorophenol solutions. The facility consisted of various storage and mixing tanks, a warehouse, a bermed, unpaved containment area, various pumps and a truck loading area.

The facility geography is essentially flat and is located less than 1/4 mile from the Willamette River. The soil is principally fine to medium sand with some silt. Ground water is reportedly found from 10 to 20 feet below the surface in this area. During June of 1985, a portion of visibly contaminated soil in the containment area was excavated and disposed of as a hazardous waste. This excavation left a depression in the northwest corner of the containment area sloping gradually to approximately four feet below the adjacent grade. Surface soil was disturbed during this process and, as such, surface sampling was not expected to be representative of conditions existing prior to excavation.

During the years of operation, several intermittent PCP discharges were known to occur, especially during mixing and transfer operations. These discharges resulted in soil contamination in and around the containment area. Initial site visits in April 1985 indicated visible PCP contamination of soils in this vicinity. A sampling plan for surface and subsurface soils extending through the vadose zone was designed and initiated in July 1985.

This sampling and analytical protocol was designed to estimate the spatial limits of PCP contaminant migration in the vadose zone of the soil in and immediately adjacent to the PCP containment area facility. As such, a systematical gridding array was used in lieu of random or other types of probability sampling. No attempt was made to sample underneath structures or paved areas. The protocol was not intended to determine the average concentration of PCP in soil at the facility since the area sampled was not expected to be homogeneous nor to represent a specific population of PCP concentrations. Therefore, statistical evaluations such as mean and standard deviation, have only academic significance in respect to these data.

However, since the origin points in the regular sampling arrays were randomly selected (i.e., a systematic random sampling procedure), there is no reason why some or all of this data could not be used for this purpose at a future time.

AP 860019

Sampling

All sampling was performed in accordance with EPA publication SW846, "Test Methods for Evaluating Solid Waste". Surface soil sampling was achieved using a small trier and/or sampling scoop. Subsurface samples were obtained using a 6" continuous flight hollow stemmed auger fitted with a 2" split-spoon sampler. All sampling equipment was decontaminated between samples with a trisodium phosphate wash, water rinse, hexane wash and a triple rinse with distilled, deionized water. Auger flights were decontaminated by high pressure steam cleaning between bore holes.

Samples were obtained from two areas. Area 1 consisted of a peripheral surface margin surrounding the containment areas on all of the available sides (see Figure 1). Area 2 consisted of the area inside the containment wall. All samples from each site were placed in new 16-ounce wide-mouthed glass jars previously washed with laboratory cleaner, water rinsed, hexane washed, air dried and rinsed three times with distilled, deionized water, then fitted with teflon-lined caps under clean conditions. Samples were labelled with client identification, sample number, date, time, sampler's name, sample location, and other pertinent information. Containers were sealed and placed in portable, refrigerated ice chests for transportation to the laboratory. Samples were delivered to the laboratory by RES courier within 48 hours after collection. Chain of custody forms accompanied all samples from original field sampling to final analysis and are included in this report (Appendix A). A field log of each sample was generated on site during sampling and retained for future reference.

Preliminary surface sampling in Area 1 was performed by preparation of a composite sample obtained from sub-areas A, D and F by pooling grab samples taken with triers or spoons at 10-foot intervals, five feet away from the containment area.

Secondary surface sampling was conducted in Area 1 by obtaining individual grab samples using triers or spoons. The sample sites are numbered 1-81 and are indicated on Figure 1. Secondary samples were obtained in response to the detection of significant concentrations of PCP in preliminary composite samples from sub-areas A and D, above, and were used solely to estimate the limits of contamination beyond the containment area. As stated earlier, no attempt was made in this sampling and analytical protocol to determine average (mean) values of PCP contamination.

TOLS001630

BZTO104(e)038451

Sampling in Area 1, peripheral samples, was performed to ascertain the surface margins of the contaminated area. It was arbitrarily assumed that the area within the containment walls was contaminated with PCP and the peripheral margins of this area established as consisting of the warehouse south wall, the east and west concrete walls and the southern edge of a pipeline transecting the containment area as indicated in Figure 1. Three concentric, 10-foot-wide marginal strips were staked out surrounding this boundary and are indicated by broken lines in Figure 1. These areas did not include areas inside the warehouse or below the asphalt paved railway siding located, respectively, on the north and northeast sides of the containment area. The 10 foot marginal strips were subdivided into areas A, B and C to the west, D, E and F to the south, and G, H, and I to the east (see Figure 1).

Sampling of Area 2, the containment area proper, was performed to evaluate PCP concentrations at the surface and at depth in subsoils to the saturated zone. Grab samples were obtained from a 2-foot x 2-inch split spoon sampler pressed through a 6-inch hollow-stem augered bore hole, and were placed in 16-ounce sample containers as previously described. Decontamination procedures, chain of custody, labelling and logging were identical to Area 1 samples. Auger flights were decontaminated at the completion of each coring to prevent cross contamination. Samples were taken at a mximum depth of 0, 2, 4, 7 and 12 feet below the surface elevation of the unexcavated portion of the containment area. Sampling at 17 feet, as originally planned, was not undertaken due to the detection of groundwater at approximately 12 feet.

Due to the sloping contour of the containment area caused by the excavation, the surface elevation below grade was measured from a string line pulled tightly between two unexcavated surface points and spanning the sampling point. Elevation of sampling site surfaces below this grade line was measured using a rigid ruler and is shown in Table I. Data from this table was used to calculate the actual auger depth below the surface required to obtain the split spoon samples to align all samples in the same respective horizontal plane. This data is listed in Table II and indicates the actual depth drilled below the surface required to obtain a sample at the nominal depth listed (0, 2, 4, 7, 12 or 17 feet). In cases where it was deemed practical, soil was hand excavated to the depth corresponding to the first sampling depth indicated and the sample obtained manually with a small trier or spoon.

The horizontal array of borings was selected to minimize the maximum distance from any given point in the sampling area to the nearest boring. To do this most effectively, a triangular grid was staked off. The array was based on a

TOLS001631

BZTO104(e)038452

triangle with an east-west base of 25 feet and a north-south height of 18 feet. The maximum distance from any point on the grid to the nearest sample point in this case is 13.34 feet as opposed to 14.14 feet for a standard 20-foot x 20-foot rectangular array. This selection allowed for the placement of additional wells just outside the containment wall without increased cost, thereby improving coverage with fewer sampling points (reference: Parkhurst, D.F., Optimal Sampling Geometry for Hazardous Waste Sites; Environmental Science & Technology, 18 No. 7, p. 521 [1984]). The triangular grid is indicated on Figure 1. Bore holes are indicated by the symbol "B" and are labeled with alpha symbols J-Z. A table of samples so obtained is given in Table III.

Following sampling, borings were sealed with bentonite grout in accordance with state well sealing standards under the direction of a registered geologist. Decontamination water, collected into tubs, was analyzed and, following receipt of negative results for PCP, disposed of on site.

Results

Samples were analyzed by Coffee Laboratories, Portland, Oregon, using EPA SW-846 protocols. Soil samples were Sohxlet extracted using EPA protocol #3540. Procedure #8040 was utilized with electron capture quantification for PCP analysis. Results are expressed in milligrams of PCP per kilogram soil (ppm, dry weight). At sites where results could be expected to approach zero (based on results from adjacent sites), samples were held but not analyzed. The results are listed in Table IVA-E. Preliminary composite results are shown in Table IVF and confirm PCP contamination beyond the containment wall.

These tables list PCP concentrations at each sample site as well as the X and Y coordinates used to locate these sites on the plan drawing (Figure 1). These coordinates are tied to an arbitrary grid as shown on Figure 1. The northwest corner of the containment wall is located at coordinates X=76, Y=166 (76,166), for sake of reference. Each sampling depth is listed on a separate table. Copies of the laboratory reports are listed in Appendix B.

The coordinate data and concentration results were plotted using an interpolating contouring program (In-Situ Corp., Laramie WY). This package performs smoothed contouring of the data using a triangularization method and bivariate interpolation. Contours were generated from surface samples (regardless of elevation below grade) and 2-, 4-, 7- and 12-foot depths below grade. The contours are plotted on Figures IIA-E. These contour diagrams have been reduced and printed on mylar sheets in addition to the attached figures.

TABLE I

TIME-OIL CO. - PORTLAND, OREGON

Depth of Boring Site Surface Sample Below Grade
(Horiz. String Line)

Boring	Depth
J	0
K	6"
L	3'
M	0
N	0
O	0
P	1'8"
Q	2'6"
R	0
S	0
T	2'
U	0
V	0
W	0
X	2'
Y	3'
Z	0

AP 860023

TABLE II

TIME OIL CO. - PORTLAND, OREGON

Actual Split-Spoon Sample Depths Below Grade

Boring	Nominal Depth 0	2	4	7	12	17
J	0	0-2'	2-4'	5-7'	10-12'	15-17'
K	NA	0-1 1/2	1 1/2-3 1/2	4 1/2-6 1/2	9 1/2-11 1/2	14 1/2-16 1/
L	NA	NA	Surf (11")	2-4'	7-9'	12-14'
M	0	0-2'	2-4'	5-7'	10-12'	15-17'
N	0	0-2'	2-4'	5-7'	10-12'	15-17'
O	0	0-2'	2-4'	5-7'	10-12'	15-17'
P	NA	Surf (4")	0-2'	3-5'	8-10'	13-15'
Q	NA	NA	0-1 1/2	2 1/2-4 1/2	7 1/2-9 1/2	12 1/2-14 1/2
R	0	0-2'	2-4'	5-7'	10-12'	15-17'
S	0	0-2'	2-4'	5-7'	10-12'	15-17'
T	NA	Surf	0-2'	3-5'	8-10'	13-15'
U	0	0-2'	2-4'	5-7'	10-12'	15-17'
V	0	0-2'	2-4'	5-7'	10-12'	15-17'
W	0	0-2'	2-4'	5-7'	10-12'	15-17'
X	NA	Surf	0-2'	3-5'	8-10'	13-15'
Y	NA	NA	Surf (11")	2-4'	7- 9'	12-14'
Z	0	0-2'	2-4'	5-7'	10-12'	15-17'

NOTE:

Actual depths indicate depth of bottom of split-spoon.

NA = Not available

Surf = Surface sample obtained by hand excavation at depth indicated in parentheses

AP 860024

TOLS001634

BZTO104(e)038455

TABLE III

TIME OIL CO. - PORTLAND, OREGON

Nominal Split-Spoon Sample Depths

Boring	0 Surface	2 0-2'	4 2-4'	7 5-7'	12 10-12'	17 15-17'
J	X	X	X	X	X	ND
K	-	X	X	X	X	ND
L	-	-	X	X	X	ND
M	X	X	X	X	X	ND
N	X	X	X	X	X	ND
O	X	X	X	X	X	ND
P	-	X	X	X	X	ND
Q	-	-	X	X	X	ND
R	X	X	X	X	X	ND
S	X	X	X	X	X	ND
T	-	X	X	X	X	ND
U	X	X	X	X	X	ND
V	X	X	X	X	X	ND
W	X	X	X	X	X	ND
X	-	X	X	X	X	ND
Y	-	-	X	X	X	ND
Z	X	X	X	X	X	ND

NOTE: X = Sample

\- = Not available due to excavation

ND = Not sampled due to presence of groundwater

AP 860025

TOLS001635

BZTO104(e)038456

TABLE IVA
TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Surface Contour Data

Sample #	Coordinates X	Coordinates Y	Concentration Mg/Kg
1	81	171	13500
2	71	171	29
3	71	161	500
4	71	151	5450
5	71	141	5560
6	71	131	8760
7	71	121	4870
8	71	111	92
9	71	101	20
10	81	181	16
11	71	181	7
12	61	181	9
13	61	171	95
14	61	161	175
15	61	151	18
16	61	141	229
17	61	131	88
18	61	121	6
19	61	111	3
20	61	101	2.5
21	61	91	5.2
37	81	95	857
38	91	96	1130
39	101	97	17
40	111	98	3.5
41	121	98	3.1
42	131	99	3.2
43	141	100	2.4
44	151	100	1.8
45	161	101	171
46	71	84	3
47	81	85	3.6
48	91	86	6.1
49	121	87	3.2
50	131	88	1.5
51	141	89	2.3
52	151	90	1.7
53	161	91	1.9
54	171	92	1.2

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	1400
K	117.5	161	N/A
L	92.5	161	N/A
M	67.5	161	4720
N	155	143	4280
O	130	143	3000
P	105	143	N/A
Q	80	143	N/A
R	142.5	125	1712
S	117.5	125	522
T	92.5	125	123
U	67.5	125	26550
V	155	107	317
W	130	107	3385
X	105	107	N/A
Y	80	107	N/A
Z	80	179	21

N/A = Not Available

AP 860026

TOLS001636

BZTO104(e)038457

TABLE IVB

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Two Foot Contour Data

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	3
K	117.5	161	8.8
L	92.5	161	N/A
M	67.5	161	87*
N	155	143	3.1
O	130	143	59
P	105	143	16
Q	80	143	N/A
R	142.5	125	34
S	117.5	125	252
T	92.5	125	123
U	67.5	125	44
V	155	107	260
W	130	107	15
X	105	107	4.5
Y	80	107	N/A
Z	80	179	14*

N/A = Not Available
* = Data points omitted from contouring program to reduce extrapolation error

A-P 860027

TABLE IVC

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Four Foot Contour Data

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	3.6
K	117.5	161	10.5
L	92.5	161	7200
M	67.5	161	22
N	155	143	238
O	130	143	23
P	105	143	15
Q	80	143	2205
R	142.5	125	50
S	117.5	125	184
T	92.5	125	534
U	67.5	125	55
V	156	107	380
W	130	107	8.1
X	105	107	1.3
Y	80	107	598
Z	80	179	2

AP 860028

TOLS001638

BZTO104(e)038459

TABLE IVD

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

7 Foot Contour Data

CORE #	COORDINATES X	COORDINATES Y	CONCENTRATION mg/kg
J	142.5	161	(NA)
K	117.5	161	3
L	92.5	161	8400
M	67.5	161	1
N	155	143	(NA)
O	130	143	13
P	105	143	130
Q	80	143	700
R	142.5	125	500
S	117.5	125	1130
T	92.5	125	75
U	67.5	125	5
V	155	107	1
W	130	107	1
X	105	107	1.9
Y	80	107	700
Z	80	179	7

AP 860029

TABLE IVE

TINE OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

12 Foot Contour Data

CORE #	COORDINATES X	COORDINATES Y	CONCENTRATION mg/kg
J	142.5	161	NA
K	117.5	161	2.3
L	92.5	161	2030
M	67.5	161	690
N	155	143	NA
O	130	143	38
P	105	143	450
Q	80	143	1150
R	142.5	125	1
S	117.5	125	217
T	92.5	125	90
U	67.5	125	NA
V	155	107	3.4
W	130	107	1.9
X	105	107	1.0
Y	80	107	720
Z	80	179	1.0

AP 860030

TOLS001640

BZTO104(e)038461

TABLE IVF

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Preliminary Surface Composites

Area	PCP (mg/kg)
A	660
D	860
G	17

AP 860031

The scale on the mylar prints is such that the contours are superimposable on Figure 1 (site plan). This allows for facile comparison of PCP concentration profiles at depth with surface features of the facility. A reference point on Figures 1 and 2(a-e) is located at (76,166) for ease of alignment.

Conclusions

As seen in Tables IVA-E, PCP concentrations range from 1 ppm to 26,550 ppm. Two foci of contamination are seen at the surface. One, located at coordinates (83,168) in the northwest corner of the containment area, is consistent with reported spillage at this corner of the warehouse. A second focus occurs just outside the containment wall to the west at coordinates (65,125). This site is consistent with reported minor spills during truck loading procedures at this site. Additional minor contamination sites occur at the surface in various positions throughout the sample area; however, no prominent concentration peaks are evident. This may be due, in part, to the partial excavation mentioned previously or to vehicle traffic or other activity in this area.

Additional contours at depth indicate penetration of PCP to the saturated zone at the northwest focus. No evidence of penetration of the "loading area" focus below 2 feet was observed. Note that the results of the 2-foot contouring fail to demonstrate a continuation of the foci found at the surface. This is due, in part, to the excavation which removed the 2-foot material and to the definition of surface samples as surface material regardless of relationship to elevation (i.e. surface samples are not equivalent to "0 foot" samples). This phenomenon is indicated by the lack of sample sites on the 2-foot contour at boring sites L, N, Q, Y and Z. The lack of high PCP concentrations at boring site U, 2-foot contour, implies that no significant penetration occurred at this site and that PCP contamination at this site is restricted to narrowly distributed but high concentration surface contamination.

Contours at 4, 7 and 12 feet indicate penetration to the groundwater (encountered between 7 and 12 feet) with appreciable attenuation of PCP concentrations with increasing depth. The maximum concentration at 12 feet is 2030 ppm located at boring "L". Note that no samples were analyzed at boring sites "J" and "N" at 7- or 12-foot depths, since concentrations above these depths indicated that concentrations near zero could be expected. No sample was obtained at "U" due to loss of sample when groundwater was encountered.

The slight tendency of the PCP-plume to tail off to the south implies that groundwater flux may be diffusing the plume in this direction. This conclusion can only be substantiated by hydrogeologic evaluations of the site, however.

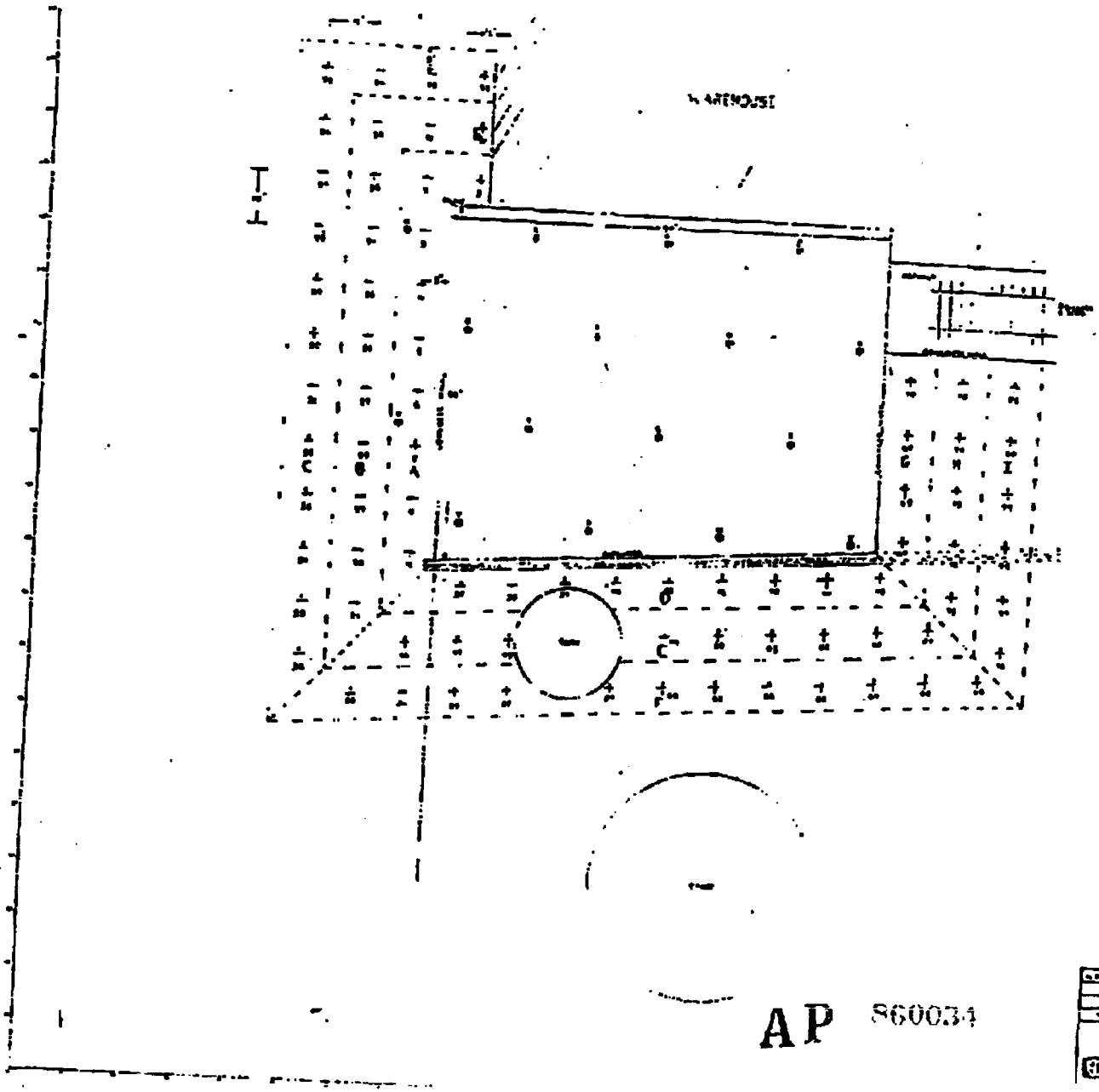
The contaminant plume may be restricted at the surface by the presence of the warehouse foundation. This structure could be expected to prevent diffusion of the PCP plume to the north by presenting a physical barrier to contaminant migration. No sampling was performed underneath the warehouse and this study cannot conclude that migration has occurred beyond the foundation base. Identification of concentrations of PCP beneath the building on contour plots is a function of the contouring program and may not be indicative of actual plume morphology in this area.

Summary

Significant PCP concentrations were detected in soil at Time Oil Co.'s north Portland operation. Contamination was pronounced at two focal sites, one at the northwest corner of the containment area and one at the west side of the containment area. Surface concentrations ranged from 1.2 mg/kg to 26,500 mg/kg. Sampling at depth indicated significant PCP concentrations at the northwest focus descending to the saturated zone and approximately 8-12 feet. Concentrations at 12 feet ranged from 1.0 mg/kg to 2,030 mg/kg. Analytical data from surface, 2-, 4- 7- and 12-foot samples were contoured and plotted and may be related to an area plan drawing of the same scale.

A-P 860033

FIGURE 1



AP 860034

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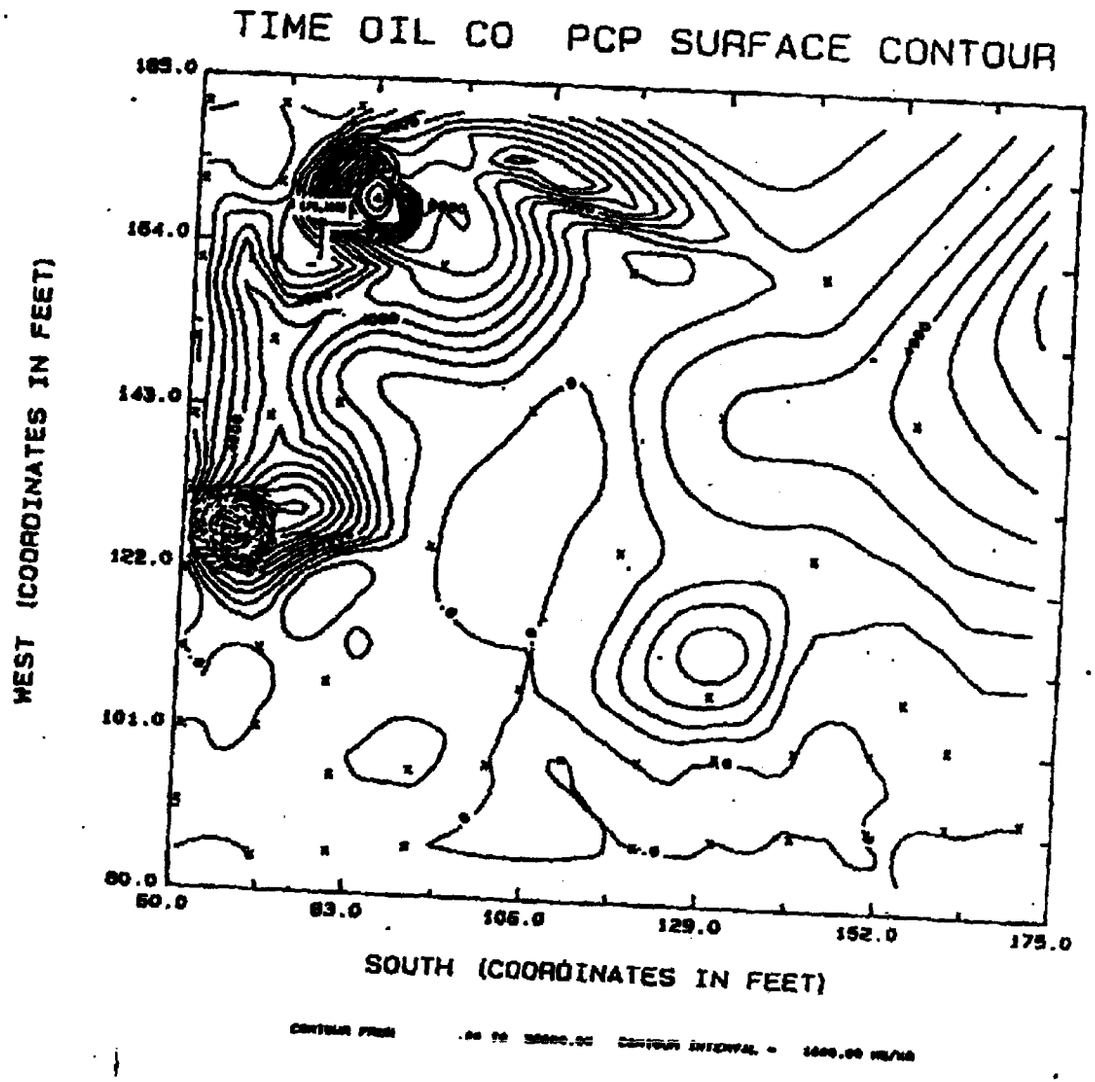
FIGURE 2A



AP 860035

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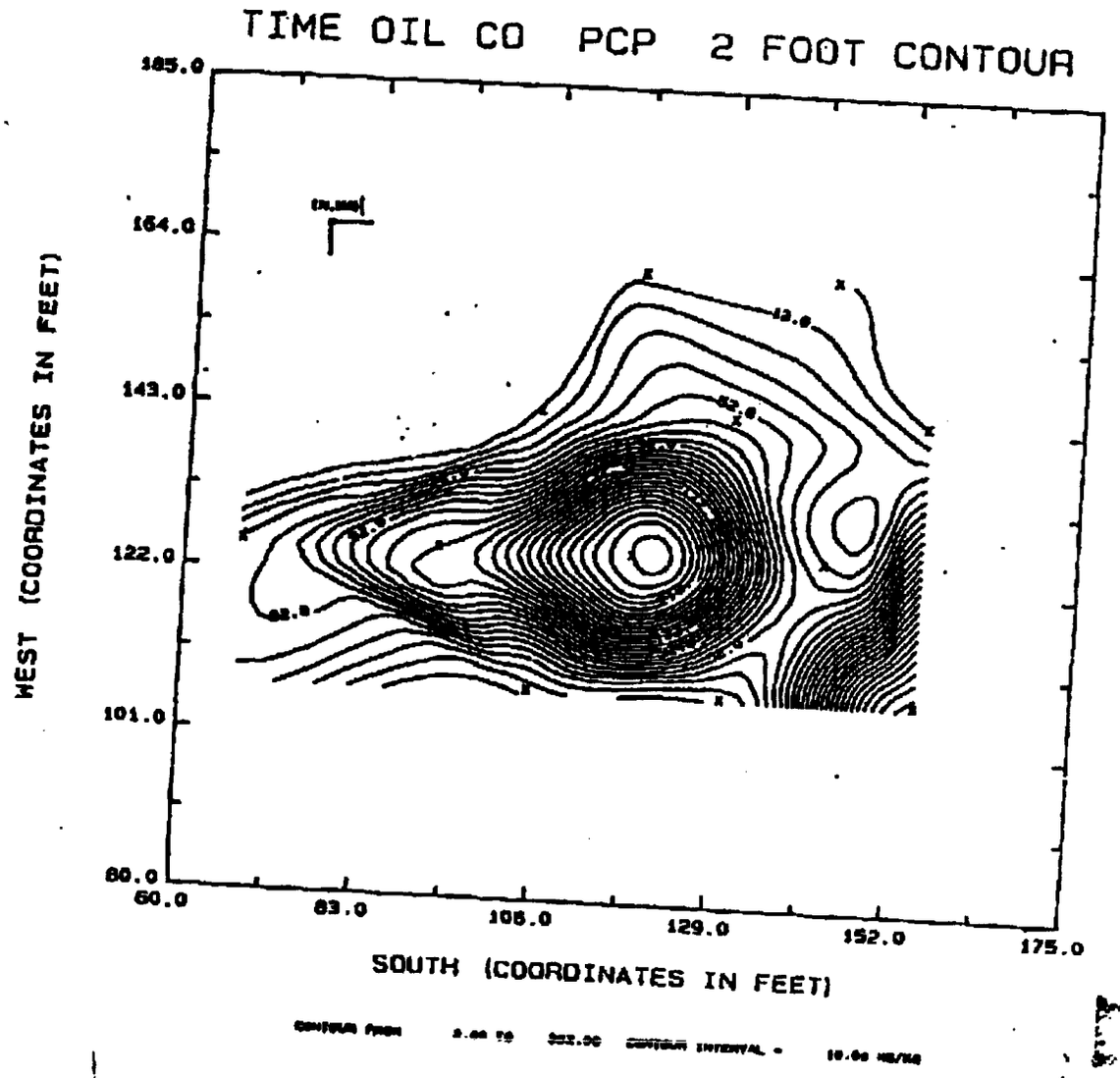
FIGURE 28

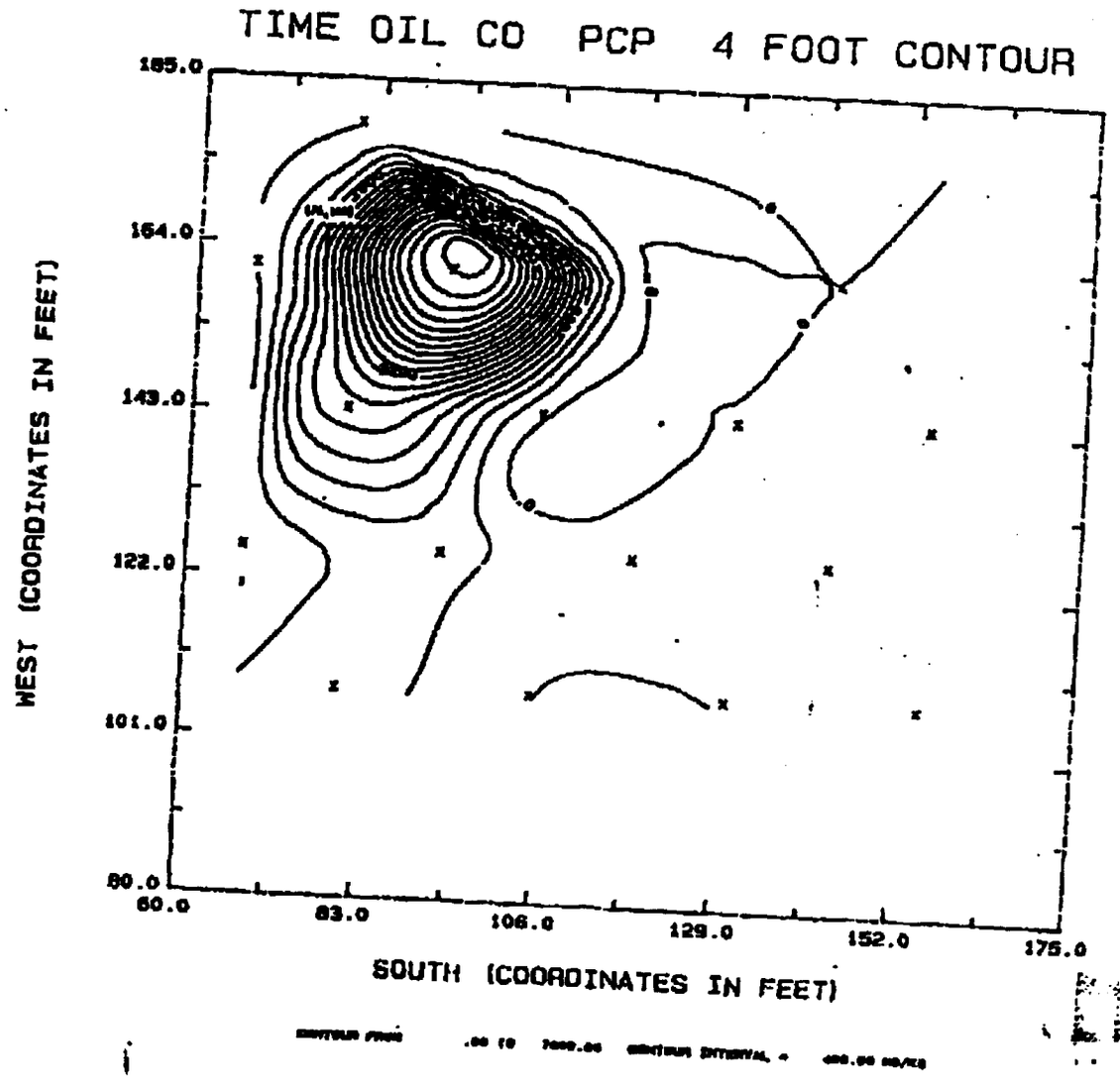


AP 860036

BZTO104(e)038467

TOLS001646

FIGURE 2C



AP 860037

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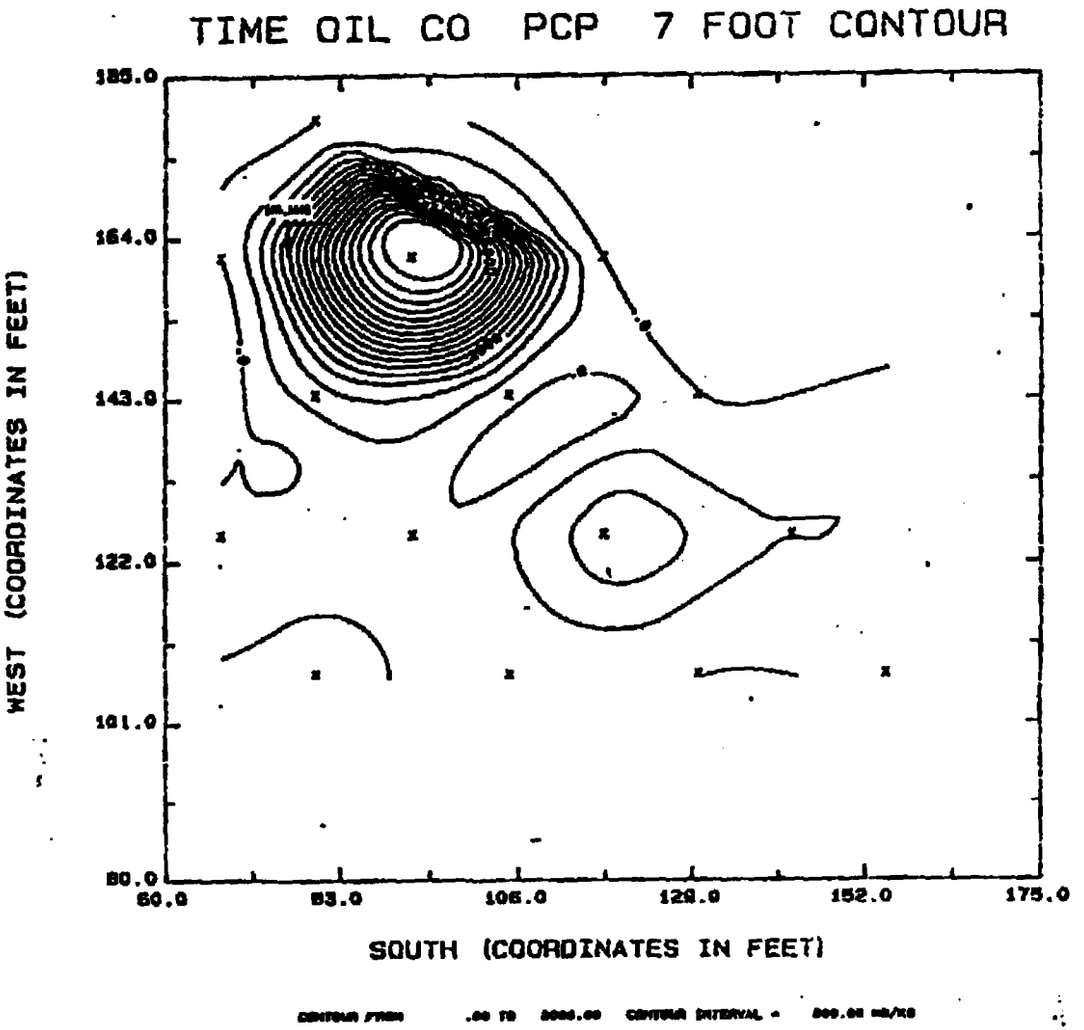
TOLS001647

FIGURE 2 D



AP 860038

TOLS001648

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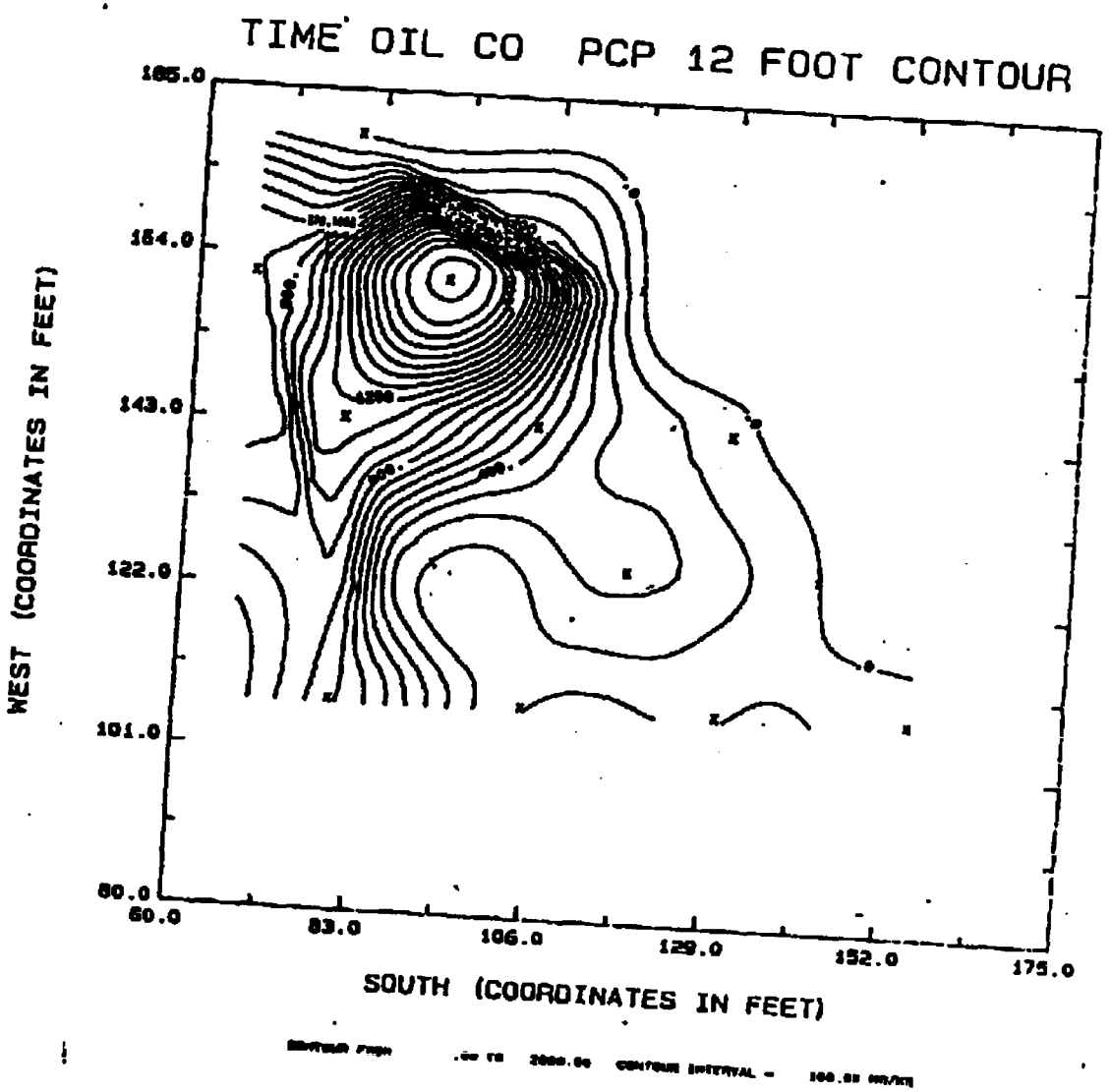
FIGURE 2E



A.P 860039

TOLS001649

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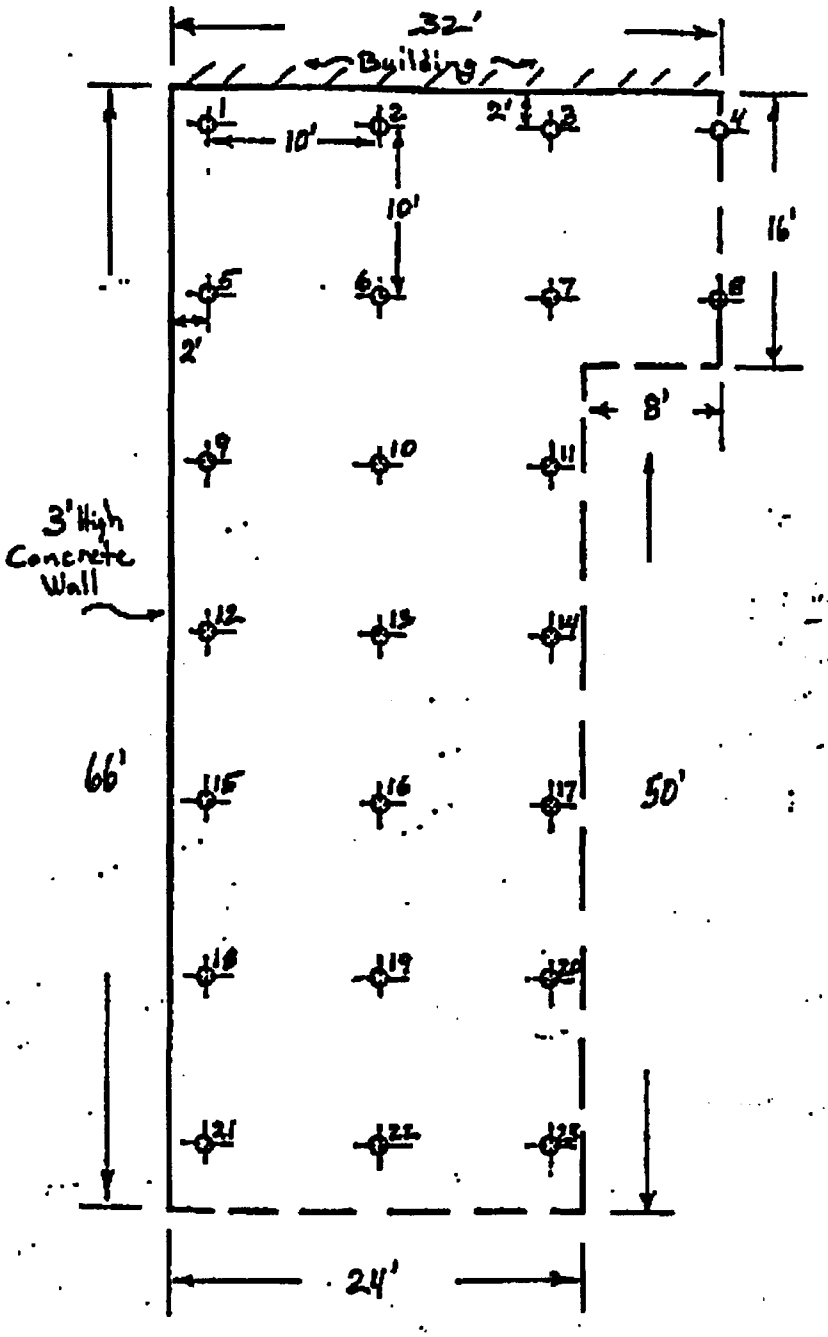
NORTHWEST TERMINAL WOODTREATING SOIL SAMPLING PLAN

Scale: 1" = 10'



1. Drill 23 holes and obtain samples from each.
2. On holes 2, 3, 4, 6 & 7:
   a. Sample at 6", 1', 2', 3', 5', 10' and 15' levels.
   b. Analyze samples at 1', 2', 3', 5' & 10' levels (25 analyses). Also analyze holes 2,3 & 6 at 15' level.
   c. Hold remaining samples at 40 degrees F.
3. On all other holes:
   a. Sample at 6", 1', 2', 3', 5' and 10' levels.
   b. Analyze samples at 6", 1', 2' & 3' levels (72 analyses).
   c. Hold remaining samples at 40 degrees F.

AP 860040

Elec. 1

TOLS001650

CONTRACT

The parties to this agreement are Time Oil Co. (hereinafter termed owner) and Northwest Vacuum Truck Service, Inc. (hereinafter termed contractor) whereas:

Owner has a volume of earthen material located in Portland, Oregon and owner is desirous of having that material removed.

Contractor is willing to undertake that task upon the terms and conditions set forth below.

Therefore, in consideration of the agreements contained herein, the parties agree as follows:

1. Contractor agrees to remove the material from its present location, load it into suitable transportation vehicles and transport it to a disposal facility approved by the Oregon Department of Environmental Quality.

2. The material to be removed by contractor is generally set forth on the drawing labeled exhibit 1, attached hereto and incorporated by this reference. Prior to work under this agreement, a representative of owner will meet with contractor at the site and the extent of the material to be removed will be more specifically delineated at that time.

3. The commencement date for work will be February 21, 1985 or such other date as may be agreed upon by the parties following coordination with the Department of Environmental Quality and the authorized disposal facility. Work is intended to be divided into two phases. First phase consists of material removal to an agreed upon depth. Then there will be a several day delay while additional tests are conducted to determine if further removal is required. If so, phase two removal actions are to be effected. Should there be any need to continue removal, above process is to be repeated until ultimate removal is accomplished.

4. For each day worked, owner agrees to pay contractor the sum of 1200 dollars for labor and equipment pertaining to soil removal plus 500 dollars for each truckload of soil transported. A day worked shall be one wherein earth moving equipment, necessary to perform the work, has been utilized to the fullest, reasonably possible, extent for a period of not less than 8 hours. Truck shall be a standard 18 yard rated capacity vehicle. Payment will be made upon completion of the work and receipt by owner of written acknowledgement from the approved disposal facility that all material removed and transported by contractor has been received at that facility.

5. Contractor indemnifies and agrees to defend and hold owner harmless from any and all costs, claims, liabilities and damages arising out of contractors work under this contract.

6. Contractor hereby declares that it is engaged as an independent contractor and agrees to perform the work as independent contractor and not as an employee of owner. Contractor has and hereby retains the right to exercise full control and supervision of the work and full control over the employment, direction, compensation and discharge of all persons assisting in the work.

AP 860044

Ex. 4

TOLS001651

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7. Contractor agrees at its expense to obtain all governmental permits, licenses and approvals and comply with all laws, rules, regulations and requirements now or hereafter existing necessary for the accomplishment of the work to be performed by contractor under this agreement.

8. Contractor especially acknowledges its understanding that portions of the material to be removed, transported and disposed of under this agreement have been found to contain commercial pentachlorophenol in concentrations ranging from 0 ppm to 1820 ppm. Contractor agrees to take all necessary precautions for the protection of persons and property that may be required or prudent in the removal and transportation of that material.

9. Contractor agrees to maintain workmans' compensation insurance in the form and amounts required by the laws of the state of Oregon and broad form comprehensive public liability insurance with minimum limits of $1 million per person and $1 million per accident for bodily injury and $500,000 per accident for property damage. Contractor shall promptly deliver to owner certificates of said insurance, naming owner as an additional insured before commencing work and such certificate shall provide that said insurance shall not be cancelled prior to 30 days by written notice to owner.

10. Contractor agrees that before commencement of any work hereunder, it will promptly furnish owner with a faithful performance bond in an amount to 53,000 dollars guaranteeing completion of all work and performance of all obligations undertaken by contractor under this agreement.

11. The nature, validity and interpretation of this contract shall be governed by the laws of the state of Washington.

Dated this 19th day of February 1985.

OWNER
Time Oil Co.

by _____
John P. Denham
Environmental Manager

CONTRACTOR
Northwest Vacuum Truck Service Inc.

by _____
John H. Somes
General Manager

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SAIF CORPORATION

INSURING COMPANY:
☐ SAIF CORPORATION
☐ SAIF CORPORATION OF OREGON

Certificate of Coverage

Date of Issue: FEBRUARY 25, 1985

This certifies that NW VACUUM TRUCK SERVICE INC. *Policy No.* 426329
is insured with SAIF, with a policy period ending date of JUNE 30, 1985
and is complying with the Oregon Workers' Compensation Law to provide for payment of compensation to subject Oregon workers.

TO: TIME OIL CO,
2737 W. COMMODORE WAY
SEATTLE, WASHINGTON 98199

ATTN: JOHN DENHAM

Michael J. Dora

Michael J. Dora
Director
Underwriting Division

A P 860037

F1270 1/84

BZTO104(e)038474

TOLS001653

CHEM-SECURITY SYSTEMS, INC. DISPOSAL REQUEST

REFERENCE: E13508
WASTE PROFILE SHEET NO.

SUBJECT:

WASTE STREAM NAME: PCP contaminated soil

PHYSICAL STATE
LIQUID ☐ SOLID ☒ SEMISOLID ☐

1242
EPA WASTE CODE

GENERATOR NAME: TIME OIL CO.

ORD009597543
EPA GENERATOR I.D. NUMBER

FACILITY ADDRESS

Time Oil Co.
12005 N. Burgard Rd.
Portland, Or

MAILING ADDRESS

Same

GENERATOR CONTACT PERSON NAME: John P. Denham Tel. No. 206 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards (NOW) 0 (ANNUAL)

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4.

No free liquid allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie
NAME (PRINT)

J. Craig McKenzie
SIGNATURE

4-29-85
DATE

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
May 14, 1985
Solid Waste Division
Hazardous Waste Operations

RE: HW4.10 T

COMMENTS:

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TOLS001654

BZTO104(e)038475

CONTRACT BOND

Bond No. H 34156

KNOW ALL MEN BY THESE PRESENTS, That we, NORTHWEST VACUUM TRUCK SERVICE, INC.

5555 NORTH CHANNEL - BLDG. 43 - PORTLAND, OREGON 97217

called the Principal, and HERITAGE INSURANCE COMPANY OF AMERICA, A ILLINOIS corporation, called the Surety, are held and firmly bound unto TIME OIL CO.

called the owner in the sum of FIFTY THREE THOUSAND AND NO/100THS ---------- Dollars ($ 53,000.00**), for the payment whereof said Principal and Surety bind themselves firmly by these presents.

WHEREAS, the Principal has, by written Agreement, dated MARCH 12, , 19 85, entered into a Contract with the Owner for REMOVAL OF EARTHEN MATERIAL OWNED BY OWNER FROM ITS PRESENT LOCATION, LOAD IT INTO SUITABLE TRANSPORTATION VEHICLES AND TRANSPORT IT TO A DISPOSAL FACILITY APPROVED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY.

a copy of which is by reference made a part hereof;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That if the Principal shall faithfully perform the Contract, and indemnify and save harmless the Owner from all loss, cost or damage which Owner may suffer by reason of any lien arising out of claim for labor or materials utilized in the construction under said Contract, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 12TH day of MARCH, 19 85.

NORTHWEST VACUUM TRUCK SERVICE, INC.
Principal

By: S M Skeel

HERITAGE INSURANCE COMPANY OF AMERICA

By: J C Baumann
J C. BAUMANN
Attorney-in-fact

ENCL. 6

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TOLS001655

BZTO104(e)038476

HERITAGE INSURANCE COMPANY OF AMERICA

LINCOLNWOOD, ILLINOIS

Power of Attorney

PRINCIPAL NORTHWEST VACUUM TRUCK SERVICE, INC. EFFECTIVE DATE MARCH 12, 1985

DBA AMOUNT OF BOND $ 53,000.00

POWER NO. H 34156

KNOW ALL MEN BY THESE PRESENTS: That the Heritage Insurance Company, a Corporation in the State of Illinois, having its principal office in Lincolnwood, Illinois, pursuant to the following resolution, adopted by the Board of Directors of the said Company on the 9th day of March, 1979, to wit:

"The President, or any Vice-President, or other officer designated by the Board of Executive Committee shall have authority, severally, to make, execute and deliver a power of attorney constituting as Attorney-in-Fact such persons, firms or corporations as such officers may select from time to time."

does hereby make, constitute and appoint J.T. Kohoutek, C.J. Huffman and/or J.C. Baumann of Seattle in the State of Washington, its true and lawful attorney(s)-in-fact, with full power and authority hereby conferred in its name, place and stead, to sign, execute, acknowledge and deliver in its behalf, and as act and deed, as follows:

The obligation of the Company shall not exceed the sum of five hundred thousand ($500,000.00) dollars.

and to bind Heritage Insurance Company thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of the Heritage Insurance Company, and all the acts of said Attorney(s) pursuant to the authority herein given, are hereby ratified and confirmed.

IN WITNESS WHEREOF, the Heritage Insurance Company has caused these presents to be signed by its President and/or its Vice-President, and its Corporate Seal to be hereto affixed.

HERITAGE INSURANCE COMPANY OF AMERICA

Vincent M. Giudetta, President

State of Illinois)
County of Cook) SS:

On this 9th day of March, 1979, before the subscriber, a Notary Public of the State of Illinois in and for the County of Cook duly commissioned and qualified, came V. M. Giudetta of the Heritage Insurance Company, to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation, and that the resolution of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my official seal at Lincolnwood, Illinois, the day and year above written.

Joseph D. Udoni
Notary Public

JOSEPH D. UDONI
NOTARY PUBLIC, State of Illinois
Qualified in State of Illinois
Commission Expires March 4, 1984

State of Illinois)
County of Cook) SS:

CERTIFICATE

I, the undersigned, Secretary of *HERITAGE INSURANCE CO.* a stock corporation of the State of Illinois, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Resolution of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, at Lincolnwood, Illinois. Dated this 12TH day of MARCH A.D., 19 85

Carrie A. Faille
Secretary

H-93

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WASTE TRANSPORTATION AND DISPOSAL AGREEMENT

On this 24th day of May, 19 84, the parties, Time Oil Co., a Washington corporation with its principal offices at 2737 W. Commodore Way, Seattle, WA 98199 (hereinafter called "Generator"), and CHEM-SECURITY SYSTEMS, INC., a Washington corporation with its principal offices at 10602 N. E. 38th Place, Kirkland, Washington 98033 (hereinafter called "Disposer"), have agreed as follows:

1. WASTE PRODUCTS. The term "Waste Products" refers to those solid, liquid, semi-solid, or contained gaseous materials which are generally described in, and which have physical, chemical, biological or radioactive constituents, characteristics and properties within the specifications stated in, the Supplemental Information Document. The term "Waste Products" also includes containers described in the Supplemental Information Document, if they are to be supplied by the Generator. The term "unit of Waste Products" refers to a single whole container of Waste Products (such as a barrel, drum, box, or tanker load).

   Materials and containers shall be considered nonconforming: (i) if they are not in accordance with the warranties, descriptions, specifications or limitations stated in this agreement and the Supplemental Information Document, or (ii) if they have material constituents or components, not specifically identified in the Supplemental Information Document, (a) which materially increase the nature or extent of the hazard and risk undertaken by CSSI in agreeing to handle, load, transport, store, treat or dispose of the Waste Products, or (b) for whose storage, treatment or disposal the Disposal Facility is not designed or permitted.

2. SUPPLEMENTAL INFORMATION DOCUMENT. Where "the Supplemental Information Document" is referred to in this Agreement, the parties understand that such term refers to each single entire document, in that form specified in Exhibit A, (which exhibit is attached hereto and made part hereof), containing the information therein required and executed by the Generator and Disposer. Each Supplemental Information Document shall be numbered in chronological sequence. A Supplemental Information Document, prepared and executed as herein required, shall be considered incorporated into this Agreement and part hereof as of the date and time of Document execution. It is the intention of the parties that each Supplemental Information Document, when incorporated into this Agreement, constitutes a separate undertaking, individually enforceable.

Form No. WMI-55-B (Rev. 10/10/84)
c 1980, WASTE MANAGEMENT, INC.

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A Supplemental Information Document, or any amendment thereto, shall be executed, on behalf of Disposer or Generator, only by such persons appointed as authorized agents of the parties for such purposes, which persons are identified, by name or specific position title, in Exhibit B. attached hereto and made part hereof. Either party may, by notice to the other, amend its list of authorized agents, which shall constitute an amendment to Exhibit B at the time such notice is received.

At any time during the term of a Supplemental Information Document, upon the written request of Disposer, the Generator shall: (a) supply an updated written description of the Waste Products or a written certification that the description previously supplied remains true and accurate; or, (b) supply a written certification that a particular load of Waste Products delivered to Disposer constituted a representative sample of the Waste Products described in the Supplemental Information Document; or, (c) supply a representative sample of the Waste Products together with a written certification of the sample's representativeness; or, (d) allow Disposer access to the Waste Products at Generator's facility for the purpose of obtaining one or more representative samples. Forms to be used in providing written Waste Products descriptions, recertifications of previous descriptions, or certifications of representative Waste Products samples shall be supplied by Disposer.

3. TENDER OF DELIVERY. Generator shall tender delivery of the Waste Products to Disposer at those times and places, in those quantities, and in the manner specified in the Supplemental Information Document. Generator shall, at the same time and place, tender to Disposer those completed documents, shipping papers or manifests as are required, for lawful transfer of the Waste Products to Disposer, by valid and applicable statutes, ordinances, orders, rules or regulations of the federal, state, or local governments, including, but not limited to, the Hazardous Materials Transportation Act, the Toxic Substances Control Act and the Resource Conservation and Recovery Act of 1976.

Tender of delivery shall be considered non-conforming if not in accordance with this Section and the specifications of the Supplemental Information Document, or if not preceded by such notification as required by Section 16 (f).

4. DISPOSER RIGHT TO INSPECTION UPON TENDER. Disposer shall have the right, but not the obligation, to inspect, sample, analyze, or test any tendered Waste Products before accepting such products. Failure or refusal of the Generator to provide Disposer with access to any tendered or delivered Waste Products, prior to Disposer's acceptance, shall be deemed a non-conforming tender or delivery of all of the Waste Products tendered or delivered at that time and place. Disposer's

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exercise of, or failure to exercise, its right hereunder shall not operate to relieve Generator of its responsibility or liability under this Agreement.

5. DISPOSER RIGHTS ON IMPROPER DELIVERY. If the Waste Products, any unit thereof, or the tender of delivery fail in any respect to conform to this Agreement, including the requirements of the Supplemental Information Document, Disposer may, at its exclusive option, (i) reject all Waste Products tendered; or, (ii) accept all Waste Products tendered; or, (iii) accept any unit or units of Waste Products and reject the rest. Provided, however, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other tendered container, would be visibly apparent, Disposer's option shall be limited to accepting or rejecting the particular non-conforming unit.

Rejection of the Waste Products must be within a reasonable time after their tender or delivery, not to exceed twenty-four (24) hours. In rejecting any Waste Products, Disposer shall orally notify the Generator of the manner in which the Waste Products or the tender of delivery are non-conforming, such notice to be followed by written notice within five (5) business days.

6. ACCEPTANCE OF WASTE PRODUCTS. Disposer shall accept any Waste Products which are in conformance with, and which have been tendered in conformance with, this Agreement, including the Supplemental Information Document, and may accept, as provided in Section 5, non-conforming Waste Products. If transportation is to be provided by Disposer, Disposer shall evidence its acceptance by removing such Waste Products from the place of tender. If transportation to the Storage or Disposal Facility is to be provided by Generator, Disposer shall evidence its acceptance by written notice to the Generator, such as through signing shipping papers or the manifest tendered with the Waste Products.

Failure of Disposer to reject the Waste Products, or any unit thereof, as provided in Section 5 shall be deemed acceptance of all tendered Waste Products not so rejected.

Upon acceptance of the Waste Products Disposer shall be precluded from rejecting those Waste Products accepted and, if acceptance of any unit of Waste Products was made with actual knowledge of a non-conformity, Disposer shall be precluded from revoking its acceptance of such unit because of such non-conformity. Acceptance of the Waste Products, or any unit thereof, does not, however, impair, or operate as a waiver of, any right or remedy available to Disposer, including revocation of acceptance, in the event the Waste Products or

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their tender are later discovered to be non-conforming.

7. REVOCATION OF ACCEPTANCE. Disposer may, at any time before the condition of the Waste Products has been materially changed (such as by treatment, processing or disposal), revoke its acceptance of any unit or units of Waste Products discovered to be non-conforming.

Discovery by Disposer that any unit of the Waste Products is non-conforming for any reason shall be considered discovery that all units of such Waste Products, accepted at the same time as the non-conforming unit, are non-conforming for the same reasons. Provided, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other accepted container, would be visibly apparent, Disposer's option shall be limited to revoking acceptance of the particular non-conforming unit.

Revocation must occur within a reasonable time after Disposer actually discovers or should have discovered the non-conformity. In revoking its acceptance of any Waste Products, Disposer shall notify the Generator of the manner in which the Waste Products are non-conforming.

7a GENERATOR'S OPTIONS IN EVENT OF REJECTION OF REVOCATION OF ACCEPTANCE.
In the event Disposer rejects or revokes its acceptance of Waste Products, and at such time the Waste Products are in Disposer's possession or control, Generator may, within five (5) business days after receipt of notice, notify Disposer of Generator's intent to test the Waste Products, to verify the alleged non-conformity, or to correct any improper containerization, marking or labeling. Generator may, if lawfully permitted, direct Disposer to arrange for such testing or corrections, pursuant to Generator's instructions and at Generator's cost. All testing or corrections must be completed within twenty-one (21) days of Generator's receipt of the rejection or revocation notice. During the period of any testing or corrections, the duty of Disposer with respect to the Waste Products shall be that of a bailee for hire.

Upon mutual agreement of the parties that the Waste Products or any unit are not conforming for the reasons specified in Disposer's notice, the notice of rejection or revocation as to such Waste Products or unit shall be deemed null and void as of the time of its original issuance.

8. DISPOSER OPTIONS AS TO RIGHTFULLY REJECTED OR REVOKED WASTE PRODUCTS.
If Disposer rejects or revokes its acceptance of all or any units of Waste Products, and at such time the Waste Products

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are in Disposer's possession or control, Disposer and Generator shall, in good faith, attempt to amend the Supplemental Information Document to provide for handling of the non-conforming materials. If the parties cannot, within a reasonable time after rejection or revocation (including any time provided for correction or testing in Section 7a), agree on necessary amendments, Generator shall make prompt arrangements for the removal of the non-conforming materials from the Storage or Disposal Facility to another lawful place of disposition.

Generator agrees to pay Disposer its reasonable expenses and charges for handling, loading, stowing, preparing for transport, transporting, storing and caring for any Waste Products returned to Generator pursuant to this Section.

9. LOADING AND TRANSPORTATION OF WASTE PRODUCTS. If the Supplemental Information Document specifies that Disposer is to provide loading or transportation services, Disposer shall load or stow and transport Waste Products to the Storage or Disposal Facility herein specified. In the aforesaid event, as between the parties, selection of transportation vehicles or vessels, times of travel and routes shall be solely determined by Disposer unless otherwise specified in the Supplemental Information Document. In selecting transportation vehicles or vessels compatible with the Waste Products, Disposer shall rely on Generator's description of the Waste Products.

10. STORAGE AND DISPOSAL. Disposer shall dispose of the Waste Products at the particular facility or facilities, referred to herein as "the Disposal Facility", identified in the Supplemental Information Document. Disposer shall utilize those general storage, treatment, and disposal methods specified in the Supplemental Information Document; however, as between the parties, Disposer shall be solely responsible for determining the specific times and techniques for storage, processing, treatment and disposal of the Waste Products. In determining such techniques, Disposer shall rely on Generator's description of the Waste Products.

If the Supplemental Information Document specifies that Disposer is to provide interim storage of the Waste Products at a "Storage Facility", prior to transportation of the Waste Products to the Disposal Facility, Disposer shall store such Waste Products at such Storage Facility for a period not to exceed ninety (90) days, unless some other period is specified in the Supplemental Information Document.

Disposer may use, distribute or sell any of the Waste Products, or any component or residue thereof, unless otherwise specified in the Supplemental Information Document.

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11. TITLE TO WASTE PRODUCTS. At the time Disposer accepts the Waste Products and takes possession and control thereover, title, risk of loss and all other incidents of ownership to the Waste Products shall be transferred from the Generator and vested in Disposer.

A justified revocation of acceptance by Disposer revests title to the Generator, including risk of loss and all other incidents of ownership, at the time such revocation of acceptance is communicated to the Generator.

12. TERM. The term of this Agreement shall be as specified in the Supplemental Information Document, to commence on the date of execution of such Document, as provided in Section 2.

13. RIGHT TO TERMINATE. Either party may terminate this Agreement if the other party (i) has been adjudicated a bankrupt, or (ii) has filed a voluntary petition in bankruptcy, or (iii) has made an assignment for the benefit of creditors, or (iv) a receiver has been appointed for such party. Termination pursuant to this paragraph shall be effective for performance remaining under any and all Supplemental Information Documents.

The Generator may terminate this Agreement, with respect to performance remaining under an identified Supplemental Information Document, if, at any time after execution of such document, the specified Storge or Disposal Facility fails to obtain, or maintain as valid, any license, permit or approval required to allow lawful acceptance and storage, treatment, processing and disposal of the Waste Products at such Facility.

Termination as provided above, or as allowed by Section 22, shall be by notice from the terminating party to the other party, specifying the reason therefor and the effective date thereof, which shall be not less than five (5) days after the date of the notice.

Either party may terminate this Agreement without cause, with respect to performance remaining under an identified Supplemental Information Document, by notice from the terminating party to the other party specifying the effective date of termination which shall be not less than thirty (30) days after receipt of the notice by the non-terminating party.

The right of terminating hereunder is in addition to, and not in lieu of, any right of a party to cancel this Agreement for breach of its terms or conditions.

14. COMPENSATION. For all of the Waste Products transported, stored and disposed of by Disposer, the Generator shall pay Disposer a fee, determined in accordance with the Supplemental Information Document. Disposer shall measure the Waste Products, for the purpose of computing fees, at the time and

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place, and in the manner, specified in the Supplemental Information Document. Disposer determinations so made shall govern unless proved to be in error by Generator.

Fees specified in the Supplemental Information Document shall not be altered during the term of this Agreement except as follows:

(a) Disposer may, on the first day of any calendar quarter, with thirty (30) days written notice to Generator, increase or decrease fees specified in the Supplemental Information Document. If any Waste Products, to which such fee alterations apply, are delivered to Disposer more than thirty days after Generator's receipt of this notice, Generator shall be deemed to have accepted such fee alterations and the Supplemental Information Document shall be deemed amended in such respect.

(b) If legislation or regulations, first implemented after date of execution of the Supplemental Information Document, impose taxes, tariffs, fees, surcharges or other charges upon the transportation, storage, processing, treatment or disposal of the Waste Products, the Generator shall reimburse the Disposer for such charges upon the Disposer's submission of an invoice stating that such charges have been levied or paid.

The Disposer shall submit statements to the Generator which shall be paid by the Generator not later than thirty (30) days from date of receipt. Disposer shall retain copies of such statements for a period of at least five (5) years as a record of disposal.

15. DISPOSER WARRANTIES. Disposer warrants and represents to the Generator that:

(a) Disposer understands the currently known hazards and risks which are presented to human beings, property and the environment in the handling, transportation, storage, treatment, processing and disposal of the Waste Products as they have been described by the Generator in the Supplemental Information Document; and,

(b) Disposer is engaged in the business of transportation, storage and disposal of industrial and other wastes, and has developed the requisite expertise for the handling, transportation, storage, treatment, processing, and diposal of such; and,

(c) Disposer will handle, load, stow, transport, store, treat, process, and dispose of the Waste Products in a safe and workmanlike manner and in full compliance with all valid and applicable statutes, ordinances, orders,

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rules and regulations of the federal, state and local governments in whose jurisdictions such activities are performed under this Agreement; and,

(d) Any and all vehicles or vessels, Waste Products containers and personnel to be provided by Disposer in the performance of this Agreement have obtained or will obtain all permits, licenses, certificates or approvals required to comply with valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments.

(e) The Storage or Disposal Facility (or Facilities) described in the Supplemental Information Document has been issued, as of the date of execution of such Document, all permits, licenses, certificates or approvals, required by valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in which such Facility is located, necessary to allow such Facility to accept and store, treat, process and dispose of the Waste Products as described by the Generator in such Document. Disposer shall provide Generator with reasonable advance notice if any such permit, license, certificate or approval is to expire and not be renewed during the term of a Supplemental Information Document, or becomes the subject of judicial or administrative action seeking revocation or suspension. Such notice shall also be provided if Disposer determines not to seek any necessary permit, license, certificate or approval which becomes required after execution of a Supplemental Information Document.

16. GENERATOR WARRANTIES. The Generator warrants and represents to Disposer that:

(a) The description of the Waste Products in the Supplemental Information Document is true and correct in all material respects, fairly advises Disposer of the hazards and risks known by the Generator to be incident to the handling, transportation, storage, treatment, processing and disposal of the Waste Products, and is otherwise in full compliance with all materials description requirements of valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdictions such Waste Products are to be handled, transported, stored, treated, processed or disposed; and,

(b) Waste Products tendered to Disposer will conform to the descriptions and specifications contained in the Supplemental Information Document; and,

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(c) If Generator receives information, during the term of any Supplemental Information Document, that Waste Products described in such Document, or some component of such Products, present or may present a hazard or risk to persons or the environment, which was not disclosed in the Supplemental Information Document, Generator shall promptly report such information to Disposer. Such information shall include, but not be limited to, any relevant notification of substantial risk required to be given by Generator pursuant to Section 8 (e) of the Toxic Substances Control Act;

(d) If any load of Waste Products, tendered to Disposer for transportation in a single transportation vehicle, contains a reportable quantity of one or more hazardous substances, as provided in Section 102 of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or regulations adopted thereunder, Generator will, prior to tendering such load to Disposer, provide the person in charge of the Disposer transport vehicle with written notice that the load contains a reportable quantity of such hazardous substance(s), identifying the known or estimated quantity of each such hazardous substance present.

(e) Generator will prepare the Waste Products for transportation and tender to Disposer in accordance with all valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdiction such Waste Products are to be tendered to Disposer pertaining to: (i) container specifications for any container not supplied by Disposer; and, (ii) marking and labeling of all containers.

(f) If regulations promulgated or revised under Section 3001 of the Resource Conservation and Recovery Act of 1976 (P. L. 94-580) identify the Waste Products as "hazardous waste," either by characteristics or listing, the Generator, prior to tendering any Waste Products to Disposer has filed or will file with the appropriate governmental agency the preliminary notification required by Section 3010(a) of the above Act, and provide Disposer with evidence thereof.

(g) The Generator has sole title to Waste Products which will be tendered to Disposer, and is under no legal restraint, statutory, regulatory, administrative or judicial, which prohibits the transfer of possession or title to such Waste Products to Disposer.

17. INDEMNIFICATION. Disposer agrees to indemnify and save harmless the Generator, its present and future officers or

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directors (or officials), employees and agents, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by Disposer, or any negligent or willful act or omission of Disposer, its employees or subcontractors in the performance of this Agreement.

The Generator agrees to indemnify and save harmless Disposer, its present and future officers, directors, employees, agents, subcontractors and assignees, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by the Generator, or any negligent or willful act or omission of Generator, its employees or agents in the performance of this Agreement.

18. INSURANCE. Disposer shall procure and maintain, at its expense, during the term of this Agreement, at least the following insurance:

	COVERAGE	LIMITS
(a)	Worker's Compensation	.Statutory
(b)	Employer's Liability	$500,000 each occurence
(c)	Public Liability (bodily injury & property damage)	$15,000,000 combined single limit
(d)	Automobile Liability (bodily injury & property damage)	$15,000,000 combined single limit

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Public Liability Insurance shall include coverage for completed operations and contractual liability under this Agreement with respect to sudden and accidental occurrences.

Each contract of insurance, and certificate of insurance, shall provide that said insurance shall not be cancelled or materially altered until at least ten (10) days after written notice is received by the Generator. Disposer agrees to furnish insurance with the above requirements, to the Generator before Disposer commences work hereunder.

In the event Disposer is required by law to obtain environmental impairment liability insurance for non-sudden and accidental occurrences at the Disposal Facility, Disposer shall furnish Generator with a copy of the certificate of insurance provided to the regulatory agency imposing the insurance requirement.

19. CONFIDENTIALITY. Disposer and Generator shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement, except as is necessary to perform this Agreement, (and then only on a confidential basis satisfactory to both parties), any information (including any technical information, experience or data) regarding either party's plans, programs, plants, processes, products, costs, equipment, operations or customers which may come within the knowledge of the parties, their officers or their employees in the performance of this Agreement, without in each instance securing the prior written consent of the other party.

Disposer shall also treat as confidential and shall not disclose to others, except as required by law, information relating to the chemical composition of the Waste Products or the quantity of Waste Products delivered to it by Generator.

Generator shall also treat as confidential and shall not disclose to others, except as required by law, this form of Agreement and the Supplemental Information Document.

Nothing above, however, shall prevent either Disposer or Generator from disclosing to others or using in any manner information which either party can show:

(a) Has been published and has become part of the public domain other than by acts, omissions or fault of Disposer or Generator or their employees; or

(b) Has been furnished or made known to Disposer or Generator by third parties (other than those acting directly or indirectly for or on behalf of Disposer or

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Generator) as a matter of legal right without restrictions on its disclosure; or

(c) Was in either party's possession prior to the disclosure thereof by Generator or Disposer to each other.

Provided, however, neither party shall release, or cause or allow the release of, information to the communications media, except as required by law, concerning the existence or terms of this Agreement or any Supplemental Information Document, including identification of the Generator of the Waste Products, identification of the Disposal Facility receiving the Waste Products, or the general description, characteristics or constituents of the Waste Products, without in each instance securing the prior written consent of the other party.

The foregoing obligations shall survive the termination or expiration of the Agreement.

20. WORK ON GENERATOR'S PREMISES. Generator agrees to provide Disposer, its employees and subcontractors a safe working environment for any work, in performance of this Agreement, which must be undertaken on premises owned or controlled by the Generator. While its employees or subcontractors are on Generator's premises, Disposer will maintain strict work discipline and effect its work in compliance with governmental laws or regulations pertaining to occupational safety and health. Disposer, its employees and subcontractors shall also comply with the Generator's safety procedures while on the Generator's premises, provided such procedures have been specified in the Supplemental Information Document or are attached thereto.

21. INSPECTIONS. The Generator shall have the right to inspect and obtain, at its expense, copies of all written licenses, permits or approvals, issued by any governmental entity or agency to Disposer or its subcontractors which are applicable to the performance of this Agreement and for which no claim of business confidentiality or trade secret is asserted; to inspect and test, at its own expense, transportation vehicles or vessels, containers or disposal facilities provided by Disposer; and to inspect the handling, loading, transportation, storage, treatment, processing or disposal operations conducted by Disposer in the performance of this Agreement. Such inspections are encouraged by Disposer, but shall not operate to relieve Disposer of its responsibility or liability under this Agreement.

22. EXCUSE OF PERFORMANCE. The performance of this Agreement, except for the payment of money for services already rendered, may be suspended by either party in the event the delivery or

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transportation of Waste Products by Generator, or transportation, storage, treatment, processing or disposal of Waste Products by Disposer are prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include, but not be limited to, acts of God, acts of war, riot, fire, explosion, accident, flood, or sabotage; lack of adequate fuel, power, raw materials, labor or transportation facilities; governmental laws, regulations, requirements, orders or actions; breakage or failure of machinery or apparatus; national defense requirements; injunctions or restraining orders; labor trouble, strike, lockout or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgement).

The party asserting a right to suspend performance under this Section must, within a reasonable time after he has knowledge of the effective cause, notify the other party of the cause for suspension, the performance suspended, and the anticipated duration of suspension. Upon receipt of such notice advising of a material or indefinite suspension of performance, and if such suspension substantially impairs the value of this Agreement to him, a party may, within a reasonable time (not to exceed thirty days), terminate this Agreement as provided in Section 13. If such notice of termination is not provided, this Agreement will lapse with respect to any performance suspended hereunder.

The party asserting a right to suspend performance hereunder shall advise the other party when the suspending event has ended, and when performance will be resumed.

Provided, if title to Waste Products has been transferred to Disposer, Disposer may not suspend performance of this Agreement with respect to such Waste Products; however, if a performance-suspending event occurs after Disposer has taken title to Waste Products but before completion of performance, Disposer may delegate such performance to any other persons lawfully permitted to transport, store, treat or dispose of the Waste Products pursuant to Section 23. In the circumstances described above, the Generator hereby consents to any necessary delegations for which it receives written notice from Disposer.

23. DELEGATION AND ASSIGNMENT. Disposer may at any time, with the prior written consent of Generator, which consent shall not be unreasonably withheld, delegate, orally or in writing, the performance of the work, or any portion thereof, which is by this Agreement undertaken by Disposer. Any such delegation shall not operate to relieve Disposer of its responsibilities hereunder and, notwithstanding any such delegation, Disposer shall remain obligated to the Generator in these undertakings.

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Either party may, at any time, upon written notice to the other party, assign its rights under this Agreement.

24. INDEPENDENT CONTRACTOR. Disposer is and shall perform this Agreement as an independent contractor, and as such, shall have and maintain complete control over all of its employees, agents, and operations. Neither Disposer nor anyone employed by it shall be, represent, act, purport to act or be deemed to be the agent, representative, employee or servant of the Generator.

25. NOTICE. Any notice, communication or statement required or permitted to be given hereunder shall be in writing and deemed to have been sufficiently given when delivered in person or by registered or certified mail, postage prepaid, return receipt requested, to the address of the respective party below:

GENERATOR: Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

DISPOSER: CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269
Portland, Oregon 97207-1269

Either party may, by notice to the other, change the addresses and names above given.

26. ENTIRE AGREEMENT. This Agreement represents the entire understanding and agreement between the parties hereto relating to the transportation, storage, treatment, processing and disposal of Waste Products and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. No terms, conditions, prior course of dealings, course of performance, usage of trade, understandings, purchase orders, or agreement purporting to modify, vary, supplement or explain any provision of this Agreement shall be effective unless in writing, signed by representatives of both parties authorized to amend this Agreement.

In no event shall the preprinted terms or conditions found on any Disposer or Generator purchase or work order be considered an amendment or modification of this Agreement, even if such documents are signed by representatives of both parties: such preprinted terms or conditions shall be considered null and of no effect.

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27. WAIVER. Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be so expressed in writing and signed by the party to be bound.

28. MISCELLANEOUS. The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State specified in the Supplemental Information Document.

All paragraph headings herein are for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular sections to which they refer.

In the event of a conflict between the terms or conditions of this Agreement and those of the Supplemental Information Document, the terms and conditions of the Supplimental Information Document shall control.

29. SEPARABILITY. If any Section, subsection, sentence or clause of this Agreement shall be adjudged illegal, invalid or unenforceable, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of the Agreement as a whole or of any Section, subsection, sentence or clause hereof not so adjudged.

30. The covenants and agreements contained in this Agreement shall apply to, inure to the benefit of and be binding upon the parties hereto and upon their respective heirs, executors, administrators, assigns and successors in interest.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

DATE: _____

Time Oil Company

By: _____

Title: _____

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

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EXHIBIT A

SUPPLEMENTAL INFORMATION DOCUMENT: NUMBER 85-001

This Document supplements, and is part of, that certain "Waste Transportation and Disposal Agreement," (hereinafter "the Agreement"), entered into by and between Tims Oil Company, (hereinafter "the Generator"), and CHEM SECURITY SYSTEMS, INC., (hereinafter "Disposer"), on May 24, 1985. The provisions of this Document shall be incorporated into the Agreement.

1. DESCRIPTION OF WASTE PRODUCTS. The "Waste Products", to which the Agreement refers, are described in the "Generator's Waste Material Profile Sheet," Code Designation E13588, attached hereto and made part hereof.

   Containers are to be provided by Generator according to the following specifications:
   lined and plastic wrapped dump truck

2. TENDER OF WASTE PRODUCTS. Generator shall tender or deliver the above Waste Products to Disposer as follows:

   (a) Quantity of Waste Products to be Tendered Over Term.

   (1) Estimated.
   Volume listed in Section "F" of referenced Generator's Waste Material Profile Sheet(s) or in addenda for each profile sheet.

   (2) Guaranteed (if applicable).

   Not Applicable.

   (b) Maximum/Minimum Quantity of Waste Products Per Tender (if tendered in installments).

   Maximum: same as quantity listed in Section 2(a) above. or in addendum to waste profile sheet.

   (c) Place of Tender.
   Arlington, Oregon

   (d) Time and Frequency of Tender.
   8:00 a.m. to 4:30 p.m. weekdays, except holidays, weather permitting.

c 1984, WASTE MANAGEMENT, INC.
(Revised 10/10/84)

AP 860079

(e) Manner of Tender (including notification to Disposer). Uniform hazardous waste manifest. No free liquid may be present in waste.

3. WORK RULES/PROCEDURES AT GENERATOR'S PREMISES. Any specific rules or procedures required by Generator for workers on its premises must be noted here, or attached hereto and initialed by both parties.

4. LOADING AND TRANSPORTATION. The Waste Products are to be loaded (or stowed) on vehicles (or vessels) by Generator, and transported to the Storage Facility/Disposal Facility (circle one) by Generator. If the Waste Products are first transported to a Storage Facility, they will be reloaded (or stowed) on vehicles (or vessels) by N/A, and transported to the Disposal Facility by N/A. If Disposer is to provide transportation the following special transportation requirements (if any) shall apply, pursuant to the Generator's direction:

(a) Vehicles or Vessels.

dump truck

(b) Routes.

Not Applicable.

(c) Hours of Transportation.

Not Applicable.

5. STORAGE FACILITY. Disposer shall store the Waste Products at the following storage facility for a period not to exceed ___ days, from which facility the Waste Products will then be removed to the Disposal Facility: Not Applicable

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(Revised 10/10/84)

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(a) Name/Address of Storage Facility:

(b) Name/Address of Facility Permittee:

(c) Permit Number(s)/Initiation and Termination Date(s):

(d) Permitting Authority(ies):

6. DISPOSAL FACILITY. Disposer shall dispose of the above Waste Products at the following disposal facility (or facilities):

(a) Name/Address of Facility (Facilities):

The Arlington Facility
Star Route
Arlington, Oregon 97812

(b) Name/Address of Facility Permittee:

Chem-Security Systems, Inc.
P.O. Box 1866
Bellevue, Washington 98009-1866

(c) Permit Number(s)/Initiation and Termination Date(s):

State of Oregon - HW-1, initiated Aug. 26, 1980; continues pending issuance of new permit.

(d) Permitting Authority(ies):

Oregon Department of Environmental Quality.

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7. DISPOSAL METHODS: Disposer shall utilize one or more of the following methods for the disposal of the Waste Products:
secure burial

8. EMERGENCY SERVICES: Disposer shall provide emergency transportation, storage or disposal services, with respect to the above Waste Products, pursuant to the following:
As required by site license or at Generator's request

9. RECLAMATION AND/OR SALE OF WASTE PRODUCTS. Disposer is authorized to reclaim, recover and sell, distribute or use the Waste Products, their components or residues, except as specified below:

Not Applicable.

10. COMPENSATION. The Generator shall compensate Disposer as follows:

(a) For Transportation, Storage and Disposal of Waste Products.

(b) For Transportation and Disposal of Waste Products. Per ton:

	Before July 1, 1985	Beginning July 1, 1985
250 tons per yr.	$110	$116
250-1500 tons per yr.	$100	$106

Fed. tax is $213 per dry wt. ton. Minimum billing is $200 per tender.

(c) For Disposal of Waste Products Only.

(d) Emergency Services.

Time and materials basis

(e) Measurement of Waste Products. Waste Products shall be measured by Disposer for the purpose of computing fees hereunder, at the time and place, and in the manner, as follows: Upon acceptance at the Arlington facility using:

facility scale

AP 860082

(Revised 10/10/84)

(f) Generator's Billing Address. Disposer shall submit its statements to:

Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

(g) Disposer Billing Address. Disposer will issue its billings from the following:

CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE
ARLINGTON, OREGON 97812

11. TERM. The term of the Agreement, with respect to the Waste Products covered in this Document, shall be as follows:

This Agreement shall commence on May 24, 1985 and shall remain in effect until terminated by either party with or without cause by thirty (30) days' advance written notice to the other party.

12. LAW TO GOVERN. The Agreement and this Supplemental Information Document shall be governed and construed in accordance with the laws of the State of Oregon.

13. MISCELLANEOUS CONDITIONS.

By their signatures hereto, the parties agree that this Supplemental Information Document shall be considered an attachment to, and part of, that certain "Waste Transportation and Disposal Agreement" identified above.

Date: _____

Time Oil Company

By: _____

Title: _____

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

(Revised 10/10/84)

AP

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EXHIBIT B

AUTHORIZED SIGNATORIES

This Exhibit, being attached to, and forming part of that certain "Waste Transportation and Disposal Agreement" entered into by the undersigned parties on May 24, 1985, establishes the identities of those persons authorized to execute Supplemental Information Documents on behalf of the parties, to-wit:

FOR GENERATOR:

FOR DISPOSER:

Regional Sales Manager	up to $ 50,000
District Manager or National Accounts Manager	up to $ 300,000
Regional Vice President or Regional Manager	up to $ 500,000
Senior Vice President	up to $1,000,000
President	over $1,000,000

Time Oil Company

By: _____

Title: _____

Chem-Security Systems, Inc.

By: _____

Title: _____

(Revised 10/10/84)

AP 860057

TOLS001677

BZTO104(e)038498

PHONE 286-1611

TIME OIL COMPANY

12005 N. BURGARD, P. O. BOX 03117, ST. JOHNS STATION, PORTLAND, OREGON 97203

SEATTLE
TACOMA
PORTLAND
STOCKTON
OAKLAND
SAN PEDRO
LOS ANGELES

RECEIVED
APR 28 1986
NORTHWEST REGION

April 25, 1986

Mr. Harry M. Demaray
Dept. of Environmental Quality
P. O. Box 1760
Portland, Oregon 97207

Dear Mr. Demaray:

The following information, reference a ground surface gasoline leak at 12005 N. Burgard, Portland, Oregon, is submitted in compliance with Oregon Administrative Rule 340-47-015 (1) (E).

On April 21, 1986, at approximately 0830 hours a regular unleaded gasoline leak was discovered by Time Oil Company personnel. A spill pan was immediately placed beneath the leak, it was quickly determined that the leak was a result of a ruptured flange gasket. By approximately 1000 hours the flange gasket had been replaced and leak was stopped. We commenced with hand excavation beneath flanges and prepared portable pumps hoses, etc. for product recovery. At 1030 hours notice of leak was reported to the Operations Manager. At approximately 1130 hours excavation was stopped at the six foot level, no liquid had been observed during any of the excavation. There has been no product recovered. At 1355 hours the U.S. Coast Guard (Petty Officer Stone) was notified of spill. After somewhat of a confusing conversation, do to location and proximity of leak relative to the Willamette River, it was of their opinion that the wrong agency had been notified and Time Oil Company should contact D.E.Q. At 1450 hours D.E.Q, (Mr. Archie Mustard) was notified of leak. At 1455 hours I received a telephone call from D.E.Q. (Mr. Harry Demaray), we discussed, location, quantity, recovery attempt, etc. Mr. Demaray said he would physically observe the site on the morning of April 22, (this he did), as of this date, no further contact has transpired between Time Oil Company and D.E.Q.

AP 860097

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The initial reported quantity of 982 gallons was in error, pipeline slope was not considered for the initial quantity. The adjusted and reportable quantity is estimated at 49.6 gallons (Please see attachment "A").

Procedures outlined in the "Facility Operations Manual" were followed, the correct regulatory agency was notified, corrective action to stop the leak was taken, despite attempts to recover product, no product was recovered. Do to small quantity spilled and the rapid absorption into the soil it is felt natural processes, such as, aeration, biodegradation will be sufficient to effect product cleanup.

To the best of my knowledge and belief, actions taken meet all requirements of Oregon Administrative Rule 340-47-015.

Sincerely,

Neil E. Wallis

Neil E. Wallis
Terminal Manager
Time Oil Company

NEW/kr

AP 860098

TOLS001679

BZTO104(e)038500

Department of Environmental Quality

VICTOR ATIYEH
Governor

522 S.W. FIFTH AVENUE, BOX 1760, PORTLAND, OREGON 97207 PHONE: (503) 229-5696

January 8, 1986

Dept. of Environmental Quality
RECEIVED
JAN 13 1986
NORTHWEST REGION

John Denham
Time Oil Company
2737 W. Commodore Way
Seattle, WA 98199

Re: HW 7.20
ORD 009597543
12005 N. Burgard
Portland, OR
86-04-HW-NWR
Multnomah County
NOTICE OF VIOLATION

Dear Mr. Denham:

The Department is in receipt of your quarterly report for the second quarter of 1985. Please be advised that your report lacked the certification statement necessary to complete your report.

Pursuant to OAR 340-102-041(1)(a)(B), the quarterly report must be accompanied by the following statement:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

This statement must be signed by the appropriate individual as per OAR 340-105-011(2) and OAR 340-105-011(4).

In the event of any similar violation, the Department may initiate civil penalty action. This type of violation is subject to a civil penalty of from $100 to $10,000 for each violation. Submit to the Department an amendment to your report within 15 days of the date of this letter. To avoid any future violation, please be sure to include the certification statement in each quarterly report and have it signed by the appropriate individual.

If you have any questions, please feel free to contact this office at 229-5913 or toll-free at 1-800-452-4011.

Sincerely,

Gary J. Calaba
Hazardous Waste Specialist
Hazardous Waste Section
Hazardous and Solid Waste Division

GJC:c
WC25 (HWNOV.4 5/1/85)
cc: Northwest Region, DEQ
Enforcement Section, DEQ
Compliance File

DEQ-1

AP 860100

TOLS001680

BZTO104(e)038501

STATE OF OREGON
DEPARTMENT OF ENVIRONMENTAL QUALITY

Memorandum

To: Alan S. Goodman, EPA-000 Date: 12 February 1985

From: Gregory D. Baesler, DEQ

HW 9.50

Subject: HW - 3012 Superfund Investigations

Attached please find a cover memo and copies of the preliminary assessment and site investigations for Time Oil Company, 12005 N. Burgard, Portland, Oregon.

Please review, advise of any deficiencies, or route to EPA-Region X, as appropriate.

GDB/mb
Attachments
cc: Hazardous Waste Section, DEQ

Solid Waste Division
Dept. of Environmental Quality
RECEIVED
FEB 12 [illegible]

DEQ-4

AP 860104

TOLS001681

BZTO104(e)038502

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY — INTEROFFICE MEMO

TO: Debbie Flood, Superfund Program Management Section, EPA-Region X

DATE: February 12, 1985

FROM: John L. Smits
Northwest Region, DEQ

SUBJECT: HW - 3012 Superfund
Time Oil Company
ORD 009597543
Multnomah County

Time Oil Company operates a petroleum products storage terminal at 12005 N. Burgard, Portland, Oregon 97203. The terminal occupies a 51.53-acre site along the east bank of the Willamette River and is owned by Time Oil Co., PO Box 24447 Terminal Annex, Seattle, Washington 98124. The present capacity of the terminal in 30+ tanks is 770,000 barrels.

The on-site inspection was conducted on Oct. 25, 1984. John Denham, environmental manager who has worked for Time Oil since 1970 and Neil Wallis, terminal manager employed by Time Oil since 1979 were interviewed. Time Oil Co. acquired the site during 1959. Mr. Denham provided by letter dated Nov. 7, 1984, the attached chart which lists the tanks by number and indicates the types of chemicals stored in each since 1973. As can be seen from the chart, most tanks have held a number of different chemicals at different times. For example, tank no. 4408 held the following during the period:

1973	Methanol
1974	Jet fuel
1975	Premium gasoline
1976-78	Unleaded gasoline
1979-80	Fuel oil no. 2
1981-83	Empty

The terminal has handled the following chemicals:

- Fatty acid (wood byproduct)
- Isobutanol
- Jet fuel
- Methanol
- Premium gasoline
- Regular gasoline
- Turpentine
- Butyl alcohol
- Liquid fertilizer (ammonium nitrate)
- Lignin liquor
- Lube oil
- Methyl 10
- Pentachlorophenol
- Solvent (xylene, toluene)
- Unleaded gasoline

A number of the substances that have been and are stored at this Time Oil terminal are hazardous substances due to ignitability or toxicity.

AP 860105

TOLS001682

BZTO104(e)038503

It appears that several arrangements have been made at the terminal related to product handling. Time Oil may lease a tank to a company like Chevron with the stored product owned by Chevron and handling, distribution and storage services performed by Time Oil. Time may control the tank, own the product and distribute the product, or rent a tank for storage only.

In the case of tanks 50067 and 10002, Time Oil Co. leased the tanks and possibly that portion of the tank farm site to Crosby and Overton of 5420 N. Lagoon, Portland, Oregon 97217. The same tanks appear to have been leased prior to this time by Pac-Mar, the previous name of Crosby and Overton. The Department has been unable to obtain a copy of the lease agreement. Crosby and Overton provides the service of collecting and then storing waste oils from separators, oil slop tanks, ship tank cleaning, etc. The two tanks appear to have been leased to Crosby and Overton since 1973.

Several smaller tanks, no. 20001, 20002 and 20003 having a capacity of 20,000 gal. each were leased to Koppers Co., Inc., of 5137 Southwest Ave., St. Louis, MO 63110. Several smaller, above-ground, horizontal oriented tanks in this area belong to Koppers Co. as well. According to Mr. Denham, Time Oil Co. formulated pentachlorophenol for Koppers to Koppers specifications and then handled or stored the formulations for later pickup by customers of Koppers.

The 20,000-gal. tanks were present during the Oct. 25, 1984 site inspection (reportedly empty) but had been removed from the site prior to the Dec. 12, 1984 soil sampling event. There was visually obvious contamination of the soil by incidental spills and slops in this former pentachlorophenol handling area. The level of contamination will be discussed later in this narrative.

Present Waste Management Practices

Since around December 1972, all tanks (except 50067 and 10002 leased to Crosby and Overton and the smaller tanks leased to or belonging to Koppers Company), the loading rack area and the pump house have been connected to a water draw system. A water draw box and water draw fittings are located beside each tank. These in turn are connected to a drainage piping network in place throughout the terminal. About once each year, water is drawn from the bottom of each tank and pumped to slop tank 3007 located in the northwest terminal area, or to tank 1406 in the area known as the Bell Oil Terminal. A portable Fram-Akers oil/water separator is periodically connected to the slop tank. The separated oil is either piped back to the appropriate storage tank or to an underground 3000-gal. separator tank near tank 3007 or an above-ground separator tank no. 1407 beside tank 1506. Water removed by the separator which contains less than 100 ppm ether soluble oil is by agreement discharged by a piping system to the City of Portland sanitary sewer system for treatment at the publicly owned treatment works (POTW). Two sampling manholes associated with two sewer lines are periodically monitored by staff with the City Dept. of Public Works. Waste oil from the separator is periodically removed from the underground 3000-gal. tank and above-ground tank 1507, and taken by Crosby and Overton to the tanks 50067 or 10002 that they lease from Time Oil on

AP 860106

TOLS001683

BZTO104(e)038504

the same site area. Alternately, a vacuum truck may be connected directly to the oil/water separator with waste oils transported to the Crosby and Overton tanks.

There is also an underground 6000-gal. spill prevention control and countermeasure (SPCC) tank associated with the off-shore pier to hold any spills and storm water that may be collected during ship loading/unloading. An 8000-gal. underground SPCC tank is located near the pump house and truck loading rack to collect any spills and storm water from those areas. The rail spur line recently constructed with curbing and spill drains has an underground 12,000-gal. tank for containment of any spills in that area. The loading rack area of the Bell Oil Terminal section was proposed to be equipped with an underground 4000-gal. slop and water tank. This section of the terminal has not been in use for quite some time.

Time Oil Co. on Aug. 11, 1980, completed EPA Form 8700-12, Notification of Hazardous Waste Activity, as required by RCRA 3010 listing specific source wastes, F051 - API separator sludge, K052 - tank bottoms (leaded) and P090 - pentachlorophenol. On Feb. 22, 1982, Time Oil requested assignment of a generator identification number by correspondence with the Department of Environmental Quality.

Past Waste Management Practices

According to Mr. Denham, there are no retrievable inventory records of product storage for the period 1959 to 1973. He agreed that it can be assumed similar products were stored on-site in a pattern like that shown on the 1973 to 1983 chart provided by Time Oil Co.

Prior to the installation of the draw water system for each tank, associated piping and use of the portable oil/water separator in late 1972, wastewater from tank bottoms was allowed to spill onto the ground around the site. This practice was apparently common to oil terminal facilities in the area until Oregon DEQ began to work in 1970-71 with terminals to discontinue discharge into public waters and onto ground surfaces. This practice apparently occurred at the Time Oil terminal during the period from 1959 to late 1972. A Feb. 16, 1971 internal memo describes a conversation with the plant engineer employed by Time Oil at that time that confirms the discharge of draw water from tank bottoms onto the ground but states further that the company maintained no such effluent discharged to the river, drainage ditch or storm sewer.

In view of the wasting of water from tank bottoms onto the soil surface for a period of up to 13 years, and the storage of leaded gasoline at one time or another in most of the tanks, a decision was made to collect soil samples in a somewhat random grid fashion throughout the terminal area. Samples were also collected in the area near tanks used by Crosby and Overton and those leased to Koppers to store pentachlorophenol formulations.

AP 860107

Sampling

At each of 12 locations, a composite soil sample using a soil core was collected. The composite was made up of the surface and 1, 2 and 3 foot intervals. Samples were collected and analyzed by the DEQ laboratory. Analysis of each sample included base-neutral extractables, pesticides/PCBs (method 608), acid extractables, pesticides (method 625) and EP Toxicity for lead. An effort was also made to identify and quantify any other organic chemical observed with the extraction/GC (gas chromatograph) MS (mass spectrometer) procedures.

All 12 soil samples tested for EP Toxicity lead showed concentrations of <0.1 mg/l. Concentrations of 5 mg/l or greater for EPA Toxic lead are classified as hazardous waste. The detection limit for this procedure is 0.1 mg/l.

Of 12 soil samples tested for pesticides, method 625, extracted by RCRA method 3540, all showed concentrations of <5 mg/kg (the detection limit) of these pesticides.

Samples tested for acid extractables method 625, extracted by RCRA method 3540 (acetone/hexane) showed all 12 sites to contain <1 mg/kg (detection limit) for these phenol species except item 9, sample Z1018 collected 19 ft. NE of tank 50067 (Crosby and Overton leased tank) contained 515 mg/kg pentachlorophenol and 12 mg/kg tetrachlorophenol. Item 10, sample Z1017 contained 1820 mg/kg pentachlorophenol and 71 mg/kg tetrachlorophenol collected at the site of the tanks leased to Koppers for storage of pentachlorophenol formulations.

Of the soil samples collected and analyzed for base-neutral extractables, method 625, extracted by RCRA method 3540 all showed concentrations of this group of pollutants to be less than the detection limit (< 1 mg/kg) except the following tanks showed:

No. 20511 - Item 4, soil bag Z1008

Isophorone	1 mg/kg
2,4-dinitrotoluene	3 mg/kg
Fluorene	1 mg/kg
n-nitrosodiphenylamine	2 mg/kg
Phenanthrene	1 mg/kg
Anthracene	1 mg/kg

No. 15002 - Item 8, soil bag Z1012

Fluorene	13 mg/kg
Phenanthrene	14 mg/kg
Anthracene	105 mg/kg

Crosby and Overton

No. 50067 - Item 9, soil bag Z1018

Chrysene	1 mg/kg
Bis(2-ethylhexyl)phthalate	3 mg/kg

AP 860108

Although polychlorinated biphenyls (PCBs) were detected at several soil sample sites, total PCBs were well below the 50 mg/kg concentration which requires handling.

At each sample site, in addition to the priority pollutant chemicals, the sample was scanned for any other unknowns above the detection limit of 1.0 mg/l. In the case of 3 sample sites, 4 (Z1008), 9 (Z1018) and 10 (Z1017), a number of other chemicals were tentatively identified and estimated concentrations determined. These results are shown on the attached lab sheets.

Crosby and Overton Leased Tanks

During 1983 on an as yet unspecified date, an individual was allegedly exposed to a substance while cutting an access hole into tank no. 10002 leased to Crosby and Overton by Time Oil Co. The hole was reportedly cut to remove the substance inside. Allegedly, the individual developed immediate symptoms involving skin irritation. Reportedly, the individual returned to the tank some time later and collected three (3) soil samples near the tank. Those soil samples were said analyzed by CH2M/Hill. CH2M/Hill reported PCB concentrations of 29.4 mg/kg, 584, mg/kg and 1060 mg/kg (disposal restrictions apply when PCB concentrations exceed 50 mg/kg).

On May 2, 1984, DEQ laboratory staff collected samples at the Crosby and Overton tank in question. A soil sample 10 ft. from the apparent access hole cut into the tank showed a total PCB concentration of 59.7 mg/kg. Sludge collected on a surface 4 ft. from the edge of the tank entry hole showed a total PCB concentration of 1357 mg/kg.

Detection of PCB near the tank resulted in review of past waste oil disposal records involving the Crosby and Overton tank. The records showed disposal of 210,000 gal. of petroleum-based sludge by Crosby and Overton at the St. Johns Municipal Landfill located on Columbia Blvd. in Portland, Oregon. An application for disposal of special wastes at the landfill was approved by the Metropolitan Service District (Metro) Aug. 10, 1983, following review of sample analysis of the tank contents which showed PCB concentrations to be <1 ppm.

During Sept. 1984, the area at the St. Johns Landfill believed to contain the 210,000 gal. of petroleum sludge was extensively sampled and analyzed for PCBs. The presence of PCBs in the areas tested was not confirmed.

Assessment

There are problems at the Time Oil Co. terminal associated with the past handling of hazardous substances. The long-time discharge of tank bottom draw water onto the ground surface within the terminal area may have impacted groundwater below the site. This could not be confirmed using the sampling equipment available. Surface soil samples did not detect any significant concentrations of priority pollutants to depths of three (3) feet that might be expected within a tank farm that had discharged wastewater onto the ground. As mentioned above under the Sampling section, priority pollutants and other organic chemicals were found in some areas.

TOLS001686

BZTO104(e)038507

The soil on-site appears to be dredge sand that has been in place for many years. Lenses of silt were observed within the 3-ft. sample. The silt appeared to perch water at some sample sites. The permanent groundwater table is apparently about 20 ft. below the land surface. Downgradient groundwater usage could not be confirmed.

Based on past practices of draw water disposal, presence of some contaminants within the upper surface and shallow depth of groundwater, it is recommended that construction of groundwater monitoring wells be seriously considered to better characterize the extent of pollution.

Pentachlorophenol is present in high concentrations within the soil in the area of the tanks leased to Koppers Co. and those leased to Crosby and Overton. These areas need cleanup of the spilled hazardous wastes. Cleanup should include careful evaluation of the effectiveness of the removal including groundwater sampling. Further review of the alleged incident involving presence of PCB at the Crosby and Overton tanks appears to be warranted.

During a Jan. 28, 1985, phone conversation with John Denham of Time Oil, the detection of pentachlorophenol was discussed. He told me the company realized the waste was present on the ground and soil some time ago. Denham also told me that after this information became available, Time had cancelled the contract to handle pentachlorophenol and its ingredients for Koppers as well as the lease of tanks. Denham stated that tanks have been cleaned out and removed and the remaining tanks will be moved out soon and cleanup of the area will start. It was suggested that this information be sent by letter to the Northwest Region of DEQ including proposed cleanup methods and time schedule. He said he would do that after reviewing sampling results.

Backlog Reduction

It is recommended that Time Oil Co. (ORD 009597543) be placed into backlog reduction category B-5. Problems involving hazardous wastes are present. The State of Oregon DEQ, Northwest Region, has the regulatory authority to investigate hazardous waste handling/disposal and to require remedial cleanup action. Northwest Region of DEQ fully intends to follow up this assessment and work with the company to establish necessary monitoring and cleanup.

The site does not appear to present a hazard to the health of the general public by direct contact with wastes present due to the security of fences, 24-hr/day staffing of the site and a watchman service. The threat to the environment appears to be related to the potential impact to groundwater. Groundwater impact needs to be further evaluated.

At this time, it does not appear that further involvement of the RCRA 3012 program will be necessary.

RC2044
Attachment
cc: Northwest Region, DEQ
Hazardous Waste Operations, DEQ
Time Oil Co.
Crosby and Overton

AP 860110

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

EPA

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: 0009597543

II. SITE NAME AND LOCATION

01 SITE NAME	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Time Oil Company	12005 N. Burgard St.

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Portland	OR	97203	MULTNOMAH	051	03

09 COORDINATES: LATITUDE 45° 36' 56.2" | LONGITUDE 122° 47' 00.2"

10 DIRECTIONS TO SITE: Heading north through Portland on Interstate 5 take the north Columbia Blvd. exit. Proceed West on N. Columbia Blvd about 3 miles. At sharp left corner N. Columbia Blvd. becomes N. Burgard Rd., proceed to next sharp left corner turn R onto N. Burgard St. Bear Right, proceed about .75 miles to Time Oil Co.

III. RESPONSIBLE PARTIES

01 OWNER	02 STREET
TIME Oil Company	P.O. Box 24447, Terminal Annex

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Seattle	WA	98124	(206) 285-2400

07 OPERATOR	08 STREET
TIME Oil Company	P.O. Box 03137

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Portland	OR	97203	(503) 284-1611

13 TYPE OF OWNERSHIP: ☒ A. PRIVATE ☐ B. FEDERAL: _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER: _____ ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE: ☒ A. RCRA 3001 DATE RECEIVED: 8/11/80 ☐ B. UNCONTROLLED WASTE SITE DATE RECEIVED: ___/___/___ ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION: ☒ YES ☐ NO DATE 10/25/84 (MONTH DAY YEAR)
BY: ☐ A. EPA ☐ B. EPA CONTRACTOR ☒ C. STATE ☐ D. OTHER CONTRACTOR ☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____
CONTRACTOR NAME(S): _____

02 SITE STATUS	03 YEARS OF OPERATION
☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN	1959 (BEGINNING YEAR) _____ (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED: Petroleum tank farm. Considered as a generator of hazardous waste including API Separator sludge, tank bottoms (leaded) and Pentachlorophenol. Tank farm has handled gasoline, xylene, toluene, diesel, products containing pentachlorophenol, herbicides (ammonium nitrate), Jet-fuel, methyl alchol, butyl alcohol

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION: During the years 1970-1972 tank drawn water waste water and apparently tank bottoms were allowed to spill on to the ground surface (old sand fill) and seep away. 1972-1974 waste water from oil water separator discharged to drywells. Groundwater (unused) may have been contaminated with lead, toxic and ignitable wastes. Portion of farm leased to firm collecting and storing waste oils in two tanks, PCB's have been detected on ground surface near these leased tanks.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION: ☒ A. HIGH ☐ B. MEDIUM ☐ C. LOW ☐ D. NONE

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (AGENCY/ORGANIZATION)	03 TELEPHONE NUMBER
John Denham	Time Oil Company	(206) 285-2400

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
John L. Smith	OR-DEQ	NW REGION	(503) 325-8660	1/15/85 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

AP 860111

TOLS001688

BZTO104(e)038509

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: OR D 009597543

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)
- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER (Specify): Contaminated Soil
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)
- TONS: _____
- CUBIC YARDS: 1037 CY (EST at least)
- NO. OF DRUMS: _____

03 WASTE CHARACTERISTICS (Check all that apply)
- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES (EST at least)	1037	CY	Soil contaminated with pentachlorophenol and tetrachlorophenol
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
PSD	Pentachlorophenol and	87865	Contaminated soil	1820	mg/KG
	2,3,4,6-Tetrachlorophenol	58902	area around old tank farm site	71	mg/KG
	* See cover narrative for further explanation.				
	Time oil registered as	Generator of Hazardous Waste			
	API Separator	Sludge	K052		
	Tank Bottom's (Leaded		K052		
	Pentachlorophenol		P090		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Petroleum Products	Storage	FDS		
FDS	handling facility		FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., State files, sample analysis, reports)

Site inspection Oct. 25, 1984, interview with Environmental Manager John Denham, Terminal Manager Neil Wallis, Search of OR-DEQ files, City of Portland Dept. of Public Works files Review of OR-DEQ soil sample analysis data.

EPA FORM 2070-12 (7-81)

AP 860112

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
OR	D009597543

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ■ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: 1970 ?) ☐ POTENTIAL ■ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: N/A Not used — 04 NARRATIVE DESCRIPTION Probable contamination of groundwater below area leased to and handled for Koppers Co. for formulation and storage of pentachlorophenol. Same potential for tanks leased to Crosby and Overton. Pentachlorophenol detected in soil at 515 mg/kg. Groundwater impact in general tank farm area needs further study

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION None documented

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION VOC only. Notice of violation for storage of gasoline without vapor control.

01 ■ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: N/A) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: N/A — 04 NARRATIVE DESCRIPTION Lt. Wm Knotts of the Portland Fire Bureau reported: Typical tank farm. Probability of fire fairly low, but if it does occur, as with any tank farm, fire can be very severe with multiple explosions. There have been no fire responses since 1975. Mr. Knotts can be reached at (503) 248-4375.

01 ■ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: N/A) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: N/A — 04 NARRATIVE DESCRIPTION
Low potential for direct contact by public with soil contaminated by pentachlorophenol due to site security, fenced, personell on site 24 hrs/day and watchmen service

01 ■ F. CONTAMINATION OF SOIL — 02 ■ OBSERVED (DATE: 1970 beginning probably) ☐ POTENTIAL ■ ALLEGED
03 AREA POTENTIALLY AFFECTED: .5 (acres) — 04 NARRATIVE DESCRIPTION Surface to at least 3 ft. depth contaminated by pentachlorophenol, tetrachlorophenol spills/drips in area of Koppers Co. tanks and tanks leased to Crosby and Overton.

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

N/A

01 ■ H. WORKER EXPOSURE/INJURY — 02 ■ OBSERVED (DATE: 1983) ☐ POTENTIAL ■ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 1 — 04 NARRATIVE DESCRIPTION Workman cutting hole in a tank leased to Crosby and Overton to remove contents willingly contacted PCB, reported immediate symptoms of skin irritation

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

N/A

EPA FORM 2070-12 (7-81)

AP 860113

TOLS001690

BZTO104(e)038511

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: D 009597543

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N/A

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names of species)
N/A

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N/A

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids/Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
N/A

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N/A

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION Oil water Separator water discharged to sanitary sewer and then City of Portland POTW, Sampling manhole checked by city. No documented violations. City standard is not > 100 ppm other soluble oil to sewer.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N/A

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
N/A

III. TOTAL POPULATION POTENTIALLY AFFECTED: N/A Groundwater Contamination needs further explanation

IV. COMMENTS
See cover narrative

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
See Part 2, VI.

EPA FORM 2070-13 (7-81)

AP 860114

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: D009597543

II. SITE NAME AND LOCATION

01 SITE NAME	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Time Oil Company	12005 N. Burgard St.

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG. DIST.
Portland	OR	97203	MULTNOMAH	051	03

09 COORDINATES: LATITUDE 45° 34' 56.4" | LONGITUDE 122° 47' 00.4"

10 TYPE OF OWNERSHIP (Check one)
■ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
10 25 84 (MONTH DAY YEAR)	■ ACTIVE ☐ INACTIVE	1959 (BEGINNING YEAR) _____ (ENDING YEAR) _____ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
■ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
John L. Smits	ENVIRONMENTAL ANALYST	OR-DEQ	(503) 325-8660
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
			( )
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
John P. Denham	ENVIRONMENTAL MANAGER	TIME OIL COMPANY P.O. BOX 24447 Seattle WA 98124	(206) 285-2400
NEIL WALLIS	Terminal MANAGER	TIME OIL COMPANY P.O. Box 03137 Portland, OR 97203	(503) 286-1611
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
■ PERMISSION ☐ WARRANT	11:00	Cool, Overcast, occasional showers

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
John P. Denham	Time Oil Company	(206) 285-2400

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
John L. Smits	OR-DEQ	NW REGION	503-325-8660	1 15 85 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

AP 860115

TOLS001692

BZTO104(e)038513

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: D009597543

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)
- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER (Specify): Contaminated Soil
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)
- TONS: _____
- CUBIC YARDS: est at least 1087 cy
- NO. OF DRUMS: _____

03 WASTE CHARACTERISTICS (Check all that apply)
- ■ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES estimate at least	1087	CY	Soil contaminated with pentachlorophenol
OCC	OTHER ORGANIC CHEMICALS			and tetrachlorophenol
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See appendix for most frequently cited CAS numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
PSD	Pentachlorophenol and	87865	Contaminated soil stored	1820	mg/KG
	2,3,4,6-Tetrachlorophenol	58902	old tank sites	71	mg/KG
	*See cover narrative for further explanation				
	Time Oil Co registered as Generator of Hazardous Waste				
	API Separator Sludge	K052			
	Tank bottoms (leaded)	K052			
	Pentachlorophenol	P090			

V. FEEDSTOCKS (See appendix for CAS numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Petroleum Products Storage/handling		FDS		
FDS	facility (terminal)		FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Site inspection Oct. 25, 1984, interview with Environmental manager John Denham, terminal manager Neil Wallis. Search of DE-DEQ files, City of Portland Dept. of Public Works files
Review of DE-DEQ laboratory soil sample analysis data.

EPA FORM 2070-13(7-81)

AP 860116

TOLS001693

BZTO104(e)038514

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: D009597543

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ■ A. GROUNDWATER CONTAMINATION | 02 □ OBSERVED (DATE: 1970 —) | □ POTENTIAL | ■ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Not Released | 04 NARRATIVE DESCRIPTION: Probable groundwater contamination below area leased to and headed for Koppers Co. for formulation and storage of pentachlorophenol. Same potential for adjacent area leased to Crosby and Overton which showed Penta contamination of upper 3ft of soil at 515 mg/kg. Ground water impact in general tank farm area needs further evaluation

01 □ B. SURFACE WATER CONTAMINATION | 02 □ OBSERVED (DATE:) | □ POTENTIAL | □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: | 04 NARRATIVE DESCRIPTION: None documented

01 □ C. CONTAMINATION OF AIR | 02 □ OBSERVED (DATE:) | □ POTENTIAL | □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: | 04 NARRATIVE DESCRIPTION: VOC only. Notice of Violation sent by OR-DEQ for storage of gasoline without vapor control

01 ■ D. FIRE/EXPLOSIVE CONDITIONS | 02 □ OBSERVED (DATE: N/A) | ■ POTENTIAL | □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: N/A | 04 NARRATIVE DESCRIPTION: Lt. Wm. Knotts of the Portland Fire Bureau reported: Typical tank farm. Probability of fire small, low, but if it does occur, as with any tank farm, fire can be very severe with multiple explosions. There have been no fire responses since 1975. Mr. Knotts can be reached at (503) 248-4875.

01 ■ E. DIRECT CONTACT | 02 □ OBSERVED (DATE: N/A) | ■ POTENTIAL | □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: N/A | 04 NARRATIVE DESCRIPTION:
Low potential for direct contact by public with soil contaminated by pentachlorophenol due to site security of fences, personnel on-site 24 hrs/day and watchmans service.

01 ■ F. CONTAMINATION OF SOIL | 02 ■ OBSERVED (DATE: 1970 — ?) | □ POTENTIAL | ■ ALLEGED
03 AREA POTENTIALLY AFFECTED: ~5 (approx.) | 04 NARRATIVE DESCRIPTION: Surface to at least 3ft. depth contaminated by pentachlorophenol, tetrachlorophenol spills/drippage in area of Koppers Co. tanks and tanks leased to Crosby and Overton.

01 □ G. DRINKING WATER CONTAMINATION | 02 □ OBSERVED (DATE:) | □ POTENTIAL | □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: | 04 NARRATIVE DESCRIPTION:

N/A

01 ■ H. WORKER EXPOSURE/INJURY | 02 ■ OBSERVED (DATE: 1983) | □ POTENTIAL | ■ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 1 | 04 NARRATIVE DESCRIPTION: Workman cutting hole in a tank leased to Crosby & Overton to remove contents allegedly contacted PCB, reported immediate symptoms of skin irritation

01 □ I. POPULATION EXPOSURE/INJURY | 02 □ OBSERVED (DATE:) | □ POTENTIAL | □ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: | 04 NARRATIVE DESCRIPTION:

N/A

EPA FORM 2070-13 (7-81)

AP 860117

TOLS001694

BZTO104(e)038515

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: D009597543

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N/A

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names of species)
N/A

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N/A

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
N/A

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N/A

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION Oil/water separator water discharged to sanitary sewer and then City of Portland POTW. Sampling manhole checked by City. No documented violations. City Standard is not ≥ 100ppm ether soluble oil to sewer

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N/A

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
N/A

III. TOTAL POPULATION POTENTIALLY AFFECTED: N/A Groundwater contamination needs further evaluation

IV. COMMENTS
See Cover narrative

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
See part 2, VI.

EPA FORM 2070-13 (7-81)

AP 860118

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: D009597543

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☒ C. AIR				Related to VOC (Volatile Organic Compounds)
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☒ H. LOCAL (Specify)	Agreement with City of Portland Dept. of Public Works re: discharge to sewer.			
☐ I. OTHER (Specify)	Registered as generator of hazardous wastes.			
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND	3000	GA
☒ E. TANK, BELOW GROUND	1500	BBLS
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)	05 OTHER
☐ A. INCINERATION	☒ A. BUILDINGS ON SITE
☐ B. UNDERGROUND INJECTION	
☒ C. CHEMICAL/PHYSICAL	
☐ D. BIOLOGICAL	
☐ E. WASTE OIL PROCESSING	06 AREA OF SITE
☐ F. SOLVENT RECOVERY	51.53 Acres
☒ G. OTHER RECYCLING/RECOVERY	
☒ H. OTHER Removed to Crosby and Overton Tanks	

07 COMMENTS
Tank drawn water sent to slop tank periodically run through FROM AKERS Oil water separator water to sewer - waste oil back to tank drawn from if possible or to Vacuum truck and to Crosby and Overton Tanks or to 3000 gal below ground separator tank or above ground 1500 bbl. separator tank for take removal by Crosby and Overton taken to tanks on-site leased to Crosby + Overton

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)
☒ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.
Diking - SPCC Plans - SPCC Tanks

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☒ NO Fenced, 24 hr personel, watchmans service
02 COMMENTS

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See part 3, VI.

EPA FORM 2070-13 (7-81)

AP 860119

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
OR	009597543

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ■	B. □
NON-COMMUNITY	C. □	D. □

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. □	B. □	C. ■
D. □	E. □	F. □

03 DISTANCE TO SITE

A. >20 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

□ A. ONLY SOURCE FOR DRINKING
□ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)
□ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)
■ D. NOT USED, UNUSEABLE — could not be accurately determined

02 POPULATION SERVED BY GROUND WATER N/A

03 DISTANCE TO NEAREST DRINKING WATER WELL ? 1 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
< 20 (ft)	NNW	≤ 20 (ft)	Unknown (gpd)	□ YES ■ NO

09 DESCRIPTION OF WELLS (including use, depth, and location relative to population and buildings)

Old well logs for area could not locate on ground in area

10 RECHARGE AREA

□ YES
□ NO
COMMENTS

11 DISCHARGE AREA

■ YES
□ NO
COMMENTS Along east bank of Willamette River

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

□ A. RESERVOIR, RECREATION DRINKING WATER SOURCE
□ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
□ C. COMMERCIAL, INDUSTRIAL
□ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
	□	(mi)
	□	(mi)
	□	(mi)

NOT APPLICABLE

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. _____ NO. OF PERSONS	B. _____ NO. OF PERSONS	C. _____ NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION _____ (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE _____

04 DISTANCE TO NEAREST OFF-SITE BUILDING _____ (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, dense, populated urban area)

EPA FORM 2070-13 (7-81)

AP 860120

TOLS001697

BZTO104(e)038518

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: D009597543

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one) — estimate
☐ A. 10^{-6} – 10^{-4} cm/sec ☐ B. 10^{-4} – 10^{-6} cm/sec ☐ C. 10^{-4} – 10^{-3} cm/sec ☒ D. GREATER THAN 10^{-3} cm/sec
DREDGE SAND - silt lenses

02 PERMEABILITY OF BEDROCK (Check one) — unknown
☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE (10^{-4} – 10^{-6} cm/sec) ☐ C. RELATIVELY PERMEABLE (10^{-3} – 10^{-5} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-3} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
> 200 (ft)	≥ 3 (ft)	5.5-6	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
Annual 45 (in)	(in)	0-1 %	NNW	1 %

09 FLOOD POTENTIAL
SITE IS IN 100 YEAR FLOODPLAIN

10
☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. (mi)	B. .5 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
(mi)
ENDANGERED SPECIES: unknown

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL, STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. within (mi)	B. 1 mi (mi)	C. 2 1 (mi)	D. (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY
Low River terrace adjacent to Willamette River, upper older terraces about 1 mile to the southeast

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling reports)
See part 2, VI.

EPA FORM 2070-13(7-81)

AP 860121

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
OR	D009597543

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	12	OR-DEQ Laboratory	Attached
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
NONE	

IV. PHOTOGRAPHS AND MAPS

01 TYPE ■ GROUND ■ AERIAL — 02 IN CUSTODY OF Attached or in OR-DEQ HW Files

03 MAPS ■ YES ☐ NO — 04 LOCATION OF MAPS Site quadrangle - plan attached

V. OTHER FIELD DATA COLLECTED

None

VI. SOURCES OF INFORMATION

See part 5, VI.

EPA FORM 2070-13 (7-81)

AP 860122

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: D009597543

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	04 SIC CODE
Time Oil Company		5171

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE
P.O. Box 24447, Terminal Annex	Seattle	WA	98124

01 NAME	02 D+B NUMBER	04 SIC CODE
N/A		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE
N/A		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE
N/A		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

PARENT COMPANY (if applicable)

09 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
SAME			

12 CITY	13 STATE	14 ZIP CODE

09 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
N/A			

12 CITY	13 STATE	14 ZIP CODE

09 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
N/A			

12 CITY	13 STATE	14 ZIP CODE

09 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
N/A			

12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	04 SIC CODE
Not available		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE
N/A		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE
N/A		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (if applicable, list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
N/A			

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
N/A			

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
N/A			

05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See part 2, VI.

EPA FORM 2070-13 (7-81)

AP 860123

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: 000459754 3

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME: Time Oil Company	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 12005 N. Burgard St.	04 SIC CODE: 5171
05 CITY: Portland	06 STATE: OR
07 ZIP CODE: 97203	
08 YEARS OF OPERATION: 1959—	09 NAME OF OWNER: Time Oil Company

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME: Time Oil Company	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.): P.O. Box 24447, Terminal Annex	13 SIC CODE:
14 CITY: Seattle	15 STATE: WA
16 ZIP CODE: 98124	

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

01 NAME: N/A	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):	04 SIC CODE:
05 CITY:	06 STATE:
07 ZIP CODE:	
08 YEARS OF OPERATION:	09 NAME OF OWNER DURING THIS PERIOD:
10 NAME: N/A	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE:
16 ZIP CODE:	

01 NAME: N/A	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):	04 SIC CODE:
05 CITY:	06 STATE:
07 ZIP CODE:	
08 YEARS OF OPERATION:	09 NAME OF OWNER DURING THIS PERIOD:
10 NAME: N/A	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE:
16 ZIP CODE:	

01 NAME: N/A	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):	04 SIC CODE:
05 CITY:	06 STATE:
07 ZIP CODE:	
08 YEARS OF OPERATION:	09 NAME OF OWNER DURING THIS PERIOD:
10 NAME: N/A	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE:
16 ZIP CODE:	

IV. SOURCES OF INFORMATION (Cite specific references, e.g., State files, sample analysis, reports)

See part 2, VI.

EPA FORM 2070-13 (7-81)

AP 860124

TOLS001701

BZTO104(e)038522

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: D009597543

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
N/A	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Crosby and Overton			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
5420 N. Lagoon			
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
Portland	OR 97217		
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Crosby and Overton leases 2 tanks from Time Oil Company. C+O collects oily waste oil slops, ship pumpings to the site; from off-site generators too numerous to list

See part 2, VI.

EPA FORM 2070-13 (7-81)

AP 860125

TOLS001702

BZTO104(e)038523

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: OOO9597543

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION N/A	02 DATE	03 AGENCY
01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☒ D. SPILLED MATERIAL REMOVED 04 DESCRIPTION Heating oil and diesel spill at Tank 24508, Tank weld failure. Est 866 bbls onto soil. Cleaned up reportedly soil removed by company	02 DATE MARCH 8, 1985	03 AGENCY Time Oil.
01 ☒ E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ F. WASTE REPACKAGED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ H. ON SITE BURIAL 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ L. ENCAPSULATION 04 DESCRIPTION NOT APPLICABLE	02 DATE	03 AGENCY
01 ☐ M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ N. CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY

EPA FORM 2070-13 (7-81)

AP 860126

TOLS001703

BZTO104(e)038524

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE: OR | 02 SITE NUMBER: OOO95975 43

II. PAST RESPONSE ACTIVITIES (Continued)

01 ☐ A. BARRIER WALLS CONSTRUCTED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION

NOT APPLICABLE

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See part 2, VI.

EPA FORM 2070-13 (7-81)

AP 860127

TOLS001704

BZTO104(e)038525

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE: OR | 02 SITE NUMBER: D009597513

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

OR-DEQ NW Region Notice of Violation to Time oil Company 7-26-78
storage of > 40,000 gal. gasoline without vapor emission control devices

1983-1984 Multnomah County Sheriffs Criminal Investigation related to workman allegedly contacting PCB at Crosby and Olsdon tanks

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See Part 8, VI.

EPA FORM 2070-13 (7-81)

AP 860128

TOLS001705

BZTO104(e)038526

AP 860229

TOLS001706

Key Map

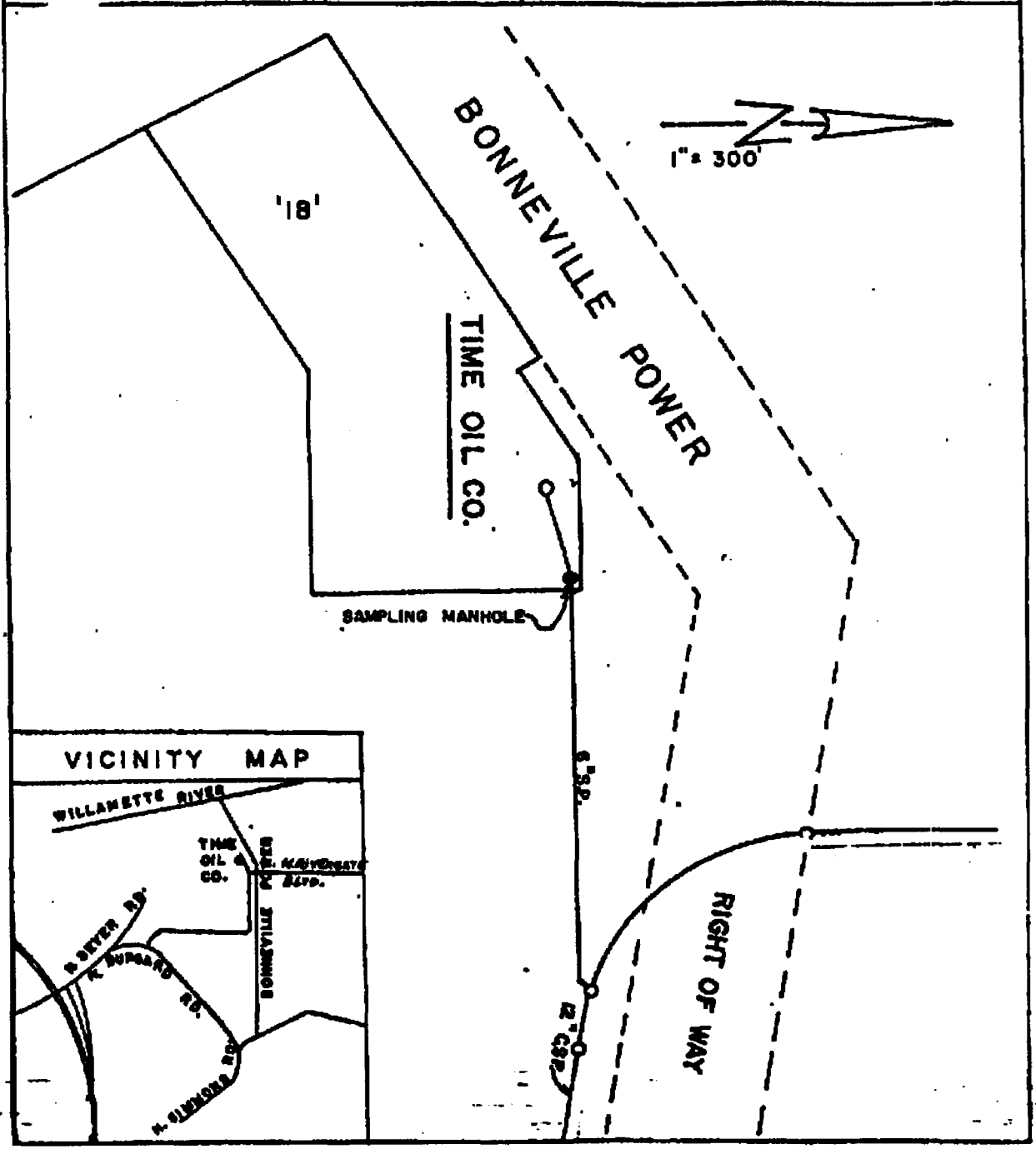
SAMPLING MANHOLE MAP

INDUSTRIAL WASTEWATER MANAGEMENT
CITY OF PORTLAND, OREGON
DEPT OF PUBLIC WORKS
OFFICE OF THE CITY ENGINEER

TIME · OIL TERMINAL
12005 N. BURGARD ROAD
PORTLAND, OR. 97203

SIC5171 1/4 SEC. 1719 DATE 9/11/79.

OIL TERMINAL

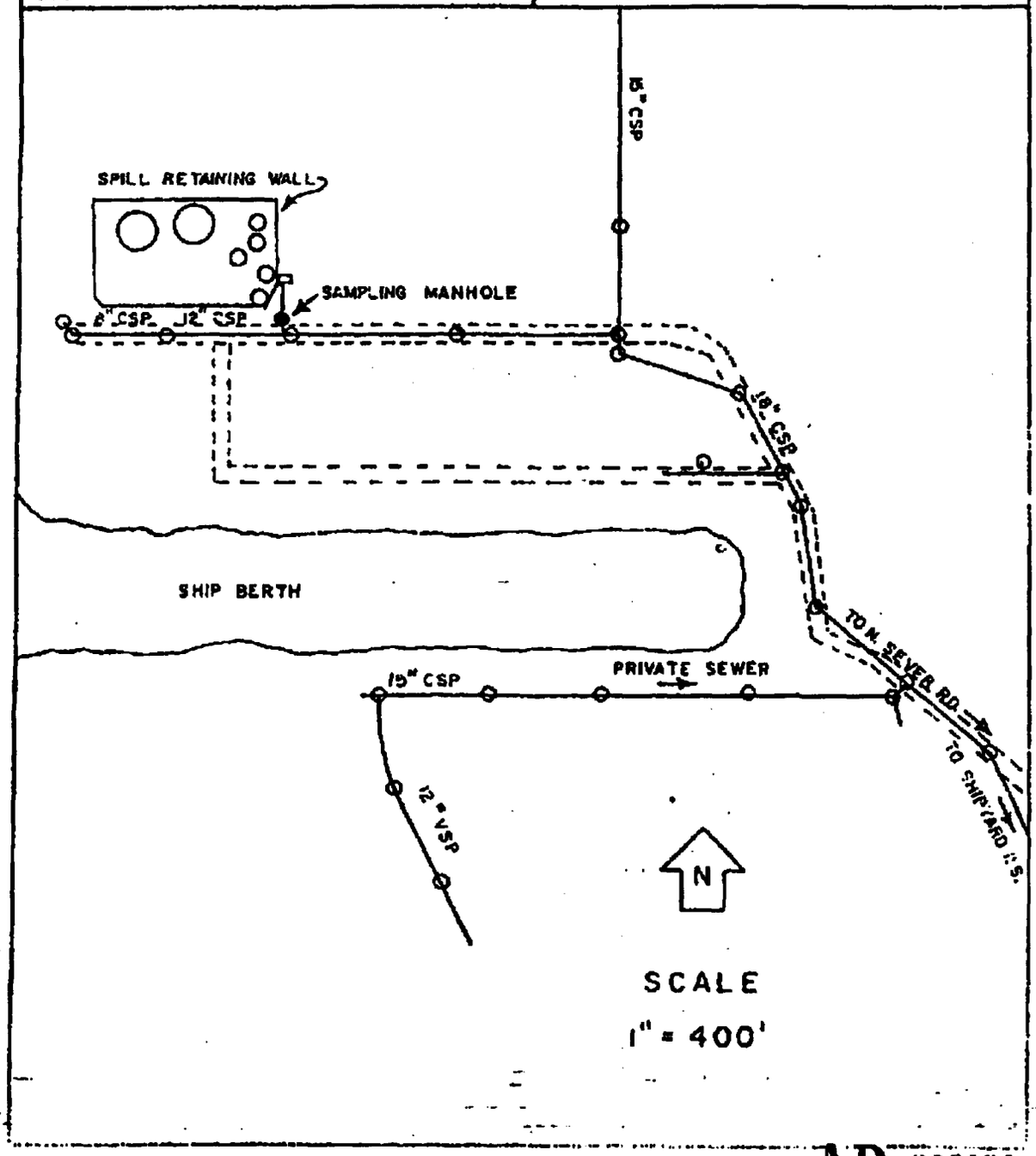


AP 860130

TOLS001707

BZTO104(e)038528

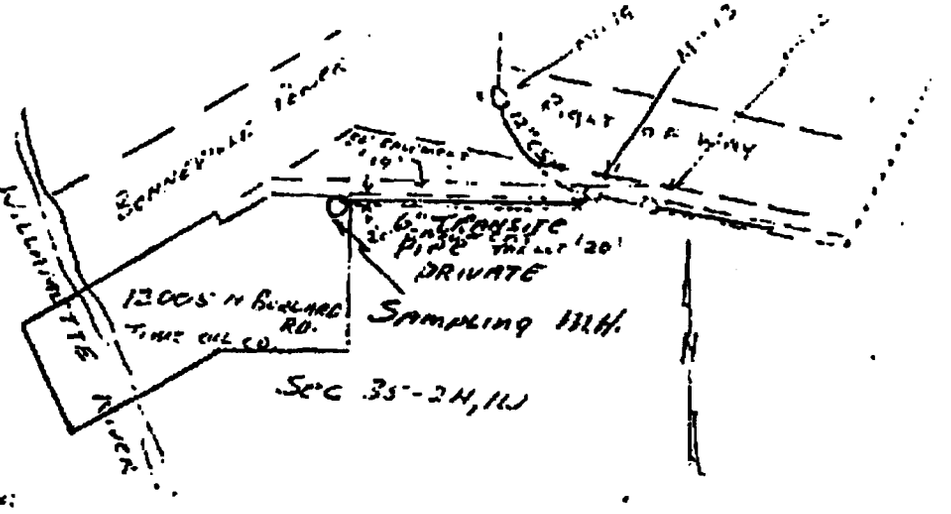
SAMPLING MANHOLE MAP	BELL OIL TERMINAL (TIME OIL)
INDUSTRIAL WASTEWATER MANAGEMENT CITY OF PORTLAND, OREGON DEPT OF PUBLIC WORKS OFFICE OF THE CITY ENGINEER	12005 N. BURGARD RD. PORTLAND, OREGON 97203
SIC 5171 1/4 SEC. 1819 DATE 8/21/84	OIL TERMINAL AREA

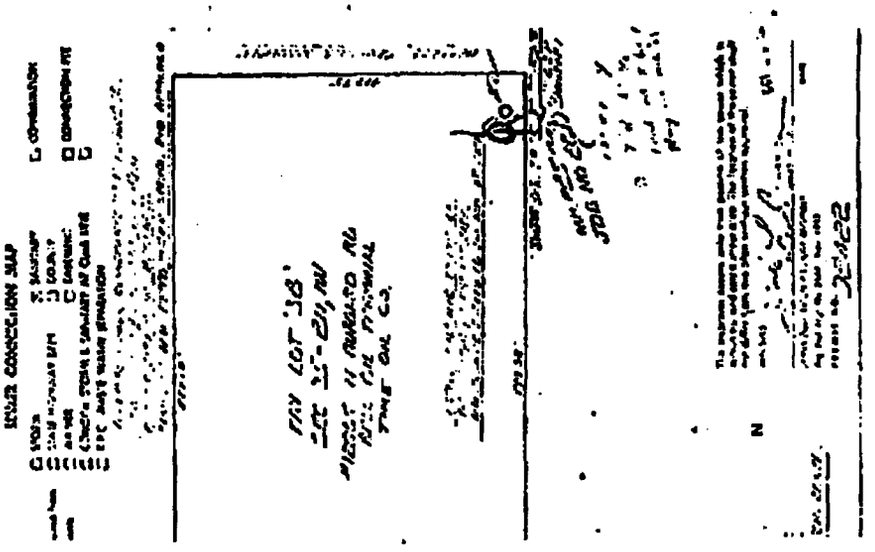


AP 860131

TOLS001708

BZTO104(e)038529





AP 860133

TOLS001709

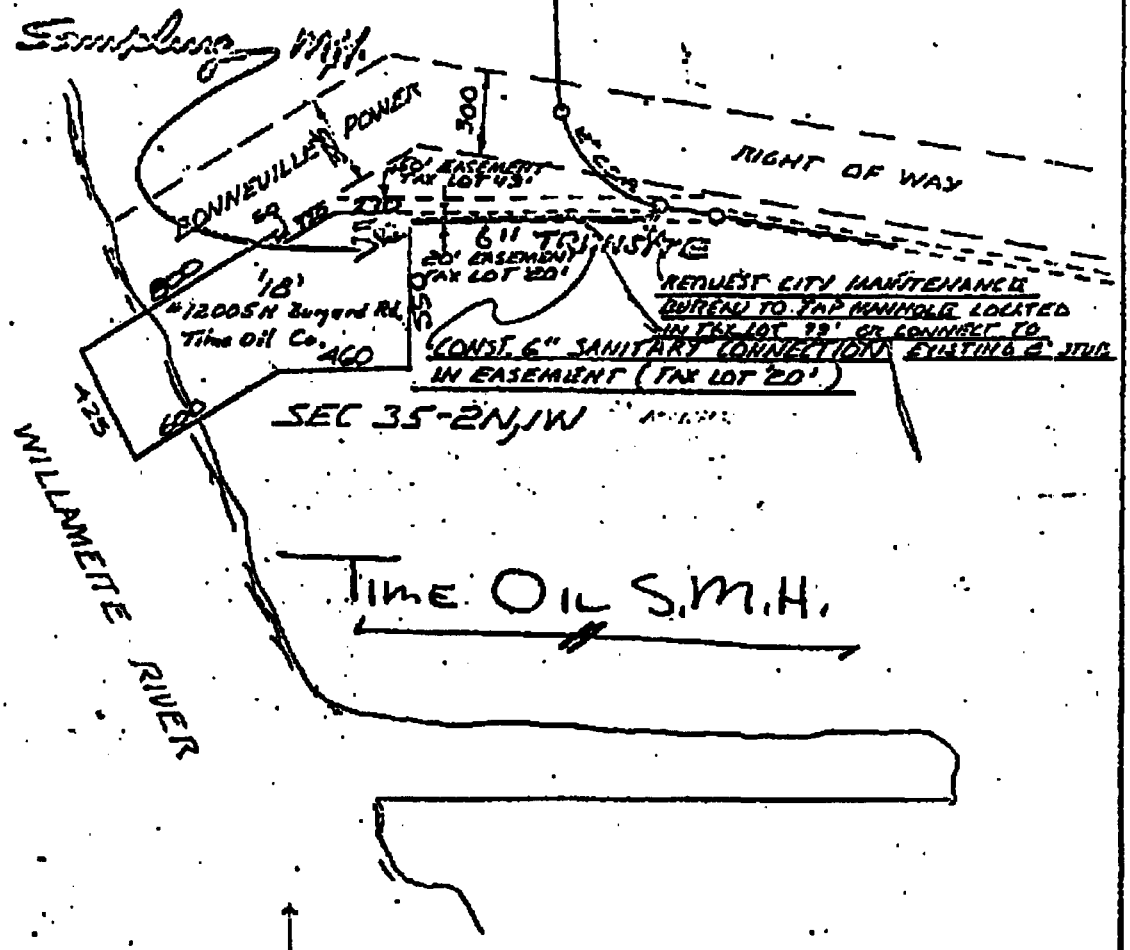
BZTO104(e)038530

DEPARTMENT OF PUBLIC WORKS, CITY OF PORTLAND

SEWER CONNECTION MAP

Type of sewer	☐ STORM	☒ SANITARY	☐ COMBINATION
Road permit required from	☐ STATE HIGHWAY DEPT.	☒ COUNTY	
Special requirements	☐ WAIVER	☒ EASEMENT	☐ CONNECTION FEE
	☐ COMBINE STORM & SANITARY AT CURB LINE		☐
	☐ ...P.C. WASTE WATER SEPARATION		

NOTE:
1) OUT OF CITY BOND REQUIRED
2) MULT. CO. PLUMBING PERMIT REQ'D.
3) SAMPLING MH REQUIRED SEE STD # 1210 ATTACHED
4) SEWER USER AGREEMENT REQUIRED



The approval covers only that portion of the sewer which is within the dedicated street area. The location of the sewer shall not differ from this plan without written approval.

APPROVED: _____ OCT 10 1972
JAMES L. APPERSON P.E., CITY ENGINEER — DATE
Reg. Prof. Engr. No. 3744 Nov. 1955

SCALE: 1" = 600'
1/4 Sec. No. 1719

HARDER MECHANICAL CONTR.
CONTRACTOR

PERMIT NO. AP 860134

Sewer Book 9 Page 148

TOLS001710

BZTO104(e)038531

State of Oregon

DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE MEMO

To: Industrial Waste Section cc: PDO WDL Date: February 16, 1971

From: WDL

Subject: IN 3-0 PacMar

Friday, February 12, I visited Mr. Dude Kennedy at Pac-Mar Services on Swan Island.

Mr. Kennedy said that all of the waste oil they collect is stored in a tank rented from Time Oil. It is not processed so they do not have any wastes. The waste oil and some water it contains is used to oil Forest Service roads during the summer season.

AP 860135

TOLS001711

BZTO104(e)038532

State of Oregon

DEPARTMENT OF ENVIRONMENTAL QUALITY INTEROFFICE MEMO

To: RCB Industrial Waste Section cc: FDO WDL Date: Feb. 16, 1971

From: WDL

Subject: IW 3-0 Time Oil Co.

Visited Time Oil Company's Terminal at 12005 N. Burgard this afternoon and talked to the plant engineer, Neil_____. Time Oil has a dock and a fairly good size tank farm storing:

1. Gasoline
2. Jet Fuel
3. Diesel
4. Raw turpentine from paper mills
5. Other miscellaneous products.

When they draw water from tank bottoms they allow it to flow on the ground. But they maintain they have no effluent going into the river, drainage ditch or storm sewer.

But they may be saturating the soil with oil over a long period.

They also lease a tank to PacMar Services to store wastes from refinery separators, ships tank cleaning, etc.

WDL

AP 860136

TOLS001712

BZTO104(e)038533

DEPARTMENT OF ENVIRONMENTAL QUALITY

TERMINAL SALES BLDG. • 1234 S.W. MORRISON ST. • PORTLAND, OREGON 97205

January 12, 1972

Time Oil Company
Portland Division
12005 N. Burgard Street
Portland, Oregon 97203

Attention: Mr. N. P. Losh, Vice President

Gentlemen:

Re: WDP File #85780

The Department of Environmental Quality staff has reviewed your plans and proposals set forth in meetings in connection with proposed facilities for the collection and treatment of tank water draw waste waters at Time and Bell Oil Terminals. It is understood Bell Oil is a wholly owned subsidiary of Time Oil Co.

The basic components of the system are as follows:

1. A water draw box at each tank having water draw fittings (8 tanks at Time Terminal and 4 tanks at the Bell Terminal).

2. Drainage piping to centrally located sampling sumps in the tank farm area where waters may be sampled before discharge. (Two at the Time Terminal and 1 at the Bell Oil Terminal.)

3. A portable Fram-Aker oil/water separator coupleable to tank water draw fitting, discharging treated water to collection system and returning oil to the tank.

4. Three dry well stations each with sampling platform and sump (overflow to dry well).

COPY

AP 860137

TOLS001713

BZTO104(e)038534

Approval is herewith granted for the proposed construction and facilities subject to confirmation by the Environmental Quality Commission.

Approval of the above facilities does not preclude discharge of treated waters to the sanitary sewer by arrangement with the city of Portland.

If you have any questions, please contact this office.

Very truly yours,

L. B. Day
Director

WDL/lb

AP 860138

TOLS001714

BZTO104(e)038535

ate of Oregon

DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE MEMO

cc: CKA, Jim Swaney

To: RJNichols, ~~RGGilbert~~, ~~RJZilka~~

Date: June 28, 1974

From: LDPatterson

Subject: WQ - Time Oil Company - Multnomah County

This is in reference to an inspection of the Time Oil Company facilities located in the Rivergate District.

The large majority of the property is sand which allows storm water to percolate into the ground. All paved areas drain to collection sumps which connect to a closed private sewer system. Water from this private system, including tank draw water, is pumped to a large oil storage tank. The liquid from this tank is periodically pumped through a portable oil-water separator from which the water is discharged to the City of Portland's sanitary sewer.

The oil dock has been concreted, curbed and plumbed to carry any oil spillage to the same oil storage facility.

Pac-Mar has been contracted to remove waste oils from the separator.

The Time Oil Company has no discharges to the Willamette River. The facility appears to be clean, neat and well maintained.

An NPDES Permit will not be required for this facility.

Should get a state permit for this facility when we get time.

DEQ 4

AP 860139

TOLS001715

BZTO104(e)038536

SEATTLE
TACOMA
PORTLAND
STOCKTON
OAKLAND
SAN PEDRO
LOS ANGELES

PHONE 286-1611

TIME OIL COMPANY

12005 N. BURGARD, P. O. BOX 03117, ST. JOHNS STATION, PORTLAND, OREGON 97203

July 2, 1974

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY
RECEIVED
JUL 3 1974
WATER QUALITY CONTROL

Mr. L. Sawyer, Director of Water Quality
Department of Environmental Quality
Room 205 Terminal Sales Building
1234 S. W. Morrison St.
Portland, Oregon 97205

Dear Mr. Sawyer:

On August 1, 1972 we were issued a Waste Discharge Permit #1198, which expires December 31, 1974. Your file number was 38780, application number 1160, receiving stream Willamette River, County of Multnomah.

I talked to William Lesher in your office today, relative to the procedure to renew this permit when it expires. He told me that perhaps we did not need a permit.

In our operation here we do not discharge any water or wastes into the Willamette River. In 1972 we installed a water draw system for all of our tanks and this water is piped to a slop tank, together with any storm water from around our loading rack and a small portion of our payed yard. The water and oil that is collected in the slop tank is periodically ran through our Fram Oily Water Separator. The oil collected in this operation is disposed of or returned to storage and the water which contains less than 100 ppm ether soluble oil is dumped into the City of Portland sewer.

With our method of operation we would like to know if we need a NPDS permit or a State of Oregon permit, since we dump nothing in the river and the storm water from a small area in our paved yard is processed through our collection system.

If you need any additional information, please contact me.

Yours very truly,

Newton P. Lesh

NPL/s

AP 860140

TOLS001716

BZTO104(e)038537

January 31, 1975

Time Oil Company
P. O. Box 03117
Portland, Oregon 97203

Attention: Mr. Newton P. Lash
Vice President

Re: WQ - Time Oil Company
Multnomah County

Gentlemen:

The Department has reviewed Time Oil Company's application for a State of Oregon Water Pollution Control Facilities Permit. Because your wastewater is discharged to the City of Portland sewerage system, we have determined that a permit will not be required for your terminal. Further processing of your permit application has, therefore, been terminated.

If you have any questions relative to this procedure, please feel free to contact Mr. Dick Nichols of this office at 238-8471.

Very truly yours,

KESSLER R. CANNON
Director

E. J. Weatherbee, Administrator
Northwest Region

RJN:cs

cc: Water Quality Division, DEQ

AP 860141

TOLS001717

BZTO104(e)038538

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
SAN PEDRO
LOS ANGELES

TIME OIL CO.

2737 W. COMMODORE WAY, P.O. BOX 24447, TERMINAL ANNEX, SEATTLE, WA 98124

March 14, 1975

Department of Environmental Quality
1234 S. W. Morrison Street
Portland, Oregon 97205

Dear Sirs:

Attached detailed report of oil spill at the Time Oil Company terminal facility in Portland, Oregon is submitted for compliance with paragraph (1)(e), section 47-015, of the Oregon Administrative Rules Compilation.

Sincerely,

John P. Denham

John P. Denham
Environmental Control Engineer

JPD/jf

Copy to:

Region X
Environmental Protection Agency
Attn: Mr. Jim Willman
1200 Sixth Avenue
Seattle, Washington 98101

NORTHWEST REGION OFFICE
RECEIVED
MAY 16 1975
DEPARTMENT OF
ENVIRONMENTAL QUALITY

AP 860142

ENCLOSURE 3

TOLS001718

BZTO104(e)038539

STATISTICS

Diesel	Bbls.
Conditions:	
On barge prior to discharge	15,244
Discharged into tank 55021	11,334
On barge prior to discharge to tank 29508	3,910
Discharged into tank 29508 before rupture	1,837
Isolated on barge at time of rupture	2,073
In tank 29508 before receipt	24,470
In tank 29508 after rupture	5,301
On barge after rupture	7,480
In tank 15002 after rupture	4,843
In tank 5312 after rupture	3,283
In tank 5313 after rupture.	1,737
Loss:	
Quantity in tank 29508 before receipt	24,470
Plus quantity discharged into tank 29508 before rupture	1,837
Less quantity in tank 29508 after rupture	5,301
Less quantity recovered	17,343
Equals loss of	3,663

AP 860143

SUBJECT: OIL SPILL AT TIME OIL COMPANY TERMINAL - PORTLAND, OREGON

On March 8, 1975 Heating oil and Diesel on board PAC Barge 25 were being discharged to terminal storage tanks. Heating oil discharge operation started about 0700 hours and was completed at 1020 hours. Diesel discharge operation began immediately thereafter. Spill occurred, during the diesel operation, at tank 29508 and was due to tank rupture.

Operation took place as follows. Approximately 11,334 of the 15,244 total net barrels on board barge was received into tank 55021. At approximately 1530 hours, tank 55021 was filled and pumping to tank 29508 was started. When pumping to tank 29508 began, Neil Gallagher (Terminal Superintendent) departed for home. Otto Saylor and Wayne Schmidt remained on duty. At approximately 1630 hours, Schmidt was inspecting the pipelines being used and was within 100 feet of tank 29508 when the vertical weld on the second ring from the tank bottom ruptured. Schmidt observed the initial rupture (approximately 6 inches in length) instantly spread to the full six (6) foot length of the vertical weld. Schmidt immediately caused barge pumping to stop. The bargeman isolated remaining product on board, then opened all empty barge tanks and started receiving tank 29508 product back on the barge. Superintendent was notified, returned to the terminal at about 1650 hours, and effected emergency actions. Empty tank 15002, adjacent to tank 29508, was opened and began receiving product by gravity flow through an 8 inch line. Tank 5313, already containing approximately 121 bbls. of diesel and on a common line with tank 15002, was also opened. The U.S. Coast Guard office was informed of the rupture at approximately 1700 hours.

Spill accumulation had flowed to a low area adjacent to tank 5312. A portable 3 inch transfer pump was put into operation and spill recovery operations began about 1730 hours with the pumping into empty tank 5312. Another 2 inch pump was put into operation at a second low spot by tank 5313 and pumping started to that tank. Two additional personnel were called in to work. The Willamette Tug and Barge Company was called to deploy the company's on hand oil containment boom just in case any oil might reach the river. Boom was deployed by 1830 hours.

PO-2 Melvin Harris of the U.S. Coast Guard was on site. He requested his office call the Portland Fire Department, then took pictures of the tank rupture. The plant entry gate had been closed as part of the emergency operations procedure, and a company employee was standing by it with instructions to permit only necessary company personnel or emergency vehicles to enter. The fire department arrived at approximately 1930 hours and surveyed the area.

At approximately 2200 hours, when the product level in tank 29508 had been decreased somewhat and there was no possible chance of injury to personnel, a ladder was placed against the tank and cedar shingles were driven into the crack. Spill was then reduced to a minimum.

AP 860144

TOLS001720

BZTO104(e)038541

At 0015 hours, March 9th, the product in tank 29508 was below the rupture. Transfer to the barge was stopped. Barge was gauged. Gauge showed barge had received approximately 7,480 barrels. When tank rupture occurred, there was 2,073 barrels remaining on the barge. 1,837 barrels had, therefore, been discharged into tank 29508 before the rupture. The 7,480 barrels of product returned to the barge and the 2,073 barrels previously on board were then pumped to tank 16804. Final product transfer was completed at 0500 hours on March 9th.

Meanwhile, portable pumps were continually being moved to different locations where other low spots existed and all visible spill accumulations were recovered by 1700 hours on March 9th. Recovery operations continued on March 10th. Beginning at 0700 hours, holes were hand dug in many places and any small quantities of oil were transferred to tank 5312. Oil sorbent pads were simultaneously deployed throughout the area and pick-up accomplished. A backhoe was then brought in and large holes dug throughout the area in search of remaining oil accumulation. None could be found. As a final recovery effort on March 11th, certain areas were flooded with fresh water. No oil accumulation resulted.

Overall corrective action started March 12th when complete removal and disposal of all ground in the spill area was begun. Ground is being replaced with newly purchased soil. Tank is to be repaired and tested prior to being returned to service.

Synopsis: At approximately 1630 hours on March 8, 1975, a diesel oil spill occurred at the Time Oil Co. terminal in Portland, Oregon. Spill resulted from a tank rupture. Emergency procedures were effected in accordance with Operations Manual. Spill was contained by secondary containment diked area inside property boundaries. At no time did any product reach navigable waters. 3,663 bbls. of diesel oil were lost.

AP 860145

ENVIRONMENTAL PROTECTION AGENCY

EPA NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTALLATION'S EPA I.D. NO.

I. NAME OF INSTALLATION

II. INSTALLATION MAILING ADDRESS

III. LOCATION OF INSTALLATION

PLEASE PLACE LABEL IN THIS SPACE

FPA - RCRA

INSTRUCTIONS: If you received a prepr... label, affix it in the space at left. If any of ... information on the label is incorrect, draw a l... through it and supply the correct informa... in the appropriate section below. If the labe... complete and correct, leave items I, II, and ... below blank. If you did not receive a prepri... label, complete all items. "Installation" may ... single site where hazardous waste is genera... treated, stored and/or disposed of, or a tr... porter's principal place of business. Please r... to the INSTRUCTIONS FOR FILING NOTI... CATION before completing this form. ... Information requested herein is required by ... *(Section 3010 of the Resource Conservation ... Recovery Act).*

DETACH A

FOR OFFICIAL USE ONLY

COMMENTS

C

INSTALLATION'S EPA I.D. NUMBER | APPROVED | DATE RECEIVED (yr., mo., & day)

F

I. NAME OF INSTALLATION

Time Oil Co.

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX

3 2737 West Commodore Way

CITY OR TOWN | ST. | ZIP CODE

4 Seattle | WA | 98199

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER

5 12005 North Burgard

CITY OR TOWN | ST. | ZIP CODE

6 Portland | OR | 97203

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title) | PHONE NO. (area code & no.)

2 Denham John Hazard Control Mgr | 206-285-2400

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER

8 Time Oil Co.

B. TYPE OF OWNERSHIP (enter the appropriate letter into box)

F = FEDERAL
M = NON-FEDERAL

M

VI. TYPE OF HAZARDOUS WASTE ACTIVITY (enter "X" in the appropriate box(es))

- [X] A. GENERATION
- [ ] B. TRANSPORTATION (complete item VII)
- [ ] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION (transporters only – enter "X" in the appropriate box(es))

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER (specify)

AP 8601

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notificatio... If this is not your first notification, enter your installation's EPA I.D. Number in the space provided below.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION (complete item C)

C. INSTALLATION'S EPA I.D. NO.

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

EPA Form 8700-12 (5-80)

CONTINUE ON REVERSE

TOLS001722

BZTO104(e)038543

I.D. – FOR OFFICIAL USE ONLY

W

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON-SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.31 for each listed hazardous waste from non-specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
7	8	9	10	11	12

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
K051	K052				
19	20	21	22	23	24
25	26	27	28	29	30

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four-digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
P090					
37	38	39	40	41	42
43	44	45	46	47	48

D. LISTED INFECTIOUS WASTES. Enter the four-digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON-LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non-listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

☐ 1. IGNITABLE (D001) ☐ 2. CORROSIVE (D002) ☐ 3. REACTIVE (D003) ☐ 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
J. D. Mason	J. D. Mason, Vice President	8/11/80

EPA Form 8700-12 (8-80) REVERSE

Dept. of Environmental Quality
RECEIVED
FEB 2 1982

AP 860147

TOLS001723

BZTO104(e)038544

TIME OIL COMPANY

February 25, 1982

Department of Environmental Quality
Attn: Mike Ebeling
P.O. Box 1760
Portland, OR 97207

Dear Mike,

Per your telecon request this date, enclosed are copies of EPA Form 8700-12 for Time Oil Co. facilities at 9100 Saint Helens Road N.W., Portland, OR 97231 and 12005 North Burgard, Portland, OR 97203.

Sincerely,

John P. Denham

John P. Denham
Hazard Control Manager

Encl. a/s

JPD/mm

Dept. of Environ. Quality
RECEIVED
FEB 2 1982

AP 860148

EPA

ACKNOWLEDGEMENT OF NOTIF ATION OF HAZARDOUS WASTE ACTIVITY

This is to acknowledge that you have filed a Notification of Hazardous Waste Activity for the installation located at the address shown in the box below to comply with Section 3010 of the Resource Conservation and Recovery Act *(RCRA)*. Your EPA Identification Number for that installation appears in the box below. The EPA Identification Number must be included on all shipping manifests for transporting hazardous wastes; on all Annual Reports that generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal facilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

EPA I.D. NUMBER ➤ ORD009577543

TIME OIL CO
2737 WEST COMMODORE WAY
SEATTLE WA 98199

INSTALLATION ADDRESS ➤ 12005 NORTH BURGARD
PORTLAND OR 97203

EPA Form 8700-12A (4-80)

AP 860119

TOLS001725

BZTO104(e)038546

TIME OIL COMPANY

2737 W. COMMODORE WAY, P.O. BOX 24447, SEATTLE, WA 98124

February 22, 1982

Department of Environmental Quality
Attn: Mike Ebeling
P.O. Box 1760
Portland, Oregon 97207

Dear Mr. Ebeling:

This is a request for assignment of a "Generator Identification Number". It is submitted, as required by OAR 340-63-210, for use by Time Oil Co. at 12005 North Burgard in Portland, Oregon 97203.

Three (3) Hazardous Wastes, as defined in ORS 459.410 (6), may periodically be generated at this terminal location. They are listed below with identifications as shown in 40 CFR 261.32 and 261.33.

NO.	WASTE
K051	API Separator Sludge
K052	Tank bottoms (leaded)
P090	Pentachlorophenol

Enclosed is copy of EPA I.D. number ORD009597543 assigned to this installation. Please send "Generator Identification Number" to me.

Sincerely,

John P. Denham

John P. Denham
Hazard Control Manager

Dept. of Environmental Quality
RECEIVED
FEB 24 1982

JPD/jam

Encl. a/s

AP860150

TOLS001726

BZTO104(e)038547

wrong identification [illegible] corrected [illegible]

I. INSTALLATION'S EPA I.D. NUMBER

	HAZARDOUS WASTE NUMBER (see instructions)	METHOD (enter code)	D. AMOUNT OF WASTE
ORD009597543	K051 K052		

II. NAME OF INSTALLATION

Time Oil Co. API Separator Sludge & Tank Bottoms		$02	40

III. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX

2737 West Commodore Way

Called 2/10/82

CITY OR TOWN	ST.	ZIP CODE
Seattle	WA	98199

LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER

12005 North Burgard

CITY OR TOWN	ST.	ZIP CODE
Portland	OR	97203

VI. INSTALLATION CONTACT

NAME (last and first)	PHONE NO. (circle)
Denham John	206-285-2400

VII. TRANSPORTATION SERVICES USED (for Part A reports only)

List the EPA Identification Numbers for those transporters whose services were used during the reporting year represented by this report.

ORD070730395

12

XXII. COMMENTS (enter information by line number - see instructions)

VIII. COST ESTIMATES FOR FACILITIES (for Part B reports only)

A. COST ESTIMATE FOR FACILITY CLOSURE	B. COST ESTIMATE FOR POST CLOSURE MONITORING AND MAINTENANCE (disposal facilities only)
$	$

IX. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

860151

John P. Denham — A. PRINT OR TYPE NAME

John P. Denham — B. SIGNATURE

2/26/82 — C. DATE SIGNED

EPA Form 8700-13 (1-81)

PAGE 1 OF 2

TOLS001727

BZTO104(e)038548

wrong identifier called & corrected

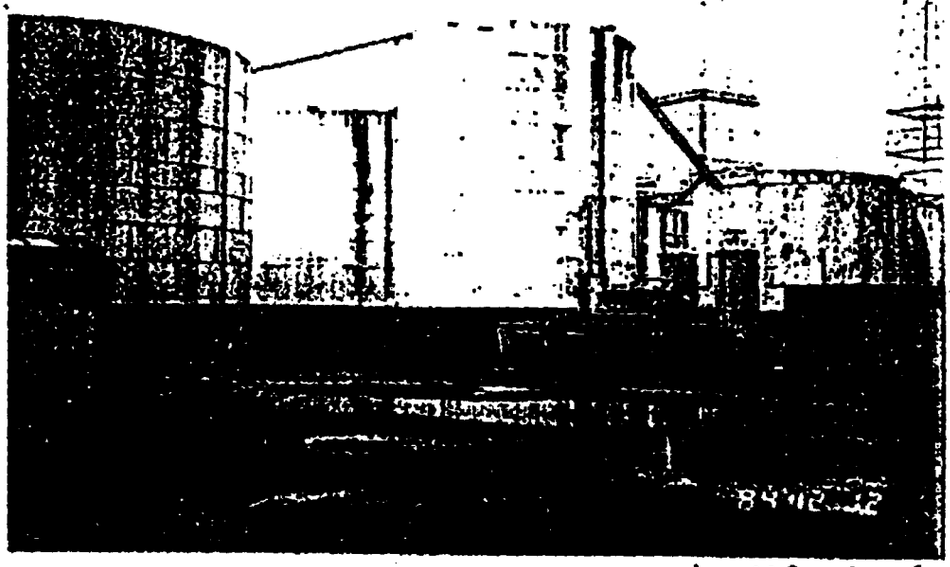
XXI. WASTE IDENTIFICATION

	A. DESCRIPTION OF WASTE	B. EPA HAZARDOUS WASTE NUMBER (see instructions)	C. HANDLING METHOD (enter code)	D. AMOUNT OF WASTE
1	API Separator Sludge & Tank Bottoms	K051 K052	S02	40
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

XXII. COMMENTS (enter information by line number - see instructions)

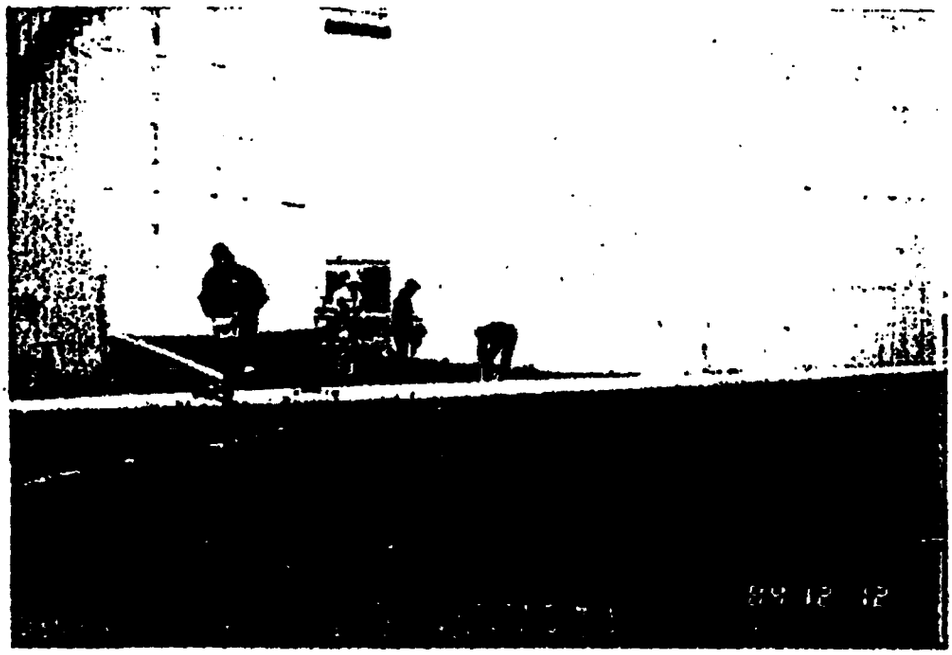
AP 860152

EPA Form 8700-13U (1-81)

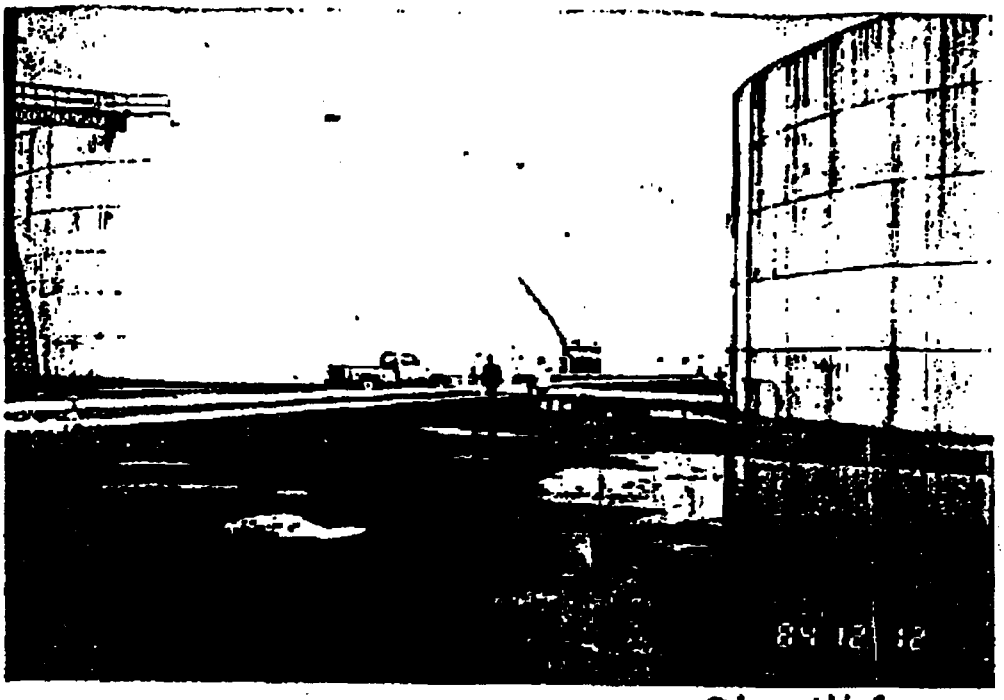


Time Oil Co. Vapor Control System
looking NNW

Looking NNW
forward tank 5312

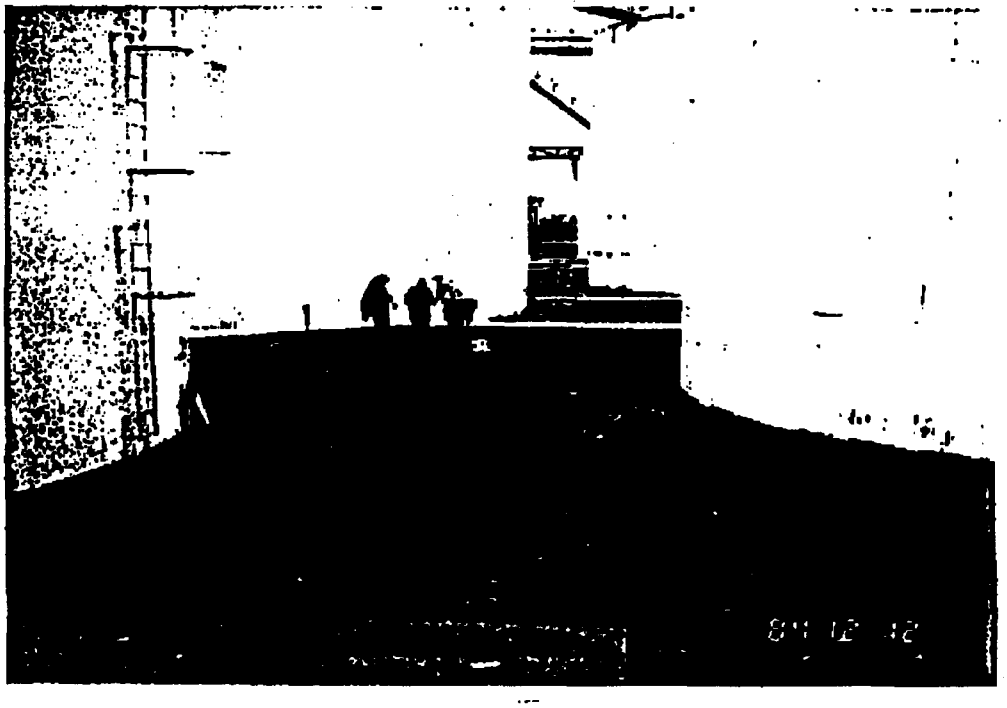


AP 860153

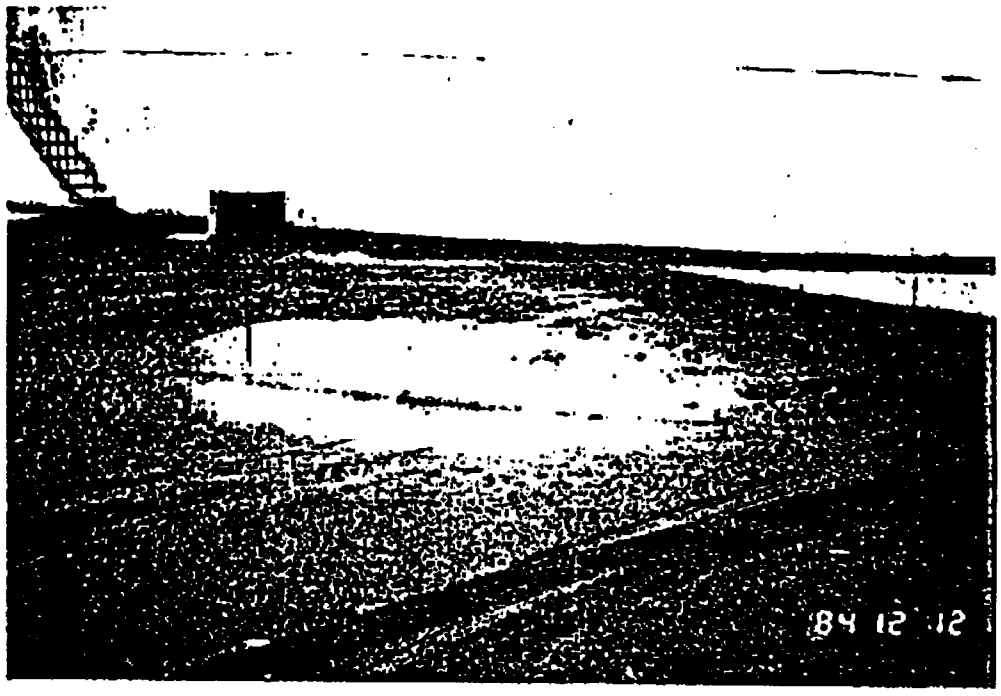


Time Oil Co.
Bell Oil Section
looking NNE

Looking North



AP 860154

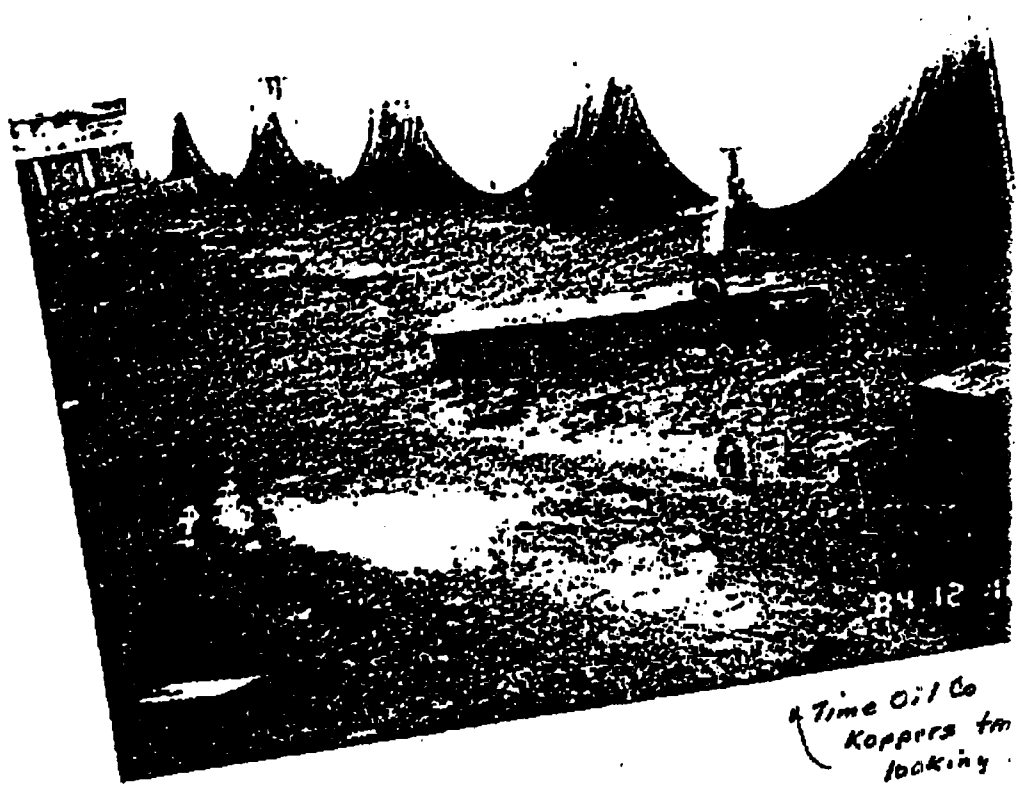


Time Oil Company

AP 860155

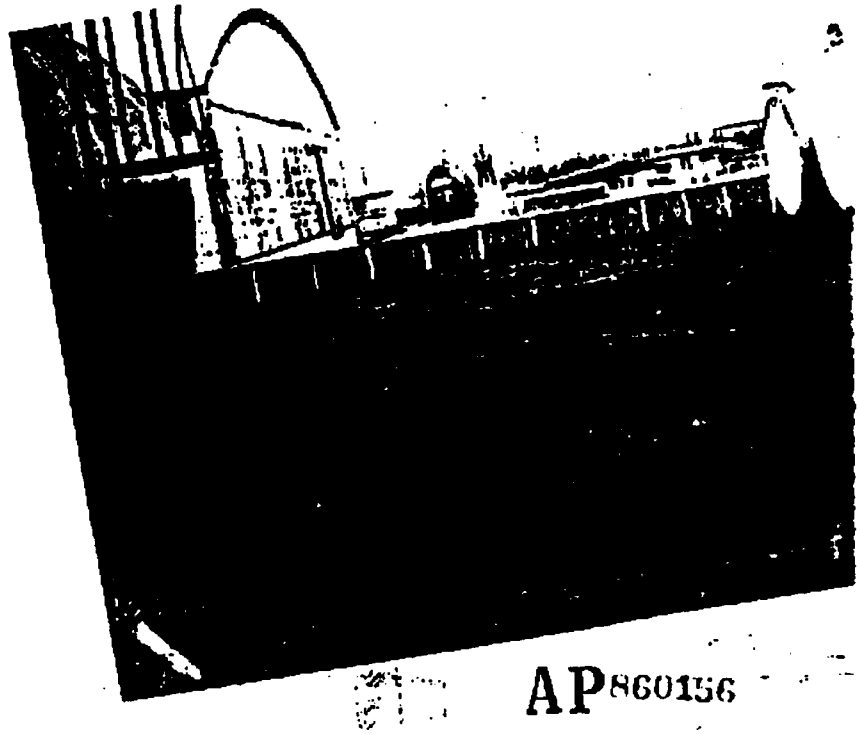
TOLS001731

BZTO104(e)038552



Time Oil Co
Koppers tm
looking

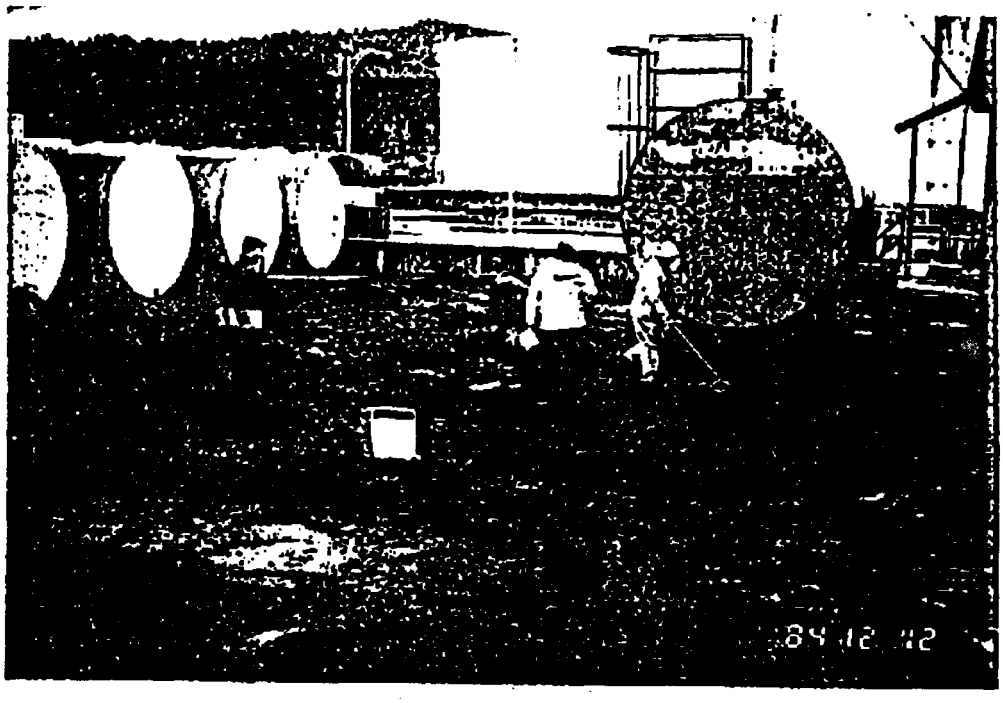
Looking



AP860156

TOLS001732

BZTO104(e)038553



Time Oil Co.

Koppers Tank area looking sw

AP 960152

TOLS001733

BZTO104(e)038554

The site plan / sampling map could not be easily reproduced. NW Region has a copy

AP 960158

TOLS001734

BZTO104(e)038555

LEGAL

HW-(cc

DEPARTMENT OF ENVIRONMENTAL QUALITY
Request for Analysis

Laboratory No. 84-0

Location/Site: Time Oil

Date: May 2, 1984 1000

Date Received Lab: MAY 02 1984 1100

Collected By: RFG, RNN, BR

Program: HW 42-88

Date Reported: MAY 31 1984

Purpose: Complaint follow up w/ Melt. Co shirt

Report Data To: ~~GDR~~ ~~PKR~~ CBC

Comments:

* Basic (P) unpreserved; Nutrient (R) add H_2SO_4 in field; Metals (Tm) HNO_3 added in lab—don't rinse; Organic(X) mason jar lab prepared

Item No.	Sampling Point Description (include time)	*Sample Container (bottle) #'s Nutrients Basic	DO BOD	Metals Organic		Test Required
1	SLUDGE ON SURFACE — 4' FROM EDGE OF TANK ENTRY HOLE			#1		PCB's, Pb %M Priority Pollutants (Organics) GC-MS acids/BN
2	SOIL - 10' FROM TANK 6-7 INCHES BELOW SURFACE			#2		"
3						
4						
5						
6						

Dept. of Environmental Quality
RECEIVED
JUL 30 1984
Astoria Branch

Dept. of Environmental Quality
RECEIVED
JUL 1 1984
NORTHWEST REGION

Laboratory comments #1 oily sludge

AP 860159

TOLS001735

BZTO104(e)038556

Haz. Waste

Department of Environmental Quality

VICTOR ATIYEH
Governor

522 S.W. FIFTH AVENUE, BOX 1760, PORTLAND, OREGON 97207 PHONE: (503) 229-5696

September 7, 1984

HW 950
Time 0.1

Dan Durig
Solid Waste Manager
METRO
527 SW Hall
Portland, OR 97204

Dear Dan:

As Dennis mentioned to you earlier, he and other members of our staff, along with Al Goodman of EPA's Oregon office, met last week to discuss the problems with the possible PCB sludge which may have been disposed of in the St. Johns Landfill. We still believe that it is in everyone's best interest to have that portion of the landfill where the contaminated sludges may have been disposed of excavated. Excavation of the area, with sampling of 17 or 18 trenches, seems to be the best plan. We would recommend that samples be taken every two feet, along with one composite sample of each trench. Our laboratory will analyze the 17 composite samples for you. Should any of these samples show significant levels of PCB contamination, the samples taken every two feet could then be used to more accurately find the contaminated material and have it removed. Should additional sample analysis be needed, METRO would need to arrange that with a private or other public laboratory. Our lab does not have the resources to analyze more than the 17 composite samples.

I understand from Dennis that METRO is exploring ways to have Crosby and Overton share in the excavation and sample collection costs, which certainly makes sense. However, we believe the area in question needs to be excavated and samples taken even should Crosby and Overton decide they are unwilling to participate in those expenses.

Please let us know as soon as possible your schedule for having the area excavated. We will need to reserve time on our laboratory's schedule, and if we do not have 3 or 4 weeks notice, there could be some delay in having the samples analyzed. With the rainy season coming soon, it would probably make sense to try to have the excavation started by October 8th.

Call me at 229-5292 should you have any questions or problems starting October 8th.

Sincerely,

Janet A. Gillespie

Janet A. Gillespie
Regional Manager
Northwest Region

JAG:c
RC1751
cc: Hazardous Waste Operations, DEQ
Regional Operations, DEQ
EPA-Oregon Operations Office

AP 860169

DEQ 1

TOLS001736

BZTO104(e)038557

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
SAN PEDRO
LOS ANGELES

TIME OIL COM

2737 W. COMMODORE WAY, P.O. BOX 24441, T

Nov

Department of Environmental Quality
Northwest Region
Attn: John L. Smits, R.S.
522 S.W. Fifth Avenue, P.O. Box 1760
Portland, Oregon 97207

Dear Mr. Smits:

The following information is provided per your verbal
1984 regarding this company's storage terminal located
in Portland Oregon.

Enclosed are:

a. Lists of product stored, by tank, at our North
to date.

b. Three copies of terminal SPCC and drainage pla

As I mentioned in our telecon earlier today, terminal
terminal storage capacity is 770,000 bbls.

It is my understanding that your efforts are intended
practices on site from 1940 to 1972 to determine if t
affected. A check of our records shows this locatior
1953. Our policy is to generate no waste, so we rec
Products which can not be reclaimed are recycled. P
only in those instances where recycling can not be c
hazardous waste generated are reported to the DEQ.

It is also my understanding that you may wish to sa
inside several diked areas of the facility. Should
kindly identify desired locations on one copy of e
along with a listing of the tests to be conducted,
procedures to be used by your laboratory and the d
actions can be coordinated. Request you provide
each sample obtained from our site.

Dept. of Environmental Quality

RECEIVED

NOV 13 1984

NORTHWEST REGION

Enclosures a/s

AP 860170

TOLS001737

BZTO104(e)02855

12005 N[illegible]URGARD
PORTLAND, OR

1984

TANK NO.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
~~164~~ 7004	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
~~301~~ 1200	PE	PE	PE	PE	PE	PE	PE	PE	PE	MT		
~~471~~ 30001	PE	PE	PE	PE	PE	PE	PE	PE	PE	MT		
~~472~~ 30002	S	S	S	S	S	S	S	S	S	MT		
~~472~~ 30008	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
~~310~~ 28009	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
2524	I	I	I	I	I	I	I	I	I	I		
2525	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME		
4408	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
5006	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
5006T	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO		
5312	#2	LF	LF	LF	LF	LF	LF	MT	MT	MT		
5313	MT	MT	MT	MT	MT	MT	MT	MT	#2	MT		
9509	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
9510	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		

KEY

CO - Crosby & Overton
I - Isobutanol
J - Jet Fuel
FA - Fatty Acid (by-prod. of wood)
LO - Lube Oil
LF - Liquid Fertilizer
LL - Lignin Liquor
M - Methanol
ME - Methyl 10
MT - Empty
NI - Not Installed
PE - Pentachlorophenol
P - Premium Gasoline
R - Regular Gasoline
S - Solvent
T - Turpentine
U - Unleaded Gasoline
#1 - Fuel Oil #1
#2 - Fuel Oil #2
#4 - Fuel Oil #4

TOLS001738

AP 860171

BZTO104(e)038559

NORTHWEST AND BELL TERMINALS
12005 N. BURGARD
PORTLAND, OR

1984

TANK NO.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
38015	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
38016	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
38017	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
55021	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
80009	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
80010	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT		
80014	MT	MT	MT	MT	MT	M	M	M	M	M		
80408	M	M	M	M	M							

KEY

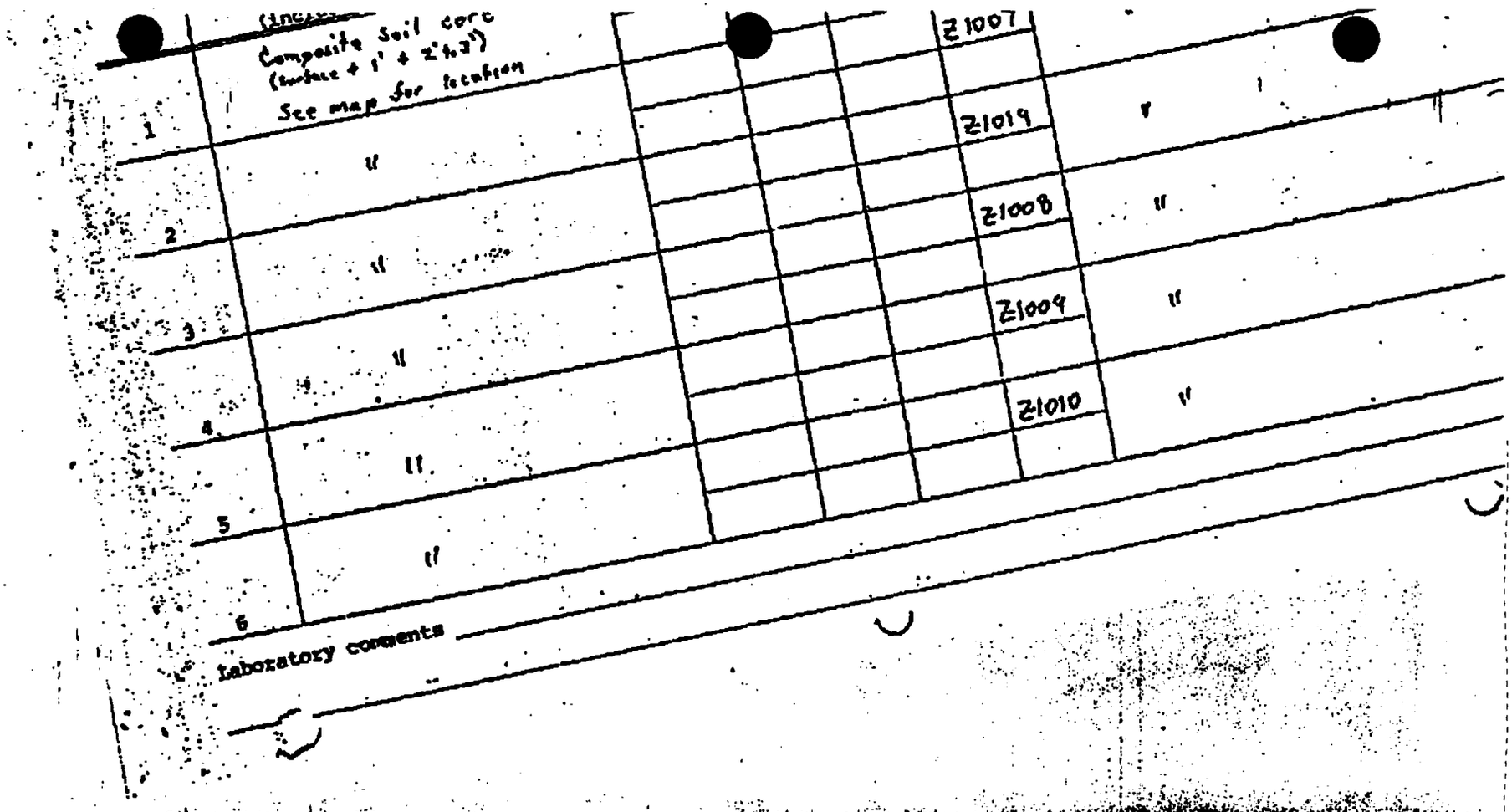
M - Methanol
MR - Methyl 10

S - Solvent
T - Turpentine
U - Unleaded Gasoline
#1 - Fuel Oil #1
#2 - Fuel Oil #2
Fuel Oil #4

TOLS001739

AP 860172

BZTO104(e)038560



AP 860173

TOLS001740

BZTO104(e)038561

LEGAL

2/2

DEPARTMENT OF ENVIRONMENTAL QUALITY
Request for Analysis

Laboratory No. 84-10201

Location/Site: Time Oil Date: 12 Dec 84 Date Received Lab: DEC 13 1984 1245

Collected By: RFG, JLS Program: 42 90 Date Reported: JAN 15 1985

Purpose: Report Data To:

Comments:

Basic (P) unpreserved; Nutrient (R) add H_2SO_4 in field; Metals (Tm) HNO_3 added in lab—don't rinse; Organic (X) mason jar (lab prepared)

Item No.	Sampling Point Description (include time)	*Sample Container (bottle) #'s Nutrients / Basic	DO / DOO	Metals / Organic		Test Required
7 X	W				21011	EP tox Pb " GCMS acid/BN PCB's
8 X	W				21012	"
9 X	"				21018	"
10 X	"				21017	"
11 X	"				21016	"
12 X	"				21004	AP 860174

Laboratory comments

TOLS001741

BZTO104(e)038562

LEGAL

DEPARTMENT OF ENVIRONMENTAL QUALITY
Laboratory Data Sheet

Laboratory No: 84-1020
Program Code: 4290
Page: 1 of: 49
Analysis Completed: JAN 04 1985

Time Oil REG

Item No.	Test Results (All units in mg/l or ug/m³)											
	bag #	EP Tox Pb										
1	Z1020	<0.1										
2	Z1007	<0.1										
3	Z1019	<0.1										
4	Z1008	<0.1										
5	Z1009	<0.1										
6	Z1010	<0.1										
7	Z1011	<0.1										
8	Z1012	<0.1										
9	Z1018	<0.1										
10	Z1017	<0.1										
11	Z1016	<0.1										
12	Z1004	<0.1										

Comments:

Q-rep #
NO - 1984
1 meni 1983
June 29
495 gal gasoline
D008
52923 #
Chem Sec.

AP 860175

TOLS001742

BZTO104(e)038563

July 26, 1978

Time Oil Company
P.O. Box 03117
Portland, Oregon 97203

Attention: Mr. Newton Leah
Terminal Manager

Re: AQ - Time Oil Company
Multnomah County
NWR-AQ-78-188
NOTICE OF VIOLATION

Gentlemen:

Department personnel have verified that gasoline products at Time Oil Company, 12005 N. Burgard, Portland, Oregon greater than 40,000 gallons without approved vapor emiss on the storage tanks. This is in violation of Oregon Ad (OAR) Chapter 340, Section 28-050 (1).

You or your representatives are requested to attend an our offices located at 522 SW 5th Avenue, Portland, Ore 1978, at 10:00 a.m. At this time please be prepared to and time schedule which will bring your facility into c

If the Department can be of any assistance to you in t call me at 229-5295.

Sincerely,

James R. Close
Environmental Speci
Northwest Region

JRC/sh
Enclosure
cc: Air Quality Division, DEQ
Regional Operations, DEQ

AP 860212

TOLS001743

BZTO104(e)03850

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
SAN PEDRO
LOS ANGELES

TIME OIL COMPANY

2737 W. COMMODORE WAY, P.O. BOX 24467, TERMINAL ANNEX, SEATTLE, WA 98124

Dept. of Environmental Quality
RECEIVED
NOV 23 1984

November 20, 1984

NORTHWEST REGION

Department of Environmental Quality
Northwest Region
Attn: John L. Smits, R.S.
522 S.W. Fifth Avenue, P.O. Box 1760
Portland, Oregon 97207

Dear Mr. Smits:

This is to acknowledge receipt of your November 14, 1984 letter regarding DE
NW-3012 assessment of Time Oil Co. facility at 12005 N. Burgard in Portland
Oregon.

As per our telecon today, date of sampling was confirmed to be December 12
1984. One additional bit of information is needed at the time sampling is
done - the name of the tests to be performed on soil samples taken.

Sincerely,

John P. Denham

John P. Denham
Environmental Manager

JPD/ch

AP 860213

VICTOR ATIYEH
Governor

Department of Environmental Quality

522 S.W. FIFTH AVENUE, BOX 1760, PORTLAND, OREGON 97207 PHONE: (503) 229-5696

November 14, 1984

Time Oil Company
P.O. Box 24447
Terminal Annex
Seattle, WA 98124

Re: HW-3012 Superfund
Time Oil Company
Multnomah County

The Department is conducting an assessment of past waste disposal practices at your facility at 12005 N. Burgard, Portland, Oregon as part of a RCRA Section 3012 cooperative agreement with EPA. The assessment included a site inspection and interview with John Denham and Neil Wallis on October 25, 1984.

In order to properly complete the assessment, a grid of composite soil samples tested for priority pollutants is required from within the tank farm. This includes the old Bell Oil Terminal and additional samples near the tanks leased to Crosby and Overton. Proposed sampling points are shown on the attached map.

The purpose of this activity is to determine if there are environmental problems associated with past handling of tank bottoms, draw waste waters, separator sludge, pentachlorophenol and wastes handled by Crosby and Overton. The Department cites Oregon Revised Statutes (ORS) 459.670 (copy enclosed) governing hazardous waste as authority to enter the site for sample collection.

The Department requests your cooperation in completing the assessment work. We have a limited amount of time to complete this activity and, therefore, as agreed we propose to collect samples on December 5, 1984 beginning at 1:30 p.m. Sampling will take two to three hours. Split samples will be provided in containers to you. If you wish to hold samples for later analysis, the temperature should be maintained at 4° C. We expect to be able to phone preliminary results about 30 days after collection. Test procedures will be provided to you at the time of sampling.

If you have any questions, please feel free to contact me at our Portland office at (503) 229-5296 or (503) 738-5949.

Sincerely,

John L. Smits
Environmental Analyst
Northwest Region

JLS:b
RB3953
Enclosure(s)
cc: Northwest Region, DEQ
Hazardous Waste Operations, DEQ
Crosby and Overton
EPA Region X
Superfund Program Management Section
DEQ - Laboratory

AP 860214

DEQ-1

TOLS001745

BZTO104(e)038566

Department of Environmental Quality

522 S.W. 5th AVENUE, BOX 1760, PORTLAND, OREGON 97207

North Coast Branch
P. O. Box 869
Astoria, Oregon 97103
Phone (503) 325-8660

June 28, 1984

Time Oil Company
P.O. Box 24447
Terminal Annex
Seattle, Washington 98124

Attn: John P. Denham
Environmental Manager

Dept. of Environmental Quality
RECEIVED
JUL 2 1984
NORTHWEST REGION

RE: HW-3012 Superfund
Time Oil Company
Multnomah County

Dear Mr. Denham,

I have your May 25, 1984 letter to Gary Calaba regarding the listing of Time Oil in Portland, on the Uncontrolled (Abandoned) Hazardous Waste Disposal Sites list. I have been asked to respond.

Time Oil is listed in EPA's Emergency and Remedial Response Information System (ERRIS). The DEQ did not list Time Oil, EPA did. We are participating in the 3012 - Superfund inspection program to determine if there are potential hazardous waste impacts at the sites. We believe that the list was generated in a somewhat random fashion. It appears several business categories have been targeted for review, possibly because problems have been found at similar facilities in other parts of the country. We also wonder why some companies are listed and others are not. Time Oil cannot be removed from the list unless the assessment/inspection warrents that action.

It appears to me that the listing of Time Oil is appropriate due to the recent incident involving the tank(s) leased from Time Oil by Crosby and Overton. My preliminary assessment/site inspection in the next couple months will concern that incident as well as review of past and present disposal practices involving tank bottoms, slops, etc.

I hope this answers your question. If not, please feel free to contact me at (503) 325-8660. I will contact you in advance of any planned inspection.

Sincerely,

John L. Smits

John L. Smits, R.S.
Environmental Analyst
North Coast Branch

JLS:ccv
cc: Northwest Region, DEQ
Hazardous Waste Section, DEQ
EPA

AP 860215

DEQ-1

SITE SAFETY PLAN

SITE: TIME OIL CO.

DATE: 1 May 1984

LOCATION: 12005 N. Burgard Road
Portland, Oregon 97203

PREPARER: B. C. Reynolds
G. B. Baesler

INVESTIGATIVE OBJECTIVE(S): Remove soil samples from around tank.

Proposed Date of Investigation: 2 May 1984

BACKGROUND REVIEW: Complete (XX) Partial ( )

DOCUMENTATION/SUMMARY:
Overall Hazard: High _____ Moderate _____ Low _____ Unknown XXX
Others:
Site Plan and Site Sketch Attached: Yes _____

INCIDENT/MATERIAL CHARACTERISTICS:
MATERIAL TYPE (Spill/Waste): Liquid _____ Solid _____ Sludge XXX Gas/Vapor _____ Unknown
CHARACTERISTICS:
Corrosive: XXX Ignitable: _____ Radioactive _____ Volatile XXX Unknown
Toxic: _____ Reaction: _____ Biological Agent: _____ ILV: _____
Dermal Toxicity: _____ Others: _____
Chemical Name(s): _____

QUANTITY INVOLVED: Unknown SOURCE: Product removed from tank
CAUSE: Industrial clean up
INCIDENT/SITE DESCRIPTION: Size: 20 by 100 feet
Surrounding Population: None (day workers)
Buildings: Storage Topography: Tank farm
Receiving Waters/Tributaries: None
Unusual Features (e.g., Sensitive Areas, Endangered Species, etc.): None

HISTORY: _____

PERSONNEL PROTECTION:
Level of Protective Clothing: A ____ B ____ C ____ D X
Was this Subsequently Downgraded?: Yes ____ No X
If yes, Explain: _____

AP 860216

List Specific Protective Clothing Required:
1. Throwaway suit 2. _____ 3. Gloves 4. Respirator
5. Boot cover 6. _____ 7. _____ 8. _____

Field Monitoring Equipment and Materials Required:
1. _____ 2. _____ 3. _____ 4. _____
5. _____ 6. _____ 7. _____ 8. _____

TOLS001747

BZTO104(e)038568

PPE Stations: 1. _____ 2. _____ 3. _____
4. _____ 5. _____ 6. _____ 7. _____

List Equipment, Materials, and Level of Protection Required:

1. _____ 2. _____ 3. _____ 4. _____
5. _____ 6. _____ 7. _____ 8. _____

SITE ENTRY PROCEDURES:

Team Size: 2

Station Designation (Name/Responsibility) _____

Special Instructions: None

EMERGENCY PRECAUTIONS:

Health Hazards: Unknown - none

Acute Exposure Symptions (if known): _____

Special First Aid Instructions: _____

EMERGENCY INFORMATION SOURCES:

	Name	Town	Phone	Notified Yes	Notified No
Fire	Portland	Portland	911		XX
Police	Multnomah	"	911	XX	
Ambulance		"	911		XX
Hospital	Good Samaritan	"	911		XX
EPA Contact					
List Other Resources					

AP 860217

EMERGENCY TELEPHONE NUMBER :

EPA Regional Office _____

EPA Sur. and Anal. Division _____

Other _____

COMMUNICATIONS:

Nearest Telephone Company office

Communications Used on Site Police and Fire radio

EMERGENCY ROUTES

Any direction - will be taking soil samples only.

SAFETY EQUIPMENT CHECKOUT

SCBA ☐ CYLINDERS ☐

APR ☐ CARTRIDGES ☐

EXPLOSIMETER ☐

O_2 INDICATOR ☐

DRAEGER PUMP ☐ TUBES ☐

RADIATION SURVEY METER ☐

RADIATION CONTAMINATION METER ☐

HNU Photoionizer ☐

Organic Vapor Analyzer (OVA) ☐

EYE WASH UNIT ☐

FIRST AID KIT ☐

DRINKING WATER SUPPLY ☐

PERSONAL CLOTHING ☒

DECONTAMINATION MATERIALS ☐

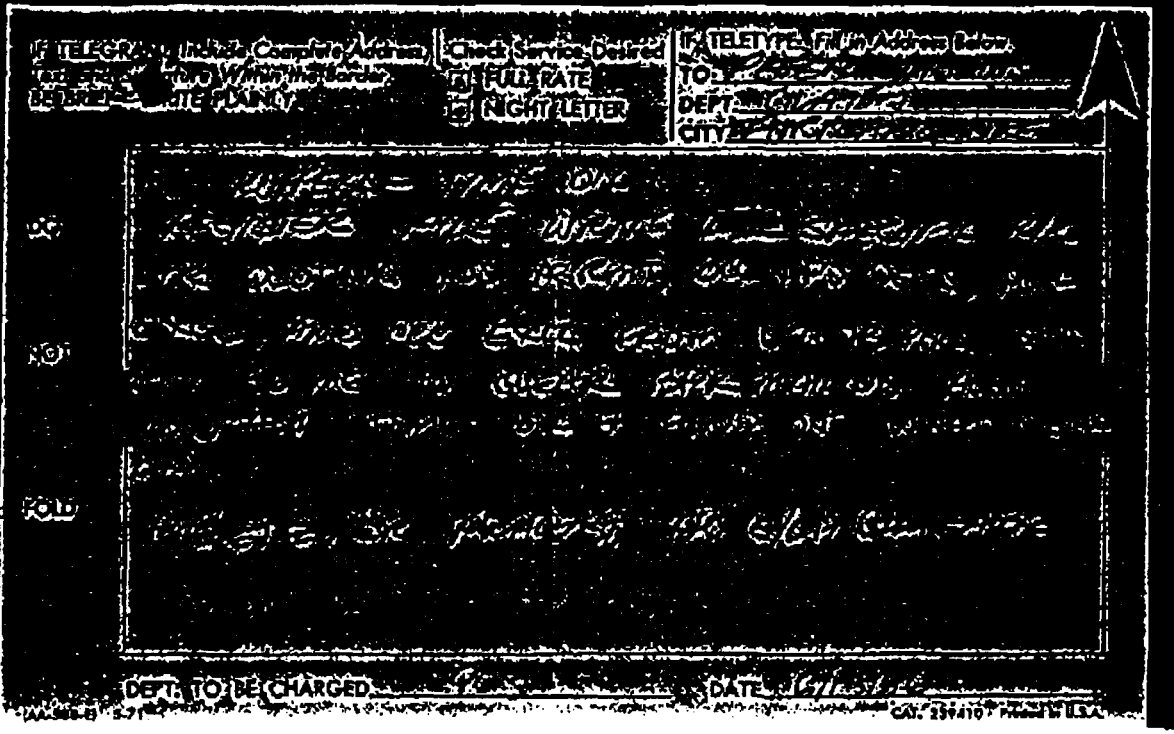
Dosimeter Badges ☐

Throwaway boot covers, suit & gloves.

AP 860218

TOLS001749

BZTO104(e)038570



BZTO104(e)038571

PHONE 285 2400
CABLE ADDRESS. TIMOIL

SEA
TAC
PORTLAND
STOCKTON
RENO
RICHMOND
SAN PEDRO
LOS ANGELES

TIME
PRODUCTS TIME TESTED

TIME OIL COMPANY

2737 W. COMMODORE WAY, P.O. BOX 24447, TERMINAL ANNEX, SEATTLE, WA 98124

Dept. of Environmental Quality

RECEIVED
FEB 8 1985
NORTHWEST REGION

JAG
JAB
~~CHG~~
CHG
For your follow
see JAG

February 4, 1985

Department of Environmental Quality
Attn: Janet Gillaspie, Northwest Region Manager
522 S.W. 5th Avenue, P.O. Box 1760
Portland, Oregon 97207

Dear Ms. Gillaspie:

This pertains to our Northwest Terminal location at 12005 North Burgard in Portland, Oregon and the bulk pentachlorophenol operation at that site. The purpose of this letter is to acquaint you with concurrent actions being taken by two companies to voluntarily correct what both felt may become a problem.

BACKGROUND

In March of 1982, a potential problem with the ground surrounding the pentachlorophenol operation was determined. Contract between Koppers Co. (product owner) and Time Oil Co. (land owner) was cancelled. Product phaseout and clean-up actions were jointly agreed upon by both companies. Accomplishments to date have been:

a. Bulk pentachlorophenol operations ceased.

b. On hand product inventory blended off and shipped out.

c. All tanks and piping cleaned.

d. Waste from cleaning shipped to Arlington.

e. Piping removed and scrapped.

f. Time Oil Co. tanks removed and scrapped.

Remaining to be accomplished are:

a. Removal of Koppers owned tanks (scheduled for week of February 4, 1985).

b. Contaminated soil removal and replacement.

AP 860234

On December 12, 1984, Messrs. John Smits and Rick Gates of your office conducted soil sampling activities at the site. Twelve samples were taken inside diked areas. Split samples were provided Time Oil Co. DEQ laboratory test results (49 pages) were received here on February 1, 1985. Telecon with Messrs. Smits and Gates on that date revealed the following:

a. All samples were tested for lead content. None were found to be above normal limits (page 1).

b. All samples were tested for fourteen different pesticides. None were found to be above normal limits (pages 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36).

c. All samples were scanned for organic chemicals other than priority pollutants (pages 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37). No unknowns were identified above detection limits on nine of these samples. On three sample, (pages 13, 28, 31), the compounds tentatively identified were those petroleum residues normally expected to be found in a tank farm. Estimated concentrations were so low that none were at all significant, simply present.

d. All samples were tested for priority pollutant chemicals (pages 2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, 35). No unknowns were identified above detection limits on eight of these samples. On one sample (page 11), only two trace elements were found. Both were in the 1 ppm quantity, which is not considered significant and certainly cannot be classed as a problem. On one sample (page 23), three residues of polynuclear aeromatics were found, again insignificant in quantity. On one sample (page 26), one more polynuclear aeromatic of insignificant quantity was found along with a small quantity (515 ppm) of pentachlorophenol and 12 ppm of tetrachlorophenol. It is my understanding that since this quantity (515 ppm) of pentachlorophenol is below 1000 ppm, it falls in the gray area of consideration regarding significance. The tetrachlorophenol is a part of commercial pentachlorophenol so its presense would naturally be expected. On one sample (page 29), pentachlorophenol (1820 ppm) and tetrachlorophenol (71 ppm) were found. This latter finding confirms our unitedly expressed (Koppers and Time Oil) concern and substantiates the need for corrective action as we had previously planned.

CURRENT

As of today, it appears that our (Koppers and Time Oil) initial plan of action remains valid. Progress has been made. Time and more favorable weather conditions should result in the contaminated soil being removed, necessary second soil tests being conducted and new soil being put in place without difficulty.

Sincerely,

John P. Denham

John P. Denham
Environmental Manager

JPD/ch

AP 860235

WDD E13588

PO#26869

A GENERATOR INFORMATION

GENERATOR NAME: Time Oil Co.
FACILITY ADDRESS: 12005 N. Burgard Rd.
Portland, OR
TECHNICAL CONTACT: John P. Denham TITLE: Environmental Manager PHONE: (206) 285-2400
NAME OF WASTE: PCP contaminated soil
PROCESS GENERATING WASTE: Clean up of contaminated site at 12005 N. Burgard Road

TRANSPORTER: Gresham Transfer Inc.
TRANSPORTER PHONE: (503) 255-7900
GENERATOR USEPA I.D. O R D 0 0 9 5 9 7 5 4 3
GENERATOR STATE I.D.

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR
ODOR: ☐ NONE ☐ MILD ☐ STRONG ☐ OTHERS
PHYSICAL STATE @ 70°F: ☒ SOLID ☐ SEMI-SOLID ☐ LIQUID ☐ POWDER
LAYERS: ☐ MULTILAYERED ☐ BI-LAYERED ☒ SINGLE PHASED
FREE LIQUIDS: ☐ YES ☒ NO VOLUME: %

pH: ☐ < 2 ☐ 2.1-10 ☒ N/A ☐ 2-4 ☐ 10.1-12.5 ☐ 4.1-6.0 ☐ > 12.5 ☐ 7 ☐ EXACT
SPECIFIC GRAVITY: ☐ < .8 ☐ 1.3-1.4 ☐ .8-1.0 ☐ 1.5-1.7 ☒ 1.1-1.2 ☐ > 1.7 ☐ EXACT
FLASH POINT: ☐ < 70°F ☐ > 200°F ☐ CLOSED CUP ☐ 70°F-100°F ☒ NO FLASH ☐ OPEN CUP ☐ 101°F-130°F ☐ EXACT ☐ 140°F-200°F

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Contaminated soil	%
pentachlorophenol	.1820 %
tetrachlorophenol	.0071 %
trace amounts of other chlorinated chemicals less than	.0001 %
	%
Non-contaminated soil	99.812 %
	%
	%
	%

D METALS ☐ TOTAL (PPM) ☐ EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)	-0-	SELENIUM (Se)	-0-
BARIUM (Ba)	-0-	SILVER (Ag)	-0-
CADMIUM (Cd)	-0-	COPPER (Cu)	-0-
CHROMIUM (Cr)	-0-	NICKEL (Ni)	-0-
MERCURY (Hg)	-0-	ZINC (Zn)	-0-
LEAD (Pb)	-0-	THALLIUM (Tl)	-0-
CHROMIUM+HEX (Cr + 6)	-0-		

E OTHER COMPONENTS - TOTAL (PPM)

CYANIDES	-0-	PCB'S	-0-
SULFIDES	-0-	PHENOLICS	-0-

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? ☒ YES ☐ NO
PROPER SHIPPING NAME: Waste pentachlorophenol mixture
HAZARD CLASS: ORM-E I.D. NO.: NA 2020 R.Q.: 10 lbs
METHOD OF SHIPMENT: ☐ BULK LIQUID ☒ BULK SOLID ☐ DRUM (TYPE/SIZE):
ANTICIPATED VOLUME: GALS. 260 CUBIC YARDS OTHER
PER: ☒ ONE TIME ☐ WEEK ☐ MONTH ☐ QUARTER ☐ YEAR ☐

G HAZARDOUS CHARACTERISTICS

REACTIVITY: ☒ NONE ☐ PYROPHORIC ☐ SHOCK SENSITIVE ☐ EXPLOSIVE ☐ WATER REACTIVE ☐ OTHER
OTHER HAZARDOUS CHARACTERISTICS: ☒ NONE ☐ RADIOACTIVE ☐ ETIOLOGICAL ☐ PESTICIDE MANUFACTURING WASTE ☐ OTHER
USEPA HAZARDOUS WASTE? ☒ YES ☐ NO
USEPA HAZARDOUS CODE(S): U242
STATE HAZARDOUS WASTE? ☒ YES ☐ NO
STATE CODE(S):

DEC 21

H SPECIAL HANDLING INFORMATION

☐ ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

AUTHORIZED SIGNATURE: John P. Denham TITLE: Environmental Manager DATE: February 19, 1985

AP 860236

TOLS001753

BZTO104(e)038574

CHEM-SECURITY SYSTEMS, INC.

REFERENCE: _____ WASTE PROFILE SHEET NO.

SUBJECT:

WASTE STREAM NAME: _____

PHYSICAL STATE
LIQUID ☐ SOLID ☐ SEMISOLID ☐

_____ EPA WASTE CODE

GENERATOR NAME: _____ _____ EPA GENERATOR I.D. NUMBER

FACILITY ADDRESS	MAILING ADDRESS
_____	_____
_____	_____
_____	_____

GENERATOR CONTACT PERSON NAME: _____ Tel. No. _____

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil	Spill Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: _____ NOW _____ ANNUAL

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

_____

_____

_____

_____

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: _____ NAME (PRINT)

_____ SIGNATURE

_____ DATE

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
May 14, 1985
Solid Waste Division
Hazardous Waste Operations

RE: HW4.10 I

COMMENTS: _____

AP

S60235

TOLS001754

BZTO104(e)038575

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

DEC 13 1985

REPLY TO ATTN OF: H/S 533

Dept. of Environmental Quality
RECEIVED
DEC 12 1985
NORTHWEST REGION

John P. Denham
Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199

Re: Time Oil, Environmental Protection Agency ID. No. ORD009597543

Dear Mr. Denham:

Based upon the description you have given the Environmental Protection Agency (EPA) of the activities that have occurred at the facility referenced above, the soil contaminated with leaked pentachlorophenol is classified as hazardous waste F027. F027 designates discarded unused formulations containing pentachlorophenol, and soil contaminated with this waste is a hazardous waste by virtue of the mixture rule of 40 CFR 261.3 (a)(2)(iv).

There are presently no commercial hazardous waste facilities in the United States that will accept waste designated as F027, and it will be approximately six months before any commercial facilities will be certified to accept such waste. In light of this fact, you will have to work closely with the Oregon Department of Environmental Quality (DEQ) in determining the proper way to handle the contaminated soil at your site.

You have told Janet O'Hara of my staff that the storage tanks were completely emptied by approximately the end of January 1985. Therefore, you will be responsible for closing the facility (e.g., removing the hazardous waste) in accordance with the applicable closure and post-closure rules of 40 CFR Part 265. We realize that you have begun this closure process by cleaning and removing the storage tanks and associated piping. Because of the two factors we have discussed with you in telephone conversations, those being the potentially highly toxic nature of the contaminated soil and the lack of storage or disposal sites for it, it would be in your best interest to consult with DEQ personnel before you continue with clean up operations.

Sincerely,

George C. Hofer

George C. Hofer, Chief
RCRA Permits Section

cc: J. Gillespie, DEQ
J. Whitworth, DEQ
C. Rice

AP SG0235

TOLS001755

BZTO104(e)038576

NORTHWEST TESTING LABORATORIES, INC.

CONSTRUCTION INSPECTION
MATERIALS INSPECTION
CHEMICAL ANALYSIS
PHYSICAL TESTING

6405 N. Lagoon Avenue
P.O. Box 17126
Portland, Oregon 97217-0126
Phone: (503) 289-1775

NON-DESTRUCTIVE TESTING
WELDING CERTIFICATION
SOIL TESTING
ASSAYING

May 27, 1986

Crosby & Overton
5420 N. Lagoon
Portland, OR 97217

Attention: Mr. Mike Woods

Subject: Analysis on one (1) sample received on 5-6-86.

Ref: Time Oil

Item: Small Tank

Analysis:

1,1, Dichloroethane, ppm	88
Trichloroethylene, ppm	35
Toluene, ppm	32
Tetrachloroethylene, ppm	10
Xylene, ppm	13
PCB, ppm	<1.0
Chlorinated Pesticides, ppm	<1.0

No other priority pollutants over 5ppm

Instrumentation used: GC/MS & GC/ECD

Respectfully,
NORTHWEST TESTING LABORATORIES, INC.

Howard Holmes
Assistant Supervisor, Chemistry

John Melvin, Chemist

Report No. 297316-B

AP 860211

TOLS001756

BZTO104(e)038577

Department of Environmental Quality

TOR ATIYEH
Governor

522 S.W. FIFTH AVENUE, BOX 1760, PORTLAND, OREGON 97207 PHONE: (503) 229-5696

May 30, 1986

Michael Woods
Crosby & Overton Environmental
Management Inc.
5420 N. Lagoon Avenue
Portland, OR 97217

Re: Time Oil-NW
Multnomah County

Dear Mr. Woods:

This is in response to your questions concerning the sludge from the tanks at Time Oil. Given the analysis and the history of the tanks, the Department would consider that sludge to be a hazardous waste. It would need to be transported and disposed of as a hazardous waste.

If you have any questions, please contact me at 229-5296.

Sincerely,

Edward G. Woods
Senior Environmental Analyst
Northwest Region

EGW:r
WR1060
cc: Hazardous & Solid Waste Division, DEQ

AP 860243

TELEPHONE USE REPORT

JAG
~~DAT~~ DLC

CALL FROM/TO: Mike Woods
COMPANY/TITLE: Crosby & Overton - HW

PHONE NO.: 283 1150 x2 DATE: 6/4/86
TOWN: Portland TIME:

SUMMARY OF CALL:

Jima Oil Co has a tank that they are cleaning out. C&O sent a copy of an organic analysis of the residue in the tank 88ppm dichloromethane, 35ppm TCE, 32 ppm toluene and some other organics. The tank was used for waste oils storage for a long time. C&O had a flash point test done and it does not qualify as a HW for ignitability. It was my determination that it does not qualify as a HW in any category and disposal at a landfill was appropriate. There is approximately 70,000 gal of residues.

I had initially told them by letter it was HW but I reconsidered, got more info and changed my mind.

Ed Woods
Signature

RB3972

AP860211

TOLS001758

BZTO104(e)038579

LIAG

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE MEMO

file

TO: File

DATE: June 6, 1986

HW-TIME OIL MULT.

FROM: Ed Woods

SUBJECT: Time Oil
c/o Crosby & Overton
Tank Residue - HW Determination

I was contacted by Mike Woods of Crosby & Overton on behalf of Time Oil. Crosby and Overton is cleaning out the residue in a waste oil tank at Time Oil Co. They wanted to know if the residue is a hazardous waste. A chemical analysis of the waste was provided. It showed the presence of several common solvents in concentrations less than 100 ppm.

Initially I had made the determination that the residue was hazardous (See letter of May 30, 1986). After further discussions with Mike Woods about the history of the tank, I took the following series of steps in determining that the residue was not hazardous.

340-102-011(2) Hazardous Waste Determination

(a) The residue in the tank is not exempted by 40 CFR 261.2.

(b) Since the tanks has been used for many years, the origin of the solvents in the residue is unknown. However, given the use of the tank, there is no reason to believe the source of the solvents is a "commercial chemical product.. chemical intermediate or off-specification chemical product..." Therefore it is not a P or U listed waste. The residue is not listed among the F or K listed wastes.

(c) A test of ignitability was done by Crosby and Overton. The flash point was above 200°. The solvents present were not expected to meet criteria for reactive or corrosive hazardous wastes.

(d) The total of all solvents components does not exceed 3% or 10% of the residue. Therefore, the residue does not meet the criteria of 340-101-033 for hazardous wastes.

Given the volume of the waste and the fact that is it still in the tank, it is doubtful that the sample analyzed is a representative sample. However, if it is representative, the 70,000 gallons of residue contains less than 14 gallons of solvents.

The waste does not meet any criteria for hazardous waste and the amount of the components of concern in the total amount of waste is not significant. Therefore, I told Mike woods of Crosby and Overton that we would approve disposal at a landfill other than CSSI.

EW:r
RR1103

AP 860245

PART B. WASTE GENERATION RATE & FEE SCHEDULE

For instructions in completing this form, please turn this page over to Part C

TABLE 1. GENERAL INFORMATION

EPA/DEQ ID NUMBER: OR D 0 0 0 6 1 8 0 1 7 SIC CODE NUMBER: 5 1 7 1 REPORT CALENDAR YEAR: 19 8 5

COMPANY NAME: TIME OIL CO. SITE ADDRESS: 9100 SAINT HELENS ROAD N.W.
PORTLAND, OR 97231

TABLE 2. GENERATOR STATUS

a. ( ) YES, we generate hazardous waste (Please complete this report, certify below, and return.)
b. (X) NO, we do NOT generate hazardous waste (Please STOP here, certify below, and return to:

Oregon Department of Environmental Quality · Hazardous & Solid Waste Division
PO Box 1760 · Portland, OR 97207-1760

TABLE 3. HAZARDOUS WASTES GENERATED EACH MONTH IN 1985

	WASTE GENERATION			WASTE MANAGEMENT				
				(D) SHIPPED OFF-SITE		(E) HANDLED ON-SITE		
LINE	(A) EPA/DEQ WASTE CODE NO.	(B) QUANTITY OF THIS WASTE GENERATED EACH MONTH	(C) UNIT OF MEASUREMENT CODE	MANIFEST YES/NO	(1) TO A TSD (2) TO LANDFILL	RECYCLED: REUSED	RECYCLED: RECLAIMED	OTHER
EXAMPLE X-1	K054	900	P	Yes	(1)	---	---	---
EXAMPLE X-2	F001	100	P	No	---	---	---	NPDES
EXAMPLE X-3	D002	50	P	No	---	X	---	---
1								
2								
3								
4								
5								
6								
7								
8								

TABLE 4. GENERATION RATE FOR ALL HAZARDOUS WASTES IN 1985

CALENDAR MONTH	(A) TOTAL QUANTITY OF ALL HAZARDOUS WASTES GENERATED	(B) UNIT OF MEASUREMENT CODE	(C) ESTIMATED (E) OR ACTUAL (A)	(D) QUANTITY CONVERTED TO CU.FT.
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
CALENDAR YEAR TOTAL			= ⟶	

TABLE 5. FEE SCHEDULE

HAZARDOUS WASTE GENERATION RATE (cu.ft./yr.)	FEE (dollars)
<35	no fee
35-99	$ 100
100-499	350
500-499	625
1,000-4,999	1,500
5,000-9,999	3,500
>10,000	5,000

PART B. CERTIFICATION STATEMENT: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are penalties for submitting false information, including the possibility of a fine.

John P. Denham — Print or type name and title
Hazardous Materials Manager
0886

John L. Denham — Signature

September 12, 1986 — Date signed

AP 860246

III. HAZARDOUS WASTE MANAGEMENT METHODS

Please ✓ the following statements that describe current hazardous waste management methods being used by your installation: (Check ALL that apply.)

a. ( ) We currently ship OFF-SITE:
   aa. ( ) Regulated hazardous wastes
   bb. ( ) Regulated wastes, but not regulated as hazardous wastes (i.e., PCB's)
   cc. ( ) Non-regulated wastes

b. ( ) We currently ship OFF-SITE to:
   aa. ( ) A TSD Facility ("TSD" means a licensed/permitted facility that treats, stores, and/or disposes of hazardous wastes)
   bb. ( ) A licensed/permitted solid waste landfill
   cc. ( ) A recycling facility
   dd. ( ) Other: (please explain)_____

c. ( ) We currently ship OFF-SITE by:
   aa. ( ) Manifests
   bb. ( ) Shipping papers
   cc. ( ) Other: (please explain)_____

d. ( ) We currently manage hazardous waste ON-SITE by:
   aa. ( ) Recycling (40 CFR 261.1(7))
   ☐ Reuse (40 CFR 261.1(5))
   ☐ Reclamation (40 CFR 261.1(4))
   (please indicate reclamation process)_____
   ☐ Other: (please explain)_____

e. ( ) We currently receive hazardous waste for recycling from other sources:
   aa. ( ) Within the State of Oregon
   bb. ( ) Outside the State of Oregon
   Sending state(s):_____
   cc. ( ) Outside the United States
   Sending country(s):_____

f. ( ) Our waste is stored prior to recycling:
   aa. ( ) In containers
   bb. ( ) In above ground tanks
   cc. ( ) In below ground tanks
   dd. ( ) In piles
   ee. ( ) In surface impoundments
   ff. ( ) Other: (please explain)_____

g. ( ) Our waste is NOT stored prior to recycling.

h. ( ) We handle our waste ON-SITE, other than, or in addition to recycling by:
   aa. ( ) Treating it in tanks or containers
   Waste Code Number(s): ____, ____, ____, ____, ____, ____
   bb. ( ) Discharging it to a POTW (Publically Owned Treatment Works)
   Waste Code Number(s): ____, ____, ____, ____, ____, ____
   cc. ( ) Discharging it to a Wastewater Treatment Unit (we have a NPDES permit)
   Waste Code Number(s): ____, ____, ____, ____, ____, ____
   dd. ( ) Discharging it to an Elementary Neutralization Unit
   Waste Code Number(s): ____, ____, ____, ____, ____, ____
   ee. ( ) Other: (please explain)_____
   Waste Code Number(s): ____, ____, ____, ____, ____, ____

PLEASE CONTINUE ON TO "PART B. WASTE GENERATION RATE & FEE SCHEDULE"

AP 860217

TOLS001761

BZTO104(e)038582

PHONE 281-1800
CABLE ADDRESS TIMOIL

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
[illegible]MOND
[illegible]EDRO
[illegible]NGELES

TIME OIL COMPANY

2737 WEST COMMODORE WAY
P.O. BOX 24447, TERMINAL STATION

SEATTLE, WASHINGTON 98199-1233
SEATTLE, WASHINGTON 98124-0447

September 12, 1986

Oregon Department of Environmental Quality
Hazardous and Solid Waste Division - 6266
Attn: Mary Ann Santana
P.O. Box 1760
Portland, OR 97207-1760

Dear Ms. Santana:

Enclosed, per your August 13, 1986 letter request, is completed "Supplemental Fact Sheet".

While no hazardous waste has been generated at this site for more than three years, its operational complexities are such that hazardous waste may be generated in the future. We use our assigned generator ID number only when necessary.

Sincerely,

John P. Denham
Hazardous Materials Manager

Enclosure a/s

JPD/ch

AP 860248

TOLS001762

BZTO104(e)038583

SUPPLEMENTAL FACT SHEET

PART A. GENERATOR QUESTIONNAIRE

DATE: September 12, 1986

1. Is the information on the preprinted label below correct?
   a. ( ) YES↔If YES, but information is incomplete, please enter missing data here↔
   b. (X) NO↔If NO, please draw a line through the inaccurate information and supply the correct information here↔

ORD000618017
TIME OIL COMPANY ~~ST HELENS RD~~
2737 WEST COMMODORE WAY
SEATTLE WA 98199
JOHN DENHAM
(206) 285-2400
TIME OIL COMPANY ~~ST HELENS RD~~
9100 NW ST HELENS RD N.W.
PORTLAND OR 97231
5171

EPA/DEQ ID NUMBER: ORD 0 0 0 6 1 8 0 1 7
COMPANY NAME: TIME OIL COMPANY
MAILING ADDRESS: 2737 WEST COMMODORE WAY
CITY,STATE,ZIP: SEATTLE, WA 98199
CONTACT NAME: JOHN DENHAM
CONTACT PHONE: (206) 285-2400
SITE NAME: TIME OIL COMPANY
SITE ADDRESS: 9100 ST. HELENS RD. N.W.
CITY,STATE: PORTLAND, OR 97231
PRIMARY SIC CODE NUMBER: 5 1 7 1

Note: "Generator" means the producer of a hazardous waste.
"Site" means the place where hazardous waste is being generated.
"Contact" means the person who should be contacted regarding information about your firm's hazardous waste activities.

2. Enter your mailing address zip code AND your "zip-plus-four" number: 9 8 1 9 9 - 1 2 3 3
(Please contact your local post office for your special "add-on" number.)

3. Enter your site address zip code AND your "zip-plus-four" number: 97 2 3 1 - 1 1 2 9

4. Enter the legal name of your company:
Time Oil Co.

5. Enter the name(s) of the legal owner(s) of your company:
Time Oil Co.

6. Enter the name(s) of the legal owner(s) of the property (land):
Time Oil Co.

7. Has there been a change in ownership, operation, or location of your installation since you last submitted a "Notification of Hazardous Waste Activity" Form 8700-12?
   a. ( ) YES↔If YES, please submit a new Form 8700-12.
   b. (X) NO

AP 860249

TOLS001763

BZTO104(e)038584

I. HAZARDOUS WASTE GENERATOR STATUS

8. Are you currently generating hazardous waste, have you generated any during this calendar year, or in the previous calendar year?
   a. ( ) YES←→If YES, please CONTINUE ON TO Q9.
   b. (X) NO←→If NO, please STOP here and turn to "PART B. WASTE GENERATION RATE AND FEE SCHEDULE." Complete Tables 1 & 2, certify, and return this information to:

Oregon Department of Environmental Quality
Hazardous and Solid Waste Division
PO Box 1760
Portland, OR 97207-1760

If you have questions, please call 229-6266 or toll-free 1-800-452-4011

* * * * * * * * * * *

II. HAZARDOUS WASTE GENERATION ACTIVITIES

9. Please / the following statements that describe current waste generation activities at your installation: (Check ALL that apply.)

   a. ( ) We are generating less than 200 lbs. of hazardous waste or 2.2 lbs. of acutely hazardous waste in ANY calendar month during the current calendar year (Small Quantity Generator).

   b. ( ) We are generating greater than 200 lbs. of hazardous waste or 2.2 lbs. of acutely hazardous waste in ANY calendar month, but less than 2200 lbs. (or 1000 kg.) per calendar month (Small Quantity Generator).

   c. ( ) We are generating greater than 2200 lbs. of hazardous waste per calendar month (Fully Regulated Generator).

   d. ( ) We are generating PCB's or asbestos which are regulated, but not as regulated hazardous wastes.

   e. ( ) Our generator status changes from month-to-month (i.e., one month, greater than 2200 lbs/mo; another month, less than 2200 lbs/mo.).

   f. ( ) We are generating hazardous wastes only ONCE A YEAR (i.e., all hazardous wastes are generated during one month or less of a calendar year; or, our hazardous wastes exceed the Small Quantity Generator exclusion only once during a calendar year).

   g. ( ) We are the owner/operator of a TSD Facility
      aa. ( ) Treatment
      bb. ( ) Storage
      cc. ( ) Disposal

   h. ( ) We are registered as a transporter.

AP 860250

TOLS001764

BZTO104(e)038585

TELEPHONE USE REPORT

cc: HW Remedial actn

CALL FROM/TO: John Denham

COMPANY/TITLE: Time Oil Co — HW mgt

PHONE NO.: 800 426 0235 DATE: 1/16/87

TOWN: TIME:

SUMMARY OF CALL:

I asked about the current status of the penta contaminated soil at the Portland terminal. Time has contracted with SRI to study the options for on site treatment. Time management will meet and discuss the options next month. It is possible that they will authorize money to proceed with cleanup. The cleanup is still a joint venture with Koppers. Tests have not found any groundwater problems. The contaminated soil has been piled and covered to limit exposure and prevent escape of penta. John will meet with us when they have a firm proposal and funding.

Ed Weed
Signature

RB3972

AP 860251

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BZTO104(e)038586

MEMORANDUM

June 11, 1985

TO:	Robert Abendroth	Seattle
	Bill Baldwin	Pittsburgh
	Don Marion	Pittsburgh
	Neil Wallis	Portland
FROM:	John Denham	Seattle

SUBJECT: NORTHWEST TERMINAL WOODTREATING SITE

This is a status update regarding cleanup of soil at our Portland Oregon terminal where the Pentachlorophenol operation existed.

Following Don Marion and Bill Baldwin's March 13, 1985 visit, the following occurred:

a. On April 2, Bill B called to coordinate results of his contact with Koppers geologists. Bill requested sampling per enclosure 1. On April 4, Robert A agreed with this action. On April 5, Neil W was tasked to locate a firm to accomplish soil sampling and a laboratory which could handle this sizable soil analysis within a reasonable time frame at the lowest possible costs.

b. After a diligent search, it was learned there was only one firm in the area that had the capability to do this job - Riedel Environmental Services, Inc. On April 25, Riedel submitted their cost of $18,600 (enclosure 2). I asked for a cost breakdown. Riedel submitted it on May 18 (enclosure 3). Drilling cost of $7,644 is actual fee of drilling contractor Sweet and Edwards out of Kelso (I verified this). Analytical cost of $4,956 is strictly the laboratory charge for processing 96 samples from 16 holes at 6 six samples per hole. (Note this is 7 less holes than Bill B requested but covers a larger 80' x 80' area). Method of analysis is GC/MS, which is the only one allowed by EPA/DEQ. Cost to analyze each sample is $51.63. Labor cost of $3,985 includes taking nine additional composite surface samples (3 on northeast, 3 on east and 3 on south) outside bermed area to determine soil contamination boundaries, taking the 96 samples mentioned above, drawing the drilling plan, preparing the contour map which shows location of contamination at the various depths, supervision of entire job on site by a qualified hydrologist and writing the report. Other direct costs of $2,115 cover decontamination of equipment between the taking of each sample, sample jars, safety gear used, drums for and disposal of decontamination solvent used for all equipment decontamination and the bentonite used to plug all holes drilled.

AP 860272

c. Contract with Northwest Vacuum Truck Service was negotiated (enclosure 4). Certificate of insurance coverage (enclosure 5) and contract bond (enclosure 6) were obtained from contractor. An "approved" transporter was obtained (Gresham Transfer Service).

d. Disposal request for contaminated soil was approved by DEQ (Enclosure 7).

e. Hazardous Waste Manifests with appropriate instructions were obtained (enclosure 8).

f. The required "Waste Transportation and Disposal Agreement" was obtained from Chem-Security Systems, operators of the Arlington disposal facility (enclosure 9). I disagreed with item 2(b) on page 17 (in that it limited disposal on this tender to only one movement) and item 10(c) on page 20 (in that there was no price break after 250 tons as was originally quoted). Telecon contact with their offices resulted in satisfactorily worded replacement pages for agreement, which arrived today and are included in enclosure 9.

At this point in time, everything seems to be "go". All arrangements have been made to start the first phase of digging, hauling and disposing on June 24, 1985. I will be on site. Plan is to remove and dispose of several truck loads of soil, stop, have sampling and analyses done, then repeat as needed. This approach takes advantage of lower disposal costs (prior to July 1) and the conduct of the expensive sampling and analysis only one time. Current known costs for first phase are $53,000 plus $18,600 = $71,600.

JPD/ch

AP 860273

AMENDMENT 2
TIME OIL CO. - RIEDEL ENVIRONMENTAL SERVICES, INC.
SAMPLING AND ANALYSIS AGREEMENT
DATED JUNE 28, 1985

The work scope is amended to include the following:

1. Sandblasting and demolition of the impoundment wall (designated A in Figure 1). The cost of this procedure is estimated to be $5,568.01.

2. Drilling, sampling and installation of 3 monitoring walls angeled 45 degrees beneath the existing warehouse (listed as Wells 1, 2 & 3 in Figure 1). Also, the installation of a 40 foot vertical monitoring well, including sampling at 5 foot intervals, directly in front of the angled wells (listed as Well 4 in Figure 1). Analytical results for 12 PCP samples are included in the estimated cost of $12,667.07.

3. Drilling, sampling and installation of an additional 5, 20-foot monitoring wells (listed in Figure 1 as Wells 5, 6, 7, 8 & 9). Soil samples will be taken at 5 foot intervals and 5 analyses for PCP are included in the estimated cost of $6,595.50.

DATED this 5th day of November, 1985.

TIME OIL CO.

John Denham
Environmental Manager

RIEDEL ENVIRONMENTAL SERVICES, INC.

F.J. Bradach
President

RS:bw

KERRIER

Interoffice Correspondence

RECEIVED

MAR 12 1986

ENVIRONMENTAL RESOURCES

To D. R. Kerschner

Location K-1940

Subject Response on Remedial Measures - Time Oil

From J. K. Fu

Location Monroeville

Date March 10, 1986

This is in response to the information you provided on evaluating the feasibility of a physical-chemical technology (ATW process) on removing PCP contamination at the Time Oil site. Overall, the information did not provide enough evidence regarding treatment of organically contaminated material. My specific comments are as follows:

1. The information provided described a process which can effectively reduce heavy metal migration in the subsurface environment. As you understand, PCP is an organic compound which behaves in a different manner than metal species. Under typical subsurface environmental conditions, PCP remains in the nonionic form. Several of the chemical processes utilized in the ATW technology (neutralization, precipitation) generally do not affect nonionic species.

2. The articles state that the chemical oxidation process can break down benzene ring structure but does not react with phenol. Phenol is a benzene derivative and as such the meaning of the statement is unclear. Additionally, phenol is present at the majority of the sites where PCP is present, and we would need a system which would deal with both constituents.

3. In ATW process, lime cycle ($CaO \longrightarrow Ca(OH)_2 \longrightarrow CaCO_3 \longrightarrow CaO$) is used to transform waste residue, clay and calcium oxide into limestone. The limestone is pH sensitive and can dissolve in low pH conditions. The waste can then be released to the environment. Additionally, the calcination temperature (1900~2400°F) utilized to convert limestone to calcium oxide would make the process energy intensive, and could make direct incineration of the waste a cost-competitive alternative.

4. The information indicates that in-situ biodegradation is cost-effective, but they did not provide examples and details on what they can do. The information we have from our past studies can provide much better information for this area.

5. The "chemical barrier" and "biodegradation barrier" combination may be useful if there is metal and organic contamination together. If there is only PCP contamination, the chemical barrier will not be needed and the process will become what we call "land treatment."

J. K. Fu

JKFiss

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BZTO104(e)038591

TIME OIL CO. INVOICE 091868

P.O.BOX 24447 TERM. STATION - SEATTLE WA 98124-0447
2737 WEST COMMODORE WAY - SEATTLE WA 98199-1233
PHONE (206) 285-2400

DATE 03/06/86
REF. 03-03028 JKJ

CUSTOMER #: 03/05505623

ACCOUNT:
KOPPERS COMPANY INC
ATTN: DONALD F. MARION
KOPPERS BUILDING ROOM 750
PITTSBURGH PA 15219

657	60	123	27831.21
120	9		14250.00

- -

TO CHARGE YOU FOR 1/2 OF THE FOLLOWING PER MUTUAL AGREEMENT IN REFERENCE TO CLEAN UP COSTS AT 12005 N. BURGARD RD., PORTLAND, OREGON.

EXPENDITURES

4/26/85 CHEM-SECURITY SYSTEMS (LABORATORY ANALYSIS OF SOIL SAMPLES)	150.00
7/10/85 NORTHWEST VACUUM TRUCK SERVICE (RELOCATING 242.76 TONS OF SOIL TO ARLINGTON)	9,000.00
7/29/85 CHEM-SECURITY SYSTEMS (RECEIVING 243.30 TONS OF SOIL AT ARLINGTON)	27,270.88
8/8/85 ENVIRONMENTAL EMERGENCY SERVICES (OBTAIN AND ANALYZE 3 COMPOSITE SAMPLES)	
12/31/85 ENVIRONMENTAL EMERGENCY SERVICES (PRIMARY SAMPLING AND ANALYSIS PLUS REPORT)	18,741.55
	55,662.43

COMMITTMENTS

DEQ PER OAR 240-102-065	3,500.00
*RIEDEL ENVIRONMENTAL SERVICES (ADMENDMENT 2)	25,000.00+
	84,162.43

50% = 42,081.21

*NAME CHANGE FROM ENVIRONMENTAL EMERGENCY SERVICES

INVOICE TOTAL $42,081.21

000010

RSE SIDE FOR GENERAL TERMS AND CONDITIONS

K-311

ORIGINAL

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SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
SAN PEDRO
LOS ANGELES

TIME

PRODUCTS TIME TESTED

TIME OIL COMPANY

2737 W. COMMODORE WAY, P.O. BOX 24447, TERMINAL ANNEX, SEATTLE, WA 98124

January 27, 1986 JAN 29 1986

William J. Baldwin
Koppers Company, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219

Dear Bill,

Enclosed is copy of the ATW Calweld data I promised on January 23, 1986 during our meeting at your Pittsburgh, PA offices. Calweld designed, developed and operates the equipment. ATW developed the waste treatment technology. Cary Jackson is the chemist who determines what is needed to treat whatever the problem, consistent with client desires. The proper person to contact is Franch Manchak. I have spoken with him. He has agreed to speak with you about our mutual problem.

Regarding the water treatment biodegradation process, the three basic chemicals are amonium nitrate, potassium sulfate and sodium phosphate. These fertilizer materials provide the chemical nutriants enabling bacteria to grow. Bacteria are added. The whole mixture is arable. Water is pumped from below ground to a surge tank to a 10' x 10' x 30' tank where the mixture exists. Discharge is either returned to the ground or to sewer as permitted.

Today I received the enclosed DEQ Hazardous Waste Enforcement Guidelines dated January 9, 1986. A copy is enclosed for your information. The thought I intend to convey here is related to our meeting discussion about the unknown amount of money (shown as a ?) on the "cost to date" paper presented. This is an unknown that I had no idea was in existance at the time of our meeting.

Hope this helps. It was a pleasure to see you again, to meet Dave and to provide a project status update.

Sincerely,

John P. Denham

John P. Denham
Environmental Manager

Enclosure a/s

cc: Robert Abendroth
Jim Garrity
Dave Kerschner
Don Marion
Templeton Smith

TIME OIL COMPANY
PORTLAND, OREGON

PENTACHLOROPHENOL SAMPLING & ANALYSIS

Prepared by
RIEDEL ENVIRONMENTAL SERVICES
P.O. Box 5007
Portland, Oregon 97208

October, 1985

TOLS001773

BZTO104(e)038594

Introduction

Between 1967 and 197_ Time Oil Company operated a pentachlorophenol (PCP) facility at its North Portland, Oregon, terminal. This facility consisted of blending and storage operations used to prepare commercial pentachlorophenol solutions. The facility consisted of various storage and mixing tanks, a warehouse, a bermed, unpaved containment area, various pumps and a truck loading area.

The facility geography is essentially flat and is located less than 1/4 mile from the Willamette River. The soil is principally fine to medium sand with some silt. Ground water is reportedly found from 10 to 20 feet below the surface in this area. During June of 1985, a portion of visibly contaminated soil in the containment area was excavated and disposed of as a hazardous waste. This excavation left a depression in the northwest corner of the containment area sloping gradually to approximately four feet below the adjacent grade. Surface soil was disturbed during this process and, as such, surface sampling was not expected to be representative of conditions existing prior to excavation.

During the years of operation, several intermittent PCP discharges were known to occur, especially during mixing and transfer operations. These discharges resulted in soil contamination in and around the containment area. Initial site visits in April 1985 indicated visible PCP contamination of soils in this vicinity. A sampling plan for surface and subsurface soils extending through the vadose zone was designed and initiated in July 1985.

This sampling and analytical protocol was designed to estimate the spatial limits of PCP contaminant migration in the vadose zone of the soil in and immediately adjacent to the PCP containment area facility. As such, a systematical gridding array was used in lieu of random or other types of probability sampling. No attempt was made to sample underneath structures or paved areas. The protocol was not intended to determine the average concentration of PCP in soil at the facility since the area sampled was not expected to be homogeneous nor to represent a specific population of PCP concentrations. Therefore, statistical evaluations such as mean and standard deviation, have only academic significance in respect to these data.

However, since the origin points in the regular sampling arrays were randomly selected (i.e., a systematic random sampling procedure), there is no reason why some or all of this data could not be used for this purpose at a future time.

Sampling

All sampling was performed in accordance with EPA publication SW846, "Test Methods for Evaluating Solid Waste". Surface soil sampling was achieved using a small trier and/or sampling scoop. Subsurface samples were obtained using a 6" continuous flight hollow stemmed auger fitted with a 2" split-spoon sampler. All sampling equipment was decontaminated between samples with a trisodium phosphate wash, water rinse, hexane wash and a triple rinse with distilled, deionized water. Auger flights were decontaminated by high pressure steam cleaning between bore holes.

Samples were obtained from two areas. Area 1 consisted of a peripheral surface margin surrounding the containment areas on all of the available sides (see Figure 1). Area 2 consisted of the area inside the containment wall. All samples from each site were placed in new 16-ounce wide-mouthed glass jars previously washed with laboratory cleaner, water rinsed, hexane washed, air dried and rinsed three times with distilled, deionized water, then fitted with teflon-lined caps under clean conditions. Samples were labelled with client identification, sample number, date, time, sampler's name, sample location, and other pertinent information. Containers were sealed and placed in portable, refrigerated ice chests for transportation to the laboratory. Samples were delivered to the laboratory by RES courier within 48 hours after collection. Chain of custody forms accompanied all samples from original field sampling to final analysis and are included in this report (Appendix A). A field log of each sample was generated on site during sampling and retained for future reference.

Preliminary surface sampling in Area 1 was performed by preparation of a composite sample obtained from sub-areas A, D and F by pooling grab samples taken with triers or spoons at 10-foot intervals, five feet away from the containment area.

Secondary surface sampling was conducted in Area 1 by obtaining individual grab samples using triers or spoons. The sample sites are numbered 1-81 and are indicated on Figure 1. Secondary samples were obtained in response to the detection of significant concentrations of PCP in preliminary composite samples from sub-areas A and D, above, and were used solely to estimate the limits of contamination beyond the containment area. As stated earlier, no attempt was made in this sampling and analytical protocol to determine average (mean) values of PCP contamination.

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Sampling in Area 1, peripheral samples, was performed to ascertain the surface margins of the contaminated area. It was arbitrarily assumed that the area within the containment walls was contaminated with PCP and the peripheral margins of this area established as consisting of the warehouse south wall, the east and west concrete walls and the southern edge of a pipeline transecting the containment area as indicated in Figure 1. Three concentric, 10-foot-wide marginal strips were staked out surrounding this boundary and are indicated by broken lines in Figure 1. These areas did not include areas inside the warehouse or below the asphalt paved railway siding located, respectively, on the north and northeast sides of the containment area. The 10 foot marginal strips were subdivided into areas A, B and C to the west, D, E and F to the south, and G, H, and I to the east (see Figure 1).

Sampling of Area 2, the containment area proper, was performed to evaluate PCP concentrations at the surface and at depth in subsoils to the saturated zone. Grab samples were obtained from a 2-foot x 2-inch split spoon sampler pressed through a 6-inch hollow-stem augered bore hole, and were placed in 16-ounce sample containers as previously described. Decontamination procedures, chain of custody, labelling and logging were identical to Area 1 samples. Auger flights were decontaminated at the completion of each coring to prevent cross contamination. Samples were taken at a mximum depth of 0, 2, 4, 7 and 12 feet below the surface elevation of the unexcavated portion of the containment area. Sampling at 17 feet, as originally planned, was not undertaken due to the detection of groundwater at approximately 12 feet.

Due to the sloping contour of the containment area caused by the excavation, the surface elevation below grade was measured from a string line pulled tightly between two unexcavated surface points and spanning the sampling point. Elevation of sampling site surfaces below this grade line was measured using a rigid ruler and is shown in Table I. Data from this table was used to calculate the actual auger depth below the surface required to obtain the split spoon samples to align all samples in the same respective horizontal plane. This data is listed in Table II and indicates the actual depth drilled below the surface required to obtain a sample at the nominal depth listed (0, 2, 4, 7, 12 or 17 feet). In cases where it was deemed practical, soil was hand excavated to the depth corresponding to the first sampling depth indicated and the sample obtained manually with a small trier or spoon.

The horizontal array of borings was selected to minimize the maximum distance from any given point in the sampling area to the nearest boring. To do this most effectively, a triangular grid was staked off. The array was based on a

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triangle with an east-west base of 25 feet and a north-south height of 18 feet. The maximum distance from any point on the grid to the nearest sample point in this case is 13.34 feet as opposed to 14.14 feet for a standard 20-foot x 20-foot rectangular array. This selection allowed for the placement of additional wells just outside the containment wall without increased cost, thereby improving coverage with fewer sampling points (reference: Parkhurst, D.F., Optimal Sampling Geometry for Hazardous Waste Sites; Environmental Science & Technology, 18 No. 7, p. 521 [1984]). The triangular grid is indicated on Figure 1. Bore holes are indicated by the symbol "B" and are labeled with alpha symbols J-Z. A table of samples so obtained is given in Table III.

Following sampling, borings were sealed with bentonite grout in accordance with state well sealing standards under the direction of a registered geologist. Decontamination water, collected into tubs, was analyzed and, following receipt of negative results for PCP, disposed of on site.

Results

Samples were analyzed by Coffee Laboratories, Portland, Oregon, using EPA SW-846 protocols. Soil samples were Sohxlet extracted using EPA protocol #3540. Procedure #8040 was utilized with electron capture quantification for PCP analysis. Results are expressed in milligrams of PCP per kilogram soil (ppm, dry weight). At sites where results could be expected to approach zero (based on results from adjacent sites), samples were held but not analyzed. The results are listed in Table IVA-E. Preliminary composite results are shown in Table IVF and confirm PCP contamination beyond the containment wall.

These tables list PCP concentrations at each sample site as well as the X and Y coordinates used to locate these sites on the plan drawing (Figure 1). These coordinates are tied to an arbitrary grid as shown on Figure 1. The northwest corner of the containment wall is located at coordinates X=76, Y=166 (76,166), for sake of reference. Each sampling depth is listed on a separate table. Copies of the laboratory reports are listed in Appendix B.

The coordinate data and concentration results were plotted using an interpolating contouring program (In-Situ Corp., Laramie WY). This package performs smoothed contouring of the data using a triangularization method and bivariate interpolation. Contours were generated from surface samples (regardless of elevation below grade) and 2-, 4-, 7- and 12-foot depths below grade. The contours are plotted on Figures IIA-E. These contour diagrams have been reduced and printed on mylar sheets in addition to the attached figures.

TABLE I

TIME OIL CO. - PORTLAND, OREGON

Depth of Boring Site Surface Sample Below Grade
(Horiz. String Line)

Boring	Depth
J	0
K	6"
L	3'
M	0
N	0
O	0
P	1'8"
Q	2'6"
R	0
S	0
T	2'
U	0
V	0
W	0
X	2'
Y	3'
Z	0

TABLE II

TIME OIL CO. - PORTLAND, OREGON

Actual Split-Spoon Sample Depths Below Grade

	Nominal Depth					
Boring	0	2	4	7	12	17
J	0	0-2'	2-4'	5-7'	10-12'	15-17'
K	NA	0-1 1/2	1 1/2-3 1/2	4 1/2-6 1/2	9 1/2-11 1/2	14 1/2-16 1/2
L	NA	NA	Surf (11")	2-4'	7-9'	12-14'
M	0	0-2'	2-4'	5-7'	10-12'	15-17'
N	0	0-2'	2-4'	5-7'	10-12'	15-17'
O	0	0-2'	2-4'	5-7'	10-12'	15-17'
P	NA	Surf (4")	0-2'	3-5'	8-10'	13-15'
Q	NA	NA	0-1 1/2	2 1/2-4 1/2	7 1/2-9 1/2	12 1/2-14 1/2
R	0	0-2'	2-4'	5-7'	10-12'	15-17'
S	0	0-2'	2-4'	5-7'	10-12'	15-17'
T	NA	Surf	0-2'	3-5'	8-10'	13-15'
U	0	0-2'	2-4'	5-7'	10-12'	15-17'
V	0	0-2'	2-4'	5-7'	10-12'	15-17'
W	0	0-2'	2-4'	5-7'	10-12'	15-17'
X	NA	Surf	0-2'	3-5'	8-10'	13-15'
Y	NA	NA	Surf (11")	2-4'	7- 9'	12-14'
Z	0	0-2'	2-4'	5-7'	10-12'	15-17'

NOTE:

Actual depths indicate depth of bottom of split-spoon.

NA = Not available

Surf = Surface sample obtained by hand excavation at depth indicated in parentheses

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TABLE III

TIME OIL CO. - PORTLAND, OREGON

Nominal Split-Spoon Sample Depths

Boring	0 Surface	2 0-2'	4 2-4'	7 5-7'	12 10-12'	17 15-17'
J	X	X	X	X	X	ND
K	-	X	X	X	X	ND
L	-	-	X	X	X	ND
M	X	X	X	X	X	ND
N	X	X	X	X	X	ND
O	X	X	X	X	X	ND
P	-	X	X	X	X	ND
Q	-	-	X	X	X	ND
R	X	X	X	X	X	ND
S	X	X	X	X	X	ND
T	-	X	X	X	X	ND
U	X	X	X	X	X	ND
V	X	X	X	X	X	ND
W	X	X	X	X	X	ND
X	-	X	X	X	X	ND
Y	-	-	X	X	X	ND
Z	X	X	X	X	X	ND

NOTE: X = Sample

\- = Not available due to excavation

ND = Not sampled due to presence of groundwater

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TABLE IVA
TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Surface Contour Data

Sample #	Coordinates X	Coordinates Y	Concentration Mg/Kg
1	81	171	13500
2	71	171	29
3	71	161	500
4	71	151	5450
5	71	141	5560
6	71	131	8760
7	71	121	4870
8	71	111	92
9	71	101	20
10	81	181	16
11	71	181	7
12	61	181	9
13	61	171	95
14	61	161	175
15	61	151	18
16	61	141	229
17	61	131	88
18	61	121	6
19	61	111	3
20	61	101	2.5
21	61	91	5.2
37	81	95	857
38	91	96	1130
39	101	97	17
40	111	98	3.5
41	121	98	3.1
42	131	99	3.2
43	141	100	2.4
44	151	100	1.8
45	161	101	171
46	71	84	3
47	81	85	3.6
48	91	86	6.1
49	121	87	3.2
50	131	88	1.5
51	141	89	2.3
52	151	90	1.7
53	161	91	1.9
54	171	92	1.2

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	1400
K	117.5	161	N/A
L	92.5	161	N/A
M	67.5	161	4720
N	155	143	4280
O	130	143	3000
P	105	143	N/A
Q	80	143	N/A
R	142.5	125	1712
S	117.5	125	522
T	92.5	125	123
U	67.5	125	26550
V	155	107	317
W	130	107	3385
X	105	107	N/A
Y	80	107	N/A
Z	80	179	21

N/A = Not Available

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TABLE IVB

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Two Foot Contour Data

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	3
K	117.5	161	8.8
L	92.5	161	N/A
M	67.5	161	87*
N	155	143	3.1
O	130	143	59
P	105	143	16
Q	80	143	N/A
R	142.5	125	34
S	117.5	125	252
T	92.5	125	123
U	67.5	125	44
V	155	107	260
W	130	107	15
X	105	107	4.5
Y	80	107	N/A
Z	80	179	14*

N/A = Not Available
* = Data points omitted from contouring program to reduce extrapolation error

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TABLE IVC

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Four Foot Contour Data

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	3.6
K	117.5	161	10.5
L	92.5	161	7200
M	67.5	161	22
N	155	143	238
O	130	143	23
P	105	143	15
Q	80	143	2205
R	142.5	125	50
S	117.5	125	184
T	92.5	125	534
U	67.5	125	55
V	155	107	380
W	130	107	8.1
X	105	107	1.3
Y	80	107	598
Z	80	179	2

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TABLE IVD

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

7 Foot Contour Data

CORE #	COORDINATES X	COORDINATES Y	CONCENTRATION mg/kg
J	142.5	161	(NA)
K	117.5	161	3
L	92.5	161	B400
M	67.5	161	1
N	155	143	(NA)
O	130	143	13
P	105	143	130
Q	80	143	700
R	142.5	125	500
S	117.5	125	1130
T	92.5	125	75
U	67.5	125	5
V	155	107	1
W	130	107	1
X	105	107	1.9
Y	80	107	700
Z	80	179	7

TABLE IVE

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

12 Foot Contour Data

CORE #	COORDINATES X	Y	CONCENTRATION mg/kg
J	142.5	161	NA
K	117.5	161	2.3
L	92.5	161	2030
M	67.5	161	690
N	155	143	NA
O	130	143	38
P	105	143	450
Q	80	143	1150
R	142.5	125	1
S	117.5	125	217
T	92.5	125	90
U	67.5	125	NA
V	155	107	3.4
W	130	107	1.9
X	105	107	1.0
Y	80	107	720
Z	80	179	1.0

TABLE IVF

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Preliminary Surface Composites

Area	PCP (mg/kg)
A	660
D	860
G	17

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The scale on the mylar prints is such that the contours are superimposable on Figure 1 (site plan). This allows for facile comparison of PCP concentration profiles at depth with surface features of the facility. A reference point on Figures 1 and 2(a-e) is located at (76,166) for ease of alignment.

Conclusions

As seen in Tables IVA-E, PCP concentrations range from 1 ppm to 26,550 ppm. Two foci of contamination are seen at the surface. One, located at coordinates (83,168) in the northwest corner of the containment area, is consistent with reported spillage at this corner of the warehouse. A second focus occurs just outside the containment wall to the west at coordinates (65,125). This site is consistent with reported minor spills during truck loading procedures at this site. Additional minor contamination sites occur at the surface in various positions throughout the sample area; however, no prominent concentration peaks are evident. This may be due, in part, to the partial excavation mentioned previously or to vehicle traffic or other activity in this area.

Additional contours at depth indicate penetration of PCP to the saturated zone at the northwest focus. No evidence of penetration of the "loading area" focus below 2 feet was observed. Note that the results of the 2-foot contouring fail to demonstrate a continuation of the foci found at the surface. This is due, in part, to the excavation which removed the 2-foot material and to the definition of surface samples as surface material regardless of relationship to elevation (i.e. surface samples are not equivalent to "Ø foot" samples). This phenomenon is indicated by the lack of sample sites on the 2-foot contour at boring sites L, M, Q, Y and Z. The lack of high PCP concentrations at boring site U, 2-foot contour, implies that no significant penetration occurred at this site and that PCP contamination at this site is restricted to narrowly distributed but high concentration surface contamination.

Contours at 4, 7 and 12 feet indicate penetration to the groundwater (encountered between 7 and 12 feet) with appreciable attenuation of PCP concentrations with increasing depth. The maximum concentration at 12 feet is 2030 ppm located at boring "L". Note that no samples were analyzed at boring sites "J" and "N" at 7- or 12-foot depths, since concentrations above these depths indicated that concentrations near zero could be expected. No sample was obtained at "U" due to loss of sample when groundwater was encountered.

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The slight tendency of the PCP plume to tail off to the south implies that groundwater flux may be diffusing the plume in this direction. This conclusion can only be substantiated by hydrogeologic evaluations of the site, however.

The contaminant plume may be restricted at the surface by the presence of the warehouse foundation. This structure could be expected to prevent diffusion of the PCP plume to the north by presenting a physical barrier to contaminant migration. No sampling was performed underneath the warehouse and this study cannot conclude that migration has occurred beyond the foundation base. Identification of concentrations of PCP beneath the building on contour plots is a function of the contouring program and may not be indicative of actual plume morphology in this area.

Summary

Significant PCP concentrations were detected in soil at Time Oil Co.'s north Portland operation. Contamination was pronounced at two focal sites, one at the northwest corner of the containment area and one at the west side of the containment area. Surface concentrations ranged from 1.2 mg/kg to 26,500 mg/kg. Sampling at depth indicated significant PCP concentrations at the northwest focus descending to the saturated zone and approximately 8-12 feet. Concentrations at 12 feet ranged from 1.0 mg/kg to 2,030 mg/kg. Analytical data from surface, 2-, 4- 7- and 12-foot samples were contoured and plotted and may be related to an area plan drawing of the same scale.

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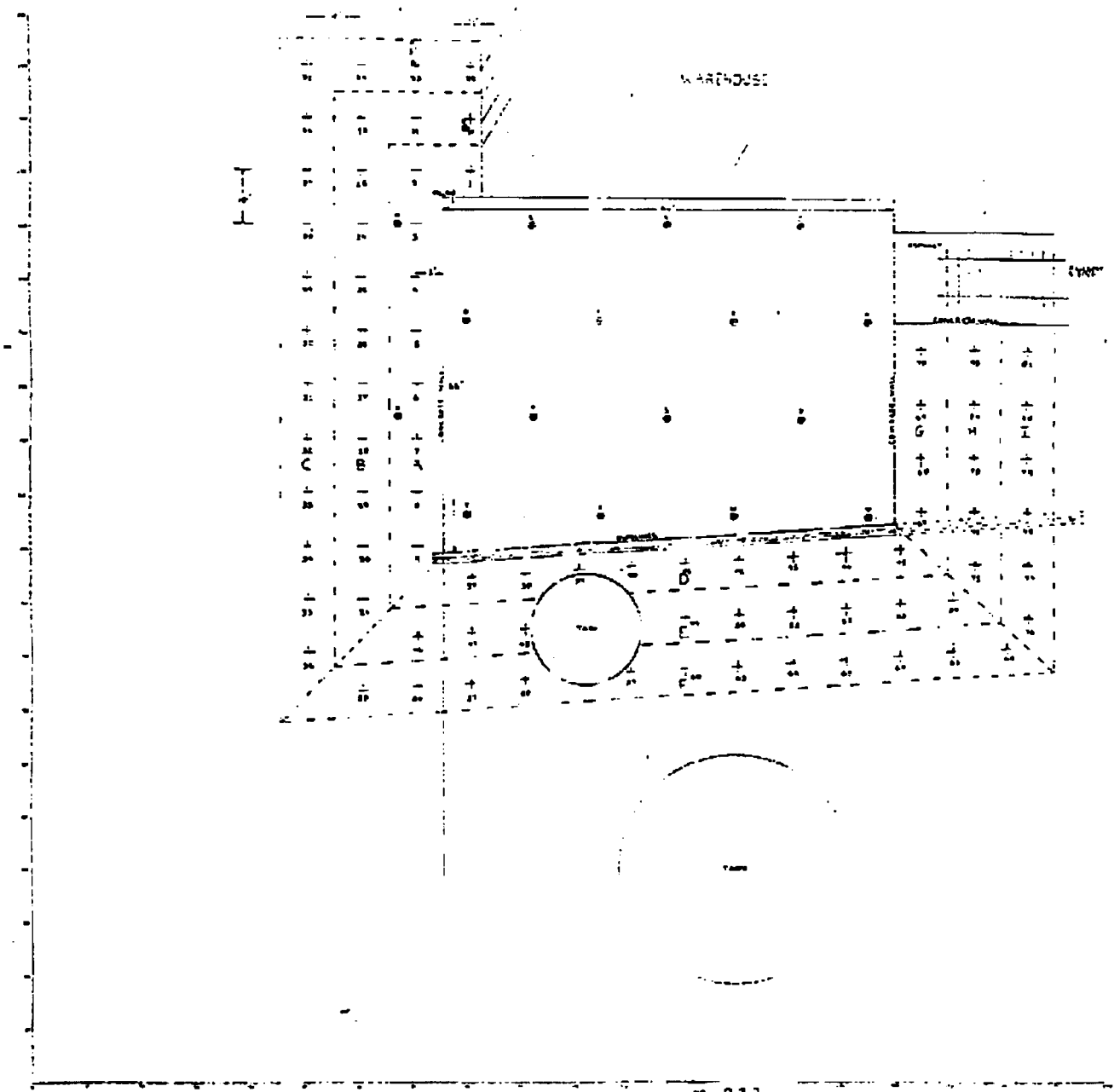
FIGURE 1



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RIEDEL INTERNATIONAL
TIME OIL CO - PORTLAND OR.
PCP SAMPLING PLAN
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FIGURE 2A

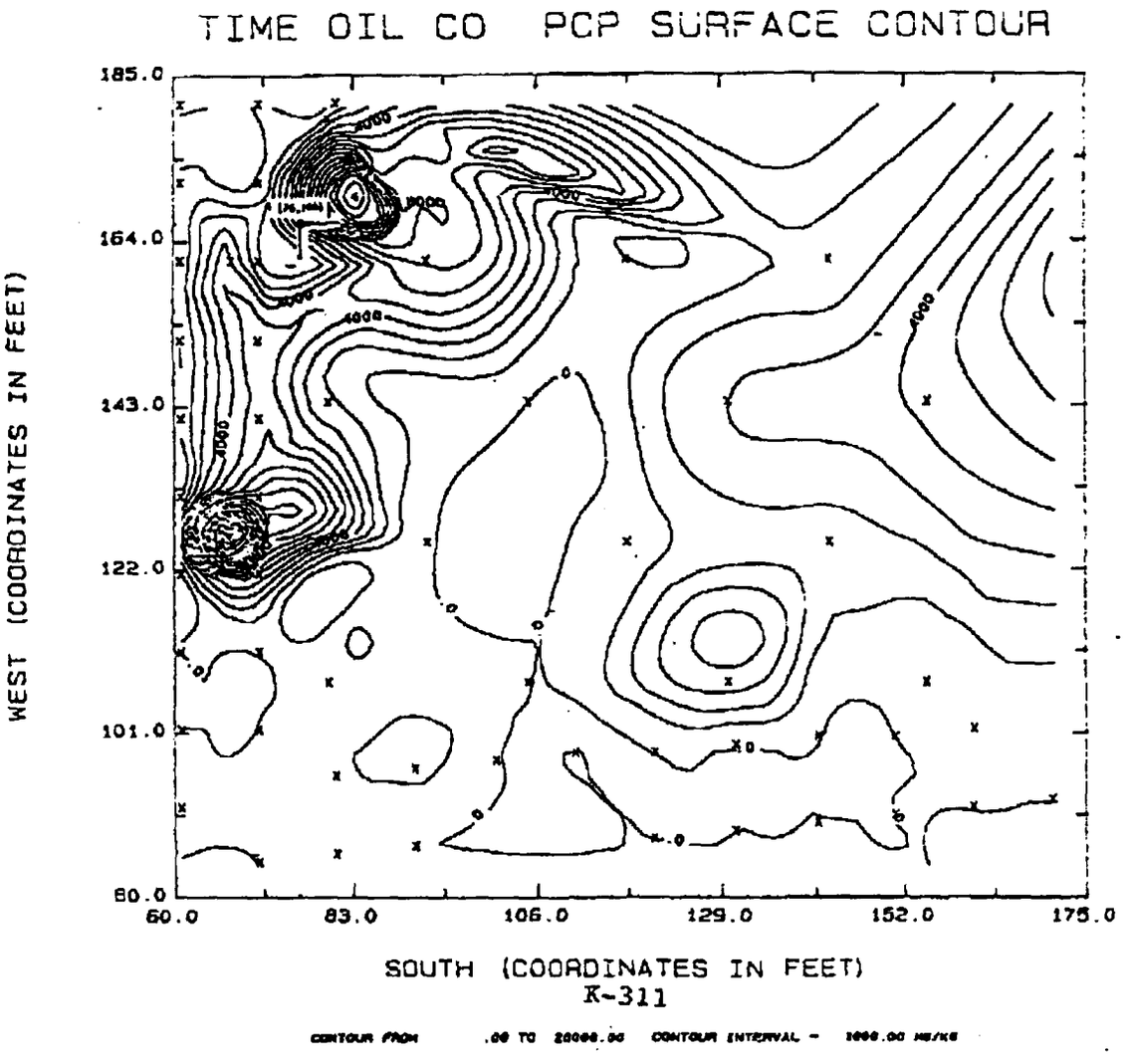

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FIGURE 2B

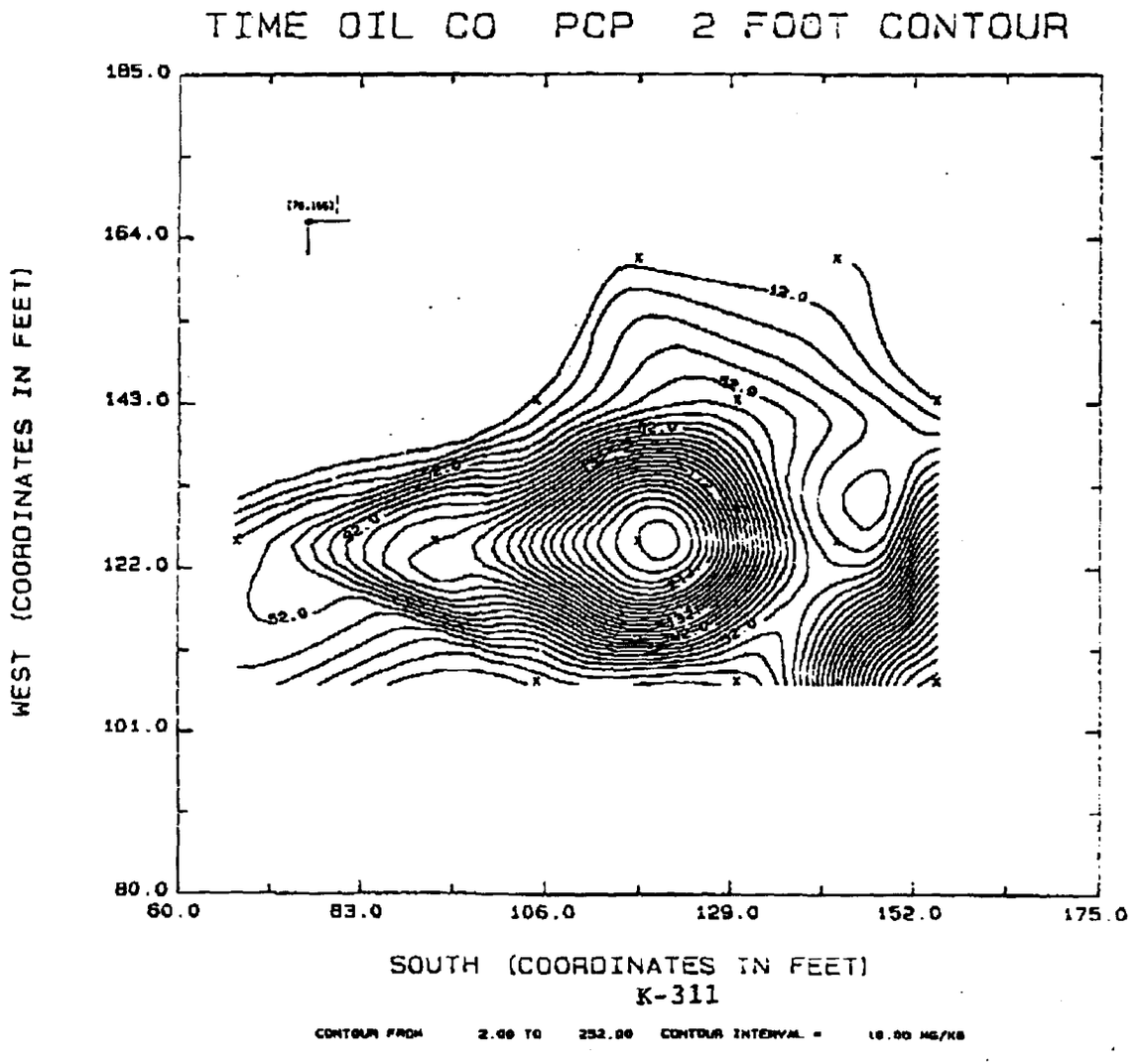

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FIGURE 2C

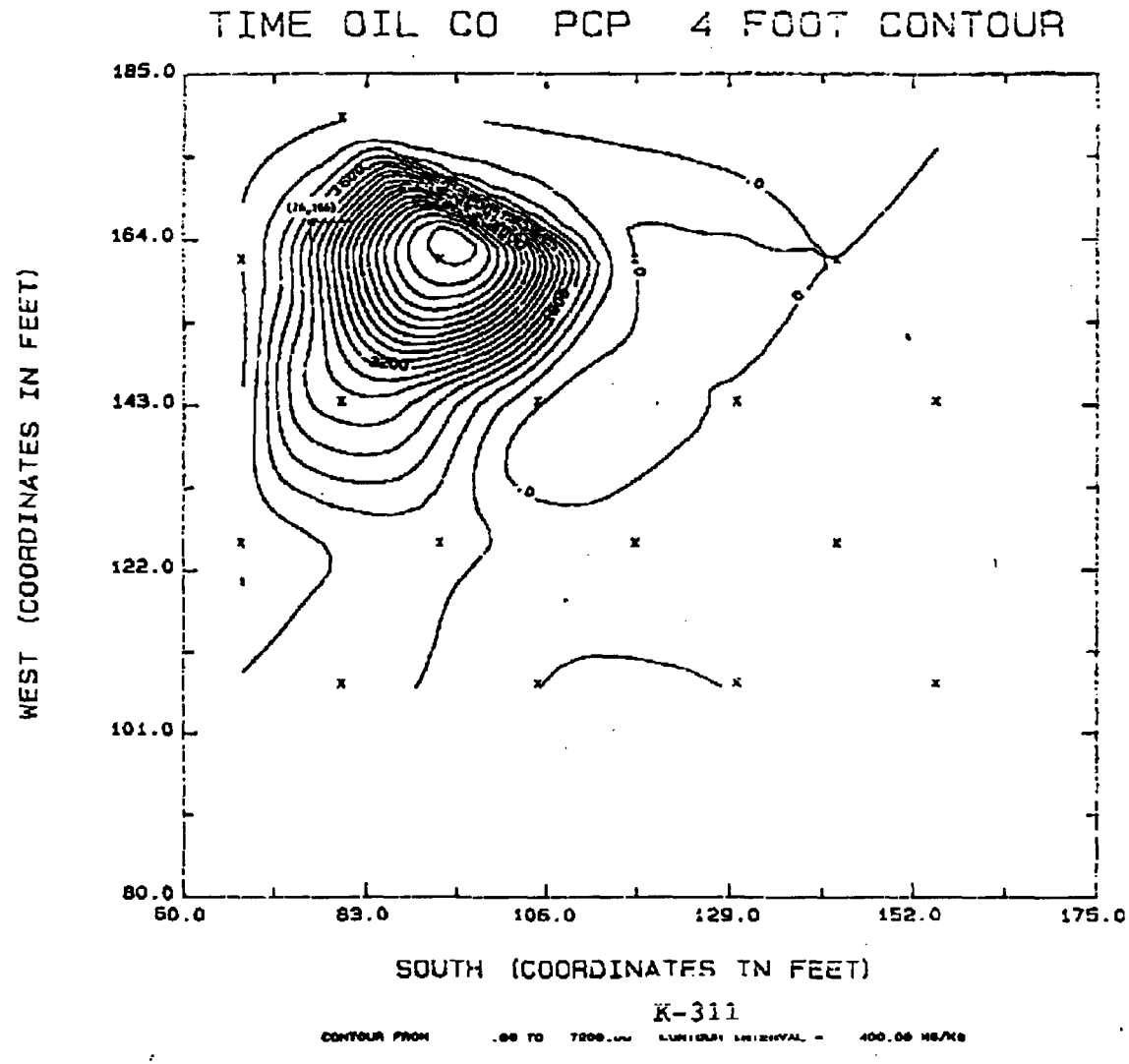

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FIGURE 2 0

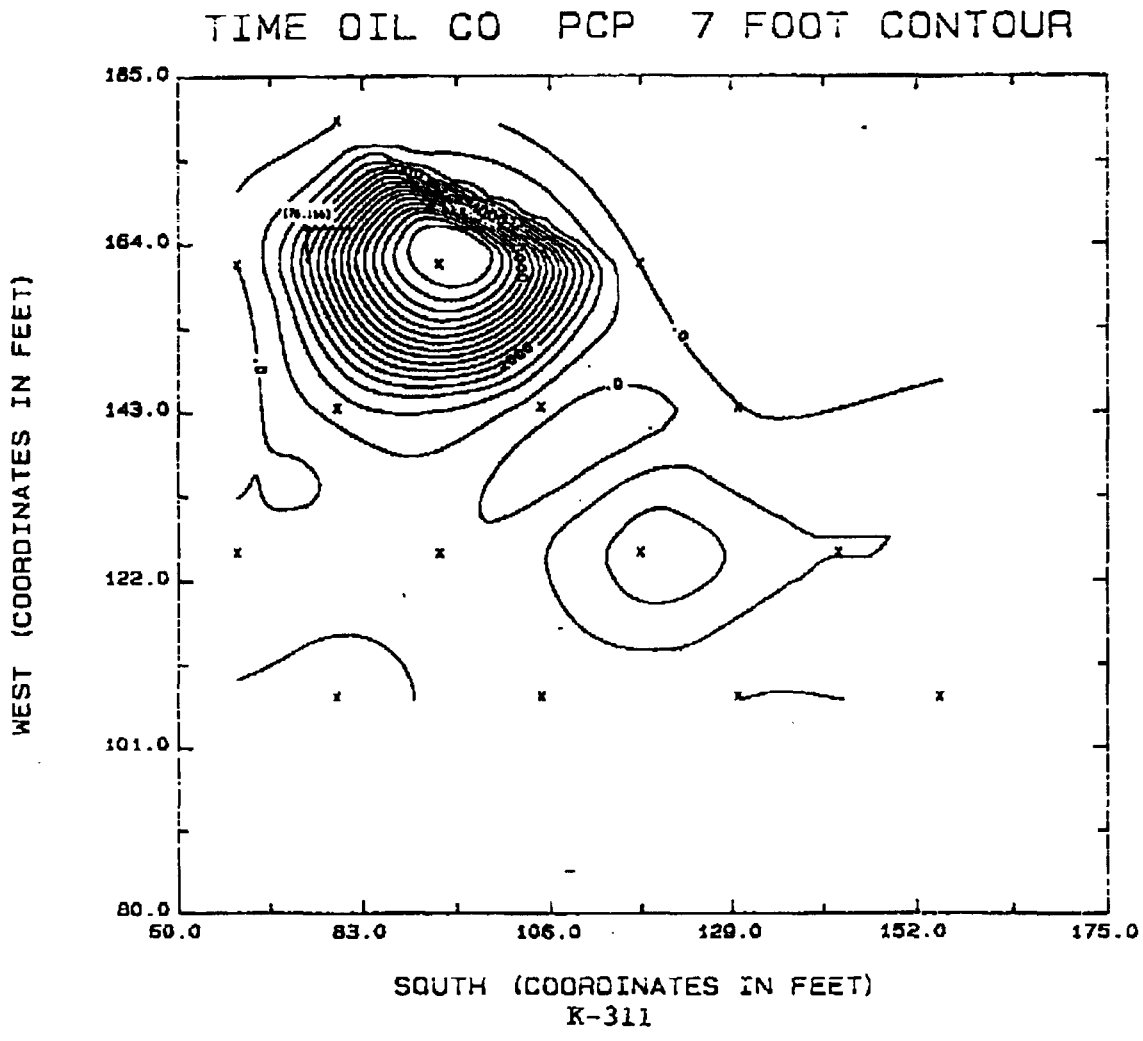

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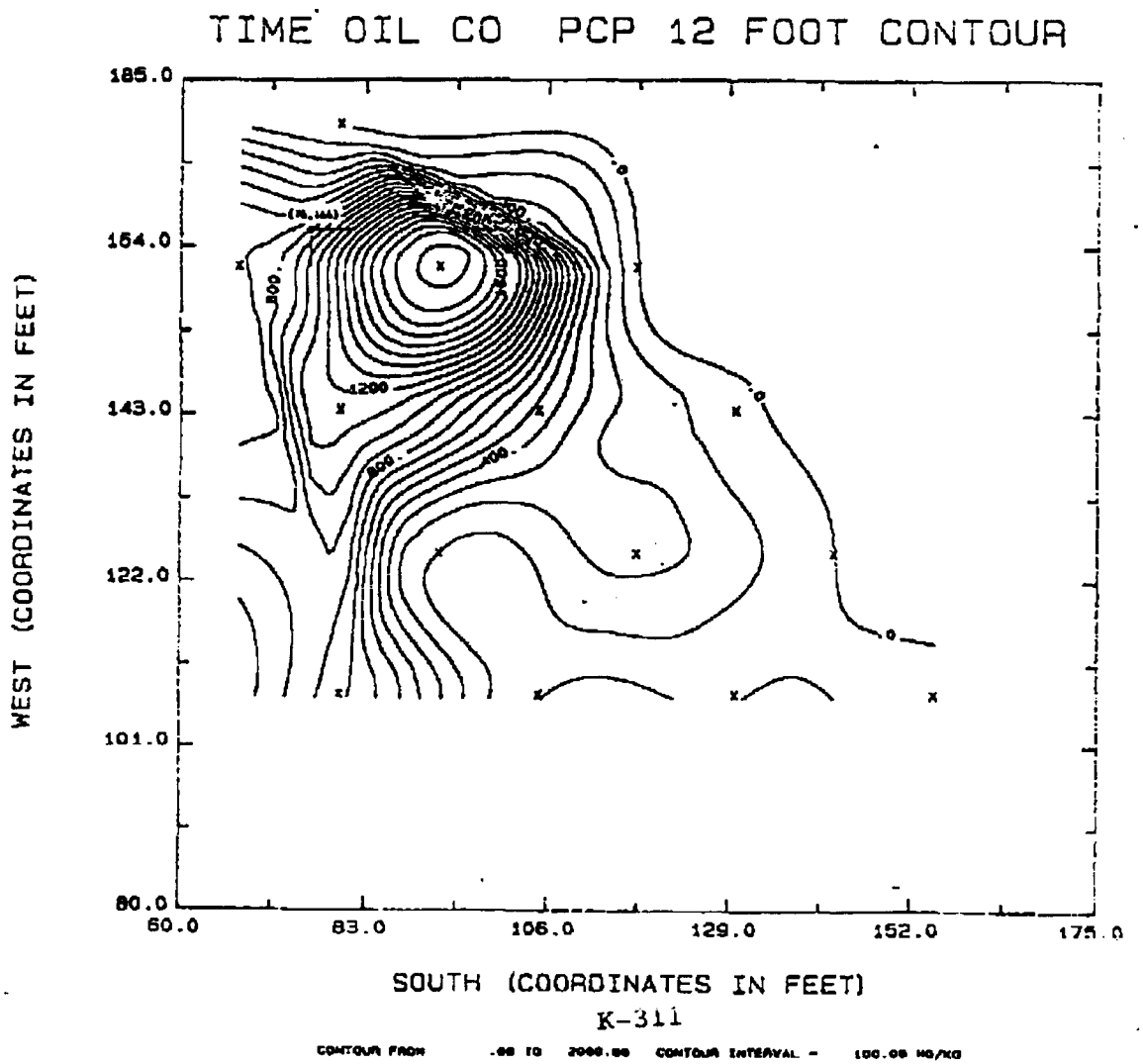
FIGURE 2E



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CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269 • Portland, Oregon 97207-1269 • (503) 223-1912
CSSI

May 28, 1985

Neil E. Wallis
Time Oil Company
2737 W. Commodore Way
Seattle, Washington 98199

Dear Mr. Wallis:

Enclosed are two copies of our Waste Transportation and Disposal Agreement. Please sign both copies and return both copies to me at the above address. I will then forward your fully-executed copy. We appreciate your business and look forward to serving your hazardous waste needs.

Please feel free to call if you have any questions.

Sincerely,

CHEM-SECURITY SYSTEMS, INC.

Joyce Johnson

Joyce Johnson
Inside Sales Representative

JJ:lh
Enclosures

Encl. 9

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WASTE TRANSPORTATION AND DISPOSAL AGREEMENT

On this 24th day of May, 19 84, the parties, Time Oil Co., a Washington corporation with its principal offices at 2737 W. Commodore Way, Seattle, WA 98199 (hereinafter called "Generator"), and CHEM-SECURITY SYSTEMS, INC., a Washington corporation with its principal offices at 10602 N. E. 38th Place, Kirkland, Washington 98033 (hereinafter called "Disposer"), have agreed as follows:

1. WASTE PRODUCTS. The term "Waste Products" refers to those solid, liquid, semi-solid, or contained gaseous materials which are generally described in, and which have physical, chemical, biological or radioactive constituents, characteristics and properties within the specifications stated in, the Supplemental Information Document. The term "Waste Products" also includes containers described in the Supplemental Information Document, if they are to be supplied by the Generator. The term "unit of Waste Products" refers to a single whole container of Waste Products (such as a barrel, drum, box, or tanker load).

   Materials and containers shall be considered nonconforming: (i) if they are not in accordance with the warranties, descriptions, specifications or limitations stated in this agreement and the Supplemental Information Document, or (ii) if they have material constituents or components, not specifically identified in the Supplemental Information Document, (a) which materially increase the nature or extent of the hazard and risk undertaken by CSSI in agreeing to handle, load, transport, store, treat or dispose of the Waste Products, or (b) for whose storage, treatment or disposal the Disposal Facility is not designed or permitted.

2. SUPPLEMENTAL INFORMATION DOCUMENT. Where "the Supplemental Information Document" is referred to in this Agreement, the parties understand that such term refers to each single entire document, in that form specified in Exhibit A, (which exhibit is attached hereto and made part hereof), containing the information therein required and executed by the Generator and Disposer. Each Supplemental Information Document shall be numbered in chronological sequence. A Supplemental Information Document, prepared and executed as herein required, shall be considered incorporated into this Agreement and part hereof as of the date and time of Document execution. It is the intention of the parties that each Supplemental Information Document, when incorporated into this Agreement, constitutes a separate undertaking, individually enforceable.

Form No. WMI-55-B (Rev. 10/10/84)
c 1980, WASTE MANAGEMENT, INC.

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A Supplemental Information Document, or any amendment thereto, shall be executed, on behalf of Disposer or Generator, only by such persons appointed as authorized agents of the parties for such purposes, which persons are identified, by name or specific position title, in Exhibit B. attached hereto and made part hereof. Either party may, by notice to the other, amend its list of authorized agents, which shall constitute an amendment to Exhibit B at the time such notice is received.

At any time during the term of a Supplemental Information Document, upon the written request of Disposer, the Generator shall: (a) supply an updated written description of the Waste Products or a written certification that the description previously supplied remains true and accurate; or, (b) supply a written certification that a particular load of Waste Products delivered to Disposer constituted a representative sample of the Waste Products described in the Supplemental Information Document; or, (c) supply a representative sample of the Waste Products together with a written certification of the sample's representativeness; or, (d) allow Disposer access to the Waste Products at Generator's facility for the purpose of obtaining one or more representative samples. Forms to be used in providing written Waste Products descriptions, recertifications of previous descriptions, or certifications of representative Waste Products samples shall be supplied by Disposer.

3. TENDER OF DELIVERY. Generator shall tender delivery of the Waste Products to Disposer at those times and places, in those quantities, and in the manner specified in the Supplemental Information Document. Generator shall, at the same time and place, tender to Disposer those completed documents, shipping papers or manifests as are required, for lawful transfer of the Waste Products to Disposer, by valid and applicable statutes, ordinances, orders, rules or regulations of the federal, state, or local governments, including, but not limited to, the Hazardous Materials Transportation Act, the Toxic Substances Control Act and the Resource Conservation and Recovery Act of 1976.

Tender of delivery shall be considered non-conforming if not in accordance with this Section and the specifications of the Supplemental Information Document, or if not preceded by such notification as required by Section 16 (f).

4. DISPOSER RIGHT TO INSPECTION UPON TENDER. Disposer shall have the right, but not the obligation, to inspect, sample, analyze, or test any tendered Waste Products before accepting such products. Failure or refusal of the Generator to provide Disposer with access to any tendered or delivered Waste Products, prior to Disposer's acceptance, shall be deemed a non-conforming tender or delivery of all of the Waste Products tendered or delivered at that time and place. Disposer's

exercise of, or failure to exercise, its right hereunder shall not operate to relieve Generator of its responsibility or liability under this Agreement.

5. DISPOSER RIGHTS ON IMPROPER DELIVERY. If the Waste Products, any unit thereof, or the tender of delivery fail in any respect to conform to this Agreement, including the requirements of the Supplemental Information Document, Disposer may, at its exclusive option, (i) reject all Waste Products tendered; or, (ii) accept all Waste Products tendered; or, (iii) accept any unit or units of Waste Products and reject the rest. Provided, however, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other tendered container, would be visibly apparent, Disposer's option shall be limited to accepting or rejecting the particular non-conforming unit.

   Rejection of the Waste Products must be within a reasonable time after their tender or delivery, not to exceed twenty-four (24) hours. In rejecting any Waste Products, Disposer shall orally notify the Generator of the manner in which the Waste Products or the tender of delivery are non-conforming, such notice to be followed by written notice within five (5) business days.

6. ACCEPTANCE OF WASTE PRODUCTS. Disposer shall accept any Waste Products which are in conformance with, and which have been tendered in conformance with, this Agreement, including the Supplemental Information Document, and may accept, as provided in Section 5, non-conforming Waste Products. If transportation is to be provided by Disposer, Disposer shall evidence its acceptance by removing such Waste Products from the place of tender. If transportation to the Storage or Disposal Facility is to be provided by Generator, Disposer shall evidence its acceptance by written notice to the Generator, such as through signing shipping papers or the manifest tendered with the Waste Products.

   Failure of Disposer to reject the Waste Products, or any unit thereof, as provided in Section 5 shall be deemed acceptance of all tendered Waste Products not so rejected.

   Upon acceptance of the Waste Products Disposer shall be precluded from rejecting those Waste Products accepted and, if acceptance of any unit of Waste Products was made with actual knowledge of a non-conformity, Disposer shall be precluded from revoking its acceptance of such unit because of such non-conformity. Acceptance of the Waste Products, or any unit thereof, does not, however, impair, or operate as a waiver of, any right or remedy available to Disposer, including revocation of acceptance, in the event the Waste Products or

their tender are later discovered to be non-conforming.

7. REVOCATION OF ACCEPTANCE. Disposer may, at any time before the condition of the Waste Products has been materially changed (such as by treatment, processing or disposal), revoke its acceptance of any unit or units of Waste Products discovered to be non-conforming.

Discovery by Disposer that any unit of the Waste Products is non-conforming for any reason shall be considered discovery that all units of such Waste Products, accepted at the same time as the non-conforming unit, are non-conforming for the same reasons. Provided, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other accepted container, would be visibly apparent, Disposer's option shall be limited to revoking acceptance of the particular non-conforming unit.

Revocation must occur within a reasonable time after Disposer actually discovers or should have discovered the non-conformity. In revoking its acceptance of any Waste Products, Disposer shall notify the Generator of the manner in which the Waste Products are non-conforming.

7a GENERATOR'S OPTIONS IN EVENT OF REJECTION OF REVOCATION OF ACCEPTANCE.
In the event Disposer rejects or revokes its acceptance of Waste Products, and at such time the Waste Products are in Disposer's possession or control, Generator may, within five (5) business days after receipt of notice, notify Disposer of Generator's intent to test the Waste Products, to verify the alleged non-conformity, or to correct any improper containerization, marking or labeling. Generator may, if lawfully permitted, direct Disposer to arrange for such testing or corrections, pursuant to Generator's instructions and at Generator's cost. All testing or corrections must be completed within twenty-one (21) days of Generator's receipt of the rejection or revocation notice. During the period of any testing or corrections, the duty of Disposer with respect to the Waste Products shall be that of a bailee for hire.

Upon mutual agreement of the parties that the Waste Products or any unit are not conforming for the reasons specified in Disposer's notice, the notice of rejection or revocation as to such Waste Products or unit shall be deemed null and void as of the time of its original issuance.

8. DISPOSER OPTIONS AS TO RIGHTFULLY REJECTED OR REVOKED WASTE PRODUCTS.
If Disposer rejects or revokes its acceptance of all or any units of Waste Products, and at such time the Waste Products

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are in Disposer's possession or control, Disposer and Generator shall, in good faith, attempt to amend the Supplemental Information Document to provide for handling of the non-conforming materials. If the parties cannot, within a reasonable time after rejection or revocation (including any time provided for correction or testing in Section 7a), agree on necessary amendments, Generator shall make prompt arrangements for the removal of the non-conforming materials from the Storage or Disposal Facility to another lawful place of disposition.

Generator agrees to pay Disposer its reasonable expenses and charges for handling, loading, stowing, preparing for transport, transporting, storing and caring for any Waste Products returned to Generator pursuant to this Section.

9. LOADING AND TRANSPORTATION OF WASTE PRODUCTS. If the Supplemental Information Document specifies that Disposer is to provide loading or transportation services, Disposer shall load or stow and transport Waste Products to the Storage or Disposal Facility herein specified. In the aforesaid event, as between the parties, selection of transportation vehicles or vessels, times of travel and routes shall be solely determined by Disposer unless otherwise specified in the Supplemental Information Document. In selecting transportation vehicles or vessels compatible with the Waste Products, Disposer shall rely on Generator's description of the Waste Products.

10. STORAGE AND DISPOSAL. Disposer shall dispose of the Waste Products at the particular facility or facilities, referred to herein as "the Disposal Facility", identified in the Supplemental Information Document. Disposer shall utilize those general storage, treatment, and disposal methods specified in the Supplemental Information Document; however, as between the parties, Disposer shall be solely responsible for determining the specific times and techniques for storage, processing, treatment and disposal of the Waste Products. In determining such techniques, Disposer shall rely on Generator's description of the Waste Products.

If the Supplemental Information Document specifies that Disposer is to provide interim storage of the Waste Products at a "Storage Facility", prior to transportation of the Waste Products to the Disposal Facility, Disposer shall store such Waste Products at such Storage Facility for a period not to exceed ninety (90) days, unless some other period is specified in the Supplemental Information Document.

Disposer may use, distribute or sell any of the Waste Products, or any component or residue thereof, unless otherwise specified in the Supplemental Information Document.

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11. TITLE TO WASTE PRODUCTS. At the time Disposer accepts the Waste Products and takes possession and control thereover, title, risk of loss and all other incidents of ownership to the Waste Products shall be transferred from the Generator and vested in Disposer.

A justified revocation of acceptance by Disposer revests title to the Generator, including risk of loss and all other incidents of ownership, at the time such revocation of acceptance is communicated to the Generator.

12. TERM. The term of this Agreement shall be as specified in the Supplemental Informtion Document, to commence on the date of execution of such Document, as provided in Section 2.

13. RIGHT TO TERMINATE. Either party may terminate this Agreement if the other party (i) has been adjudicated a bankrupt, or (ii) has filed a voluntary petition in bankruptcy, or (iii) has made an assignment for the benefit of creditors, or (iv) a receiver has been appointed for such party. Termination pursuant to this paragraph shall be effective for performance remaining under any and all Supplemental Information Documents.

The Generator may terminate this Agreement, with respect to performance remaining under an identified Supplemental Information Document, if, at any time after execution of such document, the specified Storge or Disposal Facility fails to obtain, or maintain as valid, any license, permit or approval required to allow lawful acceptance and storage, treatment, processing and disposal of the Waste Products at such Facility.

Termination as provided above, or as allowed by Section 22, shall be by notice from the terminating party to the other party, specifying the reason therefor and the effective date thereof, which shall be not less than five (5) days after the date of the notice.

Either party may terminate this Agreement without cause, with respect to performance remaining under an identified Supplemental Information Document, by notice from the terminating party to the other party specifying the effective date of termination which shall be not less than thirty (30) days after receipt of the notice by the non-terminating party.

The right of terminating hereunder is in addition to, and not in lieu of, any right of a party to cancel this Agreement for breach of its terms or conditions.

14. COMPENSATION. For all of the Waste Products transported, stored and disposed of by Disposer, the Generator shall pay Disposer a fee, determined in accordance with the Supplemental Information Document. Disposer shall measure the Waste Products, for the purpose of computing fees, at the time and

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place, and in the manner, specified in the Supplemental Information Document. Disposer determinations so made shall govern unless proved to be in error by Generator.

Fees specified in the Supplemental Information Document shall not be altered during the term of this Agreement except as follows:

(a) Disposer may, on the first day of any calendar quarter, with thirty (30) days written notice to Generator, increase or decrease fees specified in the Supplemental Information Document. If any Waste Products, to which such fee alterations apply, are delivered to Disposer more than thirty days after Generator's receipt of this notice, Generator shall be deemed to have accepted such fee alterations and the Supplemental Information Document shall be deemed amended in such respect.

(b) If legislation or regulations, first implemented after date of execution of the Supplemental Information Document, impose taxes, tariffs, fees, surcharges or other charges upon the transportation, storage, processing, treatment or disposal of the Waste Products, the Generator shall reimburse the Disposer for such charges upon the Disposer's submission of an invoice stating that such charges have been levied or paid.

The Disposer shall submit statements to the Generator which shall be paid by the Generator not later than thirty (30) days from date of receipt. Disposer shall retain copies of such statements for a period of at least five (5) years as a record of disposal.

15. DISPOSER WARRANTIES. Disposer warrants and represents to the Generator that:

(a) Disposer understands the currently known hazards and risks which are presented to human beings, property and the environment in the handling, transportation, storage, treatment, processing and disposal of the Waste Products as they have been described by the Generator in the Supplemental Information Document; and,

(b) Disposer is engaged in the business of transportation, storage and disposal of industrial and other wastes, and has developed the requisite expertise for the handling, transportation, storage, treatment, processing, and diposal of such; and,

(c) Disposer will handle, load, stow, transport, store, treat, process, and dispose of the Waste Products in a safe and workmanlike manner and in full compliance with all valid and applicable statutes, ordinances, orders,

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rules and regulations of the federal, state and local governments in whose jurisdictions such activities are performed under this Agreement; and,

(d) Any and all vehicles or vessels, Waste Products containers and personnel to be provided by Disposer in the performance of this Agreement have obtained or will obtain all permits, licenses, certificates or approvals required to comply with valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments.

(e) The Storage or Disposal Facility (or Facilities) described in the Supplemental Information Document has been issued, as of the date of execution of such Document, all permits, licenses, certificates or approvals, required by valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in which such Facility is located, necessary to allow such Facility to accept and store, treat, process and dispose of the Waste Products as described by the Generator in such Document. Disposer shall provide Generator with reasonable advance notice if any such permit, license, certificate or approval is to expire and not be renewed during the term of a Supplemental Information Document, or becomes the subject of judicial or administrative action seeking revocation or suspension. Such notice shall also be provided if Disposer determines not to seek any necessary permit, license, certificate or approval which becomes required after execution of a Supplemental Information Document.

16. GENERATOR WARRANTIES. The Generator warrants and represents to Disposer that:

(a) The description of the Waste Products in the Supplemental Information Document is true and correct in all material respects, fairly advises Disposer of the hazards and risks known by the Generator to be incident to the handling, transportation, storage, treatment, processing and disposal of the Waste Products, and is otherwise in full compliance with all materials description requirements of valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdictions such Waste Products are to be handled, transported, stored, treated, processed or disposed; and,

(b) Waste Products tendered to Disposer will conform to the descriptions and specifications contained in the Supplemental Information Document; and,

(c) If Generator receives information, during the term of any Supplemental Information Document, that Waste Products described in such Document, or some component of such Products, present or may present a hazard or risk to persons or the environment, which was not disclosed in the Supplemental Information Document, Generator shall promptly report such information to Disposer. Such information shall include, but not be limited to, any relevant notification of substantial risk required to be given by Generator pursuant to Section 8 (e) of the Toxic Substances Control Act;

(d) If any load of Waste Products, tendered to Disposer for transportation in a single transportation vehicle, contains a reportable quantity of one or more hazardous substances, as provided in Section 102 of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or regulations adopted thereunder, Generator will, prior to tendering such load to Disposer, provide the person in charge of the Disposer transport vehicle with written notice that the load contains a reportable quantity of such hazardous substance(s), identifying the known or estimated quantity of each such hazardous substance present.

(e) Generator will prepare the Waste Products for transportation and tender to Disposer in accordance with all valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdiction such Waste Products are to be tendered to Disposer pertaining to: (i) container specifications for any container not supplied by Disposer; and, (ii) marking and labeling of all containers.

(f) If regulations promulgated or revised under Section 3001 of the Resource Conservation and Recovery Act of 1976 (P. L. 94-580) identify the Waste Products as "hazardous waste," either by characteristics or listing, the Generator, prior to tendering any Waste Products to Disposer has filed or will file with the appropriate governmental agency the preliminary notification required by Section 3010(a) of the above Act, and provide Disposer with evidence thereof.

(g) The Generator has sole title to Waste Products which will be tendered to Disposer, and is under no legal restraint, statutory, regulatory, administrative or judicial, which prohibits the transfer of possession or title to such Waste Products to Disposer.

17. INDEMNIFICATION. Disposer agrees to indemnify and save harmless the Generator, its present and future officers or

directors (or officials), employees and agents, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by Disposer, or any negligent or willful act or omission of Disposer, its employees or subcontractors in the performance of this Agreement.

The Generator agrees to indemnify and save harmless Disposer, its present and future officers, directors, employees, agents, subcontractors and assignees, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by the Generator, or any negligent or willful act or omission of Generator, its employees or agents in the performance of this Agreement.

18. INSURANCE. Disposer shall procure and maintain, at its expense, during the term of this Agreement, at least the following insurance:

	COVERAGE	LIMITS
(a)	Worker's Compensation	Statutory
(b)	Employer's Liability	$500,000 each occurence
(c)	Public Liability (bodily injury & property damage)	$15,000,000 combined single limit
(d)	Automobile Liability (bodily injury & property damage)	$15,000,000 combined single limit

Public Liability Insurance shall include coverage for completed operations and contractual liability under this Agreement with respect to sudden and accidental occurrences.

Each contract of insurance, and certificate of insurance, shall provide that said insurance shall not be cancelled or materially altered until at least ten (10) days after written notice is received by the Generator. Disposer agrees to furnish insurance with the above requirements, to the Generator before Disposer commences work hereunder.

In the event Disposer is required by law to obtain environmental impairment liability insurance for non-sudden and accidental occurrences at the Disposal Facility, Disposer shall furnish Generator with a copy of the certificate of insurance provided to the regulatory agency imposing the insurance requirement.

19. CONFIDENTIALITY. Disposer and Generator shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement, except as is necessary to perform this Agreement, (and then only on a confidential basis satisfactory to both parties), any information (including any technical information, experience or data) regarding either party's plans, programs, plants, processes, products, costs, equipment, operations or customers which may come within the knowledge of the parties, their officers or their employees in the performance of this Agreement, without in each instance securing the prior written consent of the other party.

Disposer shall also treat as confidential and shall not disclose to others, except as required by law, information relating to the chemical composition of the Waste Products or the quantity of Waste Products delivered to it by Generator.

Generator shall also treat as confidential and shall not disclose to others, except as required by law, this form of Agreement and the Supplemental Information Document.

Nothing above, however, shall prevent either Disposer or Generator from disclosing to others or using in any manner information which either party can show:

(a) Has been published and has become part of the public domain other than by acts, omissions or fault of Disposer or Generator or their employees; or

(b) Has been furnished or made known to Disposer or Generator by third parties (other than those acting directly or indirectly for or on behalf of Disposer or

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Generator) as a matter of legal right without restrictions on its disclosure; or

(c) Was in either party's possession prior to the disclosure thereof by Generator or Disposer to each other.

Provided, however, neither party shall release, or cause or allow the release of, information to the communications media, except as required by law, concerning the existence or terms of this Agreement or any Supplemental Information Document, including identification of the Generator of the Waste Products, identification of the Disposal Facility receiving the Waste Products, or the general description, characteristics or constituents of the Waste Products, without in each instance securing the prior written consent of the other party.

The foregoing obligations shall survive the termination or expiration of the Agreement.

20. WORK ON GENERATOR'S PREMISES. Generator agrees to provide Disposer, its employees and subcontractors a safe working environment for any work, in performance of this Agreement, which must be undertaken on premises owned or controlled by the Generator. While its employees or subcontractors are on Generator's premises, Disposer will maintain strict work discipline and effect its work in compliance with governmental laws or regulations pertaining to occupational safety and health. Disposer, its employees and subcontractors shall also comply with the Generator's safety procedures while on the Generator's premises, provided such procedures have been specified in the Supplemental Information Document or are attached thereto.

21. INSPECTIONS. The Generator shall have the right to inspect and obtain, at its expense, copies of all written licenses, permits or approvals, issued by any governmental entity or agency to Disposer or its subcontractors which are applicable to the performance of this Agreement and for which no claim of business confidentiality or trade secret is asserted; to inspect and test, at its own expense, transportation vehicles or vessels, containers or disposal facilities provided by Disposer; and to inspect the handling, loading, transportation, storage, treatment, processing or disposal operations conducted by Disposer in the performance of this Agreement. Such inspections are encouraged by Disposer, but shall not operate to relieve Disposer of its responsibility or liability under this Agreement.

22. EXCUSE OF PERFORMANCE. The performance of this Agreement, except for the payment of money for services already rendered, may be suspended by either party in the event the delivery or

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transportation of Waste Products by Generator, or transportation, storage, treatment, processing or disposal of Waste Products by Disposer are prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include, but not be limited to, acts of God, acts of war, riot, fire, explosion, accident, flood, or sabotage; lack of adequate fuel, power, raw materials, labor or transportation facilities; governmental laws, regulations, requirements, orders or actions; breakage or failure of machinery or apparatus; national defense requirements; injunctions or restraining orders; labor trouble, strike, lockout or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgement).

The party asserting a right to suspend performance under this Section must, within a reasonable time after he has knowledge of the effective cause, notify the other party of the cause for suspension, the performance suspended, and the anticipated duration of suspension. Upon receipt of such notice advising of a material or indefinite suspension of performance, and if such suspension substantially impairs the value of this Agreement to him, a party may, within a reasonable time (not to exceed thirty days), terminate this Agreement as provided in Section 13. If such notice of termination is not provided, this Agreement will lapse with respect to any performance suspended hereunder.

The party asserting a right to suspend performance hereunder shall advise the other party when the suspending event has ended, and when performance will be resumed.

Provided, if title to Waste Products has been transferred to Disposer, Disposer may not suspend performance of this Agreement with respect to such Waste Products; however, if a performance-suspending event occurs after Disposer has taken title to Waste Products but before completion of performance, Disposer may delegate such performance to any other persons lawfully permitted to transport, store, treat or dispose of the Waste Products pursuant to Section 23. In the circumstances described above, the Generator hereby consents to any necessary delegations for which it receives written notice from Disposer.

23. DELEGATION AND ASSIGNMENT. Disposer may at any time, with the prior written consent of Generator, which consent shall not be unreasonably withheld, delegate, orally or in writing, the performance of the work, or any portion thereof, which is by this Agreement undertaken by Disposer. Any such delegation shall not operate to relieve Disposer of its responsibilities hereunder and, notwithstanding any such delegation, Disposer shall remain obligated to the Generator in these undertakings.

Either party may, at any time, upon written notice to the other party, assign its rights under this Agreement.

24. INDEPENDENT CONTRACTOR. Disposer is and shall perform this Agreement as an independent contractor, and as such, shall have and maintain complete control over all of its employees, agents, and operations. Neither Disposer nor anyone employed by it shall be, represent, act, purport to act or be deemed to be the agent, representative, employee or servant of the Generator.

25. NOTICE. Any notice, communication or statement required or permitted to be given hereunder shall be in writing and deemed to have been sufficiently given when delivered in person or by registered or certified mail, postage prepaid, return receipt requested, to the address of the respective party below:

GENERATOR: Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

DISPOSER: CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269
Portland, Oregon 97207-1269

Either party may, by notice to the other, change the addresses and names above given.

26. ENTIRE AGREEMENT. This Agreement represents the entire understanding and agreement between the parties hereto relating to the transportation, storage, treatment, processing and disposal of Waste Products and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. No terms, conditions, prior course of dealings, course of performance, usage of trade, understandings, purchase orders, or agreement purporting to modify, vary, supplement or explain any provision of this Agreement shall be effective unless in writing, signed by representatives of both parties authorized to amend this Agreement.

In no event shall the preprinted terms or conditions found on any Disposer or Generator purchase or work order be considered an amendment or modification of this Agreement, even if such documents are signed by representatives of both parties: such preprinted terms or conditions shall be considered null and of no effect.

27. WAIVER. Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be so expressed in writing and signed by the party to be bound.

28. MISCELLANEOUS. The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State specified in the Supplemental Information Document.

All paragraph headings herein are for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular sections to which they refer.

In the event of a conflict between the terms or conditions of this Agreement and those of the Supplemental Information Document, the terms and conditions of the Supplimental Information Document shall control.

29. SEPARABILITY. If any Section, subsection, sentence or clause of this Agreement shall be adjudged illegal, invalid or unenforceable, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of the Agreement as a whole or of any Section, subsection, sentence or clause hereof not so adjudged.

30. The covenants and agreements contained in this Agreement shall apply to, inure to the benefit of and be binding upon the parties hereto and upon their respective heirs, executors, administrators, assigns and successors in interest.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

DATE: _____

Time Oil Company

By: _____

Title: _____

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

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EXHIBIT A

SUPPLEMENTAL INFORMATION DOCUMENT: NUMBER 85-001

This Document supplements, and is part of, that certain "Waste Transportation and Disposal Agreement," (hereinafter "the Agreement"), entered into by and between Time Oil Company, (hereinafter "the Generator"), and CHEM SECURITY SYSTEMS, INC., (hereinafter "Disposer"), on May 24, 1985. The provisions of this Document shall be incorporated into the Agreement.

1. DESCRIPTION OF WASTE PRODUCTS. The "Waste Products", to which the Agreement refers, are described in the "Generator's Waste Material Profile Sheet," Code Designation E13588, attached hereto and made part hereof.

   Containers are to be provided by Generator according to the following specifications:
   lined and plastic wrapped dump truck

2. TENDER OF WASTE PRODUCTS. Generator shall tender or deliver the above Waste Products to Disposer as follows:

   (a) Quantity of Waste Products to be Tendered Over Term.

   (1) Estimated.
   Volume listed in Section "F" of referenced Generator's Waste Material Profile Sheet(s) or in addenda for each profile sheet.

   (2) Guaranteed (if applicable).

   Not Applicable.

   (b) Maximum/Minimum Quantity of Waste Products Per Tender (if tendered in installments).

   Maximum: same as quantity listed in Section 2(a) above.
   or in addendum to waste profile sheet.

   (c) Place of Tender.
   Arlington, Oregon

   (d) Time and Frequency of Tender.
   8:00 a.m. to 4:30 p.m. weekdays, except holidays, weather permitting.

c 1984, WASTE MANAGEMENT, INC.
(Revised 10/10/84)

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(a) Name/Address of Storage Facility:

(b) Name/Address of Facility Permittee:

(c) Permit Number(s)/Initiation and Termination Date(s):

(d) Permitting Authority(ies):

6. DISPOSAL FACILITY. Disposer shall dispose of the above Waste Products at the following disposal facility (or facilities):

(a) Name/Address of Facility (Facilities):

The Arlington Facility
Star Route
Arlington, Oregon 97812

(b) Name/Address of Facility Permittee:

Chem-Security Systems, Inc.
P.O. Box 1866
Bellevue, Washington 98009-1866

(c) Permit Number(s)/Initiation and Termination Date(s):

State of Oregon - HW-1, initiated Aug. 26, 1980; continues pending issuance of new permit.

(d) Permitting Authority(ies):

Oregon Department of Environmental Quality.

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(f) Generator's Billing Address. Disposer shall submit its statements to:

Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

(g) Disposer Billing Address. Disposer will issue its billings from the following:

CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE
ARLINGTON, OREGON 97812

11. TERM. The term of the Agreement, with respect to the Waste Products covered in this Document, shall be as follows:

This Agreement shall commence on May 24, 1985 and shall remain in effect until terminated by either party with or without cause by thirty (30) days' advance written notice to the other party.

12. LAW TO GOVERN. The Agreement and this Supplemental Information Document shall be governed and construed in accordance with the laws of the State of Oregon.

13. MISCELLANEOUS CONDITIONS.

By their signatures hereto, the parties agree that this Supplemental Information Document shall be considered an attachment to, and part of, that certain "Waste Transportation and Disposal Agreement" identified above.

Date: _____ Time Oil Company

By: _____

Title: _____

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

(Revised 10/10/84)

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EXHIBIT B

AUTHORIZED SIGNATORIES

This Exhibit, being attached to, and forming part of that certain "Waste Transportation and Disposal Agreement" entered into by the undersigned parties on May 24, 1985, establishes the identities of those persons authorized to execute Supplemental Information Documents on behalf of the parties, to-wit:

FOR GENERATOR:

FOR DISPOSER:

Regional Sales Manager	up to $ 50,000
District Manager or National Accounts Manager	up to $ 300,000
Regional Vice President or Regional Manager	up to $ 500,000
Senior Vice President	up to $1,000,000
President	over $1,000,000

Time Oil Company

By: _____

Title: _____

Chem-Security Systems, Inc.

By: _____

Title: _____

(Revised 10/10/84)

CHEM-SECURITY SYSTEMS, INC. DISPOSAL REQUEST

RECEIVED MAY 15 1985

REFERENCE: [illegible]
WASTE PROFILE SHEET NO.

SUBJECT:
WASTE STREAM NAME: PCP contaminated soil

PHYSICAL STATE
LIQUID ☐ SOLID ☒ SEMISOLID ☐

U242
EPA WASTE CODE

GENERATOR NAME: TIME OIL CO.

ORD009597543
EPA GENERATOR I.D. NUMBER

FACILITY ADDRESS	MAILING ADDRESS
Time Oil Co. 12005 N. Burgard Rd. Portland, Or 97203-6493	Same

GENERATOR CONTACT PERSON NAME: John P. Denham Tel. No. 206 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards (NOW) ? (ANNUAL)

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4.

No free liquid allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie
NAME (PRINT)

[signature]
SIGNATURE

4-29-85
DATE

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
On May 14, 1985
By Eduardo A. Chung
Solid Waste Division
Hazardous Waste Operations

COMMENTS:

K-311

RE: HW4.10

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Waste Management, Inc.

GENERATOR'S WASTE MATERIAL PROFILE SHEET

TEMP E13588

A GENERAL INFORMATION

GENERATOR NAME: Tire Oil Co.
TRANSPORTER: Gresham Transfer, Inc.
FACILITY ADDRESS: 12005 N. Burgard Rd.
Portland, OR
TRANSPORTER PHONE: (503) 255-7900
GENERATOR USEPA ID: O R D 0 0 9 5 9 7 5 4 3
GENERATOR STATE ID:
TECHNICAL CONTACT: John P. Denham TITLE: Environmental Manager PHONE: (206) 285-2400
NAME OF WASTE: PCP contaminated soil
PROCESS GENERATING WASTE: Clean up of contaminated site at 12005 N. Burgard Road

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR:
ODOR: [ ] NONE [ ] MILD [X] STRONG
DESCRIBE:
PHYSICAL STATE @ 70°F: [X] SOLID [ ] SEMI SOLID [ ] LIQUID [ ] POWDER
LAYERS: [ ] MULTILAYERED [ ] BILAYERED [X] SINGLE PHASED
FREE LIQUIDS: [ ] YES [X] NO VOLUME: %

pH: [ ] < 2 [ ] 2-4 [ ] 4.1-6.9 [ ] 7 [ ] 7.1-10 [ ] 10.1-12.5 [ ] > 12.5 [ ] EXACT [X] N/A
SPECIFIC GRAVITY: [ ] < .8 [ ] .8-1.0 [X] 1.1-1.2 [ ] EXACT [ ] 1.3-1.4 [ ] 1.5-1.7 [ ] > 1.7
FLASH POINT: [ ] < 70°F [ ] 70°F-100°F [ ] 101°F-139°F [ ] 140°F-200°F [ ] > 200°F [X] NO FLASH [ ] EXACT [ ] CLOSED CUP [ ] OPEN CUP

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Contaminated soil	
pentachlorophenol	.1820 %
tetrachlorophenol	.0071 %
trace amounts of other	
chlorinated chemicals less than	.0001 %
	%
Non-contaminated soil	99.812 %
	%
	%
	%

D METALS [ ] TOTAL (PPM) [ ] EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)	-0-	SELENIUM (Se)	-0-
BARIUM (Ba)	-0-	SILVER (Ag)	-0-
CADMIUM (Cd)	-0-	COPPER (Cu)	-0-
CHROMIUM (Cr)	-0-	NICKEL (Ni)	-0-
MERCURY (Hg)	-0-	ZINC (Zn)	-0-
LEAD (Pb)	-0-	THALLIUM (Tl)	-0-
CHROMIUM HEX (Cr + 6)	-0-		

E OTHER COMPONENTS - TOTAL (PPM)

CYANIDES	-0-	PCB'S	-0-
SULFIDES	-0-	PHENOLICS	-0-

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? [X] YES [ ] NO
PROPER SHIPPING NAME: Waste pentachlorophenol mixture
HAZARD CLASS: ORM-E I.D. NO: NA 9220 RQ: 10 lbs
METHOD OF SHIPMENT: [ ] BULK LIQUID [X] BULK SOLID [ ] DRUM (TYPE/SIZE)
ANTICIPATED VOLUME: GALS 260 CUBIC YARDS [ ] OTHER
PER: [X] ONE TIME [ ] WEEK [ ] MONTH [ ] QUARTER [ ] YEAR [ ]

G HAZARDOUS CHARACTERISTICS

REACTIVITY: [X] NONE [ ] PYROPHORIC [ ] SHOCK SENSITIVE [ ] EXPLOSIVE [ ] WATER REACTIVE [ ] OTHER
OTHER HAZARDOUS CHARACTERISTICS
[X] NONE [ ] RADIOACTIVE [ ] ETIOLOGICAL [ ] PESTICIDE MANUFACTURING WASTE [ ] OTHER
USEPA HAZARDOUS WASTE? [X] YES [ ] NO
USEPA HAZARDOUS CODE(S): U242
STATE HAZARDOUS WASTE? [X] YES [ ] NO
STATE CODE(S): U 242

H SPECIAL HANDLING INFORMATION

[ ] ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE, AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

AUTHORIZED SIGNATURE	TITLE	DATE
John P. Denham	K-311 Environmental Manager	February 19, 1985

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BZTO104(e)038637

CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269 • Portland, Oregon 97207-1269 • (503) 223-1912
CSSI

June 7, 1985

Mr. John Denham
Time Oil Company
2737 N. Commodore Way
Seattle, Washington 98199

Dear John:

Enclosed are the two copies of replacement pages for our Supplemental Information Document that we discussed by phone today. Please replace them in the original contracts that you have and return both contracts to me.

If I can be of further assistance do not hestitate to call me.

Sincerely,

CHEM-SECURITY SYSTEMS, INC.

Joyce Johnson
Inside Sales Representative

Enclosure

Waste Management, Inc.

GENERATOR'S WASTE MATERIAL PROFILE SHEET

WASTE PROFILE SHEET CODE: NWI E13588

A GENERAL INFORMATION

GENERATOR NAME: Time Oil Co.
FACILITY ADDRESS: 12005 N. Burgard Rd.
Portland, OR
TECHNICAL CONTACT: John P. Denham TITLE: Environmental Manager PHONE: (206) 285-2400
NAME OF WASTE: PCP contaminated soil
PROCESS GENERATING WASTE: Clean up of contaminated site at 12005 N. Burgard Road

TRANSPORTER: Gresham Transfer Inc.
TRANSPORTER PHONE: (503) 255-7900
GENERATOR USEPA I.D.: O R D 0 0 9 5 9 7 5 4 3
GENERATOR STATE I.D.:

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR
ODOR: ☐ NONE ☐ MILD ☐ STRONG DESCRIBE:
PHYSICAL STATE @ 70°F: ☒ SOLID ☐ SEMI-SOLID ☐ LIQUID, ☐ POWDER
LAYERS: ☐ MULTILAYERED ☐ BI-LAYERED ☒ SINGLE PHASED
FREE LIQUIDS: ☐ YES ☒ NO VOLUME: %

pH: ☐ < 2 ☐ 2-10 ☒ N/A ☐ 10.1-12.5 ☐ 12.5 ☐ EXACT
SPECIFIC GRAVITY: ☐ < .8 ☐ .8-1.0 ☒ 1.1-1.2 ☐ 1.3-1.4 ☐ 1.5-1.7 ☐ > 1.7 ☐ EXACT
FLASH POINT: ☐ < 70°F ☐ 70°F-100°F ☐ 101°F-139°F ☐ 140°F-200°F ☐ > 200°F ☒ NO FLASH ☐ EXACT ☐ CLOSED CUP ☐ OPEN CUP

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Contaminated soil	
pentachlorophenol	.1820
tetrachlorophenol	.0071
trace amounts of other	
chlorinated chemicals less than	.0001
Non-contaminated soil	99.812

D METALS ☐ TOTAL (PPM) ☐ EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)	-0-	SELENIUM (Se)	-0-
BARIUM (Ba)	-0-	SILVER (Ag)	-0-
CADMIUM (Cd)	-0-	COPPER (Cu)	-0-
CHROMIUM (Cr)	-0-	NICKEL (Ni)	-0-
MERCURY (Hg)	-0-	ZINC (Zn)	-0-
LEAD (Pb)	-0-	THALLIUM (Tl)	-0-
CHROMIUM-HEX (Cr + 6)	-0-		

E OTHER COMPONENTS - TOTAL (PPM)

CYANIDES	-0-	PCB'S	-0-
SULFIDES	-0-	PHENOLICS	-0-

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? ☒ YES ☐ NO
PROPER SHIPPING NAME: Waste pentachlorophenol mixture
HAZARD CLASS: ORM-E ID NO: NA 2020 RQ: 10 lbs
METHOD OF SHIPMENT: ☐ BULK LIQUID ☒ BULK SOLID ☐ DRUM (TYPE/SIZE):
ANTICIPATED VOLUME: GALS: 260 CUBIC YARDS: OTHER:
PER: ☒ ONE TIME ☐ WEEK ☐ MONTH ☐ QUARTER ☐ YEAR ☐

G HAZARDOUS CHARACTERISTICS

REACTIVITY: ☒ NONE ☐ PYROPHORIC ☐ SHOCK SENSITIVE ☐ EXPLOSIVE ☐ WATER REACTIVE ☐ OTHER
OTHER HAZARDOUS CHARACTERISTICS: ☒ NONE ☐ RADIOACTIVE ☐ ETIOLOGICAL ☐ PESTICIDE MANUFACTURING WASTE ☐ OTHER:
USEPA HAZARDOUS WASTE? ☒ YES ☐ NO
USEPA HAZARDOUS CODE(S): U242
STATE HAZARDOUS WASTE? ☒ YES ☐ NO
STATE CODE(S): U 242

H SPECIAL HANDLING INFORMATION

☐ ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE, AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.
AUTHORIZED SIGNATURE TITLE DATE

K-311

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- Joyce Nunley
4/1/85
503/223-1912
Samples since
2/19

Wayne Smith
215/822-3307
5/15 LMTC

15 10 5 3 2 1 0'

5/15/85 John B. LMTC
E&S will do sampling/
analysis for $18,000.
Still no result from
Chem Sec.

3/25/85 LMTC

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1

Soil

BASE/NEUTRAL EXTRACTABLES
METHOD 625
8270

PARAMETER
BIS(2-CHLOROETHYL) ETHER
1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE
1,2-DICHLOROBENZENE
HEXACHLOROETHANE
N-NITROSO-DI-N-PROPYLAMINE
NITROBENZENE
ISOPHORONE
BIS(2-CHLOROETHOXY) METHANE
1,2,4-TRICHLOROBENZENE
NAPHTHALENE
HEXACHLOROBUTADIENE
HEXACHLOROCYCLOPENTADIENE
2-CHLORONAPHTHALENE
ACENAPHTHYLENE
DIMETHYLPHTHALATE
2,6-DINITROTOLUENE

PARAMETER
ACENAPHTHENE
2,4-DINITROTOLUENE
FLUORENE
DIETHYLPHTHALATE
N-NITROSODIPHENYLAMINE
4-BROMOPHENYL PHENYL ETHER
HEXACHLOROBENZENE
PHENANTHRENE
ANTHRACENE
DIBUTYL PHTHALATE
FLUORANTHENE
PYRENE
BUTYL BENZYL PHTHALATE
BENZ(A)ANTHRACENE
CHRYSENE
3,3'-DICHLOROBENZIDINE
BIS(2-ETHYLHEXYL) PHTHALATE
BENZ(A)PYRENE

PESTICIDES/PCB'S
METHOD 608

PARAMETER
ALPHA-BHC
BETA-BHC
LINDANE
HEPTACHLOR
ALDRIN
P,P'-DDE
P,P'-DDD
P,P'-DDT

PARAMETER
TOXAPHENE
PCB GROUP 1
PCB GROUP 2
PCB GROUP 3
TOTAL PCB

PCB GROUP 1 INCLUDES PCB'S 1221, 1232, 1242 AND IS CALCULATED AS 1242.
PCB GROUP 2 INCLUDES PCB'S 1248, 1254 AND IS CALCULATED AS 1254
PCB GROUP 3 INCLUDES PCB'S 1260, 1262 AND IS CALCULATED AS 1260

000218

TOLS001820

BZTO104(e)038641

ACID EXTRACTABLES
METHOD 625
8270

PARAMETER
PHENOL
2-CHLOROPHENOL
2-NITROPHENOL
2,4-DIMETHYLPHENOL
2,4-DICHLOROPHENOL
4-CHLORO-3-METHYLPHENOL

PARAMETER
2,4,6-TRICHLOROPHENOL
2,4-DINITROPHENOL
4-NITROPHENOL
2-METHYL-4,6-DINITROPHENOL
PENTACHLOROPHENOL
TETRACHLOROPHENOLS **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

PESTICIDES
METHOD 625
8270

PARAMETER
ALPHA-BHC
HEPTACHLOR
ALDRIN
HEPTACHLOR EPOXIDE
ENDOSULFAN I
TRANS-NONACHLOR
P,P'-DDE

PARAMETER
DIELDRIN
ENDRIN
ENDOSULFAN II
P,P'-DDD
ENDOSULFAN CYCLIC SULFATE
P,P'-DDT
GAMMA-BHC (LINDANE)

EP Tox Lead

In addition to these specific chemicals we will identify and quantitate any other organic that is observed with the extraction/GC/MS procedure.

000219

TOLS001821

BZTO104(e)038642

LEGAL

1/2

DEPARTMENT OF ENVIRONMENTAL QUALITY
Request for Analysis

Laboratory No. 84-1020

Location/Site: Time Oil Date: 12 Dec 84 Date Received Lab: DEC 13 1984 1243

Collected By: RFG, JLS Program: 4290 Date Reported: JAN 15 1985

Purpose: RCRA Site Survey Report Data To: Bates, Smith

Comments: Samples locked in Refrigerator # 1208 overnight and removed for log-in 13 Dec 84 lab prepared

Basic (P) unpreserved; Nutrient (R) add H_2SO_4 in field; Metals (Tm) HNO_3 added in lab—don't rinse; Organic(X) mason jar

Item No.	Sampling Point Description (include time)	*Sample Container (bottle) #'s Nutrients Basic	DO BOD	Metals Organic		Test Required
1	Composite Soil core (Surface + 1' + 2',3') See map for location				Z1020	EP Lead GC/MS - Acids, BN PCB's
2	"				Z1007	"
3	"				Z1019	"
4	"				Z1008	"
5	"				Z1009	"
6	"				Z1010	"

Laboratory comments

TOLS001822

000220

K-311

BZT0104(e)038643

LEGAL

7/2

DEPARTMENT OF ENVIRONMENTAL QUALITY
Request for Analysis

Laboratory No. 84-1020

Location/Site: Time Oil Date: 12 Dec 84 Date Received Lab: DEC 13 1984 1245

Collected By: RFG, JLS Program: 42 90 Date Reported: JAN 15 1985

Purpose: Report Data To:

Comments:

Basic (P) unpreserved; Nutrient (R) add H_2SO_4 in field; Metals (Tm) HNO_3 added in lab--don't rinse; Organic(X) mason jar — lab prepared

Item No.	Sampling Point Description (include time)	*Sample Container (bottle) #'s Nutrients / Basic	DO / BOD	Metals / Organic		Test Required
7 1	"				21011	EP tox Pb " GCMS acid BN PCB's
8 2	"				21012	"
9 3	"				21018	"
10 4	"				21017	"
11 5	"				21016	"
12 6	"				21004	"

Laboratory comments

K-311

TOLS001823

000221

BZTO104(e)038644

LEGAL

DEPARTMENT OF ENVIRONMENTAL QUALITY
Laboratory Data Sheet

Laboratory No: 84-1020
Program Code: 4290
Page: 1 of: 49
Analysis Completed: JAN 05 [illegible]

Time 0:1 RFG

Item No.	Test Results (All units in mg/l or ug/m³)											
	bag #	EP Tox Pb										
1	Z1020	<0.1										
2	Z1007	<0.1										
3	Z1019	<0.1										
4	Z1008	<0.1										
5	Z1009	<0.1										
6	Z1010	<0.1										
7	Z1011	<0.1										
8	Z1012	<0.1										
9	Z1018	<0.1										
10	Z1017	<0.1										
11	Z1016	<0.1										
12	Z1004	<0.1										

TOLS001824

Comments:

BZTO104(e)038645

LEGAL

DATE: 31 DEC 84

LAB #: 84-1828
ITEM #: 1
SAMPLE: 21828

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLOROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

TOLS001825

BZTO104(e)038646

LEGAL

3/49

DATE: 31 DEC 84 3/11

LAB #: 48-1026
ITEM #: 1
SAMPLE: 21929

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT MG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

000224

TOLS001826

BZTO104(e)038647

LEGAL

4/49

31 DEC 84

GC/MS SCAN ID

84-1020 Z1020

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 1.0 MG/KG. NO UNKNOWNS WERE IDENTIFIED ABOVE THAT DETECTION LIMIT.

DATE: 02 JAN 84

LAB #: 84-1828
ITEM #: 2
SAMPLE: 21897

LEGAL

5/49

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT UG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT UG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLOROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

DATE: 02 JAN 95

LEGAL

6/49

LAB #: 84-1028
ITEM #: 2
SAMPLE: Z1007

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT MG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

TOLS001829

BZTO104(e)038650

LEGAL

7/49

02 JAN 85

GC/MS SCAN ID

84-1020 Z1007

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 1.0 MG/KG. NO UNKNOWNS WERE IDENTIFIED ABOVE THAT DETECTION LIMIT.

LEGAL

8/49

DATE: 28 DEC 84

LAB #: 84-1033
ITEM #: 3
SAMPLE: 21819

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLOROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

TOLS001831

BZTO104(e)038652

LEGAL

DATE: 28 DEC 84

LAB #: 84-1033
ITEM #: 3
SAMPLE: 21819

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT UG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

000230

TOLS001832

BZTO104(e)038653

LEGAL

10/49

28 DEC 84

GC/MS SCAN ID

84-1020 Z1019

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 10 MG/KG. NO UNKNOWNS WERE IDENTIFIED ABOVE THAT DETECTION LIMIT.

LEGAL

11/49

DATE: 31 DEC 84

LAB #: 84-1020
ITEM #: 4
SAMPLE: Z1008

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL

AMOUNT MG/KG	PARAMETER
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE

AMOUNT MG/KG	PARAMETER
<1	ACENAPHTHENE
3	2,4-DINITROTOLUENE
1	FLUORENE
<1	DIETHYLPHTHALATE
2	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
1	PHENANTHRENE
1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

1 ppm trace only not significant not a problem

LEGAL

12/49

DATE: 31 DEC 84 DJH

LAB #: 84-1828
ITEM #: 4
SAMPLE: I1008

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT MG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

LEGAL

31 DE

GC/MS SCAN ID

84-1020 Z1008

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 1.0 MG/L. THE FOLLOWING COMPOUNDS WERE TENTATIVELY IDENTIFIED WITH THE ESTIMATED CONCENTRATIONS SHOWN.

COMPOUND	MG/KG
NONANE	1
DECANE	4
4-METHYLDECANE	3
UNDECANE	19
2-METHYLUNDECANE	8
DODECANE	46
TRIDECANE	67
7-METHYLTRIDECANE	38
HENEICOSANE	37

000234

TOLS001836

BZTO104(e)038657

LEGAL

14/49

DATE: 28 DEC 84

LAB #: 84-1828
ITEM #: S
SAMPLE: 21889

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL ##

REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLOROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

TOLS001837

BZTO104(e)038658

LEGAL

15/49

DATE: 28 DEC 84

LAB #: 84-1833
ITEM #:5
SAMPLE:21089

PESTICIDES
METHOD 625.
EXTRACTED BY RCRA 3540

AMOUNT UG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

TOLS001838

BZTO104(e)038659

LEGAL

16/49

28 DEC 84

GC/MS SCAN ID

84-1020 Z1009

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 10 MG/KG. NO UNKNOWNS WERE IDENTIFIED ABOVE THAT DETECTION LIMIT.

TOLS001839

BZTO104(e)038660

LEGAL

17/49

DATE: 28 DEC 84

LAB #: 84-1633
ITEM #: 6
SAMPLE: 21818

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

TOLS001840

000230

BZTO104(e)038661

LEGAL

18/49

DATE: 28 DEC 84

LAB #: 84-1033
ITEM #: 6
SAMPLE: 11016

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT UG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

LEGAL

19/49

D-311

28 DEC 84

GC/MS SCAN ID

84-1020 Z1010

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 10 MG/KG. NO UNKNOWNS WERE IDENTIFIED ABOVE THAT DETECTION LIMIT.

TOLS001842

BZTO104(e)038663

LEGAL

DATE: 03 JAN 85

LAB #: 84-1020
ITEM #: 7
SAMPLE: 21011

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT UG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT UG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

TOLS001843

BZTO104(e)038664

LEGAL

2149

DATE: 03 JAN 85

LAB #: 84-1020
ITEM #: 7
SAMPLE: 21611

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT UG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

LEGAL

03 JAN 85

GC/MS SCAN ID

84-1020 Z1011

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 1.0 MG/KG. NO UNKNOWNS WERE IDENTIFIED ABOVE THAT DETECTION LIMIT.

DATE: 03 JAN 85

LAB #: 84-1028
ITEM #: B
SAMPLE: 21812

LEGAL

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
13	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
14	PHENANTHRENE
105	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLOROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

TOLS001846

BZTO104(e)038667

LEGAL

24/49

DATE: 03 JAN 85

LAB #: 84-1820
ITEM #: 8
SAMPLE: 21612

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT MG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

LEGAL

25/49

03 JAN 85

GC/MS SCAN ID

B4-1020 Z1012

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 1.0 MG/KG. NO UNKNOWNS WERE IDENTIFIED ABOVE THAT DETECTION LIMIT.

TOLS001848

BZTO104(e)038669

LEGAL

DATE: 03 JAN 85

LAB #: 84-1020
ITEM #: 9
SAMPLE: 21018

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL

AMOUNT MG/KG	PARAMETER
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
515	PENTACHLOROPHENOL
12	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE

AMOUNT MG/KG	PARAMETER
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
1	CHRYSENE
<1	3,3'-DICHLOROBENZIDINE
3	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

000247

TOLS001849

BZTO104(e)038670

LEGAL

27/49

DATE: 03 JAN 85

LAB #: 84-1020
ITEM #: 9
SAMPLE: 21018

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT MG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

TOLS001850

BZTO104(e)038671

LEGAL

28/49

03 JAN 85

GC/MS SCAN ID

84-1020 Z1018

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 1.0 MG/L. THE FOLLOWING COMPOUNDS WERE TENTATIVELY IDENTIFIED WITH THE ESTIMATED CONCENTRATIONS SHOWN.

COMPOUND	MG/KG
DODECANE	6
TRIDECANE	8
PENTADECANE	6

000249

TOLS001851

BZTO104(e)038672

DATE: 03 JAN 85

LAB #: 84-1828
ITEM #: 18
SAMPLE: 21817

LEGAL

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
1820	PENTACHLOROPHENOL
71	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLOROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

000250

TOLS001852

BZTO104(e)038673

LEGAL

30/49

DATE: 03 JAN 85

LAB #: 84-1828
ITEM #: 18
SAMPLE: Z1817

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT UG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

000251

TOLS001853

BZTO104(e)038674

LEGAL

31/49

03 JAN 85

GC/MS SCAN ID

84-1020 Z1017

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 1.0 MG/L. THE FOLLOWING COMPOUNDS WERE TENTATIVELY IDENTIFIED WITH THE ESTIMATED CONCENTRATIONS SHOWN.

COMPOUND	MG/KG
1-ETHYL-4-METHYLCYCLOHEXANE	10
2,6-DIMETHYLOCTANE	10
4-METHYLNONANE	8
1-METHYL-4-(1-METHYLETHYL)CYCLOHEXANE	12
4-METHYLDECANE	36
BUTYLCYCLOHEXANE	14
5-METHYLDECANE	15
3-METHYLDECANE	8
UNDECANE	18
OCTYLCYCLOPROPANE	53

THE SAMPLE ALSO CONTAINED NUMEROUS OTHER COMPOUNDS NOT IDENTIFIED. THE PATTERN, HOWEVER, WAS INDICATIVE OF A SOLVENT MIXTURE SIMILAR TO PAINT THINNER.

DATE: 02 JAN 85

LAB #: 84-1020
ITEM #: 11
SAMPLE: 21016

LEGAL

32/49

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLOROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

TOLS001855

BZTO104(e)038676

33/49

DATE: 02 JAN 85

LEGAL

LAB #: 84-1020
ITEM #: 11
SAMPLE: Z1016

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT MG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

TOLS001856

BZTO104(e)038677

LEGAL

34/39

02 JAN 85

GC/MS SCAN ID

84-1020 Z1016

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 1.0 MG/KG. NO UNKNOWNS WERE IDENTIFIED ABOVE THAT DETECTION LIMIT.

LEGAL

DATE: 02 JAN 85

LAB #: 84-1020
ITEM #: 12
SAMPLE: Z1004

DJH

35/49

ACID EXTRACTABLES
METHOD 625
EXTRACTED BY RCRA METHOD 3540

AMOUNT MG/KG	PARAMETER
<1	PHENOL
<1	2-CHLOROPHENOL
<1	2-NITROPHENOL
<1	2,4-DIMETHYLPHENOL
<1	2,4-DICHLOROPHENOL
<1	4-CHLORO-3-METHYLPHENOL

AMOUNT MG/KG	PARAMETER
<1	2,4,6-TRICHLOROPHENOL
<1	2,4-DINITROPHENOL
<1	4-NITROPHENOL
<1	2-METHYL-4,6-DINITROPHENOL
<1	PENTACHLOROPHENOL
<1	TETRACHLOROPHENOL **

** REPORTED AS
2,3,4,6-TETRACHLOROPHENOL

BASE/NEUTRAL EXTRACTABLES
METHOD 625

AMOUNT MG/KG	PARAMETER
<1	BIS(2-CHLOROETHYL) ETHER
<1	1,3-DICHLOROBENZENE
<1	1,4-DICHLOROBENZENE
<1	1,2-DICHLOROBENZENE
<1	HEXACHLOROETHANE
<1	N-NITROSO-DI-N-PROPYLAMINE
<1	NITROBENZENE
<1	ISOPHORONE
<1	BIS(2-CHLOROETHOXY) METHANE
<1	1,2,4-TRICHLOROBENZENE
<1	NAPHTHALENE
<1	HEXACHLOROBUTADIENE
<1	HEXACHLOROCYCLOPENTADIENE
<1	2-CHLORONAPHTHALENE
<1	ACENAPHTHYLENE
<1	DIMETHYLPHTHALATE
<1	2,6-DINITROTOLUENE

AMOUNT MG/KG	PARAMETER
<1	ACENAPHTHENE
<1	2,4-DINITROTOLUENE
<1	FLUORENE
<1	DIETHYLPHTHALATE
<1	N-NITROSODIPHENYLAMINE
<1	4-BROMOPHENYL PHENYL ETHER
<1	HEXACHLOROBENZENE
<1	PHENANTHRENE
<1	ANTHRACENE
<1	DIBUTYL PHTHALATE
<1	FLUORANTHENE
<1	PYRENE
<1	BUTYL BENZYL PHTHALATE
<1	BENZ(A)ANTHRACENE
<1	CHRYSENE
<1	3,3'-DICHLROBENZIDINE
<1	BIS(2-ETHYLHEXYL) PHTHALATE
<1	BENZ(A)PYRENE

TOLS001858

BZTO104(e)038679

LEGAL

36/49

DATE: 02 JAN 85

DJH

LAB #: 84-1820
ITEM #: 12
SAMPLE: I1894

PESTICIDES
METHOD 625
EXTRACTED BY RCRA 3540

AMOUNT UG/KG	PARAMETER
<5	ALPHA-BHC
<5	HEPTACHLOR
<5	ALDRIN
<5	HEPTACHLOR EPOXIDE
<5	ENDOSULFAN I
<5	TRANS-NONACHLOR
<5	P,P'-DDE
<5	DIELDRIN
<5	ENDRIN
<5	ENDOSULFAN II
<5	P,P'-DDD
<5	ENDOSULFAN CYCLIC SULFATE
<5	P,P'-DDT
<5	GAMMA-BHC (LINDANE)

K-311

000257

TOLS001859

BZTO104(e)038680

LEGAL

37/49

8/1

02 JAN 85

GC/MS SCAN ID

84-1020 Z1004

THE WATER SAMPLE WAS EXTRACTED BY EPA RCRA PROCEDURE 3540 (ACETONE/HEXANE) AND ANALYZED BY GC/MS. IN ADDITION TO THE PRIORITY POLLUTANT CHEMICALS, THE SAMPLE WAS SCANNED FOR ANY OTHER UNKNOWNS ABOVE THE DETECTION LIMIT OF 1.0 MG/KG. NO UNKNOWNS WERE IDENTIFIED ABOVE THAT DETECTION LIMIT.

LEGAL

38/49

DATE: 14 JAN 85

LAB #: 84-1020
ITEM #: 1
SAMPLE: Z1020

PCB'S
METHOD 608

AMOUNT UG/KG	PARAMETER
<0.5	PCB GROUP 1
<0.1	PCB GROUP 2
<0.05	PCB GROUP 3
<0.05	PCB GROUP 4
<0.05	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

000259

TOLS001861

BZTO104(e)038682

LEGAL

39/49

DATE: 14 JAN 85

LAB #: 84-1928
ITEM #: 2
SAMPLE: Z1#07

PCB'S
METHOD 608

AMOUNT UG/KG	PARAMETER
<0.25	PCB GROUP 1
<0.1	PCB GROUP 2
<0.05	PCB GROUP 3
<0.05	PCB GROUP 4
<0.05	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

000260

K-211

TOLS001862

BZTO104(e)038683

LEGAL

40/99

DATE: 14 JAN 85

LAB #: 84-1828
ITEM #: 3
SAMPLE: 21819

82K

PCB'S
METHOD 608

AMOUNT NG/KG	PARAMETER
<0.5	PCB GROUP 1
<0.1	PCB GROUP 2
<0.05	PCB GROUP 3
<0.05	PCB GROUP 4
<0.05	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

TOLS001863

BZTO104(e)038684

LEGAL

41/49

DATE: 14 JAN 85

LAB #: 84-1820
ITEM #: 4
SAMPLE: 21868

PCB'S
METHOD 608

AMOUNT UG/KG	PARAMETER
<0.25	PCB GROUP 1
<0.1	PCB GROUP 2
<0.05	PCB GROUP 3
<0.05	PCB GROUP 4
<0.05	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

000262

TOLS001864

BZTO104(e)038685

LEGAL

42/49

DATE: 14 JAN 85

LAB #: 84-1020
ITEM #: 5
SAMPLE: 21009

PCB'S
METHOD 608

AMOUNT UG/KG	PARAMETER
<0.25	PCB GROUP 1
<0.1	PCB GROUP 2
<0.05	PCB GROUP 3
<0.05	PCB GROUP 4
<0.05	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

000263

TOLS001865

BZTO104(e)038686

LEGAL

43/49

DATE: 14 JAN 85 PCK

LAB #: 84-1028
ITEM #: 6
SAMPLE: Z1018

PCB'S
METHOD 608

AMOUNT MG/KG	PARAMETER
<0.25	PCB GROUP 1
<0.1	PCB GROUP 2
.09	PCB GROUP 3
<0.05	PCB GROUP 4
<0.05	PCB GROUP 5
.09	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

TOLS001866

BZTO104(e)038687

LEGAL

44/49

DATE: 14 JAN 89

LAB #: 84-1026
ITEM #: 7
SAMPLE: Z1011

PCB'S
METHOD 608

AMOUNT KG/KG	PARAMETER
<0.25	PCB GROUP 1
<0.1	PCB GROUP 2
<0.05	PCB GROUP 3
<0.05	PCB GROUP 4
<0.05	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

000265

TOLS001867

BZTO104(e)038688

LEGAL

45/49

DATE: 14 JAN 85

LAB #: 84-1828
ITEM #: 8
SAMPLE: 21812

PCB'S
METHOD 608

AMOUNT MG/KG	PARAMETER
<0.75	PCB GROUP 1
<0.25	PCB GROUP 2
<0.15	PCB GROUP 3
<0.15	PCB GROUP 4
<0.15	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

000766

TOLS001868

BZTO104(e)038689

LEGAL

46/49

DATE: 14 JAN 85

LAB #: 84-1020
ITEM #: 9
SAMPLE: 21618

PCB'S
METHOD 608

AMOUNT MG/KG	PARAMETER
<10	PCB GROUP 1
<10	PCB GROUP 2
<5	PCB GROUP 3
<5	PCB GROUP 4
<5	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

V-311

TOLS001869

BZTO104(e)038690

LEGAL

47/49

DATE: 14 JAN 85

LAB #: 84-1029
ITEM #: 18
SAMPLE: I1017

REK

PCB'S
METHOD 608

AMOUNT MG/KG	PARAMETER
<100	PCB GROUP 1
<100	PCB GROUP 2
<50	PCB GROUP 3
<50	PCB GROUP 4
<50	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

TOLS001870

BZTO104(e)038691

LEGAL

48/49

DATE: 14 JAN 85

LAB #: 84-1928
ITEM #: 11
SAMPLE: 21916

PCB'S
METHOD 608

AMOUNT UG/KG	PARAMETER
<0.25	PCB GROUP 1
<0.1	PCB GROUP 2
<0.05	PCB GROUP 3
<0.05	PCB GROUP 4
<0.05	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

TOLS001871

BZTO104(e)038692

LEGAL

49/49

DATE: 14 JAN 85

LAB #: 84-1828
ITEM #: 12
SAMPLE: Z1884

PCB'S
METHOD 608

AMOUNT NG/KG	PARAMETER
<0.5	PCB GROUP 1
<0.1	PCB GROUP 2
<0.05	PCB GROUP 3
<0.05	PCB GROUP 4
<0.05	PCB GROUP 5
0	TOTAL PCB

PCB GROUP 1 INCLUDES PCB 1221 AND IS CALCULATED AS 1221.
PCB GROUP 2 INCLUDES PCB 1232 AND IS CALCULATED AS 1232.
PCB GROUP 3 INCLUDES PCB'S 1016, 1242, AND 1248 AND IS CALCULATED AS 1242.
PCB GROUP 4 INCLUDES PCB 1254 AND IS CALCULATED AS 1254.
PCB GROUP 5 INCLUDES PCB'S 1260 AND 1262 AND IS CALCULATED AS 1260.

wjB-1-Garrity

KOPPERS

Interoffice Correspondence

To	Jim Garrity	From	William J. Baldwin
Location	St. Louis	Location	K - 1350
Subject	Time Oil	Date	February 19, 1985

I am attaching the originally signed manifests i.e., numbers 70121 and 70201 used for the transportation of the pentachlorophenol waste from Time Oil to Chem-Security Systems, Inc., in Arlington, Oregon. Please maintain these manifests in your hazardous waste files for at least three (3) years.

William J. Baldwin

WJB/bml

Attachments

cc: Don Marion (w/o attachments)

K-5 REV. 2

K-211

000271

TOLS001873

BZTO104(e)038694

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
BENICIA
SAN PEDRO
LOS ANGELES

TIME OIL COMPANY

3731 W. COMMODORE WAY, P.O. BOX 24401, TERMINAL ANNEX, SEATTLE, WA 98124

February 4, 1985

Department of Environmental Quality
Attn: Janet Gillespie, Northwest Region Manager
522 S.W. 5th Avenue, P.O. Box 1760
Portland, Oregon 97207

Dear Ms. Gillespie:

This pertains to our Northwest Terminal location at 12005 North Burgard in Portland, Oregon and the bulk pentachlorophenol operation at that site. The purpose of this letter is to acquaint you with concurrent actions being taken by two companies to voluntarily correct what both felt may become a problem.

BACKGROUND

In March of 1982, a potential problem with the ground surrounding the pentachlorophenol operation was determined. Contract between Koppers Co. (product owner) and Time Oil Co. (land owner) was cancelled. Product phaseout and clean-up actions were jointly agreed upon by both companies. Accomplishments to date have been:

a. Bulk pentachlorophenol operations ceased.

b. On hand product inventory blended off and shipped out.

c. All tanks and piping cleaned.

d. Waste from cleaning shipped to Arlington.

e. Piping removed and scrapped.

f. Time Oil Co. tanks removed and scrapped.

Remaining to be accomplished are:

a. Removal of Koppers owned tanks (scheduled for week of February 4, 1985).

b. Contaminated soil removal and replacement.

000273

TOLS001874

BZTO104(e)038695

On December 12, 1984, Messrs. John Smits and Rick Gates of your office conducted soil sampling activities at the site. Twelve samples were taken inside diked areas. Split samples were provided Time Oil Co. DEQ laboratory test results (49 pages) were received here on February 1, 1985. Telecon with Messrs. Smits and Gates on that date revealed the following:

a. All samples were tested for lead content. None were found to be above normal limits (page 1).

b. All samples were tested for fourteen different pesticides. None were found to be above normal limits (pages 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36).

c. All samples were scanned for organic chemicals other than priority pollutants (pages 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37). No unknowns were identified above detection limits on nine of these samples. On three sample, (pages 13, 28, 31), the compounds tentatively identified were those petroleum residues normally expected to be found in a tank farm. Estimated concentrations were so low that none were at all significant, simply present.

d. All samples were tested for priority pollutant chemicals (pages 2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, 35). No unknowns were identified above detection limits on eight of these samples. On one sample (page 11), only two trace elements were found. Both were in the 1 ppm quantity, which is not considered significant and certainly cannot be classed as a problem. On one sample (page 23), three residues of polynuclear aeromatics were found, again insignificant in quantity. On one sample (page 26), one more polynuclear aeromatic of insignificant quantity was found along with a small quantity (515 ppm) of pentachlorophenal and 12 ppm of tetrachlorophenol. It is my understanding that since this quantity (515 ppm) of pentachlorophenol is below 1000 ppm, it falls in the grey area of consideration regarding significance. The tetrachlorophenol is a part of commercial pentachlorophenol so its presense would naturally be expected. On one sample (page 29), pentachlorophenol (1820 ppm) and tetrachlorophenol (71 ppm) were found. This latter finding confirms our unitedly expressed (Koppers and Time Oil) concern and substantiates the need for corrective action as we had previously planned.

CURRENT

As of today, it appears that our (Koppers and Time Oil) initial plan of action remains valid. Progress has been made. Time and more favorable weather conditions should result in the contaminated soil being removed, necessary second soil tests being conducted and new soil being put in place without difficulty.

Sincerely,

John P. Denham

John P. Denham
Environmental Manager

JPD/ch

000274

TOLS001875

BZTO104(e)038696

cc: B. BALDWIN

KOPPERS

Interoffice Correspondence

To Don Marion

Location K-700

Subject Penta Exposure - Time Oil

From James F. Garrity

Location St. Louis

Date January 23, 1985

Attached are copies of letters sent to us by St. Johns Clinic. It seems that workers that were exposed to penta are getting physical exams.

Please review and advise if needed.

James F. Garrity

JFG/mp
Encl.

TOLS001876

BZTO104(e)038697

ST. JOHNS CLINIC, P.C.
PHYSICIANS AND SURGEONS
GORDON F. WOLFE, M.D.
J. VICTOR VORE, M.D.
GORDON A. CARON, M.D.

8250 N. LOMBARD
PORTLAND, OREGON 97203
(503) 286-8809

January 17, 1985

Time Oil Co.,
Wood Treating Chemical Department,
Koppers' Company, Inc.,
5137 S. W. Avenue,
St. Louis, Missouri 63110.

Re: Donald Grosmick

Employer: Time's Oil Plant,
12005 No. Burgard,
Portland, Oregon

Dear Gentlemen:

On January 9, 1985 I examined Mr. Donald Grosmick. These are the results as oriented to your ten points that you recommended regarding his general physical examination for exposure to occupational chemicals.

The patient states he is not sure he has had any recent exposure to Pentachlorophenol. Examination of the skin revealed that he has some acne-like lesions of the back. However, these are of long-standing and he has had these since he was a teenager. They have not recently increased in size and are more scarring in nature than active acne. Examination of the nose and throat revealed no irritation. Examination of the eyes, particularly the cornea and the iris showed no abnormality. Blood pressure, sitting, was 122/90 and standing is 120/84. Examination of the abdomen revealed tenderness or enlargement of the liver. This was borne out on the SMAC-20 laboratory examination. Neurologic functions of the arms and legs were normal. The chest x-ray revealed no abnormalities of the bony thorax; the lungs were normal and the heart was normal in size and configuration. Urinalysis, microscopically, was negative for cells except for an occasional epithelial cell. The examination was negative for sugar and albumin. The SMAC-20 analysis, including blood sugars were all normal.

I hope this information will be of benefit to you.

Sincerely yours,

Gordon F. Wolfe, M.D.

GFW/transdata

ST. JOHNS CLINIC, P.C.
PHYSICIANS AND SURGEONS
GORDON P. WOLFE, M.D.
J. VICTOR VORE, M.D.
GORDON A. CARON, M.D.

8300 N. LOMBARD
PORTLAND, OREGON 97203
(503) 289-5885

January 17, 1985

Time Oil Co.,
12005 No. Burgard Road,
Portland, Oregon 97218.

Re: Physical Examination
Mike DeLaschmit
Date: January 7, 1985

Dear Gentlemen:

Mr. Mike DeLaschmit was examined by me at your request on January 7, 1985.

The interim history was that the patient had increasing fatigue in the fall of 1984 and saw his family physician who advised him that his physical examination by him was normal but that he required more rest.

The patient has not been exposed to Pentochlorophenol or any other chemicals recently and is presently feeling in good condition. The patient smokes one pack of cigarets a day.

General physical examination was performed by me and the ten items listed that you want particular emphasis to be expressed were done, and in summary his skin examination was normal. There was no irritation of the nose or throat. Examination of the eyes and cornea was normal. The blood pressure, while standing, was 112/76 and while sitting, 122/74. Examination of the abdomen revealed no masses and no abnormalities. The liver was not enlarged to palpation and there was no spleen palpable. Neurologic examination of the arms and legs, and the rest of the body was normal. The chest x-ray revealed no abnormality of the bony skeleton nor of the heart size which was normal. The lungs showed no abnormality. Urinalysis: microscopic examination showed just an occasional epithelial cell. There was no blood or pus, or white blood cells present. Examination for sugar and albumin was negative.

The blood chemistry analysis in the form of an SMA-20 was performed and all 20 items checked were normal.

In summary, this patient is presently, when examined by me, with special emphasis on the items mentioned by your company, found to be generally in good health. Despite his smoking one package of cigarets for many years, his timed vital capacity was above normal. However, we still suggested to the patient that he avoid smoking, if possible.

I hope this information will be of help to you.

Sincerely,

Gordon F. Wolfe, M.D.

GFW/transdata

sent JAN 25 1985
cc Templeton
Smith
K-1400

KOPPERS

Interoffice Correspondence

To Bill Baldwin

From James F. Garrity

Location K-750

Location St. Louis

Subject Penta Exposure - Time Oil

Date January 23, 1985

Attached are copies of letters sent to us by St. Johns Clinic. It seems that workers that were exposed to penta are getting physical exams.

Please review and advise if needed.

James F. Garrity

JFG/mp
Encl.
P.S. Temp Smith may be interested.

K-6 REV. 2

000280

K-311

TOLS001880

BZTO104(e)038701

ST. JOHNS CLINIC, P.C.
PHYSICIANS AND SURGEONS
GORDON F. WOLFE, M.D.
J. VICTOR VORE, M.D.
GORDON A. CARON, M.D.

8280 N. LOMBARD
PORTLAND, OREGON 97203
(503) 286-8866

January 17, 1985

Time Oil Co.,
Wood Treating Chemical Department,
Koppers' Company, Inc.,
5137 S. W. Avenue,
St. Louis, Missouri 63110.

Re: Donald Grosmick

Employer: Time's Oil Plant,
12005 No. Burgard,
Portland, Oregon

Dear Gentlemen:

On January 9, 1985 I examined Mr. Donald Grosmick. These are the results as oriented to your ten points that you recommended regarding his general physical examination for exposure to occupational chemicals.

The patient states he is not sure he has had any recent exposure to Pentachlorophenol. Examination of the skin revealed that he has some acne-like lesions of the back. However, these are of long-standing and he has had these since he was a teenager. They have not recently increased in size and are more scarring in nature than active acne. Examination of the nose and throat revealed no irritation. Examination of the eyes, particularly the cornea and the iris showed no abnormality. Blood pressure, sitting, was 122/90 and standing is 120/84. Examination of the abdomen revealed tenderness or enlargement of the liver. This was borne out on the SMAC-20 laboratory examination. Neurologic functions of the arms and legs were normal. The chest x-ray revealed no abnormalities of the bony thorax; the lungs were normal and the heart was normal in size and configuration. Urinalysis, microscopically, was negative for cells except for an occasional epithelial cell. The examination was negative for sugar and albumin. The SMAC-20 analysis, including blood sugars were all normal.

I hope this information will be of benefit to you.

Sincerely yours,

Gordon F. Wolfe

Gordon F. Wolfe, M.D.

GFW/transdata

ST. JOHNS CLINIC, P.C.
PHYSICIANS AND SURGEONS
GORDON F. WOLFE, M.D.
J. VICTOR YORE, M.D.
GORDON A. CARON, M.D.

8280 N. LOMBARD
PORTLAND, OREGON 97203
(503) 286-8509

January 17, 1985

Time Oil Co.,
12005 No. Burgard Road,
Portland, Oregon 97218.

Re: Physical Examination
Mike DeLaschmit
Date: January 7, 1985

Dear Gentlemen:

Mr. Mike DeLaschmit was examined by me at your request on January 7, 1985.

The interim history was that the patient had increasing fatigue in the fall of 1984 and saw his family physician who advised him that his physical examination by him was normal but that he required more rest.

The patient has not been exposed to Pentochlorophenol or any other chemicals recently and is presently feeling in good condition. The patient smokes one pack of cigarets a day.

General physical examination was performed by me and the ten items listed that you want particular emphasis to be expressed were done, and in summary his skin examination was normal. There was no irritation of the nose or throat. Examination of the eyes and cornea was normal. The blood pressure, while standing, was 112/76 and while sitting, 122/74. Examination of the abdomen revealed no masses and no abnormalities. The liver was not enlarged to palpation and there was no spleen palpable. Neurologic examination of the arms and legs, and the rest of the body was normal. The chest x-ray revealed no abnormality of the bony skeleton nor of the heart size which was normal. The lungs showed no abnormality. Urinalysis: microscopic examination showed just an occasional epithelial cell. There was no blood or pus, or white blood cells present. Examination for sugar and albumin was negative.

The blood chemistry analysis in the form of an SMA-20 was performed and all 20 items checked were normal.

In summary, this patient is presently, when examined by me, with special emphasis on the items mentioned by your company, found to be generally in good health. Despite his smoking one package of cigarets for many years, his timed vital capacity was above normal. However, we still suggested to the patient that he avoid smoking, if possible.

TOLS001882

BZTO104(e)038703

I hope this information will be of help to you.

Sincerely,

Gordon F. Wolfe, M.D.

GFW/transdata

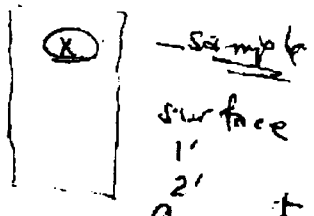
TOLS001883

BZTO104(e)038704

St. Louis Time-Oil/Koppers MTG. 1/11/85

Tanks cleaned out
Product Removed
Need certificate for right of ownership
for Northwest Vacuum to remove tanks
(T/O)
Time-Oil's / tanks removed

Region 10 S' Fund money — so Oregon DEQ
made up list of abandoned Haz. waste
sites (44 sites) T/O on List for inspection
Last inspection Dec. 12, 1984 (≈ 12 samples) from
ground-deepest 2' most surface
I was in tank farm ≈ 50' x 80' → 100' x 100'
Contaminated area western portion



Sample taken from "good area"
Visual = Oil Stained
Some peperstals around heater
6-8' fill on site - Originally swamp

Rainfall in Area ≈ 37"/yr.
Between Coast Range + Cascades

- Data to be completed mid-Jan.
  - Heavy Rain day samples taken
    - in farm used ~~for~~ for waste oil

TOLS001884

BZTO104(e)038705

KOPPERS

Interoffice Correspondence

To Don Marion — From James F. Garrity

Location K-700 — Location St. Louis

Subject Time Oil — Date October 17, 1984

Met with Neil Wallis, John Denham, Fred Proby, and Neil Gallagher to discuss a clean-up procedure at Time Oil.

The clean-up will be broken down into three phases: Phase one, internally clear thairteen tanks and remove as bulk waste; Phase two, remove Koppers own storage tanks to an area to be scrapped; Phase three, determine soil contamination.

Phase One:

Western Compliance Service, Inc. (Wescomp) is taking care of arranging the tank clean-out. One tank will act as a holding tank for the waste and rinse liquids. From this tank a homogeneous sample will be taken and submitted to Coffey Labs. Once results are known, either the existing profile sheet can be used or a new profile sheet must be submitted to the Department of Environmental Quality for approval. Once approved Chemical Security will solidify and arrange to move the hazardous waste to the waste landfill in Arlington, OR. (Estimated completion time, eight weeks.)

Phase Two:

George McGinley, Pittsburgh Purchasing, is receiving bids on removing the six horizontals and one mobile tank that Koppers own. These seven tanks will be scrapped (away from danger) on Time Oil's property.

Phase Three:

The diked area where the storage tanks rest need ground samples taken. The floor in this area of concern consists of sand and dirt. Over the years an unknown amount of Woodtox Preprime and 140 has leaked into the soil. The clean-up responsibilities are Time Oil's, but they would like Koppers to contribute. I'll be in contact with Bill Baldwin to update him so he can get involved.

This is a general description of what will take place over the next few months. If a more detailed report is needed, please advise.

WTC Inventory (10/2/84)

1.	Mineral Spirits	300 gals.
2	Paraffin Wax	1111 gals.
3	Phosphoric Acid	125 lbs.
4	WR-340 Conc.	165 gal.
5.	55 gal., TH, B&W, Drum	50 ea.

1. The mineral spirits will be used to rinse the storage tanks after they have been pumped dry.

2. The paraffin wax is being sent back to St. Louis to be used there.

3. The phosphoric acid will be returned to Van Walter and Rogers.

4. Three drums of WR-340 are being offered at distressed price to Cal Wood Door.

5. Sold Time Oil the 50 empty drums.

James F. Garrity

JFG/mp

bc: W. J. Baldwin - K-750
T. A. Marr
M. R. Urbassik
D. F. Marion

Koppers Company, Inc.
Environmental Resources Department
Pittsburgh, PA 15219, Telephone 412-227-2000

EXPRESS MAIL

KOPPERS

APR 04 1984

April 3, 1984

Mr. Neil Wallace
Time Oil Company
12005 North Burgard
Portland, OR 97203

Subject: Samples of Tank #20002
Penta Tank Bottoms

Dear Mr. Wallace:

Per our telephone conversation on April 2, 1984, enclosed is the information required for the Penta Tank Bottom clean out project.

Please package and label two duplicate quart samples of the waste per the prescribed EPA procedures (copy enclosed for your reference) and complete the Certification of Representative Sample Document #NWP D39854 (blank enclosed) required by Chemical Security Systems/Chemical Waste Management, Inc.

The samples and documentation should be shipped together as soon as possible to:

Mr. George Mills, Chemist
Koppers Company, Inc.
Specialty Wood Chemicals Division
5137 Southwest Avenue
St. Louis, MO 63110
Phone: (314) 772-2200

Please note that UPS package #4 is required for shipping penta samples via UPS. Attached are the packaging specifications. A suggested supplier of this packaging is Labelmaster, Inc., Chicago, Illinois (800) 621-5808. The samples must be packaged so that they do not leak, spill, or vaporize from their packages.

In addition, please assure that the following information accompanies each of the samples:

Your Location

Time Oil Company
12005 North Burgard
Portland, OR 97203
Contact: Neil Wallace
Phone: (503) 286-1611

Writer's Direct Dial Number (412) 227-2767

K-311

000288

TOLS001887

BZTO104(e)038708

Shipping Destination

Koppers Company, Inc.
Specialty Wood Chemicals Division
5137 Southwest Avenue
St. Louis, MO 63110
ATTN: George Mills, Chemist
Phone: (314) 772-2200

Sample Description

Sample of penta sludge from tank #20002
Quantity of sample: 1 quart

Collection Data

Sample Collector's Name: _____

Collection Date: _____ Time: _____

Date of Shipment: _____

If you have any questions regarding any of the above or attached information, please contact either Mr. John Palmer, Regional Manager at Koppers' St. Louis location, (314) 772-2200 or this office at your earliest convenience. Your cooperation in this matter is appreciated.

Sincerely,

Charles J. Vita
Environmental Specialist

CJV:cg
Enclosures: EPA-600/2-80-018 - Samplers and Sampling Procedures for Hazardous Waste Streams
(NWPD 39854) Chemical Waste Management Form WMI-51 (Rev. 8/83)
(Package #4) UPS Guide for Shipping Hazardous Materials

cc: J. D. Palmer - St. Louis
G. Mills - St. Louis
File Portland (Time Oil)

000289

TOLS001888

BZTO104(e)038709

- John Denham
- Neil Wallis
- Neil
- Palmer

Time Oil
10/3/84

(7")

20001 795 gal — semisolid (pumpable) (✓ if George H. has samples)

20002 Preprime-RTU 14729 gal. - some solids
probable 800 gal. se

20003 1281 gal. KB-3 (samples sent to George)
Black in color (carbon) Use for Timbertex 40 ✓ George

7004 Empty for several years (used to have 140 Conc.) some solids

8005 * 140 Conc. 68 gal. Conc.

8006 * 591 Gallons Oxo-bottoms usable material

8007 * 97 gal. Oxo-bottoms - usable material

6008 * Min Spirits (pre-prime Conc. before)

3809 * Min Spirits 4400 gallons (clean)

3010 * Empty (can't remember what in it last - may have been pcp.)
Timbertex 40 Conc

* Koppers Tanks

Arco Tank has 140 Conc. ≈ 1-2" 10,000 gal. on "wheels" - home-made

---

State of Wash. General Procedure for Static Acute Fish Bioassay Testing
Method two

K-311

30/30 Died @ 1000 ppm level within first 5 hrs.
30/30 @ 100 ppm died within 24 hours

000300

TOLS001889

BZTO104(e)038710

11/15/83 - Last Day

- steam clean warehouse
- talk with John on tank cleanout
- Arlington (Disposal site)
- Disposal of tanks (Kappes) (WJB check)
  - willing to use their EPA ID #
- May be pop in other tank sludge
- Cleaning of Time-Oil Tanks
- final opinion from attorneys → [Time/oil]
- ASTM Test procedure + State Reps.
  - DEQ
    522 SW 5th St
    Portland, OR
  - ✓ Disposal site [C. Vito]
  - Chem Security

Crosby & Overton, Inc
Portland, Ore
Pumpes 283-1150
289-5749

000301

TOLS001890

BZTO104(e)038711

TO: Greg Ringeling
Koppers Company, Inc.

KOPPERS

FROM: Chuck Vita

REQUISITION

1 2 3 4 5

DIVISION OR DEPARTMENT Environmental Resources Dept.

DATE 1/26/84

INQUIRY No.

APPVD.	Suggested BIDDERS	PRICE	F.O.B.	DELY.	WEIGHT PRICE/LB.
	WESCOMP				
	CHEMSEC (CWM)				
	ESI (Idaho Site)				

BUDGET	ESCALATED – YES ☐ NO ☐	REQUIRED DELIVERY ASAP	ESTIMATED WEIGHT Bulk

SHIP VIA	PLANT	USE	CLOSING DATE
Truck	SWCD (Time Oil)	Tank Cleanout	2/24/84

W.L. NO. OR REQUISITION NO.	KEY NO.	ACCOUNT NO.	ORDER NO.
Forest Products Environmental 3			

QUANTITY	DESCRIPTION	PRICE
Bulk	**HAZARDOUS WASTE REMOVAL AND/OR DISPOSAL** Tank Cleanout of Woodtox Preprime Residue Tank. EPA Waste Code U242 Pentachlorophenol Plant Contact: John Palmer @ St.Louis Plt. (314) 772-2200 Profile Sheets: Bill Baldwin/C.Vita Chemist: George Mills @ St.Louis Plt. (314) 772-2200 cc: T. Marr J. Palmer G. Mills B. Baldwin C. Vita	

EXTRA COPIES TO
ENG'G.
INS.
TRAFF.
SEE
INC. STAMP

TOTAL ESTIMATED WEIGHT TOTAL AMOUNT INVOLVED	ORDERED BY	APPROVED BY

PRICE	PURCHASED FROM
F.O.B.	
DELIVERY	
TERMS	DATE

000302

TOLS001891

BZTO104(e)038712

cc: W. Baldwin – K 750
G. Ringeling *
D. Marion
G. Mills *
T. Marr

*attachments

KOPPERS

APR ... 1984

Interoffice Correspondence

To John Palmer — From Chuck Vita

Location St. Louis, MO — Location Pittsburgh

Subject Profile sheet for Time Oil Penta sludge FPE Req. #3 — Date March 28, 1984

Attached is the completed profile sheet (NWP-D39854) for the tank bottoms clean out at Time Oil in Portland. Please note that Mr. John Denham (Time Oil) has given me Time Oil's Portland, Oregon USEPA I.D. # for use in the clean-up.

Please review all attached information, and if you do not see any problems, follow the Waste Management Instruction sheet that is attached to the profile sheet.

In addition to providing the technical information on the profile sheet, Bill Baldwin has informed me that George Mills has in his possession a representative sample of the Time Oil tank bottoms at the St. Louis plant. Please have George (or yourself) review and complete the certification document that accompanies the profile sheet.

The sample and profile sheet should be shipped together along with a short cover letter ASAP to:

Mr. Mike Zabel, Site Chemist
Chem-Security Systems, Inc.
(A Chemical Waste Mg't. Company)
Star Route
Arlington, OR 97812

Please send a photocopy of the profile sheet to:

Mr. Bill Van Dyke, District Sales Mg'r.
Chem-Security Systems, Inc.
(A Chemical Waste Mg't. Company)
P.O. Box 1269
Portland, OR 97207-1269

Also note that in addition to the MSDS for Penta (already attached) MSDS' for the other applicable chemical components should be attached for the landfill's reference.

If you have any questions regarding the above, please contact me at your earliest convenience. Thanks for your help.

Chuck Vita

K-311 Chuck Vita 000303

PS: UPS pkg. #4 is required for penta shipped via UPS. Attached are specs. Can be obtained from Labelmaster (800) 621-5808.

K-5 REV 2

TOLS001892

BZTO104(e)038713

Waste Management, Inc.

GENERATOR'S WASTE MATERIAL PROFILE SHEET

NWP TSDF D39854

A GENERAL INFORMATION

GENERATOR NAME: Koppers Company, Inc., c/o Time Oil Co. TRANSPORTER: Will Advise

FACILITY ADDRESS: 12005 North Burgard, Portland, OR 97203 TRANSPORTER PHONE: Will Advise

GENERATOR USEPA ID: OR D0 0 0 6 9 7 5 4 3

GENERATOR STATE ID: Same As Above

TECHNICAL CONTACT: George Mills TITLE: Chemist St. Louis Plt PHONE: (314) 772-2200

NAME OF WASTE: Time Oil Sludge Tank #20002/Penta Tank Bottoms

PROCESS GENERATING WASTE: Manufacturing of Wood Preservative Solution

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR: Amber

ODOR: [ ] NONE [ ] MILD [X] STRONG DESCRIBE: Petroleum

PHYSICAL STATE @ 70°F: [ ] SOLID [ ] SEMI-SOLID [X] LIQUID [ ] POWDER

LAYERS: [ ] MULTI-LAYERED [X] BI-LAYERED [ ] SINGLE PHASED

FREE LIQUIDS: [X] YES [ ] NO VOLUME: 59 %

pH: [ ] < 2 [ ] 2-4 [ ] 4.1-6.9 [ ] 7 [ ] 7.1-10 [ ] 10.1-12.5 [ ] > 12.5 [ ] EXACT [X] N/A

SPECIFIC GRAVITY: [ ] < 8 [X] 8-10 [ ] 10.1-12 [ ] > 12 [ ] EXACT [ ] 8.1-9 [ ] 9.1-10 [ ] 10.1-11 [ ] 11.1-12

FLASH POINT: [ ] < 70°F [ ] 70°F-100°F [X] 101°F-139°F [ ] 140°F-200°F [ ] > 200°F [ ] NO FLASH [ ] EXACT [X] CLOSED CUP [ ] OPEN CUP

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Pentachlorophenol	6.03 %
Paraffin Wax	0.91 %
Monsanto Heavy Oxo Ends	18.09 %
Nalco Inhibitor	0.36 %
Mineral Spirits	33.92 %
Penta Insolubles	40.69 %

D METALS [ ] TOTAL (PPM) [ ] EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As) SELENIUM (Se)

BARIUM (Ba) SILVER (Ag)

CADMIUM (Cd) COPPER (Cu)

CHROMIUM (Cr) NICKEL (Ni)

MERCURY (Hg) ZINC (Zn)

LEAD (Pb) THALLIUM (Tl)

CHROMIUM HEX (Cr + 6)

E OTHER COMPONENTS TOTAL (PPM)

CYANIDES PCB'S

SULFIDES PHENOLICS 156,000

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? [X] YES [ ] NO

PROPER SHIPPING NAME: RQ Waste Pentachlorophenol (sludge)

HAZARD CLASS: ORM-E ID NO: NA2020 RQ: (A)10

METHOD OF SHIPMENT: [X] BULK LIQUID or [ ] BULK SOLID

[X] DRUM (TYPE/SIZE): 55 gallons

ANTICIPATED VOLUME: 700 to 1,700 GALS CUBIC YARDS (Not Guaranteed) OTHER

PER: [ ] ONE TIME [ ] WEEK [ ] MONTH [ ] QUARTER [X] YEAR

G HAZARDOUS CHARACTERISTICS

REACTIVITY: [X] NONE [ ] PYROPHORIC [ ] SHOCK SENSITIVE [ ] EXPLOSIVE [ ] WATER REACTIVE [ ] OTHER

OTHER HAZARDOUS CHARACTERISTICS

[ ] NONE [ ] RADIOACTIVE [ ] ETIOLOGICAL

[X] PESTICIDE MANUFACTURING WASTE [ ] OTHER

USEPA HAZARDOUS WASTE? [X] YES [ ] NO

USEPA HAZARDOUS CODE(S): U242 D001

STATE HAZARDOUS WASTE? [X] YES [ ] NO

STATE CODE(S): U242, D001

H SPECIAL HANDLING INFORMATION

As published for pentachlorophenol. See also MSDS for pure materials attached.

[X] ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

AUTHORIZED SIGNATURE: William J. Baldwin TITLE: K-311 Mgr. Customer Technical Services DATE: 3-28-84

000304

TOLS001893

BZTO104(e)038714

KOPPERS

Interoffice Correspondence

To Greg Ringeling — From Chuck Vita

Location K-801 — Location K-1201

Subject Time Oil Penta Tank Clean-Out — Date March 28, 1984

FPE Req. #3

The profile sheet and sample for the penta tank bottoms clean-out at Time Oil in Portland, Oregon should be received shortly by Chem-Security Systems (Chemical Waste Management).

The current rough estimate of the amount of waste is around 700 gallons, however, it could top off at around 1,700 gallons.

Please call the following firms for bid purposes:

1. Chem-Security Systems (Chemical Waste Management)
   Contact: Bill Van Dyke (503) 223-1912
   Note: Please have CSS bid removal, transportation, and disposal, separately.

2. Crosby & Overton
   Phone: (503) 283-1250

3. Wescomp Services, Inc.
   Contact: Paul Hopkins (503) 684-3066

Also, as a suggestion, Mr. Henry Rassi, the Superintendent of Koppers Organic Material Northwest Terminal, located in Portland (503) 286-3681 could be contacted to help develop further leads in this project.

Your help in the expedition of this clean-up project would be appreciated, if you have any questions, please call me at 2767.

Chuck Vita

CJV:cg
cc: W. J. Baldwin - K-250
J. D. Palmer - St. Louis
D. F. Marlon
T. A. Marr
FILE - Portland (Time Oil) File
M. R. Urbassik

KOPPERS

Interoffice Correspondence

MAR 15 1984

To Wm. Baldwin — From C. P. Brush

Location K-7 — Location K-12

Subject Time Oil Clean Up — Date March 13, 1984

Enclosed is a first draft of a clean-up procedure for the Time Oil Site in Portland, Oregon. Please comment and advise to your plans and timetable so that a revised clean-up procedure can be prepared in greater detail.

Charles P. Brush

Charles P. Brush

CPB/s
encl.

cc: A. C. Middleton - w/att
J. A. Quagliotti - w/att -- Please comment
T. A. Marr - W/att

cc J. Palmer

K-5 REV. 2

000306

TOLS001895

BZTO104(e)038716

Time Oil Clean-Up -- Charles P. Brush, P.E.

INTRODUCTION

The Time Oil site in Portland, Oregon has been manufacturing a penta in oil and wax mixture for more than ten years. A site vitis by Koppers' Environmental Resources Department in December, 1983 documented past procedures that have created on-site conditions which are unacceptable environmentally. The enclosed photographs show how a single pump has been used (with hoses) to connect the several steps of production. The leakage from hose connection/disconnections is clearly seen in the photographs. The bottom of the diked area is soil that does not hold rain water. (See standing water in the plant yard outside of the dike and almost no water in the diked area). The conclusion I draw is penta going into the soil.

It is reasonable to assume that the soil below the pump location, and generally inside the diked area in contaminated with a significant amount of penta. Oil and other organic chemicals are not of particular concern to Koppers because of the nature of Time Oil's larger tank farm operation at this terminal. (This is a large ocean terminal handling liquid cargos of oils, chemicals and agricultural chemicals. Time Oil has no program of monitoring groundwater below this terminal and I believe it is reasonable to believe that the Terminal has impacted the local groundwater).

PROGRAM

Koppers has proposed at other sites that earth with less than 100 x the safe drinking water level of PCP is not a hazardous substance that requires excavation. It still seems reasonable to continue this position until such time as a better approach is developed to assess the health and environmental impact of contaminated soils at depth. The Terminal is located between two very large rivers at a point not far above their discharge to the Pacific Ocean. The site is served by municipal water and no groundwater users appear to be close-by (this point needs to be verified).

Tanks and the pumps are being cleaned and removed from the area under Koppers re-negotiation of the toll blending agreement. That phase of the clean-up is not considered in this paper.

The proposed clean-up strategy is rather straight forward:

1. Establish an acceptable background level of PCP for this particular location.

2. Excavate and remove contaminated soils in a step-wise fashion, sampling between steps, until the background is achieved.

3. Dispose of contaminated soils (in bulk) at a hazardous waste disposal site.

4. Back fill with clean fill.

5. Provide all appropriate documentation, shipping instructions and manifest as required.

SPECIFIC DETAILS

Background levels of Penta - Available data for pentachlorophenol indicate that acute and chronic toxicity to freshwater acquatic life occur at concentrations as low as 55 and 3.2 ug/l, and toxic to salt water acquatic life as low as 53 to 34 ug/l, respectively.

The human health derived criterion levels for pentachlorophenol is 1.01 mg/l. The organoleptic level for controlling taste and odor in ambient water is estimated to be 30 ug/l.

The size of the two adjacent rivers and their direct discharge into the Pacific Ocean (no bay) indicates dilution of any groundwater entering fresh water or salt water will eliminate both acute and chronic effects on aquatic life.

The proposed background level for PCP in soil below the site is therefore derived to be 100 x 1.01 mg/l or 100.1 mg/l.

Shipment of Waste - It appears that considerable soil (a hundred cubic yards or more) could be involved in the clean-up and we should consider bulk transportation rather than drums.

PCP Analysis - Before starting the project, a laboratory should be located nearby that could provide quick turn-around time for sampoling.

Sampling Plan - Inside the diked area, we should consider a 5' grid to establish the limits of the clean-up. Reference marks should be made on the dike walls, using survey or stakes and flags to mark the limits of excavation. Excavation to one foot should be made with a shovel so that the two samples, taken on the first sampling round (surface and one foot deep) can determine the first layer to be excavated.

After the first layer is removed - (one foot if test shows contamination that deep, or 6 inches if only surface contamination), resample on the sample 5' grid and excavate 6 inches unless it is clear a "hot" spot exists and deeper cuts are justified. Reduce or expand the grid as each depth is sampled.

Samples should be coded to match the grid and depth to avoid field confusion.

Grid lines should use letters A - B - C - D - E - F - in one direction and numbers 1 - 2 - 3 - 4 - 5 - in the other. Depths should be in decimal feet below grade.

A typical sample code would be (B-3-0.5) to represent a sample at grid lines B and 3, 6" deep.

Preplanning - Detailed preplanning is needed to coordinate the contractor, disposal site acceptance, manifest, and on-site safety and decontamination of equipment.

C. P. Brush
3/12/84

KOPPERS

Interoffice Correspondence

MAR 19 1984

To Wm. Baldwin — From C. P. Brush

Location K-7 — Location K-12

Subject Time Oil Clean Up — Date March 13, 1984

Enclosed is a first draft of a clean-up procedure for the Time Oil Site in Portland, Oregon. Please comment and advise to your plans and timetable so that a revised clean-up procedure can be prepared in greater detail.

Charles P. Brush

Charles P. Brush

CPB/s
encl.

cc: A. C. Middleton - w/att
J. A. Quagliotti - w/att -- Please comment
T. A. Marr - W/att

cc J. Palmer St Louis

K-6 REV. 2

K-311

000314

TOLS001899

BZTO104(e)038720

Time Oil Clean-Up -- Charles P. Brush, P.E.

INTRODUCTION

The Time Oil site in Portland, Oregon has been manufacturing a penta in oil and wax mixture for more than ten years. A site vitis by Koppers' Environmental Resources Department in December, 1983 documented past procedures that have created on-site conditions which are unacceptable environmentally. The enclosed photographs show how a single pump has been used (with hoses) to connect the several steps of production. The leakage from hose connection/disconnections is clearly seen in the photographs. The bottom of the diked area is soil that does not hold rain water. (See standing water in the plant yard outside of the dike and almost no water in the diked area). The conclusion I draw is penta going into the soil.

It is reasonable to assume that the soil below the pump location, and generally inside the diked area in contaminated with a significant amount of penta. Oil and other organic chemicals are not of particular concern to Koppers because of the nature of Time Oil's larger tank farm operation at this terminal. (This is a large ocean terminal handling liquid cargos of oils, chemicals and agricultural chemicals. Time Oil has no program of monitoring groundwater below this terminal and I believe it is reasonable to believe that the Terminal has impacted the local groundwater).

PROGRAM

Koppers has proposed at other sites that earth with less than 100 x the safe drinking water level of PCP is not a hazardous substance that requires excavation. It still seems reasonable to continue this position until such time as a better approach is developed to assess the health and environmental impact of contaminated soils at depth. The Terminal is located between two very large rivers at a point not far above their discharge to the Pacific Ocean. The site is served by municipal water and no groundwater users appear to be close-by (this point needs to be verified).

Tanks and the pumps are being cleaned and removed from the area under Koppers re-negotiation of the toll blending agreement. That phase of the clean-up is not considered in this paper.

The proposed clean-up strategy is rather straight forward:

1. Establish an acceptable background level of PCP for this particular location.

2. Excavate and remove contaminated soils in a step-wise fashion, sampling between steps, until the background is achieved.

TOLS001900

BZTO104(e)038721

3. Dispose of contaminated soils (in bulk) at a hazardous waste disposal site.

4. Back fill with clean fill.

5. Provide all appropriate documentation, shipping instructions and manifest as required.

SPECIFIC DETAILS

Background levels of Penta - Available data for pentachlorophenol indicate that acute and chronic toxicity to freshwater acquatic life occur at concentrations as low as 55 and 3.2 ug/l, and toxic to salt water acquatic life as low as 53 to 34 ug/l, respectively.

The human health derived criterion levels for pentachlorophenol is 1.01 mg/l. The organoleptic level for controlling taste and odor in ambient water is estimated to be 30 ug/l.

The size of the two adjacent rivers and their direct discharge into the Pacific Ocean (no bay) indicates dilution of any groundwater entering fresh water or salt water will eliminate both acute and chronic effects on aquatic life.

The proposed background level for PCP in soil below the site is therefore derived to be 100 x 1.01 mg/l or 100.1 mg/l.

Shipment of Waste - It appears that considerable soil (a hundred cubic yards or more) could be involved in the clean-up and we should consider bulk transportation rather than drums.

PCP Analysis - Before starting the project, a laboratory should be located nearby that could provide quick turn-around time for sampoling.

Sampling Plan - Inside the diked area, we should consider a 5' grid to establish the limits of the clean-up. Reference marks should be made on the dike walls, using survey or stakes and flags to mark the limits of excavation. Excavation to one foot should be made with a shovel so that the two samples, taken on the first sampling round (surface and one foot deep) can determine the first layer to be excavated.

After the first layer is removed - (one foot if test shows contamination that deep, or 6 inches if only surface contamination), resample on the sample 5' grid and excavate 6 inches unless it is clear a "hot" spot exists and deeper cuts are justified. Reduce or expand the grid as each depth is sampled.

Samples should be coded to match the grid and depth to avoid field confusion.

TOLS001901

BZTO104(e)038722

Grid lines should use letters A - B - C - D - E - F - in one direction and numbers 1 - 2 - 3 - 4 - 5 - in the other. Depths should be in decimal feet below grade.

A typical sample code would be (B-3-0.5) to represent a sample at grid lines B and 3, 6" deep.

Preplanning - Detailed preplanning is needed to coordinate the contractor, disposal site acceptance, manifest, and on-site safety and decontamination of equipment.

C. P. Brush
3/12/84

SCHEDULE

TERMINAL: TIDE OIL CO., Portland, Oregon

DATE OF AGREEMENT: March 1, 1967

INITIAL TERM OF AGREEMENT: March 1, 1967 to February 29, 1972.

OPERATOR: TIDE OIL CO.

CUSTOMER: WOOD TREATING CHEMICALS CO.

PRODUCTS TO BE STORED: Mineral spirits with additives.

FACILITIES: Operator will furnish Customer the following Facilities:

Storage Tanks: Three (3) tanks with a shell capacity of approximately 20,570 gallons each, one (1) tank with a shell capacity of approximately 13,000 gallons, one (1) blending tank of approximately 1,500 gallons equipped with six (6) electric heating elements, together with warehouse space for storing approximately 100,000 pounds of additives on pallets in drums and bags. Additives being pentachlorophenol in bags and Customer's additive #316 in drums.

SERVICES:

Storage and handling: Operator shall receive the Products from tank cars and/or transport trucks and shall deliver such Products into storage tanks.

Operator shall deliver the Products and commodities into transport trucks and/or tank cars. Transport trucks to be driver loaded.

Operator shall receive additives from freight cars and/or trucks.

Operator shall blend additives for mixing with mineral spirits at a temperature not to exceed 140°F.

CHARGES: The only Charges for the Facilities and Services herein are the following:

$440.00 per month to be billed in advance on the first day of each month and paid by Customer within 10 days after receipt of invoice.

One-half cent (.005) per gallon on all liquid products received at the terminal with 200,000 gallons minimum receipts guaranteed annually, to be billed at the 1st of each month for the prior months' receipts and paid by Customer within 10 days after receipt of invoice, and plus -

One-half cent (.005) per gallon on all liquid products shipped from the terminal with 200,000 gallons minimum shipments guaranteed annually to be billed at the 1st of each month for the prior months' shipments and paid by Customer within 10 days after receipt of invoice.

Overtime and extra labor and cost of armed guards as specified in Sections B.3, D.9(a) and 13(c) of the Agreement to which this Schedule is annexed and of which it is a part.

000322

TOLS001903

BZTO104(e)038724

AMENDED SCHEDULE

TERMINAL:	TIME OIL CO., Portland, Oregon.
DATE OF AGREEMENT:	March 1, 1967 August 1, 1970 amended schedule.
INITIAL TERM OF AGREEMENT:	April 1, 1967 to March 31, 1972.
OPERATOR:	TIME OIL CO.
CUSTOMER:	WOOD TREATING CHEMICALS CO.
PRODUCTS TO BE STORED:	Raw materials in bulk, drums and bags for wood preservatives. Finished products in bulk and drums. Also, such other raw materials and finished products specified by the Customer and accepted by the Operator.
FACILITIES:	Operator will furnish Customer the following facilities: Storage tanks - one (1) tank with a shell capacity of approximately 38,000 gallons, three (3) tanks with a shell capacity of approximately 20,570 gallons each, one (1) tank with a shell capacity of approximately 13,000 gallons, one (1) blending tank of approximately 1,500 gallons equipped with six (6) electric heating elements, together with warehouse space for storing approximately 100,000 pounds of raw or finished materials on pallets in drums and bags.
SERVICES: Storage and Handling	Operator shall receive the raw materials from railroad tank cars or freight cars and/or trucks and shall deliver such products into storage tanks and/or warehouse. Operator shall deliver the finished products into storage, trucks and/or railroad cars. Operator shall mix or blend products at a temperature not to exceed 180 deg. F.
HANDLING AND TRANSFER CHARGES:	The only charges for the facilities and services herein are the following: $615.00 per month to be billed in advance on the first day of each month and paid by Customer within 10 days after receipt of invoice. One cent (0.01) per gallon for blending and shipping pentapetroleum or LST type solutions shipped in tank cars, tank trucks or drums that can be bulk or tank blended. These products are Customer's products known as:

TOLS001904

BZTO104(e)038725

CHARGES: cont.

1. Woodtox Preprime RTU
2. Woodtox 140 RTU
3. Presstreat
4. Woodtox 109 RTU
5. Woodtox 109 w/o Penta

Other products of similar type solutions can be added from time to time by Customer upon written acceptance by the Operator.

Three cents (0.03) per gallon for blending and shipping concentrate type solutions in tank cars, tank trucks or drums. These products are Customer's products known as:

1. Timbertox 40 Concentrate
2. WR 340 Concentrate
3. Woodtox Preprime Concentrate
4. Woodtox 140 Concentrate
5. Inhibitor L
6. Penta Wood Preservative Concentrate

Other concentrate type solutions can be added from time to time by Customer upon written acceptance by the Operator.

Five cents (0.05) per gallon for filling 55 gallon drums.

One cent (0.01) per gallon for blending contaminated products returned to storage and/or blending Woodtox 109 w/o Penta to include Penta.

Seventy-five (0.75) cents for each 55 gallon drum of additives shipped that have been in storage and are shipped without blending with other products.

Blending, shipping and drum filling charges are to be invoiced by Operator to the Customer on the first day of each month for the shipments made during the previous month and Customer agrees to pay charges within 10 days after receipt of invoice.

Overtime and extra labor and cost of armed guards as specified in Sections B.3, D.9 (a) and 13 (c) of the Agreement to which this Schedule is annexed and which it is a part.

It is agreed by the parties hereto that the Schedule attached to the Agreement dated the 1st day of March, 1967, shall be superceded and replaced in its entirety by this Amended Schedule effective August 1, 1970.

It is further agreed that said Agreement dated the 1st day of March, 1967 is further amended as follows:

On Page 1, Section A.FACILITIES, Paragraph 2, line 7 after the word Agreement shall be added "Customer shall, however, inform Operator of any irregularities or deficiencies discovered during any such inspection."

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On page 2, Paragraph 3, line 6. The amount $5.8125 shall be substituted for the amount of $4.25 stated therein.

On page 4, Paragraph 6, line 3. The word "similar" shall be deleted and after the word "cause" shall be added "beyond the control of Operator".

On page 5, Paragraph 8, line 2. The following shall be substituted for Paragraph 8 in its entirety. " Customer's representative shall have access to the truck and rail car loading rack, tanks and warehouse covered by this agreement, as a matter of course, but all other areas of Operator's terminal facilities shall be closed to Customer's representatives except when accompanied by a representative of Operator. While on Operator's terminal premises, Customer's representative shall comply at all times with any rules established from time to time by Operator in connection with the operation of the terminal."

On page 5, Paragraph 9, (a) wherever the amount of $2.71 is stated the amount of $3.875 shall be substituted therefor.

On page 8, Paragraph 13 (a), the following shall be substituted therefor:

"Performance of any obligation under this Agreement may be suspended by either party, in whole or in part, without liability, in the event of act of God, war, riot, fire, explosion, flood, drought, sabotage, inability to obtain fuel or power, accident, national, state, or other governmental laws, regulations, rules or orders, or any other circumstance of like nature beyond the reasonable control of such party, or labor trouble, strike, walkout, or injunction, whether or not any such delays within the reasonable control of such party, which delays, prevents, restricts or limits the performance of this agreement or the consumption, sale, use or end use of the products or any product manufactured or processed therefrom or therewith. The affected party shall invoke this provision by promptly notifying the other party of the nature and estimated duration of the suspension. At Customer's option, the period specified for processing and/or delivery of the products hereunder shall be extended by the period of delay occasioned by any such suspension and processing or deliveries not performed or made during any suspension period shall be performed or made during such extention, or the period specified for processing and/or delivery shall not be extended and the total contract quantity hereunder shall be reduced by the processing or deliveries not performed or made during such suspension and, in either event, the contract shall otherwise remain uneffected."

The following provisions are incorporated therein:

Disposal of waste shall be for the Customer's account but subject to Customer's prior approval of expenditures for that purpose.

Customer shall reimburse Operator for fines or penalties imposed upon Operator by a court of law and paid in full by Operator, which fines are for pollution, expressly prohibited by statute, proved in said court to have been caused solely by the correct, non-negligent performance by Operator of written instructions given by Customer to Operator under and pursuant to this Agreement. Customer shall also re-imburse Operator for all attorneys fees and costs of suit incurred in the defense of any suit brought against Operator for pollution proved to have been caused solely by the correct, non-negligent performance by Operator of written instructions given by Customer to Operator under and pursuant to this Agreement.

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All other of the terms and provisions of said Agreement shall remain the same and in full force and effect.

Witness:

TIME OIL CO., Operator

By R. D. Abendroth
R. D. Abendroth, President

Witness:

WOOD TREATING CHEMICALS CO.

Paulus L. Wright

By Lowell C. Gutzler
Asst. Secretary

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BZTO104(e)038728

AGREEMENT

THIS AGREEMENT, made and entered into this 1st day of March, 1967, by and between TIDE OIL CO. (hereinafter referred to as "Operator"), a corporation incorporated and existing under the laws of the State of Washington, and WOOD TREATING CHEMICALS CO. (hereinafter referred to a "Customer"), a corporation organized and existing under the laws of the State of Missouri.

WITNESSETH:

For and in consideration of the mutual covenants and conditions contained herein, it is agreed as follows:

A. FACILITIES.

1. Operator shall provide and furnish to Customer during the term of this Agreement facilities, storage tanks, blending tanks, equipment, improvements and warehouse space as set forth in the Schedule attached hereto and as set forth in this Agreement (all hereinafter called "Facilities").

2. Operator shall retain possession of the Facilities and shall keep and maintain the same in good order and repair and clean and fit for the storage and handling of the Products. Customer shall have the right to inspect the Facilities and the Products stored therein at all times during the hereinafter defined Regular Hours, and during other reasonable times, but no such inspection shall relieve Operator of any of its obligations under this Agreement. Operator shall advise Customer in writing in advance of any changes or alterations in or to the Facilities (excluding, however, maintenance and repairs) which are used for the receipt, storage, blending, handling or redelivery of the Products.

B. SERVICES.

1. Operator shall provide and furnish to Customer during the term of this Agreement any and all labor and services necessary or reasonably incidental to receive, store, handle, blend and redeliver the Products at, to and from the Facilities in a safe, efficient, clean and prompt manner (all hereinafter called the "Services").

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2. Operator shall receive the Products from trucks and rail cars, store the same in the storage tanks, transfer such Products to the blending tanks as directed by Customer, and redeliver such Products into trucks and rail cars, as and when directed by Customer. Operator shall follow the procedures outlined in the booklet entitled "Monsanto Warehousing and Terminaling Unified Procedures" and all reasonable amendments thereof and additions thereto, applicable to the Products involved. A copy of such booklet is attached hereto as Exhibit A and made a part hereof. Operator shall keep complete and accurate records of the type and quantity of the Products received into, transferred out of, and remaining in said Facilities at all times and of all shipments of the Products made at Customer's request, and such records shall be open to inspection by Customer at all reasonable times. Operator shall make reports to Customer with respect to such receipts, shipments and inventories, at such times and in such manner as may be reasonably prescribed by Customer.

3. The Services shall be performed from 7:00 a.m. to 4:30 p.m., five days per week, Monday through Friday, except for the holidays hereinafter mentioned, herein called the "Regular Hours." The holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas. Upon the request of Customer, Operator shall perform such services beyond Regular Hours at an additional charge of $ 11.15 per man hour.

C. PAYMENTS. So long as Operator shall meet its obligations hereunder, Customer shall make payments to Operator during the term of this Agreement according to the Charges on the attached Schedule.

D. GENERAL.

1. Neither Operator, nor any person or party claiming by, through or under Operator, shall ever have or assert any right, title, claim, lien or interest in or to any of the Products.

2. In no event, anything in this Agreement to the contrary notwithstanding, does Operator intend to lease, sublease or assign to the Customer all or any part of the Facilities referred to herein, and neither this Agreement, nor any provision thereof, shall be so construed.

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3. Operator shall indemnify and hold harmless Customer from and against any and all liabilities, claims, actions, damages, losses, costs or expenses arising out of injury to or death of any person or damage to or loss or destruction of any property, caused by or connected with: (a) any negligence, or wrongful act or omission of Operator, its employees or agents in the receipt, storage, handling or redelivery of the Products, or any of them; (b) the performance or nonperformance of any of its obligations or operations under this Agreement; or (c) any default of Operator hereunder.

4. Operator shall obtain and maintain, at its expense, during the term of this Agreement, the following insurance in insurance companies satisfactory to Customer:

(a) Workmen's compensation insurance in an amount equal to the limit of liability and in the form prescribed by the laws of Oregon, for all Operator's employees engaged in any operations under this Agreement. In the event that any employees are not protected by a workmen's compensation statute, Operator shall provide employer's liability insurance in an amount not less than $100,000 for injury to or for death of any one employee, and subject to the same limitation for each employee, in an amount not less than $300,000 on account of any one accident.

(b) Public liability insurance sufficient to cover the obligations assumed by Operator pursuant to Section D.3 of this Agreement and claims for injury to or death of persons or damage to property arising from any activities or operations of Operator under this Agreement in amounts of:

(i) not less than $150,000 for injury to or death of any one person and not less than $500,000 in respect to any one accident; and

(ii) not less than $100,000 for damage to or destruction of property on account of each accident.

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Operator shall furnish Customer with certificates of insurance which certificates shall provide that the foregoing insurance coverage shall not be terminated or reduced without the insurance carrier first giving Customer ten (10) days' prior written notice thereof.

5. Operator shall be liable and responsible for any loss, destruction, spoilage, spillage, pollution, evaporation, shrinkage, line-loss, slingage, discoloration or contamination of, or damage to, any Products arising out of its receipt, storage, handling, blending, mixing or redelivery thereof, or of any of the Services performed or to be performed hereunder resulting from the negligence or wrongful act or omission of Operator, its employees, agents or representatives, or default of Operator under this Agreement.

6. In the event that the Facilities are partially or totally damaged or destroyed or become unfit by reason of fire, explosion, accident, casualty or any other similar cause, or if any of the Facilities are taken or condemned by eminent domain proceedings (all of the foregoing being hereinafter for convenience collectively called "Casualty") so that the same shall be rendered unsuitable or unavailable for the receipt, storage, handling and redelivery of any of the Products, Operator shall immediately notify Customer thereof. Not later than ten (10) days after the occurrence of such Casualty, Operator shall also notify Customer as to whether the Facilities will be restored to their former condition within a period of time not longer than six (6) months measured from the date of such Casualty. If such notice is not given, or if given and the Facilities are not restored by the end of said six (6) month period, Customer may terminate this Agreement at any time thereafter upon notice to Operator, and thereupon Customer shall be relieved of all duties and obligations hereunder.

7. (a) Losses of any Product for which Operator is responsible hereunder shall be determined monthly at the end of each month, commencing with the date of the first receipt of such Product by Operator hereunder, and also, at the time any abnormal loss occurs or is discovered. The extent of loss shall be computed by deducting the total withdrawals of such Product during the period for which the accounting

is made, plus the stock of such Product on hand at the end of such period, from the sum of the total receipts of such Product during such period plus the stock of such Product on hand at the beginning of such period.

(b) Operator shall not be liable for actual losses resulting from normal spillage and evaporation not in excess of the loss allowance hereinafter described. The term "loss allowance" shall mean actual losses resulting from normal spillage and evaporation not exceeding 3/4 of 1% per month of the aggregate of the receipts per month or 3/4 of 1% of the maximum amount of Products stored in any one month, whichever is greater, of any such Product as determined under Section D.9(b) of this Agreement.

8. While on Operator's terminal premises, Customer shall comply at all times with any and all rules established as of the date of this Agreement by Operator in connection with the operation of the terminal. A copy of such rules is attached hereto as Exhibit B to this Agreement. Such rules shall not hereafter be amended except by consent of Customer.

9. (a) If the average wage rate in effect at the terminal for all employees of Operator employed full or part time at the terminal as of the first day of any month shall exceed $2.71 per hour, then, with respect to such month, the handling and transfer charges set forth in the schedule(s) shall be increased by a percentage equal to 25 per cent (25%) of that percentage of $2.71 which the excess of the average wage rate of $2.71 constitutes. "Average wage rate" means the amount derived by dividing (a) the total of (i) the rates for the single-rate classifications of wage rates applicable to Operator's personnel and (ii) the mid-points of wage rates for all rate-range classifications applicable to Operator's personnel by (b) the

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number of classifications applicable to Operator's personnel.

(b) The quantity of Product received into or withdrawn from storage tanks shall be determined by Operator's representatives by checking and gauging said tanks at the time of receipt or withdrawal of said Product. Customer may assist, supervise, or participate in all aspects of such checking and gauging, but in the absence of such participation, gauges taken by Operator shall be conclusive, unless such gauges are proven to be in error. However, quantities delivered to rail tank cars or transport trucks may be determined by reference to mutually acceptable calibration charts of the rail car or truck tanks. The cost of such work done by Operator's representatives or licensed inspectors shall be borne by Customer. In the event of any disagreement as to quantities of Products received, it shall, upon written notice of either party to the other, be submitted to one arbitrator to be appointed by the American Arbitration Association for hearing and decision, in Portland, Oregon, which decision shall be rendered within thirty (30) days from the date the case is submitted, and shall be final and binding upon the parties hereto. The cost and expense of the arbitrator shall be borne equally between the parties hereto and the law of Missouri shall govern the arbitration and award.

(c) If requested by Customer, Operator will take samples from rail tank cars, automotive tank trucks and storage tanks and deliver such samples to Customer and the cost of containers for such samples paid by Operator and the freight charges for deliveries thereof to Customer shall be reimbursed to Operator by Customer each month. Samples shall be taken in accordance with the procedure specified by Customer.

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10. Without relieving Operator from any of its duties or obligations under this Agreement, for each day or portion thereof that:

(a) The Facilities are unsuitable for the receipt, storage, blending, handling or redelivery of any of the Products by reason of any Casualty or for any other similar or dissimilar reason, and/or

(b) Operator fails or refuses to provide and furnish the Services,

then, and in either event, the Charges set forth in the Schedule shall be suspended for such period or periods; furthermore, if Operator fails or refuses to redeliver any of the Products within five (5) days after Customer's request therefor, Customer shall have the right to enter upon the Facilities and remove such Products from the storage area.

11. Customer agrees to examine Operator's tanks, pipelines and equipment prior to Customer's acceptance and use of their Facilities hereunder and by such use agrees that said Facilities are acceptable for rendering of the Services referred to herein. Operator may substitute other suitable facilities in lieu of those which are designated hereunder provided Operator pays any costs incurred by Customer in regard to such substitution.

12. Customer shall use the Facilities furnished hereunder for the storage, blending and handling of only the Products and commodities specified in said Schedule; provided, however, that anything in this Agreement to the contrary notwithstanding, Customer shall not store and/or handle or cause to be stored and/or handled in any of these Facilities (a) any commodity other than those listed on such Schedule containing hydrogen sulphide or other corrosive materials, (b) any commodity other than those listed on such Schedule which would in any way be injurious to any of the Facilities, or (c) any commodity other than those listed on such Schedule which would render any of the Facilities unfit, after cleaning, for the proper storage and/or handling of water white oils. Customer shall be responsible for any damages resulting from the storage and/or handling in any of these Facilities of any commodity other than those listed in the Schedule which may not be stored and/or handled therein under the terms hereof.

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13. (a) Subject to the terms of Sections 6 and 10 hereof, neither party shall be liable to the other for, and each shall be excused from, any failure of or delay in performance under this Agreement, caused by any acts of God or the public enemy, war, floods, storms, earthquake, lightning, or other act of the elements, accidental fires, explosion, strikes, labor disturbances, riots, insurrection, civil commotion, governmental acts or regulations, accidents, failure or delay of transportation or delivery facilities or supplies, failure or delay of manufacturers or persons from whom such party is obtaining machinery, equipment, materials or supplies to delivery the same, or any other cause beyond the control and without the fault or neglect of such party, whether similar or not to the foregoing causes. For each day or portion thereof that either party shall fail or be unable to perform by reason of any of the foregoing events, the said Charges set forth in the Schedule shall be suspended for such period or periods. Each party shall, in the event it shall fail or be unable to perform by reason of any of the foregoing events, promptly notify the other party thereof. Upon cessation of any such event, performance shall be resumed promptly and the other party shall be notified immediately thereof.

(b) Should the County or City, in which Operator's Facilities are located, or any other government agency, local or federal, prohibit operation of any then existing Facilities used in performing this Agreement, or shall in any way deprive Operator of the right to use any such Facilities or any property in connection therewith, or shall require the construction of additional facilities to be used in performing this Agreement, this Agreement shall terminate at the option of Operator, unless Customer shall pay for the cost of replacing any such Facilities or property of

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which Operator was deprived, or for the cost of construction of such additional facilities, or for any other expenses necessary to meet the requirements of such government agency.

(c) The cost of any Armed Guard Services and/or other protective services or facilities required by Customer or by any government agency shall be for the account of Customer.

14. Operator shall bill Customer monthly in advance and Customer agrees to pay Operator within 10 days after presentation of invoice. All payments hereunder shall be made to Operator at its office at 12005 N. Burgard St., P. O. Box 03117, Portland, Oregon 97203, or at such other place as Operator may notify Customer in writing.

15. Customer agrees promptly upon expiration or termination of this Agreement, to remove all of its Products, either bulk or packaged, from Operator's premises. All such Products not removed within 60 days after the expiration or termination of this Agreement may be sold at auction by Operator and Operator shall return to Customer the proceeds of any such sale, less the amount owed Operator by Customer under the terms of this Agreement and Operator's reasonable expenses in selling said Products.

16. (a) The initial term of this Agreement shall commence as of March 1, 1967 and, if not earlier terminated as herein provided, shall end on February 29, 1972. Upon the expiration of the initial term of this Agreement, this Agreement shall be automatically renewed for a term of five years, and automatically renewed thereafter for successive terms of five years each; provided, however, that either party, at its option, shall have the right to terminate this Agreement at the end of its initial term or at the end of any renewal term by furnishing written notice to the other party at least one year prior to the designated termination date.

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16. (b) Provided that Customer may, at its option, terminate this Agreement at any time during the initial term of this Agreement by making a payment to Operator which is equal to Operator's total expenditures for storage, blending tanks, heating elements, warehouse improvements or improvements to any such Facilities which were expended by Operator for the purpose of furnishing storage or blending tanks and Facilities to Customer, less 20% of the total expenditures for each full year that this Agreement has been in full force and effect. The Operator represents that the amount expended covering the above is $_____.

(c) Should Operator fail or refuse to discharge any of its obligations under this Agreement, Customer may, at its option and in addition to any other remedies provided for herein, terminate this Agreement immediately upon giving notice to Operator.

17. Should Customer go into bankruptcy, voluntary or involuntary, or be placed in the hands of a receiver, State or Federal, then, and in any such event, the minimum monthly storage and handling charges for the whole unexpired term hereof together with all accrued charges, shall, at the option of Operator, become immediately due and payable. In any such event, Operator shall also have the right, at its option, to terminate this Agreement and, after giving 15 days' notice to Customer, Operator may sell all or any portion of such Products, at public or private sale, but Operator may not be purchaser at such sale or sales. Customer shall pay for and indemnify Operator against its reasonable expenses of such sale, including reasonable attorney's fees, incurred by Operator for the sale of Customer's Products as above provided, for storage, handling services or other amounts due and owing Operator. Any proceeds of such sale less any amounts due and owing from Customer to Operator under this Agreement and the reasonable expenses of such sale, shall be promptly remitted by Operator to Customer.

18. In the event Customer decides to reduce the quantity or eliminate the handling, blending or storage of any of the Products so that the Facilities are not used or required, Operator shall, at Customer's request, use all reasonable efforts, and otherwise cooperate with Customer, to find and make arrangements with another party or parties to utilize such unused or unrequired Facilities to the extent and as designated by Customer, Operator shall, however, have the right to establish reasonable fees and charges in connection with such arrangements. Customer shall be entitled to a credit against all fees (but not exceeding any amounts due from Customer) to the extent of payments made by such other party or parties pursuant to said arrangements.

19. Customer shall pay any and all taxes, charges and/or assessments on or with respect to the Products. Operator shall pay any and all taxes, charges and/or assessments on or with respect to the Facilities and/or Services.

20. Operator recognizes that Customer utilizes secret processes in its manufacturing and accordingly Operator agrees that it will not disclose or divulge, without the written consent of Customer the identities or quantities of Products which are received, blended, handled or redelivered by Operator hereunder or the names of customers to whom delivery of such Products or other products is scheduled or made.

21. Operator is not and shall not act or purport to act as an employee, agent or representative of Customer, but is and shall act as an independent contractor.

22. Operator shall obtain and maintain all legally required state and local licenses and permits required for construction, maintenance or operation of the Facilities and/or the Services or Operator's performance of this Agreement.

23. Operator agrees to assume liability for any demurrage on rail equipment or truck equipment, which occurs directly as a result of Operator's operations. Any demurrage accruing on rail equipment or truck equipment, through no fault of Operator shall be paid by Customer; provided, however, Operator shall, in good faith, furnish Customer with all evidence and information known to Operator with respect to the facts, circumstances and causes connected with rail or truck demurrage.

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24. Except for any transfer or assignment, in whole or in part by Customer to the Monsanto Company or to any subsidiary company in which Customer owns or controls at least a 50% interest or to an associated company in which the Monsanto Company owns or controls at least a 50% interest, neither party shall transfer or assign this Agreement, or any of its rights hereunder, in whole or in part, without the prior written consent of the other party, and any attempt to do so without such consent shall be void. Subject to the foregoing, this Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

25. Except as otherwise provided in this Agreement, any notice required or permitted to be given under this Agreement shall be in writing and shall be sufficiently given when delivered in person or when deposited in the United States mails (registered or certified), postage prepaid, addressed as follows:

If to Operator, addressed to:
Time Oil Co.
5150 Wilshire Boulevard
Los Angeles, California 90036

and a copy to:

12005 N. Burgard Street
P. O. Box 03117
Portland, Oregon 97203

If to Customer, addressed to:
Wood Treating Chemicals Co.
5137 Southwest Avenue
St. Louis, Mo. 63110
Attn: R. M. Morrise

or to such other address as may be specified from time to time in a written notice given by such party. Both parties agree to acknowledge in writing receipt of any notice delivered in person. Routine operating instructions, requests, directions and other similar routine communications shall not require a notice as above provided and may be given in such manner and to such persons as may be customary or practicable.

26. This Agreement constitutes the sole agreement between the parties pertaining to the Facilities and/or Services.

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27. The section and paragraph headings in this Agreement are inserted for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular sections or paragraphs to which they refer.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first hereinabove written.

TIME OIL CO.

ATTEST: [signature]

BY R D Chandler Pres

Asst. Secy

WOOD TREATING CHEMICALS CO.

ATTEST:

BY_____

_____

M E M O R A N D U M

TO: R. D. Abendroth - Seattle
N. P. Lesh (info)- Portland

DATE: January 22, 1981

FROM: Neil Gallagher - Portland

SUBJECT: Woodtreating Chemicals (Koppers Company)

Woodtreating has leased since 1967 the Southwest half of what was formerly the TBA Tire Warehouse. Time Oil leases the facility to them and bills them for Handling Charge. The facilities consist of Warehouse space, one 38,000 tank, three 20,000 gallon tanks, one 13,000 tank, one 7,000 gallon tank, one 1,400 gallon heating tank, one 5 HP Motor and 2-1/2 x 3" Gilbarco positive suction pump. In addition, Woodtreating purchased and we installed three 8,000 gallon tanks, one 6,000 gallon and one 3,000 gallon. The tanks are used for raw materials, such as three different solvents, and finished products for shipping. All the tanks are manifolded to a central location and hoses are used for transferring and moving all the products. The heating tank is equipped with four 480V - 115 15W x 12' heating coils. Woodtreating sends in by tank car and by truck, all the raw materials. All products going out go in either bulk truck and trailer or in 55 gallon drums. Formulas are furnished to Time Oil Company by Woodtreating from their main office in St. Louis, Missouri. The finished products are in two different categories. LST Type, that is the lighter product, and Concentrates that are heavier and are usually put in drums.

To mix the raw materials a formulated amount (see attached formula sheet) is charged to the heating tank. The heating coils can be turned on manually or by a timed control switch. Normally the timer is set to come on at 1:00 A.M. or 2:00 A.M. in the morning and the products are hot enough to mix at 7:00 A.M., and if needed the tank is charged again and the heat turned on manually. This way two batches can be made up in one eight hour day. To mix a 30" x 4' a 80 mesh screen is placed in the top opening of the heating tank and the hot material is rotated from the bottom of the heating tank and goes back down in thru the screen.

Wax that comes in 71b. slabs is broken up and melted down in the screen first. Then Penta that comes in 50 lb. bags is then poured into the screen and also dissolved. If the product is LST Type the heating tank is then pumped to one of the other tanks and more solvents are added and the product is then circulated in the tank from top to bottom for approximately four hours. Concentrates are either pumped into drums or pumped to a storage tank, for later shipment or drumming. It normally takes from one to two hours to add the wax and Penta, depending on consisting of the solvents and heat.

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Penta is a very hazardous material and must be handled with many safety precautions. Full face masks and respirators must be worn, gloves, boots and rain gear must also be worn. It takes approximately two minutes to fill a 55 gallon drum and two men usually handle this operation. After filling bungs must be tightened, labels and stencils applied, and drums moved from filling area. For 10 drums the elapsed time will be close to one hour for two men. When product goes by truck and trailer, one hour is usually allowed for 7,000 gallons. The wax and Penta come into the warehouse on pallets, therefore a forklift is also an additional piece of equipment along with a floor jack and barrel trucks.

The billing consists of $615.00 per month for Facility Rental, $.0124 per gallon for LST Type of product, $.03715 per gallon for Concentrates and $.619 per gallon for filling drums, (see attached copy of billing). The average billing for the period of July 1, 1980 to December 31, 1980 has been $1,514.57, a total of 82,243 net gallons of LST Type, 45,016 gallons of Concentrates and 41,910 gallons drummed for the same period; a charge also of $.75 per drum of additive that is brought in and shipped is charged. This has been very nil for the last six months. During this same period we have received 83,482 gallons of Solvents, 1,960 bags of Penta, 10,010 lbs of wax, and 720 empty drums. All this material has to be unloaded and stored, but there is no charge for receipts.

Woodtreating is given an inventory at the end of each month (see attached copy). Due to the many different raw materials and finished product, this takes constant supervision on my part.

One pint of each batch of product mixed is mailed to St. Louis. As of January 1, 1981, a new Handling Charge will be applied (see attached copy).

All employees complain of working in this warehouse. Even with masks on, Penta causes your nose and eyes to run. The solvents have a very obnoxious odor and some employees this causes nauseau, and stomach upset.

AMENDED SCHEDULE

TERMINAL:	TIME OIL CO., Portland, Oregon.
DATE OF AGREEMENT:	March 1, 1967 August 1, 1970 amended schedule.
INITIAL TERM OF AGREEMENT:	April 1, 1967 to March 31, 1972.
OPERATOR:	TIME OIL CO.
CUSTOMER:	WOOD TREATING CHEMICALS CO.
PRODUCTS TO BE STORED:	Raw materials in bulk, drums and bags for wood preservatives. Finished products in bulk and drums. Also, such other raw materials and finished products specified by the Customer and accepted by the Operator.
FACILITIES:	Operator will furnish Customer the following facilities: Storage tanks - one (1) tank with a shell capacity of approximately 38,000 gallons, three (3) tanks with a shell capacity of approximately 20,570 gallons each, one (1) tank with a shell capacity of approximately 13,000 gallons, one (1) blending tank of approximately 1,500 gallons equipped with six (6) electric heating elements, together with warehouse space for storing approximately 100,000 pounds of raw or finished materials on pallets in drums and bags.
SERVICES: Storage and Handling	Operator shall receive the raw materials from railroad tank cars or freight cars and/or trucks and shall deliver such products into storage tanks and/or warehouse. Operator shall deliver the finished products into storage, trucks and/or railroad cars. Operator shall mix or blend products at a temperature not to exceed 180 deg. F.
HANDLING AND TRANSFER CHARGES:	The only charges for the facilities and services herein are the following: $615.00 per month to be billed in advance on the first day of each month and paid by Customer within 10 days after receipt of invoice. One cent (0.01) per gallon for blending and shipping pentapetroleum or LST type solutions shipped in tank cars, tank trucks or drums that can be bulk or tank blended. These products are Customer's products known as:

CHARGES: cont.

1. Woodtox Preprime RTU
2. Woodtox 140 RTU
3. Preestreat
4. Woodtox 109 RTU
5. Woodtox 109 w/o Penta

Other products of similar type solutions can be added from time to time by Customer upon written acceptance by the Operator.

Three cents (0.03) per gallon for blending and shipping concentrate type solutions in tank cars, tank trucks or drums. These products are Customer's products known as:

1. Timbertox 40 Concentrate
2. WR 340 Concentrate
3. Woodtox Preprime Concentrate
4. Woodtox 140 Concentrate
5. Inhibitor L
6. Penta Wood Preservative Concentrate

Other concentrate type solutions can be added from time to time by Customer upon written acceptance by the Operator.

Five cents (0.05) per gallon for filling 55 gallon drums.

One cent (0.01) per gallon for blending contaminated products returned to storage and/or blending Woodtox 109 w/o Penta to include Penta.

Seventy-five (0.75) cents for each 55 gallon drum of additives shipped that have been in storage and are shipped without blending with other products.

Blending, shipping and drum filling charges are to be invoiced by Operator to the Customer on the first day of each month for the shipments made during the previous month and Customer agrees to pay charges within 10 days after receipt of invoice.

Overtime and extra labor and cost of armed guards as specified in Sections B.3, D.9 (a) and 13 (c) of the Agreement to which this Schedule is annexed and which it is a part.

It is agreed by the parties hereto that the Schedule attached to the Agreement dated the 1st day of March, 1967, shall be superseded and replaced in its entirety by this Amended Schedule effective August 1, 1970.

It is further agreed that said Agreement dated the 1st day of March, 1967 is further amended as follows:

On Page 1, Section A.FACILITIES, Paragraph 2, line 7 after the word Agreement shall be added "Customer shall, however, inform Operator of any irregularities or deficiencies discovered during any such inspection."

On page 2, Paragraph 3, line 6. The amount $5.8125 shall be substituted for the amount of $4.25 stated therein.

On page 4, Paragraph 6, line 3. The word "similar" shall be deleted and after the word "cause" shall be added "beyond the control of Operator".

On page 5, Paragraph 8, line 2. The following shall be substituted for Paragraph 8 in its entirety. " Customer's representative shall have access to the truck and rail car loading rack, tanks and warehouse covered by this agreement, as a matter of course, but all other areas of Operator's terminal facilities shall be closed to Customer's representatives except when accompanied by a representative of Operator. While on Operator's terminal premises, Customer's representative shall comply at all times with any rules established from time to time by Operator in connection with the operation of the terminal."

On page 5, Paragraph 9. (a) wherever the amount of $2.71 is stated the amount of $3.875 shall be substituted therefor.

On page 8, Paragraph 13 (a), the following shall be substituted therefor:

"Performance of any obligation under this Agreement may be suspended by either party, in whole or in part, without liability, in the event of act of God, war, riot, fire, explosion, flood, drought, sabotage, inability to obtain fuel or power, accident, national, state, or other governmental laws, regulations, rules or orders, or any other circumstance of like nature beyond the reasonable control of such party, or labor trouble, strike, walkout, or injunction, whether or not any such delays within the reasonable control of such party, which delays, prevents, restricts or limits the performance of this agreement or the consumption, sale, use or end use of the products or any product manufactured or processed therefrom or therewith. The affected party shall invoke this provision by promptly notifying the other party of the nature and estimated duration of the suspension. At Customer's option, the period specified for processing and/or delivery of the products hereunder shall be extended by the period of delay occasioned by any such suspension and processing or deliveries not performed or made during any suspension period shall be performed or made during such extention, or the period specified for processing and/or delivery shall not be extended and the total contract quantity hereunder shall be reduced by the processing or deliveries not performed or made during such suspension and, in either event, the contract shall otherwise remain unaffected."

The following provisions are incorporated therein:

Disposal of waste shall be for the Customer's account but subject to Customer's prior approval of expenditures for that purpose.

Customer shall reimburse Operator for fines or penalties imposed upon Operator by a court of law and paid in full by Operator, which fines are for pollution, expressly prohibited by statute, proved in said court to have been caused solely by the correct, non-negligent performance by Operator of written instructions given by Customer to Operator under and pursuant to this Agreement. Customer shall also re-imburse Operator for all attorneys fees and costs of suit incurred in the defense of any suit brought against Operator for pollution proved to have been caused solely by the correct, non-negligent performance by Operator of written instructions given by Customer to Operator under and pursuant to this Agreement.

All other of the terms and provisions of said Agreement shall remain the same and in full force and effect.

Witness:

TIME OIL CO., Operator

By R. D. Abendroth
R. D. Abendroth, President

Witness:

WOOD TREATING CHEMICALS CO.

By Lowell C. Gutzler
Asst. Secretary

000751

TOLS001926

BZTO104(e)038747

10/5/83

From the desk of

DONALD F. MARION

TO: J. D. PALMER
B. BALDWIN

Attached for your review is a copy of T F McGuire's memo of 10/4/83 and Mr. Steve Tomko's memo of 9/30/83. Please review these memos and let's discuss in light of your trip to the West Coast.

Thanks,
Don
Marion

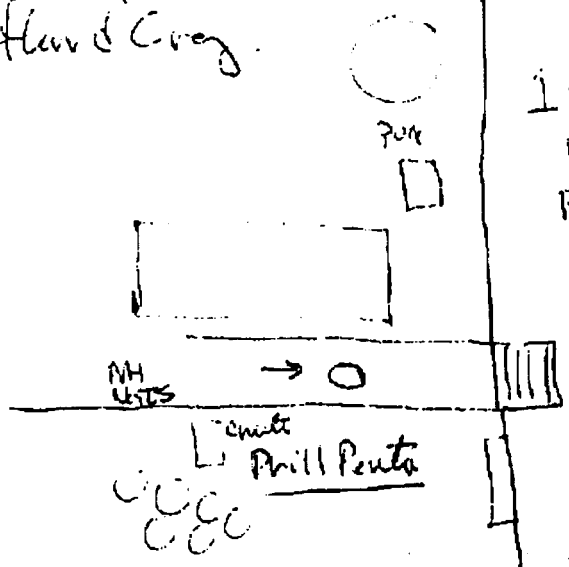
K-311

000350

TOLS001927

BZTO104(e)038748

Mr Neil Wallis Dec 7, 1983
Time Oil
Portland Oreg.



1 - Pump does all work
1967 -- Start
Bulk & Drums.

Env. John Denham
Time Oil -
206-285-2400
Bill Baldwin working with
John Denham

37" rain year
No water treatment for facility
No drain in area.

No industrial sewer
Sanitary Sewer
Small API for spills
Sandy Soil

Site is inspected on about
a 2 year cycle by Org Ag Dept
Only one sample taken by
an OSHA type inspection or
small fine in EYEWASH

No EPA protection reports by this
facility. Sm

TOLS001928

BZTO104(e)038749

Get Label
M. Baldwin

KOPPERS

Interoffice Correspondence

JUN 14 1

To J. D. Palmer

Location St. Louis

Subject Time Oil Company Meeting - 6/9/83

From D. F. Marion

Location Pittsburgh

Date June 14, 1983

On Thursday, June 9, I met with Donald L. Schwendiman and Neil Wallis of Time Oil in Seattle to discuss the new agreement covering Woodtox concentrate dilution to Woodtox ready-to-use. The fundamental language of the contract was finalized and will be reviewed by Robert Abendroth before sending the Agreement to me for execution. However, the minimum storage fee and the $0.05 per gallon handling fee are being reviewed. I have proposed a $500 per month minimum storage fee versus their original $700 proposal. Robert Abendroth must formally approve the number. In addition, due to the melting of parafin wax and adding it, along with the mineral spirits, to the Woodtox concentrate per George Mill's memo of 5/19/83, which was reviewed with Neil and Don, Neil indicated he would have to review his $0.05 per gallon price. He will contact George Mills direct regarding the mixing procedures referenced in George's memo and then discuss the situation with Neil Gallagher and advise me regarding the necessity to revise his number. It appears that these remaining economic items, along with the minor wording items, will be resolved in the next week or so. We should then be receiving the final agreement executed by Time Oil for our execution on behalf of Koppers.

I'll continue to closely monitor the situation until I have the Agreement in hand and we're ready to move the first railcar of Woodtox Concentrate to the West Coast. When we ship the first car to Portland, I would recommend that George Mills go out and work closely with Neil Gallagher on the procedures for dilution. George can also set up procedures to work off inventories of other items. Our objective should be to clear up all items that are not moving through Time Oil any longer.

KOPPERS

Interoffice Correspondence

To _____ From _____

Location _____ Location _____

Subject Time Oil Meeting Date June 14, 1983

If you have any questions regarding the above information or you would like to discuss the situation at Time Oil further, please call.

Donald F. Marion

DFM/dkm

cc: P. A. Goydan
G. B. Mills
W. J. Baldwin

TOLS001930

BZTO104(e)038751

KOPPERS

Interoffice Correspondence

To P. A. Goydan
M. S. Marino
Location G. Mills

From W. J. Baldwin
Location K-927

Subject TIME OIL COMPANY

Date June 1, 1983

As most of you are aware, in the near future we will be shipping a concentrated Woodtox® solution from St. Louis to Time Oil for further dilution and sale as Woodtox Preprime RTU. The concentrated solution of Woodtox is not currently registered with U.S. EPA; however, we are exempt from registration requirement in accordance with 40 CFR, Section 162.5(b)(1). The regulations do require, however, that a label accompany each shipment. As such, I am attaching a draft label prepared by G. Mills and myself for your review and comment.

Bill B.

William J. Baldwin

WJB/pc

Enclosure

cc: J. D. Palmer - Enclosure
D. F. Marion - "
J. J. Kozak - "

To Bill Baldwin
Bill - Please see my note
cc Palmer

K-5 REV. 2

K-311

000385

TOLS001931

BZTO104(e)038752

KOPPERS

PRE-PRIME 1-7 CONCENTRATE

For Manufacturing Purposes Only

WARNING! KEEP OUT OF REACH OF CHILDREN.
See side panel for first aid and additional precautionary statements

READ "LIMIT OF WARRANTY AND LIABILITY" BEFORE BUYING OR USING. IF SUCH TERMS ARE NOT ACCEPTABLE, RETURN AT ONCE UNOPENED.

ACTIVE INGREDIENTS	27.95
[illegible]	3.25
[illegible]	[illegible]
INERT INGREDIENTS	68.80

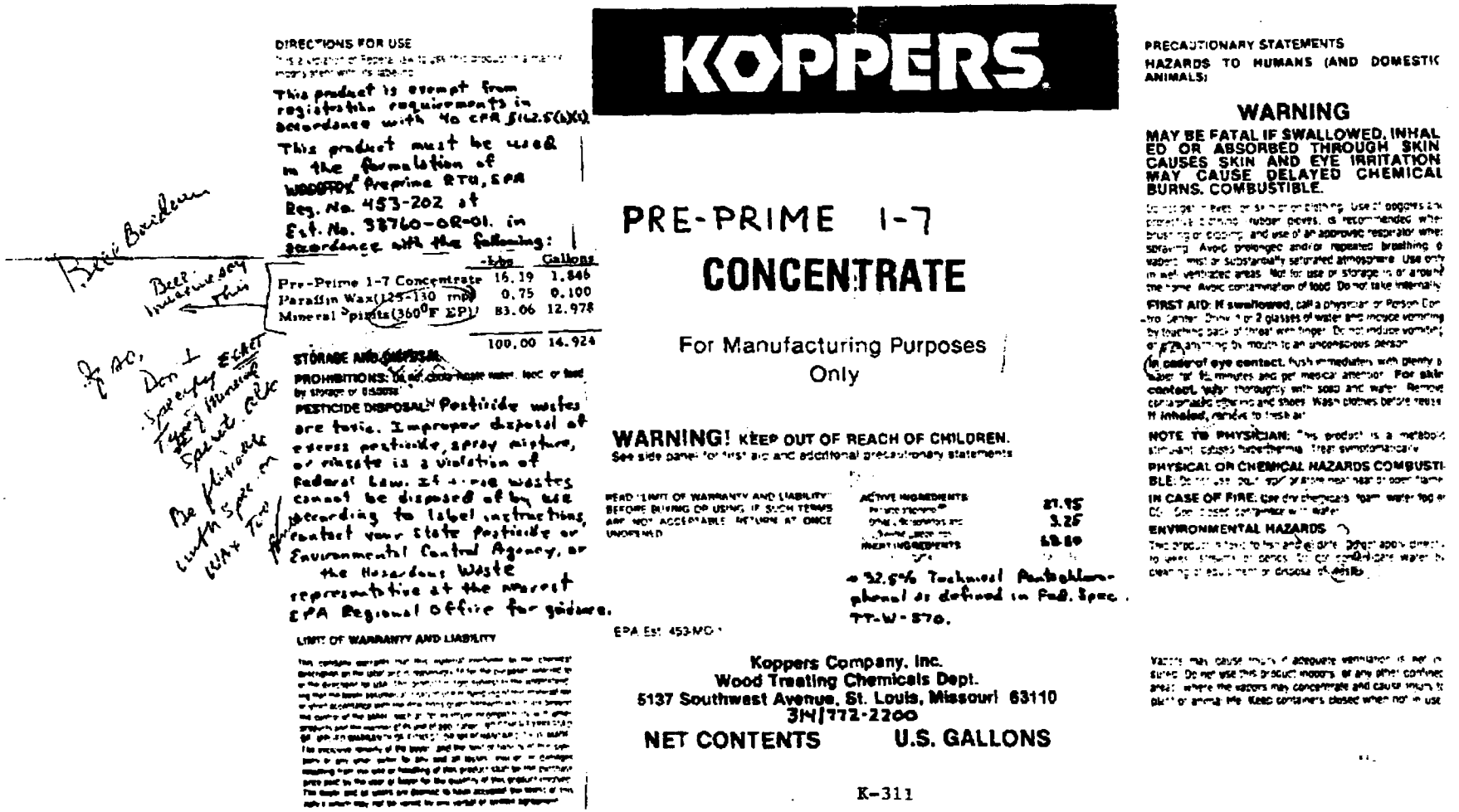
→ 32.5% Technical Pentachlorophenol as defined in Fed. Spec. TT-W-570.

EPA Est. 453-MO-1

Koppers Company, Inc.
Wood Treating Chemicals Dept.
5137 Southwest Avenue, St. Louis, Missouri 63110
314/772-2200

NET CONTENTS **U.S. GALLONS**

K-311



DIRECTIONS FOR USE

This product is exempt from registration requirements in accordance with 40 CFR §162.5(b)(1).

This product must be used in the formulation of WOODTOX Preprime RTU, EPA Reg. No. 453-202 at Est. No. 33760-OR-01, in accordance with the following:

	Lbs	Gallons
Pre-Prime 1-7 Concentrate	16.19	1.846
Paraffin Wax (125-130 mp)	0.75	0.100
Mineral Spirits (360°F EP)	83.06	12.978
	100.00	14.924

Beer Bordeaux

Beer Insecure say this

If AC, Don't specify EXACT Type of Mineral Spirit. Also Be flexible with Spec on WAX Too

STORAGE AND DISPOSAL

PROHIBITIONS: Do not contaminate water, food or feed by storage or disposal.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

LIMIT OF WARRANTY AND LIABILITY

[illegible]

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)

WARNING

MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES SKIN AND EYE IRRITATION. MAY CAUSE DELAYED CHEMICAL BURNS. COMBUSTIBLE.

Do not get in eyes or skin or on clothing. Use of goggles and protective clothing, rubber gloves, is recommended when brushing or dipping, and use of an approved respirator when spraying. Avoid prolonged and/or repeated breathing of vapors, mist or substantially saturated atmosphere. Use only in well ventilated areas. Not for use or storage in or around the home. Avoid contamination of food. Do not take internally.

FIRST AID: If swallowed, call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

In case of eye contact, flush immediately with plenty of water for 15 minutes and get medical attention. **For skin contact,** wash thoroughly with soap and water. Remove contaminated clothing and shoes. Wash clothes before reuse. **If inhaled,** remove to fresh air.

NOTE TO PHYSICIAN: This product is a metabolic stimulant, causes hyperthermia. Treat symptomatically.

PHYSICAL OR CHEMICAL HAZARDS COMBUSTIBLE: Do not use, pour, spill or store near heat or open flame.

IN CASE OF FIRE: Use dry chemicals, foam, water fog or CO2. Spill closed containers with water.

ENVIRONMENTAL HAZARDS

This product is toxic to fish and wildlife. Do not apply directly to lakes, streams or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

Vapors may cause injury if adequate ventilation is not insured. Do not use this product indoors or any other confined areas where the vapors may concentrate and cause injury to plant or animal life. Keep containers closed when not in use.

000386

TOLS001932

BZTO104(e)038753

KOPPERS

Interoffice Correspondence

To John D. Palmer

Location St. Louis

Subject Time Oil

From K. E. Cegan

Location Pittsburgh

Date January 25, 1983

On January 19, Neil Wallace called and indicated that Time Oil was just getting into the RCRA program and tank Nos. 20001 and 13001 have sludge present. I have arranged for Neil Wallace to have samples taken and forwarded to St. Louis to determine if these materials can be reworked. If they can, we should institute a program to recover and reuse these solids. If they cannot be recovered, then it will be necessary to have Neil determine cleanout and disposal costs. Tank 20001 has 795 gallons and tank 13001 has 145 gallons. You indicated that this material is not in our inventory so that our cleaning costs will only include placing the material in drums and its subsequent disposal if necessary.

As soon as these samples come in, please arrange to have George Mills analyze them so that we can reach a decision early in the year on what to do with these two tanks.

K. E. Cegan

KECmtd

cc: P. A. Claydon

K43-REV. 5 100M 10-81

000398

TOLS001933

BZTO104(e)038754

KOPPERS

Interoffice Correspondence

Trace 3/1/83

To John D. Palmer

Location St. Louis

Subject Time Oil

From K. E. Cogan

Location Pittsburgh

Date January 25, 1983

On January 19, Neil Wallace called and indicated that Time Oil was just getting into the RCRA program and tank Nos. 20001 and 13001 have sludge present. I have arranged for Neil Wallace to have samples taken and forwarded to St. Louis to determine if these materials can be reworked. If they can, we should institute a program to recover and reuse those solids. If they cannot be recovered, then it will be necessary to have Neil determine cleanout and disposal costs. Tank 20001 has 795 gallons and tank 13001 has 145 gallons. You indicated that this material is not in our inventory so that our cleaning costs will only include placing the material in drums and its subsequent disposal if necessary.

As soon as those samples come in, please arrange to have George Mills analyze them so that we can reach a decision early in the year on what to do with these two tanks.

K. E. Cogan

KECcmtd

cc: P. A. Goydan

TOLS001934

BZTO104(e)038755

FILE TIME OIL

KOPPERS

Interoffice Correspondence

To John D. Palmer

Location WTC - St. Louis

Subject Time Oil Company

From Paul A. Goydan

Location SWCH - Pittsburgh

Date 2/15/83

Regarding Time Oil's desire to clean out Tank 20001 and Tank 13001 that apparently have some settled sludge in them, I would like to advise that settled material in a tank that is being continuously used for operations is not considered hazardous waste. The only time something is considered hazardous waste is if the material is physically removed from an operating or working tank and put into separate containers purely for the purpose of holding or storing waste. If Neil Wallace of Time is concerned about having hazardous waste in a tank that is under operational or working control, he is in error and you should advise Neil.

The question I have is whether these tanks really need to be cleaned now or whether we can wait and continue to produce adequate and good product. Another question I have is whether we can try to redissolve some of the so-called sludge or solids on the bottom and recover some of this material.

I would appreciate your discussing with me what you think we can do to minimize our costs and expenses. I have a feeling that this is not as "sludgy" or as unusable as perhaps Neil Wallace believes. I would also be interested in knowing what George Mills' analysis has shown and your further thoughts on the matter.

Paul A. Goydan

PAG:klc

cc: ~~LK~~ R. Cogan
G. B. Mills

TOLS001935

BZTO104(e)038756

4900 9TH AVENUE N.W., • SEATTLE, WASHINGTON 98107-3697 • 206/783-4700

ANALYSIS REPORT

CLIENT: Time Oil Company

DATE REPORTED: 4/18/83

REPORT TO: Neil Wallis
P.O. Box 03117
St. Johns Station
Portland, OR 97203

P.O.# 24870

Laboratory Sample No.	57057
Client Identification	Soil 2/28/83

SUBJECT: Static acute fish bioassay testing on juvenile rainbow trout Salmo gairdneri.

PROCEDURE: Sample was tested at both the 100 and 1000ppm levels. The procedure followed is outlined in the State of Washington's General Procedure for Static Acute Fish Bioassay Testing.

The test was begun using method two in which the test organisms were placed into the chambers within 30 minutes of adding the toxicant to the water. Daily logs of temperature, dissolved oxygen and mortalities were maintained.

RESULTS: Thirty (30/30) of the fish tested at the 1000 ppm level died within the first five hours of the four day test period.

Thirty (30/30) of the fish tested at the 100ppm level died within 24 hours of the four day period.

None (0/60) of the control fish died during the four day test period.

CONCLUSION: The soil sample submitted by the Time Oil Company was found to be toxic to juvenile rainbow trout at both the 100 and 1000 ppm hazardous waste material (E.H.W.) under Washington State Guidelines.

Respectfully Submitted,

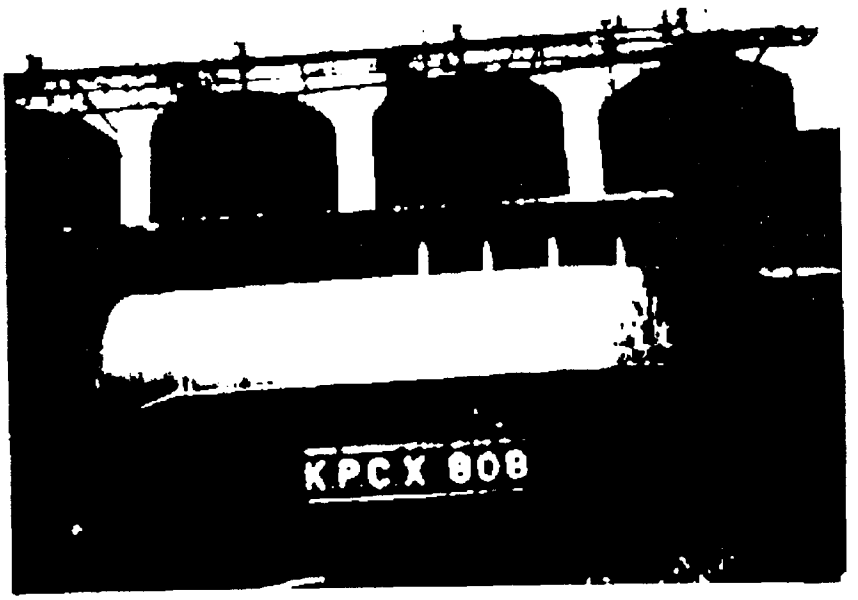
Mark A. Fugiel
Director of Industrial Chemistry

K-311

000402

TOLS001936

BZTO104(e)038757



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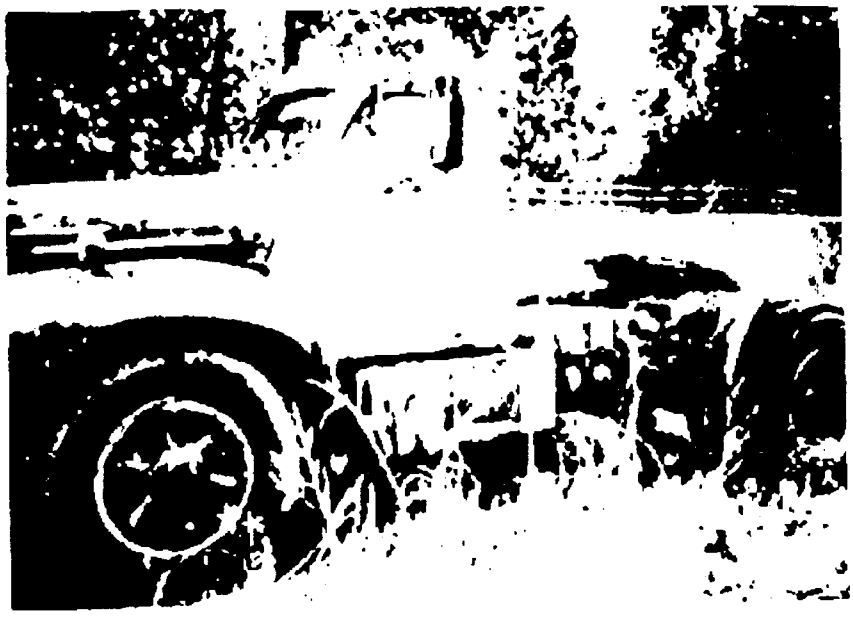

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TOLS001942

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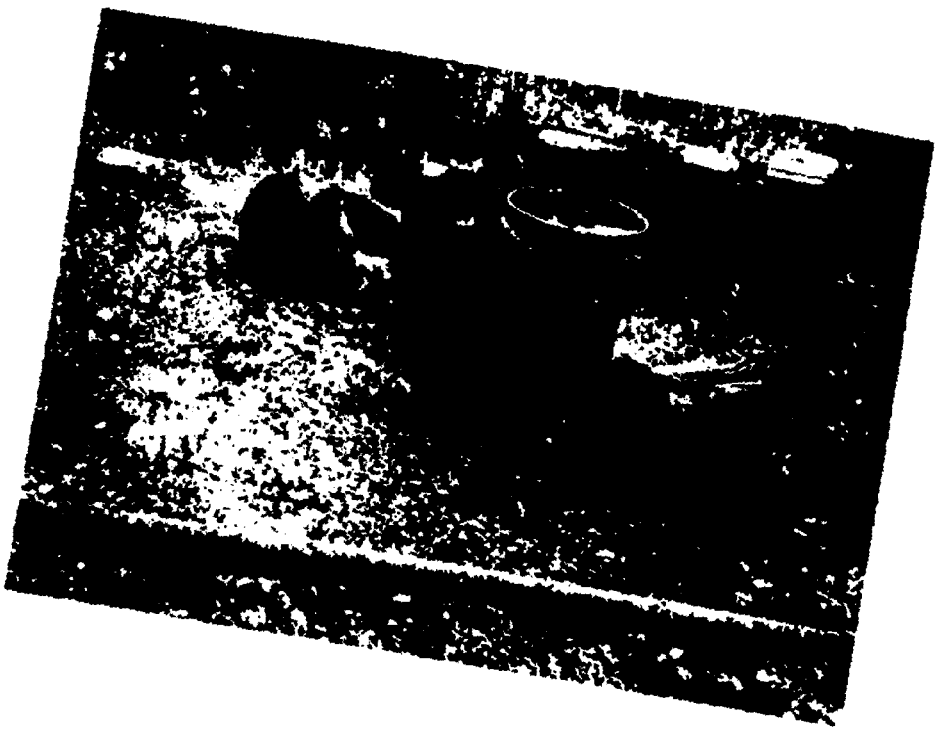

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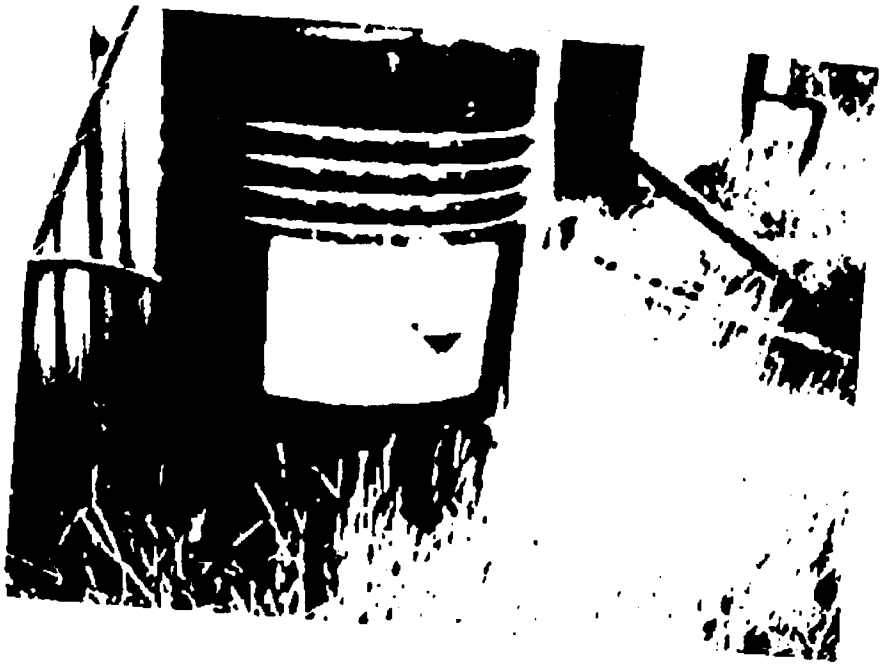

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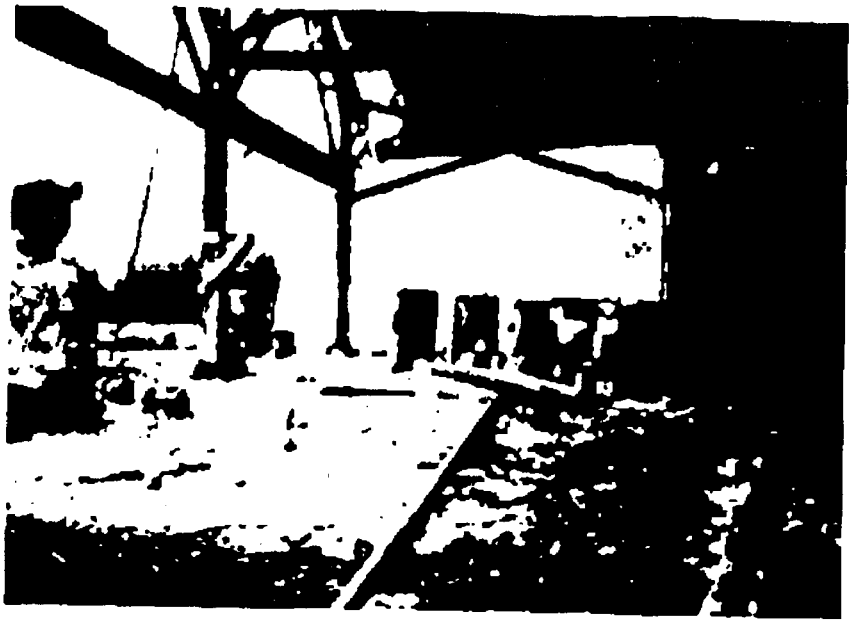

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TOLS001951

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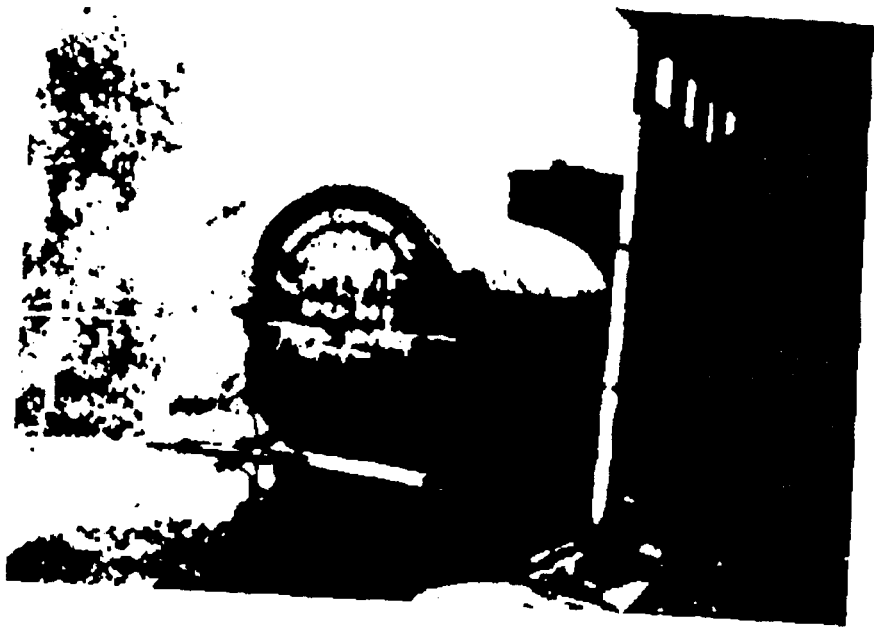

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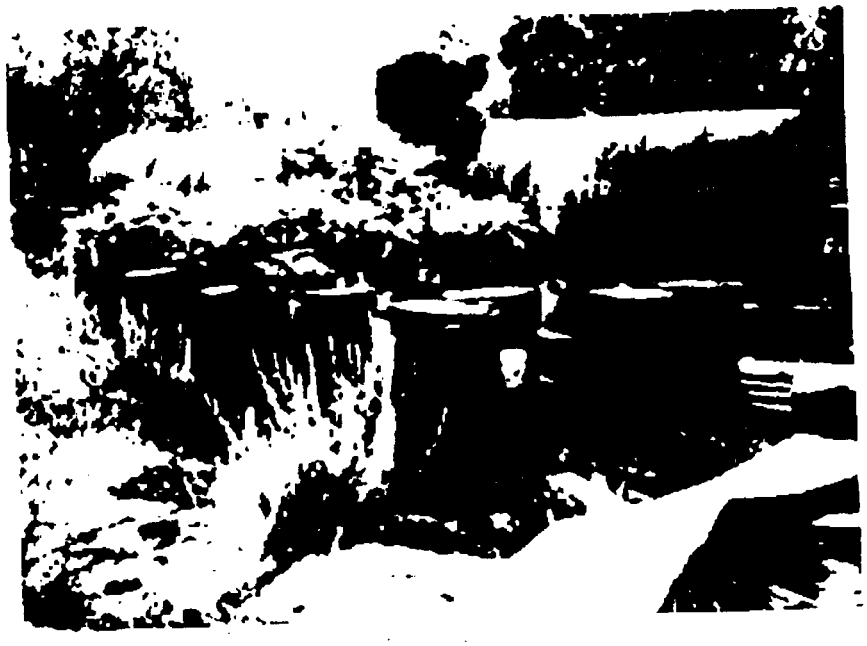
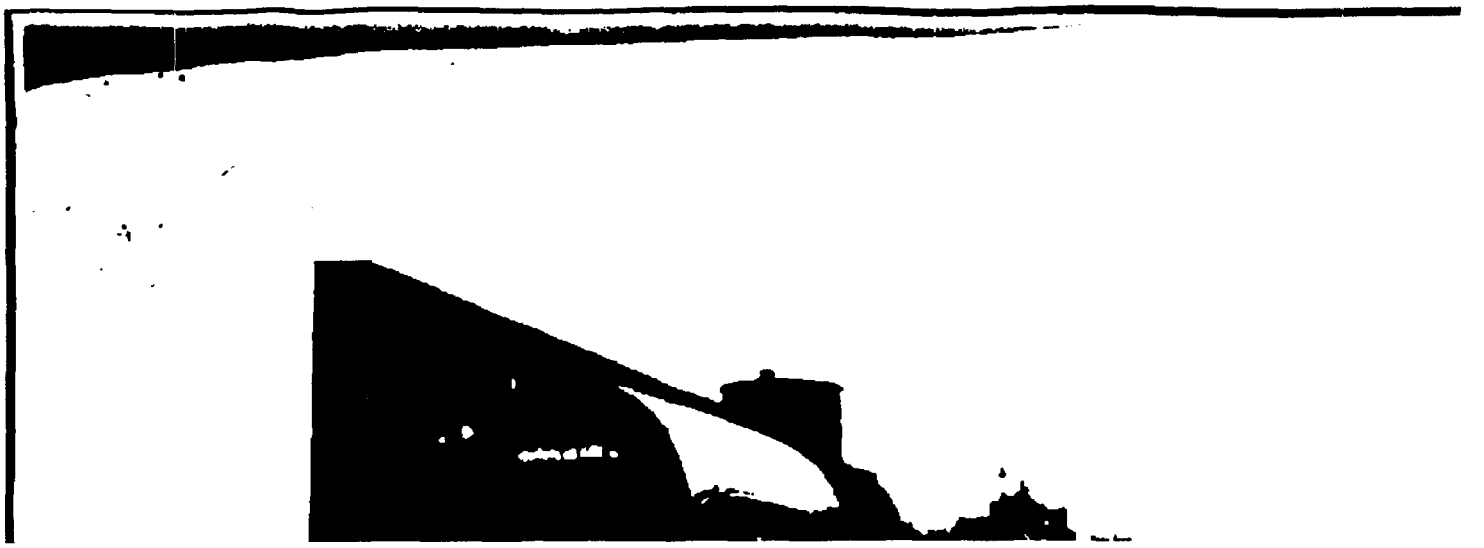
TOLS001953

BZTO104(e)038774

TOLS001954

BZTO104(e)038775





TOLS001956

BZTO104(e)038777

PHONE 285-2400
CABLE ADDRESS: TIMOIL

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
SAN PEDRO
LOS ANGELES

TIME OIL COMPANY

2737 WEST COMMODORE WAY
P.O. BOX 24447, TERMINAL STATION

SEATTLE, WASHINGTON 98199 1233
SEATTLE, WASHINGTON 98124-0447

August 8, 1986

Koppers Company, Inc.
Attn: Donald F. Marion
Koppers Building Room 750
Pittsburgh, PA 15219

Dear Don:

Per our telecon today, copy of amendment 2 to agreement with Riedel is attached.

Since EPA advised, in December 1985, that we could no longer remove contaminated dirt from the premises, we set aside the soil investigation and concentrated on learning if there was any ground water contamination and, if so, plume extent. We installed wells, developed them, had them sampled and analyzed. Results are favorable in that only .0022 ppm was found in one spot by corner of building. Map showing well locations is attached. We also determined water flow direction and checked water elevations several times.

Now we are attempting to somehow effect clean up of soil on site. Several areas are being investigated but we do not yet, in my opinion, have any really good solution. About the middle of next month, we should be in a more knowledgeable position regarding remedial actions. Still have more sampling to do under building if possible, more water measurements to be taken and more data to develop regarding available clean up processes. Will try to gather up everything by October 1 and send it along to you for your use.

Sincerely,

John P. Denham

John P. Denham
Environmental Manager

Enclosures a/s

JPD/ch

TOLS001957

BZTO104(e)038778

AMENDMENT 2
TIME OIL CO. - RIEDEL ENVIRONMENTAL SERVICES, INC.
SAMPLING AND ANALYSIS AGREEMENT
DATED JUNE 28, 1985

The work scope is amended to include the following:

1. Sandblasting and demolition of the impoundment wall (designated A in Figure 1). The cost of this procedure is estimated to be $5,568.01.

2. Drilling, sampling and installation of 3 monitoring walls angeled 45 degrees beneath the existing warehouse (listed as Wells 1, 2 & 3 in Figure 1). Also, the installation of a 40 foot vertical monitoring well, including sampling at 5 foot intervals, directly in front of the angled wells (listed as Well 4 in Figure 1). Analytical results for 12 PCP samples are included in the estimated cost of $12,667.07.

3. Drilling, sampling and installation of an additional 5, 20-foot monitoring wells (listed in Figure 1 as Wells 5, 6, 7, 8 & 9). Soil samples will be taken at 5 foot intervals and 5 analyses for PCP are included in the estimated cost of $6,595.50.

DATED this 5th day of November, 1985.

TIME OIL CO.

John Denham
Environmental Manager

RIEDEL ENVIRONMENTAL SERVICES, INC.

F.J. Bradach
President

RS:bw

000219

TOLS001958

BZTO104(e)038779

TIME OIL COMPANY
PORTLAND, OREGON

PENTACHLOROPHENOL SAMPLING & ANALYSIS

Prepared by
RIEDEL ENVIRONMENTAL SERVICES
P.O. Box 5007
Portland, Oregon 97208

October, 1985

K-354

TOLS001959

BZTO104(e)038780

Introduction

Between 1967 and 197_ Time Oil Company operated a pentachlorophenol (PCP) facility at its North Portland, Oregon, terminal. This facility consisted of blending and storage operations used to prepare commercial pentachlorophenol solutions. The facility consisted of various storage and mixing tanks, a warehouse, a bermed, unpaved containment area, various pumps and a truck loading area.

The facility geography is essentially flat and is located less than 1/4 mile from the Willamette River. The soil is principally fine to medium sand with some silt. Ground water is reportedly found from 10 to 20 feet below the surface in this area. During June of 1985, a portion of visibly contaminated soil in the containment area was excavated and disposed of as a hazardous waste. This excavation left a depression in the northwest corner of the containment area sloping gradually to approximately four feet below the adjacent grade. Surface soil was disturbed during this process and, as such, surface sampling was not expected to be representative of conditions existing prior to excavation.

During the years of operation, several intermittent PCP discharges were known to occur, especially during mixing and transfer operations. These discharges resulted in soil contamination in and around the containment area. Initial site visits in April 1985 indicated visible PCP contamination of soils in this vicinity. A sampling plan for surface and subsurface soils extending through the vadose zone was designed and initiated in July 1985.

This sampling and analytical protocol was designed to estimate the spatial limits of PCP contaminant migration in the vadose zone of the soil in and immediately adjacent to the PCP containment area facility. As such, a systematical gridding array was used in lieu of random or other types of probability sampling. No attempt was made to sample underneath structures or paved areas. The protocol was not intended to determine the average concentration of PCP in soil at the facility since the area sampled was not expected to be homogeneous nor to represent a specific population of PCP concentrations. Therefore, statistical evaluations such as mean and standard deviation, have only academic significance in respect to these data.

However, since the origin points in the regular sampling arrays were randomly selected (i.e., a systematic random sampling procedure), there is no reason why some or all of this data could not be used for this purpose at a future time.

TOLS001960

BZTO104(e)038781

Sampling

All sampling was performed in accordance with EPA publication SW846, "Test Methods for Evaluating Solid Waste". Surface soil sampling was achieved using a small trier and/or sampling scoop. Subsurface samples were obtained using a 6" continuous flight hollow stemmed auger fitted with a 2" split-spoon sampler. All sampling equipment was decontaminated between samples with a trisodium phosphate wash, water rinse, hexane wash and a triple rinse with distilled, deionized water. Auger flights were decontaminated by high pressure steam cleaning between bore holes.

Samples were obtained from two areas. Area 1 consisted of a peripheral surface margin surrounding the containment areas on all of the available sides (see Figure 1). Area 2 consisted of the area inside the containment wall. All samples from each site were placed in new 16-ounce wide-mouthed glass jars previously washed with laboratory cleaner, water rinsed, hexane washed, air dried and rinsed three times with distilled, deionized water, then fitted with teflon-lined caps under clean conditions. Samples were labelled with client identification, sample number, date, time, sampler's name, sample location, and other pertinent information. Containers were sealed and placed in portable, refrigerated ice chests for transportation to the laboratory. Samples were delivered to the laboratory by RES courier within 48 hours after collection. Chain of custody forms accompanied all samples from original field sampling to final analysis and are included in this report (Appendix A). A field log of each sample was generated on site during sampling and retained for future reference.

Preliminary surface sampling in Area 1 was performed by preparation of a composite sample obtained from sub-areas A, D and F by pooling grab samples taken with triers or spoons at 10-foot intervals, five feet away from the containment area.

Secondary surface sampling was conducted in Area 1 by obtaining individual grab samples using triers or spoons. The sample sites are numbered 1-81 and are indicated on Figure 1. Secondary samples were obtained in response to the detection of significant concentrations of PCP in preliminary composite samples from sub-areas A and D, above, and were used solely to estimate the limits of contamination beyond the containment area. As stated earlier, no attempt was made in this sampling and analytical protocol to determine average (mean) values of PCP contamination.

TOLS001961

BZTO104(e)038782

Sampling in Area 1, peripheral samples, was performed to ascertain the surface margins of the contaminated area. It was arbitrarily assumed that the area within the containment walls was contaminated with PCP and the peripheral margins of this area established as consisting of the warehouse south wall, the east and west concrete walls and the southern edge of a pipeline transecting the containment area as indicated in Figure 1. Three concentric, 10-foot-wide marginal strips were staked out surrounding this boundary and are indicated by broken lines in Figure 1. These areas did not include areas inside the warehouse or below the asphalt paved railway siding located, respectively, on the north and northeast sides of the containment area. The 10 foot marginal strips were subdivided into areas A, B and C to the west, D, E and F to the south, and G, H, and I to the east (see Figure 1).

Sampling of Area 2, the containment area proper, was performed to evaluate PCP concentrations at the surface and at depth in subsoils to the saturated zone. Grab samples were obtained from a 2-foot x 2-inch split spoon sampler pressed through a 6-inch hollow-stem augered bore hole, and were placed in 16-ounce sample containers as previously described. Decontamination procedures, chain of custody, labelling and logging were identical to Area 1 samples. Auger flights were decontaminated at the completion of each coring to prevent cross contamination. Samples were taken at a mximum depth of 0, 2, 4, 7 and 12 feet below the surface elevation of the unexcavated portion of the containment area. Sampling at 17 feet, as originally planned, was not undertaken due to the detection of groundwater at approximately 12 feet.

Due to the sloping contour of the containment area caused by the excavation, the surface elevation below grade was measured from a string line pulled tightly between two unexcavated surface points and spanning the sampling point. Elevation of sampling site surfaces below this grade line was measured using a rigid ruler and is shown in Table I. Data from this table was used to calculate the actual auger depth below the surface required to obtain the split spoon samples to align all samples in the same respective horizontal plane. This data is listed in Table II and indicates the actual depth drilled below the surface required to obtain a sample at the nominal depth listed (0, 2, 4, 7, 12 or 17 feet). In cases where it was deemed practical, soil was hand excavated to the depth corresponding to the first sampling depth indicated and the sample obtained manually with a small trier or spoon.

The horizontal array of borings was selected to minimize the maximum distance from any given point in the sampling area to the nearest boring. To do this most effectively, a triangular grid was staked off. The array was based on a

triangle with an east-west base of 25 feet and a north-south height of 18 feet. The maximum distance from any point on the grid to the nearest sample point in this case is 13.34 feet as opposed to 14.14 feet for a standard 20-foot x 20-foot rectangular array. This selection allowed for the placement of additional wells just outside the containment wall without increased cost, thereby improving coverage with fewer sampling points (reference: Parkhurst, D.F., Optimal Sampling Geometry for Hazardous Waste Sites; Environmental Science & Technology, 18 No. 7, p. 521 [1984]). The triangular grid is indicated on Figure 1. Bore holes are indicated by the symbol "B" and are labeled with alpha symbols J-Z. A table of samples so obtained is given in Table III.

Following sampling, borings were sealed with bentonite grout in accordance with state well sealing standards under the direction of a registered geologist. Decontamination water, collected into tubs, was analyzed and, following receipt of negative results for PCP, disposed of on site.

Results

Samples were analyzed by Coffee Laboratories, Portland, Oregon, using EPA SW-846 protocols. Soil samples were Sohxlet extracted using EPA protocol #3540. Procedure #8040 was utilized with electron capture quantification for PCP analysis. Results are expressed in milligrams of PCP per kilogram soil (ppm, dry weight). At sites where results could be expected to approach zero (based on results from adjacent sites), samples were held but not analyzed. The results are listed in Table IVA-E. Preliminary composite results are shown in Table IVF and confirm PCP contamination beyond the containment wall.

These tables list PCP concentrations at each sample site as well as the X and Y coordinates used to locate these sites on the plan drawing (Figure 1). These coordinates are tied to an arbitrary grid as shown on Figure 1. The northwest corner of the containment wall is located at coordinates X=76, Y=166 (76,166), for sake of reference. Each sampling depth is listed on a separate table. Copies of the laboratory reports are listed in Appendix B.

The coordinate data and concentration results were plotted using an interpolating contouring program (In-Situ Corp., Laramie WY). This package performs smoothed contouring of the data using a triangularization method and bivariate interpolation. Contours were generated from surface samples (regardless of elevation below grade) and 2-, 4-, 7- and 12-foot depths below grade. The contours are plotted on Figures IIA-E. These contour diagrams have been reduced and printed on mylar sheets in addition to the attached figures.

TOLS001963

BZTO104(e)038784

TABLE I

TIME OIL CO. - PORTLAND, OREGON

Depth of Boring Site Surface Sample Below Grade
(Horiz. String Line)

Boring	Depth
J	0
K	6"
L	3'
M	0
N	0
O	0
P	1'8"
Q	2'6"
R	0
S	0
T	2'
U	0
V	0
W	0
X	2'
Y	3'
Z	0

TOLS001964

BZTO104(e)038785

TABLE II

TIME OIL CO. - PORTLAND, OREGON

Actual Split-Spoon Sample Depths Below Grade

Boring	Nominal Depth 0	2	4	7	12	17
J	0	0-2'	2-4'	5-7'	10-12'	15-17'
K	NA	0-1 1/2	1 1/2-3 1/2	4 1/2-6 1/2	9 1/2-11 1/2	14 1/2-16 1/2
L	NA	NA	Surf (11")	2-4'	7-9'	12-14'
M	0	0-2'	2-4'	5-7'	10-12'	15-17'
N	0	0-2'	2-4'	5-7'	10-12'	15-17'
O	0	0-2'	2-4'	5-7'	10-12'	15-17'
P	NA	Surf (4")	0-2'	3-5'	8-10'	13-15'
Q	NA	NA	0-1 1/2	2 1/2-4 1/2	7 1/2-9 1/2	12 1/2-14 1/2
R	0	0-2'	2-4'	5-7'	10-12'	15-17'
S	0	0-2'	2-4'	5-7'	10-12'	15-17'
T	NA	Surf	0-2'	3-5'	8-10'	13-15'
U	0	0-2'	2-4'	5-7'	10-12'	15-17'
V	0	0-2'	2-4'	5-7'	10-12'	15-17'
W	0	0-2'	2-4'	5-7'	10-12'	15-17'
X	NA	Surf	0-2'	3-5'	8-10'	13-15'
Y	NA	NA	Surf (11")	2-4'	7- 9'	12-14'
Z	0	0-2'	2-4'	5-7'	10-12'	15-17'

NOTE:

Actual depths indicate depth of bottom of split-spoon.

NA = Not available

Surf = Surface sample obtained by hand excavation at depth indicated in parentheses

TOLS001965

BZTO104(e)038786

TABLE III

TIME OIL CO. - PORTLAND, OREGON

Nominal Split-Spoon Sample Depths

Boring	0 Surface	2 0-2'	4 2-4'	7 5-7'	12 10-12'	17 15-17'
J	X	X	X	X	X	ND
K	-	X	X	X	X	ND
L	-	-	X	X	X	ND
M	X	X	X	X	X	ND
N	X	X	X	X	X	ND
O	X	X	X	X	X	ND
P	-	X	X	X	X	ND
Q	-	-	X	X	X	ND
R	X	X	X	X	X	ND
S	X	X	X	X	X	ND
T	-	X	X	X	X	ND
U	X	X	X	X	X	ND
V	X	X	X	X	X	ND
W	X	X	X	X	X	ND
X	-	X	X	X	X	ND
Y	-	-	X	X	X	ND
Z	X	X	X	X	X	ND

NOTE: X = Sample
- = Not available due to excavation
ND = Not sampled due to presence of groundwater

TOLS001966

BZTO104(e)038787

TABLE IVA
TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Surface Contour Data

Sample #	Coordinates X	Coordinates Y	Concentration Mg/Kg
1	81	171	13500
2	71	171	29
3	71	161	500
4	71	151	5450
5	71	141	5560
6	71	131	8760
7	71	121	4870
8	71	111	92
9	71	101	20
10	81	181	16
11	71	181	7
12	61	181	9
13	61	171	95
14	61	161	175
15	61	151	18
16	61	141	229
17	61	131	88
18	61	121	6
19	61	111	3
20	61	101	2.5
21	61	91	5.2
37	81	95	857
38	91	96	1130
39	101	97	17
40	111	98	3.5
41	121	98	3.1
42	131	99	3.2
43	141	100	2.4
44	151	100	1.8
45	161	101	171
46	71	84	3
47	81	85	3.6
48	91	86	6.1
49	121	87	3.2
50	131	88	1.5
51	141	89	2.3
52	151	90	1.7
53	161	91	1.9
54	171	92	1.2

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	1400
K	117.5	161	N/A
L	92.5	161	N/A
M	67.5	161	4720
N	155	143	4280
O	130	143	3000
P	105	143	N/A
Q	80	143	N/A
R	142.5	125	1712
S	117.5	125	522
T	92.5	125	123
U	67.5	125	26550
V	155	107	317
W	130	107	3385
X	105	107	N/A
Y	80	107	N/A
Z	80	179	21

N/A = Not Available

TOLS001967

BZTO104(e)038788

TABLE IVB

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Two Foot Contour Data

Core #	Coordinates X	Y	Concentration Mg/Kg
J	142.5	161	3
K	117.5	161	8.8
L	92.5	161	N/A
M	67.5	161	87*
N	155	143	3.1
O	130	143	59
P	105	143	16
Q	80	143	N/A
R	142.5	125	34
S	117.5	125	252
T	92.5	125	123
U	67.5	125	44
V	155	107	260
W	130	107	15
X	105	107	4.5
Y	80	107	N/A
Z	80	179	14*

N/A = Not Available
* = Data points omitted from contouring program to reduce extrapolation error

TOLS001968

BZTO104(e)038789

TABLE IVC

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Four Foot Contour Data

Core #	Coordinates X	Y	Concentration Mg/Kg
J	142.5	161	3.6
K	117.5	161	10.5
L	92.5	161	7200
M	67.5	161	22
N	155	143	238
O	130	143	23
P	105	143	15
Q	80	143	2205
R	142.5	125	50
S	117.5	125	184
T	92.5	125	534
U	67.5	125	55
V	155	107	380
W	130	107	8.1
X	105	107	1.3
Y	80	107	598
Z	80	179	2

TOLS001969

BZTO104(e)038790

TABLE IVD

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

7 Foot Contour Data

CORE #	COORDINATES X	COORDINATES Y	CONCENTRATION mg/kg
J	142.5	161	(NA)
K	117.5	161	3
L	92.5	161	8400
M	67.5	161	1
N	155	143	(NA)
O	130	143	13
P	105	143	130
Q	80	143	700
R	142.5	125	500
S	117.5	125	1130
T	92.5	125	75
U	67.5	125	5
V	155	107	1
W	130	107	1
X	105	107	1.9
Y	80	107	700
Z	80	179	7

TABLE IVE

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

12 Foot Contour Data

CORE #	COORDINATES		CONCENTRATION
	X	Y	mg/kg
J	142.5	161	NA
K	117.5	161	2.3
L	92.5	161	2030
M	67.5	161	690
N	155	143	NA
O	130	143	38
P	105	143	450
Q	80	143	1150
R	142.5	125	1
S	117.5	125	217
T	92.5	125	90
U	67.5	125	NA
V	155	107	3.4
W	130	107	1.9
X	105	107	1.0
Y	80	107	720
Z	80	179	1.0

TOLS001971

BZTO104(e)038792

TABLE IVE

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

12 Foot Contour Data

CORE #	COORDINATES		CONCENTRATION
	X	Y	mg/kg
J	142.5	161	NA
K	117.5	161	2.3
L	92.5	161	2030
M	67.5	161	690
N	155	143	NA
O	130	143	38
P	105	143	450
Q	80	143	1150
R	142.5	125	1
S	117.5	125	217
T	92.5	125	90
U	67.5	125	NA
V	155	107	3.4
W	130	107	1.9
X	105	107	1.0
Y	80	107	720
Z	80	179	1.0

TABLE IVF

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

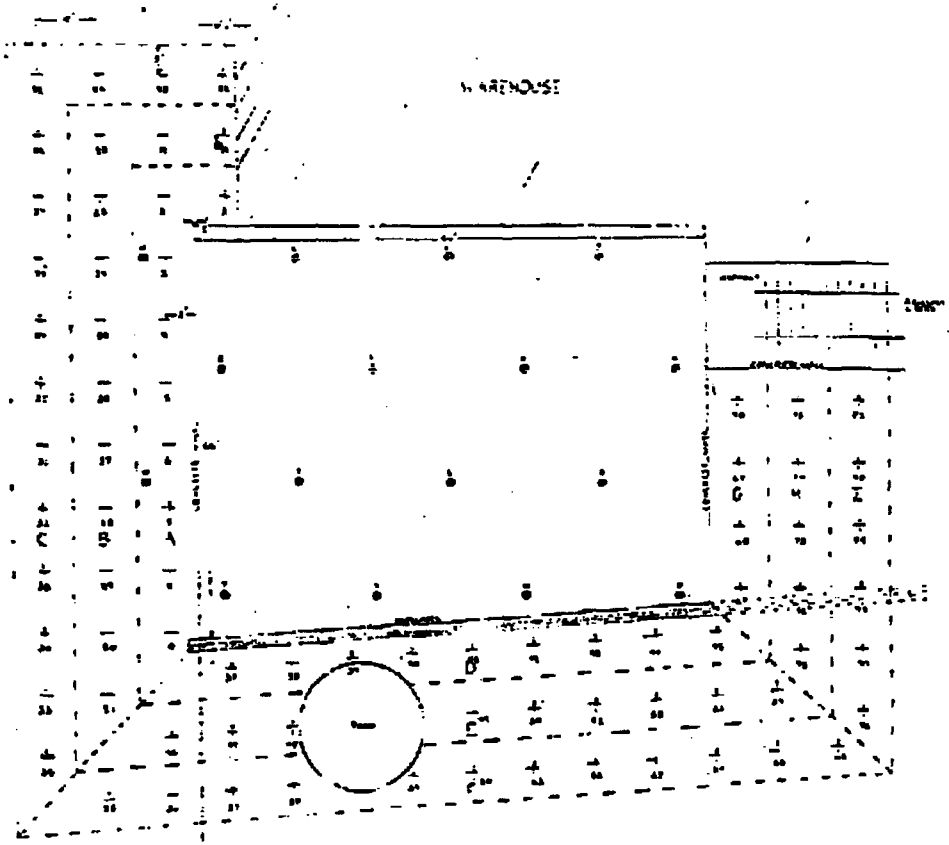
Preliminary Surface Composites

Area	PCP (mg/kg)
A	660
D	860
G	17

TOLS001973

BZTO104(e)038794

FIGURE



K-354

000241

TOLS001974

RIEDEL INTERNATIONAL, INC.

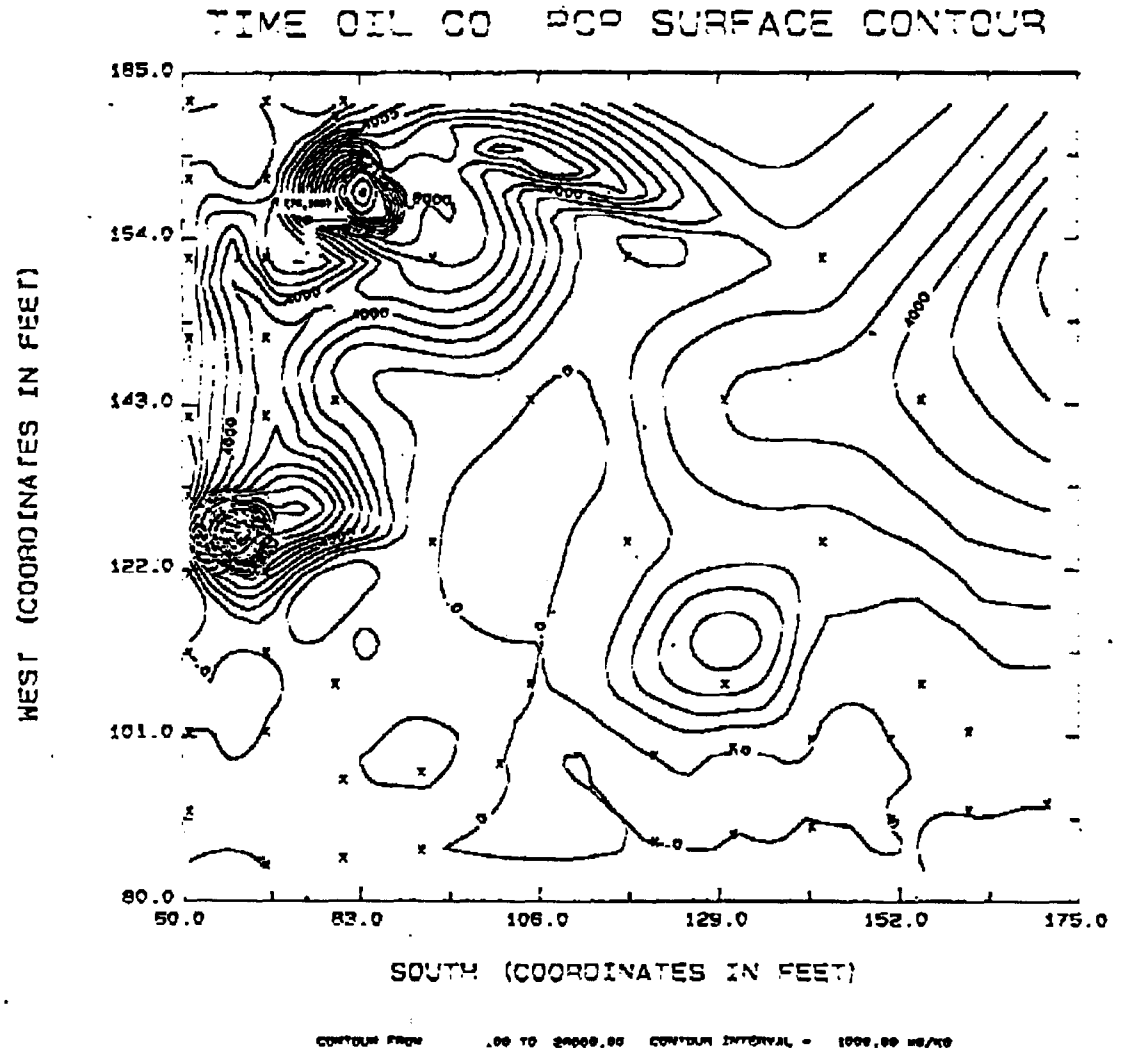
TIME OIL CO. - PORTLAND, OR.

RCP SAMPLING PLAN
SAMPLING GRID - LATERAL SAMPLES

K-356

BZT0104(e)038795

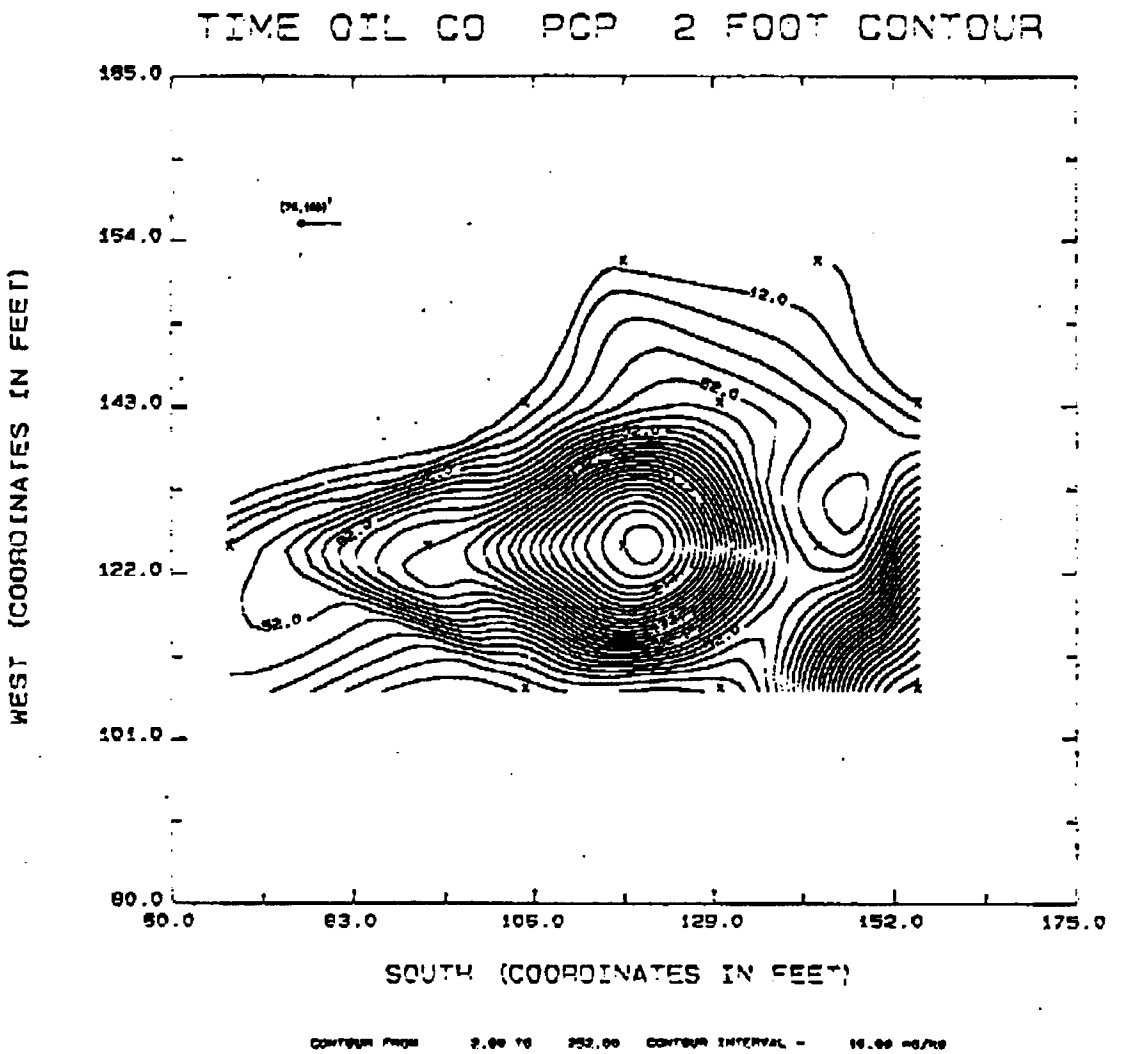
FIGURE 2A:



K-354

000242
K-354
BZTO104(e)038796

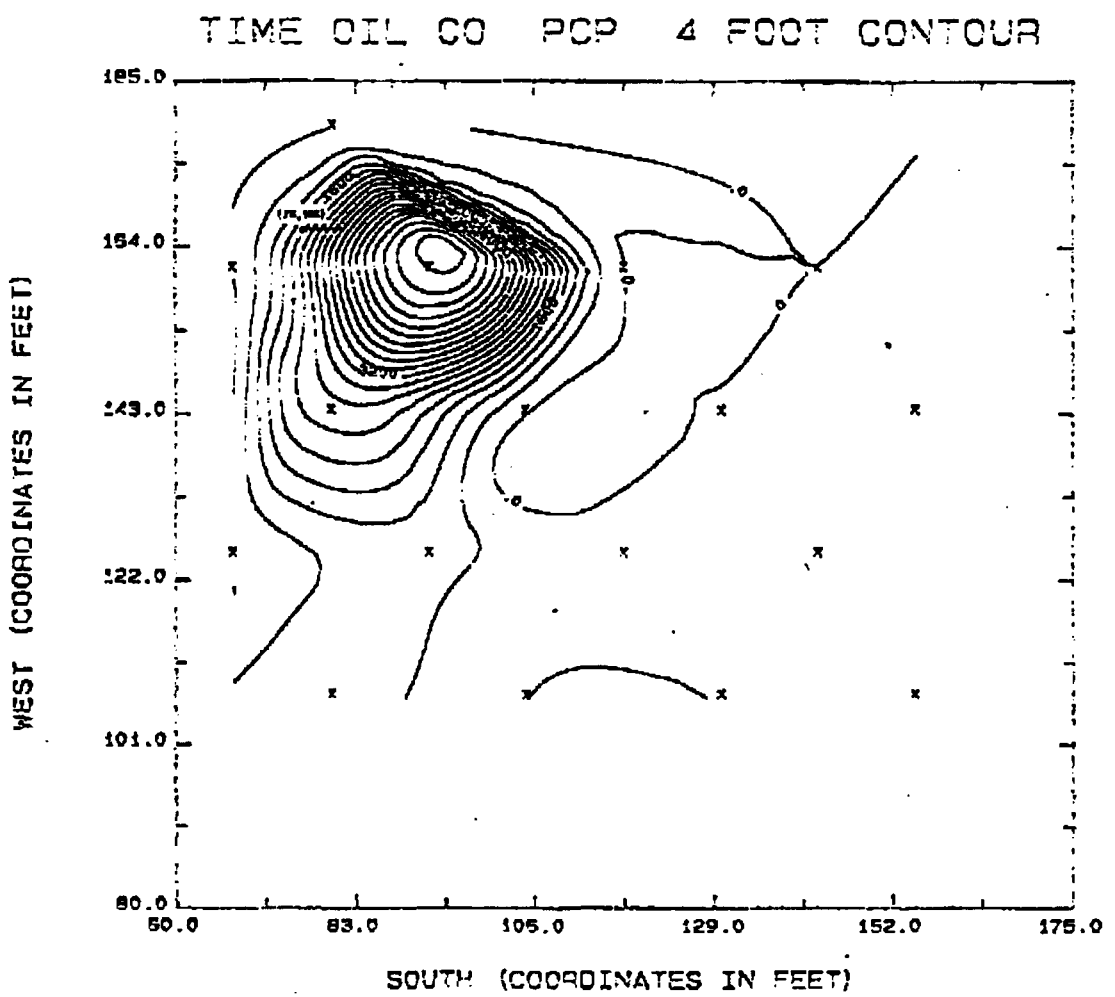
FIGURE 23



K-354

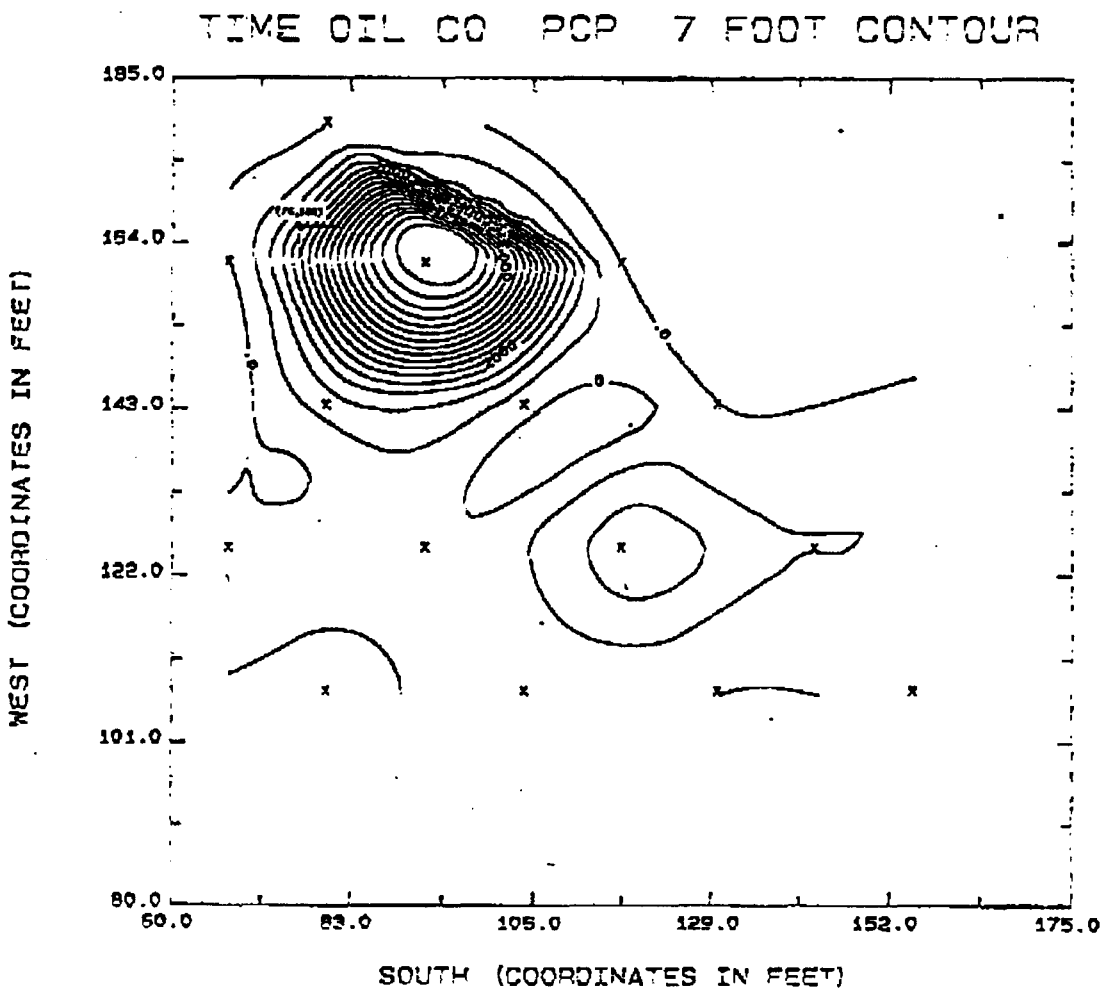
000243
BZTO104(e)038797
K-354
TOLS001976

FIGURE 2C



000244
BZTO104(e)038798
K-354
TOLS001977

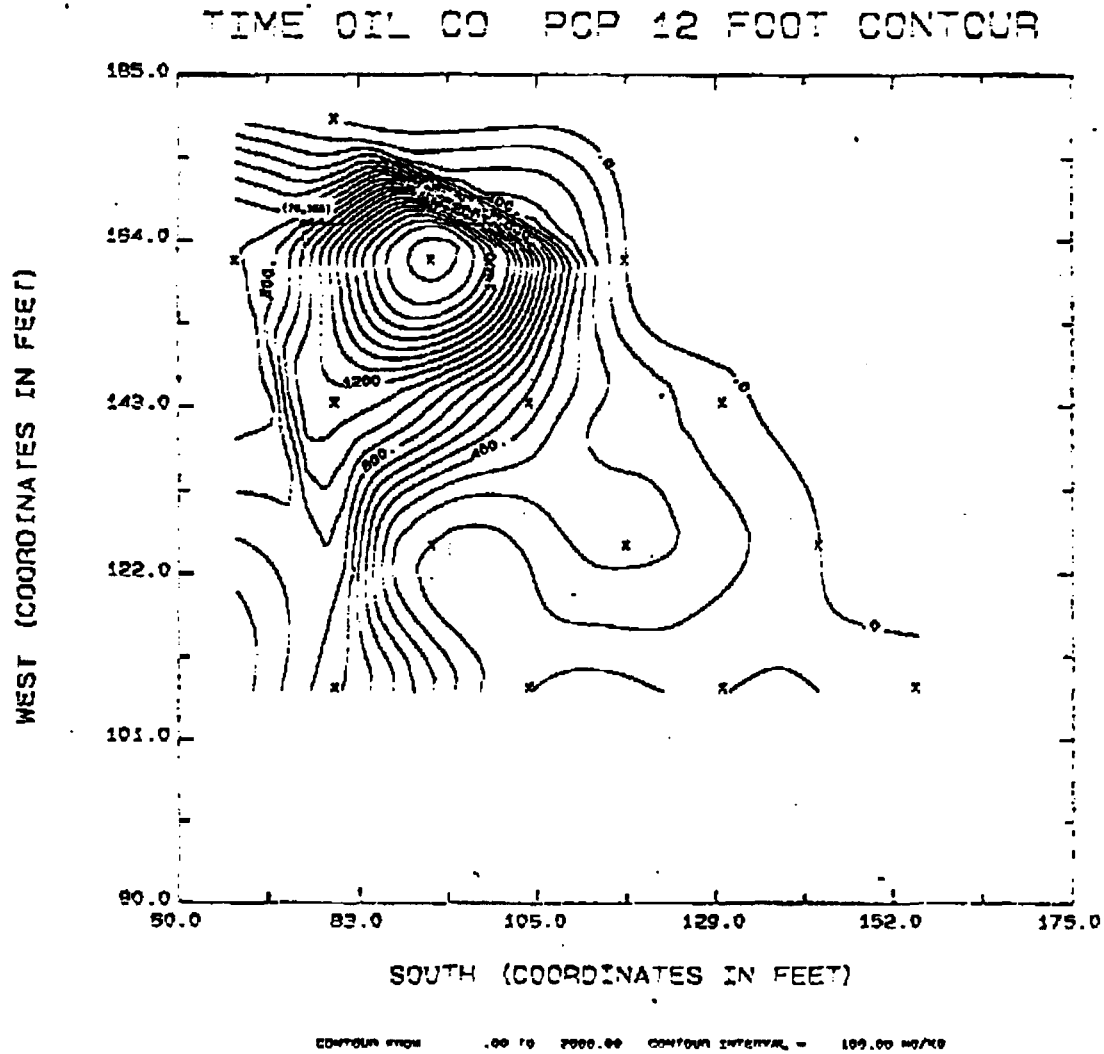
FIGURE 2 0



K-354

000245
K-354
BZTO104(e)038799
TOLS001978

FIGURE 25



BZTO104(e)038800
000246
K-354
TOLS001979

CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269 • Portland, Oregon 97207-1269 • (503) 223-1912
CSSI

June 7, 1985

Mr. John Denham
Time Oil Company
2737 N. Commodore Way
Seattle, Washington 98199

Dear John:

Enclosed are the two copies of replacement pages for our Supplemental Information Document that we discussed by phone today. Please replace them in the original contracts that you have and return both contracts to me.

If I can be of further assistance do not hesitate to call me.

Sincerely,

CHEM-SECURITY SYSTEMS, INC.

Joyce Johnson
Inside Sales Representative

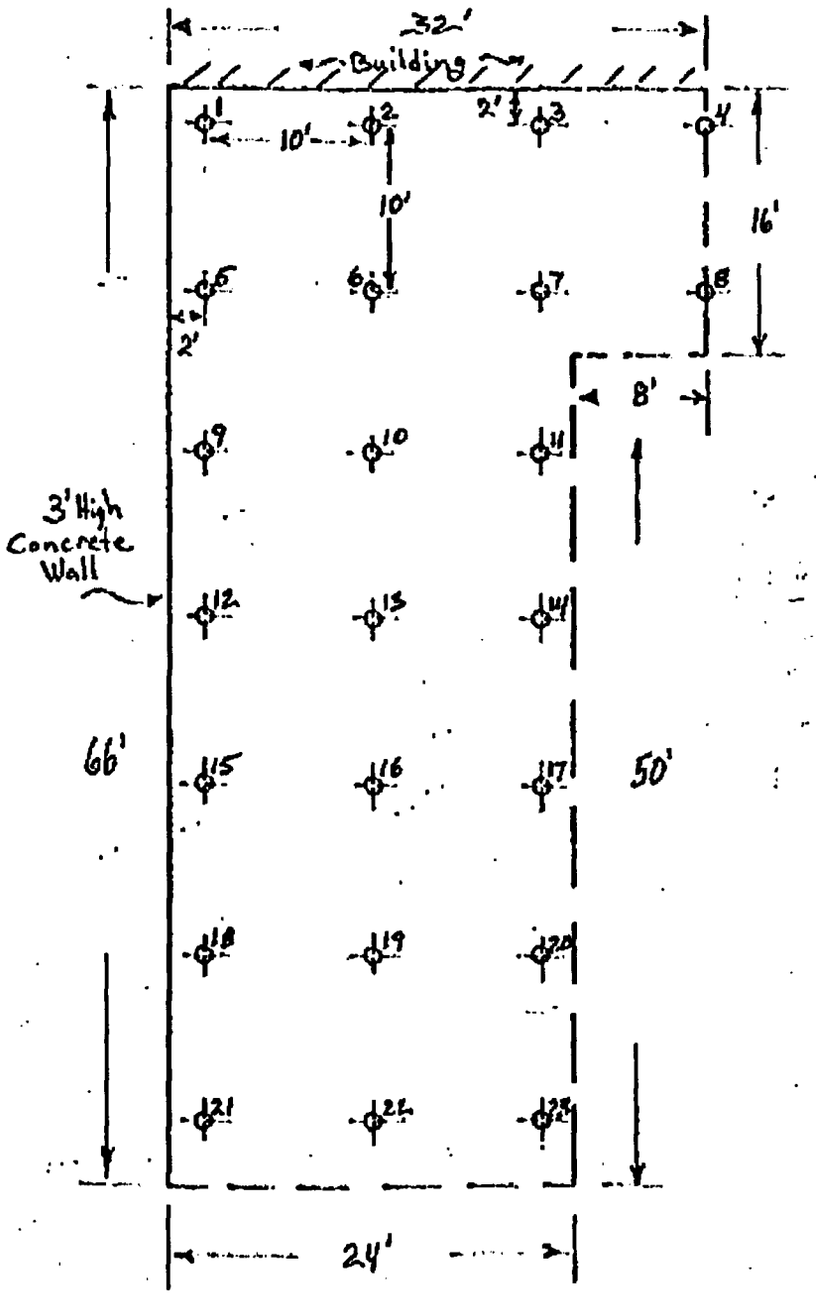
Enclosure

TOLS001980

BZTO104(e)038801

NORTHWEST TERMINAL WOODTREATING SOIL SAMPLING PLAN

Scale: 1" = 10'



1. Drill 23 holes and obtain samples from each.
2. On holes 2, 3, 4, 6 & 7:
   a. Sample at 6", 1', 2', 3', 5', 10' and 15' levels.
   b. Analyze samples at 1', 2', 3', 5' & 10' levels (25 analyses). Also analyze holes 2,3 & 6 at 15' level.
   c. Hold remaining samples at 40 degrees F.
3. On all other holes:
   a. Sample at 6", 1', 2', 3', 5' and 10' levels.
   b. Analyze samples at 6", 1', 2' & 3' levels (72 analyses).
   c. Hold remaining samples at 40 degrees F.

000248

K-354

ENCL. 1

TOLS001981

BZTO104(e)038802

"Imagineering a cleaner world"

RIEDEL
ENVIRONMENTAL SERVICES, INC.

☑ Portland Division
[illegible] N. Portsmouth Ave
P.O. Box 5003
Portland, OR 97208
(503) 289-4656

☐ St. Louis Division
[illegible]
Chesterfield, MO 63017
(314) 532-7600

☐ San Francisco Division
[illegible]
Richmond, CA 94804
(415) 234-7400
or (415) 398-5351

☐ Seattle Division
[illegible]
P.O. Box [illegible]
Seattle, WA 98111
(206) 622-9400

May 18, 1985

Mr. Neil Wallis
Time Oil Co.
P. O. Box 03137
12005 N. Burgard
Portland, OR 97203

Dear Neil:

The cost breakdown on our bid for sampling and analysis of PCP contaminated soil at your facility is as follows:

Drilling	$ 7,544
Analytical	4,956
Labor	3,985
Other Direct	2,115
	$18,600

If you have any questions, please don't hesitate to contact me.

Sincerely,

John Ruddick
Microbiologist

JR:kps

ENCL. 3

CHEM-SECURITY SYSTEMS, INC. DISPOSAL REQUEST

RECEIVED MAY 15 1985

REFERENCE: 13589

WASTE PROFILE SHEET NO.

SUBJECT:

WASTE STREAM NAME: PCP contaminated soil

PHYSICAL STATE

LIQUID: SOLID: SEMISOLID: U242

EPA WASTE CODE

GENERATOR NAME: TIMO OIL CO. OSD009597543

EPA GENERATOR I.D. NUMBER

FACILITY ADDRESS

Timo Oil Co.
12005 N. Burgard Rd.
Portland, Or 97203 - 6473

MAILING ADDRESS

Dam

GENERATOR CONTACT PERSON NAME: John P. Denham Tel. No. 206 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil.	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards NOW ? ANNUAL

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4.

No free liquid allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie
NAME (PRINT)

[signature]
SIGNATURE

4-29-85
DATE

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
On May 14, 1985
By [signature]
Solid Waste Division
Hazardous Waste Operations

COMMENTS:

K-354

000253

TOLS001983

BZTO104(e)038804

Waste Management, Inc.

GENERATOR'S WASTE MATERIAL PROFILE SHEET

TSDR E13588

A GENERAL INFORMATION

FO 77 [illegible] 2/20/85

GENERATOR NAME: Time Oil Co.

FACILITY ADDRESS: 12005 N. Burgard Rd.
Portland, OR

TRANSPORTER: Gresham Transfer Inc.

TRANSPORTER PHONE: (503) 255-7900

GENERATOR USEPA I.D.: O R D 0 0 9 5 9 7 5 4 3

GENERATOR STATE I.D.:

TECHNICAL CONTACT: John P. Denham

TITLE: Environmental Manager

PHONE: (206) 285-2400

NAME OF WASTE: PCP contaminated soil

PROCESS GENERATING WASTE: Clean up of contaminated site at 12005 N. Burgard Road

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR

~~COLOR [ ] NONE [ ] MILD [ ] STRONG DESCRIBE~~

PHYSICAL STATE @ 70°F: [X] SOLID [ ] SEMI-SOLID [ ] LIQUID [ ] POWDER

LAYERS: [ ] MULTILAYERED [ ] BI-LAYERED [X] SINGLE PHASED

FREE LIQUIDS: [ ] YES [X] NO

VOLUME: %

pH: [ ] < 2 [ ] 2-4 [ ] 4.1-6.9 [ ] 7 [ ] 7.1-10 [ ] 10.1-12.5 [ ] > 12.5 [ ] EXACT [X] N/A

SPECIFIC GRAVITY: [ ] < .8 [ ] .8-1.0 [X] 1.1-1.2 [ ] EXACT [ ] 1.3-1.4 [ ] 1.5-1.7 [ ] > 1.7

FLASH POINT: [ ] < 70°F [ ] 70°F-100°F [ ] 101°F-139°F [ ] 140°F-200°F [ ] > 200°F [X] NO FLASH [ ] EXACT [ ] CLOSED CUP [ ] OPEN CUP

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Contaminated soil	
pentachlorophenol	.1620
tetrachlorophenol	.0071
trace amounts of other chlorinated chemicals less than	.0001
Non-contaminated soil	99.812

D METALS [ ] TOTAL (PPM) [ ] EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)	-0-	SELENIUM (Se)	-0-
BARIUM (Ba)	-0-	SILVER (Ag)	-0-
CADMIUM (Cd)	-0-	COPPER (Cu)	-0-
CHROMIUM (Cr)	-0-	NICKEL (Ni)	-0-
MERCURY (Hg)	-0-	ZINC (Zn)	-0-
LEAD (Pb)	-0-	THALLIUM (Tl)	-0-
CHROMIUM-HEX (Cr+6)	-0-		

E OTHER COMPONENTS - TOTAL (PPM)

CYANIDES	-0-	PCB'S	-0-
SULFIDES	-0-	PHENOLICS	-0-

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? [X] YES [ ] NO

PROPER SHIPPING NAME: Waste pentachlorophenol mixture

HAZARD CLASS: ORM-E I.D. NO.: NA 2020 RQ: 10 lbs

METHOD OF SHIPMENT: [ ] BULK LIQUID [X] BULK SOLID [ ] DRUM (TYPE/SIZE)

ANTICIPATED VOLUME: GALS. 260 CUBIC YARDS OTHER

PER: [X] ONE TIME [ ] WEEK [ ] MONTH [ ] QUARTER [ ] YEAR [ ]

G HAZARDOUS CHARACTERISTICS

REACTIVITY: [X] NONE [ ] PYROPHORIC [ ] SHOCK SENSITIVE [ ] EXPLOSIVE [ ] WATER REACTIVE [ ] OTHER

OTHER HAZARDOUS CHARACTERISTICS: [X] NONE [ ] RADIOACTIVE [ ] ETIOLOGICAL [ ] PESTICIDE MANUFACTURING WASTE [ ] OTHER

USEPA HAZARDOUS WASTE? [X] YES [ ] NO

USEPA HAZARDOUS CODE(S): U242

STATE HAZARDOUS WASTE? [X] YES [ ] NO

STATE CODE(S): U 242

H SPECIAL HANDLING INFORMATION

[ ] ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE, AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

AUTHORIZED SIGNATURE: John P. Denham

TITLE: Environmental Manager

DATE: February 19, 1985

K-354

000254

TOLS001984

BZTO104(e)038805

RLC ' T.O.C. PORTLAND 5/16/85

CHEM-SECURITY SYSTEMS, IN **DISPOSAL REQUEST**

REFERENCE: 13588
WASTE PROFILE SHEET NO.

SUBJECT:
WASTE STREAM NAME: PCP contaminated soil
PHYSICAL STATE
LIQUID [ ] SOLID [x] SEMISOLID [ ] 1242
EPA WASTE CODE

GENERATOR NAME: TIMK OIL CO. ORD009597543
EPA GENERATOR I.D. NUMBER

FACILITY ADDRESS	MAILING ADDRESS
Timm Oil Co. 12005 N. Burgard Rd. Portland, Or	Same

GENERATOR CONTACT PERSON NAME: John P. Donham Tel. No. 206 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophonol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil.	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards NOW ANNUAL

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4.

No free liquid allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie
NAME (PRINT)
J. Craig McKenzie
SIGNATURE
4-29-85
DATE

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
On May 14, 1985
By Eduardo L. Chiong
Solid Waste Division
Hazardous Waste Operations

RE: HW4.10 T

COMMENTS:

K-354

TOLS001985

000255

CSSI-6000 (1/84)

BZTO104(e)038806

CHEM-SECURITY SYSTEMS, INC

NATIONAL RE... E CENTER: ... 1-800-424-8802
OREGON ACCIDENT RESPONSE CENTER: 1-800-452-0311

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

5. Transporter 1 Company Name | 6. US EPA ID Number

7. Transporter 2 Company Name | 8. US EPA ID Number

9. Designated Facility Name and Site Address | 10. US EPA ID Number

Chem-Security Systems, Inc.
Stor Route
Arlington, Oregon 97812
ORD 089 452 353

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone (TP) **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/L Waste No.
a.						
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a.
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b.
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name | Signature | Date Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Date Month Day Year

GENERATOR — TRANSPORTER — FACILITY

ORIGINAL - K-354

000256

TOLS001986

BZTO104(e)038807

4.0 MANIFEST REQUIREMENTS

When hazardous waste is transported from the generator's location to the Arlington Facility, the Oregon DEQ, U.S. DOT and EPA require proper manifesting. Beginning September 20, 1984, these agencies required use of a uniform hazardous waste manifest form (Exhibit 7a) and, where necessary, a continuation sheet (Exhibit 7b).

Each load of chemical waste shipped to the Arlington Facility must be accompanied by one or more properly completed uniform manifests. All copies of manifests and continuation sheets must be legible. If manifest forms are needed by the generator, treater or transporter, they can be obtained by contacting the appropriate Chem-Security Systems sales office. When the transporter arrives at the Arlington Facility, the manifest(s) and other shipping paper(s) must be presented to the site receiving clerk for verification.

4.1 WHEN TO USE THE CONTINUATION SHEET

The continuation sheet must be used if:

- o More than two transporters are used to transport the waste, or;
- o More space is required for U.S. DOT description and related information in Section 11 of the manifest.

4.2 GENERATOR SUPPLIED INFORMATION REQUIRED ON MANIFESTS

To meet all the applicable current regulations on manifesting of hazardous waste to the Arlington Facility, and to help us efficiently and speedily handle waste loads, the items described below are needed on a properly completed manifest. A sample completed manifest is shown in Exhibit 7c. States other than Oregon may require other information (see Exhibit 7d).

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BZTO104(e)038808

Continuation Sheet Section #	Manifest Section #	
21	1	Generator's EPA identification number and annually unique manifest document number (preprinted on CSSI supplied manifest forms, must be added on continuation form).
22	2	Number of pages used (manifest) and page number of this sheet (continuation sheet).
23	3-4	Generator's name, mailing address (address where manifest records are kept), and telephone number. The continuation sheet requires name only.
24-27	5-8	Name and EPA identification number of each transporter.
O and Q	D and F	Phone number of each transporter.
None	9, 10, H	Name, address, EPA identification number, and phone number of the designated disposal facility (preprinted on manifests and continuation sheets provided by CSSI).
28	11	DOT proper shipping name, hazard class, identification number (49 CFR Parts 172.101, 172.202, and 172.203); and, a. Designation of whether the waste is hazardous material (check "HM" column), or b. Designation, if the waste is a hazardous substance (write "RQ" instead of a check in the "HM" column) and listing of the

constituent making the waste a hazardous substance after the proper shipping name, if it is not part of the proper shipping name.

29 12 Enter the number of containers for each waste and the appropriate abbreviation from the table below for type of container.

DM = Metal drums, barrels, kegs
DW = Wooden drums, barrels, kegs
DF = Fiberboard or plastic drums, barrels, kegs
TP = Tanks portable
TT = Cargo tanks (tank trucks)
TC = Tank cars
DT = Dump truck
CY = Cylinders
CM = Metal boxes, cartons, cases (including roll-offs)
CW = Wooden boxes, cartons, cases
CF = Fiber or plastic boxes, cartons, cases
BA = Burlap, cloth, paper, or plastic bags

30-31 13-14 Enter the total quantity of waste at 13 and the unit of measure abbreviation from the table below at 14. The quantity should be as precise as possible.

G = Gallons (liquids only)
P = Pounds
T = Tons (2,000 pounds)
Y = Cubic yards
L = Liters (liquids only)
K = Kilograms
M = Metric tons (1,000 kg)
N = Cubic meters

TOLS001989

BZTO104(e)038810

R	I	EPA waste number (if the waste is hazardous under RCRA).
S	J	Oregon Department of Environmental Quality's approved waste description, per Generator's Waste Profile Sheet description - "Waste Name" and physical state.
32	15	Please enter Waste Profile Sheet number(s) here. If an alternate facility is designated, information and identification number must appear here. Generators may use this space to indicate special transportation treatment, storage or disposal information.
None	16	Generator's Certification. Generator must read, sign by hand, and date this section. Please include this person's title along with printed/ typed name in the space provided.

For each lab pack drum, an itemized list of each waste container placed in the drum showing waste description and volume, must be stapled to the manifest. This list should be readily identifiable with a specific drum through a drum numbering or other system.

For certain PCB wastes, the following additional information is required:

- o For any PCB article, the date each item was placed in storage for disposal should be written in Section 15 (this date must also appear on the article container).
- o For each less than 500 ppm PCB liquid container or transformer waste write in PCB concentration on the manifest in Section 15, and staple to the manifest a lab analysis signed by a qualified analyst.
- o For drained and flushed transformers, a statement that each unit was drained and flushed in accordance with 40 CFR 761 must be signed by a responsible representative of the generator and stapled to the manifest.

000260

TOLS001990

BZTO104(e)038811

- For full transformers or empty ones requiring flushing at Arlington, if it is not possible for the generator to determine the exact gallonage of PCB transformers, a designation of "estimated" volume should be stated on the manifest.
- For each container of PCB capacitors a list of manufacturer name, serial number, and KVAR for each capacitor inside must be stapled to the manifest.

4.3 TRANSPORTATION INFORMATION

Continuation Sheet #	Manifest Section #	
33-34	17-18	Enter the name of the person accepting on behalf of the transporter. That person must sign, acknowledging acceptance of the waste. Use 17 for first transporter, 18 for second, and use continuation sheet for additional transporters.

4.4 TSD SUPPLIED INFORMATION

Continuation Sheet Section #	Manifest Section #	
35	19	The authorized representative of the designated facility must note in this space any significant discrepancy between waste described and waste actually received (see Section 9.1).
None	20	The person accepting waste on behalf of the facility must acknowledge acceptance of the waste by signing and entering date of receipt.

TOLS001991

BZTO104(e)038812

4.5 MANIFEST COPIES

The manifest consists of at least the number of copies which will provide the generator, each transporter, and the Arlington Facility with one copy for their records and an additional copy to be returned to the generator. On CSSI pre-printed manifest forms the use of each copy is designated at the bottom center. After the first transporter signs the manifest, the generator keeps one copy of the manifest and the remaining copies and the original remain with the transporter to accompany the shipment to the disposal facility or to another transporter or treater.

A signed copy of the manifest for loads of waste accepted at the Arlington Facility will be returned to the generator attached to the invoice for the waste shipment.

4.6 UNMANIFESTED WASTES

Wastes that arrive at the facility without manifests or approved Waste Profile Sheets may be returned to the generator as required under 40 CFR Part 262, State of Oregon requirements, and compliance policy.

BZTO104(e)038813

CHEM-SECURITY SYSTEMS, INC.

EXHIBIT 78

NATIONAL RESPONSE CENTER 1-800-424-8802
OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. 101297 | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

5. Transporter 1 Company Name | 6. US EPA ID Number

7. Transporter 2 Company Name | 8. US EPA ID Number

9. Designated Facility Name and Site Address | 10. US EPA ID Number

Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812 | ORD 089 452 353

A. State Manifest Document Number

B. State Generator's ID

C. State Transporter's ID

D. Transporter's Phone

E. State Transporter's ID

F. Transporter's Phone

G. State Facility's ID

H. Facility's Phone 503-454-2643

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.	EPA/State Waste No.
a.					
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above

a.
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information Waste Profile Sheet Number(s)

a.
b.
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name | Signature | Date Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Date Month Day Year

GENERATOR TRANSPORTER FACILITY

CHEM-SECURITY SYSTEMS, INC. EXHIBIT 7b

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No. | Manifest Document No. | 22 Page | Information in the shaded areas is not required by Federal law.

23 Generator's Name | I. State Manifest Document Number

H. State Generator's ID

24. Transporter Company Name | 25. US EPA ID Number | N. State Transporter's ID | O. Transporter's Phone

26. Transporter Company Name | 27. US EPA ID Number | P. State Transporter's ID | Q. Transporter's Phone

28. US DOT Description (including Proper Shipping Name, Hazard Class and ID number)	29. Containers No	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No
a.					
b.					
c.					
d.					
e.					
f.					
g.					
h.					
i.					

S. Additional Descriptions for Materials Listed Above

a.
b.
c.
d.

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information — Waste Profile Sheet Number(s)

a. b. c. d. e. f. g. h. i. j. k. l.

33. Transporter Acknowledgement of Receipt of Materials — Printed/Typed Name | Signature | Date Month Day Year

34 Transporter Acknowledgement of Receipt of Materials — Printed/Typed Name | Signature | Date Month Day Year

35. Discrepancy Indication Space

GENERATOR

TRANSPORTER

000264

TOLS001994

BZTO104(e)038815

CHEM-SECURITY SYSTEMS, INC.

EXHIBIT 7c

NATIONAL RESPONSE CENTER 1-800-424-8802
OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. O.R.D.0.0.0.0.1.2.3.4.5 | Manifest Document No. 01297

2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
X Y Z COMPANY
123 Main Street, Process, Oregon

4. Generator's Phone (503) 555-1234

5. Transporter 1 Company Name
CHEM-SECURITY SYSTEMS, INC.

6. US EPA ID Number O.R.D.0.8.9.4.5.2.3.5.3

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number ORD 089 452 353

A. State Manifest Document Number

B. State Generator's ID

C. State Transporter's ID

D. Transporter's Phone 503/454-2643

E. State Transporter's ID

F. Transporter's Phone

G. State Facility's ID

H. Facility's Phone 503-454-2643

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/State Waste No
a.	RQ Waste Hydrofluoric acid solution corrosive material UN 1790	0 0 1	TT	3 0 0 0	G	D002
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a. Hydrofluoric Acid Etchant waste, liquid
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information Waste Profile Sheet Number(s)
a. D85311
b.
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: John Jones | Signature | Date: Month 9 Day 20 Year 84

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Robert Smith | Signature | Date: Month 9 Day 20 Year 84

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Date: Month Day Year

GENERATOR TRANSPORTER FACILITY

EPA Form 8700-22 (3-84)

TOLS001995

BZTO104(e)038816

"Imagineering a cleaner world"

RIEDEL
ENVIRONMENTAL SERVICES, INC.

[X] Portland Division
Foot of N. Portsmouth Ave
P.O. Box 6007
Portland, OR 97208
(503) 286-4656

[ ] St. Louis Division
539 Spirit of St. Louis Blvd
Chesterfield, MO 63017
(314) 532-7600

[ ] San Francisco Division
230 Cutting Blvd
Richmond, CA 94804
(415) 234 7400
or (415) 398-5361

[ ] Seattle Division
801 Fairview Ave. No.
P.O. Box 1730
Seattle, WA 98111
(206) 622-2900

April 25, 1985

Mr. Neil Wallis
Time Oil Company
P. O. Box 03137
12005 N. Burgard Street
Portland, OR 97203

Dear Neil:

Thank you for the opportunity to visit your plant and discuss with you the penta-chlorophenol sampling requirements you have at your northwest terminal wood treating site.

We propose that an initial composite sample survey be initiated to accurately define the boundaries of the PCP contamination zone. These surface samples would be collected to establish the actual area to be sampled later by coring at depth, and are warranted since the data indicates contamination at a site outside of your original proposed sampling plan. This task would be performed at a time and materials rate. It would be expected to be quite nominal relative to the core sampling, and will minimize the possibility of having to remobilize the drill rig to modify or extend the core sampling procedure in the future.

We will also review the sampling plan and, with DEQ approval, design a sampling plan that will meet their requirements while minimizing the number of holes needed. This task would also be billed at a time and materials rate and may utilize a triangular sampling matrix to improve coverage.

Riedel Environmental Services is prepared to perform the actual sampling and analysis including grid layout, drilling, sampling at six depths, analysis for PCP, decontamination of personnel and equipment, PCP concentration contour analysis, report and background level determination. The estimate for this task is $18,600, would require five days on site, and is based on an estimated sample area of 80' x 80'. If preliminary composite samples indicate a different area, this bid will be revised accordingly. If tetrachlorophenol analyses are also required, analytical costs will increase this bid by $5,000.

On the basis of the above results, RES can prepare an estimate for removal and disposal of the contaminated soils. We can also include monitoring or observation wells if required.

Please contact either myself or Rick Gariepy if you have any questions or would like additional information.

Sincerely,

RIEDEL ENVIRONMENTAL SERVICES, INC.

John H. Ruddick
Microbiologist

JHR:kps

SAIF CORPORATION

INSURING COMPANY:
☐ SAIF CORPORATION
☐ SAIF CORPORATION OF OREGON

Certificate of Coverage

Date of Issue: FEBRUARY 25, 1985

This certifies that NW VACUUM TRUCK SERVICE INC. *Policy No.* 426329
is insured with SAIF, with a policy period ending date of JUNE 30, 1985
and is complying with the Oregon Workers' Compensation Law to provide for payment of compensation to subject Oregon workers.

TO: TIME OIL CO,
2737 W. COMMODORE WAY
SEATTLE, WASHINGTON 98199

ATTN: JOHN DENHAM

Michael J. Dora

Michael J. Dora
Director
Underwriting Division

TOLS001998

F1220 1/84

K-354

000268

BZTO104(e)038819

Marsh & McLennan

Marsh & McLennan, Incorporated
Marsh & McLennan Building
720 Olive Way
Seattle, Washington 98101
Telephone (206) 223-1240

March 5, 1985

Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199

Attention: John Denham

Insured - Northwest Vacuum Truck Service, Inc.

Company and Policy No. Safeco
Various - See attached certificate

Coverage

Location Post Office Box 24402
Seattle, Washington 98124

( ) Policy enclosed

(xx) Certificate ~~xxxxxxxxxxxxxx~~ enclosed

( ) Premium invoice enclosed for

( ) Premium invoice will be mailed to you by the Insuror

( ) Mortgage or Loss Payable clause enclosed

( ) Contract of Sale clause enclosed

( ) Please return for cancellation, Policy No.

( )

Sincerely yours,

MARSH & McLENNAN, INCORPORATED

By Jackie Starr
Account Representative

Enclosures
mf
cc: Northwest Vacuum Truck Service, Inc.
Attn Mr. Steve Skeel

TOLS001999

BZTO104(e)038820

Certificate of Insurance

acord

NAME AND ADDRESS OF AGENCY

MARSH & McLENNAN, INCORPORATED
MARSH & McLENNAN BUILDING
720 OLIVE WAY
SEATTLE, WASHINGTON 98101
(206) 223-1240

NAME AND ADDRESS OF INSURED

NORTHWEST VACUUM TRUCK SERVICE, INC.
POST OFFICE BOX 24402
SEATTLE, WASHINGTON 98124

COMPANIES AFFORDING COVERAGES

COMPANY LETTER A: SAFECO
COMPANY LETTER B:
COMPANY LETTER C:
COMPANY LETTER D:
COMPANY LETTER E:

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)	EACH OCCURRENCE	AGGREGATE
	GENERAL LIABILITY					
A	[X] COMPREHENSIVE FORM [X] PREMISES—OPERATIONS [X] EXPLOSION AND COLLAPSE HAZARD [X] UNDERGROUND HAZARD [X] PRODUCTS COMPLETED OPERATIONS HAZARD [X] CONTRACTUAL INSURANCE [X] BROAD FORM PROPERTY DAMAGE [X] INDEPENDENT CONTRACTORS [X] PERSONAL INJURY	CP 842833	05/30/85	BODILY INJURY	$	$
				PROPERTY DAMAGE	$	$
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 500,	$ 500,
				PERSONAL INJURY		$
	AUTOMOBILE LIABILITY			BODILY INJURY (EACH PERSON)	$	
A	[X] COMPREHENSIVE FORM [X] OWNED [X] HIRED [X] NON OWNED	BA 842833 A	05/30/85	BODILY INJURY (EACH ACCIDENT)	$	
				PROPERTY DAMAGE	$	
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 500,	
	EXCESS LIABILITY					
A	[X] UMBRELLA FORM [ ] OTHER THAN UMBRELLA FORM	UL 842833	05/30/85	BODILY INJURY AND PROPERTY DAMAGE COMBINED	$1,000,	$1,000,
	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY			STATUTORY		
	OTHER				$	(EACH ACCIDENT)

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES

As respects the operations of the Insured.

Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will endeavor to mail 20 days written notice to the below named certificate holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company.

ACCOUNT EXECUTIVE: Jo Ann Crook

NAME AND ADDRESS OF CERTIFICATE HOLDER

Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199
Attention: John Denham

K-354

DATE ISSUED March 5, 1985 (mf)

MARSH & McLENNAN, INCORPORATED

By: John C. Day
AUTHORIZED REPRESENTATIVE

(John C. Day) 000270

ACORD 25-1-75

TOLS002000

BZTO104(e)038821

CONTRACT BOND

Bond No. H 34156

KNOW ALL MEN BY THESE PRESENTS, That we, NORTHWEST VACUUM TRUCK SERVICE, INC.

5555 NORTH CHANNEL - BLDG. 43 - PORTLAND, OREGON 97217

called the Principal, and HERITAGE INSURANCE COMPANY OF AMERICA, A ILLINOIS corporation, called the Surety, are held and firmly bound unto TIME OIL CO.

called the owner in the sum of FIFTY THREE THOUSAND AND NO/100THS ---------- Dollars ($ 53,000.00**),

for the payment whereof said Principal and Surety bind themselves firmly by these presents.

WHEREAS, the Principal has, by written Agreement, dated MARCH 12, , 19 85 , entered into a Contract with the Owner for REMOVAL OF FARTHEN MATERIAL OWNED BY OWNER FROM ITS PRESENT LOCATION, LOAD IT INTO SUITABLE TRANSPORTATION VEHICLES AND TRANSPORT IT TO A DISPOSAL FACILITY APPROVED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY.

a copy of which is by reference made a part hereof;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That if the Principal shall faithfully perform the Contract, and indemnify and save harmless the Owner from all loss, cost or damage which Owner may suffer by reason of any lien arising out of claim for labor or materials utilized in the construction under said Contract, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 12TH day of MARCH, 19 85.

NORTHWEST VACUUM TRUCK SERVICE, INC.
Principal

By: S M Steel

HERITAGE INSURANCE COMPANY OF AMERICA

By: J.C. Baumann
J.C. BAUMANN
Attorney-in-fact

ENCL. 6

K-354

000271

TOLS002001

BZTO104(e)038822

HERITAGE INSURANCE COMPANY OF AMERICA

LINCOLNWOOD, ILLINOIS

Power of Attorney

PRINCIPAL NORTHWEST VACUUM TRUCK SERVICE, INC. EFFECTIVE DATE MARCH 12, 1985

DBA

AMOUNT OF BOND $ 53,000.00

POWER NO. H 34156

KNOW ALL MEN BY THESE PRESENTS: That the Heritage Insurance Company, a Corporation in the State of Illinois, having its principal office in Lincolnwood, Illinois, pursuant to the following resolution, adopted by the Board of Directors of the said Company on the 9th day of March, 1979, to wit:

The President, or any Vice-President, or other officer designated by the Board of Executive Committee shall have authority, severally, to make, execute and deliver a power of attorney constituting as Attorney-in-Fact such persons, firms or corporations as such officers may select from time to time.

does hereby make, constitute and appoint J.T. Kohoutek, C.J. Huffman and/or J.C. Bauman of Seattle in the State of Washington, its true and lawful attorney(s)-in-fact, with full power and authority hereby conferred in its name, place and stead, to sign, execute, acknowledge and deliver in its behalf, and its act and deed, as follows:

The obligation of the Company shall not exceed the sum of five hundred thousand ($500,000.00) dollars.

and to bind Heritage Insurance Company thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of the Heritage Insurance Company, and all the acts of said Attorney(s) pursuant to the authority herein given, are hereby ratified and confirmed.

IN WITNESS WHEREOF, the Heritage Insurance Company has caused these presents to be signed by its President and/or its Vice-President, and its Corporate Seal to be hereto affixed.

HERITAGE INSURANCE COMPANY OF AMERICA

SEAL

Vincent M. Giacinto, President

State of Illinois } SS:
County of Cook }

On this 9th day of March, 1979, before the subscriber, a Notary Public of the State of Illinois in and for the County of Cook duly commissioned and qualified, came V. M. Giacinto of the Heritage Insurance Company, to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation, and that the resolution of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my official seal at Lincolnwood, Illinois, the day and year above written.

NOTARY PUBLIC

Joseph D. Udoni
Notary Public

JOSEPH D. UDONI
NOTARY PUBLIC, State of Illinois
Qualified in State of Illinois
Commission Expires March 4, 1984

State of Illinois } SS:
County of Cook }

CERTIFICATE

I, the undersigned, Secretary of *HERITAGE INSURANCE CO.* a stock corporation of the State of Illinois, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Resolution of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, at Lincolnwood, Illinois. Dated this 12TH day of MARCH A.D., 19 85

SEAL

Carrie A. Faills
Secretary

H-78

TOLS002002

BZTO104(e)038823

HERITAGE INSURANCE COMPANY OF AMERICA

LINCOLNWOOD, ILLINOIS

Power of Attorney

PRINCIPAL NORTHWEST VACUUM ROCK SERVICE, INC. EFFECTIVE DATE MARCH 12, 1985

DBA

AMOUNT OF BOND $ 53,000.00

POWER NO. H 34156

KNOW ALL MEN BY THESE PRESENTS: That the Heritage Insurance Company, a Corporation in the State of Illinois, having its principal office in Lincolnwood, Illinois, pursuant to the following resolution, adopted by the Board of Directors of the said Company on the 9th day of March, 1979, to wit:

"The President, or any Vice-President, or other officer designated by the Board of Executive Committee shall have authority, severally, to make, execute and deliver a power of attorney constituting as Attorney-in-Fact such persons, firms or corporations as such officers may select from time to time."

does hereby make, constitute and appoint J.T. Kehoutek, C.J. Huffman and/or J.C. Baumann of Seattle in the State of Washington, its true and lawful attorney(s)-in-fact, with full power and authority hereby conferred in its name, place and stead, to sign, execute, acknowledge and deliver in its behalf, and its act and deed, as follows:

The obligation of the Company shall not exceed the sum of five hundred thousand ($500,000.00) dollars.

and to bind Heritage Insurance Company thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of the Heritage Insurance Company, and all the acts of said Attorney(s) pursuant to the authority herein given, are hereby ratified and confirmed.

IN WITNESS WHEREOF, the Heritage Insurance Company has caused these presents to be signed by its President and/or its Vice-President, and its Corporate Seal to be hereto affixed.

SEAL

HERITAGE INSURANCE COMPANY OF AMERICA

Vincent M. Ciscinio, President

State of Illinois } SS:
County of Cook }

On this 9th day of March, 1979, before the subscriber, a Notary Public of the State of Illinois in and for the County of Cook duly commissioned and qualified, came V. M. Ciscinio of the Heritage Insurance Company, to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation, and that the resolution of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my official seal at Lincolnwood, Illinois, the day and year above written.

NOTARY PUBLIC

Notary Public

JOSEPH D. UDONI
NOTARY PUBLIC, State of Illinois
Qualified in State of Illinois
Commission Expires March 4, 1984

State of Illinois } SS:
County of Cook }

CERTIFICATE

I, the undersigned, Secretary of *HERITAGE INSURANCE CO.* a stock corporation of the State of Illinois, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Resolution of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, at Lincolnwood, Illinois. Dated this 12TH day of MARCH A.D., 19 85

SEAL

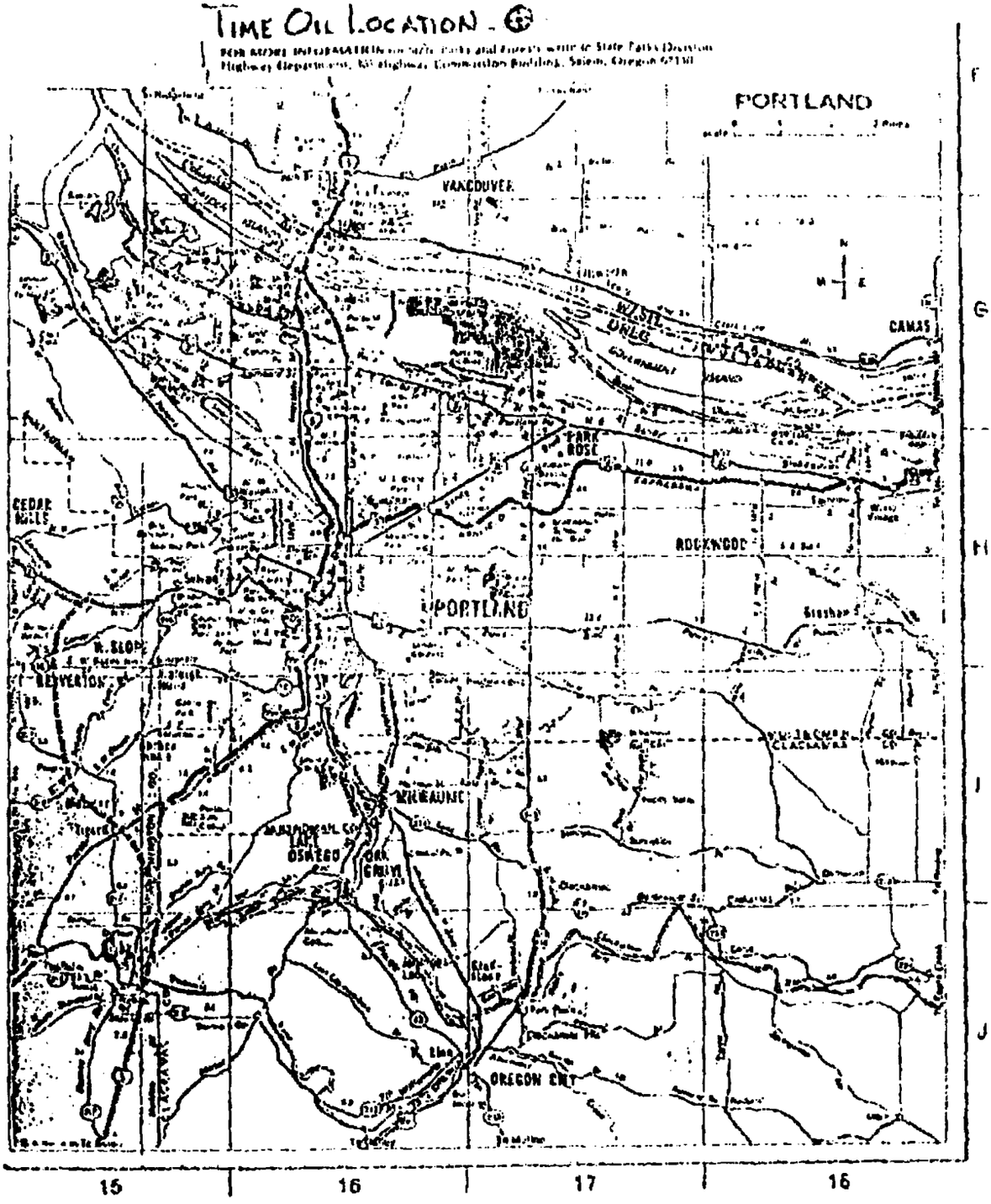
Secretary

H-78

TOLS002003

BZTO104(e)038824

TIME OIL LOCATION - ⊕



000273

TOLS002004

BZTO104(e)038825

KOPPERS

Interoffice Correspondence

To A. C. Middleton
T. A. Marr
C. P. Brush

From C. P. Brush

Location

Location K-12

Subject Time Oil, Inc., Photos

Date February 2, 1984

The enclosed photographs illustrate the current condition at Time Oil, Inc., at Portland, Oregon.

The single pump and piping manifold represents the means used to mix and move penta/oil mixtures for the past 14 years. Note the oil inside the dike. The bottom of the diked area is not sealed (sandy soil).

Charles Brush

CPB/s
enclosures

K971 - 0029

TOLS002005

BZTO104(e)038826

bc: W. J. Baldwin
T. A. Marr
M. R. Urbassik
D. F. Marion

Koppers Company, Inc.
Environmental Resources Department
Pittsburgh, PA 15219, Telephone 412-227-2000

EXPRESS MAIL

KOPPERS

April 3, 1984

Mr. Neil Wallace
Time Oil Company
12005 North Burgard
Portland, OR 97203

Subject: Samples of Tank #20002
Penta Tank Bottoms

Dear Mr. Wallace:

Per our telephone conversation on April 2, 1984, enclosed is the information required for the Penta Tank Bottom clean out project.

Please package and label two duplicate quart samples of the waste per the prescribed EPA procedures (copy enclosed for your reference) and complete the Certification of Representative Sample Document #NWP D39854 (blank enclosed) required by Chemical Security Systems/Chemical Waste Management, Inc.

The samples and documentation should be shipped together as soon as possible to:

Mr. George Mills, Chemist
Koppers Company, Inc.
Specialty Wood Chemicals Division
5137 Southwest Avenue
St. Louis, MO 63110
Phone: (314) 772-2200

Please note that UPS package #4 is required for shipping penta samples via UPS. Attached are the packaging specifications. A suggested supplier of this packaging is Labelmaster, Inc., Chicago, Illinois (800) 621-5808. The samples must be packaged so that they do not leak, spill, or vaporize from their packages.

In addition, please assure that the following information accompanies each of the samples:

Your Location

Time Oil Company
12005 North Burgard
Portland, OR 97203
Contact: Neil Wallace
Phone: (503) 286-1611

K978 - 1069

Writer's Direct Dial Number (412) 227-2767

TOLS002006

BZTO104(e)038827

Shipping Destination

Koppers Company, Inc.
Specialty Wood Chemicals Division
5137 Southwest Avenue
St. Louis, MO 63110
ATTN: George Mills, Chemist
Phone: (314) 772-2200

Sample Description

Sample of penta sludge from tank #20002
Quantity of sample: 1 quart

Collection Data

Sample Collector's Name: _____

Collection Date: _____ Time: _____

Date of Shipment: _____

If you have any questions regarding any of the above or attached information, please contact either Mr. John Palmer, Regional Manager at Koppers' St. Louis location, (314) 772-2200 or this office at your earliest convenience. Your cooperation in this matter is appreciated.

Sincerely,

Charles J. Vita
Environmental Specialist

CJV:cg
Enclosures: EPA-600/2-80-018 - Samplers and Sampling Procedures for Hazardous Waste Streams
(NWPD 39854) Chemical Waste Management Form WMI-51 (Rev. 8/83)
(Package #4) UPS Guide for Shipping Hazardous Materials

cc: J. D. Palmer - St. Louis
C. Mills - St. Louis
File Portland (Time Oil)

K378 - 1070

TOLS002007

BZTO104(e)038828

cc: B. Baldwin
G. Ringeling *
D. Marion
G. Mills *
T. Marr

*attachments

KOPPERS

Interoffice Correspondence

To John Palmer
Location St. Louis, MO
Subject Profile sheet for Time Oil
Penta sludge FPE Req. #3

From Chuck Vita
Location Pittsburgh
Date March 28, 1984

Attached is the completed profile sheet (NWP-D39854) for the tank bottoms clean out at Time Oil in Portland. Please note that Mr. John Denham (Time Oil) has given me Time Oil's Portland, Oregon USEPA I.D. # for use in the clean-up.

Please review all attached information, and if you do not see any problems, follow the Waste Management instruction sheet that is attached to the profile sheet.

In addition to providing the technical information on the profile sheet, Bill Baldwin has informed me that George Mills has in his possession a representative sample of the Time Oil tank bottoms at the St. Louis plant. Please have George (or yourself) review and complete the certification document that accompanies the profile sheet.

The sample and profile sheet should be shipped together along with a short cover letter ASAP to:

Mr. Mike Zabel, Site Chemist
Chem-Security Systems, Inc.
(A Chemical Waste Mg't. Company)
Star Route
Arlington, OR 97812

Please send a photocopy of the profile sheet to:

Mr. Bill Van Dyke, District Sales Mg'r.
Chem-Security Systems, Inc.
(A Chemical Waste Mg't. Company)
P.O. Box 1269
Portland, OR 97207-1269

Also note that in addition to the MSDS for Penta (already attached) MSDS' for the other applicable chemical components should be attached for the landfill's reference.

If you have any questions regarding the above, please contact me at your earliest convenience. Thanks for your help.

K978 - 1072

Chuck Vita

PS: UPS pkg. #4 is required for penta shipped via UPS. Attached are specs. Can be obtained from Labelmaster (800) 621-5808.

4-5 REV 2

TOLS002008

BZTO104(e)038829

Waste Management, Inc.

GENERATOR'S WASTE MATERIAL PROFILE SHEET

NWP D39854

A GENERAL INFORMATION

GENERATOR NAME: Koppers Company, Inc., c/o Time Oil Co. TRANSPORTER: Will Advise

FACILITY ADDRESS: 12005 North Burgard, Portland, OR 97203 TRANSPORTER PHONE: Will Advise

GENERATOR USEPA ID: OR D0 0 8 6 9 7 5 4 3

GENERATOR STATE ID: Same As Above

TECHNICAL CONTACT: George Mills TITLE: Chemist St. Louis Plt PHONE: (314) 772-2200

NAME OF WASTE: Time Oil Sludge Tank #20002/Penta Tank Bottoms

PROCESS GENERATING WASTE: Manufacturing of Wood Preservative Solution

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR: Amber

ODOR: [ ] NONE [ ] MILD [X] STRONG DESCRIBE: Petroleum

PHYSICAL STATE: [ ] SOLID [ ] SEMI-SOLID [X] LIQUID [ ] POWDER

LAYERS: [ ] MULTILAYERED [X] BILAYERED [ ] SINGLE PHASED

FREE LIQUIDS: [X] YES [ ] NO VOLUME: 59

pH: [ ] < 2 [ ] 2-4 [ ] 4-6.9 [ ] 7 [ ] 7-10 [ ] 10-12.5 [ ] > 12.5 [ ] EXACT [X] N/A

SPECIFIC GRAVITY: [ ] < 8 [ ] 8-10 [ ] 10-12 [ ] 12-14 [X] 14-16 [ ] 16-18 [ ] 18-20 [ ] > 20 [ ] EXACT

FLASH POINT: [ ] < 70°F [ ] 70°F-100°F [X] 101°F-139°F [ ] 140°F-200°F [ ] > 200°F [ ] NO FLASH [ ] EXACT [X] CLOSED CUP [ ] OPEN CUP

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Pentachlorophenol	6.03
Paraffin Wax	0.91
Monsanto Heavy Oxo Ends	18.09
Nalco Inhibitor	0.36
Mineral Spirits	33.92
Penta Insolubles	40.69

D METALS [ ] TOTAL (PPM) [ ] EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)		SELENIUM (Se)	
BARIUM (Ba)		SILVER (Ag)	
CADMIUM (Cd)		COPPER (Cu)	
CHROMIUM (Cr)		NICKEL (Ni)	
MERCURY (Hg)		ZINC (Zn)	
LEAD (Pb)		THALLIUM (Th)	
CHROMIUM HEX (Cr+6)			

E OTHER COMPONENTS TOTAL (PPM)

CYANIDES		PCB'S	
SULFIDES		PHENOLICS	156,000

F SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? [X] YES [ ] NO

PROPER SHIPPING NAME: RQ Waste Pentachlorophenol (sludge)

HAZARD CLASS: ORM-E ID NO: NA2020 RQ: (A)10

METHOD OF SHIPMENT: [X] BULK LIQUID or [ ] BULK SOLID [X] DRUM (TYPE/SIZE): 55 gallons

ANTICIPATED VOLUME: 700 to 1,700 GALS [ ] CUBIC YARDS (Not Guaranteed) [ ] OTHER

PER: [ ] ONE TIME [ ] WEEK [ ] MONTH [ ] QUARTER [X] YEAR

G HAZARDOUS CHARACTERISTICS

REACTIVITY: [X] NONE [ ] PYROPHORIC [ ] SHOCK SENSITIVE [ ] EXPLOSIVE [ ] WATER REACTIVE [ ] OTHER

OTHER HAZARDOUS CHARACTERISTICS: [ ] NONE [ ] RADIOACTIVE [ ] ETIOLOGICAL [X] PESTICIDE MANUFACTURING WASTE [ ] OTHER

USEPA HAZARDOUS WASTE? [X] YES [ ] NO

USEPA HAZARDOUS CODE(S): U242 D001

STATE HAZARDOUS WASTE? [X] YES [ ] NO

STATE CODE(S): U242, D001

H SPECIAL HANDLING INFORMATION

As published for pentachlorophenol. See also MSDS for pure materials attached.

[X] ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

AUTHORIZED SIGNATURE: William J Baldwin

TITLE: Major Customer + Technical Services

K378 - 1073

3-28-84

TOLS002009

BZTO104(e)038830

Waste management, inc.

GENERATOR'S WASTE MATERIAL PROFILE SHEET

YEAR D40760

A GENERAL INFORMATION

GENERATOR NAME: Koppers Company, Inc. % Time Oil Co. TRANSPORTER: Will Advise

FACILITY ADDRESS: 12005 North Burgard, Portland, OR 97203 TRANSPORTER PHONE: Will Advise

GENERATOR USEPA ID: O R D 0 0 9 5 9 7 6 4 3

GENERATOR STATE ID: Same As Above

TECHNICAL CONTACT: George Mills TITLE: Chemist St. Louis Plant PHONE: (314) 772-2200

NAME OF WASTE: Time Oil Sludge Tank 11 Decant / Tank Bottoms

PROCESS GENERATING WASTE: Manufacturing of Wood Preservative Solution

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR: Amber

ODOR: [ ] NONE [ ] MILD [X] STRONG — DESCRIBE: Petroleum

PHYSICAL STATE @ 70°F: [ ] SOLID [ ] SEMI SOLID [X] LIQUID [ ] POWDER

LAYERS: [ ] MULTILAYERED [X] BI LAYERED [ ] SINGLE PHASED

FREE LIQUIDS: [X] YES [ ] NO — VOLUME: 55 gal

pH: [ ] < 2 [ ] 2-4 [ ] 4.1-6.0 [ ] 7.1-10 [ ] 10.1-12.5 [ ] > 12.5 [ ] EXACT [X] N/A

SPECIFIC GRAVITY: [ ] < 0 [X] 0.10 [ ] 1.1-1.2 [ ] 1.3-1.4 [ ] 1.5-1.7 [ ] > 1.7 [ ] EXACT

FLASH POINT: [ ] < 70°F [ ] 70°F-100°F [X] 101°F-139°F [ ] 140°F-200°F [ ] > 200°F [ ] NO FLASH [ ] EXACT [X] CLOSED CUP [ ] OPEN CUP

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Pentachlorophenol	6.02%
Fuel Oil #2	0.91%
Resorcin Heavy Oil Ends	18.11%
Nalco Inhibitor	0.26%
Mineral Spirits	33.92%
Penta Insolubles	40.64%

D METALS [ ] TOTAL (PPM) [ ] EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)		SELENIUM (Se)	
BARIUM (Ba)		SILVER (Ag)	
CADMIUM (Cd)		COPPER (Cu)	
CHROMIUM (Cr)		NICKEL (Ni)	
MERCURY (Hg)		ZINC (Zn)	
LEAD (Pb)		THALLIUM (Tl)	
CHROMIUM-HEX (Cr + 6)			

E OTHER COMPONENTS - TOTAL (PPM)

CYANIDES		PCB's	
SULFIDES		PHENOLICS	156,000

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? [X] YES [ ] NO

PROPER SHIPPING NAME: RQ Waste Pentachlorophenol (Solid) ~~Flammable Solid~~ (Liquid)

HAZARD CLASS: ORM-E ID NO: NA9093 PG: None

METHOD OF SHIPMENT: [X] BULK LIQUID OR [ ] BULK SOLID

[X] DRUM (TYPE/SIZE): 55 gallon

ANTICIPATED VOLUME: 700 to 1,700 GALS [ ] CUBIC YARDS (NOT GUARANTEED) [ ] OTHER

PER: [ ] ONE TIME [ ] WEEK [ ] MONTH [ ] QUARTER [X] YEAR [ ]

G HAZARDOUS CHARACTERISTICS

REACTIVITY: [X] NONE [ ] PYROPHORIC [ ] SHOCK SENSITIVE [ ] EXPLOSIVE [ ] WATER REACTIVE [ ] OTHER

OTHER HAZARDOUS CHARACTERISTICS: [ ] NONE [ ] RADIOACTIVE [ ] ETIOLOGICAL [X] PESTICIDE MANUFACTURING WASTE [ ] OTHER

USEPA HAZARDOUS WASTE? [X] YES [ ] NO

USEPA HAZARDOUS CODE(S): U242 D001

STATE HAZARDOUS WASTE? [X] YES [ ] NO K378 - 1074

STATE CODE(S): U242, D001

H SPECIAL HANDLING INFORMATION

AS PUBLISHED FOR PENTACHLOROPHENOL. SEE ALSO MSDS' FOR PURE MATERIALS ATTACHED.

[X] ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE. AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED

AUTHORIZED SIGNATURE: TITLE: DATE: 3/28/89

TOLS002010

BZTO104(e)038831

Chuck

KOPPERS

Interoffice Correspondence

To Greg Ringeling — From Chuck Vita

Location K-801 — Location K-1201

Subject Time Oil Penta Tank Clean-Out FPE Req. #3 — Date March 28, 1984

The profile sheet and sample for the penta tank bottoms clean-out at Time Oil in Portland, Oregon should be received shortly by Chem-Security Systems (Chemical Waste Management).

The current rough estimate of the amount of waste is around 700 gallons, however, it could top off at around 1,700 gallons.

Please call the following firms for bid purposes:

1. Chem-Security Systems (Chemical Waste Management)
   Contact: Bill Van Dyke (503) 223-1912
   Note: Please have CSS bid removal, transportation, and disposal, separately.

2. Crosby & Overton
   Phone: (503) 283-1250

3. Wescomp Services, Inc.
   Contact: Paul Hopkins (503) 684-3066

Also, as a suggestion, Mr. Henry Rassi, the Superintendent of Koppers Organic Material Northwest Terminal, located in Portland (503) 286-3681 could be contacted to help develop further leads in this project.

Your help in the expedition of this clean-up project would be appreciated, if you have any questions, please call me at 2767.

Chuck Vita

CJV:cg
cc: W. J. Baldwin
J. D. Palmer - St. Louis
D. F. Marion
T. A. Marr
FILE - Portland (Time Oil) File
M. R. Urbassik

K878 - 1075

TOLS002011

BZTO104(e)038832

KOPPERS

PORTLAND Plant

Interoffice Correspondence

To Wm. Baldwin — From C. P. Brush

Location K-7 — Location K-12

Subject Time Oil Clean Up — Date March 13, 1984

Enclosed is a first draft of a clean-up procedure for the Time Oil Site in Portland, Oregon. Please comment and advise to your plans and timetable so that a revised clean-up procedure can be prepared in greater detail.

Charles P. Brush

Charles P. Brush

CPB/s
encl.

cc: A. C. Middleton - w/att
J. A. Quagliotti - w/att -- Please comment
T. A. Marr - W/att

K378 - 1078

K-5 REV 3

TOLS002012

BZTO104(e)038833

Time Oil Clean-Up -- Charles P. Brush, P.E.

INTRODUCTION

The Time Oil site in Portland, Oregon has been manufacturing a penta in oil and wax mixture for more than ten years. A site vitis by Koppers' Environmental Resources Department in December, 1983 documented past procedures that have created on-site conditions which are unacceptable environmentally. The enclosed photographs show how a single pump has been used (with hoses) to connect the several steps of production. The leakage from hose connection/disconnections is clearly seen in the photographs. The bottom of the diked area is soil that does not hold rain water. (See standing water in the plant yard outside of the dike and almost no water in the diked area). The conclusion I draw is penta going into the soil.

It is reasonable to assume that the soil below the pump location, and generally inside the diked area in contaminated with a significant amount of penta. Oil and other organic chemicals are not of particular concern to Koppers because of the nature of Time Oil's larger tank farm operation at this terminal. (This is a large ocean terminal handling liquid cargos of oils, chemicals and agricultural chemicals. Time Oil has no program of monitoring groundwater below this terminal and I believe it is reasonable to believe that the Terminal has impacted the local groundwater).

PROGRAM

Koppers has proposed at other sites that earth with less than 100 x the safe drinking water level of PCP is not a hazardous substance that requires excavation. It still seems reasonable to continue this position until such time as a better approach is developed to assess the health and environmental impact of contaminated soils at depth. The Terminal is located between two very large rivers at a point not far above their discharge to the Pacific Ocean. The site is served by municipal water and no groundwater users appear to be close-by (this point needs to be verified).

Tanks and the pumps are being cleaned and removed from the area under Koppers re-negotiation of the toll blending agreement. That phase of the clean-up is not considered in this paper.

The proposed clean-up strategy is rather straight forward:

1. Establish an acceptable background level of PCP for this particular location.

2. Excavate and remove contaminated soils in a step-wise fashion, sampling between steps, until the background is achieved.

TOLS002013

BZTO104(e)038834

3. Dispose of contaminated soils (in bulk) at a hazardous waste disposal site.

4. Back fill with clean fill.

5. Provide all appropriate documentation, shipping instructions and manifest as required.

SPECIFIC DETAILS

Background levels of Penta - Available data for pentachlorophenol indicate that acute and chronic toxicity to freshwater acquatic life occur at concentrations as low as 55 and 3.2 ug/l, and toxic to salt water acquatic life as low as 53 to 34 ug/l, respectively.

The human health derived criterion levels for pentachlorophenol is 1.01 mg/l. The organoleptic level for controlling taste and odor in ambient water is estimated to be 30 ug/l.

The size of the two adjacent rivers and their direct discharge into the Pacific Ocean (no bay) indicates dilution of any groundwater entering fresh water or salt water will eliminate both acute and chronic effects on aquatic life.

The proposed background level for PCP in soil below the site is therefore derived to be 100 x 1.01 mg/l or 100.1 mg/l.

Shipment of Waste - It appears that considerable soil (a hundred cubic yards or more) could be involved in the clean-up and we should consider bulk transportation rather than drums.

PCP Analysis - Before starting the project, a laboratory should be located nearby that could provide quick turn-around time for sampoling.

Sampling Plan - Inside the diked area, we should consider a 5' grid to establish the limits of the clean-up. Reference marks should be made on the dike walls, using survey or stakes and flags to mark the limits of excavation. Excavation to one foot should be made with a shovel so that the two samples, taken on the first sampling round (surface and one foot deep) can determine the first layer to be excavated.

After the first layer is removed - (one foot if test shows contamination that deep, or 6 inches if only surface contamination), resample on the sample 5' grid and excavate 6 inches unless it is clear a "hot" spot exists and deeper cuts are justified. Reduce or expand the grid as each depth is sampled.

Samples should be coded to match the grid and depth to avoid field confusion.

K878 - 1078

TOLS002014

BZTO104(e)038835

Grid lines should use letters A - B - C - D - E - F - in one direction and numbers 1 - 2 - 3 - 4 - 5 - in the other. Depths should be in decimal feet below grade.

A typical sample code would be (B-3-0.5) to represent a sample at grid lines B and 3, 6" deep.

Preplanning - Detailed preplanning is needed to coordinate the contractor, disposal site acceptance, manifest, and on-site safety and decontamination of equipment.

C. P. Brush
3/12/84

K978 - 1079

TOLS002015

BZTO104(e)038836

NEIL WALLIS

TIME OIL CO.
P.O. Box 03117
12005 N. Burgard St.
Portland, Oregon 97203

Phone: (503) 286-1611

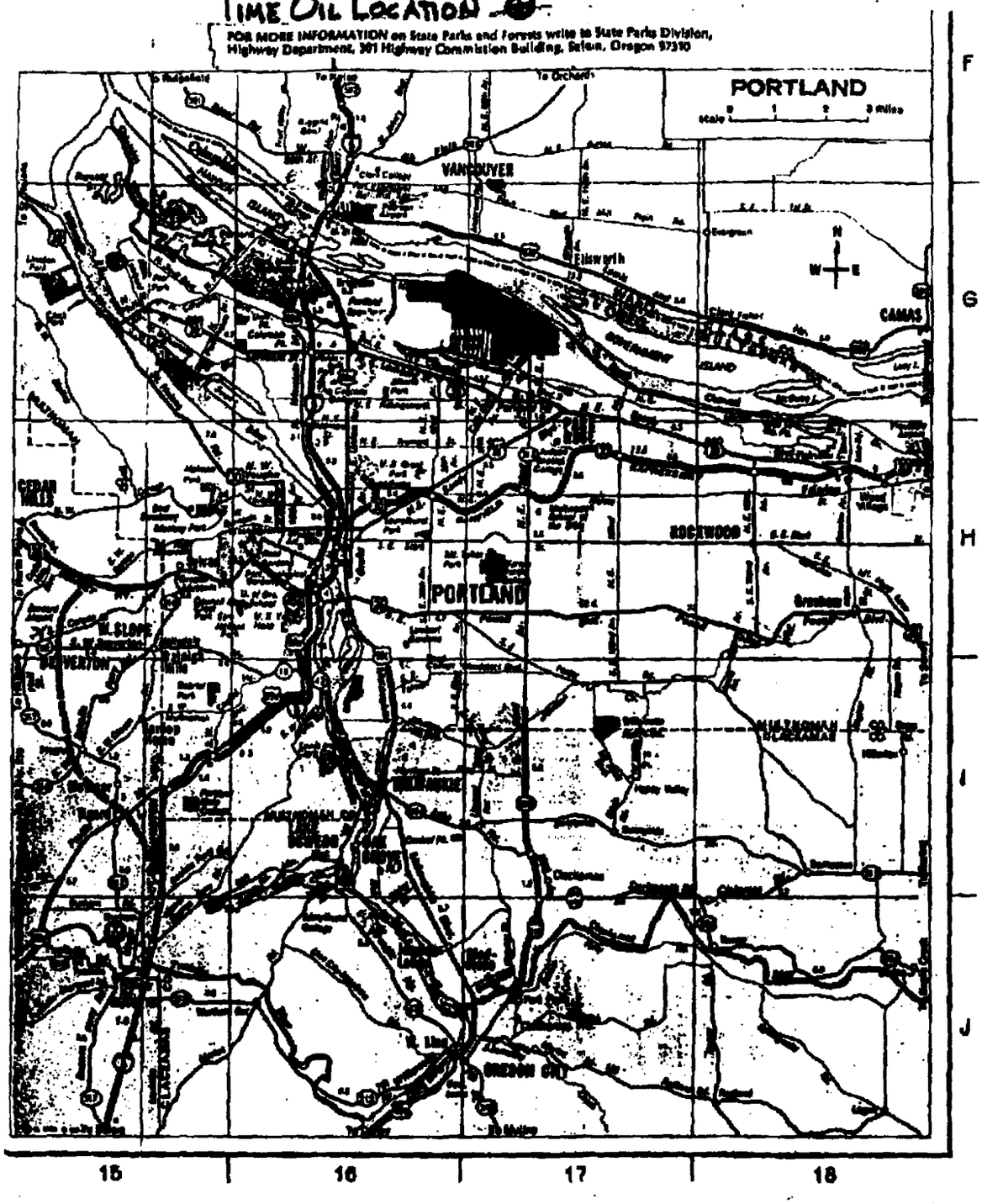
K378 - 1087

TOLS002016

BZTO104(e)038837

PLACE IN TIME OIL File
Dec 1983

TIME OIL LOCATION



TOLS002017

ANALYTICAL CHEMISTS INC.
4900 9TH AVENUE N.W., • SEATTLE, WASHINGTON 98107-3697 • 206/783-4700

ANALYSIS REPORT

CLIENT: Time Oil Company

DATE REPORTED: 4/18/83

REPORT TO: Neil Wallis
P.O. Box 03117
St. Johns Station
Portland, OR 97203

P.O.# 24870

Laboratory Sample No. 57057

Client Identification Soil 2/28/83

SUBJECT: Static acute fish bioassay testing on juvenile rainbow trout Salmo gairdneri.

PROCEDURE: Sample was tested at both the 100 and 1000ppm levels. The procedure followed is outlined in the State of Washington's General Procedure for Static Acute Fish Bioassay Testing.

The test was begun using method two in which the test organisms were placed into the chambers within 30 minutes of adding the toxicant to the water. Daily logs of temperature, dissolved oxygen and mortalities were maintained.

RESULTS: Thirty (30/30) of the fish tested at the 1000 ppm level died within the first five hours of the four day test period.

Thirty (30/30) of the fish tested at the 100ppm level died within 24 hours of the four day period.

None (0/60) of the control fish died during the four day test period.

CONCLUSION: The soil sample submitted by the Time Oil Company was found to be toxic to juvenile rainbow trout at both the 100 and 1000 ppm hazardous waste material (E.H.W.) under Washington State Guidelines.

Respectfully Submitted,

Mark A. Fugiel
Director of Industrial Chemistry

K378 - 1090

TOLS002018

BZTO104(e)038839

KOPPERS

Interoffice Correspondence

To Don Marion | From James F. Garrity

Location X-750 | Location St. Louis

Subject January Monthly Report | Date January 31, 1986

ST. LOUIS

PRODUCTION

A railcar, 6110 gallons, of Tribucide P-75 RTU was shipped to Reuten-Klein in Schenectady, NY.

Asplundh Tree Expert and Weiler Inspection, bought a total of 24,000 pounds of Tritox/Poletox.

With the 1986 Pakcage Goods Program under way, 3300 gallons of Raincoat, 2200 gallons of Wolman Clear, and 1100 gallons of Wolman Green were produced and packaged.

Western United Electric in Denver, CO ordered 72 more Pole-Hugger bandages.

MISCELLANEOUS

Three full truckloads of Wolman Wood Stains were sent to D.J. Wholesale in Augusta, ME; Brattleboro, VT and Albany, NY. A fourth location, Manchester, NH will also be receiving a truckload once more stains arrive from Glidden.

Met with Time Oil, Bob Abendroth and John Denham, to discuss what has been done and what needs to be done in the blending area that has contamined dirt of penta.

K388 - 0024

K-5 REV. 8

TOLS002019

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Ordered another railcar, 10,000 gallons, of Kolinem from Youngstown. The Kolinem is used in Tritox/Poletox.

JONES-HAMILTON

CCA-C

A total of 185,000 oxide pounds, seven truckloads and one bulk container were sold this month.

The backlog for February is two truckloads, one bulk container and one half truckload of non-trademark. Also, one truckload of arsenic acid for McCormick and Baxter in Portland, OR will ship in February.

James F. Garrity

JFG/mp
cc: J. E. Hamilton

TOLS002020

BZTO104(e)038841

KOPPERS
Interoffice Memo

To Mark Urbassik | From D. R. Kerschner

Location K-1940 | Location K-1940

Subject Monthly Update - January, 1986 | Date February 4, 1986

Galesburg RI/FS

The Draft RI Report was submitted to IEPA, IOAG, and US EPA in early January. The State has indicated that they will need until February 7 to complete their review. We were also informed that IEPA is changing project managers.

US EPA has apparently also changed personnel - Dave Favero is no longer associated with the project. Unfortunately, his replacement (Brad Bradley) started his first correspondence relating to the project with a statement about the "...gross deficiencies identified during the review of the first 178 pages ..." of the report. He refuses to list any specifics, and the general problems he does list are not, in my opinion, "gross deficiencies," nor are all of them correct. I am in the process of gathering some background information about Mr. Bradley, and plan to approach the State about how exactly they plan to handle US EPA's review. This attitude by Mr. Bradley is similar to dealings I have had with other Regions, and is uncalled for. I can see a possibility of US EPA's involvement creating serious problems relating to the completion of the RI/FS, unless we can get the State to take a stand. I will be working with Temp Smith on a resolution.

Denver RI/F

We are still waiting for some word from US EPA concerning the future course of the project. In the meantime, Monroeville is moving ahead with a report and plans for additional work which is needed.

The Department of Health reviewer seems to be irreversibly confused as to how lagoon closure will fit into the RI/FS (the general approach was CDH's idea in the first place). I am awaiting his comments on the Closure Plan to see whether we are going to have any agency vs. agency problems at this site.

Carbondale RI/FS

A purchase order for Woodward-Clyde is being cut. We will be meeting with IEPA, IOAG, and US EPA on February 4th in an

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attempt to work out the conflicts between the two Consent Agreements. If this occurs, the signing will probably follow shortly thereafter.

Monroeville has been requested to put together a study of Glade Creek.

Feather River RI/FS

Have yet to receive a draft Consent Agreement from US EPA. I also discovered that EPA now intends to submit the Work Plan for public comment; thus, once again, we are not guaranteed that we have a final document. Any work that may be dictated by the public comment period would probably be worked into the yet-to-be-defined "Phase # Activities". Bid packages for drilling have been distributed; responses are due by February 7th. RFP's for the laboratory work will go out shortly. A meeting between Koppers and D & M to work out problems is scheduled for February 11.

Ontario, CA

Jim Batchelder and I will be meeting with the Regional Water Quality Board on February 10 to discuss the Investigation and future remediation. We have been looking at disposal alternatives for all pertinent materials, and are also making preparations for RCRA closure.

Feather River, CA

Still working with Purchasing on waste issues at the plant. I am also putting together some information concerning the Discharge Permit.

Denver, CO

The plant got a shipment of waste off to Grenada; there is still some waste that we need to find a home for.

The POTW permit was obtained in January, and the plant is presently discharging. Indications are that the system is working well. Bernie Maloney has talked to me about putting together a long-term environmental program for the plant; I will discuss this with Jim Batchelder.

Heath, OH

Received a draft proposal for an environmental assessment from Monroeville; this is presently being finalized. I will need to get together with Real Estate to decide whether

we should conduct work on the parcel we are presently leasing.

Raleigh, NC

Monroeville is preparing a proposal for a RI/FS. I am working out the paperwork to receive approval to send the remaining contaminated soil (about 1,100 yards) from the old lagoon area to a landfill. Because the plant had its Hazardous Waste I.D. number cancelled because of lack of activity, it has been necessary to involve North Carolina in the project. Research indicates that the handling of the plant's only current waste stream is appropriate, but I am still reviewing the practice to determine whether it should continue.

Oak Creek, WI

The plant experienced a fire involving the baghouses which resulted in a shut-down of operations during the repair period. All systems are now operational, but further work will be necessary upon the arrival of replacement parts.

The plant also had a spill of approximately 20,000 pounds of sulfonic acid. The State was contacted immediately, and the plant retained Chemical Waste Management for cleanup and disposal services. I have asked Purchasing to review that arrangement, and to suggest changes, if appropriate. I also notified the National Response Center of the occurrence.

I did not receive word of either of these occurrences until at least one week after they happened. It appears that the plant is not familiar with procedure; also, no spill or contingency plans were required and, thus, do not exist. I will be visiting the plant on February 5, and will work out these difficulties. I will also review the remainder of my plants to ensure that the potential for similar occurrences does not exist.

Morgan, PA

The plant has been cleaned out, and all wastes have been shipped to Emille.

Time Oil - OR

Met with Time Oil in Pittsburgh regarding the penta cleanup and Koppers' future involvement. They have discovered that no landfill will accept the remaining contaminated soil, and thus, appear unwilling to let Koppers out of the problem.

Temp Smith is researching our actual responsibilities in the matter.

Time Oil has been talking to several remediation firms dealing with "detoxification". My initial impression is that the methods are questionable; I have received some literature which I am reviewing.

Valparaiso, IN

Reviewed the plant's biennial waste report prior to submittal.

Garwood, NJ

Received analytical results for the soil excavated from the underground tank area - this shows consistent "petroleum hydrocarbons", but inconsistent presences of specific parameters. The results have been transmitted to the State for their review, and a meeting will most likely result.

Also assisting the plant in the completion of their permit application for their storage facility. The "alternative information statement" questions resemble the Pennsylvania DER Module 10 in detail.

General

Approached Treated Wood Products regarding generic incineration and land treatment studies, with the hope of eliminating the need to do individual studies at each site. This matter was referred to Jim Batchelder; I will be talking to him shortly.

D. R. Kerschner/wl

D. R. Kerschner

DRK/wl

cc: S. M. Tymiak
J. Dern
M. Dvorsky
A. Middleton
J. Smith
J. Kane
T. Hays
R. Ohlis
J. Batchelder
R. Hamilton
C. Brush
E. Kerschner
C. Markle
J. Quagliotti
R. Hepner
T. Smith
J. Blundon
R. Wagner
W. Baldwin
P. Sawchuck

TOLS002024

K392 - 2381

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D.F.

KOPPERS

Interoffice Correspondence

To J.R. SMITH — From D.R. KERSCHNER

Location MONROEVILLE — Location K.1940

Subject REMEDIAL MEASURES-TIME OIL — Date FEBRUARY 20, 1986

For your information, Time Oil is an oil terminal where Koppers operated a penta mix facility. Soil contamination is known to exist, and groundwater contamination may also be present. Time Oil Company, who owns the property, has been taking the lead in site cleanup, but Koppers has some degree of responsibility. As part of Time's cleanup evaluation, they have been talking to two companies who claim they can "detoxify" the soil and groundwater, respectively. Time has provided us with some literature concerning these processes (enclosed). I would appreciate it if you or one of your staff would look over this information and let me know:

(1) Whether the literature provides you with enough information to make an evaluation, and,

(2) Whether this technology is feasible and should be pursued further.

We are unsure of the project schedule requirements at this time, so I would appreciate your review as soon as possible.

Dave

D.R. Kerschner

DRK/bj
Enclosure

TOLS002025

K417 - 1148

K-6 REV.2

BZTO104(e)038846

KOPPERS

Interoffice Correspondence

To P. A. Goydan
M. S. Marino
Location G. Mills

From W. J. Baldwin
Location K-927

Subject: TIME OIL COMPANY

Date June 1, 1983

As most of you are aware, in the near future we will be shipping a concentrated Woodtox[R] solution from St. Louis to Time Oil for further dilution and sale as Woodtox Preprime RTU. The concentrated solution of Woodtox is not currently registered with U.S. EPA; however, we are exempt from registration requirement in accordance with 40 CFR, Section 162.5(b)(1). The regulations do require, however, that a label accompany each shipment. As such, I am attaching a draft label prepared by G. Mills and myself for your review and comment.

Bill B.

William J. Baldwin

WJB/pc

Enclosure

cc: J. D. Palmer - Enclosure
D. F. Marion - "
J. J. Kozak - "

K422 - 2144

TOLS002026

BZTO104(e)038847

PHONE 285-2400
CABLE ADDRESS: TIMOIL

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
SAN PEDRO
LOS ANGELES

TIME OIL COMPANY

2737 W. COMMODORE WAY, P.O. BOX 24447, TERMINAL ANNEX, SEATTLE, WA 98124

February 19, 1986

Koppers Company, Inc.
Attn: Donald F. Marion
Forest Products Group
Koppers Building, Room 750
Pittsburgh, PA 15219

Dear Don:

This refers to our mutual problem of pentachlorophenol contamination at 12005 North Burgard Road in Portland Oregon.

During our January 23, 1986 meeting at your offices in Pittsburgh, you mentioned that Koppers would agree to paying half the clean-up costs incurred/committed to date and that further coordination between Koppers and Time would be appropriate for future committments. Time concurs with this approach.

In this light, the below accounting to date will be followed by an invoice two weeks from today unless we hear some objections from you before then.

EXPENDITURES

4/26/85	Chem-Security Systems (Laboratory Analysis of soil sample)	150.00
7/10/85	Northwest Vacuum Truck Service (Relocating 242.76 tons of soil to Arlington)	9,000.00
7/29/85	Chem-Security Systems (Receiving 243.30 tons of soil at Arlington)	27,270.88
8/8/85	Environmental Emergency Services (Obtain and analyze 3 composite samples)	500.00
12/5/85	Environmental Emergency Services (Primary sampling and analysis plus report)	18,741.55
		$55,662.43

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COMMITTMENTS

DEQ per OAR 240-102-065	3,500.00
* Riedel Environmental Services (Amendment 2)	25,000.00 + $84,162.43
50% =	$42,081.21

* Name change from Environmental Emergency Services

Should you have any questions regarding the above, please give me a call.

Sincerely,

Robert D. Abendroth
Operations Manager

RDA/ch

000063

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KOPPERS

Interoffice Correspondence

To Joe Kusar — From D. W. May

Location K-750 — Location K-750

Subject TIME OIL AGREEMENT — Date June 13, 1984

JUN 14 1984

A complete report will be written in the near future providing the details of our decision concerning signing a contract to have Woodtox Preprime T manufactured at Time Oil Company. We have decided that it is in Koppers' best interest to produce this product in St. Louis. I project the sales of the product to be at 60,000 gallons in bulk, and an additional 10,000 to 20,000 gallons in drums for 1984. This small volume does not justify the $90,000 expense to have the material produced at Time Oil. We have decided to make bulk shipments direct from St. Louis and to find a low cost warehousing location for drum material on the West Coast. We will consider storing the drums at Jones Hamilton as well as manufacturing the product at Jones Hamilton and also look at potential warehouse sites nearer to the customer's plant.

One of the major drawbacks in manufacturing the product at St. Louis is the high freight cost of $0.65/gallon to move it in a bulk shipment to the customer's plant on the West Coast. The actual cost to produce in St. Louis based on the latest accounting procedures and estimated results of labor negotiations on the contract, etc., is $1.49/gallon. Including the $0.65 for freight, this gives a delivered cost to Koppers of $2.14 to the customer. Don Marion is going to concentrate on finding a way to reduce the freight cost since it represents approximately one third of the total delivered cost. Producing the product at Time Oil would have a cost of $1.92/gallon plus approximately $0.08/gallon freight to the customer, or a delivered cost of $2.00/gallon compared to $2.14 out of St. Louis with new economics. Due to the low volume sales of Woodtox Preprime T on the West Coast, there is only $0.12 absorption involved and is not the main factor for making the decision not to use Time Oil. The main factor was the low volume sales and the high cost ($90,000) to get the product made at Time Oil.

Before the decision becomes final, we wanted to give you and John Hite the opportunity to ask additional questions and/or change our decision. Please give us your final decision as soon as possible since it is essential that we get notice back to Time Oil.

D. W. May

DWM/mbm

cc: J. Hite
D. Marion
J. Palmer
J. Garrity

K-5 REV 2

000064

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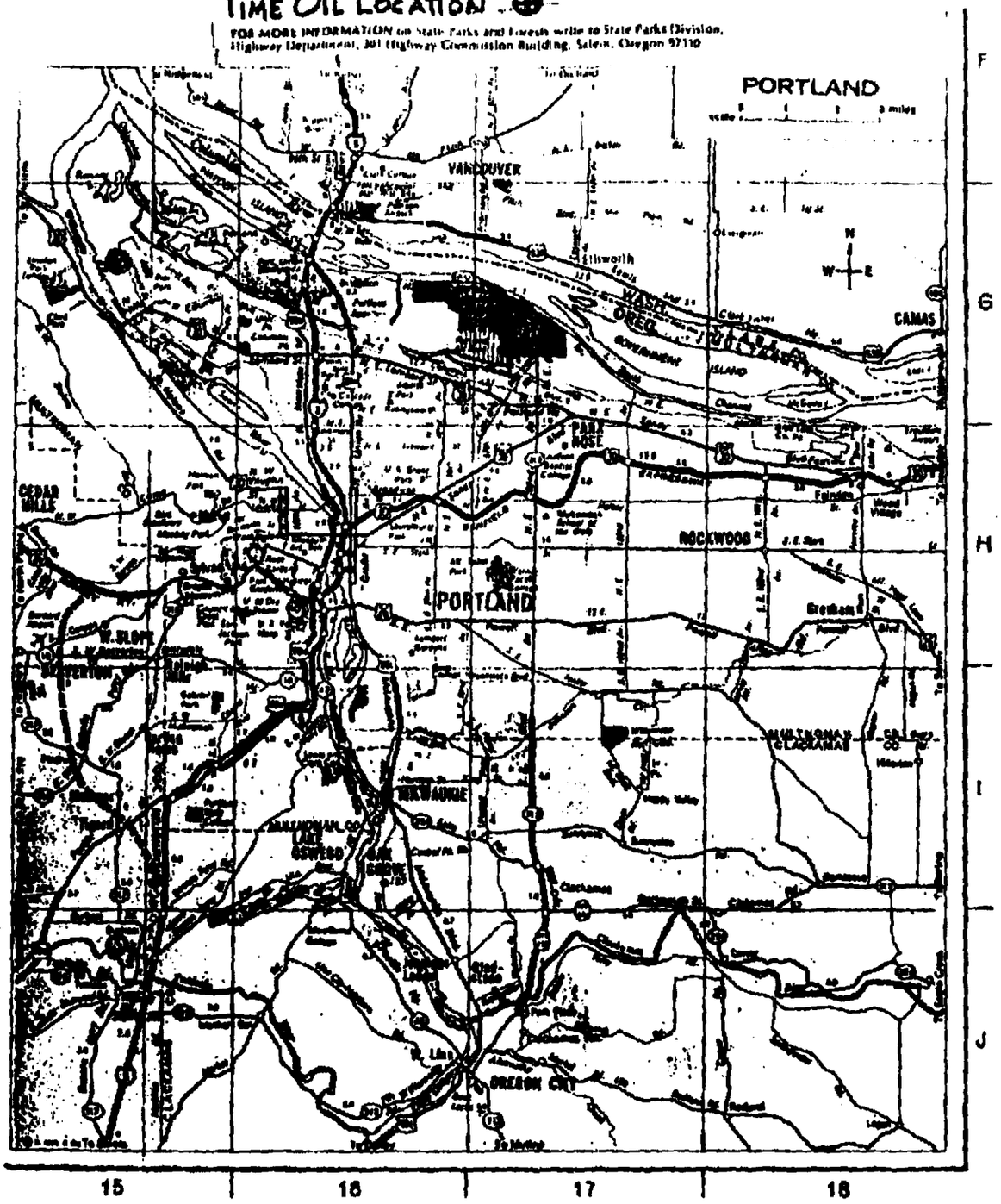
TIME OIL LOCATION ⊕



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TOLS002030

BZTO104(e)038851

MEMORANDUM

TO: R. D. Abendroth - Seattle
N. P. Leah (info)- Portland

DATE: January 22, 1981

FROM: Neil Gallagher - Portland

SUBJECT: Woodtreating Chemicals (Koppers Company)

Woodtreating has leased since 1967 the Southwest half of what was formerly the TBA Tire Warehouse. Time Oil leases the facility to them and bills them for Handling Charge. The facilities consist of Warehouse space, one 38,000 tank, three 20,000 gallon tanks, one 13,000 tank, one 7,000 gallon tank, one 1,400 gallon heating tank, one 5 HP Motor and 2-1/2 x 3" Gilbarco positive suction pump. In addition, Woodtreating purchased and we installed three 8,000 gallon tanks, one 6,000 gallon and one 3,000 gallon. The tanks are used for raw materials, such as three different solvents, and finished products for shipping. All the tanks are manifolded to a central location and hoses are used for transferring and moving all the products. The heating tank is equipped with four 480V - 115 15W x 12' heating coils. Woodtreating sends in by tank car and by truck, all the raw materials. All products going out go in either bulk truck and trailer or in 55 gallon drums. Formulas are furnished to Time Oil Company by Woodtreating from their main office in St. Louis, Missouri. The finished products are in two different categories. LST Type, that is the lighter product, and Concentrates that are heavier and are usually put in drums.

To mix the raw materials a formulated amount (see attached formula sheet) is charged to the heating tank. The heating coils can be turned on manually or by a timed control switch. Normally the timer is set to come on at 1:00 A.M. or 2:00 A.M. in the morning and the products are hot enough to mix at 7:00 A.M., and if needed the tank is charged again and the heat turned on manually. This way two batches can be made up in one eight hour day. To mix a 30" x 4' a 80 mesh screen is placed in the top opening of the heating tank and the hot material is rotated from the bottom of the heating tank and goes back down in thru the screen.

Wax that comes in 7lb. slabs is broken up and melted down in the screen first. Then Penta that comes in 50 lb. bags is then poured into the screen and also dissolved. If the product is LST Type the heating tank is then pumped to one of the other tanks and more solvents are added and the product is then circulated in the tank from top to bottom for approximately four hours. Concentrates are either pumped into drums or pumped to a storage tank, for later shipment or drumming. It normally takes from one to two hours to add the wax and Penta, depending on consisting of the solvents and heat.

Penta is a very hazardous material and must be handled with many safety precautions. Full face masks and respirators must be worn, gloves, boots and rain gear must also be worn. It takes approximately two minutes to fill a 55 gallon drum and two men usually handle this operation. After filling bungs must be tightened, labels and stencils applied, and drums moved from filling area. For 10 drums the elapsed time will be close to one hour for two men. When product goes by truck and trailer, one hour is usually allowed for 7,000 gallons. The wax and Penta come into the warehouse on pallets, therefore a forklift is also an additional piece of equipment along with a floor jack and barrel trucks.

The billing consists of $615.00 per month for Facility Rental, $.0124 per gallon for LST Type of product, $.03715 per gallon for Concentrates and $.619 per gallon for filling drums, (see attached copy of billing). The average billing for the period of July 1, 1980 to December 31, 1980 has been $1,514.57, a total of 82,243 net gallons of LST Type, 45,016 gallons of Concentrates and 41,910 gallons drummed for the same period; a charge also of $.75 per drum of additive that is brought in and shipped is charged. This has been very nil for the last six months. During this same period we have received 83,482 gallons of Solvents, 1,960 bags of Penta, 10,010 lbs of wax, and 720 empty drums. All this material has to be unloaded and stored, but there is no charge for receipts.

Woodtreating is given an inventory at the end of each month (see attached copy). Due to the many different raw materials and finished product, this takes constant supervision on my part.

One pint of each batch of product mixed is mailed to St. Louis. As of January 1, 1981, a new Handling Charge will be applied (see attached copy).

All employees complain of working in this warehouse. Even with masks on, Penta causes your nose and eyes to run. The solvents have a very obnoxious odor and some employees this causes nauseau, and stomach upset.

TOLS002032

BZTO104(e)038853

PROPOSAL AND COST ESTIMATE

BENCH SCALE FEASIBILITY STUDIES FOR THE ELUTION OF PCP FROM CONTAMINATED SOIL

DECEMBER 19, 1986

Prepared for:

TIME OIL COMPANY
2737 WEST COMMODORE WAY
SEATTLE, WASHINGTON

Prepared by:

SRH ASSOCIATES, INC.
123 NE THIRD AVE, SUITE 230
PORTLAND, OREGON 97232
(503) 232-0824

INTRODUCTION

Time Oil Co. has been investigating the nature and extent of soil and groundwater contamination at its Northwest Terminal facility located in Portland, Or. as a result of pentachlorophenol (PCP) releases which occurred at that site over a period of several years. The results of this investigation indicate that the sandy soils to the south of the wood treating chemicals warehouse are contaminated with PCP at concentrations ranging up to several thousand parts per million.

As a result of these findings, Time has performed a preliminary analysis of potential remedial alternatives for the contaminated soils at the site. Due to existing bans on landfilling of the waste (categorized by EPA as listed hazardous waste number F027) and due to Time's expressed interest in preventing further environmental impairment from this site, few alternatives were concluded to be viable. In October of 1986, SRH Associates conducted a review of all available alternatives for the disposal or treatment of Time's PCP contaminated soil. Since this evaluation, the residual soils from the incineration or thermal treatment of F027 contaminated soils have been upheld as being a separately listed hazardous waste (F028), making such thermal processes unsatisfactory remedial alternatives for Time since the resulting soils could not reasonably be expected to be easily delisted from hazardous status.

On the basis of these cumulative findings, no commercially available, licensed process was identified that was capable of treating or disposing of Time's PCP contaminated soils. Several developmental technologies were identified that appeared to have the capability to achieve Time's objectives but which had not been commercialized or demonstrated under conditions found at the Northwest Terminal facility.

On the basis of Time's evaluation of the available remedial alternatives and the above information, a site specific assessment of soil washing technology was recommended. (See Report "Pentachlorophenol Contamination, Northwest Terminal, Section II, pg. 20) Soil washing involves the extraction of wastes from soils using solvents, surfactants or other solutions. The current status of soil washing technology is generally regarded as developmental, however it represents one of the more advanced technologies available to Time in light of the restrictions placed on landfilling, incineration, and closure of the wastes in place. Assessment of this process is consistent with EPA's Research, Development and Demonstration (RD&D) protocols which ultimately require a demonstration to the agency of the effectiveness and limitations of a waste treatment technology prior to its implementation.

The Northwest Terminal contamination is of such a nature that some degree of demonstration to the regulatory agencies of any cleanup process can be expected to be required prior to the implementation of cleanup efforts. This requirement can be expected due to existing regulations, the extent of contamination at Northwest Terminal, and the potential for the presence of dioxin in the wastes.

The following is a proposed scope of work and cost estimate for a bench scale evaluation of soil washing protocols for application to Time's PCP contaminated soil. The proposal defines the work necessary to review existing literature and to perform bench scale studies to generate data which confirm or reject the assumption that soil washing technologies can successfully clean up Time's contaminated soils. The proposed scope of work does not, at this time, include pilot scale studies, which ordinarily follow bench scale determinations, since it is misleading to attempt to define the scope of work or costs associated with the pilot phase of the project until such time as bench scale results define an appropriate process for scale-up considerations.

SCOPE OF WORK

OVERVIEW

The complete investigation of the feasibility of using soil washing procedures to remediate soils at Time's Northwest Terminal includes the following tasks:

- Review of existing literature and regulations.
- Performance of bench scale experiments.
- Evaluation of bench scale results and execution of a decision to continue or terminate the investigation.
- Performance of pilot scale experiments.
- Determination of the economic feasibility of the projected process and execution of a decision to proceed or terminate the investigation.
- Engineering and design of process equipment, if not commercially available.
- Fabrication of unavailable equipment and implementation of the process for EPA demonstration and subsequent cleanup activities.

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This proposal addresses only the first phase of the project which includes the first three tasks. Segmenting the project into rational phases with decision points at which to appraise the value of proceeding following completion of each phase, permits stricter control over the project and allows better estimation of the scope of work and costs involved with each phase. The phases may be described as follows:

- o Bench scale studies
- o Pilot scale studies
- o Engineering and Implementation

The detailed scope of work and cost estimate for the bench scale study phase of this project is presented below.

BENCH SCALE STUDIES

The bench scale studies are intended to generate sufficient data to allow Time to make an informed decision to proceed with or abandon the project with a minimal amount of capital expended. The tasks associated with this phase are designed to evaluate three different soil washing procedures, to define the parameters associated with their use, to characterize the soil chemistry and the spectrum of contaminants in the PCP contaminated soil at Time's Northwest Terminal facility, to select the most effective soil washing procedure based on bench study results, to define the nature of the recovered elutriate solution generated during soil washing, and to assess methods for destruction of the contaminants found in that elutriate. The following is a detailed task breakdown to accomplish these objectives.

Task 1 - Review Current Regulations

To reduce the risk of new regulations or new interpretations of existing regulations unfavorably impacting this study, SRH will appraise the status of regulations affecting soil washing technology. These evaluations are necessary to prevent the expenditure of time investigating technologies which are generally regarded as unpermittable and to preclude the potential for regulatory violations and fines. Perhaps the most functional purpose of this task is to provide Time with both regulatory and political data to properly prepare submittals to EPA and DEQ in order to expedite acceptance of plans, permits and other communications.

EPA representatives from Region X, Waste Management Branch, Hazardous Waste Division, Seattle; EPA Headquarters, Office of Solid Waste, Washington, D.C.; and the Office of Research and

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Development (ORD), Cincinnati, OH., will be queried regarding the current and pending status of regulations regarding PCP treatment technologies. SRH proposes to solicit and evaluate the information received from these agencies in a confidential manner to allow Time Oil Co. access to unbiased information and to develop strategies which are expeditious due to their regulatory and political acceptability. Emphasis will be placed on extraction procedures. Particular effort will be placed on discussions with representatives from the Alternative Treatment Technologies Section of ORD to not only review the regulations associated with extraction of PCP contaminated soils, but to also determine the status of research being performed by EPA in this area.

This task is expected to require 2 weeks for completion with an estimated cost of $2,336.

Task 2 - Review Current Extraction Literature

SRH will review existing extraction technology by examining literature in the fields of hazardous waste extraction, food processing technology (specifically edible oils) and metal recovery and mining (ore leaching). In addition to the discussions with ORD described under task 1, EPA's list of internal publications will be reviewed to identify, obtain copies of, and subsequently review EPA literature in this field. General extraction theory will be reviewed using current texts. U.S. patent literature will be reviewed to appraise the status of engineering in this field. Manufacturers of extraction equipment will be contacted to determine the commercial availability of extraction equipment and to allow initial estimates of potential costs.

SRH will present the results of tasks 1 through 3 to Time Oil Company representatives at Time's offices in Seattle as a part of task 2. This meeting will be conducted to review findings and to refine the scope of work relative to the development of the bench scale study plan.

This task is expected to require 2 weeks for completion with an estimated cost of $4,316.

Task 3 - Evaluate the Nature of the Wastes to be Treated

SRH will determine the porosity, grain size distribution, organic carbon content and other critical parameters of Time's contaminated soil which affect the extraction of PCP and any other identified contaminants from the soil. Analyses performed to date have indicated the presence of unidentified contaminants

TOLS002037

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in addition to PCP in the soil at Northwest Terminal. SRH will determine the presence and nature of contaminants other than PCP in the soil to allow determination of their impact on the extraction process. Samples of soil from the Northwest Terminal PCP site will be taken and evaluated for priority pollutants by GC/MS, ICP and other appropriate analytical techniques with identification of other major peaks as indicated. Specifically, soil will be evaluated for grain size (particle size distribution), soil type, porosity, specific gravity, moisture content, pH, total organic carbon and oil and grease levels. Two samples are proposed for each test to allow for an estimation of the range of concentration of the contaminants found.

This task is expected to require 3 weeks for completion (including 2 weeks for laboratory analyses) with an estimated cost of $6781.

Task 4 - Develop an Initial Plan for Bench Scale Studies

The information generated in tasks 1 through 3 will be used to refine the experimental approaches needed to complete bench scale studies. The following proposed plan is expected to undergo modification based on those results.

This investigatory plan is based on extraction theory and the existing literature but is heavily weighted towards existing and available technology and equipment. It is intended to quickly produce sufficient results to allow Time to determine if further pursuit of the project is warranted.

Extractability of soil contaminants will be initially evaluated using simple jar tests. Jar tests will be performed by introducing a known amount of contaminated soil into a beaker containing a fixed volume of extracting solution. The material will be agitated for a fixed period of time at a known temperature. Following this protocol, the filtered solution and the extracted soil will be analyzed for PCP and the extraction ratio determined.

Organic solvents, elevated pH solutions and aqueous solutions of surfactants will be evaluated. Up to four solvents, four different pH levels and four different surfactants will be evaluated. Based on the observed results, relative costs, safety and environmental considerations, two different elutriating solutions will be selected for further evaluation, including optimization of extraction conditions. The effect of the extraction procedure on contaminants other than PCP which have been determined to be present in the soil will be assessed by

analysis of the extract and the residual soil for these materials. Conditions indicative of a potentially successful soil cleaning process will be pursued for optimization of the batch process. To optimize the process, the extracting conditions will be varied with respect to surfactant concentration, extraction time, temperature and/or pH, as appropriate, to maximize the removal of PCP and other contaminants from the soil. It should be noted that different contaminants may require different extraction solutions (or combinations of solutions). SRH believes that PCP and oil are the principal contaminants and a single extraction solution may be used to remove both substances from Time's soil.

When the batch process has been optimized in the above fashion, samples of the elutriate will be analyzed for all identified contaminants. A description of the elutriate solution will be prepared to allow for evaluation of elutriate treatment alternatives. At this time, it is expected that oxidation or reduction of the waste material represents a potential treatment option but that final selection of a suitable treatment will require a precise understanding of what contaminating materials, other than PCP, may be present.

The optimized solution will be used to compare three extraction procedures, as appropriate, i.e. sequenced batch, countercurrent, and reflux (Soxhlet) extractions. These processes can be conducted in SRH's bench scale, laboratory apparatus. The objective of this set of tests is to optimize the extraction procedure by improving efficiency and minimizing the quantities of solution required. This study will necessarily be contingent upon the extraction solutions selected. For example, since caustic and surfactant solutions are not generally volatile, Soxhlet procedures would not be applicable to these solutions and therefore would not be evaluated. Conversely, if an organic solvent is indicated as the elutriating solution, it may be necessary to remove the residual solvent from the extracted soil prior to discharge from the extractor. In this case, sequenced batch extraction may be favored while continuous processes such as countercurrent or soxhlet extraction would be contraindicated.

The last evaluation in the bench scale phase of the project is the determination of a treatment method for the extracted material. Although this evaluation will ultimately depend on the nature of the material as produced, it is believed that oxidation/reduction or separatory methods represent likely candidates. For example, if the extraction is performed using caustic solutions, acidification of the extract to a pH < 5.0 may precipitate significant amounts of

PCP due to the reduced solubility of this compound in its acid form. Conversely, if large amounts of oil are present, it may be necessary to utilize a solvent as the extractant, in which case removal of the solvent and treatment of the residual material through peroxide, permanganate, or other chemical oxidation process, chemical reduction, or physical adsorption onto organic or inorganic substrates may be preferred.

The plan will be developed in close association with Time Oil Co. personnel to ensure that the resultant plan meets Time's expectations and requirements.

This task is expected to require 1 week for completion, with an estimated cost of $2290.

Task 5 - Implement Bench Scale Study Plan

SRH will conduct the implementation of the study as planned in task 4, above. The plan, which will have been developed in close coordination with Time Oil Company, will have the following components for the sake of discussion and cost estimation:

- perform 12 initial jar tests
- analyze 24 PCP samples from initial jar tests
- perform 6 secondary jar tests
- analyze 12 PCP samples from secondary jar tests
- perform 4 jar tests for optimization
- analyze 8 PCP samples from optimization jar tests
- perform 3 process emulating extractions (i.e. soxhlet, countercurrent, etc)
- analyze 6 PCP samples from process emulating extractions
- analyze optimized extract from optimized jar test for all identified contaminants
- perform 4 separatory tests on optimized extract
- perform 3 oxidation tests on optimized extract
- perform 2 reduction tests on optimized extract
- analyze effluent from the above extract destruction tests (9 PCP analyses)
- analyze 1 effluent sample for all identified contaminants

The results of the bench scale study will be a summary report to Time Oil Co. indicating the success or failure of the soil washing process at the bench scale level and projecting the probability for success of a pilot level scale-up.

SRH has evaluated the topic of PCP extraction from soil and is aware that extensive work has already been performed in assessing

the extraction efficiency of this material from soils in an EPA directed extraction procedure for preparing samples for quantitative analysis. This work, done to provide a means for analyzing contaminated soil, has direct bearing on this project, and leads SRH to conclude that reflux extractions may pose a viable and well documented process for PCP contaminated soil remediation. To date, SRH is unaware of any commercial effort to decontaminate soils by this process.

This task is expected to require approximately 12 weeks for completion, including laboratory turn around time. The estimate cost for this task is $23,680, including analytical costs.

Task 6 - Prepare Report and Submit Recommendations

SRH will prepare a summary report presenting the data, conclusions and its recommendations to Time Oil Company. The report will include copies of experimental protocols and analytical results and will present a summary of the results and their significance to allow Time Oil Company to determine if further pursuit of this project is warranted. SRH will also attend a one day meeting at Time's offices in Seattle to review the results and conclusions with Time's representatives.

This task is expected to require 1 week for completion with an estimated cost of $2,626.

COST ESTIMATE

Although the precise determination of the costs associated with any developmental process is difficult due to the large potential for project reorientation based on new results and findings, SRH believes that the following cost estimates provide a good foundation for project assessment. SRH proposes to perform the work on a time and materials basis according to its current rate schedule. The estimated costs presented herein would not be exceeded without prior authorization from Time.

A detailed cost estimate breakdown is presented in figure 1. SRH suggests that the estimate be reviewed following the completion of tasks 1 - 3, to reflect information obtained during these activities which could impact the assumptions made in estimated tasks 4 through 6. SRH estimates the total bench scale phase costs to be $37,868 including labor and expenses.

TABLE 1 - COST ESTIMATE DETAIL

TASK	PERSONNEL	HOURS	COST
TASK 1 - REVIEW CURRENT REGULATIONS			
LABOR	REG. SPEC.	24.0	$1,920.00
	CLER	8.0	$216.00
	TOTAL	32.0	$2,136.00
EXPENSES	MISC.		$200.00
	TOTAL		$200.00
TOTAL			$2,336.00
TASK 2 - REVIEW CURRENT EXTRACTION LITERATURE			
TASK 2A - REVIEW LITERATURE			
LABOR	SR. SCI	32.0	$2,560.00
	CLER	8.0	$216.00
	CHEM	10.0	$500.00
	TOTAL	50.0	$3,276.00
EXPENSES	MISC.		$200.00
	TOTAL		$200.00
TOTAL			$3,476.00
TASK 2B - MEETING WITH TIME OIL CO			
LABOR	PRIN	8.0	$640.00
	TOTAL	8.0	$640.00
EXPENSES	MISC.		$200.00
	TOTAL		$200.00
TOTAL			$840.00

	TOTAL TASK 2			$4,316.00
TASK 3 - EVALUATE NATURE OF WASTES				
	LABOR	SR. SCI	16.0	$1,280.00
		CLER	8.0	$216.00
		CHEM	8.0	$400.00
		GEOL	8.0	$480.00
		TOTAL	40.0	$2,376.00
	EXPENSES	MISC.		$300.00
		ANALYTICAL		$4,105.50
		TOTAL		$4,405.50
	TOTAL			$6,781.50
TASK 4 - DEVELOP STUDY PLAN				
	LABOR	SR. SCI	24.0	$1,920.00
		CLER	10.0	$270.00
		TOTAL	34.0	$2,190.00
	EXPENSES	MISC.		$100.00
		TOTAL		$100.00
	TOTAL			$2,290.00
TASK 5 - IMPLEMENT BENCH SCALE STUDY				
	LABOR	SR. SCI	40.0	$3,200.00
		CLER	16.0	$432.00
		CHEM	72.0	$3,600.00
		GEOL	24.0	$1,440.00
		TECH	40.0	$1,600.00
		TOTAL	192.0	$10,272.00
	EXPENSES	MISC.		$350.00
		ANALYTICAL		$9,487.50
		COMPUTER		$150.00
		OTHER LABORATORY		$3,421.25
		TOTAL		$13,408.75
	TOTAL			$23,680.75

TASK 6 - REPORT AND RECOMMENDATIONS

TASK 6A - PREPARE REPORT

	LABOR	SR. SCI	8.0	$640.00
		ADMIN	8.0	$480.00
		CHEM	5.0	$250.00
		CLER	8.0	$216.00
		TOTAL	29.0	$1,586.00
	EXPENSES	MISC.		$200.00
		TOTAL		$200.00
	TOTAL			$1,786.00

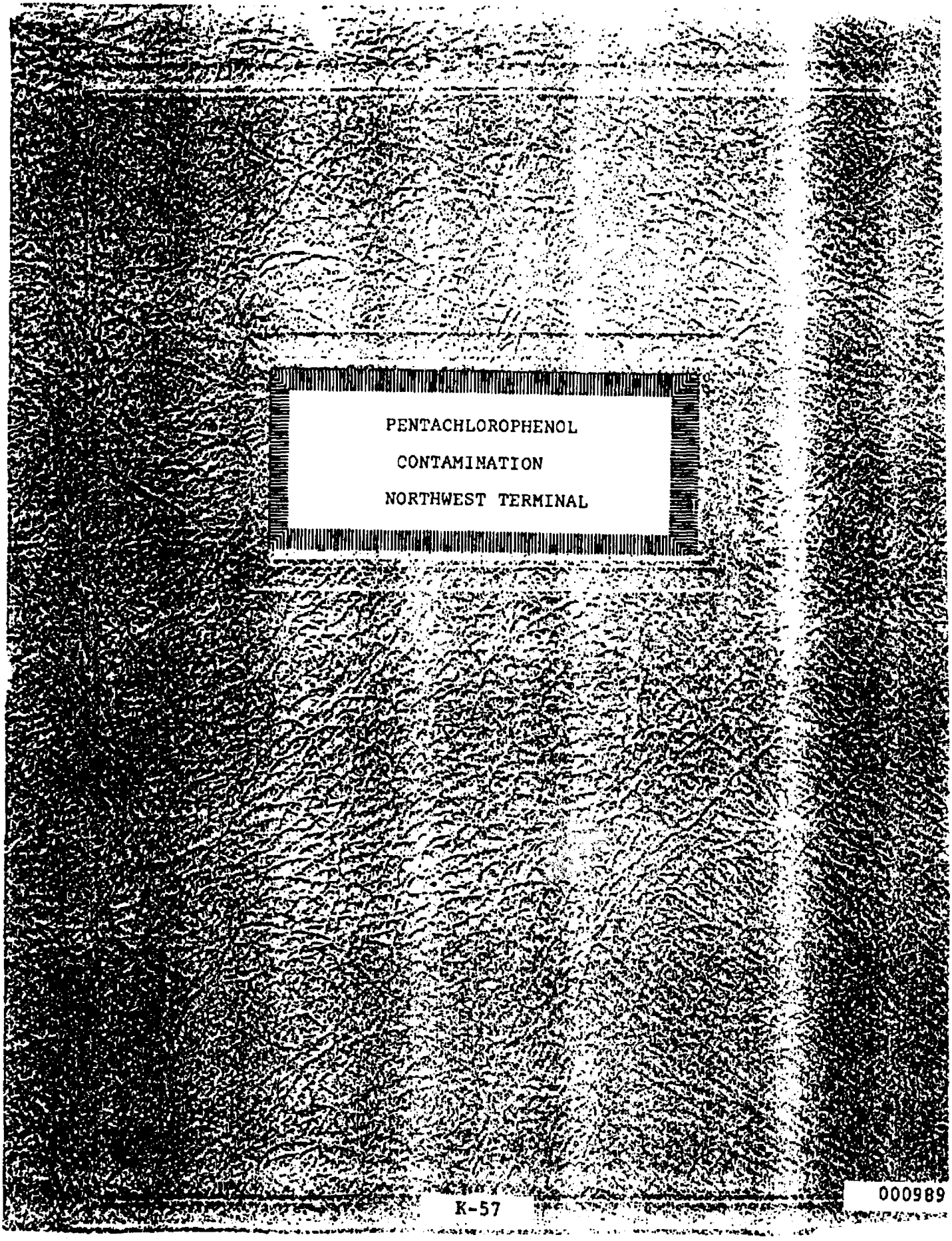
TASK 6B - MEETING WITH TIME OIL CO

	LABOR	PRIN	8.0	$640.00
		TOTAL	8.0	$640.00
	EXPENSES	MISC.		$200.00
		TOTAL		$200.00
	TOTAL			$840.00
	TOTAL TASK 6			$2,626.00

PROJECT TOTAL $42,030.25

NOTES:

REG. SPEC	REGULATORY SPECIALIST
CLER	CLERICAL
SR. SCI	SENIOR SCIENTIST
CHEM	CHEMIST
PRIN	PRINCIPAL
ADMIN	ADMINISTRATIVE ASSISTANT
GEOL	GEOLOGIST



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TOLS002045

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PENTACHLOROPHENOL

CONTAMINATION

AT

TIME OIL COMPANY

NORTHWEST TERMINAL

12005 NORTH BURGARD ROAD

PORTLAND, OREGON

OCTOBER 1, 1986

PREPARED FOR:

TIME OIL COMPANY
2737 WEST COMMODORE WAY
SEATTLE, WASHINGTON

PREPARED BY:

SRH ASSOCIATES, INC.
123 N.E. THIRD AVENUE, SUITE 230
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000990

TOLS002046

BZTO104(e)038867

EXECUTIVE SUMMARY

On March 1, 1967, Time Oil Co. and Koppers Company entered into an agreement wherein Time would provide certain labor and services connected with the receipt, storage, handling and blending of specified woodtreating products, including pentachlorophenol. All products were owned by Koppers. The site selected for this activity included a warehouse and tank farm on a small (70' x 70') portion of Time's 45 acre Northwest Terminal located at 12005 North Burgard Road in Portland, OR.

The operation started up and continued routinely until January 28, 1981. Time then advised Koppers of its election to terminate the project effective March 31, 1982, the scheduled agreement expiration date. Various in-house inspections had indicated the possibility of soil contamination. Subsequent bioassay tests confirmed the existence of pentachlorophenol in the soil adjacent to the warehouse. Both companies concurred to close the site. Operations ceased. Orderly phase out actions were established and begun.

It is noteworthy that this entire closure effort was jointly planned and undertaken by the two companies to voluntarily correct what both felt may become a future problem.

By February 1985, on hand product inventory had been blended off and shipped out. All tanks and piping had been cleaned, with cleaning wastes being shipped to Arlington. Piping and tanks had been disassembled, removed and scrapped. In short, the site was cleared to ground level.

Soil clean-up began. Following coordination with the DEQ, the Arlington landfill and local contractors, some 242 tons of soil were shipped to Arlington. A sampling matrix was prepared and more than 150 soil samples were collected and analyzed for PCP. Concentration isopleths were generated, which depicted remaining contamination locations and degrees of contamination, the highest of which was 116,000 ppm. Isopleths showed site size had now expanded to about 70' x 140' in area. The concrete wall along the western edge of the site was removed, decontaminated and disposed of to facilitate removal of this newly discovered increased area of soil contamination. To aid in reducing the physical size of this newly defined area, the extremities of site soil were centralized to the one spot having the highest known contaminant concentration. Soil relocation actions were based on previously plotted contour determinations. They were successful in that the area was reduced to about 60' x 60'.

At the end of 1985, the EPA advised Time that soil contaminated with leaked PCP had been reclassified as hazardous waste (number F027) and that there were currently no hazardous waste facilities in the U.S. that would accept this waste.

Pending resolution of EPA/DEQ acceptable disposal methods for PCP contaminated soil, efforts were directed toward the determination of possible groundwater contamination. Fourteen wells were installed and developed during 1986. Two were subsequently closed due to inefficient operation. Remaining wells have been repeatedly sampled and those samples analyzed for PCP. Concentrations have not exceeded .044 ppm at the highest reading. While well water analysis is scheduled to continue quarterly until the project is completed, to ensure no groundwater migration goes undetected, there appears to be no real groundwater problem.

Since there was no regulatory relief in sight, which would permit off-site disposal of PCP contaminated soil, Time initiated an assessment of on-site remedial alternatives. Recommended actions are:

a. Select the "Surface Mounted Soil Washing" technique as the most logical remedial approach.

b. Perform bench scale and pilot level evaluations.

c. Determine necessary destruction steps of recovered extracts.

d. Ascertain technical permitting and economic feasibility of technique for final disposal action.

e. Compare results with repeat step by step examination of next most logical remedial approaches which are: "Surface Mounted Thermal Extraction" and "In-Situ Thermal Extraction".

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SECTION I

HISTORY

Section I provides a sequential summary of those activities relating to pentachlorophenol (PCP) operations within the Time Oil Company Northwest Terminal located at 12005 North Burgard Road in Portland, Oregon. The information was gathered from Time Oil files at the firm's Seattle headquarters. Data was extracted from reports, memos and other correspondence from Time employees, the Oregon Department of Environmental Quality (DEQ), the US Environmental Protection Agency (EPA) and private consultants.

BACKGROUND

Agreement with Koppers Company, Inc. (1967-1982)

On March 1, 1967, Time Oil Company reached an agreement with the Koppers Company, whereby Time would provide the storage, handling and distribution of Koppers owned specialty woodtreating chemicals, including PCP. The operating area included a warehouse building and an adjacent tank farm area (about 70' x 70') with an earthern surface. This small site was to become known collectively as the woodtreating chemicals area. Early in 1981, Time notified Koppers of their intent to terminate the agreement on March 31, 1982. Time and Koppers jointly agreed to immediately cease all PCP operations at the site, to remove all products, to clean all tanks and pipelines, to remove and dispose of all tanks and pipelines, to effect clean up of whatever contamination existed and to do it all within existing regulatory guidelines.

Various Site Inspections (1971-1984)

A summary of in-house site inspections, over the ten year period (1971-1981), identified the following problems related to the PCP operation.

- No spill control system in warehouse. Spilled liquid was able to run unrestricted through the warehouse area and drain out through doors. Sloping of the warehouse floor and installation of drains was recommended.

- o Floor of warehouse work area caked with product. Steam cleaning recommended.
- o No warning signs were posted which call attention to hazards in the area where PCP was stored and mixed.
- o Ground near end of pipelines saturated with product to a depth of 12 inches.

During February 1983, Time contracted with the AM-Test Corporation to conduct a fish bioassay test on the site soil. Analysis resulted in a finding of the soil (only) being toxic at the 100 and 1000 ppm levels.

On a subject matter completely unrelated to the pentachlorophenol operation and Time/Koppers planned actions, the DEQ conducted an inspection of the entire Northwest Terminal facility on October 25, 1984. On that date, the DEQ advised their intent to collect soil samples throughout the facility. It is because of this latter DEQ advisory that the following soil test results are included since two samples were taken from the woodtreating chemicals area.

On December 12, 1984, DEQ personnel collected twelve soil samples from the entire facility. Splits of each sample were provided to Time. DEQ analytical results were received by Time on January 24, 1985. The DEQ samples were analyzed for EPA Priority Pollutants and for other substances identifiable through GC/MS scan, with a specific interest in lead content. No samples were found to have lead concentrations above the detection limit. The samples were also analyzed for fourteen pesticides, but no concentrations above the detection limit were found. Non-priority GC/MS scans indicated the presence of low concentrations of petroleum hydrocarbons in three of the twelve samples. In the analysis for EPA Priority Pollutants, ten of twelve samples were found to contain either no concentrations of any organics above the detection limit, or only trace amounts of polynuclear aromatics. One sample, taken from the woodtreating chemicals tank farm, contained 515 ppm of PCP and 12 ppm of tetrachlorophenol (TCP). The second sample from this area contained 1820 ppm of PCP and 71 ppm of TCP.

Sample splits, which had been provided to Time, were then submitted to Coffey Laboratories for analysis in order to confirm DEQ findings. Results of these analyses were received on March 15, 1986 and showed no PCP concentrations higher than 275 ppm. No pentachlorophenol was detected in any sample outside of the woodtreating chemicals area.

INITIAL CLEAN UP EFFORTS

Proposal for Removal of Contaminated Soil (1983)

In October of 1983, pending completion of site tank and pipeline

physical removal, plans were made to excavate and dispose of soil to a depth below that where PCP contamination was found to exist. This was to be a three phase effort, fully coordinated with the DEQ and the disposal facility. Phase I consisted of initial soil removal and its transport to an authorized disposal facility. Phase II involved a thorough investigation to determine the extent of PCP contamination and its degree of concentration. Phase III was to remove and dispose of any remaining soil which was detected, by laboratory analysis, to be contaminated above acceptable limits.

On November 1, 1983, a delay in Phase I of the planned removal occurred because ownership of the hazardous waste facility at Arlington changed and some period of time was needed for the new management to reach full operational status. Further, an agreement from the new owners (Chemical Waste Management) to accept the soil at Arlington prior to any excavation was absolutely essential to ensure that Time did not become classified as a hazardous waste storage facility.

Removal and Disposal of Contaminated Soil (February - June, 1985)

On February 4, 1985, Time reiterated to the DEQ, its intent to excavate PCP-contaminated soil and dispose of it at an approved disposal facility. On February 19, Time executed a contract with Northwest Vacuum Truck Service, Inc. for removal and transport of the contaminated soil. On May 14, the DEQ granted approval for disposal of the PCP-contaminated soil at the Arlington landfill. On June 24, an agreement covering disposal was reached with Chem-Security Systems, Inc., operator of the Arlington facility.

Between June 25 and June 28, 1985, 288 cubic yards (242.76 tons) of soil were removed and shipped to Arlington. The soil was excavated to a depth of 2 to 4 feet below grade in the northwest corner of the woodtreating chemicals tank farm.

Soil Sampling (June - July, 1985)

On June 28, 1985, following completion of contaminated soil excavation, Time retained Riedel Environmental Services to perform sampling and analysis of the remaining soil. Samples of surface soils were initially collected from 22 locations around the perimeter of the woodtreating chemicals tank farm area. Three composite samples were formed and analyzed, showing PCP concentrations of up to 860 ppm. Samples of the soil from 81 individual sample sites surrounding the woodtreating tank farm area were then collected and analyzed for PCP. The results indicated that the contamination was localized to the west and south of the warehouse with little or no contamination occurring to the east of the site.

Soil was then collected from fourteen locations at depths of 0, 2, 4, 7 and 12 feet below the surface on a triangular grid across the tank farm area. Samples were taken by the split spoon technique using a hollow stem auger drill rig, and analyses were performed in accordance with EPA procedure #8040 (SW-846). Contaminant contour maps were developed from the data which showed a maximum PCP concentration of 26,500 ppm at the surface in the area where the loading of trucks had occurred. This finding of soil contamination caused an increase of the site size to about 70' x 140'. A second focus of contamination was at the southwest corner of the warehouse. The vertical column of contamination at the second location extended to the lowest sampling interval (12-14 feet below the surface), which was noted as being in the saturated zone at the time of sampling. The highest concentration at this depth was 2,030 ppm.

The two focal points of contamination are indicated on the surface contour isopleth map generated by Riedel and presented as Figure I-1 of this report. Figure I-2 indicates the 12 foot contaminant isopleth. (Note: the southwest corner of the warehouse is indicated by the reference mark at coordinates (76,166)).

600 ppm Chlorophenol Toxicity Level Interpretation (June, 1985)

On June 28, 1985, Time received a letter from the DEQ laboratory, concerning previous interpretations by the agency, that 600 ppm of total chlorophenols in soil represented the hazardous waste threshold. This conclusion was based on extraction and bio-toxicity tests peformed by DEQ. The letter stated, however, that this was only used as guidance and did not necessarily reflect specific clean up requirements.

Removal of Concrete Wall (November, 1985)

Time retained Riedel Environmental Services in November, 1985 to remove and decontaminate a concrete wall which stood along the west perimeter of the woodtreating chemicals tank farm area. The intent of the removal of the wall was to allow for easy sample analysis, contaminant containment and future removal of the contaminated soil adjacent to the wall. This project included wall steam cleaning, subsequent testing of the wall for residual PCP and wall demolition following certification of decontamination to background levels of PCP. The wall was broken into pieces by Riedel and disposed of by Time.

Classification of Contaminated Soil as Hazardous Waste (December, 1985)

On December 10, 1985, the EPA Region X office advised Time that soil contaminated with leaked PCP had been reclassified (from U242)

to a hazardous waste bearing number F027. Referring to a moratorium on landfilling of such wastes, the EPA letter stated that at that time there were "no commercial hazardous waste facilities in the United States that would accept waste designated as F027." EPA also suggested that Time consult with the DEQ before continuing with clean-up operations at the site.

Wells 1, 2, 3 and 4 Installation (November, 1985)

Pending resolution of acceptable disposal techniques for contaminated soil containing PCP, Time concentrated on determination of possible groundwater contamination.

In November, 1985, Time again retained Riedel Environmental Services to install four groundwater monitoring wells near the southwest corner of the warehouse building. Wells 1, 2 and 3 were placed in 16-inch (O.D.) 45° slant borings which penetrated soil beneath the building to a vertical depth of 14 feet. Well 4 was installed in a 16-inch (O.D.) vertical hole drilled to a depth of 50 feet. Samples for PCP analysis were taken to advance and further earlier analyses, particularly to determine if contamination existed beneath the woodtreating chemicals warehouse.

Samples from the slant borings indicated PCP concentrations as high as 116,000 ppm at 2.5 to 4 feet below the surface, with surface concentrations ranging from 65.3 to 1,690 ppm. The concentrations generally decreased with depth. The vertical boring (Well #4) showed concentrations descreasing with depth from 574 ppm at 18.5 to 20 feet below the soil surface to a low of 1.59 ppm at 43.5 to 45 feet below the surface. The conclusion of this report was that contamination exists below the southwest corner of the woodtreating warehouse floor, although the horizontal limits of contamination were not definable with the existing data.

Geologic logging of the soil at Well #4 indicated a minor layer of low permeability about 18 to 35 feet below the surface. The well was completed by installing 4-inch PVC well casing and screen to a depth of 40 feet in the 16-inch auger hole and sand packing the well annulus to within 6 feet of the surface. A well construction diagram is shown in Figure I-3. The geologic log of this boring is shown in Figure I-4. A well construction diagram of the slant borings is shown in Figure I-5.

Installation of Well Points (February - May, 1986)

In February, 1986, in order to identify groundwater flow direction and gradient beneath the Northwest Terminal facility, Time installed well points at three locations surrounding the woodtreating chemicals warehouse and tank farm area. Two of the wells (A and B) were installed to a depth of 20 feet. Two wells were installed at a depth of 8 feet at location C (see Figure I-6).

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Water level measurements were taken on nine occasions between February 28 and March 11 in Wells A, B, C_1, C_2 and 4. The data collected indicated an unexpectedly lower water level in well 4 as compared with the other well locations.

To further investigate this unusual circumstance, three additional well points, four observation pits and a river level reference point were installed by Time in late March, 1986. Wells E and F were driven to depths of 20 and 19 feet, respectively, while Well G was driven to a depth of 13 feet where advancement of the point was halted by cobbles. Well C_2 was removed, and Well C_1 was henceforth known simply as Well C. Water levels in Well 4 and Wells A-G were again measured repeatedly over a period of several days. The data confirmed earlier indications that a water table depression existed in the area of Well 4.

A detailed evaluation of the boring log data for Well 4 showed that a series of clay lenses and silty sands had been penetrated by the bore hole between the depths of 18.5 and 35 feet.

Gravelly sand lies above this zone and medium to fine sand predominates below it. The clay lenses appear to have formed a zone of relatively low permeability separating a perched upper water bearing zone from a lower aquifer. This zone of low permeability was apparently breached by the installation of Well 4. The boring was drilled with a 16-inch diameter auger while the well consisted of 4-inch PVC pipe. The annulus was filled with coarse sand, violating the integrity of the low permeability layer and providing a potential pathway for water from the upper perched water bearing zone to flow down the hole to the lower aquifer, creating a depression in the natural groundwater flow. This appeared to have altered the natural direction of groundwater flow (toward the Willamette River) within a zone of influence surrounding Well 4.

Although the observed water table depression could represent a strong, natural vertical gradient in the vicinity of Well 4, the influence of this well on adjacent wells indicated a strong probability of an induced groundwater sink caused by an unsealed annulus of Well 4. This conclusion was reached by Time upon evaluation of the piezometric surface of the perched water, which indicated that wells in close proximity to Well 4 were apparently influenced by Well 4, showing water level depressions, while wells distant from Well 4 were unaffected.

Additional Groundwater Monitoring Wells and Well 4 Abandonment (May, 1986)

At Time's direction, three additional groundwater monitoring wells (D, H and I) were installed by Riedel in early May, 1986. The purpose of these wells was to further define the upper piezometric surface and to obtain data on groundwater quality.

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In an effort to reinstate natural groundwater flow patterns in the area and to eliminate possible intercommunication between upper and lower water bearing zones, Well 4 was removed by overdrilling and the hole sealed on May 14, 1986. Prior to choosing this method of abandonment, Time evaluated several possibilities, including pressure grouting and two different overdrilling processes, with input from Hart Crowser and Associates, Century Environmental Sciences and Riedel.

Groundwater Sampling (April - May, 1986)

Time retained Century Environmental Sciences to perform groundwater sampling and analysis of the wells and well points at the Northwest Terminal facility. In April, 1986, Century measured static water levels in Well 4, in Wells A-C and Wells E-G. These measurements again showed that the water level in Well 4 was lower than in surrounding wells. Samples collected from each well were analyzed and .0061 ppm, .0026 ppm and .0014 ppm of PCP were detected in Wells 4, B and F, respectively.

On May 28, following abandonment of Well 4, a second group of groundwater samples were collected from Wells A, B, D, E, F, H and I. The locations of these wells is indicated in Figure 6. The analytical results showed PCP in a concentration just slightly above the detection level (.0002 ppm) in Well I. Other wells contained no detectable levels of PCP.

Additional Soil and Groundwater Sampling (August, 1986)

In August, 1986, Time retained SRH Associates to perform additional sampling and analysis of soil and groundwater at the Northwest Terminal facility. Based on previous contour map determinations, Time re-graded the surface of the woodtreating chemicals tank farm area, gathering all suspected contaminated surface soil in a centralized area, reducing the area to about 60' x 60'. SRH then collected surface soil samples from the same 14 locations in the tank farm area which had been sampled earlier by Riedel, drilled six holes through the warehouse floor and sampled soil from beneath the building. Samples were collected from the surface of the soil underlying the concrete floor of the warehouse as well as the same five subsurface intervals sampled by Riedel in 1985. These borings were made in an effort to determine the extent of contamination underlying the warehouse.

SRH also collected groundwater samples for PCP analysis and pH, and made measurements of static water levels from all monitoring wells in existence. The results of these analyses are supplied in Section III of this report.

SUMMARY

During the duration of the agreement between Time and Koppers, pentachlorophenol and probably some tetrachlorophenol were released into the sandy soil adjacent to the woodtreating chemical warehouse. This material may have been released in combination with various hydrocarbon solvents used as a part of the process. The primary cause for these releases appears to have been intermittent spillage from hoses and mixing vessels during end product formulation and transfer operations, rather than a one-time spill event.

Upon investigation of these findings, Time and Koppers terminated their agreement, ceased all pentachlorophenol operations and began clean up operations at the site.

In investigating the extent of soil contamination, Time has obtained assistance from several consulting firms and clean up contractors, and has analyzed sufficient soil samples to determine the vertical and horizontal extent of contamination. The contamination is localized in the northwest corner of the woodtreating chemicals tank farm, with some slight penetration below the warehouse. An estimated 2,000 cubic yards of soil, a portion of which extends down to the first water bearing zone, is contaminated.

Time has installed an extensive water well monitoring network at the site and is continuously acquiring data on the flow directions and rates of flow of the first water bearing zone, as well as on water quality and PCP concentrations. Early data indicates that gross contamination of the groundwater has not occurred outside of the contaminated zone. PCP can barely be detected in wells in, or immediately adjacent to, the contaminant zone. Groundwater flow is generally in the direction of the Willamette River. Vertical gradients in the vicinity of the contaminant zone have not been determined at this time.

Time attempted to minimize the risk of contaminant migration by disposing of some material at Chemical Waste Management's Arlington facility. This effort was thwarted due to a moratorium on landfilling of PCP subsequently disallowing further such disposal. Time has consolidated the bulk of the contaminated soil into one spot within the woodtreating chemicals tank farm area to facilitate containment and minimize the risk of off-site migration.

Time has now retained SRH Associates to identify available alternatives to destroy or immobilize the PCP contaminated soil and is presently evaluating additionally generated data regarding groundwater quality and soil contamination.

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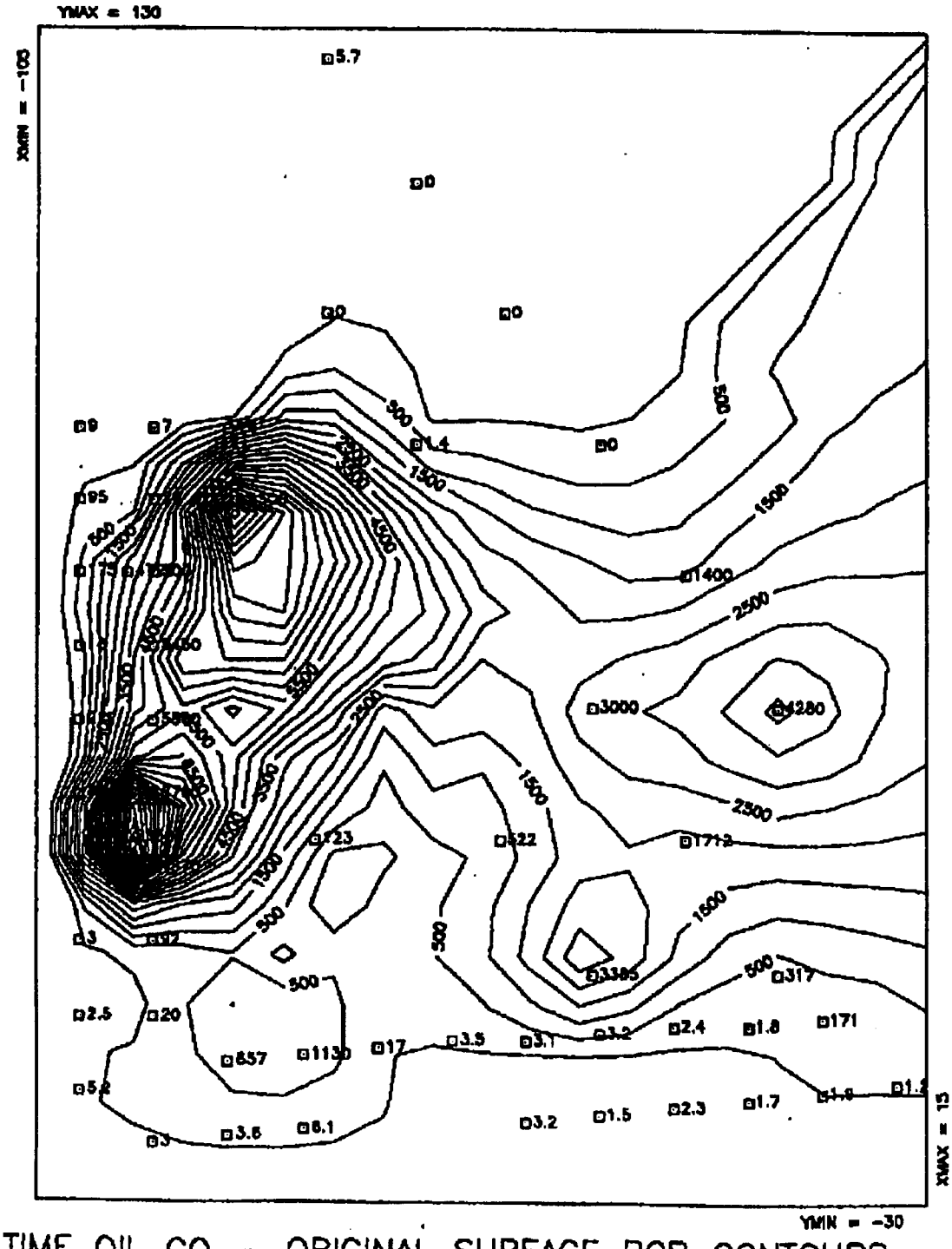
FIGURE I-1



TIME OIL CO – ORIGINAL SURFACE PCP CONTOURS

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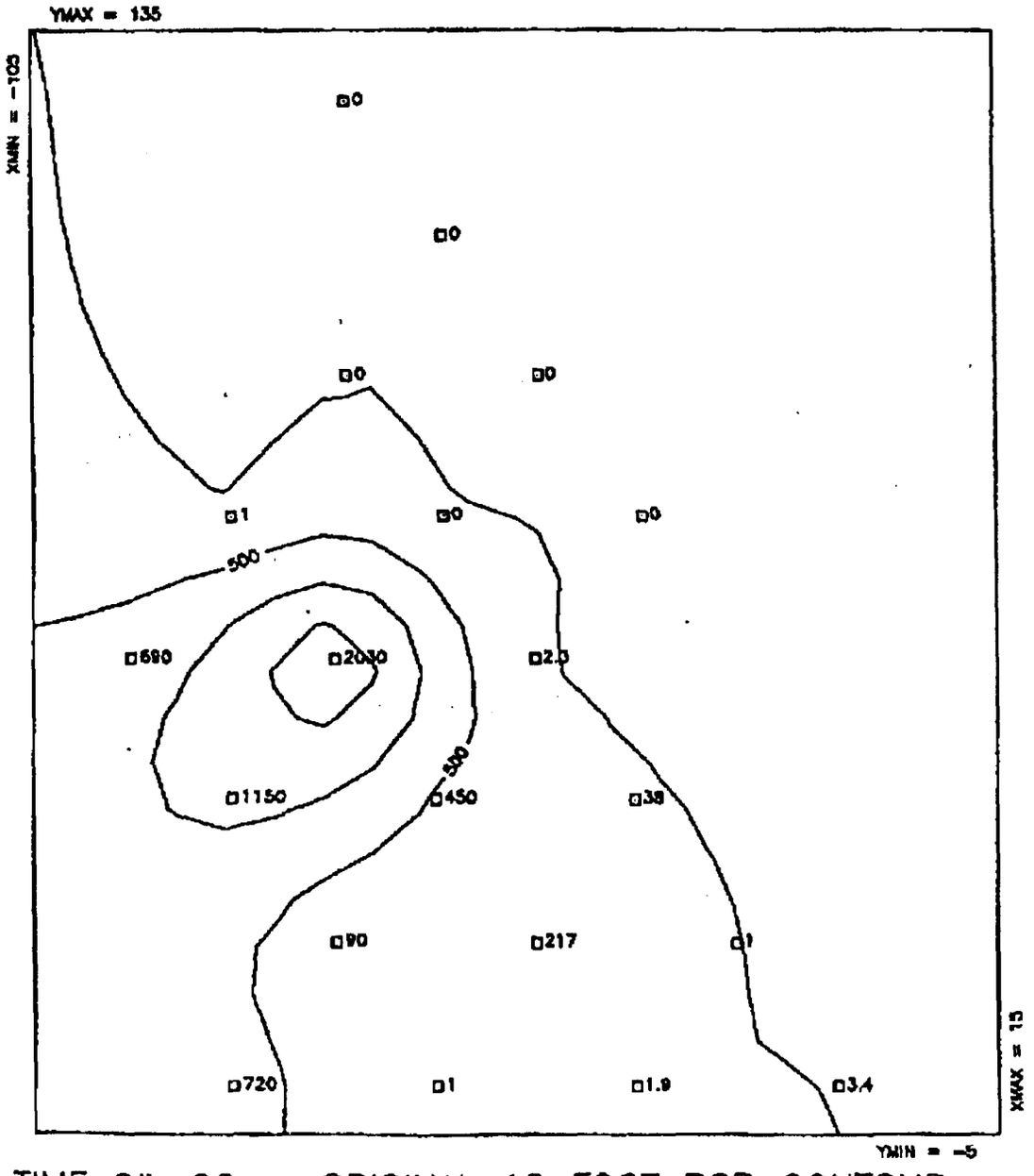
FIGURE I-2



TIME OIL CO – ORIGINAL 12 FOOT PCP CONTOUR

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FIGURE I-3

CONSTRUCTION DIAGRAM FOR

WELL 4

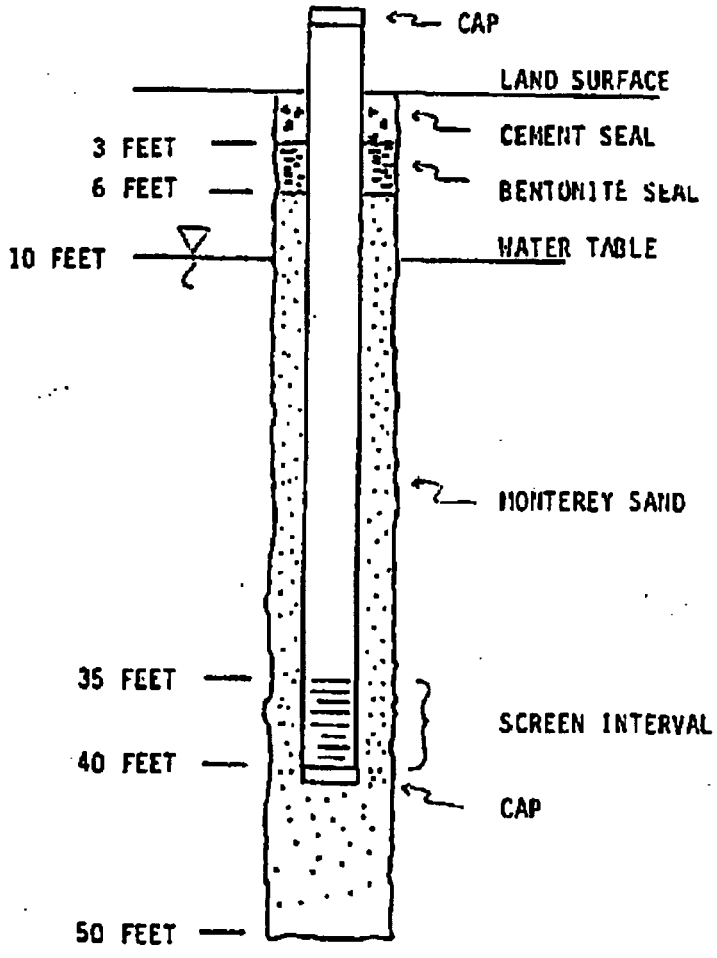

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FIGURE I-4

BORING LOG WELL 4

Depth in Feet	Soil Description
0 - 1-1/2	Light brown gravelly sand, moderately compacted, moist (shovel sample)
3-1/2 - 5	Dark brown gravelly sand, moderately compacted, moist, split spoon sample (S.S. sample)
8-1/2 - 10	Light brown gravelly sand, in contact with blue gray gravelly sand, moderately compacted, moist (S.S. sample)
10 - 13	Gravelly sand
13-1/2 - 15	Light blue gray gravelly sand, moderate compaction, saturated (S.S. sample)
15 - 18-1/2	Gravelly sand
18-1/2 - 20	Light blue gray gravelly silty sand with a clay lens, moderately compacted, saturated (S.S. sample)
20 - 23-1/2	Gravelly silty sand with clay lens
23-1/2 - 25	Light gray gravelly silty fine sand with minor clay lens, moderately compacted, saturated (S.S. sample)
25 - 28-1/2	Fine sand
28-1/2 - 30	Light gray medium to fine sand, 3-1/2" thick clay lens, saturated (S.S. sample)
30 - 32-1/2	Medium to fine sand with clay lenses
32-1/2 - 35	Light gray medium to fine sand, minor clay lenses, saturated (S.S. sample)
35 - 37-1/2	Medium to fine grained sand
37-1/2 - 39	Light gray medium to fine sand (S.S. sample)
39 - 42-1/2	Light gray medium to fine sand
42-1/2 - 45	Light gray medium sand grading to fine sand with depth, minor clay lens (S.S. sample)
45 - 47-1/2	Fine sand, saturated
47-1/2 - 49	Light gray sandy silt grading to light gray silty fine sand (S.S. sample)

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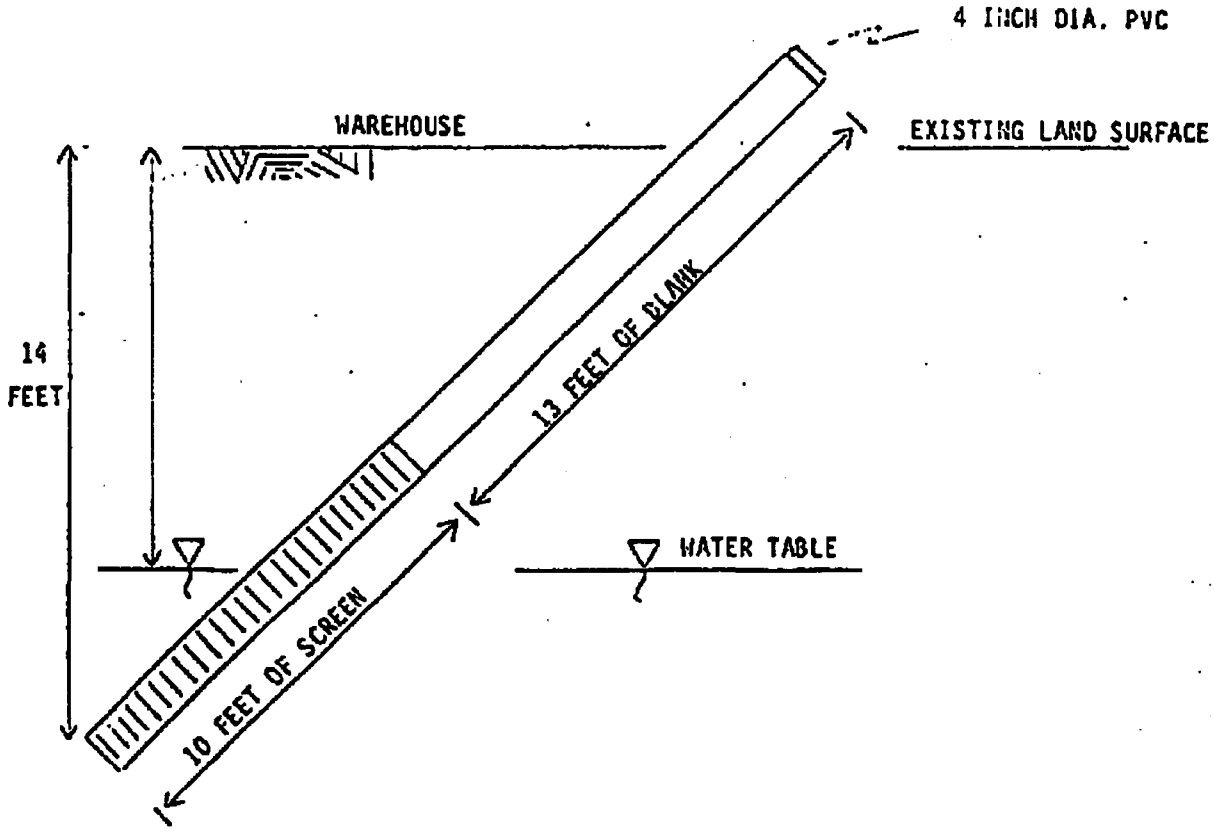
FIGURE I-5

CONSTRUCTION DIAGRAM FOR

WELLS 1, 2 AND 3



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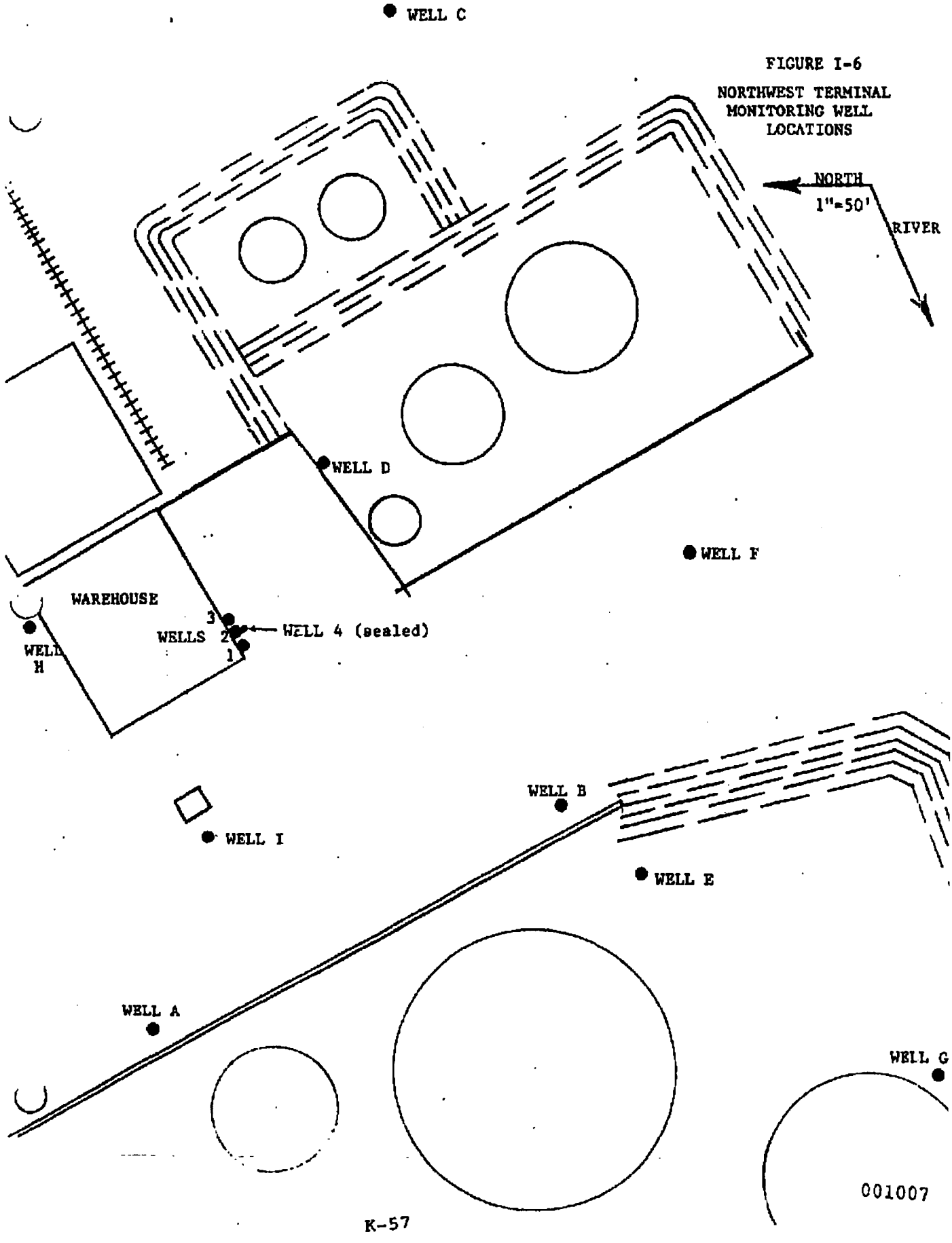

FIGURE I-6

NORTHWEST TERMINAL
MONITORING WELL
LOCATIONS

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SECTION II

REMEDIAL ALTERNATIVE ASSESSMENT

INTRODUCTION

A small portion of Time's 45 acre property at 12005 N. Burgard Road in Portland, Oregon has been identified as being contaminated with pentachlorophenol (PCP). Contamination at this site has been found to extend to approximately 70' x 140' in area and to depths of about 15 feet below the surface in one spot. The site was used for the formulation and storage of woodtreating chemicals under an agreement between Time and Koppers from 1967 until 1982. In addition to pentachlorophenol, a number of hydrocarbon solvents and petroleum products were used in this process.

Concentrations of PCP, ranging from below detectable limits to 116,000 ppm, have been detected in the soil, with concentrations generally decreasing with depth and distance from the southwest corner of the woodtreating chemicals warehouse. Concentration data has been used to generate equiconcentration isopleths which indicate that soil contamination is generally restricted to the upper 3 feet of soil, with the exception of a major vertical column of contamination located at the corner of the warehouse.

Perched groundwater underlies the site at a depth of approximately 13 feet below the surface. This water appears to be continuous with and potentially discharging to, the Willamette River. The surface soil consists predominantly of medium-grained sands with occasional minor clay lenses and/or gravels. The soil is characteristically homogeneous from the surface to the perched water table. A layer of somewhat lower permeability underlies the perched water and consists of silty sands with clay lenses. Fine-grained sands predominate below this layer.

Concentrations of PCP in groundwater below the known contaminated zone have not exceeded .044 ppm. Most wells indicate no detectable concentrations of PCP, and outside of the contaminated zone, concentrations have not exceeded .003 ppm in any well. Contamination does not appear to have migrated extensively from the known contaminated zone. Analyses of groundwater are continuing on a quarterly basis.

A water well monitoring network consisting of shallow wells and well points has been installed to monitor the upper perched water. A total of nine vertical and three slanted (45°) wells have been installed and are regularly sampled for pH and PCP plus being measured for static water levels.

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Time is concerned with potential off-site migration of PCP from this source and is determined to eliminate this risk by remediating the site. Due to an existing ban on the land disposal of soil containing pentachlorophenol, excavation and landfilling is not an available remediation alternative (the material at Time has recently been designated by the EPA as RCRA-listed waste F027 vs. its previous U242 designation). Time does not desire to either leave the material in place without corrective action, cap the contaminated area without first eliminating the contamination or excavate and store the waste on site due to the long-term risks associated with these alternatives. Time has performed emergency phase stabilization and containment measures to minimize the risks of contaminant migration.

The following discussion identifies and describes several remedial alternatives which are potentially capable of destroying or immobilizing PCP in sandy soils such as those found at Time. Comments are made regarding soil and groundwater treatment, economics, availability and technical feasibility. This discussion is not intended to represent an indepth feasibility analysis of remediation options, but rather presents a summary review of options which Time may wish to investigate in greater detail.

ALTERNATIVES

The following alternatives were identified during the preliminary evaluation as remedial methods potentially capable of achieving effective results at Time:

Adsorption onto Polymers or Activated Carbon
Biodegradation
Capping in Place
Chemical Reduction
Closure in Place with Monitoring (No Remedial Actions)
Encapsulation
Excavation and Disposal
High Temperature, Catalyzed Oxidation
Incineration
In-Situ Soil Washing and Surface-Mounted Soil Washing
In-Situ Thermal Extraction and Surface-Mounted Thermal Extraction
Sodium Dehalogenation

Of these listed alternatives, excavation and disposal, capping in place, and closure in place are either unavailable due to the regulatory moratorium on landfilling of F027 material, or do not satisfy Time's requirements for long-term risk reduction. The remaining alternatives are discussed below.

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Adsorption Onto Polymers or Activated Carbon

Should contaminating PCP, at some point, be removed from the soil by soil washing, thermal extraction or other processes, final treatment of the recovered wastes will be required. Although not a destructive process, sorption of the recovered PCP onto carbon or other polymeric substrates utilizing hydrophobic interactions as a sorptive process, will reduce the volume of PCP contaminated material.

Activated carbon and a variety of organic and silicaceous polymeric adsorbents have been utilized to bind PCP and other phenols. The sorptive process, however, is usually reversible under appropriate conditions (usually temperature elevation or through the use of non-polar solvents) and therefore may not be suitable for long term stabilization of PCP wastes under uncontrolled conditions.

These sorbents may be used to concentrate PCP from a waste stream (i.e. soil washing eluates or thermal extraction scrubber liquors) which could then be recycled or disposed of as a non-hazardous waste. The adsorbent may then be regenerated for reuse and the concentrated PCP solutions so generated, collected for disposal by destructive methods such as incineration or chemical decomposition. Such an approach may be a logical consideration for the Time site.

Biodegradation

Biodegradation of man-made compounds has been observed for many years and the results of aerobic sewage treatment systems have been documented in detail. Aerobic landfarming of oily wastes from the petroleum industry has also been in general use for years. Biodegradation occurs under essentially two basic conditions: aerobic (respiratory) and anaerobic (fermentative). Many compounds have been observed to be degraded, either partially or completely to carbon dioxide and water, by one or both of these pathways.

Pentachlorophenol has been observed to undergo degradation by bacteria and fungi. Although PCP degradation has been observed under aerobic conditions, it occurs at a more rapid rate and with fewer complications under anaerobic conditions.

In addition to the biodegradation of pentachlorophenol in soil, it has been documented that fungal enzymes promote the binding of PCP to humic acids in soils, resulting in immobilization of the PCP.

Bench scale studies by SRH Associates scientists have indicated that, under controlled conditions, PCP can be degraded in both aerobic and anaerobic soil environments. Controlling conditions for biodegradation include soil porosity, pH, moisture content, inorganic nutrients (including nitrogen, phosphorus and potassium,

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Eh (oxidation reduction potential), microbial populations and PCP concentrations. Elevated concentrations of PCP are inhibitory or toxic to microbial populations, even under conditions of acclimatization.

The application of biodegradation to the treatment of soils from the site is severely limited due to the existence of high concentration material. PCP degradation, even under optimal conditions, ceases when PCP concentrations are in excess of 1000 ppm. Typically 500 ppm is considered the maximum effective limit. Between 500 and 1000 ppm, degredation effectiveness decreases. Since some material at the site contains PCP in excess of 1000 ppm, not all of the material would be considered ammenable to this treatment without significant dilution or pretreatment to reduce the contaminant concentrations. A large amount of the soil contains PCP at low concentrations however and may be treatable if it can be successfully isolated from the high concentration material found nearby.

Biodegradation may be performed either in-situ or in surface-mounted fermentation reactors. Due to the highly permeable soil at Time, the shallow groundwater table and the possible adsorption of PCP in co-contaminating hydrocarbons which tend to immobilize the PCP, in-situ degradation is considered to present an excessive risk of PCP migration to off-site locations. Additionally, generation of anaerobic conditions in sandy soils is highly difficult. Should a biological process be initiated in-situ, significant risk of PCP mobilization through partial decomposition, preferential degradation of stabilizing hydrocarbon absorbents, or bio-emulsification of the PCP could be expected. For these reasons a surface-mounted fermenter would be the preferred method for soil treatment at the site.

A surface reactor may be used to directly treat a soil/water suspension, or may be used to treat extracted and diluted contaminants removed from the soil by other technologies. A surface fermenter allows for control of pH, nutrients, Eh, and other critical parameters, as well as preventing the release and migration of waste or waste products.

Nutrients, pH and Eh control are parameters that are easily controlled once optimal process conditions have been identified by bench and pilot scale studies. Co-metabolities or other nutrient augmentation is also easily regulated. Fermenters capable of handling soils such as those found at Time are commercially available, but may be constructed on site for considerable less cost. The requirements of this equipment vary with the amount of material to be treated, the reaction kinetics and the degree of control required.

Much debate currently exists over the benefits obtained by using PCP acclimated, commercially available bacterial preparations to promote degradation vs. using cultures of indigenous bacteria obtained from the site. There is considerable evidence to support

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the use of indigenous microorganisms. The effect on the overall cost of the project is similar for both methods. Effective preparations range from $20 to $50 per pound of material. Microbial requirements depend on a variety of soil and waste-specific parameters that have not yet been determined at the site.

Costs not directly associated with the on-site remediation include bench and pilot scale tests, engineering, permitting, chemical, biological and physical analyses, agency negotiations, waste delisting and management. These costs are expected to be similar for all of the alternative technologies evaluated here.

Chemical Reduction

Oxidation and reduction reactions have been utilized to destroy organic wastes under a variety of circumstances. Due to its high degree of chlorination, PCP is not readily oxidized by such mild oxidants as ozone or hydrogen peroxide. Stronger oxidants present such a great hazard in and of themselves as to be unsuitable for treating wastes (See High Temperature Catalyzed Oxidation).

PCP is, however, readily reduced by sodium borohydride solutions. Stailf (1981) and Sweeney (1981) have both demonstrated the use of catalyzed metal powders and/or borohydride solutions in the oxidation of chlorinated aryls. In-situ techniques have been demonstrated, however competition from reducible soil components may severely limit the reaction, requiring retreatment. This soil reduction chemistry must be identified to allow for proper selection and application of reducing agents.

Reduction, either in-situ or in surface-mounted reactors, has realistic potential for remediating the contamination at Time. The low organic content of the naturally occuring sands in the area, their homogeneity, the low trafficability of the soil, and the nature of the contaminants all support this alternative. Bench and pilot analyses would be required to determine the reduction potential and the products of reduction formed by this process. If technically successful, implementation costs should be moderate.

Encapsulation

One method of encapsulation of organic material is through application of sorbents to the contaminated soil. Sorbents include carbon granules, polymeric materials or substances which the waste is soluble. All sorbents must be insolubl water, inert and not readily degradable in order to achieve term stabilization of the wastes in question.

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Pentachlorophenol is readily adsorbed by activated carbon granules and is soluble (absorbed) in a variety of organic substances including high molecular weight hydrocarbons such as tar or asphalt. Since both of these materials meet the criteria listed above for acceptable sorbents, they offer a feasible alternative for PCP immobilization. Additionally, both materials are capable of sorbing any petroleum hydrocarbons which may exist in the soil in addition to PCP.

An attractive alternative for immobilization of Time's wastes is the admixing of the PCP contaminated soil with asphalt to form a structurally sound paving material which could then be used to seal the soil surface in the vicinity of the woodtreating chemicals tank farm. This alternative would require an analysis of the leachability of the wastes from the surfacing material and a determination of the structural integrity of the asphalt so produced at various levels of waste incorporation.

High Temperature, Catalyzed Oxidation

PCP is not ordinarily oxidized by readily available, easily handled oxidizers such as ozone or hydrogen peroxide. Although permanganate, dichromate or other strong oxidizers have been reported to successfully oxidize PCP, their cost, side reactions with soil components, and the environmental hazards generated by them restrict their use in treating contaminated soils. Zimpro has developed a process, commonly referred to as wet air oxidation, which has been successful in destroying phenols and other hazardous compounds in aqueous media.

The Zimpro, Wetox and other processes based on this same principle, employ high temperature and elevated pressures in an oxygen enriched aqueous environment to oxidize and thereby destroy hazardous organics. PCP and other extensively chlorinated organics are refractile to this process without the addition of suitable catalysts which can facilitate the dechlorination of these compounds, rendering them retreatable. Once dechlorinated, the resulting intermediates have increased susceptibility to oxidation by the wet air oxidation process and are degraded to either carbon dioxide and water or to non-toxic biodegradable intermediates.

All wet air oxidation processes are provided as packaged systems by the supplier. Included are the reactor, reagents and operators. Additional support and feasibility testing of representative media can ordinarily be negotiated. Cost of the system, which is provided on a lease basis, is variable dependent upon the volume of material to be treated, the size of the required reactor and the type of process necessary.

Incineration

Incineration represents a tested and proven method for the destruction of chlorinated hazardous wastes, including PCP. Several types of incineration capacity exist in the U.S. Ordinary incineration, which is not acceptable for chlorinated organics, does not incorporate the appropriate acid scrubbers needed to produce an acceptable air discharge from wastes such as PCP. High efficiency incinerators, (often referred to as "6 nine" incinerators, based on their destruction and removal efficiencies) are capable of treating pentachlorophenol in high concentrations. Incinerators of this type are available in the U.S. as both fixed and mobile units. However, there is not sufficient capacity at this time in either type of unit, to satisfy domestic demands. Although most incinerators can handle liquids, few are equipped to handle solids such as contaminated soil.

Incineration can easily satisfy Time's objectives of reducing long term risk related to the contamination found on site. However, since no small mobile units are available nearby, Time must either absorb significant mobilization, siting and permitting costs or ship its waste to a fixed unit. The attendant risks in shipping must be weighed against those associated with leaving the soil on site.

The nearest incinerator for solid hazardous wastes such as those at the Time facility, is located in Deer Park, TX and is operated by Rollins Environmental. A primary concern with disposal by this alternative is cost. Rollins current price for incineration of contaminated soils is approximately $0.50 per pound. Based on Time's estimate of 2000 cubic yards of contaminated soil, incineration costs may approach $2.5 million. This figure does not include excavation, shipping and other associated costs. For comparison purposes, this amount is on the order of five times the cost of landfilling, if this alternative were available to Time.

In-Situ Soil Washing and Surface Mounted Soil Washing

Removal of contaminants from soil may be accomplished through extraction with a variety of elutriating solutions. The choice of the proper solution must be based on the physico-chemical nature of the contaminants, the effect of the elutriate on the soil geochemistry and its permeability, plus the method by which the eluted contaminants are to be treated for destruction or disposal. Ordinarily, aqueous solutions of acids, bases, surfactants or other compounds are selected (US EPA, 1982).

The effect of washing contaminated soils with water alone, or with mixtures of non-ionic surfactants was investigated by Science Applications International Corp. Their findings indicate that surfactants greatly increased the effectiveness of soil washing when the contaminant of concern was either PCP or a high boiling

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oil fraction. With pentachlorophenol alone, or when used in conjunction with other chlorinated phenols, plain water provided effective washing of the contaminants from a relatively sandy soil (83% sand, 10% silt and clay).

Since the contaminants at Time initially appear to be refractile to natural elution with precipitation or groundwater, surfactants appear to be desirable at this site. The use of alkaline solutions, while ordinarily effective with phenols, may be ineffective at Time due to the possibility of co-contamination with oils or hydrocarbon solvents. Extraction with other hydrocarbon solvents, while likely to effectively extract the contaminating PCP from the soil, will result in the formation of a hydrocarbon contaminated soil requiring an additional purification step.

Two means of applying soil washing methodologies have been identified: in-situ techniques and surface-mounted techniques, (including batch or continuous flow apparatus). In-situ techniques involve the treatment of soil without excavation and provide for the application of the elutriating solvent to the soil surface and recovery of the eluate by using recovery wells in the treatment zone. Surface-mounted systems involve the use of batch extraction tanks or counter-current extraction columns which extract the contaminants under controlled conditions.

In-situ techniques are effective in extracting contaminants only where the soil geology is known to be uniform and where the permeability is high enough to permit adequate percolation of the elutriating solutions through the soil. Additionally, in cases where the distance from the lower limit of the contaminants to groundwater (or alternatively to either a natural or induced low permeability soil layer) is great, excessive amounts of solution are required. Control is reduced and the potential for uncontrolled release of the eluate is great. The technique is well suited for situations where contamination is not generally accessible by ordinary excavation techniques (i.e. below buildings, in developed or heavily utilized areas).

The in-situ process is generally implemented by applying the solution through trickle irrigation or infiltration galleries, and recovering the product through judiciously placed recovery wells. The recovered eluate is treated and, if possible, recycled. A thorough evaluation of all waste components and soil chemistry must be performed to facilitate the selection of a proper surfactant, determine application rates, evaluate recovery potential and to provide information regarding eluate characteristics for the determination of treatment alternatives.

Surface mounted processes are indicated where the distance to groundwater, extraction requirements or heterogeneity of the soil (i.e. channelling, lenses, etc.) require a higher degree of control on the process. In these cases, soil is excavated by suitable procedures and placed into batch or countercurrent continuous extractors. Batch extractors usually involve the

submersion and agitation of batches of contaminated soil in large tanks fitted with a filtration stage to separate the cleaned soil from the eluate. This step is usually repeated until a suitable clean-up standard is achieved.

Countercurrent extractors involve the introduction of contaminated soil into an upwardly moving extraction bed while the elutriating solution is introduced at the top of the bed and allowed to migrate downwards. In this latter process, the cleanest soil (already partially extracted) contacts the cleanest solvent just prior to exiting the column at the top. This continuous process has the advantage of generating less spent solvent requiring subsequent treatment than does the batch process. It requires a higher degree of process control but is generally less labor and energy intensive than a batch process. A continuous process also allows for the fitting of a second solvent stage to elute any residual surfactant from the treated soil where water was used.

The cost of soil washing is expected to be moderate, however this process does not address the final destruction and/or disposal of the recoverd solutions. These solutions, containing PCP, water, surfactants, and possibly hydrocarbons, must be treated by incineration, biodegradation, immobilization, recycling or by chemical processes prior to completion of the project. The extraction process and the treatment process should be determined in conjunction with one another in order to maximize their mutual effectiveness.

In-Situ Thermal Extraction and Surface Mounted Thermal Extraction

Thermal extraction processes involve the introduction of heat to the contaminated soil mass to increase the vapor pressure of the contaminants, rendering them sufficiently volatile to allow their recovery as a vapor. As might be expected, these processes work best with relatively volatile contaminants that tend to remain free, rather than binding to soil components. Additionally, the processes work best in friable or loose-grained soils which allow free permeation of the vapors and their subsequent release to the recovery system.

Coia (1985) has presented a system for recovery of volatiles from contaminated soils using an in-situ process. This system consists of a network of thermal injection wells and extraction wells connected to injection and extraction blowers, respectively. Although the system was intended for extraction of TCE from glacial sands, any compound that can be brought to exert a significant vapor pressure can be recovered with this system.

A similar system utilizing a modified drilling rig has been developed by ATW Calweld. This firm, a manufacturer of drilling equipment has modified the kelly of a drilling rig to incorporate several channels which allow the introduction of hot air, steam and various chemicals, if appropriate. The equipment rapidly

agitates the soil while applying heat and volatilizes contaminants which are then recovered in a negative pressure hood surrounding the surface of the rig. Contaminant vapors are drawn off to a cyclone and scrubber system. Although the device has only been demonstrated on hydrocarbon spills (gasoline and diesel oil), ATW Calweld suggests that the process is applicable to lower volatility compounds such as pentachlorophenol.

Thermal extraction in surface units has been advanced by several firms. American Toxic Disposal in Waukegan illinois, has operated a 10-ton-per-day unit which has successfully removed PCB's from contaminated soils and sludges. This system has been demonstrated to the EPA and is currently being used to treat material containing PCB's in Gary, Indiana.

As with soil washing techniques, thermal extraction techniques do not destroy contaminants, which must be recovered and treated or immobilized by other techniques. The process does, however, result in a volumetric reduction of the contaminated soil by 10 to 100 fold, allowing consideration of incineration as a final destruction alternative.

Thermal extraction processes are viable candidates for treating Time's contaminated soils since the soil at Time is friable and loose-grained. A preliminary consideration to be addressed before selecting this process is the degree of volatility of the contaminants in the matrix found at Time. Since moisture does not present a major deterrent to thermal processes, saturated material may also be successfully treated.

Sodium Dehalogenation

Both Acurex and the Franklin Institute have developed processes whereby soils are extracted (similar to Soil Washing, above) and subjected to dehalogenation using sodium based proprietary compounds. Although the process has been primarily utilized for PCB destruction, it appears to be ammenable to chlorinated phenols as well.

The Acurex process is less stable and more sensitive to interference from water than is the Franklin Institute process, which uses a specially modified sodium/polyethylene glycol complex. The Franklin Institute process has been applied directly to soils in an in-situ operation.

These procedures have been used primarily in the destruction of PCB oils and have only recently been used to treat contaminated soils. PCP has not been treated by this process. Adaptation to the Time site may be possible but should be pursued only if other demonstrated technologies do not prove successful in pilot demonstrations.

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SUMMARY

Twelve alternative processes have been identified for isolation, immobilization, separation and/or destruction of PCP contaminated soil found at Time. The selection of any one or a combination of these alternatives requires additional characterization of the wastes found at the site. Among the additional data that may be required are:

- Adsorption Isotherms of Wastes on Soil and Carbon
- Biodegradability of Waste Constituents (Half-life and Rate Constant)
- Biodegradation Products
- Bioinhibition Threshold Concentration of Waste Constituents
- Characterization of Co-contaminants (if any)
- Climatic Conditions
- Determination of Soil pH
- Determination of Soil Particle Size Distribution
- Groundwater Parameters (Flow Rates, Storage Coefficient)
- Organic Carbon and Octanol/Water Partition Coefficients of Waste Components
- Oxidation/Reduction Potentials of Waste Constituents
- Required Clean-up Levels
- Soil Microflora
- Soil Moisture Content
- Soil Nutrient Concentrations (N, P & K ratios)
- Soil Organic Matter
- Soil Oxygen Concentration
- Soil Permeability
- Soil Temperature
- Surfactant Solvation Efficiency (for Each Waste Constituent)
- Trafficability of Soil and Site
- Waste Constituent Vapor Pressure Curves

While other information may be needed for each specific alternative, some of the above data may also be necessary, depending on method selected.

It should be remembered that separatory procedures such as soil washing or thermal extraction will require additional disposal or destructive treatment processes as a final step. Surface mounted separatory or treatment processes will require excavation, containment and storage steps prior to implementation.

A recommended course of action for the determination and selection of a remedial technique for the Time site involves additional definition of the waste constituents, clarification of soil parameters, further definition of groundwater conditions and determination of site specific conditions listed above. Following

these determinations, the specific questions of technical feasibility of the various alternatives listed above can be addressed.

With this information, alternatives may then be selected with a greater degree of confidence and further pursued by performing bench scale tests to evaluate their applicability to the contaminated soils found at Time. Bench scale conditions can then be scaled up to pilot level demonstrations, either on-site or at supplier's test facilities. Finally, these data may then be used to develop and obtain required treatment permits from appropriate State/Federal agencies. The generally accepted approach to selecting an operational treatment procedure is to evaluate the most logical alternative first and if it proves unsatisfactory due to site specific or economic factors, evaluate the next logical option.

RECOMMENDATIONS

Based on existing information, the following is recommended:

a. Select the "Surface Mounted Soil Washing" technique as the most logical remedial approach.

b. Perform bench scale and pilot level evaluations.

c. Determine necessary destruction steps of recovered extracts.

d. Ascertain technical permitting and economic feasibility of technique for final disposal action.

e. Compare results with repeat step by step examination of next most logical remedial approaches which are: "Surface Mounted Thermal Extraction" and "In-Situ Thermal Extraction".

Bench scale evaluations of a surface mounted, countercurrent soil washing process involve the excavation of contaminated soils, temporary storage of the soils on an impervious slab, extraction of the contaminants with an aqueous solution of nonionic surfactants, removal of the surfactants by countercurrent washing with water, recovery and treatment of the rinsates, their analysis and on-site placement of the purified soils. The contaminated rinsates would then be subjected to a destruction step that can only be determined based on the constituents in the recovered extracts, but may include chemical reduction, incineration, biodegradation or other processes outlined earlier. A schematic drawing of a proposed process is shown in Figure II-1.

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The actual process consists of the physical excavation of contaminated soil using classical techniques and the temporary storage of the excavated soils on an impervious, protected surface. Material from this location would be transferred to an infeed hopper connected to a primary extractor or soil washer. The soil would be introduced into the lower section of the extractor via a screw feed auger. Once in the extractor, the soil would be agitated and conveyed upwards while extracting solvent [an aqueous solution of nontoxic, nonionic detergents (surfactants)] is introduced into the top of the extractor. The extraction would take place in a countercurrent fashion, producing a cleaned soil product and contaminated elutriate in a continuous process.

Cleaned soil would then be subject to rinsing with clean water in a secondary extractor, operated similarly to the primary extractor, to reduce or eliminate residual surfactant concentrations, allowing the soil to be returned to the site. The contaminated fluids would be stored, tested and treated to effect ultimate disposal. Analytical decision points are noted as diamonds in Figure II-1. There are three. It is possible that surfactant solutions with suitably low or undetectable levels of PCP could be discharged to the sanitary sewer.

The process can easily be modelled in bench scale experiments and the technical feasibility of the process can be accurately determined. The nature and required concentrations of the surfactants, soil retention times, elution rates and contaminant loading factors can all be determined to allow approximation of full scale process operating parameters. Following determination of these parameters, scale up protocols and economic feasibility may accurately be determined.

Soil washing is recommended since it has been successfully applied to soils contaminated with PCP in pilot studies on similar soil types and does not use hazardous materials which may interact with or be retained by the soil. The process should be directed towards a surface, rather than in-situ technology to improve process control and to minimize the chance of uncontrolled releases to the environment. Residual surfactants may be eliminated from the soil using only water, and surfactants can be modified to remove PCP as well as co-contaminating hydrocarbons, which may also be present.

The aqueous extracts so produced may be subjected to a variety of concentrating and destructive steps to remove the entrained PCP and hydrocarbons, placing a wider array of treatment alternatives at Time's disposal.

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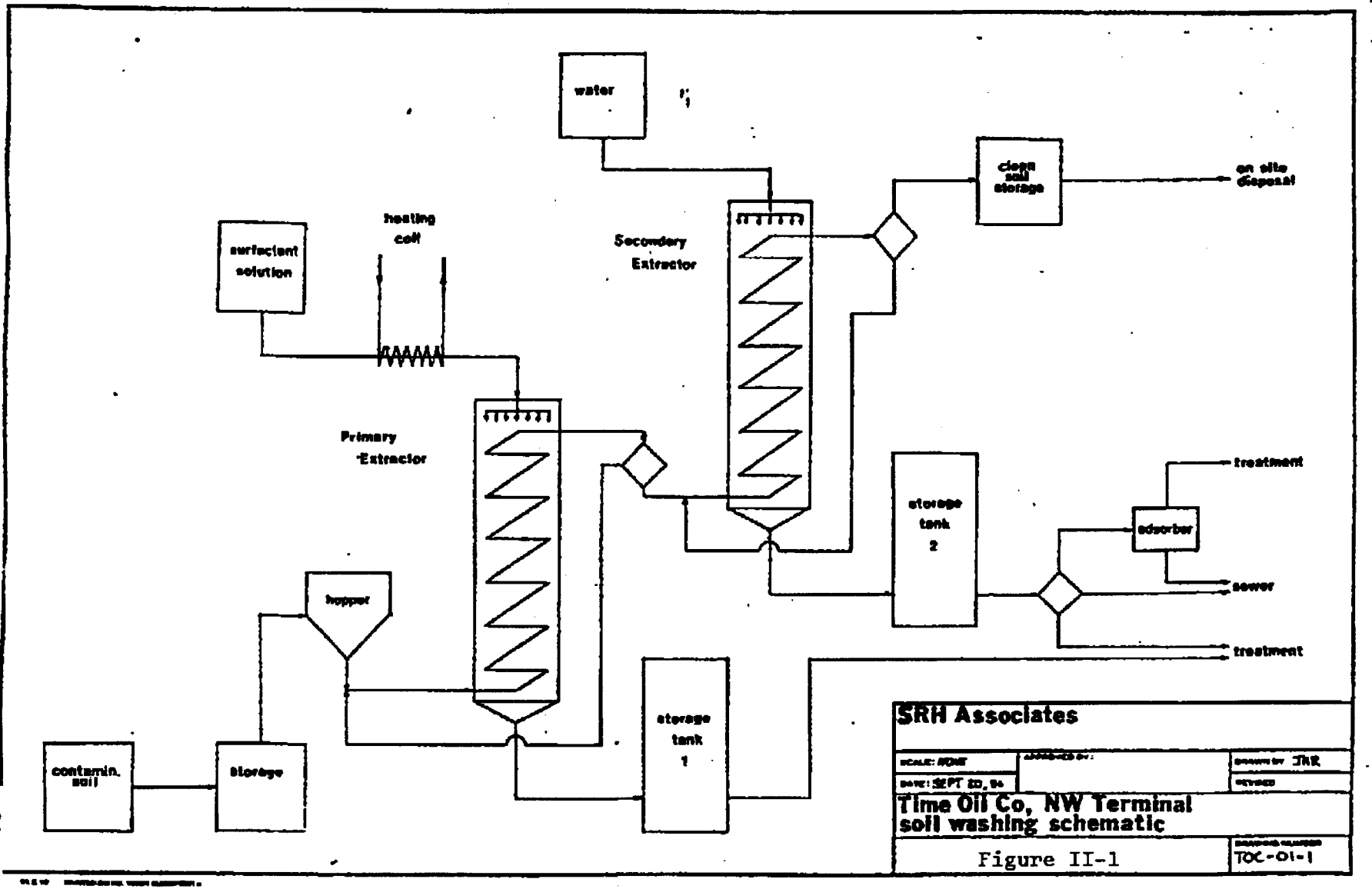

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SECTION III

ANALYSIS RESULTS

INTRODUCTION

During August of 1986, Time retained SRH Associates to collect samples of surface and subsurface soil and groundwater from the Time Facility located in Portland, Oregon. The samples were analyzed for pentachlorophenol (PCP) in an effort to further existing data concerning past releases of this chemical from a woodtreating chemicals formulating operation at this site.

Samples of surface soils were collected from an earthen tank farm area located south of the woodtreating chemicals warehouse and from six locations below the concrete floor of the warehouse itself. Additional samples were taken from five other depths below the warehouse floor from the same holes as the surface samples. Groundwater was sampled at seven existing monitoring wells surrounding the woodtreating chemicals area and was analyzed for PCP and pH. Static water levels were determined in these wells and at a monitoring station for the measurement of Willamette River water elevations located on the Northwest Terminal Facility pier.

SURFACE SOIL SAMPLING AND ANALYSIS

Following the contaminated soil relocation to one pile, surface soils were collected from 17 locations in the woodtreating tank farm area. The locations were identical to those sampled by Riedel Environmental Services during initial samplings performed in 1985. Samples were obtained from 2 to 3 inches below the soil surface to reduce the risk of contamination arising during set up procedures at the sample site.

Additionally, six locations inside the warehouse were sampled by coring through the concrete with abrasive saws. The six locations were selected by Time and represent an extension of the triangular sampling grid employed by Riedel in the 1985 study. Samples were obtained from an interval of 3.5 to 5.5 feet below the lower

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surface of the concrete using split spoon samplers. The sampling procedure used will be described in the next (Subsurface Samples) part. The selected depth was chosen to position the samples at the same true elevation as the surface samples taken from the tank farm area. Samples of soil from 2 to 6 inches below the lower surface of the concrete floor were obtained and held for possible future analysis.

Samples were obtained using stainless steel sampling spoons which had been previously cleaned with sequential washings of laboratory detergent, tap water, hexane, tap water, trisodium phosphate and sodium carbonate in water, tap water and distilled water (3X). Samples were screened through 0.10 inch stainless steel mesh which had been similarly cleaned. The screened material was allowed to fall directly from the screens into pre-washed 8 ounce glass jars fitted with screw cap closures and teflon liners. The containers had been cleaned to EPA specifications and were not opened prior to receiving the sampled material.

Samples were field logged and containers were marked with the date, time, location, sample code, requested analyses and other relevant data. Lids were replaced with care being taken to ensure that no interference with the hermetic seal occurred. Tamper indicating seals were applied, chain of custody and analysis request forms were completed and the samples placed on ice prior to transport to the laboratory. Samples were delivered to the laboratory within 48 hours of collection in all cases. No preservatives were added to soil samples.

Samples were extracted in the laboratory using method number 3540, Soxhlet Extraction, as described in EPA publication SW 846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. The extract so obtained was analyzed for pentachlorophenol by method 8040, Phenols, as described in EPA publication SW 846. Field and laboratory duplicates were analyzed and spiked sample recovery efficiencies were determined. Laboratory blanks were analyzed. No field blanks of soil were submitted. All quality control results indicated acceptable performance of sampling and analysis.

The results of the surface soil samples are listed, along with the X and Y coordinates of their respective sampling locations, in Table III-1. The coordinates are referred to a temporary bench mark located at the end of a concrete wall at the southeast corner of the woodtreating tank farm area. The coordinates are given in feet. The X axis is aligned in an approximately northeast - southwest plane while the Y axis is aligned in an approximately northwest - southeast plane at at 90° to the X axis.

The results listed in Table III-1 were subjected to Kriging analysis to generate lines of equal concentration (equiconcentration isoplethe). A .95 smoothing ratio and a search radius of 213 feet was used for generation of the contours which are shown in Figures III- 1 to III-4. The sample sites and their respective concentrations are indicated. The contours are to

TOLS002079

BZTO104(e)038900

scale (1" = 20 feet) and can be overlaid on the associated plan drawing of the sampled area. (Figure III-5).

The results indicate that the bulk of the surface contamination exists in a pile of material located in the vicinity of sample point S. Additional contamination is located to the east of point S, continuing to approximately the concrete wall bordering the tank farm on the east. The strong focal point of contamination located at point K has generated a broad area of calculated contamination on the Kriging generated contour maps. Due to the lack of supporting high concentrations of PCP adjacent to point K, it is concluded that this contour is primarily artifactual, generated by the data reducing program in response to the single very high concentration detected at K. It is more likely that K represents a small focus of high concentration, rather than the large area implied by the contours.

Most contamination that had been previously detected to the west of the woodtreating tank farm area appears to have been removed during recent excavation activities performed by Time. This is reflected by the low results found at points M and U.

Two locations beneath the warehouse floor were found to contain low levels of PCP. Borings 1 and 5 contained 5.7 and 1.4 ppm of PCP, respectively. It should be noted, however, that despite stringent efforts to prevent contamination, blowing winds and "dust devils" were noted during sampling and were observed picking up soil from the tank farm area and warehouse floor. Because of these concerns, the low levels noted in these samples are probably a result of field contamination.

SUBSURFACE SAMPLES

Samples were obtained from six depths below the lower surface of the concrete floor in the woodtreating chemicals warehouse. Six locations, determined by Time and located at extensions of the triangular sampling grid developed by Riedel, were sampled. The approximately 6 inch thick concrete floor was cored using an abrasive wheel. Twelve inch diameter holes were cut. The surface of the concrete within a 6 foot radius of the hole was swept clean and covered with .005 inch thick polyethylene film to minimize contamination from residue found in the warehouse.

The upper 2 to 3 inches of soil in the hole was removed to eliminate contamination with cuttings generated during the coring and set up operations. A sample was subsequently obtained using the technique given above, from the exposed surface of the hole. The holes were designated as numbers 1 through 6. The surface sample was collected and held for future analysis.

TOLS002080

BZTO104(e)038901

Following collection of the surface sample, the hole was advanced using a hand operated, 2 1/2 inch (O.D.) continuous flight auger. Samples were obtained at the following intervals below the upper surface of the concrete floor using a 2 inch (O.D.) split spoon sampler:

3.5	to 5.5	feet	(0)
5.5	to 7.5	feet	(2)
7.5	to 9.5	feet	(4)
10.5	to 12.5	feet	(7)
15.5	to 17.5	feet	(12)

Since the upper surface of the concrete floor was 3.5 feet above the surrounding soil surface, the five depths listed above were equivalent to the 0 to 2 foot, 2 to 4 foot, 4 to 6 foot, 7 to 9 foot and 12 to 14 foot intervals sampled in the woodtreating tank farm area by Riedel in 1985.

Samples were taken by removing the drill from the bore hole and inserting the split spoon sampler into the bore hole taking care not to dislodge any material from the surface or walls of the hole. The sampler was driven into the soil using a 20 lb. hammer. Hand drilling and driving of the penetrometer/sampler was required due to the inaccessibility of the site to conventional drill rigs and to the low overhanging roof of the warehouse.

Samples were extruded by gently tapping the soils out of the sampler onto stainless steel screens, which were cleaned as indicated above. The samples were screened, placed into jars, labelled, logged and handled as described above. Samplers were cleaned after each use, using the decontamination procedures described above. The drilling equipment was decontaminated between holes and prior to leaving the site. All decontamination water was impounded in D.O.T. 17 E drums until proper disposal requirements could be established based on analytical results.

During drilling, saturated conditions were encountered at the 12 foot interval in all holes. No groundwater samples were taken from any location. All soil samples consisted of medium grained grey - brown to blue sands. Cobbles were encountered in holes number 1 and 2 at a depth of approximately 3 feet below the floor surface. The cobbles were associated with a minor clay lens approximately 2 inches thick.

Following drilling, holes were abandoned through the addition of bentonite pellets to a depth of 13 feet below the concrete floor. The remainder of the hole was filled with bentonite grout to the surface. The concrete core plugs removed during coring of the warehouse floor were replaced in the hole and bedded with bentonite in accordance with Time's request.

The samples were refrigerated and shipped to the laboratory for PCP analysis as outlined above. The results, together with the X and Y coordinates of the sample points, are presented in Tables

III-1 through III-4. The data from these analyses have been combined with the results obtained by Riedel at the sample locations labelled J through Z in 1985, for the nominal sampling depths 2, 4, 7 and 12, to generate concentration isopleths at these depths.

The data listed in these tables was analyzed by Kriging analysis according to the procedure given above. The results of the contouring are shown in Figures III-1 through III-4. Figure III-5 shows the sample locations on a plan drawing of the woodtreating chemicals warehouse. Figure III-6 incorporates the X and Y coordinates of the sample locations on this drawing.

The results indicate that contamination is restricted to the woodtreating tank farm area with virtually no contamination being found beneath the central and northern portions of the warehouse. There is significant PCP contamination below the surface of the southwest corner of the warehouse, which appears to be continuous with a vertical column of contamination located immediately adjacent to this area in the tank farm.

Excavations in the woodtreating tank farm area have perturbed the original conditions of the site, and therefore the surface and 2 foot contours are not expected to be representative of conditions existing prior to the movement of soil. This can be seen by the distortion of the vertical column of contamination at the surface and two foot intervals, due to the fact that soil at these sites had been removed and replaced with soils from other areas within the woodtreating tank farm. A computer generated topographic grid net of the woodtreating tank farm and warehouse area can be seen in Figure III-7.

The 4, 7 and 12 foot contours reflect the strong vertical plume of PCP contamination which decreases to about 2000 ppm at the 12 foot depth. A minor lobe of this plume appears to extend to the southeast into the lower corner of the woodtreating tank farm area at or around the seven foot interval. The vertical plume appears to widen and diffuse to the south at the 12 foot contour, presumedly due to the presence of groundwater at or near this sampling depth.

GROUNDWATER ANALYSES

The nine vertical groundwater monitoring points at Time (See Figure I-6, Section I) were measured for static water levels and tested for pH and PCP. The three slant borings located at the southwest corner of the warehouse were not examined. The wells, which had been previously installed by Time employees or other contractors, consist of 1 1/4 and 2 inch (I.D.) stainless steel well points and 2 inch (I.D.) PVC screen and casing,

TOLS002082

BZTO104(e)038903

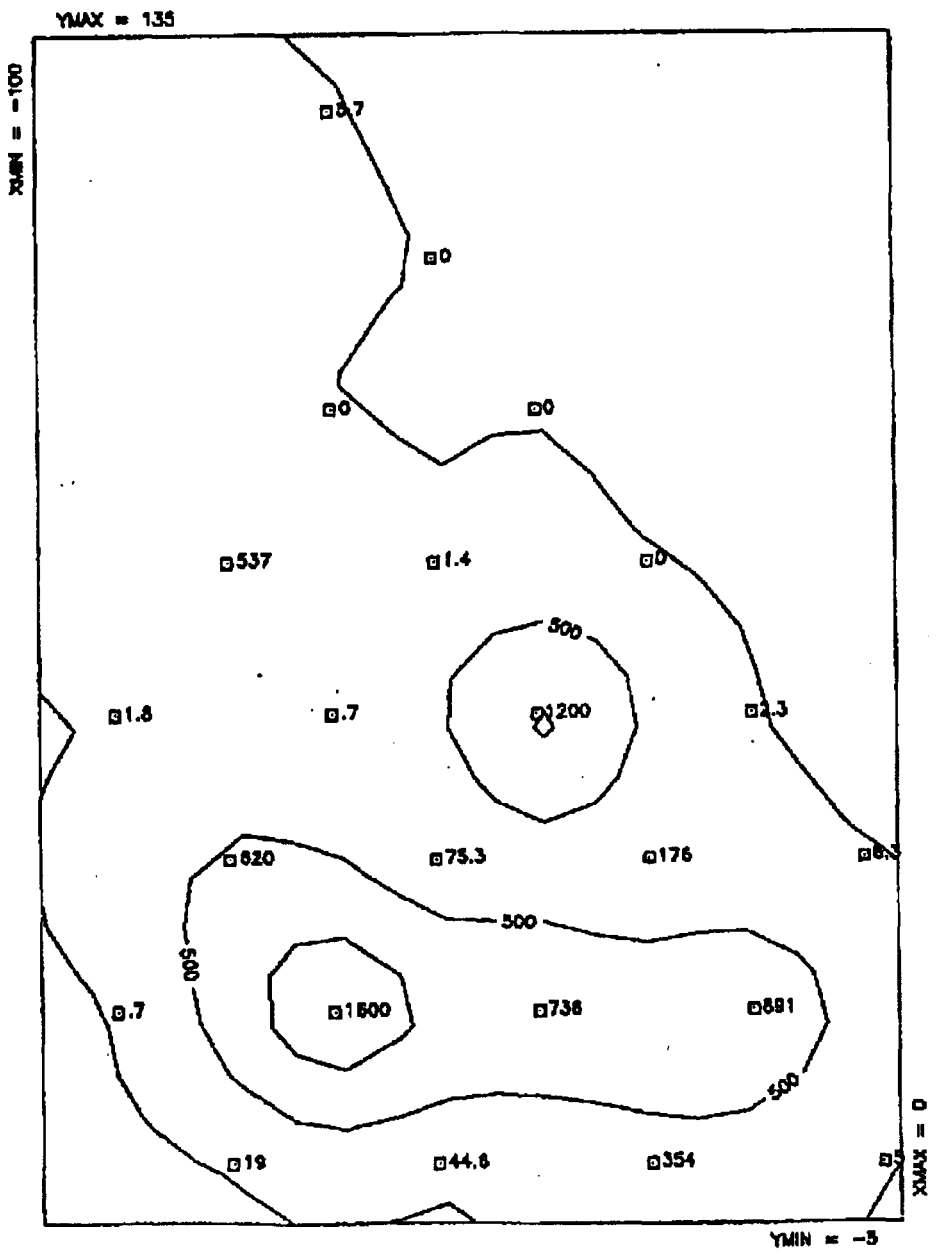
The water level elevations in the wells, labelled A through I, were measured to the nearest .01 foot from the top edge of the casing at a scribed mark located on the north side of the casing. A Fisher M-Scope previously calibrated against a steel tape was used to obtain the measurements. Standing bore volumes of well water were calculated based on these measurements and well construction drawings provided by Time. A measurement of the Willamette River water elevation relative to a mark located by Time on its unloading pier was also taken.

Stainless steel weighted bailers were used to remove at least 4 standing bore volumes of water prior to collecting representative samples of groundwater. The bailers had been previously cleaned by the procedure described above, and were re-cleaned after each well was sampled. The purged water was collected into D.O.T. 17 E drums until proper disposal could be determined based on analytical results.

The samples were dispensed directly from the bailer into two 1 liter amber glass bottles fitted with screw cap closures and teflon liners for PCP analysis. Samples were adjusted to pH 2 with 1:1 Sulfuric Acid in distilled water and checked with pH paper prior to refrigeration and delivery to the lab. Samples for pH analyses were dispensed directly into 250 ml polyethylene wide mouthed bottles without preservatives. pH analyses were performed within 2 hours of sample collection using a silver-silver chloride reference electrode standardized against two NBS traceable reference buffer solutions. Samples were logged, labelled, sealed and transferred to the laboratory within 6 hours of collection. Analyses for PCP were performed as above, except that the sample was not filtered prior to analysis, and was extracted by method 3510, Separatory Funnel Liquid - Liquid Extraction, as described in EPA publication SW 846.

The results of the groundwater investigation are shown in Table III-6. Wells C and G were dry and could not be sampled. The pH ranged from 6.53 to 6.91. The only well showing detectable PCP was well D, in which .044 ppm was detected. Well D is located southeast of the woodtreating chemicals warehouse.

FIGURE III-1

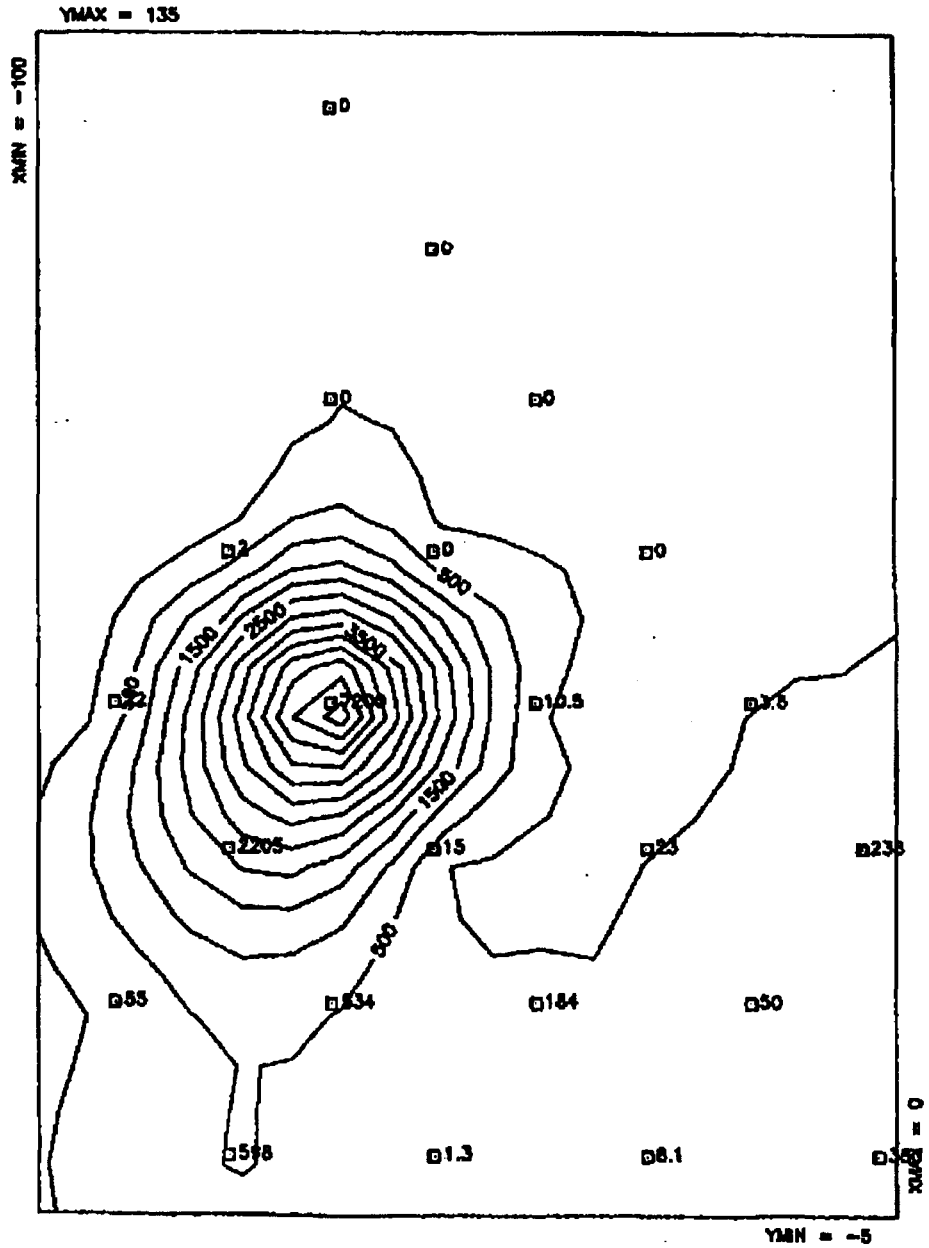


TIME OIL CO - SURFACE PCP CONTOURS

TOLS002084

BZTO104(e)038905

FIGURE III-2



TIME OIL CO - 4' FOOT PCP CONTOURS

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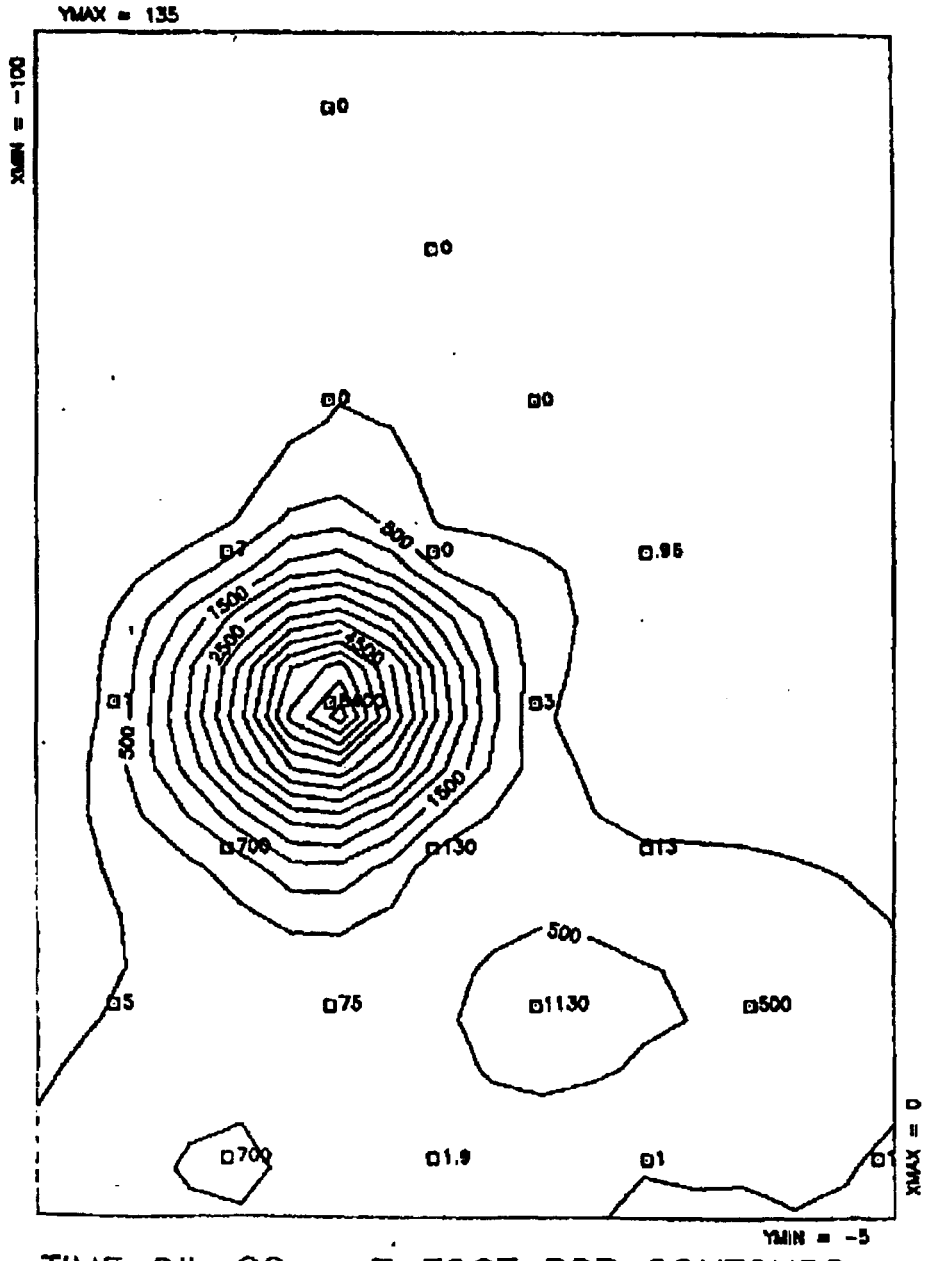
TOLS002085

BZTO104(e)038906

FIGURE III-3

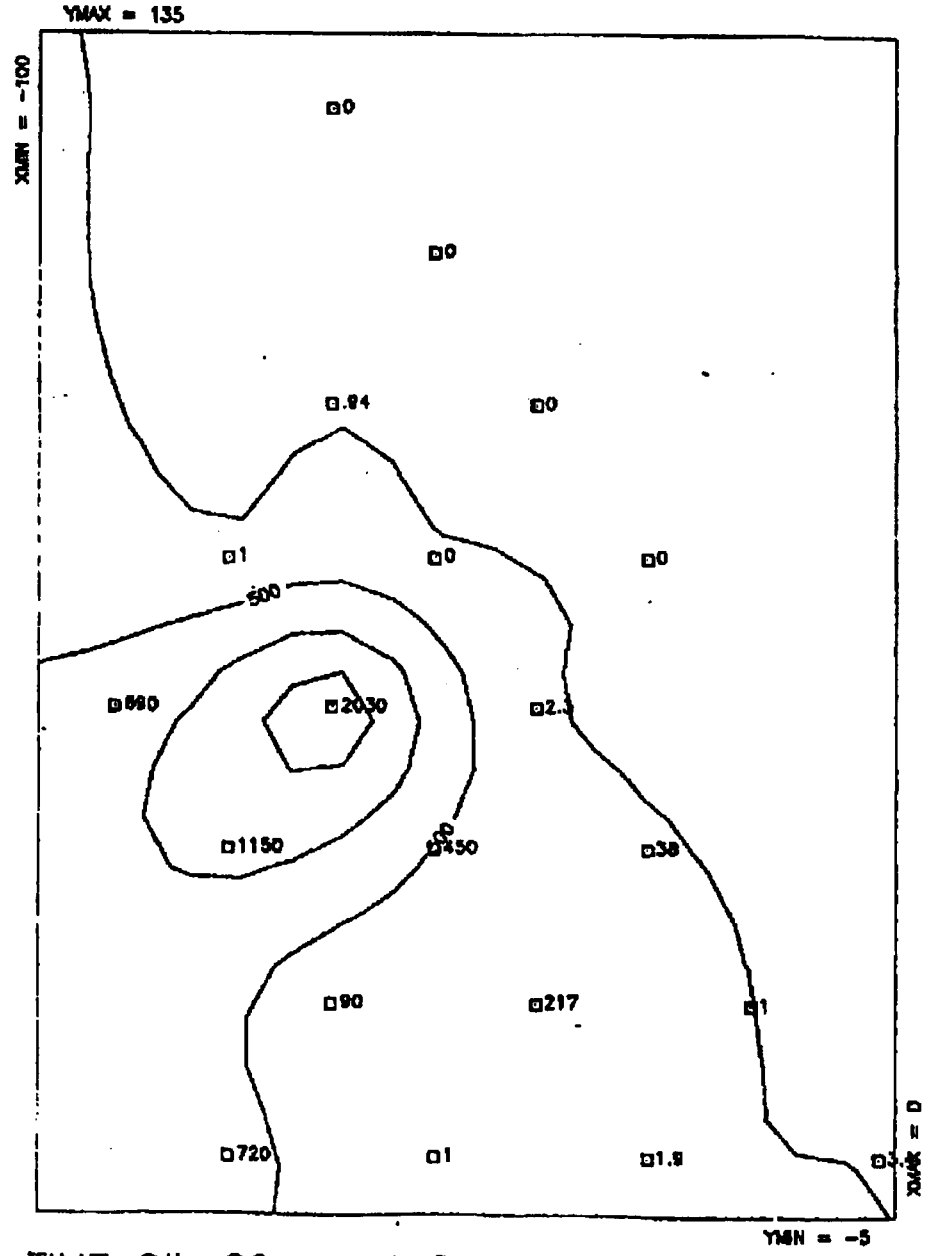


TIME OIL CO – 7 FOOT PCP CONTOURS

TOLS002086

BZTO104(e)038907

FIGURE III-4



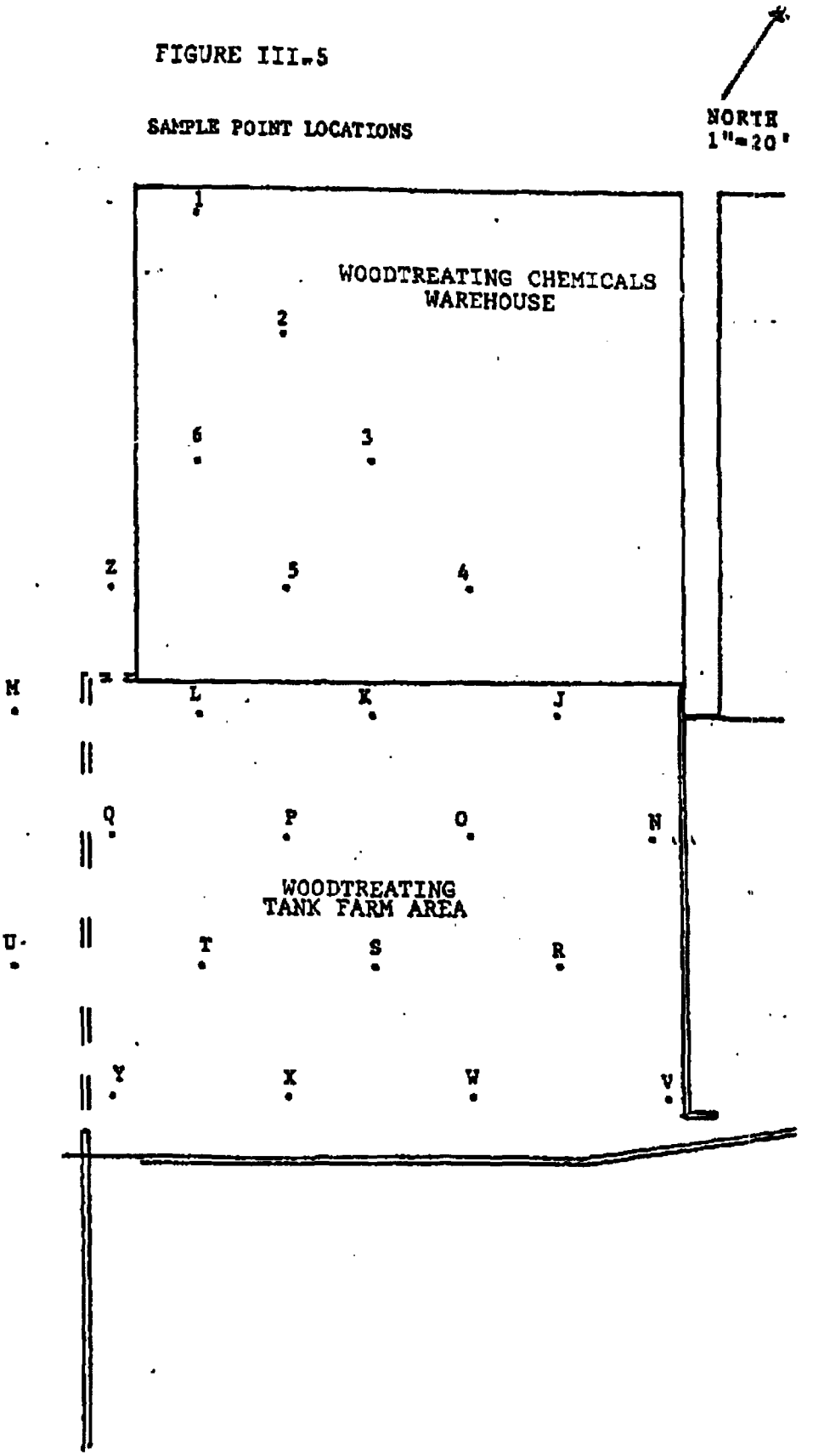
TIME OIL CO – 12 FOOT PCP CONTOURS

TOLS002087

BZTO104(e)038908

FIGURE III-5

SAMPLE POINT LOCATIONS

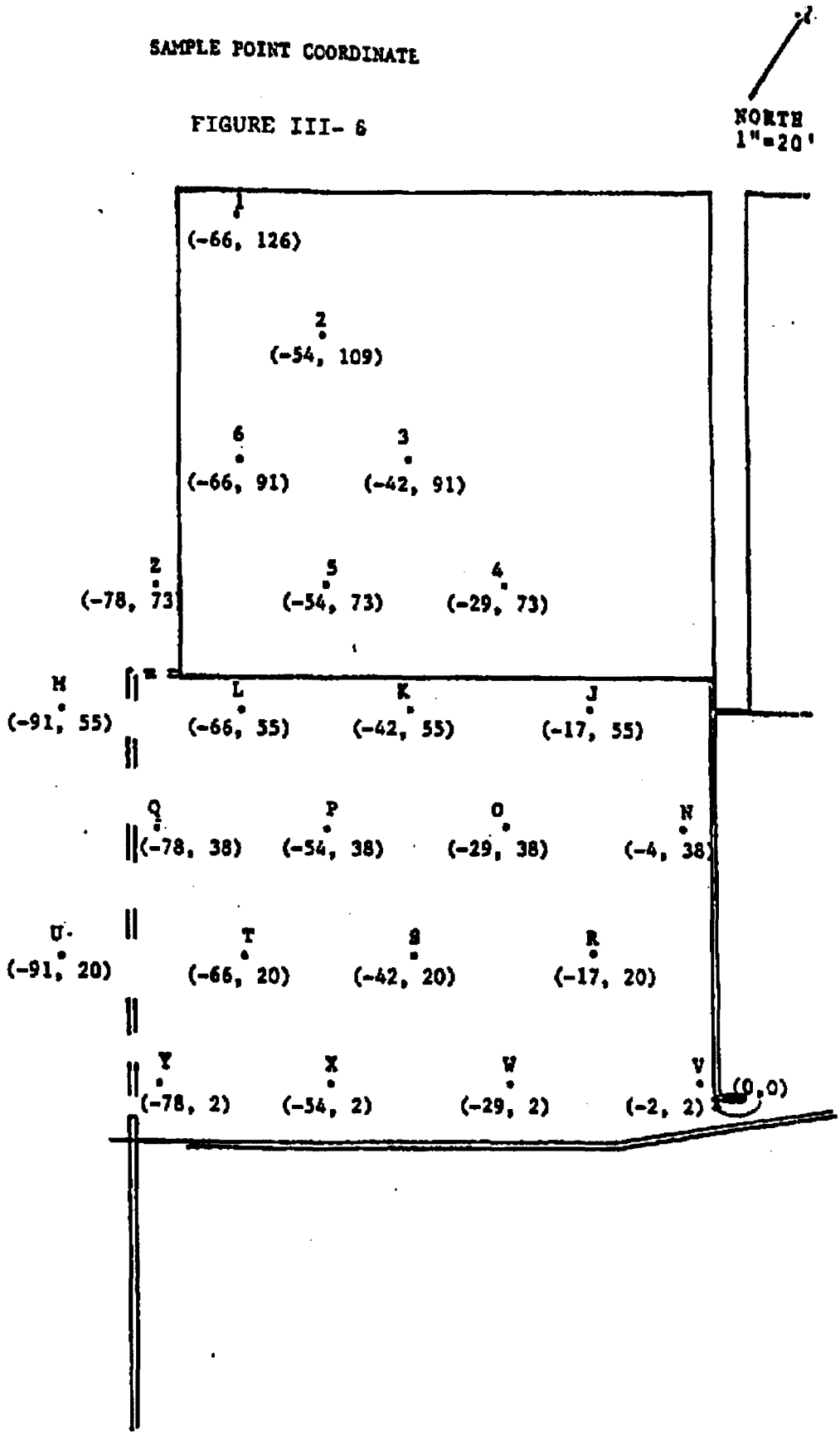


TOLS002088

BZTO104(e)038909

SAMPLE POINT COORDINATE

FIGURE III- 6



001033

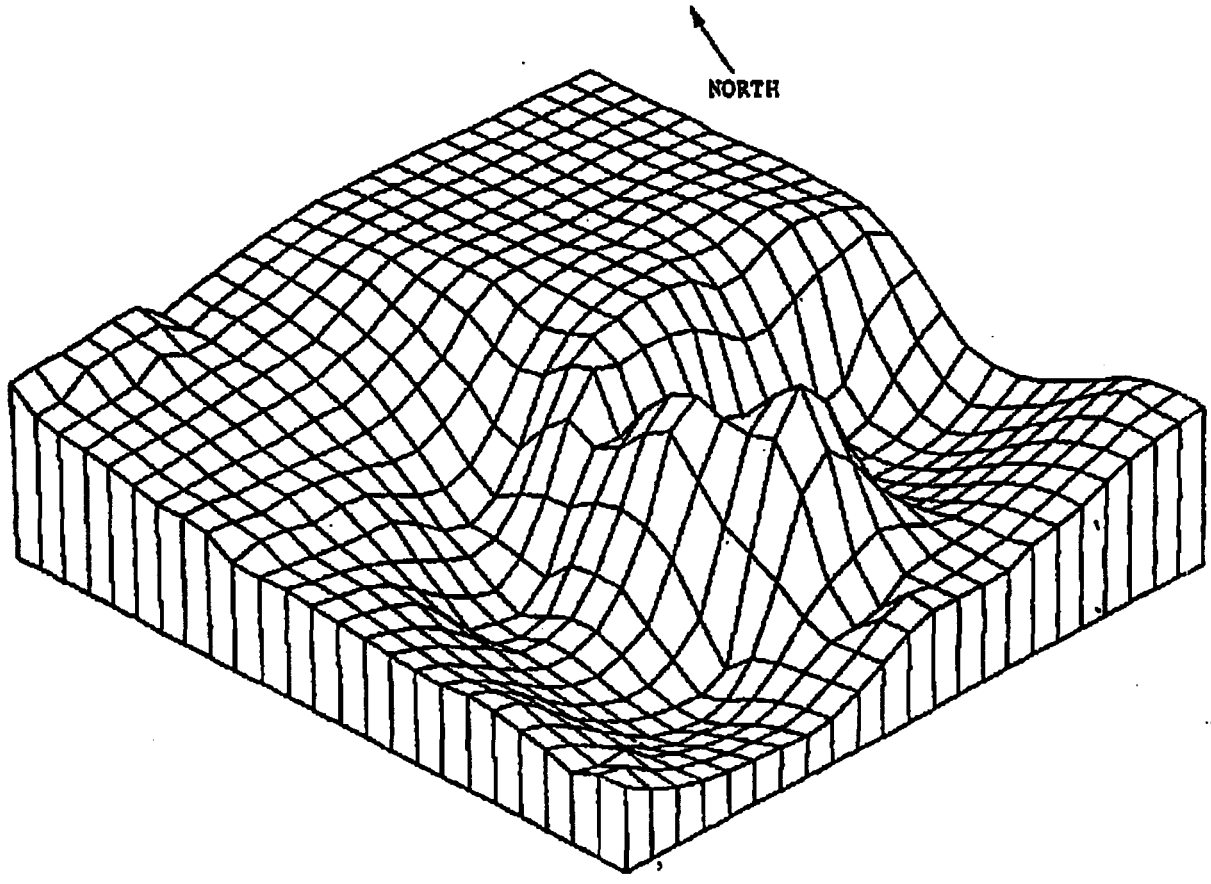
TOLS002089

BZTO104(e)038910

FIGURE III- 7

APPROXIMATE SURFACE TOPOGRAPHY

WOOD TREATING CHEMICALS AREA



TIME OIL CO. - TOPOGRAPHY

TABLE III-1

TIME OIL CO.

COORDINATES - SURFACE PCP CONTOUR

CODE	X	Y	[PCP]
J	-17	55	2.3
K	-42	55	1200
L	-66	55	0.7
M	-91	55	1.8
N	-4	38	6.3
O	-29	38	176
P	-54	38	75.3
Q	-78	38	620
R	-17	20	891
S	-42	20	736
T	-66	20	1600
U	-91	20	0.7
V	-2	2	5
W	-29	2	354
X	-54	2	44.5
Y	-78	2	19
Z	-78	73	537
6	-66	91	0
5	-54	73	1.4
4	-29	73	0
3	-42	91	0
2	-54	109	0
1	-66	126	5.7

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

TOLS002091

BZTO104(e)038912

TABLE III-2

TIME OIL CO.

COORDINATES - 2 FOOT PCP CONTOURS

CODE	X	Y	[PCP]
J	-17	55	3
K	-42	55	8.8
M	-91	55	87
N	-4	38	3.1
O	-29	38	59
P	-54	38	16
R	-17	20	34
S	-42	20	252
T	-66	20	123
U	-91	20	44
V	-2	2	260
W	-29	2	15
X	-54	2	4.5
Z	-78	73	14
6	-66	91	0
5	-54	73	5.6
4	-29	73	0
3	-42	91	0
2	-54	109	0
1	-66	126	0

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

001036

TOLS002092

BZTO104(e)038913

TABLE III-3

TIME OIL CO.

COORDINATES - 4 FOOT PCP CONTOURS

CODE	X	Y	[PCP]
J	-17	55	3.6
K	-42	55	10.5
L	-66	55	7200
M	-91	55	22
N	-4	38	238
O	-29	38	23
P	-54	38	15
Q	-78	38	2205
R	-17	20	50
S	-42	20	184
T	-66	20	534
U	-91	20	55
V	-2	2	380
W	-29	2	8.1
X	-54	2	1.3
Y	-78	2	598
Z	-78	73	2
6	-66	91	0
5	-54	73	0
4	-29	73	0
3	-42	91	0
2	-54	109	0
1	-66	126	0

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

TABLE III-4

TIME OIL CO.

COORDINATES - 7 FOOT PCP CONTOURS

CODE	X	Y	[PCP]
K	-42	55	3
L	-66	55	8400
M	-91	55	1
O	-29	38	13
P	-54	38	130
Q	-78	38	700
R	-17	20	500
S	-42	20	1130
T	-66	20	75
U	-91	20	5
V	-2	2	1
W	-29	2	1
X	-54	2	1.9
Y	-78	2	700
Z	-78	73	7
6	-66	91	0
5	-54	73	0
4	-29	73	0.96
3	-42	91	0
2	-54	109	0
1	-66	126	0

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

TABLE III-5

TIME OIL CO.

COORDINATES - 12 FOOT PCP CONTOURS

CODE	X	Y	[PCP]
K	-42	55	2.3
L	-66	55	2030
M	-91	55	690
O	-29	38	38
P	-54	38	450
Q	-78	38	1150
R	-17	20	1
S	-42	20	217
T	-66	20	90
V	-2	2	3.4
W	-29	2	1.9
X	-54	2	1
Y	-78	2	720
Z	-78	73	1
6	-66	91	0.94
5	-54	73	0
4	-29	73	0
3	-42	91	0
2	-54	109	0
1	-66	126	0

NOTE: [PCP] = CONCENTRATION OF PCP (mg/Kg) or (ppm)

TABLE III-6

TIME OIL CO.

GROUNDWATER ANALYTICAL RESULTS

(AUGUST 29, 1986)

WELL NUMBER	STATIC WATER LEVEL (FT BELOW TOP OF CASING)	pH	[PCP] (ppm)
MW-A	14.06	6.80	N.D.
MW-B	15.07	6.70	N.D.
MW-C	DRY	N.A.	N.A.
MW-D	14.48	6.53	.044
MW-E	15.22	6.54	N.D.
MW-F	15.44	6.57	N.D.
MW-G	DRY	N.A.	N.A.
MW-H	11.28	6.91	N.D.
MW-I	14.75	6.77	N.D.
RIVER	25.70	N.A.	N.A.

NOTES:

[PCP] = CONCENTRATION OF PENTACHLOROPHENOL
ppm = PARTS PER MILLION
N.A. = NOT AVAILABLE
N.D. = NOT DETECTED

001040

TOLS002096

BZTO104(e)038917

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1985
Log #A860825-F

SRH Associates, Inc.
P.O. Box 14005
Portland, Oregon 97214
Attention: John Ruddick

Analysis Requested: Pentachlorophenol

Sample Location: Time Oil Co., Portland Terminal

SAMPLE ID	RESULTS
J-0 - Surface-N.E. Tank Farm	2.9
K-0 - Surface-N. Tank Farm	2964
L-0 - Surface-N.W. Tank Farm	0.7
M-0 - Surface-N.W. Tank Farm	1.8
N-0 - Surface-E. Tank Farm	6.3
O-0 - Surface-N.E. Central Tank Farm	176
P-0 - Surface-N. Central Tank Farm	75.3
Q-0 - Surface-N.W. Central Tank Farm	620
R-0 - Surface-E. Central Tank Farm	891
S-0 - Surface-S.E. Central Tank Farm	736
T-0 - Surface-N. Central Tank Farm	1600
U-0 - Surface-W. Central Tank Farm	0.7
V-0 - Surface-S.E. Tank Farm	5.0
W-0 - Surface-S. Tank Farm	354
X-0 - Surface-S. Tank Farm	44.6
Y-0 - Surface-S.W. Tank Farm	19
Z-0 - Surface-N.W. Roadway	537
1-S - Boring #1, Warehouse Loading Dock, Surface Below Concrete	1.2
1-0 - Boring #1, Warehouse Loading Dock, 9.5 ft. Below Concrete	5.7
5-0 - Boring #5, S.W. Inside Warehouse #5, 9'4" - 5'4" Below Concrete	1.4

Results in mg/kg

REPORT CONTINUES

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

001041

TOLS002097

BZTO104(e)038918

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1985
Log #A860825-F

BRH Associates, Inc.
Page Two

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

Sample Location: Time Oil Co., Portland Terminal

SAMPLE ID	RESULTS
S-2 - Boring #5, S.W. Inside Warehouse 5'4" - 7'4" Below Concrete	5.6
S-4 - Boring #5, S.W. Inside Warehouse 7'4" - 9'4" Below Concrete	< 1
S.7 - Boring #5, S.W. Inside Warehouse 10'4" - 17'4" Below Concrete	< 1
S.12- Boring #5, S.W. Inside Warehouse 15'4" - 17'4" Below Concrete	< 1
6-0 - Boring #6, W. Central Inside Warehouse 9'5" - 5'5" Below Concrete	< 1
6-2 - Boring #6, W. Central Inside Warehouse 5'5" - 7'5" Below Concrete	< 1
6-4 - Boring #6, W. Central Inside Warehouse 7'5" - 9'5" Below Concrete	< 1
6-7 - Boring #6, W. Central Inside Warehouse 10'5" - 12'5" Below Concrete	< 1
6-12- Boring #6, W. Central Inside Warehouse 15'5" - 17'5" Below Concrete	0.94
D-2 - Waste Pile @ T-8, Duplicate of T-8	3420

Results in mg/kg

< denotes "less than"

REPORT CONTINUES

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

TOLS002098

BZTO104(e)038919

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1986
Log #AB60825-F

SRH Associates, Inc.
Page Three

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

Sample Location: Time Oil Co., Portland Terminal

SAMPLE ID	RESULTS
T-8 - Waste Pile, Feet Below Top of Pile	1280
G-8 - Waste Pile, Feet Below Top of Pile	294
D-1 - Boring #6, Duplicate of G-8	< 1
4-0 - Boring #4, S.E. Warehouse 3'5" - 5'5" Below Concrete	< 1
4-2 - Boring #4, S.E. Warehouse 5'5" - 7'5" Below Concrete	< 1
4-4 - Boring #4, S.E. Warehouse 7'5" - 9'5" Below Concrete	< 1
4-7 - Boring #4, S.E. Warehouse 10'5" - 12'5" Below Concrete	0.95
4-12- Boring #4, S.E. Warehouse 15'5" - 17'5" Below Concrete	< 1
3-0 - Boring #3, E. Central Warehouse 3'5" - 5'5" Below Concrete	< 1
3-2 - Boring #3, E. Central Warehouse 5'5" - 7'5" Below Concrete	< 1
3-4 - Boring #3, E. Central Warehouse 7'5" - 9'5" Below Concrete	< 1
3-7 - Boring #3, E. Central Warehouse 10'5" - 12'5" Below Concrete	< 1
3-12- Boring #3, E. Central Warehouse 15'5" - 17'5" Below Concrete	< 1

Results in mg/kg

REPORT CONTINUES

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

TOLS002099

BZTO104(e)038920

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1986
Log #A860825-F

SRH Associates, Inc.
Page Four

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

Sample Location: Time Oil Co., Portland Terminal

SAMPLE ID	RESULTS	% Recovery
5-4 - Boring #5, W. Central Inside Warehouse 7'5" - 9'5" Below Concrete (Duplicate)	< 1	
4-4 - Boring #4, S.E. Warehouse 7'5" - 9'5" Below Concrete (Duplicate)	< 1	
3-12- Boring #3, E. Central Warehouse 15'5" - 17'5" Below Concrete (Duplicate)	< 1	
6-4 - Boring #6, W. Central Inside Warehouse 7'5" - 9'5" Below Concrete (Spike)	399	101
4-4 - Boring #4, S.E. Warehouse 7'5" - 9'5" Below Concrete (Spike)	379	96

Results in mg/kg

< denotes "less than"

Analysis by soxhlet extraction, capillary GC/FID, EPA Method 8040

Sincerely,

Susan M. Coffey

Susan M. Coffey,
President

SMC/gs

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 3, 1986
Log #A860626-C

SRH Associates, Inc.
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

Sample Location: Time Oil Co., Portland

Sample Date: 8/25/86

SAMPLE ID	RESULTS
2-0	< 1.0
2-2	< 1.0
2-4	< 1.0
2-7	< 1.0
2-12	< 1.0
1-2	< 1.0
1-4	< 1.0
1-7	< 1.0
1-12	< 1.0

Results in mg/kg

< denotes "less than"

Analysis by soxhlet extraction, capillary GC/FID, EPA Method 8040

Sincerely,

Susan M. Coffey

Susan M. Coffey
President

SMC/gs

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

001045

TOLS002101

BZTO104(e)038922

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 5, 1986
Log # A860823-N
P.O. None

SRH Associates Incorporated
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Subject: Pentachlorophenol and pH Analysis

Sample Type: Ground Water
Sample Collected by: John Ruddick
Sample Collection Date: August 29, 1986

SAMPLE NAME	PENTACHLOROPHENOL	pH
MW-D	0.04 mg/L	6.53 SU
MW-E	< 0.01 mg/L	6.54 SU
MW-F	< 0.01 mg/L	6.57 SU
MW-H	< 0.01 mg/L	6.91 SU
MW-I	< 0.01 mg/L	6.77 SU

Pentachorophenol analysis by extraction and capillary GC/FID. The symbol "<" means less than and denotes none detected at or above the level indicated.

Sincerely,

Susan M. Coffey

Susan M. Coffey
President

SMC:hh

This report for the sole and exclusive use of the above named client. Samples are held for a maximum of 45 days from the date of this report.

001046

TOLS002102

BZTO104(e)038923

COFFEY LABORATORIES, INC.
4814 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 9, 1986
Log #A860903-J

SRH Associates, Inc.
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Analyses Requested: Pentachlorophenol (PCP) and pH

SAMPLE ID	PCP*	pH
MWA, 9/3/86, 1030	< 0.01 mg/L	6.8 S.U.
MWA, 9/3/86, 1110	< 0.01 mg/L	6.7 S.U.

< denotes "less than"

* Analysis by extraction, capillary GC/FID, Method 604.

Approved by,
Susan M. Brillante
Susan M. Brillante,
Mgr., Organic Laboratories

Sincerely,
Susan M. Coffey
Susan M. Coffey,
President

SMC/gs

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

001047

TOLS002103

BZTO104(e)038924

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

September 18, 1986
Log #AS60918-F

SRH Associates, Inc.
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

SAMPLE ID	RESULTS
#20 55	< 0.3 mg/kg

Analysis by extraction, capillary GC/FID and comparison with solutions of standards.

Approved by,
Susan M. Brillante
Susan M. Brillante,
Mgr., Organic Laboratories

Sincerely,
Susan M. Coffey
Susan M. Coffey,
President

SMC/ps

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

October 1, 1986
Lag #A860926-A

SRH Associates, Inc.
123 N.E. Third/Suite 230
P.O. Box 14005
Portland, Oregon 97214

Attention: John Ruddick

Analysis Requested: Pentachlorophenol

SAMPLE ID	RESULTS
K-O, 9/25 0915, Soil	1200 mg/kg

Analysis by EPA Method 8040, capillary GC/FID.

Approved by,
Susan M. Brillante
Susan M. Brillante,
Mgr., Organic Laboratories

Sincerely,
Susan M. Coffey
Susan M. Coffey,
President

SMC/gs

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

CHAIN OF CUSTODY RECORD (8010)

PROJ. NO.	SITE/LOCATION
1003	Vimi Oil Co

SAMPLERS: (Signature) [signature] / SRH

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE: Pentachlorophenol	AMOUNT/PRESERVATIVE: pH					SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
MWA	7/3/[illegible]	1030	BAILED	WATER	NEAR W TANK FARM	2	[illegible]	[illegible]							
MWA	"	1030	↓	↓	" "	1	[illegible]	[illegible]							
MWB	"	1110	↓	↓	" "	2	[illegible]	[illegible]							
MWA	"	1110	↓	↓	" "	1	[illegible]	[illegible]							

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
[signature]	9/3/80 1445	[signature]			
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

K-57

001050

TOLS002106

BZTO104(e)038927

CHAIN OF CUSTODY RECORD

PROJ. NO.	SITE/LOCATION
1003	TIME OIL CO PDX

SAMPLERS: (Signature) [signature]

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE	PENTACHLORINATED (8040)	PH				SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
MW-D	8/29	1600	BAILER	WATER	SE TANK FARM	3	[illegible]	[illegible]	[illegible]						
MW-E	↓	1430	↓	↓	SW TANK FARM	↓	[illegible]	[illegible]	[illegible]						
MW-F	↓	1615	↓	↓	ROADWAY (S)	↓	[illegible]	[illegible]	[illegible]						
MW-H	↓	1500	↓	↓	NEAR LOADING DECK	↓	[illegible]	[illegible]	[illegible]						
MW-I	↓	1650	↓	↓	ROADWAY (N)	↓	[illegible]	[illegible]	[illegible]						

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
[signature] SRH	8/29/86 1800	Susan M Coffey Coffey Labs			
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

K-57

001051

TOLS002107

BZTO104(e)038928

CHAIN OF CUSTODY RECORD

PROJ. NO.	SITE / LOCATION
1003	Time Oil Co - Portland

SAMPLERS: (Signature) Jill H Rudd - SRH Assoc.

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	Gas Amount / Preservative (Lab)	SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with Initials)
2-5	8/25	1130	GRAB	SOIL	NW Wall Hole 2 Surface	1	8/0			HOLD
2-0	"	1145	SPLIT SPOON	"	" " 2'5"-5'5"	1	8/0			
2-2		1450			" " 5'5"-7'5"	1	8/0			
2-4		1520			7'5"-9'5"	1	8/0			
2-7		1545			10'5"-12'5"	1	8/0			
2-12		1720			15'5"-17'5"	1	8/0			Saturated
1-2		1915	SPLIT SPOON		Hole 1 Outside Caisson Dock 5'5"-7'5"	1	8/0			
1-4		1950			" 7'5"-9'5"	1	8/0			
1-7		2030			" 10'5"-12'5"	1	8/0			
1-12	↓	2130	↓	↓	Hole 1 Outside Caisson Dock 15'5"-17'5"	1	8/0			SAT-RATED Possible contamination

Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date / Time	Received by: (Signature/Firm)
J H Rudd - SRH	8/26/82 1225				
				8/26 1930	

Relinquished by: (Signature/Firm) | Date / Time | Received by: (Signature/Firm) | Date / Time | Remarks (attachments if necessary)

K-57

001052

BZT0104(e)038929

TOLS002108

CHAIN OF CUSTODY RECORD

PROJ. NO.	SITE/LOCATION
1003	Timbrook Co – Portland Terminal

SAMPLERS: (Signature) [signature] SRH ASSOC.

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE						SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
J-0	8/23	1015	GRAB	SOIL	SURFACE – NE – TANK FARM	1	8/0								
K-0		1030			" – N "	1	8/0								
L-0		1045			" – NW "	1	8/0								
M-0		1055			" – NW "	1	8/0								
N-0		1105			" – E "	1	8/0								
O-0		1110			" – NE CENTRAL "	1	8/0								
P-0		1115			" – N CENTRAL "	1	8/0								
Q-0		1120			" – NW CENTRAL "	1	8/0								
R-0		1125			" – E CENTRAL "	1	8/0								
S-0		1130			" – SE CENTRAL "	1	8/0								
T-0		1135			" – N CENTRAL "	1	8/0								
U-0		1140			" – W CENTRAL "	1	8/0								
V-0		1145			" – SE "	1	8/0								
W-0		1150			" – S "	1	8/0								
X-0		1200			" – S "	1	8/0								

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
[signature]/SRH	8/25/24 1045				
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
				8/25 1051	[signature]
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

K-57

001053

TOLS002109

BZTO104(e)038930

CHAIN OF CUSTODY RECORD (Rev 0)

PROJ. NO.	SITE/LOCATION
1003	Time Oil Co - Portland Terminal

SAMPLERS: (Signature) [signature] SRH Assoc

A. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE (Es NONE)	PENTACHLOROPHENOL						SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
-2	8/24	11:40	Split Spoon	Soil	Boring #6 [illegible] 5'5"-7'5" Below Concrete	1	8/0									
-4	↑	12:00	↓	↓	" 7'5"-9'5" " "	1	8/0									
5-7	↓	12:30	↓	↓	10'5"-12'5" " "	1	5/0									
6-12	↓	14:20	↓	↓	15'5"-17'5" " "	1	2/0									Saturated Sample only part recovered
D-2	8/24	15:30	Grab	Soil	Waste Pile @ T-S Duplicate of T-S	1	8/0									
T-S	↓	15:30	↓	↓	Waste Pile Feet Below Top of Pile	1	8/0									
Q-S	↓	16:15	↓	↓	Waste Pile Feet Below Top of Pile	1	8/0									
2-1	8/24	10:50	Grab	Soil	Boring #6 Duplicate of 6-S	1	8/0									
4-5	8/24	16:10	Grab	Soil	Boring #4 SE Waste Surface Below Concrete	1	8/0									HOLD
4-0	↓	1650	Split Spoon	↓	Boring #4 SE Waste 2.5'-5.5' Below Concrete	1	8/0									
4-2	↓	1715	↓	↓	" 5'5"-7'5" " "	1	8/0									
4-4	↓	1745	↓	↓	" 7'5"-9'5" " "	1	8/0									
4-7	↓	1820	↓	↓	" 10'5"-12'5" " "	1	8/0									

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
[signature] / SRH	8/25/82 1045				
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
				8/25 1051	[signature]
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

K-57

001054

TOLS002110

BZTO104(e)038931

CHAIN OF CUSTODY RECORD

PROJ. NO.	SITE/LOCATION
1003	Time Oil Co - PDX Terminal

SAMPLERS: (Signature) [signature] SRH Assoc.

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE						SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
4-12	8/24	1900	Split Spoon	Soil	Boring #4 15'5"-17'5" SE WASH Bulk Concrete	1	8/0								Saturated Sample
3-5	8/24	1915	Grab	Soil	Boring #3 E-Central Surface Below Concrete	1	8/0								HOLD
3-A		1955	Split Spoon		3.5"-5'5" " "	1	8/0								
3-2		2010			5'5"-7'5" " "	1	8/0								
3-4		2015			7'5"-9'5" " "	1	8/0								
3-7		2025			10'5"-12'5" " "	1	8/0								
3-12		2100			15'5"-17'5" " "	1	8/0								Sat'd Sample

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
[signature]	8/25/86 1045				
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
				8/25 1051	[signature]
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

K-57

001055

TOLS002111

BZTO104(e)038932

CHAIN OF CUSTODY RECORD

PROJ. NO.	SITE/LOCATION
1003	TIME OIL CO – PORTLAND TERM.

SAMPLERS: (Signature) [signature] – SRH Assoc.

STA. NO.	DATE	TIME	SAMPLE TYPE	MEDIA	SAMPLE IDENTIFICATION	NO. OF CONTAINERS	AMOUNT/PRESERVATIVE						SEAL NO.	SEAL INTACT? (Y or N)	REMARKS (with initials)
Y-0	8/23	1205	GRAB	SOIL	SURFACE – SW TANK FARM	1	8/0								
Z-0	"	1210	"	"	SURFACE – NW ROADWAY	1	8/0								
1-S	8/23	1255	GRAB	SOIL	BORING #1 WAREHOUSE [illegible] SURFACE BELOW CONCRETE	1	8/0								
1-0		1635	SPLIT SPOON	"	2.5 FT BELOW CONCRETE [illegible]	1	8/0								NOT CONCRETE OR ASPHALT
5-S	8/23	1655	GRAB	SOIL	BORING #5 SW INSIDE WASH SURFACE BELOW CONCRETE	1	8/0								HOLD
5-0	↓	1710	SPLIT SPOON	↓	BORING #5 3.4–5.4' BELOW CONCRETE	1	8/0								
5-2	↓	1745	↓	↓	BORING #5 SW INSIDE WASH 5.4–7.4' " "	1	8/0								
5-4	↓	1805	↓	↓	BORING #5 7.4–9.4' " "	1	8/0								
5-7	↓	1825	↓	↓	BORING #5 10.4–12.4' " "	1	8/0								
5-12	↓	1900	↓	↓	BORING #5 15.4–17.4' " "	1	8/0								Saturated Sample JOR
6-S	8/24	1050	GRAB	SOIL	BORING #6 W CENTRAL INSIDE WASH SURFACE BELOW CONCRETE	1	8/0								HOLD
6-0	8/24	1130	SPLIT SPOON	SOIL	BORING #6 " 5.5" to 5.5" BELOW CONCRETE	1	8/0								

Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
[signature] SRH	8/25/86 1045				
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)
				8/25 1051	[signature]
Relinquished by: (Signature/Firm)	Date/Time	Received by: (Signature/Firm)	Date/Time	Remarks (attachments if necessary)	

K-57

001056

TOLS002112

BZTO104(e)038933

CLIENT ANALYSIS REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME SHR ASSOCIATES TELEPHONE# 232 0824
ADDRESS 123 NE 3RD SUITE 230 PURCHASE ORDER # VERBAL
ADDRESS PO BOX 14005 LAB PRICE QUOTE # $60/SAMPLE
CITY/STATE/ZIP PORTLAND OR 97205 BILLING ADDRESS: SAME
ATTENTION Jo. PUDDICK
SAMPLE COLLECTION DATE 9/3/86 DUE DATE ASAP RUSH
SAMPLE COLLECTED BY J.R. Ball DELEVERED BY J PUDDICK
CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTA BY EPA 8040 (SW846)
(DONT FILTER — DECANT WATER OFF ANY SEDIMENT)

ID	FieldID	Date	Time	Media	Pres	cntnr	Analysis requested	MDL
9	MWA	9/3/86	1030	WATER	1:1 H_2SO_4 to pH 2	2½ amber glass 1L	PENTACHLOROPHENOL	
	MWA	"	1030	"	NONE	250 ml PLASTIC	pH	
	MWB	"	1110	"	1:1 H_2SO_4 to pH 2	2½ amber glass 1L	PENTACHLOROPHENOL	
	MWB	"	1110	"	NONE	250 ml PLASTIC	pH	

Relinquished by: J.R. Ball /SRH Date 9/3/86 Time 1450 Received for Coffey Labs by: M. Schuh

SAMPLE INTEGRITY COMMENTS:

LAB LOG # 860903-J LOGGED IN BY: DATE: TIME:

I:\wp\clom\form\log\login.log

001057

TOLS002113

BZTO104(e)038934

CLIENT
ANALYSIS
REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME SRH Associate TELEPHONE# 232-0824

ADDRESS 123 NE 3rd STE 230 PURCHASE ORDER # VERBAL

ADDRESS 14005 LAB PRICE QUOTE # [redacted]

CITY/STATE/ZIP Portland OR 97214 BILLING ADDRESS:

ATTENTION John Ruddick

SAMPLE COLLECTION DATE 8/29/86 DUE DATE ASAP RUSH

SAMPLE COLLECTED BY J. Ruddick DELIVERED BY JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):

Penta by EPA 8040 (SW-846)

ID/Field	Date	Time	Media	Pres	cntnr	Analysis requested	MDL
MW-D	8/29	1600	Ground Water	HCl	2L Amber Glass	Pentachlorophenol (EPA 8040)	
MW-E		1430					
MW-F		1615					
MW-H		1500					
MW-I		1650					
MW-D		1600		None	250 ml Plastic	pH	
MW-E		1430					
MW-F		1615					
MW-H		1500					
MW-I		1650					

Relinquished by: J. R. Ruddick Date 8/29/86 Time 1800 Received for Coffey Labs by Susan M Coffey

SAMPLE INTEGRITY COMMENTS:

LAB LOG # A860829 N 1-10 LOGGED IN BY: S Coffey DATE: 8-29-86 TIME: 1755

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001058

TOLS002114

BZTO104(e)038935

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME: SRH ASSOCIATES
TELEPHONE#: 503 232 0824
ADDRESS: 123 NE 3RD STE 230
PURCHASE ORDER #: VERBAL
ADDRESS: PO BOX 14005
LAB PRICE QUOTE #: 60.00/SAMPLE
CITY/STATE/ZIP: PORTLAND OR 97214
BILLING ADDRESS:
ATTENTION: JOHN RUDDICK
SAMPLE COLLECTION DATE: 8/23/86
DUE DATE: 9/2/86
RUSH:
SAMPLE COLLECTED BY: J RUDDICK
DELIVERED BY: THR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTACHLOROPHENOL BY EPA 8040 (SW 846)

Lab #	Date	Time	Media	Pres	Cntnr	Analysis requested
R-0	8/23	1125	Soil	None	50Z Glass	Pentachlorophenol (EPA 8040)
S-0		1130				
T-0		1135				
U-0		1140				
V-0		1145				
W-0		1150				
X-0		1200				

Relinquished by: John H Ruddick
Date: 8/25/86
Time: 1045
Received for Coffey Labs: [signature]

SAMPLE CONDITY COMMENTS:

LOGGED IN BY: | DATE: | TI

K-57

001059

TOLS002115

BZTO104(e)038936

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME SRH Associates TELEPHONE# 503 232 0524

ADDRESS 123 SW 3rd, Ste 230 PURCHASE ORDER # Verbal

ADDRESS PO Box 14005 LAB PRICE QUOTE # 60.00/sample

CITY/STATE/ZIP Portland OR 97214 BILLING ADDRESS:

ATTENTION John Ruddick

SAMPLE COLLECTION DATE 8-14-86 + 8/23 DUE DATE 9/2/86 RUSH

SAMPLE COLLECTED BY J Ruddick DELIVERED BY J+R

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
Pentachlorophenol by EPA 8040 (SW 846)

Mark	Date	Time	Matrix	Pres	Cntnr	Analysis requested	MDL
L-4	8/14	1745	Soil	None	503 Glass	Pentachlorophenol (EPA 8040)	
4-7	8/24	1000					
J-O	8/23	1015					
K-O		1030					
L-O		1045					
M-O		1055					
N-O		1105					
O-O		1110					
P-O		1115					
Q-O		1120					

SAMPLED BY: John H Ruddick / SRA

Date 8/25/86 Time 1045 Received for Coffey Labs by: Steven L. Floyd

SPECIAL QUALITY COMMENTS:

001060

LOGGED IN BY: DATE: TIME:

TOLS002116

BZTO104(e)038937

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME: SRH Associates TELEPHONE# 503 232 0824
ADDRESS: 123 NW 3rd Ste 230 PURCHASE ORDER # Verbal
ADDRESS: PO Box 14005 LAB PRICE QUOTE # 60.00/sample
CITY/STATE/ZIP: Portland OR 97214 BILLING ADDRESS:
ATTENTION: John Ruddick
SAMPLE COLLECTION DATE: 8/25/86 DUE DATE: 9/2/86 RUSH
SAMPLE COLLECTED BY: J Ruddick DELIVERED BY: JHR
CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTACHLOROPHENOL BY EPA 8040 (SW 846)

LAB #	Date	Time	Matrix	Preservative	Analysis requested	MDL
6-4	8/24	1200	Soil	None	8040 Penta (EPA 8040)	
6-7		1230				
6-12		1420				
D-2		1530				
T-5		1530				
Q-5		1615				
D-1		1050				
4-5		1610			(Hold)	
4-0		1650				
4-2		1715				

SAMPLED BY: JH Ruddick / SRH Date: 8/25/86 Time: 1045 Received for Coffey Labs by:
SPECIAL HANDLING OR SECURITY COMMENTS:

LAB LOG # LOGGED IN BY: DATE: TIME:

K-57

001061

TOLS002117

BZTO104(e)038938

COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME: SRH Associates TELEPHONE# 503 232 0824

ADDRESS: 123 SE 3rd Ste 230 PURCHASE ORDER #: Verbal

ADDRESS: PO Box 14005 LAB PRICE QUOTE #: 60 days

CITY/STATE/ZIP: Portland OR 97214 BILLING ADDRESS:

ATTENTION: John Riddle

SAMPLE COLLECTION DATE: 8/26/86 DUE DATE: 9/2/86 RUSH:

SAMPLE COLLECTED BY: J Riddle DELIVERED BY: JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
Pentachlorophenol by EPA 8040 (SW 846)

DIP	Date	Time	Matrix	# containers	Analysis requested	MDL
6-5	8/24	1050	Soil	Nmo 402 glass	Penta (EPA 8040)	(Hold)
6-0		1130				
4-12		1900				
3-5		1915				(Hold)
3-0		1955				
3-2		2010				
3-4		2015				
3-7		2025				
3-12		2100				
6-2		1140				

RELINQUISHED BY: John H Riddle / SRH Date: 8/27/86 Time: 1045 Received for Coffey Labs by:

SAMPLE ADDITIONAL COMMENTS:

LAB LOG: LOGGED IN BY: DATE: TIME:

TOLS002118

BZTO104(e)038939

COFFEY LABORATORIES, INC.
4814 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

CLIENT
ANALYSIS
REQUEST

COMPANY NAME SRH Associates TELEPHONE# 503 232 0824

ADDRESS 123 SW 3rd Ste 230 PURCHASE ORDER # Vessel

ADDRESS PO Box 14005 LAB PRICE QUOTE # 60.00/sample

CITY/STATE/ZIP Portland OR 97214 BILLING ADDRESS:

ATTENTION John Ruddick

SAMPLE COLLECTION DATE 8/25/86 DUE DATE 9/2/86 RUSH

SAMPLE COLLECTED BY J Ruddick DELIVERED BY JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTACHLOROPHENOL BY EPA 8040 (SW 846)

LAB #	Date	Time	Media	Preservative	Container	Analysis requested	MDL
12-5	8/25	1130	Soil	None	Glass 60 ml	Penta by EPA 8040 (HOLD)	
12-0		1145				Run	
12-2		1450				Run	
12-4		1520				Run	
12-7		1545				Run	
12-12		1720				Run	
1-2		1915				Run	
1-4		1950				Run	
1-7		2030				Run	
1-12		2130				Run	

Relinquished by: [signature] Date 8/26 Time 1225 Received for Coffey Lab [signature]

SAMPLE INTEGRITY COMMENTS:

LOGGED IN BY: DATE: TIME:

K-57

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TOLS002119

BZTO104(e)038940

CLIENT ANALYSIS REQUEST

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

COMPANY NAME SRH ASSOCIATES TELEPHONE# 503 232 0824

ADDRESS 123 SE 3RD STE 230 PURCHASE ORDER # VERBAL

ADDRESS PO BOX 14005 LAB PRICE QUOTE # 60.00/SAMPLE

CITY/STATE/ZIP PORTLAND OR 97214 BILLING ADDRESS:

ATTENTION JOHN RUDDICK

SAMPLE COLLECTION DATE 8/23/86 DUE DATE 9/2/86 RUSH

SAMPLE COLLECTED BY J RUDDICK DELIVERED BY JHR

CLIENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):
PENTACHLOROPHENOL BY EPA 8040 (SW 846)

ID	Date	Time	Media	Pres	Cntnr	Analysis requested	MD
Y-0	8/23	1205	SOIL	NONE	8OZ Glass	PENTACHLOROPHENOL (EPA 8040)	
Z-0		1210					
1-S		1255				(HOLD)	
1-0		1635					
5-S		1655				(HOLD)	
5-0		1710					
5-2		1745					
5-4		1805					
5-7		1825					
5-12		1900					

Relinquished by:	Date	Time	Received for Coffey Labs by:
John H Ruddick	8/25	1045	Steven [illegible]

SAMPLE INTEGRITY COMMENTS:

LAB LOG # LOGGED IN BY: DATE: TIME:

001064

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REPAID_____
ART DEPOSIT_____
Y FOR RELEASE_____
ILL_____

COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

LOG#_____

LOGIN TIME_____

OMPANY NAME SRH ASSOC. TELEPHONE# 232-0824

DDRESS 123 NW 3RD PURCHASE ORDER # VERBAL

DDRESS STE 230 LAB PRICE QUOTE #_____

ITY/STATE/ZIP PORTLAND OR 97232 BILLING ADDRESS:

TTENTION JOHN RUDDICK

AMPLE COLLECTION DATE 9/26/96 DUE DATE MONDAY AFTERNOON 9/30/96 RUSH_____

AMPLE COLLECTED BY J RUDDICK DELIVERED BY JHR

_IENT COMMENTS-(SPECIAL INSTRUCTIONS, SPECIFIC METHOD ETC):

D! Field ID	Date	Time	Media	Pres	btl	Analysis Requested	MDL
K-O	9/26	0915	SOIL	ICE	4oz GLASS	PENTACHLOROPHENOL (EPA 8040)	

MPLE INTEGRITY COMMENTS

Relinquished by	Date	Time	Received for Coffey Labs by
	9/26/96	0950	Mary L Stowell

:\wp\clom\form\log\request.log

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EXPENDITURES

7/10/85	Northwest Vacuum Truck Service	9000.00 } 242 tons
7/29/85	Chem-Security Systems	27270.88 }
8/8/85	Environmentsl Emergency Services	500.00
12/5/85	Environmentsl Emergency Services	18741.55
		55512.43

Due:

DEQ per OAR 340-102-065	3500.00
Riedel Environmental Services (Amendment 2) Consultants	25000.00 includes the 5 new wells
Whatever is necessary to finish job	??
Spent + committed to date.	$ 84,012.43

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AMENDMENT 2
TIME OIL CO. - RIEDEL ENVIRONMENTAL SERVICES, INC.
SAMPLING AND ANALYSIS AGREEMENT
DATED JUNE 28, 1985

The work scope is amended to include the following:

1. Sandblasting and demolition of the impoundment wall (designated A in Figure 1). The cost of this procedure is estimated to be $5,568.01.

2. Drilling, sampling and installation of 3 monitoring walls angeled 45 degrees beneath the existing warehouse (listed as Wells 1, 2 & 3 in Figure 1). Also, the installation of a 40 foot vertical monitoring well, including sampling at 5 foot intervals, directly in front of the angled wells (listed as Well 4 in Figure 1). Analytical results for 12 PCP samples are included in the estimated cost of $12,667.07.

3. Drilling, sampling and installation of an additional 5, 20-foot monitoring wells (listed in Figure 1 as Wells 5, 6, 7, 8 & 9). Soil samples will be taken at 5 foot intervals and 5 analyses for PCP are included in the estimated cost of $6,595.50.

DATED this 5th day of November, 1985.

TIME OIL CO.

John Denham
Environmental Manager

RIEDEL ENVIRONMENTAL SERVICES, INC.

F.J. Bradach
President

RS:bw

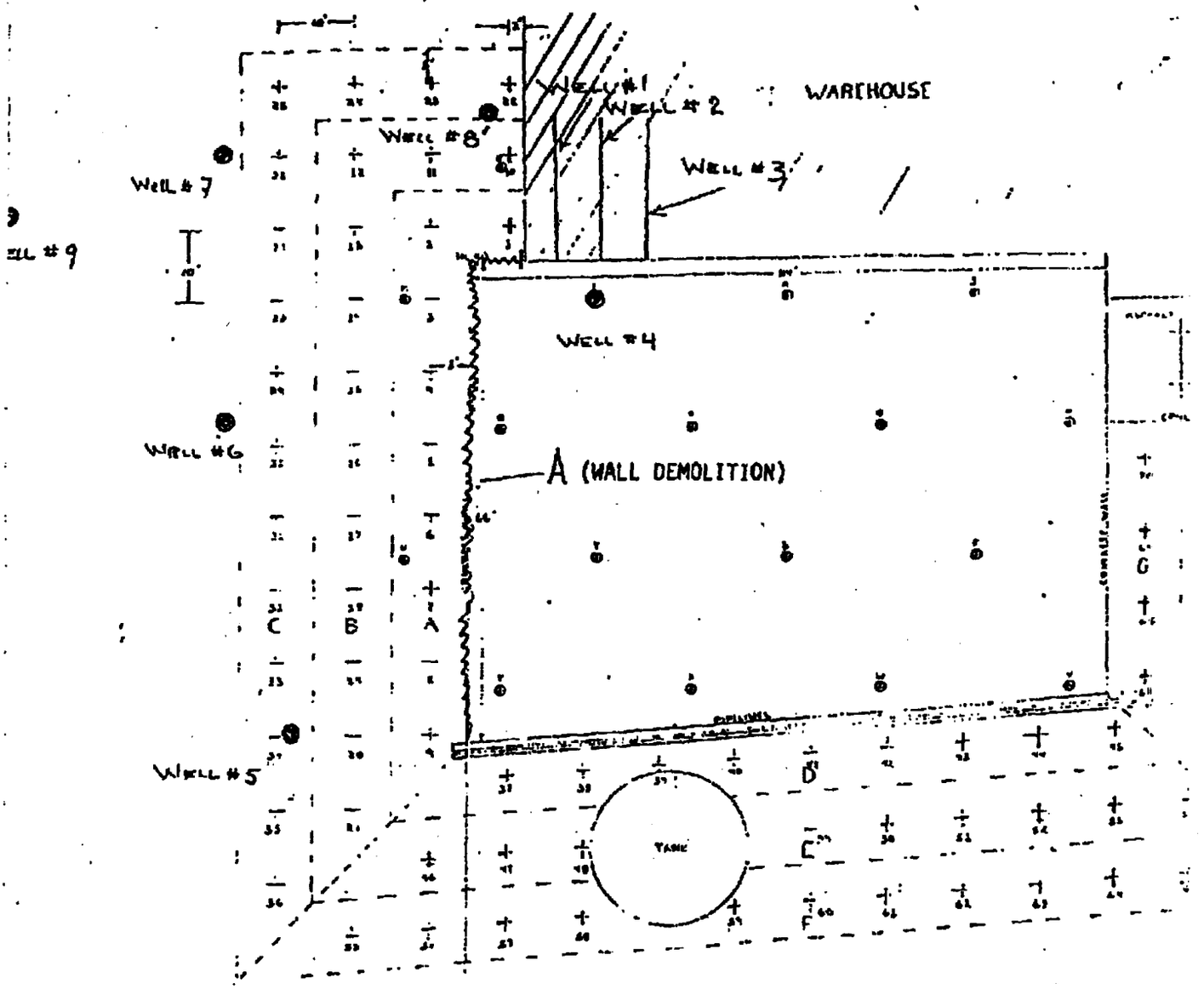

FIGURE 1

Location of Proposed Monitoring Wells

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TOLS002125

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AMENDMENT 2
TIME OIL CO. - RIEDEL ENVIRONMENTAL SERVICES, INC.
SAMPLING AND ANALYSIS AGREEMENT
DATED JUNE 28, 1985

The work scope is amended to include the following:

1. Sandblasting and demolition of the impoundment wall (designated A in Figure 1). The cost of this procedure is estimated to be $5,568.01.

2. Drilling, sampling and installation of 3 monitoring walls angeled 45 degrees beneath the existing warehouse (listed as Wells 1, 2 & 3 in Figure 1). Also, the installation of a 40 foot vertical monitoring well, including sampling at 5 foot intervals, directly in front of the angled walls (listed as Well 4 in Figure 1). Analytical results for 12 PCP samples are included in the estimated cost of $12,667.07.

3. Drilling, sampling and installation of an additional 5, 20-foot monitoring wells (listed in Figure 1 as Wells 5, 6, 7, 8 & 9). Soil samples will be taken at 5 foot intervals and 5 analyses for PCP are included in the estimated cost of $6,595.50.

DATED this 5th day of November, 1985.

TIME OIL CO.

John Denham
Environmental Manager

RIEDEL ENVIRONMENTAL SERVICES, INC.

F.J. Bradach
President

RS:bw

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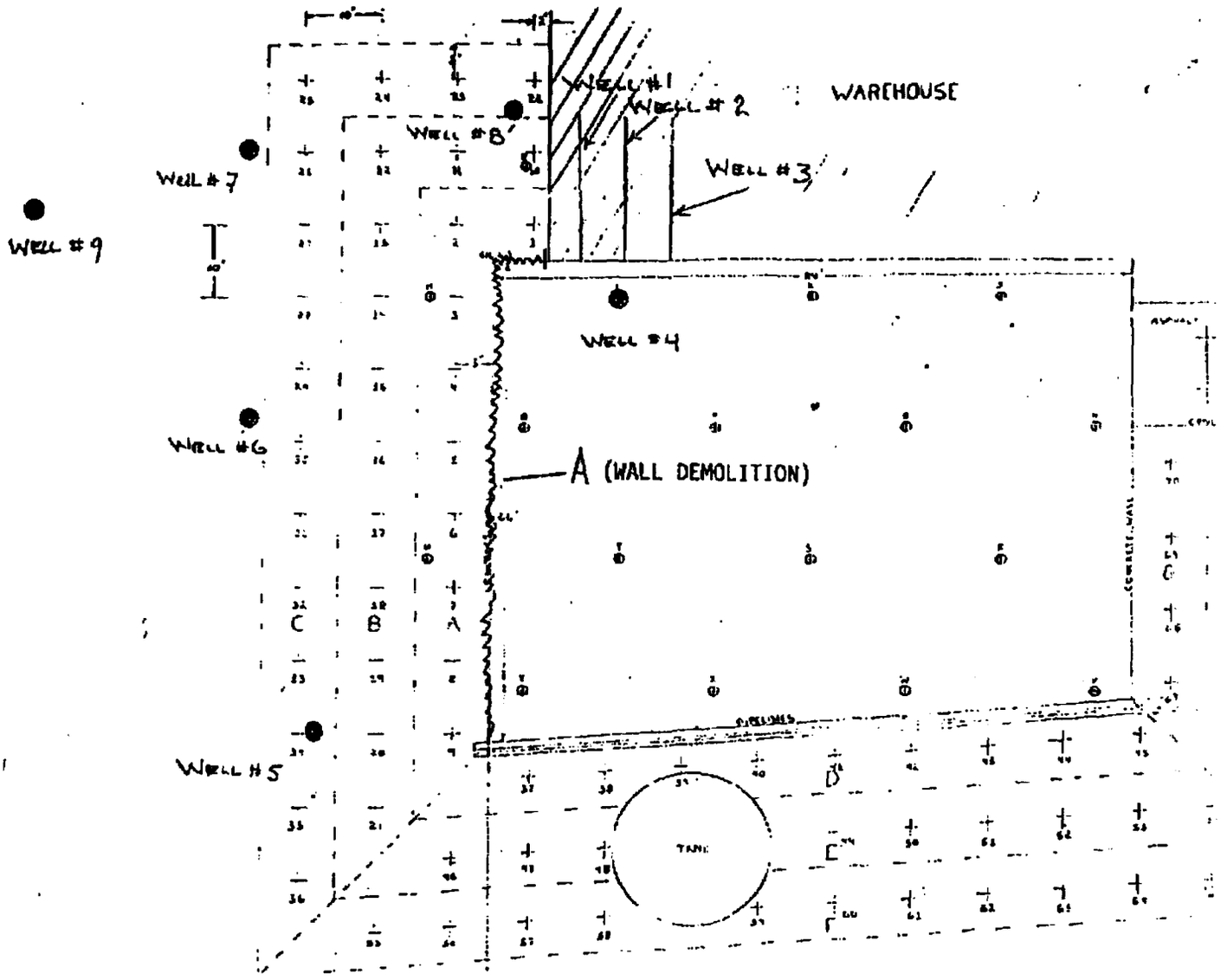

FIGURE 1

Location of Proposed Monitoring Wells

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WASTE TRANSPORTATION AND DISPOSAL AGREEMENT

On this 24th day of May, 19 84, the parties, Time Oil Co., a Washington corporation with its principal offices at 2737 W. Commodore Way, Seattle, WA 98199 (hereinafter called "Generator"), and CHEM-SECURITY SYSTEMS, INC., a Washington corporation with its principal offices at 10602 N. E. 38th Place, Kirkland, Washington 98033 (hereinafter called "Disposer"), have agreed as follows:

1. WASTE PRODUCTS. The term "Waste Products" refers to those solid, liquid, semi-solid, or contained gaseous materials which are generally described in, and which have physical, chemical, biological or radioactive constituents, characteristics and properties within the specifications stated in, the Supplemental Information Document. The term "Waste Products" also includes containers described in the Supplemental Information Document, if they are to be supplied by the Generator. The term "unit of Waste Products" refers to a single whole container of Waste Products (such as a barrel, drum, box, or tanker load).

   Materials and containers shall be considered nonconforming: (i) if they are not in accordance with the warranties, descriptions, specifications or limitations stated in this agreement and the Supplemental Information Document, or (ii) if they have material constituents or components, not specifically identified in the Supplemental Information Document, (a) which materially increase the nature or extent of the hazard and risk undertaken by CSSI in agreeing to handle, load, transport, store, treat or dispose of the Waste Products, or (b) for whose storage, treatment or disposal the Disposal Facility is not designed or permitted.

2. SUPPLEMENTAL INFORMATION DOCUMENT. Where "the Supplemental Information Document" is referred to in this Agreement, the parties understand that such term refers to each single entire document, in that form specified in Exhibit A, (which exhibit is attached hereto and made part hereof), containing the information therein required and executed by the Generator and Disposer. Each Supplemental Information Document shall be numbered in chronological sequence. A Supplemental Information Document, prepared and executed as herein required, shall be considered incorporated into this Agreement and part hereof as of the date and time of Document execution. It is the intention of the parties that each Supplemental Information Document, when incorporated into this Agreement, constitutes a separate undertaking, individually enforceable.

c 1980, WASTE MANAGEMENT, INC.

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A Supplemental Information Document, or any amendment thereto, shall be executed, on behalf of Disposer or Generator, only by such persons appointed as authorized agents of the parties for such purposes, which persons are identified, by name or specific position title, in Exhibit B, attached hereto and made part hereof. Either party may, by notice to the other, amend its list of authorized agents, which shall constitute an amendment to Exhibit B at the time such notice is received.

At any time during the term of a Supplemental Information Document, upon the written request of Disposer, the Generator shall: (a) supply an updated written description of the Waste Products or a written certification that the description previously supplied remains true and accurate; or, (b) supply a written certification that a particular load of Waste Products delivered to Disposer constituted a representative sample of the Waste Products described in the Supplemental Information Document; or, (c) supply a representative sample of the Waste Products together with a written certification of the sample's representativeness; or, (d) allow Disposer access to the Waste Products at Generator's facility for the purpose of obtaining one or more representative samples. Forms to be used in providing written Waste Products descriptions, recertifications of previous descriptions, or certifications of representative Waste Products samples shall be supplied by Disposer.

3. TENDER OF DELIVERY. Generator shall tender delivery of the Waste Products to Disposer at those times and places, in those quantities, and in the manner specified in the Supplemental Information Document. Generator shall, at the same time and place, tender to Disposer those completed documents, shipping papers or manifests as are required, for lawful transfer of the Waste Products to Disposer, by valid and applicable statutes, ordinances, orders, rules or regulations of the federal, state, or local governments, including, but not limited to, the Hazardous Materials Transportation Act, the Toxic Substances Control Act and the Resource Conservation and Recovery Act of 1976.

Tender of delivery shall be considered non-conforming if not in accordance with this Section and the specifications of the Supplemental Information Document, or if not preceded by such notification as required by Section 16 (f).

4. DISPOSER RIGHT TO INSPECTION UPON TENDER. Disposer shall have the right, but not the obligation, to inspect, sample, analyze, or test any tendered Waste Products before accepting such products. Failure or refusal of the Generator to provide Disposer with access to any tendered or delivered Waste Products, prior to Disposer's acceptance, shall be deemed a non-conforming tender or delivery of all of the Waste Products tendered or delivered at that time and place. Disposer's

exercise of, or failure to exercise, its right hereunder shall not operate to relieve Generator of its responsibility or liability under this Agreement.

5. DISPOSER RIGHTS ON IMPROPER DELIVERY. If the Waste Products, any unit thereof, or the tender of delivery fail in any respect to conform to this Agreement, including the requirements of the Supplemental Information Document, Disposer may, at its exclusive option, (i) reject all Waste Products tendered; or, (ii) accept all Waste Products tendered; or, (iii) accept any unit or units of Waste Products and reject the rest. Provided, however, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other tendered container, would be visibly apparent, Disposer's option shall be limited to accepting or rejecting the particular non-conforming unit.

Rejection of the Waste Products must be within a reasonable time after their tender or delivery, not to exceed twenty-four (24) hours. In rejecting any Waste Products, Disposer shall orally notify the Generator of the manner in which the Waste Products or the tender of delivery are non-conforming, such notice to be followed by written notice within five (5) business days.

6. ACCEPTANCE OF WASTE PRODUCTS. Disposer shall accept any Waste Products which are in conformance with, and which have been tendered in conformance with, this Agreement, including the Supplemental Information Document, and may accept, as provided in Section 5, non-conforming Waste Products. If transportation is to be provided by Disposer, Disposer shall evidence its acceptance by removing such Waste Products from the place of tender. If transportation to the Storage or Disposal Facility is to be provided by Generator, Disposer shall evidence its acceptance by written notice to the Generator, such as through signing shipping papers or the manifest tendered with the Waste Products.

Failure of Disposer to reject the Waste Products, or any unit thereof, as provided in Section 5 shall be deemed acceptance of all tendered Waste Products not so rejected.

Upon acceptance of the Waste Products Disposer shall be precluded from rejecting those Waste Products accepted and, if acceptance of any unit of Waste Products was made with actual knowledge of a non-conformity, Disposer shall be precluded from revoking its acceptance of such unit because of such non-conformity. Acceptance of the Waste Products, or any unit thereof, does not, however, impair, or operate as a waiver of, any right or remedy available to Disposer, including revocation of acceptance, in the event the Waste Products or

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their tender are later discovered to be non-conforming.

7. REVOCATION OF ACCEPTANCE. Disposer may, at any time before the condition of the Waste Products has been materially changed (such as by treatment, processing or disposal), revoke its acceptance of any unit or units of Waste Products discovered to be non-conforming.

Discovery by Disposer that any unit of the Waste Products is non-conforming for any reason shall be considered discovery that all units of such Waste Products, accepted at the same time as the non-conforming unit, are non-conforming for the same reasons. Provided, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other accepted container, would be visibly apparent, Disposer's option shall be limited to revoking acceptance of the particular non-conforming unit.

Revocation must occur within a reasonable time after Disposer actually discovers or should have discovered the non-conformity. In revoking its acceptance of any Waste Products, Disposer shall notify the Generator of the manner in which the Waste Products are non-conforming.

7a GENERATOR'S OPTIONS IN EVENT OF REJECTION OF REVOCATION OF ACCEPTANCE.
In the event Disposer rejects or revokes its acceptance of Waste Products, and at such time the Waste Products are in Disposer's possession or control, Generator may, within five (5) business days after receipt of notice, notify Disposer of Generator's intent to test the Waste Products, to verify the alleged non-conformity, or to correct any improper containerization, marking or labeling. Generator may, if lawfully permitted, direct Disposer to arrange for such testing or corrections, pursuant to Generator's instructions and at Generator's cost. All testing or corrections must be completed within twenty-one (21) days of Generator's receipt of the rejection or revocation notice. During the period of any testing or corrections, the duty of Disposer with respect to the Waste Products shall be that of a bailee for hire.

Upon mutual agreement of the parties that the Waste Products or any unit are not conforming for the reasons specified in Disposer's notice, the notice of rejection or revocation as to such Waste Products or unit shall be deemed null and void as of the time of its original issuance.

8. DISPOSER OPTIONS AS TO RIGHTFULLY REJECTED OR REVOKED WASTE PRODUCTS.
If Disposer rejects or revokes its acceptance of all or any units of Waste Products, and at such time the Waste Products

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are in Disposer's possession or control, Disposer and Generator shall, in good faith, attempt to amend the Supplemental Information Document to provide for handling of the non-conforming materials. If the parties cannot, within a reasonable time after rejection or revocation (including any time provided for correction or testing in Section 7a), agree on necessary amendments, Generator shall make prompt arrangements for the removal of the non-conforming materials from the Storage or Disposal Facility to another lawful place of disposition.

Generator agrees to pay Disposer its reasonable expenses and charges for handling, loading, stowing, preparing for transport, transporting, storing and caring for any Waste Products returned to Generator pursuant to this Section.

9. LOADING AND TRANSPORTATION OF WASTE PRODUCTS. If the Supplemental Information Document specifies that Disposer is to provide loading or transportation services, Disposer shall load or stow and transport Waste Products to the Storage or Disposal Facility herein specified. In the aforesaid event, as between the parties, selection of transportation vehicles or vessels, times of travel and routes shall be solely determined by Disposer unless otherwise specified in the Supplemental Information Document. In selecting transportation vehicles or vessels compatible with the Waste Products, Disposer shall rely on Generator's description of the Waste Products.

10. STORAGE AND DISPOSAL. Disposer shall dispose of the Waste Products at the particular facility or facilities, referred to herein as "the Disposal Facility", identified in the Supplemental Information Document. Disposer shall utilize those general storage, treatment, and disposal methods specified in the Supplemental Information Document; however, as between the parties, Disposer shall be solely responsible for determining the specific times and techniques for storage, processing, treatment and disposal of the Waste Products. In determining such techniques, Disposer shall rely on Generator's description of the Waste Products.

If the Supplemental Information Document specifies that Disposer is to provide interim storage of the Waste Products at a "Storage Facility", prior to transportation of the Waste Products to the Disposal Facility, Disposer shall store such Waste Products at such Storage Facility for a period not to exceed ninety (90) days, unless some other period is specified in the Supplemental Information Document.

Disposer may use, distribute or sell any of the Waste Products, or any component or residue thereof, unless otherwise specified in the Supplemental Information Document.

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11. TITLE TO WASTE PRODUCTS. At the time Disposer accepts the Waste Products and takes possession and control thereover, title, risk of loss and all other incidents of ownership to the Waste Products shall be transferred from the Generator and vested in Disposer.

A justified revocation of acceptance by Disposer revests title to the Generator, including risk of loss and all other incidents of ownership, at the time such revocation of acceptance is communicated to the Generator.

12. TERM. The term of this Agreement shall be as specified in the Supplemental Information Document, to commence on the date of execution of such Document, as provided in Section 2.

13. RIGHT TO TERMINATE. Either party may terminate this Agreement if the other party (i) has been adjudicated a bankrupt, or (ii) has filed a voluntary petition in bankruptcy, or (iii) has made an assignment for the benefit of creditors, or (iv) a receiver has been appointed for such party. Termination pursuant to this paragraph shall be effective for performance remaining under any and all Supplemental Information Documents.

The Generator may terminate this Agreement, with respect to performance remaining under an identified Supplemental Information Document, if, at any time after execution of such document, the specified Storge or Disposal Facility fails to obtain, or maintain as valid, any license, permit or approval required to allow lawful acceptance and storage, treatment, processing and disposal of the Waste Products at such Facility.

Termination as provided above, or as allowed by Section 22, shall be by notice from the terminating party to the other party, specifying the reason therefor and the effective date thereof, which shall be not less than five (5) days after the date of the notice.

Either party may terminate this Agreement without cause, with respect to performance remaining under an identified Supplemental Information Document, by notice from the terminating party to the other party specifying the effective date of termination which shall be not less than thirty (30) days after receipt of the notice by the non-terminating party.

The right of terminating hereunder is in addition to, and not in lieu of, any right of a party to cancel this Agreement for breach of its terms or conditions.

14. COMPENSATION. For all of the Waste Products transported, stored and disposed of by Disposer, the Generator shall pay Disposer a fee, determined in accordance with the Supplemental Information Document. Disposer shall measure the Waste Products, for the purpose of computing fees, at the time and

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place, and in the manner, specified in the Supplemental Information Document. Disposer determinations so made shall govern unless proved to be in error by Generator.

Fees specified in the Supplemental Information Document shall not be altered during the term of this Agreement except as follows:

(a) Disposer may, on the first day of any calendar quarter, with thirty (30) days written notice to Generator, increase or decrease fees specified in the Supplemental Information Document. If any Waste Products, to which such fee alterations apply, are delivered to Disposer more than thirty days after Generator's receipt of this notice, Generator shall be deemed to have accepted such fee alterations and the Supplemental Information Document shall be deemed amended in such respect.

(b) If legislation or regulations, first implemented after date of execution of the Supplemental Information Document, impose taxes, tariffs, fees, surcharges or other charges upon the transportation, storage, processing, treatment or disposal of the Waste Products, the Generator shall reimburse the Disposer for such charges upon the Disposer's submission of an invoice stating that such charges have been levied or paid.

The Disposer shall submit statements to the Generator which shall be paid by the Generator not later than thirty (30) days from date of receipt. Disposer shall retain copies of such statements for a period of at least five (5) years as a record of disposal.

15. DISPOSER WARRANTIES. Disposer warrants and represents to the Generator that:

(a) Disposer understands the currently known hazards and risks which are presented to human beings, property and the environment in the handling, transportation, storage, treatment, processing and disposal of the Waste Products as they have been described by the Generator in the Supplemental Information Document; and,

(b) Disposer is engaged in the business of transportation, storage and disposal of industrial and other wastes, and has developed the requisite expertise for the handling, transportation, storage, treatment, processing, and diposal of such; and,

(c) Disposer will handle, load, stow, transport, store, treat, process, and dispose of the Waste Products in a safe and workmanlike manner and in full compliance with all valid and applicable statutes, ordinances, orders,

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rules and regulations of the federal, state and local governments in whose jursidictions such activities are performed under this Agreement; and,

(d) Any and all vehicles or vessels, Waste Products containers and personnel to be provided by Disposer in the performance of this Agreement have obtained or will obtain all permits, licenses, certificates or approvals required to comply with valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments.

(e) The Storage or Disposal Facility (or Facilities) described in the Supplemental Information Document has been issued, as of the date of execution of such Document, all permits, licenses, certificates or approvals, required by valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in which such Facility is located, necessary to allow such Facility to accept and store, treat, process and dispose of the Waste Products as described by the Generator in such Document. Disposer shall provide Generator with reasonable advance notice if any such permit, license, certificate or approval is to expire and not be renewed during the term of a Supplemental Information Document, or becomes the subject of judicial or administrative action seeking revocation or suspension. Such notice shall also be provided if Disposer determines not to seek any necessary permit, license, certificate or approval which becomes required after execution of a Supplemental Information Document.

16. GENERATOR WARRANTIES. The Generator warrants and represents to Disposer that:

(a) The description of the Waste Products in the Supplemental Information Document is true and correct in all material respects, fairly advises Disposer of the hazards and risks known by the Generator to be incident to the handling, transportation, storage, treatment, processing and disposal of the Waste Products, and is otherwise in full compliance with all materials description requirements of valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdictions such Waste Products are to be handled, transported, stored, treated, processed or disposed; and,

(b) Waste Products tendered to Disposer will conform to the descriptions and specifications contained in the Supplemental Information Document; and,

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(c) If Generator receives information, during the term of any Supplemental Information Document, that Waste Products described in such Document, or some component of such Products, present or may present a hazard or risk to persons or the environment, which was not disclosed in the Supplemental Information Document, Generator shall promptly report such information to Disposer. Such information shall include, but not be limited to, any relevant notification of substantial risk required to be given by Generator pursuant to Section 8 (e) of the Toxic Substances Control Act;

(d) If any load of Waste Products, tendered to Disposer for transportation in a single transportation vehicle, contains a reportable quantity of one or more hazardous substances, as provided in Section 102 of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or regulations adopted thereunder, Generator will, prior to tendering such load to Disposer, provide the person in charge of the Disposer transport vehicle with written notice that the load contains a reportable quantity of such hazardous substance(s), identifying the known or estimated quantity of each such hazardous substance present.

(e) Generator will prepare the Waste Products for transportation and tender to Disposer in accordance with all valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdiction such Waste Products are to be tendered to Disposer pertaining to: (i) container specifications for any container not supplied by Disposer; and, (ii) marking and labeling of all containers.

(f) If regulations promulgated or revised under Section 3001 of the Resource Conservation and Recovery Act of 1976 (P. L. 94-580) identify the Waste Products as "hazardous waste," either by characteristics or listing, the Generator, prior to tendering any Waste Products to Disposer has filed or will file with the appropriate governmental agency the preliminary notification required by Section 3010(a) of the above Act, and provide Disposer with evidence thereof.

(g) The Generator has sole title to Waste Products which will be tendered to Disposer, and is under no legal restraint, statutory, regulatory, administrative or judicial, which prohibits the transfer of possession or title to such Waste Products to Disposer.

17. INDEMNIFICATION. Disposer agrees to indemnify and save harmless the Generator, its present and future officers or

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directors (or officials), employees and agents, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by Disposer, or any negligent or willful act or omission of Disposer, its employees or subcontractors in the performance of this Agreement.

The Generator agrees to indemnify and save harmless Disposer, its present and future officers, directors, employees, agents, subcontractors and assignees, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by the Generator, or any negligent or willful act or omission of Generator, its employees or agents in the performance of this Agreement.

18. INSURANCE. Disposer shall procure and maintain, at its expense, during the term of this Agreement, at least the following insurance:

	COVERAGE	LIMITS
(a)	Worker's Compensation	Statutory
(b)	Employer's Liability	$500,000 each occurence
(c)	Public Liability (bodily injury & property damage)	$15,000,000 combined single limit
(d)	Automobile Liability (bodily injury & property damage)	$15,000,000 combined single limit

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Public Liability Insurance shall include coverage for completed operations and contractual liability under this Agreement with respect to sudden and accidental occurrences.

Each contract of insurance, and certificate of insurance, shall provide that said insurance shall not be cancelled or materially altered until at least ten (10) days after written notice is received by the Generator. Disposer agrees to furnish insurance with the above requirements, to the Generator before Disposer commences work hereunder.

In the event Disposer is required by law to obtain environmental impairment liability insurance for non-sudden and accidental occurrences at the Disposal Facility, Disposer shall furnish Generator with a copy of the certificate of insurance provided to the regulatory agency imposing the insurance requirement.

19. CONFIDENTIALITY. Disposer and Generator shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement, except as is necessary to perform this Agreement, (and then only on a confidential basis satisfactory to both parties), any information (including any technical information, experience or data) regarding either party's plans, programs, plants, processes, products, costs, equipment, operations or customers which may come within the knowledge of the parties, their officers or their employees in the performance of this Agreement, without in each instance securing the prior written consent of the other party.

Disposer shall also treat as confidential and shall not disclose to others, except as required by law, information relating to the chemical composition of the Waste Products or the quantity of Waste Products delivered to it by Generator.

Generator shall also treat as confidential and shall not disclose to others, except as required by law, this form of Agreement and the Supplemental Information Document.

Nothing above, however, shall prevent either Disposer or Generator from disclosing to others or using in any manner information which either party can show:

(a) Has been published and has become part of the public domain other than by acts, omissions or fault of Disposer or Generator or their employees; or

(b) Has been furnished or made known to Disposer or Generator by third parties (other than those acting directly or indirectly for or on behalf of Disposer or

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Generator) as a matter of legal right without restrictions on its disclosure; or

(c) Was in either party's possession prior to the disclosure thereof by Generator or Disposer to each other.

Provided, however, neither party shall release, or cause or allow the release of, information to the communications media, except as required by law, concerning the existence or terms of this Agreement or any Supplemental Information Document, including identification of the Generator of the Waste Products, identification of the Disposal Facility receiving the Waste Products, or the general description, characteristics or constituents of the Waste Products, without in each instance securing the prior written consent of the other party.

The foregoing obligations shall survive the termination or expiration of the Agreement.

20. WORK ON GENERATOR'S PREMISES. Generator agrees to provide Disposer, its employees and subcontractors a safe working environment for any work, in performance of this Agreement, which must be undertaken on premises owned or controlled by the Generator. While its employees or subcontractors are on Generator's premises, Disposer will maintain strict work discipline and effect its work in compliance with governmental laws or regulations pertaining to occupational safety and health. Disposer, its employees and subcontractors shall also comply with the Generator's safety procedures while on the Generator's premises, provided such procedures have been specified in the Supplemental Information Document or are attached thereto.

21. INSPECTIONS. The Generator shall have the right to inspect and obtain, at its expense, copies of all written licenses, permits or approvals, issued by any governmental entity or agency to Disposer or its subcontractors which are applicable to the performance of this Agreement and for which no claim of business confidentiality or trade secret is asserted; to inspect and test, at its own expense, transportation vehicles or vessels, containers or disposal facilities provided by Disposer; and to inspect the handling, loading, transportation, storage, treatment, processing or disposal operations conducted by Disposer in the performance of this Agreement. Such inspections are encouraged by Disposer, but shall not operate to relieve Disposer of its responsibility or liability under this Agreement.

22. EXCUSE OF PERFORMANCE. The performance of this Agreement, except for the payment of money for services already rendered, may be suspended by either party in the event the delivery or

transportation of Waste Products by Generator, or transportation, storage, treatment, processing or disposal of Waste Products by Disposer are prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include, but not be limited to, acts of God, acts of war, riot, fire, explosion, accident, flood, or sabotage; lack of adequate fuel, power, raw materials, labor or transportation facilities; governmental laws, regulations, requirements, orders or actions; breakage or failure of machinery or apparatus; national defense requirements; injunctions or restraining orders; labor trouble, strike, lockout or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgement).

The party asserting a right to suspend performance under this Section must, within a reasonable time after he has knowledge of the effective cause, notify the other party of the cause for suspension, the performance suspended, and the anticipated duration of suspension. Upon receipt of such notice advising of a material or indefinite suspension of performance, and if such suspension substantially impairs the value of this Agreement to him, a party may, within a reasonable time (not to exceed thirty days), terminate this Agreement as provided in Section 13. If such notice of termination is not provided, this Agreement will lapse with respect to any performance suspended hereunder.

The party asserting a right to suspend performance hereunder shall advise the other party when the suspending event has ended, and when performance will be resumed.

Provided, if title to Waste Products has been transferred to Disposer, Disposer may not suspend performance of this Agreement with respect to such Waste Products; however, if a performance-suspending event occurs after Disposer has taken title to Waste Products but before completion of performance, Disposer may delegate such performance to any other persons lawfully permitted to transport, store, treat or dispose of the Waste Products pursuant to Section 23. In the circumstances described above, the Generator hereby consents to any necessary delegations for which it receives written notice from Disposer.

23. DELEGATION AND ASSIGNMENT. Disposer may at any time, with the prior written consent of Generator, which consent shall not be unreasonably withheld, delegate, orally or in writing, the performance of the work, or any portion thereof, which is by this Agreement undertaken by Disposer. Any such delegation shall not operate to relieve Disposer of its responsibilities hereunder and, notwithstanding any such delegation, Disposer shall remain obligated to the Generator in these undertakings.

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Either party may, at any time, upon written notice to the other party, assign its rights under this Agreement.

24. INDEPENDENT CONTRACTOR. Disposer is and shall perform this Agreement as an independent contractor, and as such, shall have and maintain complete control over all of its employees, agents, and operations. Neither Disposer nor anyone employed by it shall be, represent, act, purport to act or be deemed to be the agent, representative, employee or servant of the Generator.

25. NOTICE. Any notice, communication or statement required or permitted to be given hereunder shall be in writing and deemed to have been sufficiently given when delivered in person or by registered or certified mail, postage prepaid, return receipt requested, to the address of the respective party below:

GENERATOR: Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

DISPOSER: CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269
Portland, Oregon 97207-1269

Either party may, by notice to the other, change the addresses and names above given.

26. ENTIRE AGREEMENT. This Agreement represents the entire understanding and agreement between the parties hereto relating to the transportation, storage, treatment, processing and disposal of Waste Products and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. No terms, conditions, prior course of dealings, course of performance, usage of trade, understandings, purchase orders, or agreement purporting to modify, vary, supplement or explain any provision of this Agreement shall be effective unless in writing, signed by representatives of both parties authorized to amend this Agreement.

In no event shall the preprinted terms or conditions found on any Disposer or Generator purchase or work order be considered an amendment or modification of this Agreement, even if such documents are signed by representatives of both parties: such preprinted terms or conditions shall be considered null and of no effect.

27. WAIVER. Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be so expressed in writing and signed by the party to be bound.

28. MISCELLANEOUS. The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State specified in the Supplemental Information Document.

All paragraph headings herein are for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular sections to which they refer.

In the event of a conflict between the terms or conditions of this Agreement and those of the Supplemental Information Document, the terms and conditions of the Supplimental Information Document shall control.

29. SEPARABILITY. If any Section, subsection, sentence or clause of this Agreement shall be adjudged illegal, invalid or unenforceable, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of the Agreement as a whole or of any Section, subsection, sentence or clause hereof not so adjudged.

30. The covenants and agreements contained in this Agreement shall apply to, inure to the benefit of and be binding upon the parties hereto and upon their respective heirs, executors, administrators, assigns and successors in interest.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

DATE: _____

Time Oil Company

By: _____

Title: _____

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

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EXHIBIT A

SUPPLEMENTAL INFORMATION DOCUMENT: NUMBER 85-001

This Document supplements, and is part of, that certain "Waste Transportation and Disposal Agreement," (hereinafter "the Agreement"), entered into by and between Time Oil Company, (hereinafter "the Generator"), and CHEM SECURITY SYSTEMS, INC., (hereinafter "Disposer"), on May 24, 1985. The provisions of this Document shall be incorporated into the Agreement.

1. DESCRIPTION OF WASTE PRODUCTS. The "Waste Products", to which the Agreement refers, are described in the "Generator's Waste Material Profile Sheet," Code Designation E13588, attached hereto and made part hereof.

   Containers are to be provided by Generator according to the following specifications:
   lined and plastic wrapped dump truck

2. TENDER OF WASTE PRODUCTS. Generator shall tender or deliver the above Waste Products to Disposer as follows:

   (a) Quantity of Waste Products to be Tendered Over Term.

   (1) Estimated.
   Volume listed in Section "F" of referenced Generator's Waste Material Profile Sheet(s) or in addenda for each profile sheet.

   (2) Guaranteed (if applicable).

   Not Applicable.

   (b) Maximum/Minimum Quantity of Waste Products Per Tender (if tendered in installments).

   Maximum: same as quantity listed in Section 2(a) above. or in addendum to waste profile sheet.

   (c) Place of Tender.
   Arlington, Oregon

   (d) Time and Frequency of Tender.
   8:00 a.m. to 4:30 p.m. weekdays, except holidays, weather permitting.

c 1984, WASTE MANAGEMENT, INC.
(Revised 10/10/84)

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(e) Manner of Tender (including notification to Disposer). Uniform hazardous waste manifest. No free liquid may be present in waste.

3. WORK RULES/PROCEDURES AT GENERATOR'S PREMISES. Any specific rules or procedures required by Generator for workers on its premises must be noted here, or attached hereto and initialed by both parties.

4. LOADING AND TRANSPORTATION. The Waste Products are to be loaded (or stowed) on vehicles (or vessels) by Generator, and transported to the Storage Facility/Disposal Facility (circle one) by Generator. If the Waste Products are first transported to a Storage Facility, they will be reloaded (or stowed) on vehicles (or vessels) by N/A, and transported to the Disposal Facility by N/A. If Disposer is to provide transportation the following special transportation requirements (if any) shall apply, pursuant to the Generator's direction:

(a) Vehicles or Vessels.

dump truck

(b) Routes.

Not Applicable.

(c) Hours of Transportation.

Not Applicable.

5. STORAGE FACILITY. Disposer shall store the Waste Products at the following storage facility for a period not to exceed ___ days, from which facility the Waste Products will then be removed to the Disposal Facility: Not Applicable

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(a) Name/Address of Storage Facility:

(b) Name/Address of Facility Permittee:

(c) Permit Number(s)/Initiation and Termination Date(s):

(d) Permitting Authority(ies):

6. DISPOSAL FACILITY. Disposer shall dispose of the above Waste Products at the following disposal facility (or facilities):

(a) Name/Address of Facility (Facilities):

The Arlington Facility
Star Route
Arlington, Oregon 97812

(b) Name/Address of Facility Permittee:

Chem-Security Systems, Inc.
P.O. Box 1866
Bellevue, Washington 98009-1866

(c) Permit Number(s)/Initiation and Termination Date(s):

State of Oregon - HW-1, initiated Aug. 26, 1980; continues pending issuance of new permit.

(d) Permitting Authority(ies):

Oregon Department of Environmental Quality.

7. DISPOSAL METHODS: Disposer shall utilize one or more of the following methods for the disposal of the Waste Products:
secure burial

8. EMERGENCY SERVICES: Disposer shall provide emergency transportation, storage or disposal services, with respect to the above Waste Products, pursuant to the following:
As required by site license or at Generator's request

9. RECLAMATION AND/OR SALE OF WASTE PRODUCTS. Disposer is authorized to reclaim, recover and sell, distribute or use the Waste Products, their components or residues, except as specified below:

Not Applicable.

10. COMPENSATION. The Generator shall compensate Disposer as follows:

(a) For Transportation, Storage and Disposal of Waste Products.

(b) For Transportation and Disposal of Waste Products. Per ton:

	Before July 1, 1985	Beginning July 1, 1985
250 tons per yr.	$110	$116
250-1500 tons per yr.	$100	$106

Fed. tax is $213 per dry wt. ton. Minimum billing is $200 per tender.

(c) For Disposal of Waste Products Only.

(d) Emergency Services.

Time and mateirals basis

(e) Measurement of Waste Products. Waste Products shall be measured by Disposer for the purpose of computing fees hereunder, at the time and place, and in the manner, as follows: Upon acceptance at the Arlington facility using:

facility scale

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(f) Generator's Billing Address. Disposer shall submit its statements to:

Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

(g) Disposer Billing Address. Disposer will issue its billings from the following:

CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE
ARLINGTON, OREGON 97812

11. TERM. The term of the Agreement, with respect to the Waste Products covered in this Document, shall be as follows:

This Agreement shall commence on May 24, 1985 and shall remain in effect until terminated by either party with or without cause by thirty (30) days' advance written notice to the other party.

12. LAW TO GOVERN. The Agreement and this Supplemental Information Document shall be governed and construed in accordance with the laws of the State of Oregon.

13. MISCELLANEOUS CONDITIONS.

By their signatures hereto, the parties agree that this Supplemental Information Document shall be considered an attachment to, and part of, that certain "Waste Transportation and Disposal Agreement" identified above.

Date: _____

Time Oil Company

By: _____

Title: _____

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

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(Revised 10/10/84)

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EXHIBIT B

AUTHORIZED SIGNATORIES

This Exhibit, being attached to, and forming part of that certain "Waste Transportation and Disposal Agreement" entered into by the undersigned parties on May 24, 1985, establishes the identities of those persons authorized to execute Supplemental Information Documents on behalf of the parties, to-wit:

FOR GENERATOR:

FOR DISPOSER:

Regional Sales Manager	up to $ 50,000
District Manager or National Accounts Manager	up to $ 300,000
Regional Vice President or Regional Manager	up to $ 500,000
Senior Vice President	up to $1,000,000
President	over $1,000,000

Time Oil Company

By: _____

Title: _____

Chem-Security Systems, Inc.

By: _____

Title: _____

(Revised 10/10/84)

CONTRACT

The parties to this agreement are Time Oil Co. (hereinafter termed owner) and Northwest Vacuum Truck Service, Inc. (hereinafter termed contractor) whereas:

Owner has a volume of earthen material located in Portland, Oregon and owner is desirous of having that material removed.

Contractor is willing to undertake that task upon the terms and conditions set forth below.

Therefore, in consideration of the agreements contained herein, the parties agree as follows:

1. Contractor agrees to remove the material from its present location, load it into suitable transportation vehicles and transport it to a disposal facility approved by the Oregon Department of Environmental Quality.

2. The material to be removed by contractor is generally set forth on the drawing labeled exhibit 1, attached hereto and incorporated by this reference. Prior to work under this agreement, a representative of owner will meet with contractor at the site and the extent of the material to be removed will be more specifically delineated at that time.

3. The commencement date for work will be February 21, 1985 or such other date as may be agreed upon by the parties following coordination with the Department of Environmental Quality and the authorized disposal facility. Work is intended to be divided into two phases. First phase consists of material removal to an agreed upon depth. Then there will be a several day delay while additional tests are conducted to determine if further removal is required. If so, phase two removal actions are to be effected. Should there be any need to continue removal, above process is to be repeated until ultimate removal is accomplished.

4. For each day worked, owner agrees to pay contractor the sum of 1200 dollars for labor and equipment pertaining to soil removal plus 600 dollars for each truckload of soil transported. A day worked shall be one wherein earth moving equipment, necessary to perform the work, has been utilized to the fullest, reasonably possible, extent for a period of not less than 8 hours. Truck shall be a standard 18 yard rated capacity vehicle. Payment will be made upon completion of the work and receipt by owner of written acknowledgement from the approved disposal facility that all material removed and transported by contractor has been received at that facility.

5. Contractor indemnifies and agrees to defend and hold owner harmless from any and all costs, claims, liabilities and damages arising out of contractors work under this contract.

6. Contractor hereby declares that it is engaged as an independent contractor and agrees to perform the work as independent contractor and not as an employee of owner. Contractor has and hereby retains the right to exercise full control and supervision of the work and full control over the employment, direction, compensation and discharge of all persons assisting in the work.

Encl. 4

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7. Contractor agrees at its expense to obtain all governmental permits, licenses and approvals and comply with all laws, rules, regulations and requirements now or hereafter existing necessary for the accomplishment of the work to be performed by contractor under this agreement.

8. Contractor especially acknowledges its understanding that portions of the material to be removed, transported and disposed of under this agreement have been found to contain commercial pentachlorophenol in concentrations ranging from 0 ppm to 1820 ppm. Contractor agrees to take all necessary precautions for the protection of persons and property that may be required or prudent in the removal and transportation of that material.

9. Contractor agrees to maintain workmans' compensation insurance in the form and amounts required by the laws of the state of Oregon and broad form comprehensive public liability insurance with minimum limits of $1 million per person and $1 million per accident for bodily injury and $500,000 per accident for property damage. Contractor shall promptly deliver to owner certificates of said insurance, naming owner as an additional insured before commencing work and such certificate shall provide that said insurance shall not be cancelled prior to 30 days by written notice to owner.

10. Contractor agrees that before commencement of any work hereunder, it will promptly furnish owner with a faithful performance bond in an amount to 53,000 dollars guaranteeing completion of all work and performance of all obligations undertaken by contractor under this agreement.

11. The nature, validity and interpretation of this contract shall be governed by the laws of the state of Washington.

Dated this 19th day of February 1985.

OWNER
Time Oil Co.

by John P. Denham
John P. Denham
Environmental Manager

CONTRACTOR
Northwest Vacuum Truck Service Inc.

by John H. Somes
John H. Somes
General Manager

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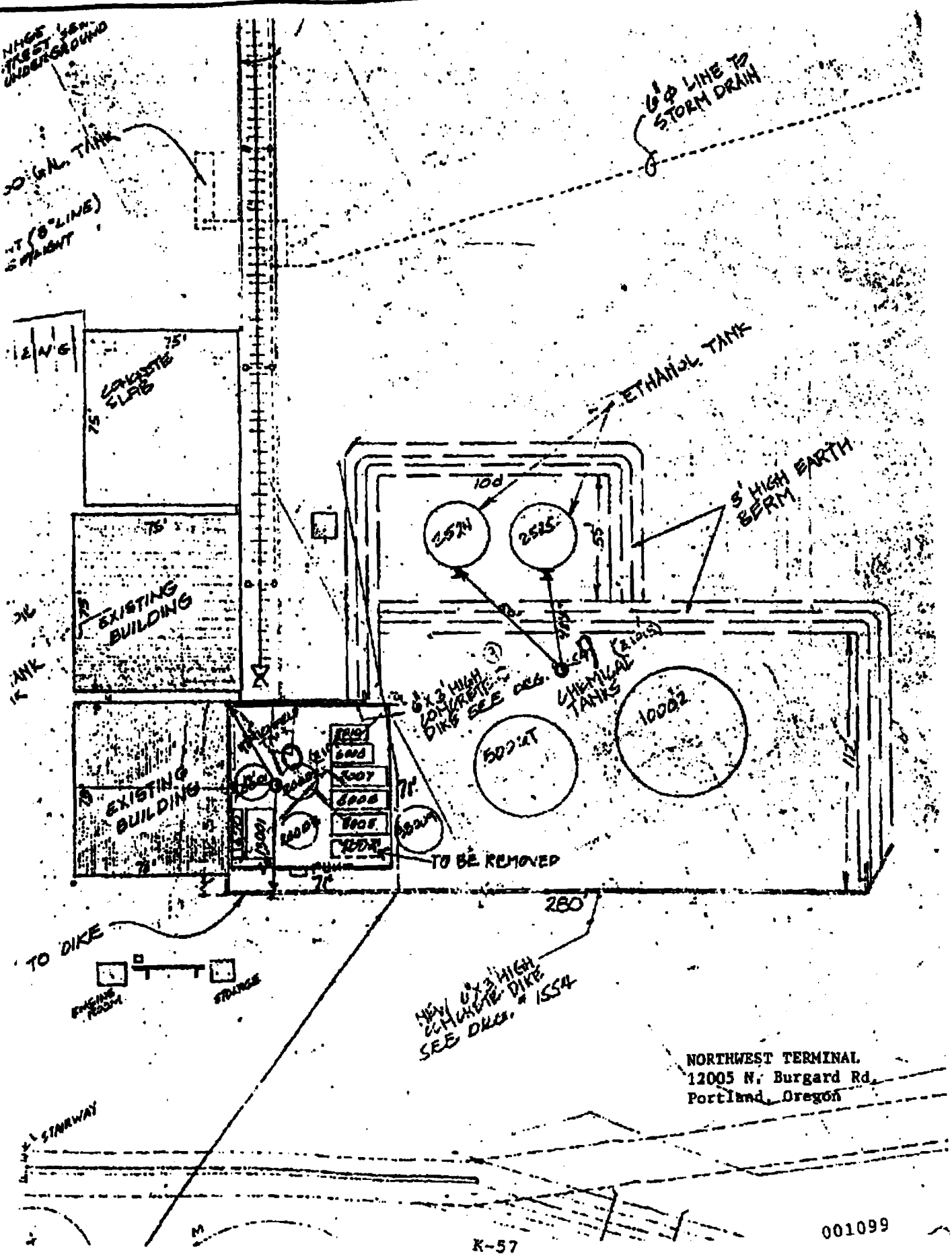

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TIME OIL COMPANY
PORTLAND, OREGON

PENTACHLOROPHENOL SAMPLING & ANALYSIS

Prepared by
RIEDEL ENVIRONMENTAL SERVICES
P.O. Box 5007
Portland, Oregon 97208

October, 1985

TOLS002152

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Introduction

Between 1967 and 197_ Time Oil Company operated a pentachlorophenol (PCP) facility at its North Portland, Oregon, terminal. This facility consisted of blending and storage operations used to prepare commercial pentachlorophenol solutions. The facility consisted of various storage and mixing tanks, a warehouse, a bermed, unpaved containment area, various pumps and a truck loading area.

The facility geography is essentially flat and is located less than 1/4 mile from the Willamette River. The soil is principally fine to medium sand with some silt. Ground water is reportedly found from 10 to 20 feet below the surface in this area. During June of 1985, a portion of visibly contaminated soil in the containment area was excavated and disposed of as a hazardous waste. This excavation left a depression in the northwest corner of the containment area sloping gradually to approximately four feet below the adjacent grade. Surface soil was disturbed during this process and, as such, surface sampling was not expected to be representative of conditions existing prior to excavation.

During the years of operation, several intermittent PCP discharges were known to occur, especially during mixing and transfer operations. These discharges resulted in soil contamination in and around the containment area. Initial site visits in April 1985 indicated visible PCP contamination of soils in this vicinity. A sampling plan for surface and subsurface soils extending through the vadose zone was designed and initiated in July 1985.

This sampling and analytical protocol was designed to estimate the spatial limits of PCP contaminant migration in the vadose zone of the soil in and immediately adjacent to the PCP containment area facility. As such, a systematical gridding array was used in lieu of random or other types of probability sampling. No attempt was made to sample underneath structures or paved areas. The protocol was not intended to determine the average concentration of PCP in soil at the facility since the area sampled was not expected to be homogeneous nor to represent a specific population of PCP concentrations. Therefore, statistical evaluations such as mean and standard deviation, have only academic significance in respect to these data.

However, since the origin points in the regular sampling arrays were randomly selected (i.e., a systematic random sampling procedure), there is no reason why some or all of this data could not be used for this purpose at a future time.

Sampling

All sampling was performed in accordance with EPA publication SW846, "Test Methods for Evaluating Solid Waste". Surface soil sampling was achieved using a small trier and/or sampling scoop. Subsurface samples were obtained using a 6" continuous flight hollow stemmed auger fitted with a 2" split-spoon sampler. All sampling equipment was decontaminated between samples with a trisodium phosphate wash, water rinse, hexane wash and a triple rinse with distilled, deionized water. Auger flights were decontaminated by high pressure steam cleaning between bore holes.

Samples were obtained from two areas. Area 1 consisted of a peripheral surface margin surrounding the containment areas on all of the available sides (see Figure 1). Area 2 consisted of the area inside the containment wall. All samples from each site were placed in new 16-ounce wide-mouthed glass jars previously washed with laboratory cleaner, water rinsed, hexane washed, air dried and rinsed three times with distilled, deionized water, then fitted with teflon-lined caps under clean conditions. Samples were labelled with client identification, sample number, date, time, sampler's name, sample location, and other pertinent information. Containers were sealed and placed in portable, refrigerated ice chests for transportation to the laboratory. Samples were delivered to the laboratory by RES courier within 48 hours after collection. Chain of custody forms accompanied all samples from original field sampling to final analysis and are included in this report (Appendix A). A field log of each sample was generated on site during sampling and retained for future reference.

Preliminary surface sampling in Area 1 was performed by preparation of a composite sample obtained from sub-areas A, D and F by pooling grab samples taken with triers or spoons at 10-foot intervals, five feet away from the containment area.

Secondary surface sampling was conducted in Area 1 by obtaining individual grab samples using triers or spoons. The sample sites are numbered 1-81 and are indicated on Figure 1. Secondary samples were obtained in response to the detection of significant concentrations of PCP in preliminary composite samples from sub-areas A and D, above, and were used solely to estimate the limits of contamination beyond the containment area. As stated earlier, no attempt was made in this sampling and analytical protocol to determine average (mean) values of PCP contamination.

Sampling in Area 1, peripheral samples, was performed to ascertain the surface margins of the contaminated area. It was arbitrarily assumed that the area within the containment walls was contaminated with PCP and the peripheral margins of this area established as consisting of the warehouse south wall, the east and west concrete walls and the southern edge of a pipeline transecting the containment area as indicated in Figure 1. Three concentric, 10-foot-wide marginal strips were staked out surrounding this boundary and are indicated by broken lines in Figure 1. These areas did not include areas inside the warehouse or below the asphalt paved railway siding located, respectively, on the north and northeast sides of the containment area. The 10 foot marginal strips were subdivided into areas A, B and C to the west, D, E and F to the south, and G, H, and I to the east (see Figure 1).

Sampling of Area 2, the containment area proper, was performed to evaluate PCP concentrations at the surface and at depth in subsoils to the saturated zone. Grab samples were obtained from a 2-foot x 2-inch split spoon sampler pressed through a 6-inch hollow-stem augered bore hole, and were placed in 16-ounce sample containers as previously described. Decontamination procedures, chain of custody, labelling and logging were identical to Area 1 samples. Auger flights were decontaminated at the completion of each coring to prevent cross contamination. Samples were taken at a mximum depth of 0, 2, 4, 7 and 12 feet below the surface elevation of the unexcavated portion of the containment area. Sampling at 17 feet, as originally planned, was not undertaken due to the detection of groundwater at approximately 12 feet.

Due to the sloping contour of the containment area caused by the excavation, the surface elevation below grade was measured from a string line pulled tightly between two unexcavated surface points and spanning the sampling point. Elevation of sampling site surfaces below this grade line was measured using a rigid ruler and is shown in Table I. Data from this table was used to calculate the actual auger depth below the surface required to obtain the split spoon samples to align all samples in the same respective horizontal plane. This data is listed in Table II and indicates the actual depth drilled below the surface required to obtain a sample at the nominal depth listed (0, 2, 4, 7, 12 or 17 feet). In cases where it was deemed practical, soil was hand excavated to the depth corresponding to the first sampling depth indicated and the sample obtained manually with a small trier or spoon.

The horizontal array of borings was selected to minimize the maximum distance from any given point in the sampling area to the nearest boring. To do this most effectively, a triangular grid was staked off. The array was based on a

triangle with an east-west base of 25 feet and a north-south height of 18 feet. The maximum distance from any point on the grid to the nearest sample point in this case is 13.34 feet as opposed to 14.14 feet for a standard 20-foot x 20-foot rectangular array. This selection allowed for the placement of additional wells just outside the containment wall without increased cost, thereby improving coverage with fewer sampling points (reference: Parkhurst, D.F., Optimal Sampling Geometry for Hazardous Waste Sites; Environmental Science & Technology, 18 No. 7, p. 521 [1984]). The triangular grid is indicated on Figure 1. Bore holes are indicated by the symbol "■" and are labeled with alpha symbols J-Z. A table of samples so obtained is given in Table III.

Following sampling, borings were sealed with bentonite grout in accordance with state well sealing standards under the direction of a registered geologist. Decontamination water, collected into tubs, was analyzed and, following receipt of negative results for PCP, disposed of on site.

Results

Samples were analyzed by Coffee Laboratories, Portland, Oregon, using EPA SW-846 protocols. Soil samples were Sohxlet extracted using EPA protocol #3540. Procedure #8040 was utilized with electron capture quantification for PCP analysis. Results are expressed in milligrams of PCP per kilogram soil (ppm, dry weight). At sites where results could be expected to approach zero (based on results from adjacent sites), samples were held but not analyzed. The results are listed in Table IVA-E. Preliminary composite results are shown in Table IVF and confirm PCP contamination beyond the containment wall.

These tables list PCP concentrations at each sample site as well as the X and Y coordinates used to locate these sites on the plan drawing (Figure 1). These coordinates are tied to an arbitrary grid as shown on Figure 1. The northwest corner of the containment wall is located at coordinates X=76, Y=166 (76,166), for sake of reference. Each sampling depth is listed on a separate table. Copies of the laboratory reports are listed in Appendix B.

The coordinate data and concentration results were plotted using an interpolating contouring program (In-Situ Corp., Laramie WY). This package performs smoothed contouring of the data using a triangularization method and bivariate interpolation. Contours were generated from surface samples (regardless of elevation below grade) and 2-, 4-, 7- and 12-foot depths below grade. The contours are plotted on Figures IIA-E. These contour diagrams have been reduced and printed on mylar sheets in addition to the attached figures.

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TABLE I

TIME OIL CO. - PORTLAND, OREGON

Depth of Boring Site Surface Sample Below Grade
(Horiz. String Line)

Boring	Depth
J	0
K	6"
L	3'
M	0
N	0
O	0
P	1'8"
Q	2'6"
R	0
S	0
T	2'
U	0
V	0
W	0
X	2'
Y	3'
Z	0

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TABLE II

TIME OIL CO. - PORTLAND, OREGON

Actual Split-Spoon Sample Depths Below Grade

Boring	Nominal Depth 0	2	4	7	12	17
J	0	0-2'	2-4'	5-7'	10-12'	15-17'
K	NA	0-1 1/2	1 1/2-3 1/2	4 1/2-6 1/2	9 1/2-11 1/2	14 1/2-16 1/2
L	NA	NA	Surf (11")	2-4'	7-9'	12-14'
M	0	0-2'	2-4'	5-7'	10-12'	15-17'
N	0	0-2'	2-4'	5-7'	10-12'	15-17'
O	0	0-2'	2-4'	5-7'	10-12'	15-17'
P	NA	Surf (4")	0-2'	3-5'	8-10'	13-15'
Q	NA	NA	0-1 1/2	2 1/2-4 1/2	7 1/2-9 1/2	12 1/2-14 1/2
R	0	0-2'	2-4'	5-7'	10-12'	15-17'
S	0	0-2'	2-4'	5-7'	10-12'	15-17'
T	NA	Surf	0-2'	3-5'	8-10'	13-15'
U	0	0-2'	2-4'	5-7'	10-12'	15-17'
V	0	0-2'	2-4'	5-7'	10-12'	15-17'
W	0	0-2'	2-4'	5-7'	10-12'	15-17'
X	NA	Surf	0-2'	3-5'	8-10'	13-15'
Y	NA	NA	Surf (11")	2-4'	7- 9'	12-14'
Z	0	0-2'	2-4'	5-7'	10-12'	15-17'

NOTE:

Actual depths indicate depth of bottom of split-spoon.

NA = Not available

Surf = Surface sample obtained by hand excavation at depth indicated in parentheses

001125

TOLS002158

BZTO104(e)038979

TABLE III

TIME OIL CO. - PORTLAND, OREGON

Nominal Split-Spoon Sample Depths

Boring	0 Surface	2 0-2'	4 2-4'	7 5-7'	12 10-12'	17 15-17'
J	X	X	X	X	X	ND
K	-	X	X	X	X	ND
L	-	-	X	X	X	ND
M	X	X	X	X	X	ND
N	X	X	X	X	X	ND
O	X	X	X	X	X	ND
P	-	X	X	X	X	ND
Q	-	-	X	X	X	ND
R	X	X	X	X	X	ND
S	X	X	X	X	X	ND
T	-	X	X	X	X	ND
U	X	X	X	X	X	ND
V	X	X	X	X	X	ND
W	X	X	X	X	X	ND
X	-	X	X	X	X	ND
Y	-	-	X	X	X	ND
Z	X	X	X	X	X	ND

NOTE: X = Sample

\- = Not available due to excavation

ND = Not sampled due to presence of groundwater

TOLS002159

BZTO104(e)038980

TABLE IVA
TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Surface Contour Data

Sample #	Coordinates X	Coordinates Y	Concentration Mg/Kg
1	81	171	13500
2	71	171	29
3	71	161	500
4	71	151	5450
5	71	141	5560
6	71	131	8760
7	71	121	4870
8	71	111	92
9	71	101	20
10	81	181	16
11	71	181	7
12	61	181	9
13	61	171	95
14	61	161	175
15	61	151	18
16	61	141	229
17	61	131	88
18	61	121	6
19	61	111	3
20	61	101	2.5
21	61	91	5.2
37	81	95	857
38	91	96	1130
39	101	97	17
40	111	98	3.5
41	121	98	3.1
42	131	99	3.2
43	141	100	2.4
44	151	100	1.8
45	161	101	171
46	71	84	3
47	81	85	3.6
48	91	86	6.1
49	121	87	3.2
50	131	88	1.5
51	141	89	2.3
52	151	90	1.7
53	161	91	1.9
54	171	92	1.2

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	1400
K	117.5	161	N/A
L	92.5	161	N/A
M	67.5	161	4720
N	155	143	4280
O	130	143	3000
P	105	143	N/A
Q	80	143	N/A
R	142.5	125	1712
S	117.5	125	522
T	92.5	125	123
U	67.5	125	26550
V	155	107	317
W	130	107	3385
X	105	107	N/A
Y	80	107	N/A
Z	80	179	21

N/A = Not Available

TOLS002160

BZTO104(e)038981

TABLE IVB

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Two Foot Contour Data

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	3
K	117.5	161	8.8
L	92.5	161	N/A
M	67.5	161	87*
N	155	143	3.1
O	130	143	59
P	105	143	16
Q	80	143	N/A
R	142.5	125	34
S	117.5	125	252
T	92.5	125	123
U	67.5	125	44
V	155	107	260
W	130	107	15
X	105	107	4.5
Y	80	107	N/A
Z	80	179	14*

N/A = Not Available
* = Data points omitted from contouring program to reduce extrapolation error

TOLS002161

BZTO104(e)038982

TABLE IVC

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Four Foot Contour Data

Core #	Coordinates X	Y	Concentration Mg/Kg
J	142.5	161	3.6
K	117.5	161	10.5
L	92.5	161	7200
M	67.5	161	22
N	155	143	238
O	130	143	23
P	105	143	15
Q	80	143	2205
R	142.5	125	50
S	117.5	125	184
T	92.5	125	534
U	67.5	125	55
V	155	107	380
W	130	107	8.1
X	105	107	1.3
Y	80	107	598
Z	80	179	2

TABLE IVD

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

7 Foot Contour Data

CORE #	COORDINATES X	COORDINATES Y	CONCENTRATION mg/kg
J	142.5	161	(NA)
K	117.5	161	3
L	92.5	161	8400
M	67.5	161	1
N	155	143	(NA)
O	130	143	13
P	105	143	130
Q	80	143	700
R	142.5	125	500
S	117.5	125	1130
T	92.5	125	75
U	67.5	125	5
V	155	107	1
W	130	107	1
X	105	107	1.9
Y	80	107	700
Z	80	179	7

TABLE IVE

TIME OIL CO. - PORTLAND, OREGON

Pentachlorophenol in Soil

12 Foot Contour Data

CORE #	COORDINATES X	COORDINATES Y	CONCENTRATION mg/kg
J	142.5	161	NA
K	117.5	161	2.3
L	92.5	161	2030
M	67.5	161	690
N	155	143	NA
O	130	143	38
P	105	143	450
Q	80	143	1150
R	142.5	125	1
S	117.5	125	217
T	92.5	125	90
U	67.5	125	NA
V	155	107	3.4
W	130	107	1.9
X	105	107	1.0
Y	80	107	720
Z	80	179	1.0

TABLE IYF

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Preliminary Surface Composites

Area	PCP (mg/kg)
A	660
D	860
G	17

TOLS002165

BZTO104(e)038986

The scale on the mylar prints is such that the contours are superimposable on Figure 1 (site plan). This allows for facile comparison of PCP concentration profiles at depth with surface features of the facility. A reference point on Figures 1 and 2(a-e) is located at (76,166) for ease of alignment.

Conclusions

As seen in Tables IVA-E, PCP concentrations range from 1 ppm to 26,550 ppm. Two foci of contamination are seen at the surface. One, located at coordinates (83,168) in the northwest corner of the containment area, is consistent with reported spillage at this corner of the warehouse. A second focus occurs just outside the containment wall to the west at coordinates (65,125). This site is consistent with reported minor spills during truck loading procedures at this site. Additional minor contamination sites occur at the surface in various positions throughout the sample area; however, no prominent concentration peaks are evident. This may be due, in part, to the partial excavation mentioned previously or to vehicle traffic or other activity in this area.

Additional contours at depth indicate penetration of PCP to the saturated zone at the northwest focus. No evidence of penetration of the "loading area" focus below 2 feet was observed. Note that the results of the 2-foot contouring fail to demonstrate a continuation of the foci found at the surface. This is due, in part, to the excavation which removed the 2-foot material and to the definition of surface samples as surface material regardless of relationship to elevation (i.e. surface samples are not equivalent to "0 foot" samples). This phenomenon is indicated by the lack of sample sites on the 2-foot contour at boring sites L, M, Q, Y and Z. The lack of high PCP concentrations at boring site U, 2-foot contour, implies that no significant penetration occurred at this site and that PCP contamination at this site is restricted to narrowly distributed but high concentration surface contamination.

Contours at 4, 7 and 12 feet indicate penetration to the groundwater (encountered between 7 and 12 feet) with appreciable attenuation of PCP concentrations with increasing depth. The maximum concentration at 12 feet is 2030 ppm located at boring "L". Note that no samples were analyzed at boring sites "J" and "N" at 7- or 12-foot depths, since concentrations above these depths indicated that concentrations near zero could be expected. No sample was obtained at "U" due to loss of sample when groundwater was encountered.

002133

TOLS002166

BZTO104(e)038987

The slight tendency of the PCP plume to tail off to the south implies that groundwater flux may be diffusing the plume in this direction. This conclusion can only be substantiated by hydrogeologic evaluations of the site, however.

The contaminant plume may be restricted at the surface by the presence of the warehouse foundation. This structure could be expected to prevent diffusion of the PCP plume to the north by presenting a physical barrier to contaminant migration. No sampling was performed underneath the warehouse and this study cannot conclude that migration has occurred beyond the foundation base. Identification of concentrations of PCP beneath the building on contour plots is a function of the contouring program and may not be indicative of actual plume morphology in this area.

Summary

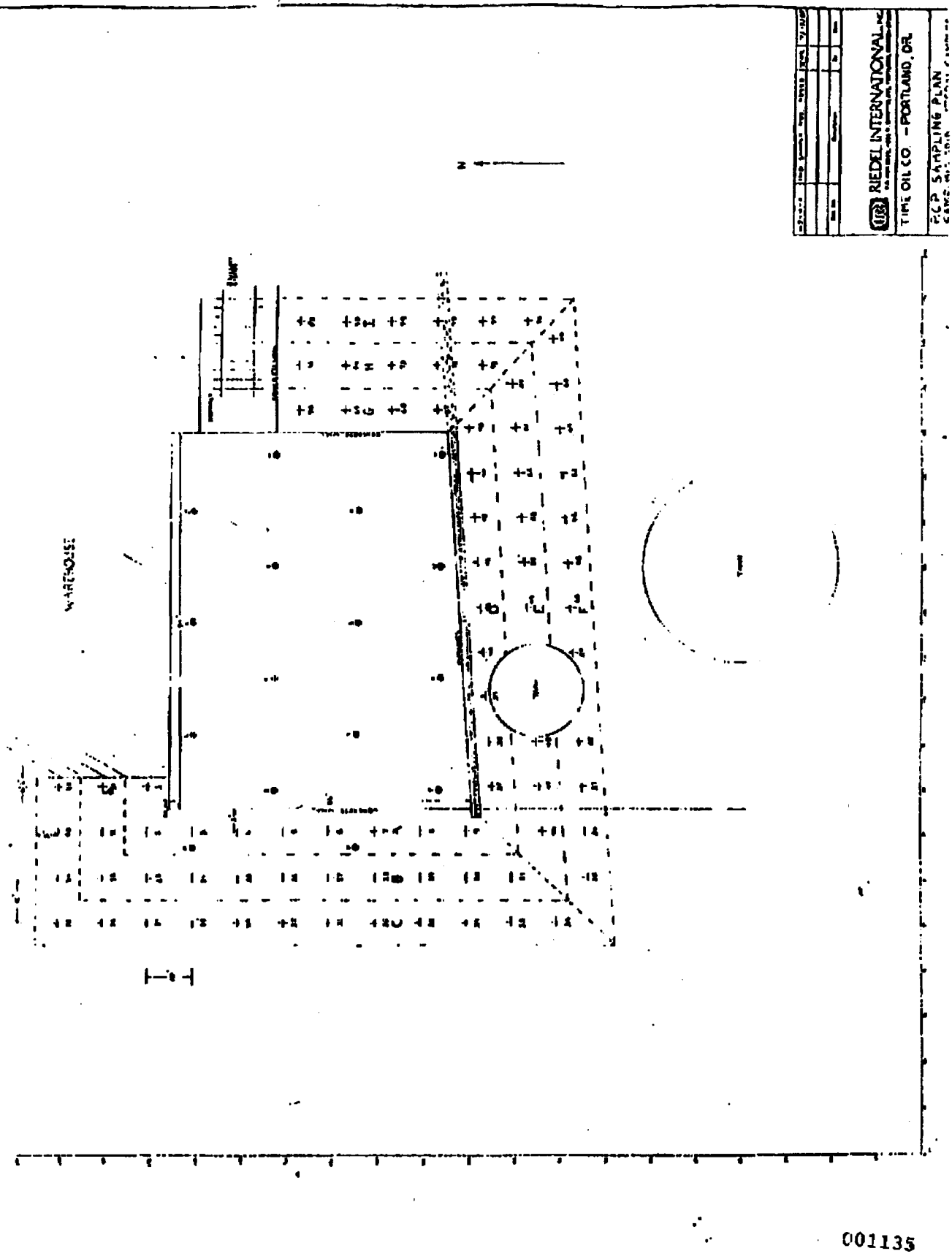
Significant PCP concentrations were detected in soil at Time Oil Co.'s north Portland operation. Contamination was pronounced at two focal sites, one at the northwest corner of the containment area and one at the west side of the containment area. Surface concentrations ranged from 1.2 mg/kg to 26,500 mg/kg. Sampling at depth indicated significant PCP concentrations at the northwest focus descending to the saturated zone and approximately 8-12 feet. Concentrations at 12 feet ranged from 1.0 mg/kg to 2,030 mg/kg. Analytical data from surface, 2-, 4- 7- and 12-foot samples were contoured and plotted and may be related to an area plan drawing of the same scale.

001134

TOLS002167

BZTO104(e)038988

FIGURE 1



001135

TOLS002168

BZTO104(e)038989

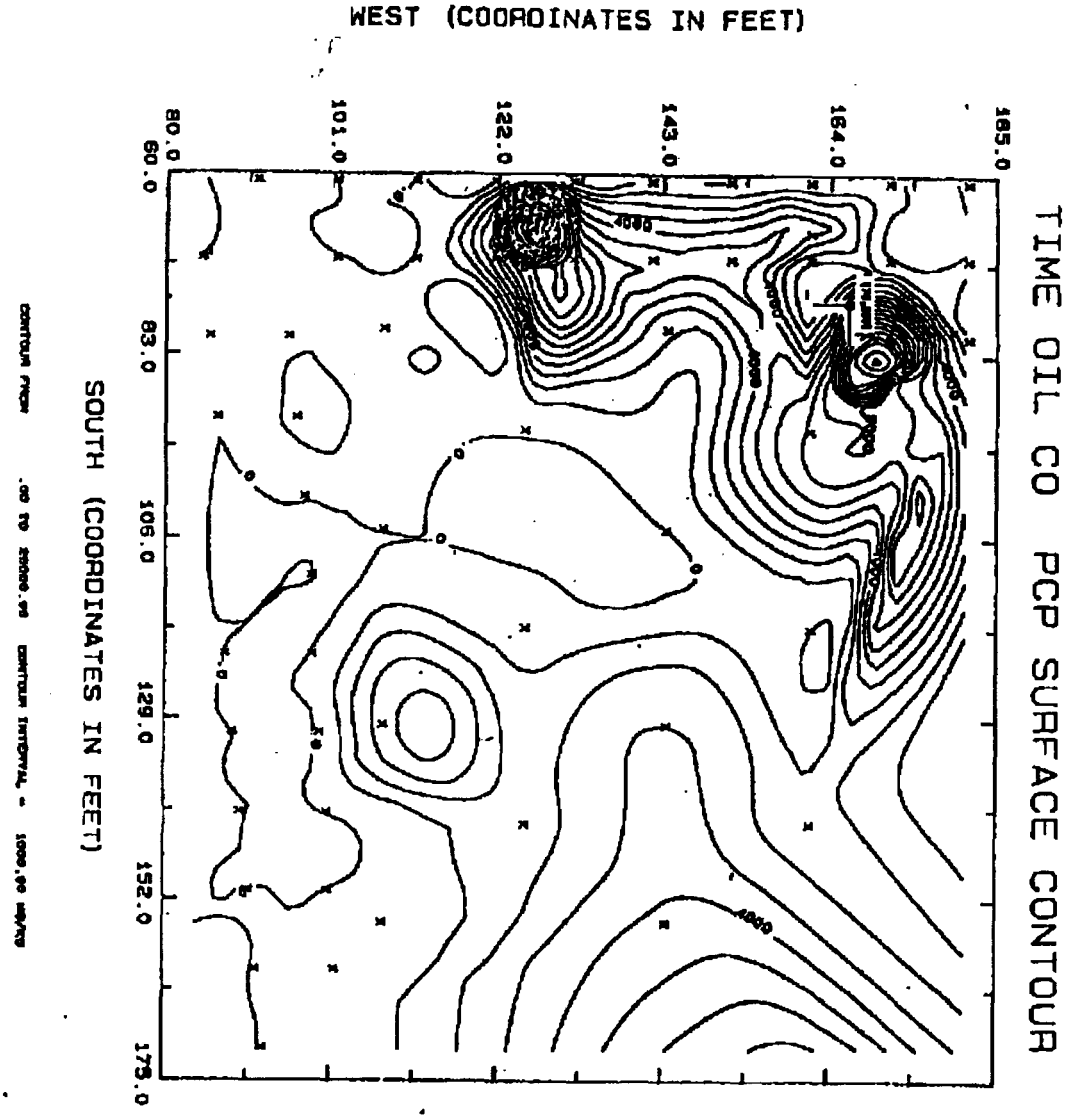

WEST (COORDINATES IN FEET)
80.0
101.0
122.0
143.0
164.0
185.0
60.0
83.0
106.0
129.0
152.0
175.0
SOUTH (COORDINATES IN FEET)
TIME OIL CO PCP SURFACE CONTOUR

FIGURE 2A

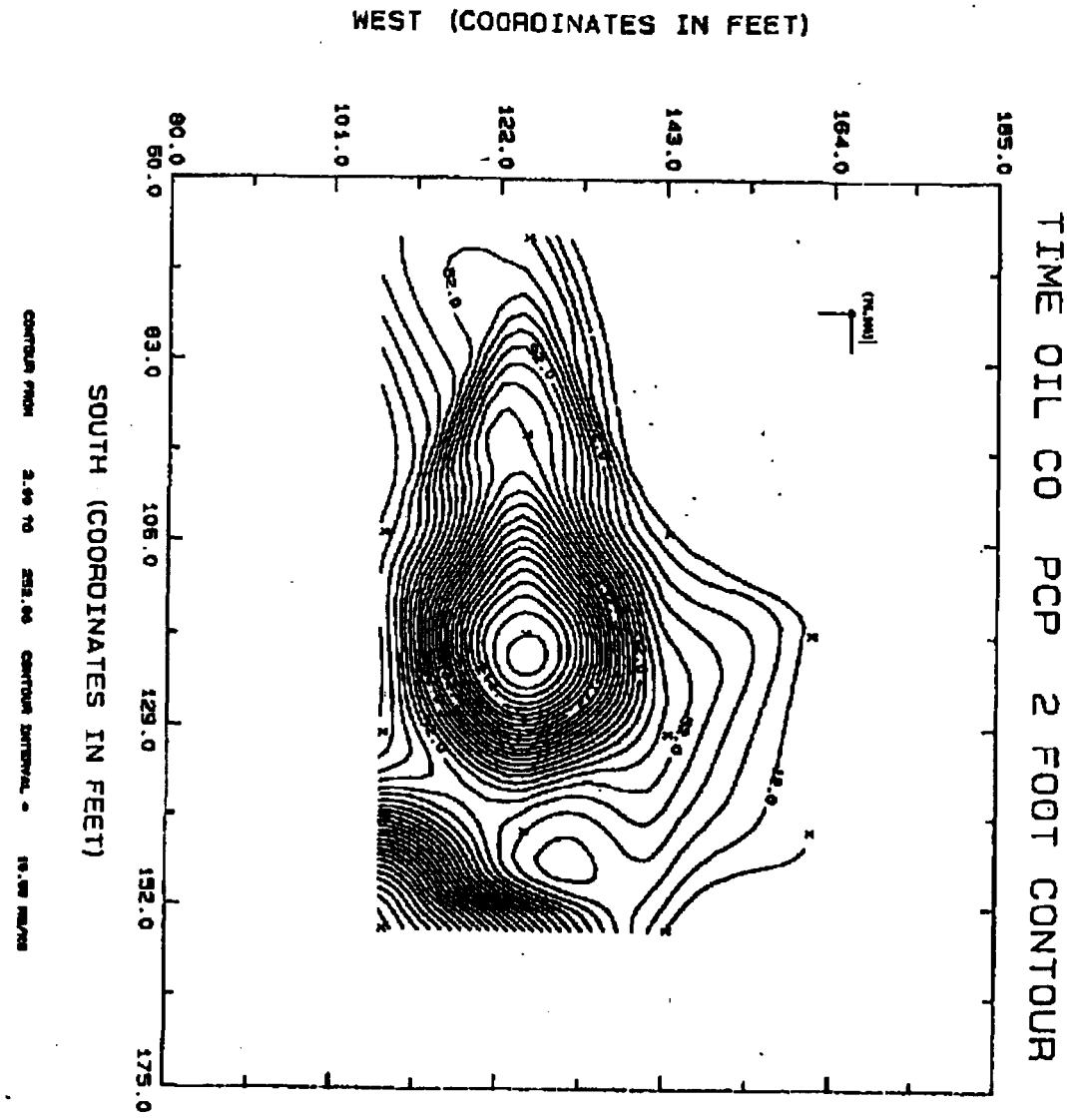


FIGURE 26

TOLS002170

BZTO104(e)038991

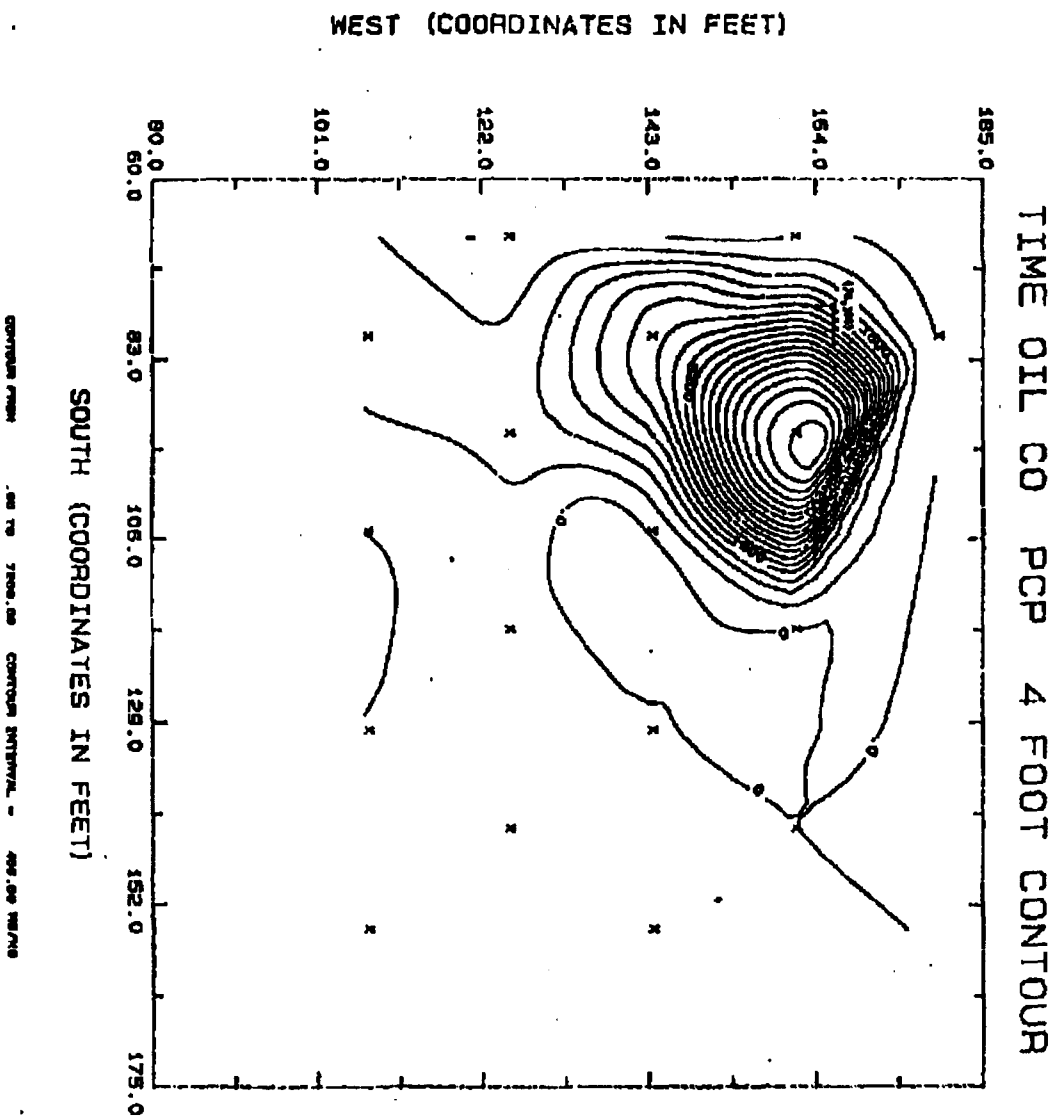

WEST (COORDINATES IN FEET)
80.0
101.0
122.0
143.0
164.0
185.0
60.0
83.0
106.0
129.0
152.0
175.0
SOUTH (COORDINATES IN FEET)
TIME OIL CO PCP 4 FOOT CONTOUR

FIGURE 2C

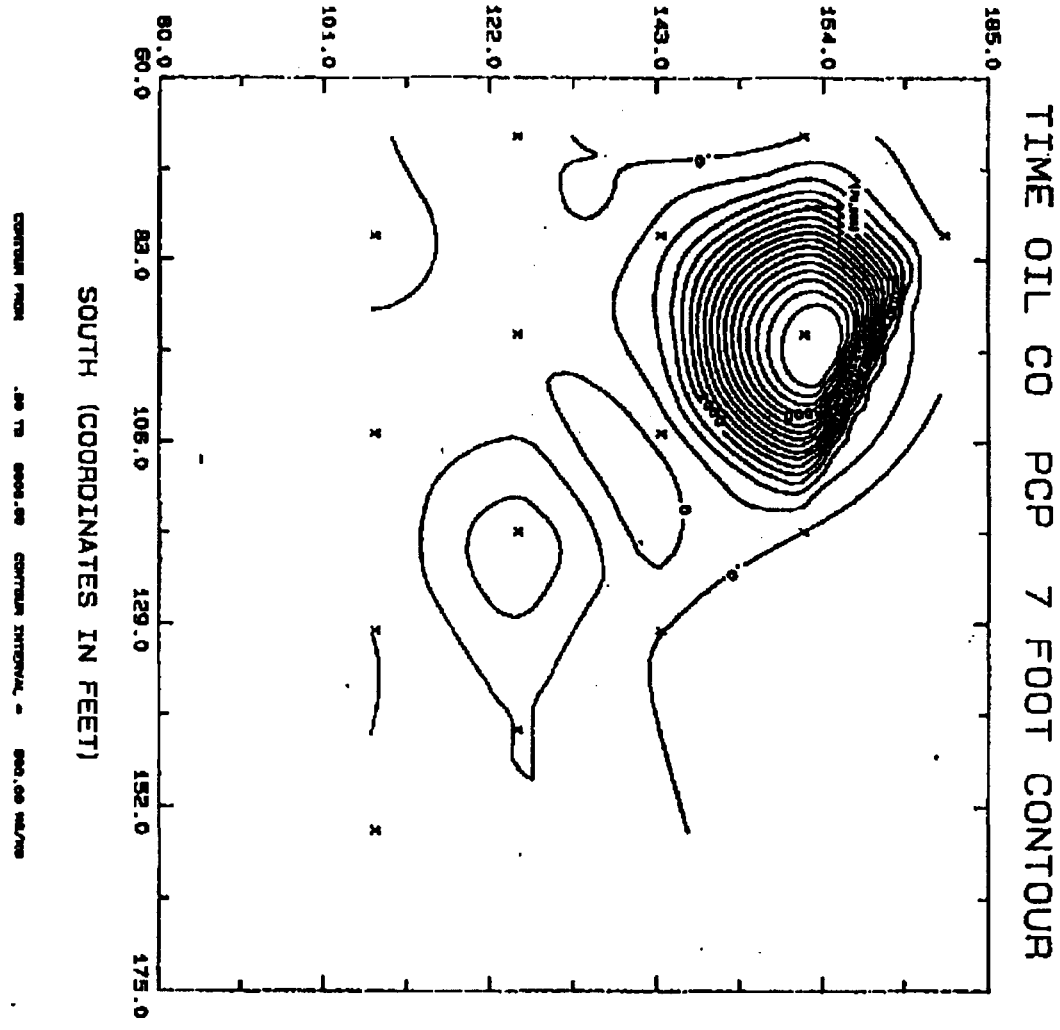


FIGURE 2.0

001139

TOLS002172

BZTO104(e)038993

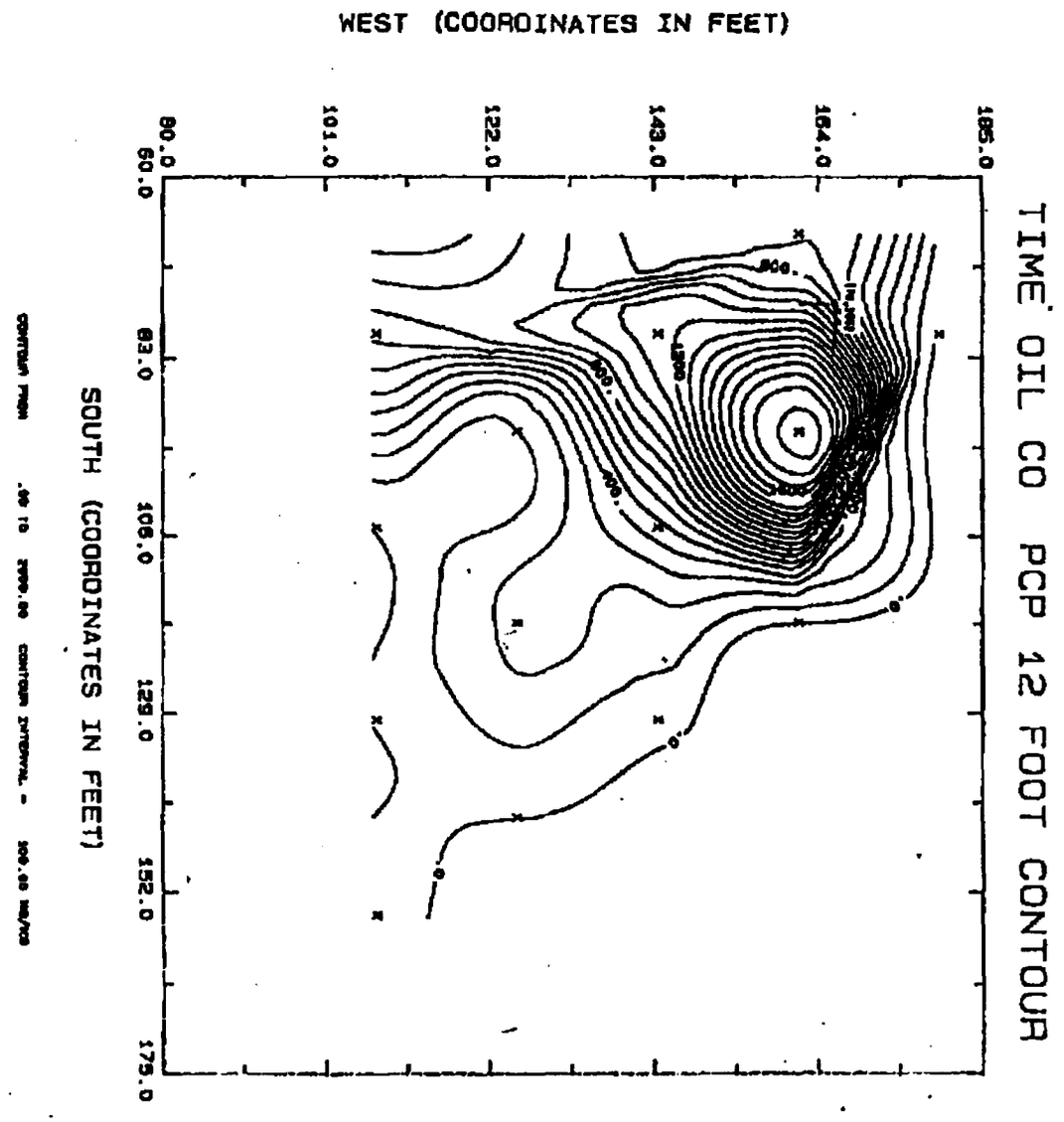

WEST (COORDINATES IN FEET)
80.0
60.0
101.0
122.0
143.0
164.0
185.0
83.0
106.0
129.0
152.0
175.0
SOUTH (COORDINATES IN FEET)
TIME OIL CO PCP 12 FOOT CONTOUR

FIGURE 2E

B.P.C.C. DRAIN AGE PLAN
TIME OIL COMPANY

Koppers Company, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219
Telephone 412-227-2000

86-119

KOPPERS

January 13, 1989

Mr. Terrill L. Henderson
Corporate Counsel
Time Oil Company
2737 West Commodore Way
Seattle, WA 98199-1233

Re: Northwest Terminal Property

Dear Terry:

Enclosed please find a check from Koppers Company in the amount of $59,185.55. This represents Koppers' share of the costs incurred through September 19, 1988 for the investigation and cleanup of the above site.

I look forward to talking with you soon concerning the scheduling of a meeting to discuss the allocation of responsibility for the remaining work Time Oil plans for the property.

Very truly yours,

Bill Giarla

William F. Giarla
412-227-2635

Enclosure

TOLS002175

BZTO104(e)038996

Beazer [redacted]erials and Services, Inc./Koppers-Pittsb[redacted]h, PA 15219

Pay	Vendor No.	Div.	Our Audit No.	Your Invoice No.	Inv. Date Mo.	Inv. Date Day	Invoice Amt.	Discount	Net Amt. Payable	C
7	125619011	100	10090100280		01	09	59185.55	0.00	59185.55	

Detach Before Depositing

001122

K-63

TOLS002176

BZTO104(e)038997

Beazer Materials and Services, Inc./Koppers-Pittsburgh, PA 15219

Vendor No.	Div.	Our Audit No.	Your Invoice No.	Inv. Date Mo.	Inv. Date Day	Invoice Amt.	Discount	Net Amt. Payable
7 125619011	100	10090100280		01	09	59185.55	0.00	59185.55

Detach Before Depositing

BEAZER MATERIALS AND SERVICES, INC./KOPPERS
PITTSBURGH, Pa. 15219

80-289
818

No. 0607809

PAY
FIFTY NINE THOUSAND ONE HUNDRED EIGHTY FIVE AND 55/100 ONLY

To the order of

Date JANUARY 11 1989

Pay this amount $59185.55

TIME OIL CO
BOX 24447 TERM ANNEX
SEATTLE WA 98124-0447

[redacted]

CENTERRE BANK
ROLLA, MO

AD-300 6/88 ⑈0607809⑈ ⑆081502899⑆ 09 9789 1⑈ Dean McAllister

001123

K-63

TOLS002177

BZTO104(e)038998

86-119 A

Koppers Company, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219
Telephone 412-227-2000

KOPPERS

December 21, 1988

Terrill Henderson, Esq.
Time Oil Company
2737 West Commodore Way
P.O. Box 24447
Terminal Station
Seattle, Washington 98124-0047

Re: Northwest Terminal

Dear Mr. Henderson:

This will confirm our conversation of last week in which I informed you that Koppers Company has reviewed your letter of September 19, 1988 and decided how to proceed with respect to the proposal you described.

In our past conversations and your letter of September 19, 1988 you indicated that on January 23, 1986 Koppers agreed to pay one-half of the costs for the cleanup and related work on the above property. After our conversation we reviewed our files, both in the Law Department and in our environmental subsidiary, in an effort to confirm that statement.

We were unable to find anything indicating an agreement as broad as the agreement you describe. We did, however, find a letter dated February 19, 1986 from Robert D. Abendroth of Time Oil which indicated that Koppers and Time had reached a more limited agreement. Mr. Abendroth's letter states:

> "During our January 23, 1986 meeting at your offices in Pittsburgh, you mentioned that Koppers would agree to pay one-half the cleanup costs incurred/committed to date and that further coordination between Koppers and Time would be appropriate for future commitments. Time concurs with this approach."

TOLS002178

BZTO104(e)038999

Mr. Abendroth's letter convincingly evidences Time's understanding of this more limited agreement between Koppers and Time, and nothing in our file indicates that any Koppers' personnel took exception to Mr. Abendroth's characterization of the agreement.

It seems clear, then, that Koppers did not make a blanket agreement to share all costs of cleanup for the site. The agreement between Koppers and Time was that Koppers would share equally the cost of cleanup and related work which Time incurred or to which Time committed by February 19, 1986. Commitments for additional cost sharing were clearly deferred pending "further coordination" between Koppers and Time.

In light of this agreement to share past costs, Koppers will reimburse Time Oil for one-half of the investigation and cleanup costs referenced in your letter of September 19, 1988. I have requested that a check be issued to Time in the amount of $59,185.55.

With respect to the future costs, the same turnover in personnel which required first hand research into the details of any agreement between our companies now requires an explanation of why Koppers should agree to pay one-half of all the cleanup costs for the Northwest Terminal site. As I told you in our conversation, the current Koppers' management personnel responsible for such costs would like to meet with Time Oil personnel in order to hear Time Oil's views on this subject, and to discuss the issue generally. I will contact you following our next Environmental Claim Review Meeting in order to schedule a meeting between our companies to discuss "future commitments".

Several weeks ago I received a copy of a letter from Mr. Abendroth to Koppers Company's President, Frederick Moore. Mr. Abendroth stated that Koppers Company appeared to be ignoring Time's communications during the last year. Much has happened here at Koppers Company in the last year, including a lengthy takeover battle, a subsequent merger, a divestiture of business units representing almost one-half of the company, and reductions in staff. The level of activity and the turnover in personnel have made communications difficult. My expectation is that future events here at Koppers Company will allow for smoother communications.

(Ironically, Mr. Abendroth's letter also asserted that Koppers had entered into a blanket cost sharing agreement, an assertion contradicted by Mr. Abendroth's February 19, 1988 letter.)

Please feel free to call me if you have any questions or comments concerning the above.

Very truly yours,

William F. Giarla

William F. Giarla
412-227-2635

WFG:km

cc: R. Abendroth

(1/30/89)

86-102

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
LOS ANGELES

PHONE 285-2400
CABLE ADDRESS: TIMOIL
(FAX)206-283-8036

TIME OIL COMPANY

2737 WEST COMMODORE WAY
P.O. BOX 24447, TERMINAL STATION

SEATTLE, WASHINGTON 98199-1233
SEATTLE, WASHINGTON 98124-0447

January 27, 1989

William F. Giarla
Koppers Company, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219

Re: Meeting - Portland, Oregon
March 1, 1989

Dear Bill:

This is to confirm our discussion yesterday in which we agreed that March 1, 1989 would be an agreeable date to meet at Time Oil Co.'s facility at 12005 North Burgard, Portland, Oregon. The purpose of the meeting to be for us to review the remedial measures that have been and will be taken at the facility in order to remove the pentachlorophenol in the soil surrounding the tanks that had been used to store Koppers' products and to resolve the division of responsibility for the costs being incurred in this cleanup.

Please let me know what time would be most convenient for you to meet. We look forward to meeting you and working with Koppers to resolve this matter in a manner that will be fair to both companies.

Very truly yours,

TIME OIL CO.

Terrill L. Henderson
Corporate Counsel

TLH:mw

cc: Robert D. Abendroth
Fred Proby

0063C

000572

TOLS002181

BZTO104(e)039002

#80-102

PHONE 285-2400
CABLE ADDRESS TIMOIL

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
LOS ANGELES

TIME OIL COMPANY

2737 WEST COMMODORE WAY
P.O. BOX 24447, TERMINAL STATION

SEATTLE, WASHINGTON 98199-1233
SEATTLE, WASHINGTON 98124-0447

January 13, 1989

William F. Giarla
Koppers Company, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219

Re: Northwest Terminal

Dear Mr. Giarla:

Thank you for your letter of December 21, 1988. I look forward to hearing from you on the matter of setting up a meeting between Koppers and Time Oil management personnel to resolve the question of payment for the cleanup costs associated with storage and blending of Koppers Company's penta at our Portland facility. In fact, our facility in Portland may be an appropriate place for such a meeting.

As of this Friday we have not yet received Koppers check for $59,185.55 you referred to in your letter.

Thank you for your assistance and I look forward to hearing from you soon.

Very truly yours,

TIME OIL CO.

Terrill L. Henderson
Corporate Counsel

TLH:m

0047C

PHONE 285-2400
CABLE ADDRESS: TIMOIL
(FAX) 206-283-8036

SEATTLE
TACOMA
PORTLAND
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RICHMOND
LOS ANGELES

TIME OIL COMPANY

2737 WEST COMMODORE WAY
P.O. BOX 24447, TERMINAL STATION

SEATTLE, WASHINGTON 98199-1233
SEATTLE, WASHINGTON 98124-0447

September 19, 1988

Mr. Bill Giarla
Koppers Company, Inc.
Koppers Building, Room 750
Pittsburg, Pennsylvania 15219

Dear Mr. Giarla:

On July 27, 1988 you and I discussed the matter of the costs incurred in the cleanup of Koppers' pentachlorophenol at Time Oil's Northwest Terminal in Portland. Since that time, Time Oil has been searching for an economic and effective method of disposing of the problem. In that regard, enclosed is a preliminary work plan prepared by Ecova Corporation for the cleanup of the pentacholorophenol contaminated soils. Although Time Oil is still in the process of evaluating the merits of the work plan, we anticipate following it subject to approval by the Oregon Department of Environmental Quality.

The cost of the proposed cleanup and related work is estimated at $400,000. Pursuant to the January 23, 1986 agreement between Koppers and Time Oil, Kopper's share would be $200,000.

As a reminder, Time Oil has spent $118,371.10 to date on investigation and cleanup of our mutual problem. Of this we have invoiced you $54,780.28 by invoices dated 3/6/86 and 4/17/87 (copies enclosed). We have not yet received payment for those invoices. Also enclosed is our invoice dated 9/21/88 for $4,405.27, which brings Kopper's total share of moneys spent to date to $59,185.55.

Very truly yours,

TIME OIL CO.

Terrill L. Henderson
Corporate Counsel

TLH:pjv

Enclosures

0297C

TOLS002183

BZTO104(e)039004

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
LOS ANGELES

PHONE 285-2400
CABLE ADDRESS: TIMOIL
(FAX)206-283-8036

TIME OIL COMPANY

2737 WEST COMMODORE WAY
P.O. BOX 24447, TERMINAL STATION

SEATTLE, WASHINGTON 98199-1233
SEATTLE, WASHINGTON 98124-0447

11/30 called T. Henderson wcb
12/1 Called T. Henderson wcb
12/2 called T. Henderson wcb
12/5 called T. Henderson wcb

November 17, 1988

Mr. Frederick C. Moore
President
Koppers Company, Inc.
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219

Dear Mr. Moore:

I am writing to you in hopes of resolving a situation that exists between Time Oil Co. and Koppers before it develops into a needless and costly dispute.

Briefly, the situation arises out of an agreement dated March 1, 1967 under which Time Oil agreed to provide certain labor and services to store and blend wood preservatives containing pentachloraphenol belonging to Koppers Company at our Portland, Oregon terminal. After the agreement was terminated in 1982 it was discovered that the ground at the terminal contains substantial quantities of the product belonging to Koppers. As you know pentachloraphenol is a hazardous substance under federal and state law and gives rise to authority by the federal and state governments to compel cleanup of the product by responsible parties including the owner of the product.

Since the problem first materialized Time Oil has been in contact with Koppers Company and initially there appeared to be willingness on the part of Koppers to work with Time to resolve this problem as inexpensively as possible and without exciting the interest of the federal and state authorities. To that end we met with Koppers personnel on January 23, 1986 in Pittsburgh where an agreement in principle was reached under which the cost of resolving this problem would be shared on a fifty fifty basis.

It is not my purpose here to detail the efforts that Time Oil has undertaken to resolve this environmental problem nor the efforts it has taken to obtain the continued cooperation of Koppers. Suffice it to say here that within the last year and half Koppers Company appears to be simply ignoring the problem and our communications.

0297C

I would appreciate anything you might be able to do to advise us as to how this matter may be resolved. My telephone number is (206) 285-2400.

Very truly yours,

TIME OIL CO.

Robert D. Abendroth
Vice President

RDA:TLH:pjv

cc Mr. Bill Giarla
Koppers Company, Inc.
Koppers Building, Room 750
Pittsburgh, Pennsylvania 15219

MEMORANDUM

June 11, 1985

TO:	Robert Abendroth	Seattle
	Bill Baldwin	Pittsburgh
	Don Marion	Pittsburgh
	Neil Wallis	Portland
FROM:	John Denham	Seattle

SUBJECT: NORTHWEST TERMINAL WOODTREATING SITE

This is a status update regarding cleanup of soil at our Portland Oregon terminal where the Pentachlorophenol operation existed.

Following Don Marion and Bill Baldwin's March 13, 1985 visit, the following occurred:

a. On April 2, Bill B called to coordinate results of his contact with Koppers geologists. Bill requested sampling per enclosure 1. On April 4, Robert A agreed with this action. On April 5, Neil W was tasked to locate a firm to accomplish soil sampling and a laboratory which could handle this sizable soil analysis within a reasonable time frame at the lowest possible costs.

b. After a diligent search, it was learned there was only one firm in the area that had the capability to do this job - Riedel Environmental Services, Inc. On April 25, Riedel submitted their cost of $18,600 (enclosure 2). I asked for a cost breakdown. Riedel submitted it on May 18 (enclosure 3). Drilling cost of $7,544 is actual fee of drilling contractor Sweet and Edwards out of Kelso (I verified this). Analytical cost of $4,956 is strictly the laboratory charge for processing 96 samples from 16 holes at 6 six samples per hole. (Note this is 7 less holes than Bill B requested but covers a larger 80' x 80' area). Method of analysis is GC/MS, which is the only one allowed by EPA/DEQ. Cost to analyze each sample is $51.63. Labor cost of $3,985 includes taking nine additional composite surface samples (3 on northeast, 3 on east and 3 on south) outside bermed area to determine soil contamination boundaries, taking the 96 samples mentioned above, drawing the drilling plan, preparing the contour map which shows location of contamination at the various depths, supervision of entire job on site by a qualified hydrologist and writing the report. Other direct costs of $2,115 cover decontamination of equipment between the taking of each sample, sample jars, safety gear used, drums for and disposal of decontamination solvent used for all equipment decontamination and the bentonite used to plug all holes drilled.

000615

TOLS002186

BZTO104(e)039007

c. Contract with Northwest Vacuum Truck Service was negotiated (enclosure 4). Certificate of insurance coverage (enclosure 5) and contract bond (enclosure 6) were obtained from contractor. An "approved" transporter was obtained (Gresham Transfer Service).

d. Disposal request for contaminated soil was approved by DEQ (Enclosure 7).

e. Hazardous Waste Manifests with appropriate instructions were obtained (enclosure 8).

f. The required "Waste Transportation and Disposal Agreement" was obtained from Chem-Security Systems, operators of the Arlington disposal facility (enclosure 9). I disagreed with item 2(b) on page 17 (in that it limited disposal on this tender to only one movement) and item 10(c) on page 20 (in that there was no price break after 250 tons as was originally quoted). Telecon contact with their offices resulted in satisfactorily worded replacement pages for agreement, which arrived today and are included in enclosure 9.

At this point in time, everything seems to be "go". All arrangements have been made to start the first phase of digging, hauling and disposing on June 24, 1985. I will be on site. Plan is to remove and dispose of several truck loads of soil, stop, have sampling and analyses done, then repeat as needed. This approach takes advantage of lower disposal costs (prior to July 1) and the conduct of the expensive sampling and analysis only one time. Current known costs for first phase are $53,000 plus $18,600 = $71,600.

JPB/ch

000616

TOLS002187

BZTO104(e)039008

SEATTLE
TACOMA
PORTLAND
EDMONDS
RENO
RICHMOND
SAN DIEGO
LOS ANGELES

TIME OIL COMPANY

3737 W. COMMODORE WAY, P.O. BOX 24047, TERMINAL ANNEX, SEATTLE, WA 98124

February 4, 1985

Department of Environmental Quality
Attn: Janet Gillaspie, Northwest Region Manager
522 S.W. 5th Avenue, P.O. Box 1760
Portland, Oregon 97207

Dear Ms. Gillaspie:

This pertains to our Northwest Terminal location at 12005 North Burgard in Portland, Oregon and the bulk pentachlorophenol operation at that site. The purpose of this letter is to acquaint you with concurrent actions being taken by two companies to voluntarily correct what both felt may become a problem.

BACKGROUND

In March of 1982, a potential problem with the ground surrounding the pentachlorophenol operation was determined. Contract between Koppers Co. (product owner) and Time Oil Co. (land owner) was cancelled. Product phaseout and clean-up actions were jointly agreed upon by both companies. Accomplishments to date have been:

a. Bulk pentachlorophenol operations ceased.

b. On hand product inventory blended off and shipped out.

c. All tanks and piping cleaned.

d. Waste from cleaning shipped to Arlington.

e. Piping removed and scrapped.

f. Time Oil Co. tanks removed and scrapped.

Remaining to be accomplished are:

a. Removal of Koppers owned tanks (scheduled for week of February 4, 1985).

b. Contaminated soil removal and replacement.

On December 12, 1984, Messrs. John Smits and Rick Gates of your office conducted soil sampling activities at the site. Twelve samples were taken inside diked areas. Split samples were provided Time Oil Co. DEQ laboratory test results (40 pages) were received here on February 1, 1985. Telecon with Messrs. Smits and Gates on that date revealed the following:

a. All samples were tested for lead content. None were found to be above normal limits (page 1).

b. All samples were tested for fourteen different pesticides. None were found to be above normal limits (pages 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36).

c. All samples were scanned for organic chemicals other than priority pollutants (pages 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37). No unknowns were identified above detection limits on nine of these samples. On three sample, (pages 13, 28, 31), the compounds tentatively identified were those petroleum residues normally expected to be found in a tank farm. Estimated concentrations were so low that none were at all significant, simply present.

d. All samples were tested for priority pollutant chemicals (pages 2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, 35). No unknowns were identified above detection limits on eight of these samples. On one sample (page 11), only two trace elements were found. Both were in the 1 ppm quantity, which is not considered significant and certainly cannot be classed as a problem. On one sample (page 23), three residues of polynuclear aromatics were found, again insignificant in quantity. On one sample (page 26), one more polynuclear aromatic of insignificant quantity was found along with a small quantity (516 ppm) of pentachlorophenol and 12 ppm of tetrachlorophenol. It is my understanding that since this quantity (516 ppm) of pentachlorophenol is below 1000 ppm, it falls in the gray area of consideration regarding significance. The tetrachlorophenol is a part of commercial pentachlorophenol so its presence would naturally be expected. On one sample (page 29), pentachlorophenol (1820 ppm) and tetrachlorophenol (71 ppm) were found. This latter finding confirms our unitedly expressed (Koppers and Time Oil) concern and substantiates the need for corrective action as we had previously planned.

CURRENT

As of today, it appears that our (Koppers and Time Oil) initial plan of action remains valid. Progress has been made. Time and more favorable weather conditions should result in the contaminated soil being removed, necessary second soil tests being conducted and new soil being put in place without difficulty.

Sincerely,

John P. Denham
Environmental Manager

JPD/ch

TOLS002189

BZTO104(e)039010

ST. JOHNS CLINIC, P.C.
PHYSICIANS AND SURGEONS
GORDON F. WOLFE, M.D.
J. VICTOR VORE, M.D.
GORDON A. CARON, M.D.

8350 N. LOMBARD
PORTLAND, OREGON 97203
(503) 289-8008

January 17, 1985

Time Oil Co.,
Wood Treating Chemical Department,
Koppers' Company, Inc.,
5137 S. W. Avenue,
St. Louis, Missouri 63110.

Re: Donald Grosmick

Employer: Time's Oil Plant,
12005 No. Burgard,
Portland, Oregon

Dear Gentlemen:

On January 9, 1985 I examined Mr. Donald Grosmick. These are the results as oriented to your ten points that you recommended regarding his general physical examination for exposure to occupational chemicals.

The patient states he is not sure he has had any recent exposure to Pentachlorophenol. Examination of the skin revealed that he has some acne-like lesions of the back. However, these are of long-standing and he has had these since he was a teenager. They have not recently increased in size and are more scarring in nature than active acne. Examination of the nose and throat revealed no irritation. Examination of the eyes, particularly the cornea and the iris showed no abnormality. Blood pressure, sitting, was 122/90 and standing is 120/84. Examination of the abdomen revealed tenderness or enlargement of the liver. This was borne out on the SMAC-20 laboratory examination. Neurologic functions of the arms and legs were normal. The chest x-ray revealed no abnormalities of the bony thorax; the lungs were normal and the heart was normal in size and configuration. Urinalysis, microscopically, was negative for cells except for an occasional epithelial cell. The examination was negative for sugar and albumin. The SMAC-20 analysis, including blood sugars were all normal.

I hope this information will be of benefit to you.

Sincerely yours,

Gordon F. Wolfe, M.D.

GFW/transdata

ST. JOHNS CLINIC, P.C.
PHYSICIANS AND SURGEONS
GORDON F. WOLFE, M.D.
J. VICTOR VORE, M.D.
GORDON A. CARON, M.D.

8250 N. LOMBARD
PORTLAND, OREGON 97203
(503) 286-8808

January 17, 1985

Time Oil Co.,
12005 No. Burgard Road,
Portland, Oregon 97218.

Re: Physical Examination
Mike DeLaschmit
Date: January 7, 1985

Dear Gentlemen:

Mr. Mike DeLaschmit was examined by me at your request on January 7, 1985.

The interim history was that the patient had increasing fatigue in the fall of 1984 and saw his family physician who advised him that his physical examination by him was normal but that he required more rest.

The patient has not been exposed to Pentochlorophenol or any other chemicals recently and is presently feeling in good condition. The patient smokes one pack of cigarets a day.

General physical examination was performed by me and the ten items listed that you want particular emphasis to be expressed were done, and in summary his skin examination was normal. There was no irritation of the nose or throat. Examination of the eyes and cornea was normal. The blood pressure, while standing, was 112/76 and while sitting, 122/74. Examination of the abdomen revealed no masses and no abnormalities. The liver was not enlarged to palpation and there was no spleen palpable. Neurologic examination of the arms and legs, and the rest of the body was normal. The chest x-ray revealed no abnormality of the bony skeleton nor of the heart size which was normal. The lungs showed no abnormality. Urinalysis: microscopic examination showed just an occasional epithelial cell. There was no blood or pus, or white blood cells present. Examination for sugar and albumin was negative.

The blood chemistry analysis in the form of an SMA-20 was performed and all 20 items checked were normal.

In summary, this patient is presently, when examined by me, with special emphasis on the items mentioned by your company, found to be generally in good health. Despite his smoking one package of cigarets for many years, his timed vital capacity was above normal. However, we still suggested to the patient that he avoid smoking, if possible.

I hope this information will be of help to you.

Sincerely,

Gordon F. Wolfe, M.D.

GFW/transdata

TOLS002192

BZTO104(e)039013

TIME OIL CO. / U.S. OIL & REFINING CO.
5150 Wilshire Blvd. • Los Angeles, California 90036 • U.S.A.

TO:

This

AFFIX STAMP HERE

TIME OIL CO. / U.S. OIL & REFINING CO.
SUBSIDIARIES AND AFFILIATES

TEN (10) TERMINALS
DOMESTIC AND WORLDWIDE
RELIABLE AND EFFICIENT SERVICE
REFINING, MARKETING, STORAGE AND HANDLING
OF LIQUID PRODUCTS

HEADQUARTERS: Supply and Distribution Planning and Policy
5150 Wilshire Blvd.
Los Angeles, California 90036
Phone (213) 938-7151

MAIN OPERATING OFFICES: 2737 W. Commodore Way
Seattle, Washington 98199
Phone (206) 285-2400

DOMESTIC TERMINALS
Bellingham, Washington • 1030 Hilton Street
Portland, Oregon • 12005 N. Burgard Street
Portland, Oregon • 9100 N.W. St. Helens Road
Richmond, California • 488 Wright Ave.
Seattle, Washington • 2737 W. Commodore Way
Sparks, Nevada • 1819 Glendale Road
Stockton, California • 3000 Navy Drive
Tacoma, Washington • 250 East D Street

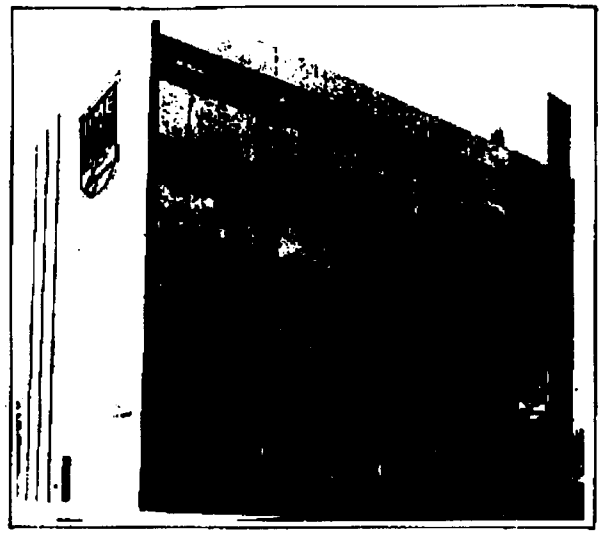
AFFILIATES
International Oil Terminals, Co., Ltd. • Manila, Philippines
U.S. Oil & Refining Co. • Tacoma, Washington
3001 Marshall Avenue

5-80

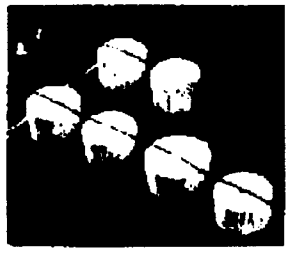
PRODUCING

REFINING

TIME OIL CO. / U.S. OIL & REFINING CO.
SUBSIDIARIES AND AFFILIATES



TIME OIL BUILDING – LOS ANGELES
Policy making headquarters. From this location, executive staff maintain close contact with the widespread operations.



TERMINALING

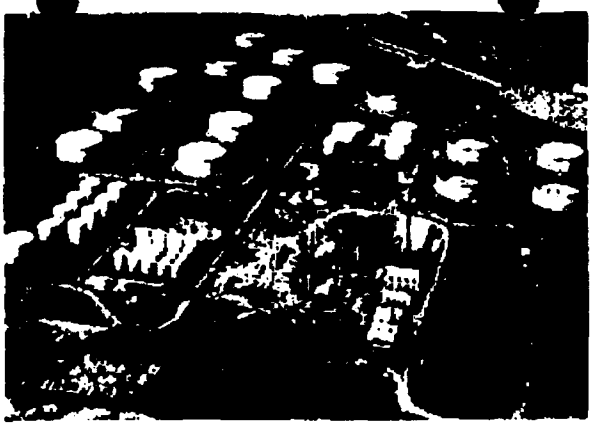
MARKETING

000626

TOLS002193

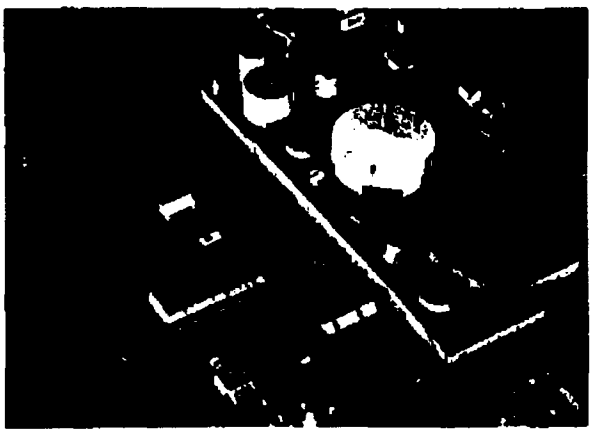
BZTO104(e)039014

TACOMA – WASHINGTON



U.S. OIL & REFINING – TACOMA PLANT

Located with deep water access near Tacoma harbor. This modern plant is the largest independent refinery in the northwest United States with a designed crude input capacity of approximately 33,000 barrels per day, and modern downstream facilities including catalytic, reforming, and hydrotreating, and manufacturing a full range of petroleum products. Total storage capacity is approximately 2,000,000 barrels.



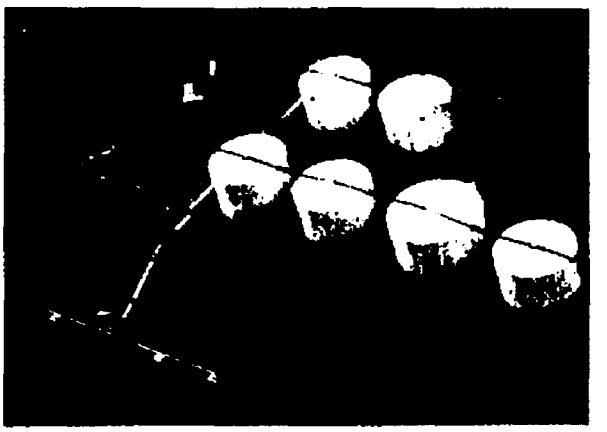
TACOMA TERMINAL

Accessible to ocean-going vessels, connected to Olympic pipelines. Total storage capacity approximately 200,000 barrels.

PORTLAND – OREGON

TIME OIL'S NORTHWEST TERMINAL – PORTLAND

Located on the Willamette River at Portland. Its tank car facilities are connected with four major railroads and its docks are accessible to ocean going tankers, thus making this terminal the ideal point of distribution for Oregon, southwest Washington and Idaho. Total storage capacity approximately 800,000 barrels.



TIME OIL'S PORTLAND TERMINAL CO.

The Portland Terminal Co. is the second of two terminals owned and operated by Time Oil Co. on the Willamette River at Portland. With docks accessible to ocean-going tankers, pipeline connections with Southern Pacific Pipelines and Olympic Pipelines – this terminal handles all grades of gasoline and diesel oil – modern truck loading facilities – storage capacity approximately 200,000 barrels.

000627

TOLS002194

BZTO104(e)039015

MANILA – PHILIPPINES

INTERNATIONAL OIL TERMINALS CO., LTD.

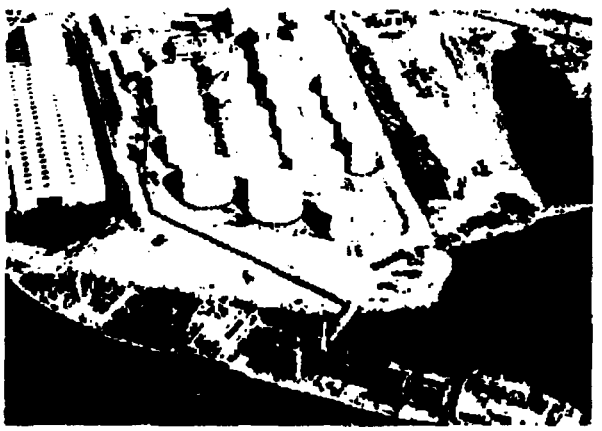
This petroleum products terminal is located in Manila on the Bataan Peninsula, Philippine Islands. Dock accessible to ocean-going tankers. Total storage capacity approximately 300,000 barrels.

STOCKTON – CALIFORNIA

TIME OIL TERMINAL AT STOCKTON

This terminal is located at the busy inland port of Stockton and is accessible to ocean-going tankers as well as large river barges. Equipped with modern truck loading facilities, connected to Southern Pacific Pipeline systems. Total storage capacity approximately 140,000 barrels.

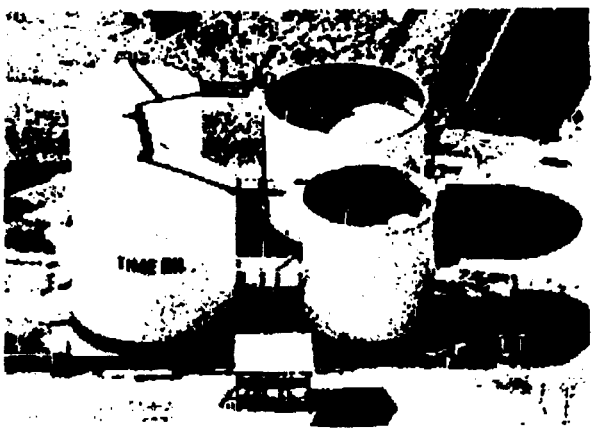
RICHMOND (SAN FRANCISCO BAY AREA) CALIFORNIA



TIME OIL TERMINAL AT RICHMOND

Situated on deep water at Richmond, this terminal is accessible to ocean-going tankers, and the rail facilities of the Santa Fe, Southern Pacific and Union Pacific railroads. Connected to Southern Pacific Pipeline system. It is, thus, in an excellent position to serve southern Oregon, northern and central California, and northern Nevada by pipeline, and/or rail, tank truck and barge. Storage capacity approximately 620,000 barrels.

SPARKS – NEVADA



TIME OIL TERMINAL AT SPARKS

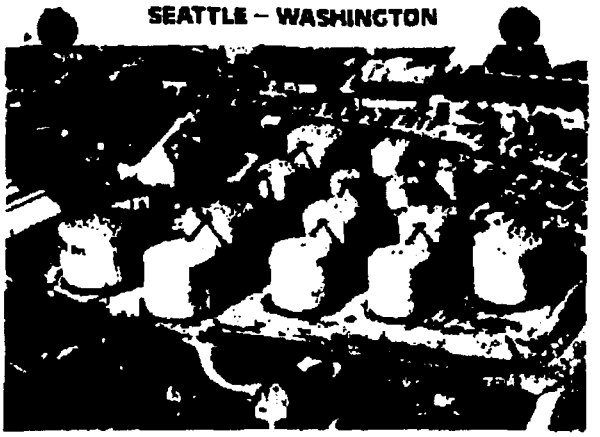
This Time Oil terminal is located in the heavily traveled tourist region of the state of Nevada. Connected directly to the Southern Pacific Pipeline system. Modern truck loading facilities. Total storage capacity approximately 52,000 barrels.

000628

TOLS002195

BZTO104(e)039016

SEATTLE – WASHINGTON



TIME OIL OFFICES AND TERMINAL AT SEATTLE

Headquartered in Seattle, the main operating offices of Time Oil adjoin the Seattle Marine Terminal which is located on Salmon Bay just inside the Lake Washington ship canal. The terminal docks in this ice-free port are capable of berthing ocean-going tankers. Additionally, the terminal is served by the Great Northern Railroad, with freight yards of three other major railroads nearby. Equipped with modern drumming, packaging and distribution facilities. Total storage capacity is approximately 200,000 barrels.

BELLINGHAM – WASHINGTON

TIME OIL TERMINAL AT BELLINGHAM

Located on Bellingham Bay on the coast of Washington, approximately 25 miles from the Canadian border – this terminal has a rail spur, truck loading facilities and total storage capacity of approximately 23,000 barrels.

MARKETING

TIME OIL SERVICE STATIONS

Time Oil owns and operates approximately 250 service stations throughout the states of California, Idaho, Nevada, Oregon and Washington. These modern, electronically equipped stations handle three grades of gasoline and other motor vehicle fuels on a self-service basis.

GLOBAL OPERATIONS

Activities of the companies extend from the Orient across the globe to the Atlantic Coast and from the Canadian border south to Mexico and the Caribbean. As a matter of policy, management is flexible and moves easily to decisions on opportunities for expansion based upon experience and conservative judgment.

000629

TOLS002196

BZTO104(e)039017

TIME OIL CO.

2737 W. COMMODORE WAY, SEATTLE 98199

FRED PROBY
ENVIRONMENTAL SPECIALIST

(206) 285-2400

TIME OIL CO.

2737 W. COMMODORE WAY • SEATTLE, WA

ROBERT D. ABENDROTH
VICE PRESIDENT - OPERATIONS

P.O. BOX 24447
TERMINAL STATION
SEATTLE, WA 98124-0447
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TIME OIL CO.

2737 W. COMMODORE WAY, SEATTLE 98199

RICHARD GORDON
CORPORATE COUNSEL

Seattle — (206) 285-2400

NEIL WALLIS

TIME OIL CO.
P.O. Box 03137
12005 N. Burgard St.
Portland, Oregon 97203

Phone: (503) 286-1611

TIME OIL COMPANY
PORTLAND, OREGON

PENTACHLOROPHENOL SAMPLING & ANALYSIS

Prepared by
RIEDEL ENVIRONMENTAL SERVICES
P.O. Box 5007
Portland, Oregon 97208

October, 1985

TOLS002198

BZTO104(e)039019

Introduction

Between 1967 and 197_ Time Oil Company operated a pentachlorophenol (PCP) facility at its North Portland, Oregon, terminal. This facility consisted of blending and storage operations used to prepare commercial pentachlorophenol solutions. The facility consisted of various storage and mixing tanks, a warehouse, a bermed, unpaved containment area, various pumps and a truck loading area.

The facility geography is essentially flat and is located less than 1/4 mile from the Willamette River. The soil is principally fine to medium sand with some silt. Ground water is reportedly found from 10 to 20 feet below the surface in this area. During June of 1985, a portion of visibly contaminated soil in the containment area was excavated and disposed of as a hazardous waste. This excavation left a depression in the northwest corner of the containment area sloping gradually to approximately four feet below the adjacent grade. Surface soil was disturbed during this process and, as such, surface sampling was not expected to be representative of conditions existing prior to excavation.

During the years of operation, several intermittent PCP discharges were known to occur, especially during mixing and transfer operations. These discharges resulted in soil contamination in and around the containment area. Initial site visits in April 1985 indicated visible PCP contamination of soils in this vicinity. A sampling plan for surface and subsurface soils extending through the vadose zone was designed and initiated in July 1985.

This sampling and analytical protocol was designed to estimate the spatial limits of PCP contaminant migration in the vadose zone of the soil in and immediately adjacent to the PCP containment area facility. As such, a systematical gridding array was used in lieu of random or other types of probability sampling. No attempt was made to sample underneath structures or paved areas. The protocol was not intended to determine the average concentration of PCP in soil at the facility since the area sampled was not expected to be homogeneous nor to represent a specific population of PCP concentrations. Therefore, statistical evaluations such as mean and standard deviation, have only academic significance in respect to these data.

However, since the origin points in the regular sampling arrays were randomly selected (i.e., a systematic random sampling procedure), there is no reason why some or all of this data could not be used for this purpose at a future time.

TOLS002199

BZTO104(e)039020

Sampling

All sampling was performed in accordance with EPA publication SW846, "Test Methods for Evaluating Solid Waste". Surface soil sampling was achieved using a small trier and/or sampling scoop. Subsurface samples were obtained using a 6" continuous flight hollow stemmed auger fitted with a 2" split-spoon sampler. All sampling equipment was decontaminated between samples with a trisodium phosphate wash, water rinse, hexane wash and a triple rinse with distilled, deionized water. Auger flights were decontaminated by high pressure steam cleaning between bore holes.

Samples were obtained from two areas. Area 1 consisted of a peripheral surface margin surrounding the containment areas on all of the available sides (see Figure 1). Area 2 consisted of the area inside the containment wall. All samples from each site were placed in new 16-ounce wide-mouthed glass jars previously washed with laboratory cleaner, water rinsed, hexane washed, air dried and rinsed three times with distilled, deionized water, then fitted with teflon-lined caps under clean conditions. Samples were labelled with client identification, sample number, date, time, sampler's name, sample location, and other pertinent information. Containers were sealed and placed in portable, refrigerated ice chests for transportation to the laboratory. Samples were delivered to the laboratory by RES courier within 48 hours after collection. Chain of custody forms accompanied all samples from original field sampling to final analysis and are included in this report (Appendix A). A field log of each sample was generated on site during sampling and retained for future reference.

Preliminary surface sampling in Area 1 was performed by preparation of a composite sample obtained from sub-areas A, D and F by pooling grab samples taken with triers or spoons at 10-foot intervals, five feet away from the containment area.

Secondary surface sampling was conducted in Area 1 by obtaining individual grab samples using triers or spoons. The sample sites are numbered 1-81 and are indicated on Figure 1. Secondary samples were obtained in response to the detection of significant concentrations of PCP in preliminary composite samples from sub-areas A and D, above, and were used solely to estimate the limits of contamination beyond the containment area. As stated earlier, no attempt was made in this sampling and analytical protocol to determine average (mean) values of PCP contamination.

Sampling in Area 1, peripheral samples, was performed to ascertain the surface margins of the contaminated area. It was arbitrarily assumed that the area within the containment walls was contaminated with PCP and the peripheral margins of this area established as consisting of the warehouse south wall, the east and west concrete walls and the southern edge of a pipeline transecting the containment area as indicated in Figure 1. Three concentric, 10-foot-wide marginal strips were staked out surrounding this boundary and are indicated by broken lines in Figure 1. These areas did not include areas inside the warehouse or below the asphalt paved railway siding located, respectively, on the north and northeast sides of the containment area. The 10 foot marginal strips were subdivided into areas A, B and C to the west, D, E and F to the south, and G, H, and I to the east (see Figure 1).

Sampling of Area 2, the containment area proper, was performed to evaluate PCP concentrations at the surface and at depth in subsoils to the saturated zone. Grab samples were obtained from a 2-foot x 2-inch split spoon sampler pressed through a 6-inch hollow-stem augered bore hole, and were placed in 16-ounce sample containers as previously described. Decontamination procedures, chain of custody, labelling and logging were identical to Area 1 samples. Auger flights were decontaminated at the completion of each coring to prevent cross contamination. Samples were taken at a mximum depth of 0, 2, 4, 7 and 12 feet below the surface elevation of the unexcavated portion of the containment area. Sampling at 17 feet, as originally planned, was not undertaken due to the detection of groundwater at approximately 12 feet.

Due to the sloping contour of the containment area caused by the excavation, the surface elevation below grade was measured from a string line pulled tightly between two unexcavated surface points and spanning the sampling point. Elevation of sampling site surfaces below this grade line was measured using a rigid ruler and is shown in Table I. Data from this table was used to calculate the actual auger depth below the surface required to obtain the split spoon samples to align all samples in the same respective horizontal plane. This data is listed in Table II and indicates the actual depth drilled below the surface required to obtain a sample at the nominal depth listed (0, 2, 4, 7, 12 or 17 feet). In cases where it was deemed practical, soil was hand excavated to the depth corresponding to the first sampling depth indicated and the sample obtained manually with a small trier or spoon.

The horizontal array of borings was selected to minimize the maximum distance from any given point in the sampling area to the nearest boring. To do this most effectively, a triangular grid was staked off. The array was based on a

triangle with an east-west base of 25 feet and a north-south height of 18 feet. The maximum distance from any point on the grid to the nearest sample point in this case is 13.34 feet as opposed to 14.14 feet for a standard 20-foot x 20-foot rectangular array. This selection allowed for the placement of additional wells just outside the containment wall without increased cost, thereby improving coverage with fewer sampling points (reference: Parkhurst, D.F., Optimal Sampling Geometry for Hazardous Waste Sites; Environmental Science & Technology, 18 No. 7, p. 521 [1984]). The triangular grid is indicated on Figure 1. Bore holes are indicated by the symbol "B" and are labeled with alpha symbols J-Z. A table of samples so obtained is given in Table III.

Following sampling, borings were sealed with bentonite grout in accordance with state well sealing standards under the direction of a registered geologist. Decontamination water, collected into tubs, was analyzed and, following receipt of negative results for PCP, disposed of on site.

Results

Samples were analyzed by Coffee Laboratories, Portland, Oregon, using EPA SW-846 protocols. Soil samples were Sohxlet extracted using EPA protocol #3540. Procedure #8040 was utilized with electron capture quantification for PCP analysis. Results are expressed in milligrams of PCP per kilogram soil (ppm, dry weight). At sites where results could be expected to approach zero (based on results from adjacent sites), samples were held but not analyzed. The results are listed in Table IVA-E. Preliminary composite results are shown in Table IVF and confirm PCP contamination beyond the containment wall.

These tables list PCP concentrations at each sample site as well as the X and Y coordinates used to locate these sites on the plan drawing (Figure 1). These coordinates are tied to an arbitrary grid as shown on Figure 1. The northwest corner of the containment wall is located at coordinates X=76, Y=166 (76,166), for sake of reference. Each sampling depth is listed on a separate table. Copies of the laboratory reports are listed in Appendix B.

The coordinate data and concentration results were plotted using an interpolating contouring program (In-Situ Corp., Laramie WY). This package performs smoothed contouring of the data using a triangularization method and bivariate interpolation. Contours were generated from surface samples (regardless of elevation below grade) and 2-, 4-, 7- and 12-foot depths below grade. The contours are plotted on Figures IIA-E. These contour diagrams have been reduced and printed on mylar sheets in addition to the attached figures.

TOLS002202

BZTO104(e)039023

TABLE I

TIME OIL CO. - PORTLAND, OREGON

Depth of Boring Site Surface Sample Below Grade
(Horiz. String Line)

Boring	Depth
J	0
K	6"
L	3'
M	0
N	0
O	0
P	1'8"
Q	2'6"
R	0
S	0
T	2'
U	0
V	0
W	0
X	2'
Y	3'
Z	0

TABLE II

TIME OIL CO. - PORTLAND, OREGON

Actual Split-Spoon Sample Depths Below Grade

	Nominal Depth					
Boring	0	2	4	7	12	17
J	0	0-2'	2-4'	5-7'	10-12'	15-17'
K	NA	0-1 1/2	1 1/2-3 1/2	4 1/2-6 1/2	9 1/2-11 1/2	14 1/2-16 1/2
L	NA	NA	Surf (11")	2-4'	7-9'	12-14'
M	0	0-2'	2-4'	5-7'	10-12'	15-17'
N	0	0-2'	2-4'	5-7'	10-12'	15-17'
O	0	0-2'	2-4'	5-7'	10-12'	15-17'
P	NA	Surf (4")	0-2'	3-5'	8-10'	13-15'
Q	NA	NA	0-1 1/2	2 1/2-4 1/2	7 1/2-9 1/2	12 1/2-14 1/2
R	0	0-2'	2-4'	5-7'	10-12'	15-17'
S	0	0-2'	2-4'	5-7'	10-12'	15-17'
T	NA	Surf	0-2'	3-5'	8-10'	13-15'
U	0	0-2'	2-4'	5-7'	10-12'	15-17'
V	0	0-2'	2-4'	5-7'	10-12'	15-17'
W	0	0-2'	2-4'	5-7'	10-12'	15-17'
X	NA	Surf	0-2'	3-5'	8-10'	13-15'
Y	NA	NA	Surf (11")	2-4'	7- 9'	12-14'
Z	0	0-2'	2-4'	5-7'	10-12'	15-17'

NOTE:

Actual depths indicate depth of bottom of split-spoon.

NA = Not available

Surf = Surface sample obtained by hand excavation at depth indicated in parentheses

000035

TOLS002204

BZTO104(e)039025

TABLE III

TIME OIL CO. - PORTLAND, OREGON

Nominal Split-Spoon Sample Depths

Boring	0 Surface	2 0-2'	4 2-4'	7 5-7'	12 10-12'	17 15-17'
J	X	X	X	X	X	ND
K	-	X	X	X	X	ND
L	-	-	X	X	X	ND
M	X	X	X	X	X	ND
N	X	X	X	X	X	ND
O	X	X	X	X	X	ND
P	-	X	X	X	X	ND
Q	-	-	X	X	X	ND
R	X	X	X	X	X	ND
S	X	X	X	X	X	ND
T	-	X	X	X	X	ND
U	X	X	X	X	X	ND
V	X	X	X	X	X	ND
W	X	X	X	X	X	ND
X	-	X	X	X	X	ND
Y	-	-	X	X	X	ND
Z	X	X	X	X	X	ND

NOTE: X = Sample
- = Not available due to excavation
ND = Not sampled due to presence of groundwater

TOLS002205

BZTO104(e)039026

TABLE IVA
TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Surface Contour Data

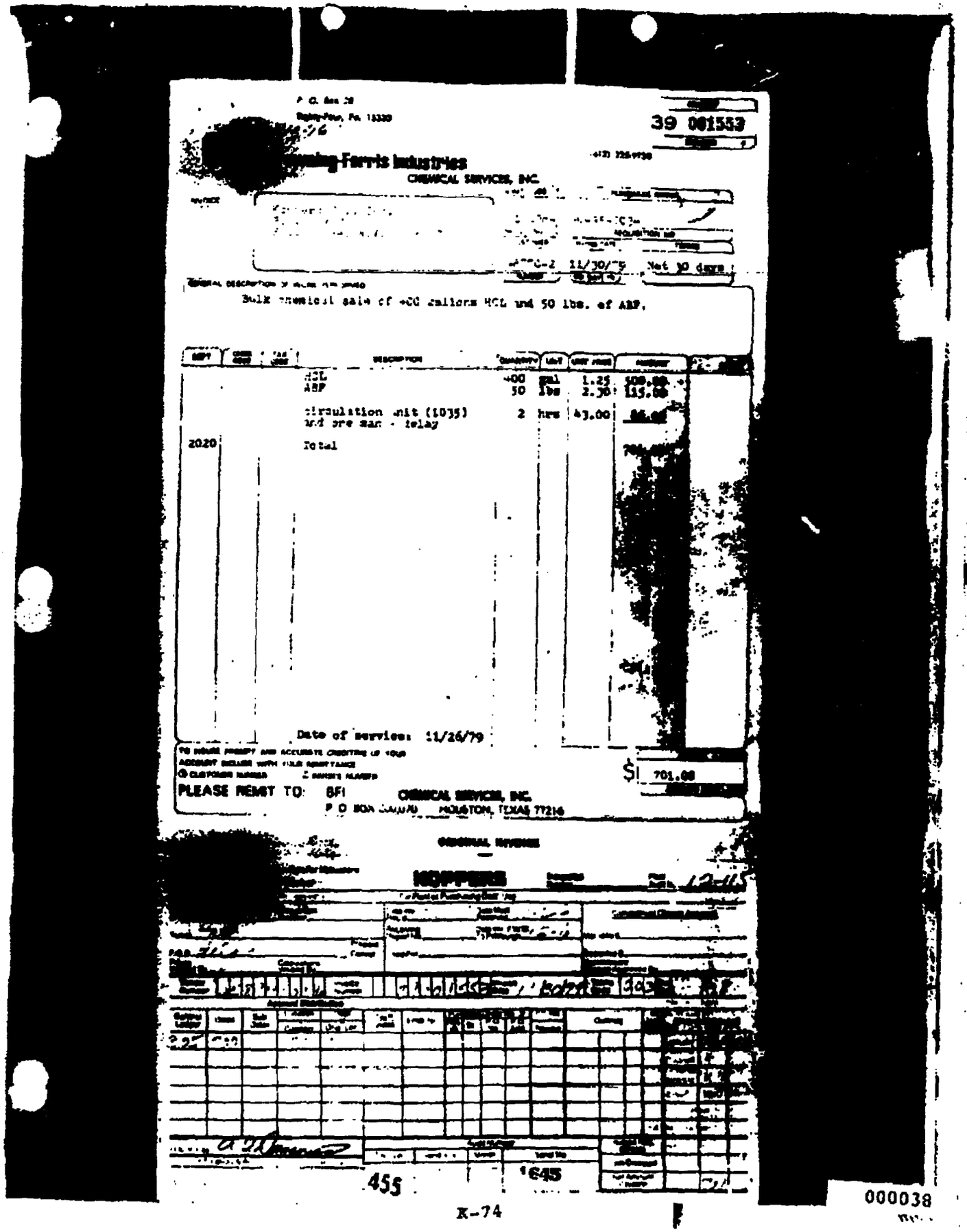
Sample #	Coordinates X	Coordinates Y	Concentration Mg/Kg
1	81	171	13500
2	71	171	29
3	71	161	500
4	71	151	5450
5	71	141	5560
6	71	131	8760
7	71	121	4870
8	71	111	92
9	71	101	20
10	81	181	16
11	71	181	7
12	61	181	9
13	61	171	95
14	61	161	175
15	61	151	18
16	61	141	229
17	61	131	88
18	61	121	6
19	61	111	3
20	61	101	2.5
21	61	91	5.2
37	81	95	857
38	91	96	1130
39	101	97	17
40	111	98	3.5
41	121	98	3.1
42	131	99	3.2
43	141	100	2.4
44	151	100	1.8
45	161	101	171
46	71	84	3
47	81	85	3.6
48	91	86	6.1
49	121	87	3.2
50	131	88	1.5
51	141	89	2.3
52	151	90	1.7
53	161	91	1.9
54	171	92	1.2

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	1400
K	117.5	161	N/A
L	92.5	161	N/A
M	67.5	161	4720
N	155	143	4280
O	130	143	3000
P	105	143	N/A
Q	80	143	N/A
R	142.5	125	1712
S	117.5	125	522
T	92.5	125	123
U	67.5	125	26550
V	155	107	317
W	130	107	3385
X	105	107	N/A
Y	80	107	N/A
Z	80	179	21

N/A = Not Available

TOLS002206

BZTO104(e)039027



P. O. Box 28
Bigley-Four, Pa. 15330

39 001553

[redacted]-Ferris Industries
CHEMICAL SERVICES, INC.

(412) 225-9730

INVOICE

[illegible]

[illegible] 11/30/79 Net 30 days

GENERAL DESCRIPTION OF INCLUDE FOR SERVICE

Bulk chemical sale of 400 gallons HCL and 50 lbs. of ABF.

DEPT	CODE CODE	TAX CODE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
			HCL	400	gal	1.25	500.00
			ABF	50	lbs	2.30	115.00
			circulation unit (1035) and one man - delay	2	hrs	43.00	86.00
2020			Total				701.00

Date of service: 11/26/79

TO INSURE PROMPT AND ACCURATE CREDITING OF YOUR ACCOUNT INCLUDE WITH YOUR REMITTANCE
① CUSTOMER NUMBER ② INVOICE NUMBER

$ 701.00

PLEASE REMIT TO: BFI CHEMICAL SERVICES, INC.
P O BOX [illegible] HOUSTON, TEXAS 77216

ORIGINAL INVOICE

HOPPERS

[illegible]

455

1645

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TOLS002207

BZTO104(e)039028

TABLE IVC

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Four Foot Contour Data

Core #	Coordinates X	Coordinates Y	Concentration Mg/Kg
J	142.5	161	3.6
K	117.5	161	10.5
L	92.5	161	7200
M	67.5	161	22
N	155	143	238
O	130	143	23
P	105	143	15
Q	80	143	2205
R	142.5	125	50
S	117.5	125	184
T	92.5	125	534
U	67.5	125	55
V	155	107	380
W	130	107	8.1
X	105	107	1.3
Y	80	107	598
Z	80	179	2

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TOLS002208

BZTO104(e)039029

TABLE IYF

TIME OIL CO. - PORTLAND, OREGON
PENTACHLOROPHENOL IN SOIL

Prelimfnary Surface Composites

Area	PCP (mg/kg)
A	660
D	860
G	17

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TOLS002209

BZTO104(e)039030

The scale on the mylar prints is such that the contours are superimposable on Figure 1 (site plan). This allows for facile comparison of PCP concentration profiles at depth with surface features of the facility. A reference point on Figures 1 and 2(a-e) is located at (76,166) for ease of alignment.

Conclusions

As seen in Tables IVA-E, PCP concentrations range from 1 ppm to 26,550 ppm. Two foci of contamination are seen at the surface. One, located at coordinates (83,168) in the northwest corner of the containment area, is consistent with reported spillage at this corner of the warehouse. A second focus occurs just outside the containment wall to the west at coordinates (65,125). This site is consistent with reported minor spills during truck loading procedures at this site. Additional minor contamination sites occur at the surface in various positions throughout the sample area; however, no prominent concentration peaks are evident. This may be due, in part, to the partial excavation mentioned previously or to vehicle traffic or other activity in this area.

Additional contours at depth indicate penetration of PCP to the saturated zone at the northwest focus. No evidence of penetration of the "loading area" focus below 2 feet was observed. Note that the results of the 2-foot contouring fail to demonstrate a continuation of the foci found at the surface. This is due, in part, to the excavation which removed the 2-foot material and to the definition of surface samples as surface material regardless of relationship to elevation (i.e. surface samples are not equivalent to "Ø foot" samples). This phenomenon is indicated by the lack of sample sites on the 2-foot contour at boring sites L, M, Q, Y and Z. The lack of high PCP concentrations at boring site U, 2-foot contour, implies that no significant penetration occurred at this site and that PCP contamination at this site is restricted to narrowly distributed but high concentration surface contamination.

Contours at 4, 7 and 12 feet indicate penetration to the groundwater (encountered between 7 and 12 feet) with appreciable attenuation of PCP concentrations with increasing depth. The maximum concentration at 12 feet is 2030 ppm located at boring "L". Note that no samples were analyzed at boring sites "J" and "N" at 7- or 12-foot depths, since concentrations above these depths indicated that concentrations near zero could be expected. No sample was obtained at "U" due to loss of sample when groundwater was encountered.

TOLS002210

BZTO104(e)039031

The slight tendency of the PCP plume to tail off to the south implies that groundwater flux may be diffusing the plume in this direction. This conclusion can only be substantiated by hydrogeologic evaluations of the site, however.

The contaminant plume may be restricted at the surface by the presence of the warehouse foundation. This structure could be expected to prevent diffusion of the PCP plume to the north by presenting a physical barrier to contaminant migration. No sampling was performed underneath the warehouse and this study cannot conclude that migration has occurred beyond the foundation base. Identification of concentrations of PCP beneath the building on contour plots is a function of the contouring program and may not be indicative of actual plume morphology in this area.

Summary

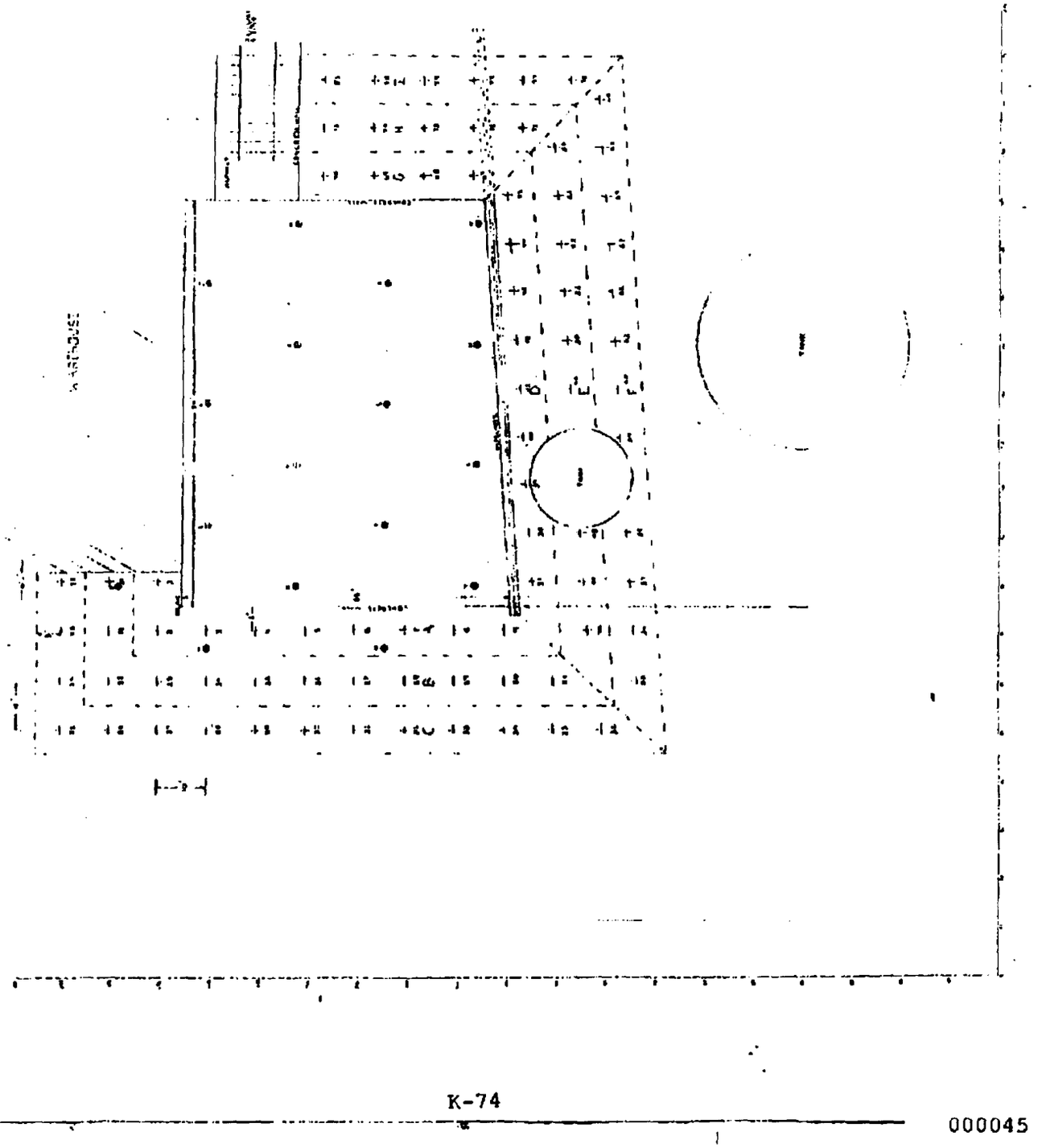
Significant PCP concentrations were detected in soil at Time Oil Co.'s north Portland operation. Contamination was pronounced at two focal sites, one at the northwest corner of the containment area and one at the west side of the containment area. Surface concentrations ranged from 1.2 mg/kg to 26,500 mg/kg. Sampling at depth indicated significant PCP concentrations at the northwest focus descending to the saturated zone and approximately 8-12 feet. Concentrations at 12 feet ranged from 1.0 mg/kg to 2,030 mg/kg. Analytical data from surface, 2-, 4- 7- and 12-foot samples were contoured and plotted and may be related to an area plan drawing of the same scale.

TOLS002211

BZTO104(e)039032

TOLS002212

FIGURE 1



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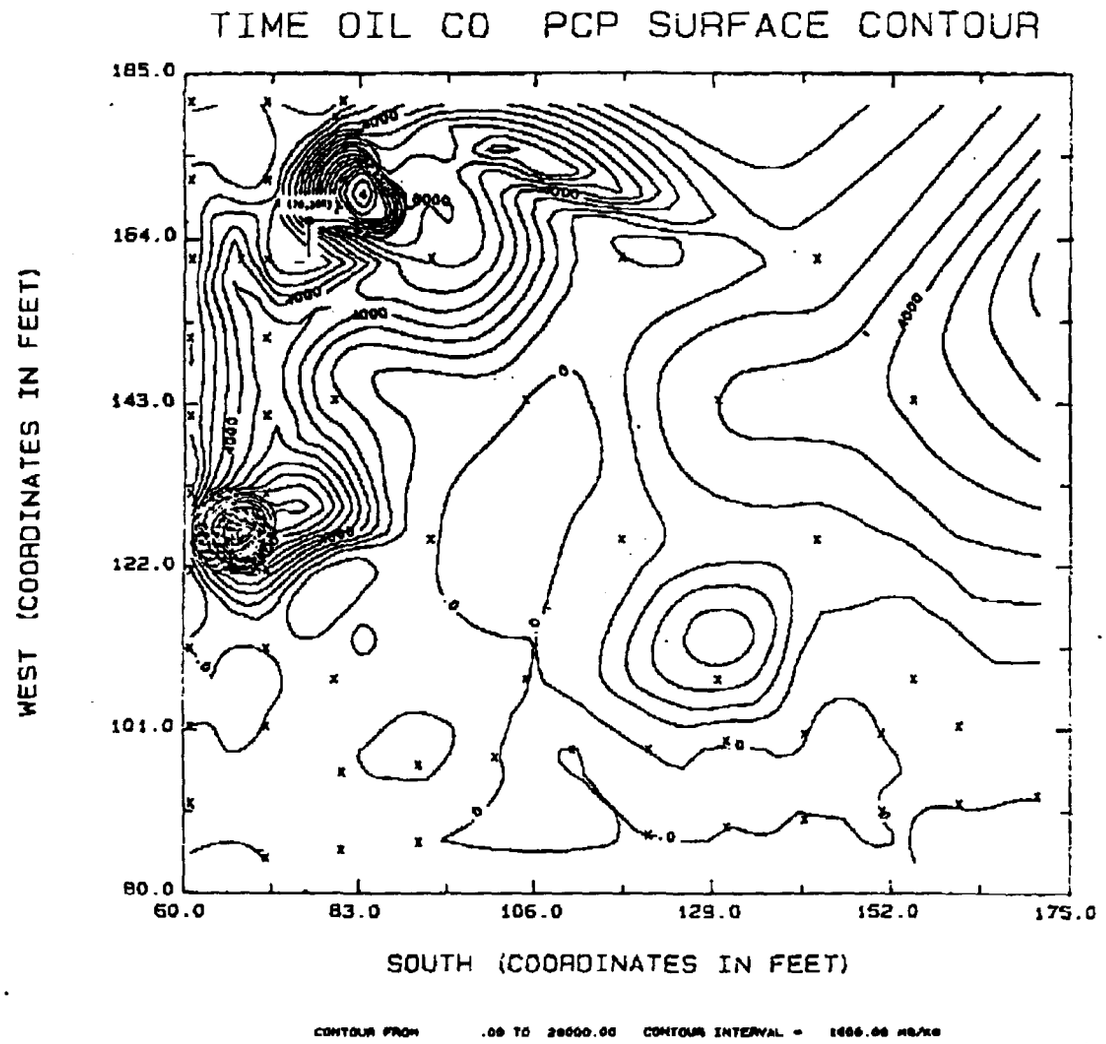
BZTO104(e)039033

BZTO104(e)039034

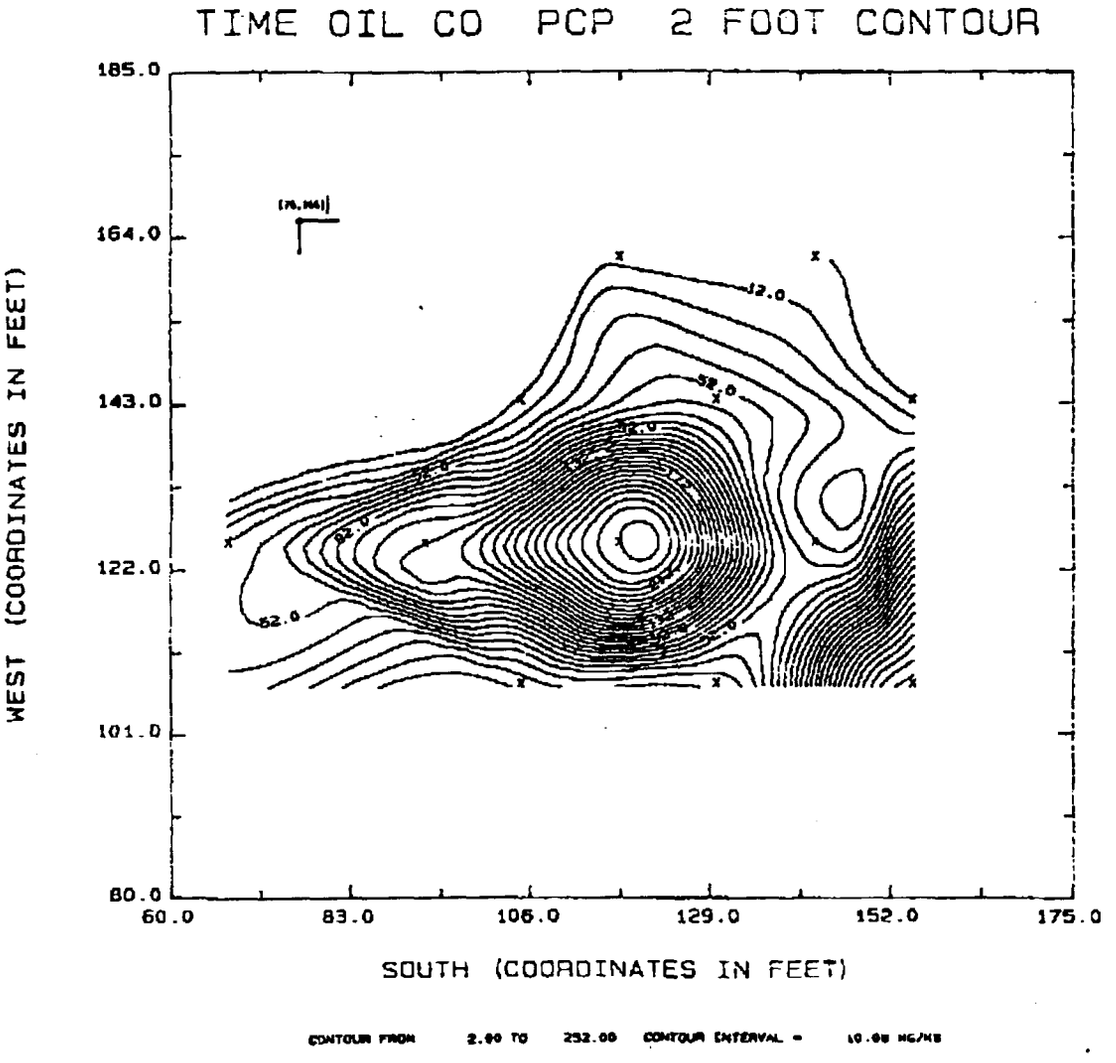
FIGURE 2A:



TOLS002213

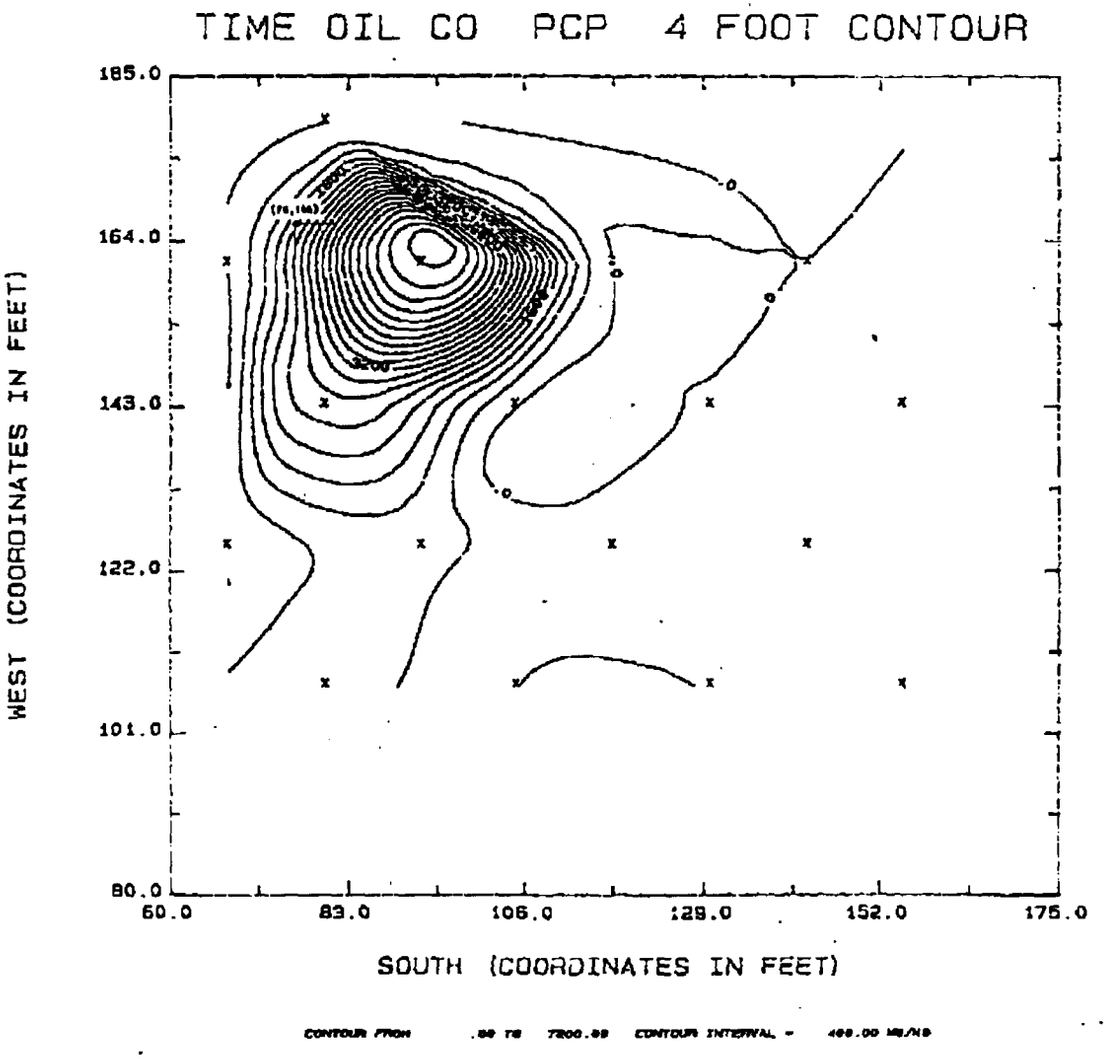
BZTO104(e)039035

FIGURE 2B



K-74

FIGURE 2C


TIME OIL CO PCP 4 FOOT CONTOUR
185.0
164.0
143.0
122.0
101.0
80.0
60.0
83.0
106.0
129.0
152.0
175.0
WEST (COORDINATES IN FEET)
SOUTH (COORDINATES IN FEET)
CONTOUR FROM .00 TO 7200.00 CONTOUR INTERVAL = 400.00 MG/KG

BZTO104(e)039037

FIGURE 2 D

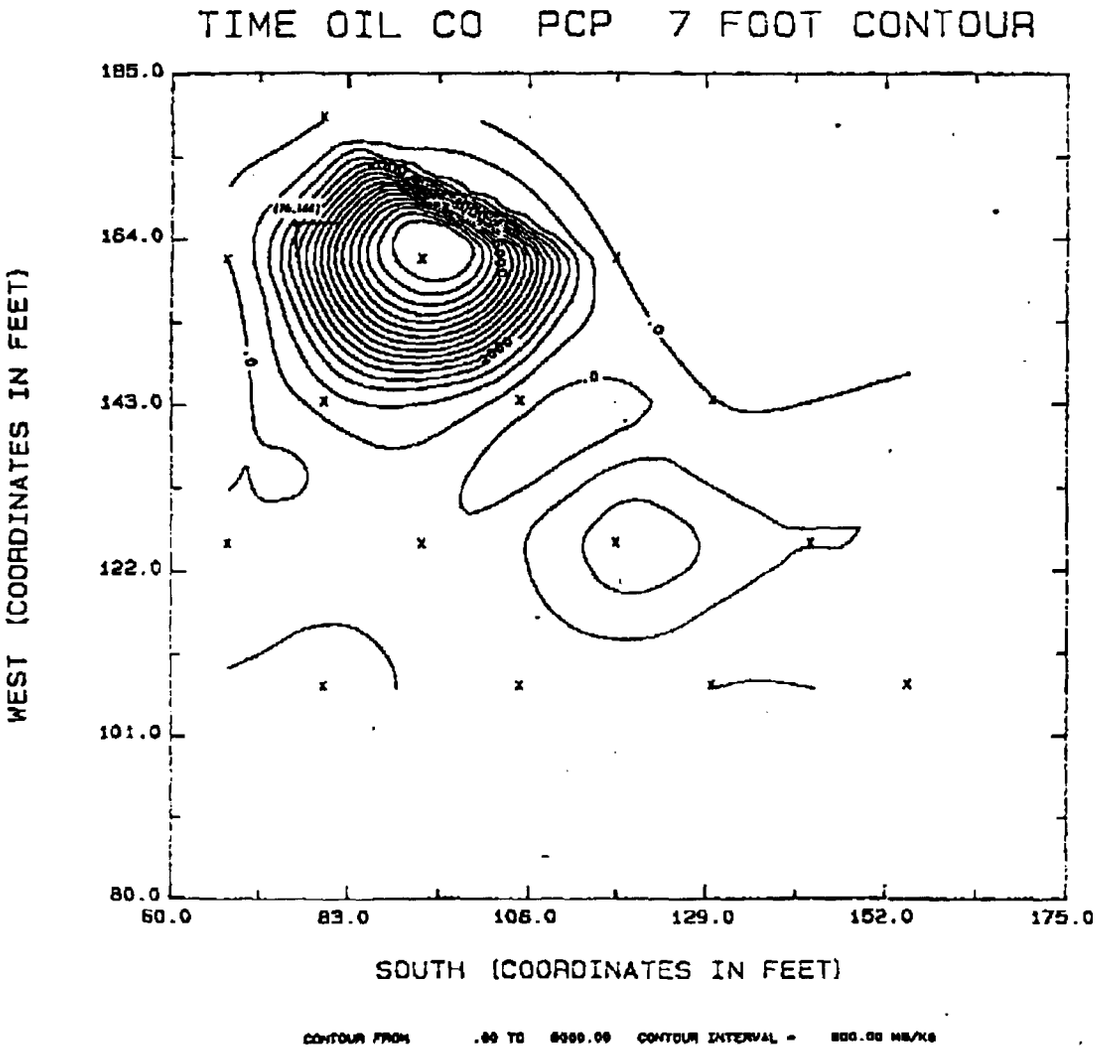
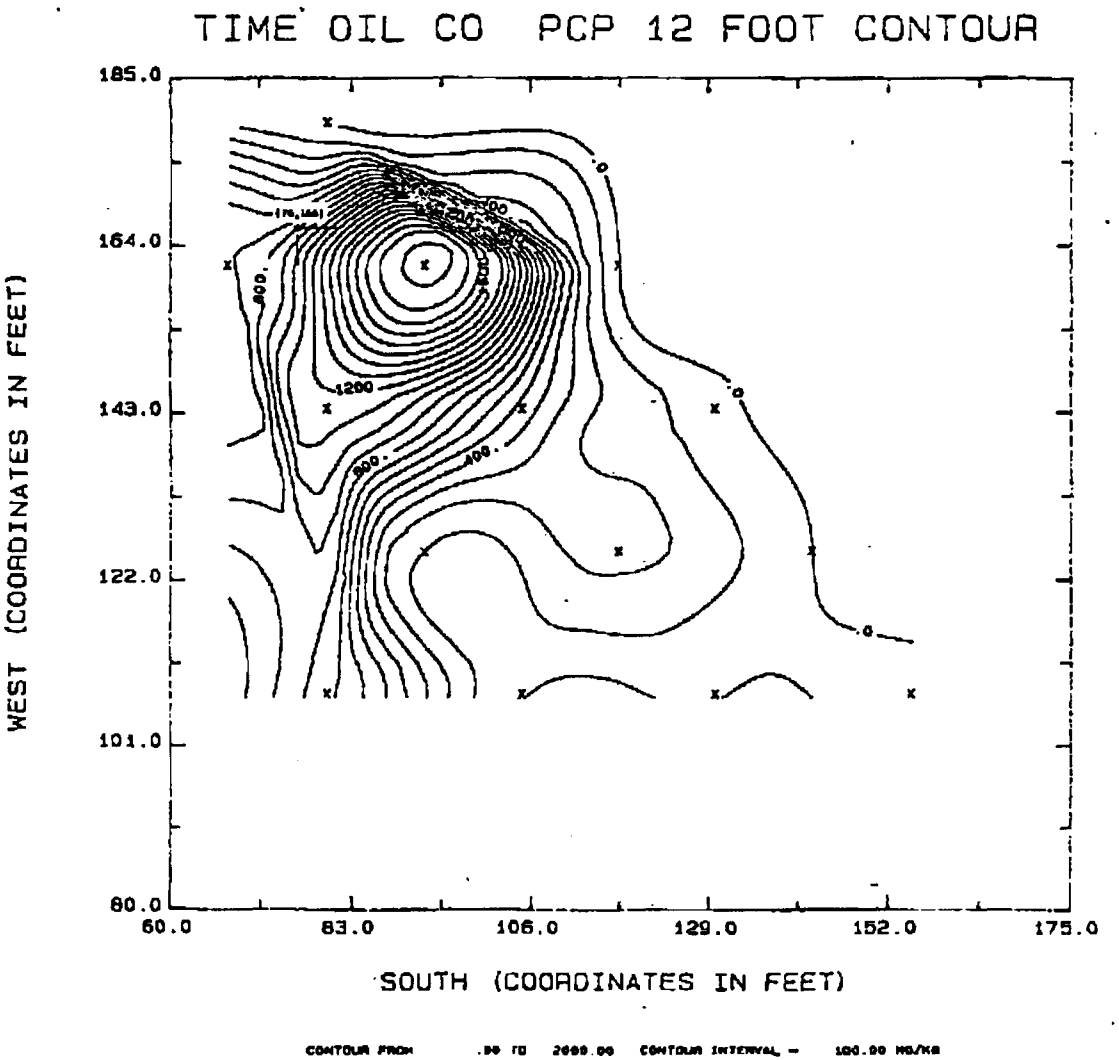


FIGURE 2E



K-74

RLC' T.O.C. PORTLAND 5/16/85

CHEM-SECURITY SYSTEMS, IN **DISPOSAL REQUEST**

REFERENCE: E13588
WASTE PROFILE SHEET NO.

SUBJECT:

WASTE STREAM NAME: PCP contaminated soil

PHYSICAL STATE
LIQUID ☐ SOLID ☒ SEMISOLID ☐

1242
EPA WASTE CODE

GENERATOR NAME: TIME OIL CO. ORD009597543
EPA GENERATOR I.D. NUMBER

FACILITY ADDRESS	MAILING ADDRESS
Time Oil Co.	Same
12005 N. Burgard Rd.	
Portland, Or	

GENERATOR CONTACT PERSON NAME: John P. Denham Tel. No. 206 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards NOW 0 ANNUAL

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4

No free liquid allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie
NAME (PRINT)
J Craig McKenzie
SIGNATURE
4-29-05
DATE

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
On May 14, 1985
By Edward A. L. Chiang
Solid Waste Division
Hazardous Waste Operations

RE: HW4.10 T

COMMENTS:

K-74

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TOLS002218

BZTO104(e)039039

CONTRACT BOND

Bond No. H 34156

KNOW ALL MEN BY THESE PRESENTS, That we, NORTHWEST VACUUM TRUCK SERVICE, INC.

5555 NORTH CHANNEL - BLDG. 43 - PORTLAND, OREGON 97217

called the Principal, and HERITAGE INSURANCE COMPANY OF AMERICA, A ILLINOIS corporation, called the Surety, are held and firmly bound unto TIME OIL CO.

called the owner in the sum of FIFTY THREE THOUSAND AND NO/100THS ---------- Dollars ($ 53,000.00**), for the payment whereof said Principal and Surety bind themselves firmly by these presents.

WHEREAS, the Principal has, by written Agreement, dated MARCH 12, , 19 85, entered into a Contract with the Owner for REMOVAL OF EARTHEN MATERIAL OWNED BY OWNER FROM ITS PRESENT LOCATION, LOAD IT INTO SUITABLE TRANSPORTATION VEHICLES AND TRANSPORT IT TO A DISPOSAL FACILITY APPROVED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY.

a copy of which is by reference made a part hereof;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That if the Principal shall faithfully perform the Contract, and indemnify and save harmless the Owner from all loss, cost or damage which Owner may suffer by reason of any lien arising out of claim for labor or materials utilized in the construction under said Contract, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 12TH day of MARCH, 19 85.

NORTHWEST VACUUM TRUCK SERVICE, INC.
Principal

By: S M Steel

HERITAGE INSURANCE COMPANY OF AMERICA

By: J.C. Baumann
J.C. BAUMANN
Attorney-in-fact

ENCL. 6

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TOLS002219

BZTO104(e)039040

HERITAGE INSURANCE COMPANY OF AMERICA

LINCOLNWOOD, ILLINOIS

Power of Attorney

PRINCIPAL NORTHWEST VACUUM TRUCK SERVICE, INC. EFFECTIVE DATE MARCH 12, 1985

DBA AMOUNT OF BOND $ 53,000.00

POWER NO. H 34156

KNOW ALL MEN BY THESE PRESENTS: That the Heritage Insurance Company, a Corporation in the State of Illinois, having its principal office in Lincolnwood, Illinois, pursuant to the following resolution, adopted by the Board of Directors of the said Company on the 9th day of March, 1979, to wit:

"The President, or any Vice-President, or other officer designated by the Board of Executive Committee shall have authority, severally, to make, execute and deliver a power of attorney constituting as Attorney-in-Fact such persons, firms or corporations as such officers may select from time to time."

does hereby make, constitute and appoint J.T. Kohoutek, C.J. Huffman and/or J.C. Baumens of Seattle in the State of Washington, its true and lawful attorney(s)-in-fact, with full power and authority hereby conferred in its name, place and stead, to sign, execute, acknowledge and deliver in its behalf, and its act and deed, as follows:

The obligation of the Company shall not exceed the sum of five hundred thousand ($500,000.00) dollars.

and to bind Heritage Insurance Company thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of the Heritage Insurance Company, and all the acts of said Attorney(s) pursuant to the authority herein given, are hereby ratified and confirmed.

IN WITNESS WHEREOF, the Heritage Insurance Company has caused these presents to be signed by its President and/or its Vice-President, and its Corporate Seal to be hereto affixed.

SEAL

HERITAGE INSURANCE COMPANY OF AMERICA

Vincent M. Giacinto, President

State of Illinois)
County of Cook) SS:

On this 9th day of March, 1979, before the subscriber, a Notary Public of the State of Illinois in and for the County of Cook duly commissioned and qualified, came V. M. Giacinto of the Heritage Insurance Company, to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation, and that the resolution of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my official seal at Lincolnwood, Illinois, the day and year above written.

NOTARY PUBLIC SEAL

Joseph D. Udoni
Notary Public

JOSEPH D. UDONI
NOTARY PUBLIC, State of Illinois
Qualified in State of Illinois
Commission Expires March 4, 1984

State of Illinois)
County of Cook) SS:

CERTIFICATE

I, the undersigned, Secretary of HERITAGE INSURANCE CO. a stock corporation of the State of Illinois, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Resolution of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, at Lincolnwood, Illinois. Dated this 12TH day of MARCH A.D., 19 85

SEAL

Carol A. Faith
Secretary

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TOLS002220

BZTO104(e)039041

CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269 • Portland, Oregon 97207-1269 • (503) 223-1912
CSSI

May 28, 1985

Neil E. Wallis
Time Oil Company
2737 W. Commodore Way
Seattle, Washington 98199

Dear Mr. Wallis:

Enclosed are two copies of our Waste Transportation and Disposal Agreement. Please sign both copies and return both copies to me at the above address. I will then forward your fully-executed copy. We appreciate your business and look forward to serving your hazardous waste needs.

Please feel free to call if you have any questions.

Sincerely,

CHEM-SECURITY SYSTEMS, INC.

Joyce Johnson

Joyce Johnson
Inside Sales Representative

JJ:lh
Enclosures

Encl. 9

WASTE TRANSPORTATION AND DISPOSAL AGREEMENT

On this 24th day of May, 19 84, the parties, Time Oil Co., a Washington corporation with its principal offices at 2737 W. Commodore Way, Seattle, WA 98199 (hereinafter called "Generator"), and CHEM-SECURITY SYSTEMS, INC., a Washington corporation with its principal offices at 10602 N. E. 38th Place, Kirkland, Washington 98033 (hereinafter called "Disposer"), have agreed as follows:

1. WASTE PRODUCTS. The term "Waste Products" refers to those solid, liquid, semi-solid, or contained gaseous materials which are generally described in, and which have physical, chemical, biological or radioactive constituents, characteristics and properties within the specifications stated in, the Supplemental Information Document. The term "Waste Products" also includes containers described in the Supplemental Information Document, if they are to be supplied by the Generator. The term "unit of Waste Products" refers to a single whole container of Waste Products (such as a barrel, drum, box, or tanker load).

   Materials and containers shall be considered nonconforming: (i) if they are not in accordance with the warranties, descriptions, specifications or limitations stated in this agreement and the Supplemental Information Document, or (ii) if they have material constituents or components, not specifically identified in the Supplemental Information Document, (a) which materially increase the nature or extent of the hazard and risk undertaken by CSSI in agreeing to handle, load, transport, store, treat or dispose of the Waste Products, or (b) for whose storage, treatment or disposal the Disposal Facility is not designed or permitted.

2. SUPPLEMENTAL INFORMATION DOCUMENT. Where "the Supplemental Information Document" is referred to in this Agreement, the parties understand that such term refers to each single entire document, in that form specified in Exhibit A, (which exhibit is attached hereto and made part hereof), containing the information therein required and executed by the Generator and Disposer. Each Supplemental Information Document shall be numbered in chronological sequence. A Supplemental Information Document, prepared and executed as herein required, shall be considered incorporated into this Agreement and part hereof as of the date and time of Document execution. It is the intention of the parties that each Supplemental Information Document, when incorporated into this Agreement, constitutes a separate undertaking, individually enforceable.

Form No. WMI-55-B (Rev. 10/10/84)
c 1980, WASTE MANAGEMENT, INC.

TOLS002222

BZTO104(e)039043

A Supplemental Information Document, or any amendment thereto, shall be executed, on behalf of Disposer or Generator, only by such persons appointed as authorized agents of the parties for such purposes, which persons are identified, by name or specific position title, in Exhibit B. attached hereto and made part hereof. Either party may, by notice to the other, amend its list of authorized agents, which shall constitute an amendment to Exhibit B at the time such notice is received.

At any time during the term of a Supplemental Information Document, upon the written request of Disposer, the Generator shall: (a) supply an updated written description of the Waste Products or a written certification that the description previously supplied remains true and accurate; or, (b) supply a written certification that a particular load of Waste Products delivered to Disposer constituted a representative sample of the Waste Products described in the Supplemental Information Document; or, (c) supply a representative sample of the Waste Products together with a written certification of the sample's representativeness; or, (d) allow Disposer access to the Waste Products at Generator's facility for the purpose of obtaining one or more representative samples. Forms to be used in providing written Waste Products descriptions, recertifications of previous descriptions, or certifications of representative Waste Products samples shall be supplied by Disposer.

3. TENDER OF DELIVERY. Generator shall tender delivery of the Waste Products to Disposer at those times and places, in those quantities, and in the manner specified in the Supplemental Information Document. Generator shall, at the same time and place, tender to Disposer those completed documents, shipping papers or manifests as are required, for lawful transfer of the Waste Products to Disposer, by valid and applicable statutes, ordinances, orders, rules or regulations of the federal, state, or local governments, including, but not limited to, the Hazardous Materials Transportation Act, the Toxic Substances Control Act and the Resource Conservation and Recovery Act of 1976.

Tender of delivery shall be considered non-conforming if not in accordance with this Section and the specifications of the Supplemental Information Document, or if not preceded by such notification as required by Section 16 (f).

4. DISPOSER RIGHT TO INSPECTION UPON TENDER. Disposer shall have the right, but not the obligation, to inspect, sample, analyze, or test any tendered Waste Products before accepting such products. Failure or refusal of the Generator to provide Disposer with access to any tendered or delivered Waste Products, prior to Disposer's acceptance, shall be deemed a non-conforming tender or delivery of all of the Waste Products tendered or delivered at that time and place. Disposer's

exercise of, or failure to exercise, its right hereunder shall not operate to relieve Generator of its responsibility or liability under this Agreement.

5. DISPOSER RIGHTS ON IMPROPER DELIVERY. If the Waste Products, any unit thereof, or the tender of delivery fail in any respect to conform to this Agreement, including the requirements of the Supplemental Information Document, Disposer may, at its exclusive option, (i) reject all Waste Products tendered; or, (ii) accept all Waste Products tendered; or, (iii) accept any unit or units of Waste Products and reject the rest. Provided, however, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other tendered container, would be visibly apparent, Disposer's option shall be limited to accepting or rejecting the particular non-conforming unit.

Rejection of the Waste Products must be within a reasonable time after their tender or delivery, not to exceed twenty-four (24) hours. In rejecting any Waste Products, Disposer shall orally notify the Generator of the manner in which the Waste Products or the tender of delivery are non-conforming, such notice to be followed by written notice within five (5) business days.

6. ACCEPTANCE OF WASTE PRODUCTS. Disposer shall accept any Waste Products which are in conformance with, and which have been tendered in conformance with, this Agreement, including the Supplemental Information Document, and may accept, as provided in Section 5, non-conforming Waste Products. If transportation is to be provided by Disposer, Disposer shall evidence its acceptance by removing such Waste Products from the place of tender. If transportation to the Storage or Disposal Facility is to be provided by Generator, Disposer shall evidence its acceptance by written notice to the Generator, such as through signing shipping papers or the manifest tendered with the Waste Products.

Failure of Disposer to reject the Waste Products, or any unit thereof, as provided in Section 5 shall be deemed acceptance of all tendered Waste Products not so rejected.

Upon acceptance of the Waste Products Disposer shall be precluded from rejecting those Waste Products accepted and, if acceptance of any unit of Waste Products was made with actual knowledge of a non-conformity, Disposer shall be precluded from revoking its acceptance of such unit because of such non-conformity. Acceptance of the Waste Products, or any unit thereof, does not, however, impair, or operate as a waiver of, any right or remedy available to Disposer, including revocation of acceptance, in the event the Waste Products or

their tender are later discovered to be non-conforming.

7. REVOCATION OF ACCEPTANCE. Disposer may, at any time before the condition of the Waste Products has been materially changed (such as by treatment, processing or disposal), revoke its acceptance of any unit or units of Waste Products discovered to be non-conforming.

Discovery by Disposer that any unit of the Waste Products is non-conforming for any reason shall be considered discovery that all units of such Waste Products, accepted at the same time as the non-conforming unit, are non-conforming for the same reasons. Provided, if a particular unit of Waste Products is determined to be non-conforming solely because of a patent non-conformity in the container, its labeling or marking, which non-conformity, if present in any other accepted container, would be visibly apparent, Disposer's option shall be limited to revoking acceptance of the particular non-conforming unit.

Revocation must occur within a reasonable time after Disposer actually discovers or should have discovered the non-conformity. In revoking its acceptance of any Waste Products, Disposer shall notify the Generator of the manner in which the Waste Products are non-conforming.

7a GENERATOR'S OPTIONS IN EVENT OF REJECTION OF REVOCATION OF ACCEPTANCE.
In the event Disposer rejects or revokes its acceptance of Waste Products, and at such time the Waste Products are in Disposer's possession or control, Generator may, within five (5) business days after receipt of notice, notify Disposer of Generator's intent to test the Waste Products, to verify the alleged non-conformity, or to correct any improper containerization, marking or labeling. Generator may, if lawfully permitted, direct Disposer to arrange for such testing or corrections, pursuant to Generator's instructions and at Generator's cost. All testing or corrections must be completed within twenty-one (21) days of Generator's receipt of the rejection or revocation notice. During the period of any testing or corrections, the duty of Disposer with respect to the Waste Products shall be that of a bailee for hire.

Upon mutual agreement of the parties that the Waste Products or any unit are not conforming for the reasons specified in Disposer's notice, the notice of rejection or revocation as to such Waste Products or unit shall be deemed null and void as of the time of its original issuance.

8. DISPOSER OPTIONS AS TO RIGHTFULLY REJECTED OR REVOKED WASTE PRODUCTS.
If Disposer rejects or revokes its acceptance of all or any units of Waste Products, and at such time the Waste Products

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are in Disposer's possession or control, Disposer and Generator shall, in good faith, attempt to amend the Supplemental Information Document to provide for handling of the non-conforming materials. If the parties cannot, within a reasonable time after rejection or revocation (including any time provided for correction or testing in Section 7a), agree on necessary amendments, Generator shall make prompt arrangements for the removal of the non-conforming materials from the Storage or Disposal Facility to another lawful place of disposition.

Generator agrees to pay Disposer its reasonable expenses and charges for handling, loading, stowing, preparing for transport, transporting, storing and caring for any Waste Products returned to Generator pursuant to this Section.

9. LOADING AND TRANSPORTATION OF WASTE PRODUCTS. If the Supplemental Information Document specifies that Disposer is to provide loading or transportation services, Disposer shall load or stow and transport Waste Products to the Storage or Disposal Facility herein specified. In the aforesaid event, as between the parties, selection of transportation vehicles or vessels, times of travel and routes shall be solely determined by Disposer unless otherwise specified in the Supplemental Information Document. In selecting transportation vehicles or vessels compatible with the Waste Products, Disposer shall rely on Generator's description of the Waste Products.

10. STORAGE AND DISPOSAL. Disposer shall dispose of the Waste Products at the particular facility or facilities, referred to herein as "the Disposal Facility", identified in the Supplemental Information Document. Disposer shall utilize those general storage, treatment, and disposal methods specified in the Supplemental Information Document; however, as between the parties, Disposer shall be solely responsible for determining the specific times and techniques for storage, processing, treatment and disposal of the Waste Products. In determining such techniques, Disposer shall rely on Generator's description of the Waste Products.

If the Supplemental Information Document specifies that Disposer is to provide interim storage of the Waste Products at a "Storage Facility", prior to transportation of the Waste Products to the Disposal Facility, Disposer shall store such Waste Products at such Storage Facility for a period not to exceed ninety (90) days, unless some other period is specified in the Supplemental Information Document.

Disposer may use, distribute or sell any of the Waste Products, or any component or residue thereof, unless otherwise specified in the Supplemental Information Document.

11. TITLE TO WASTE PRODUCTS. At the time Disposer accepts the Waste Products and takes possession and control thereover, title, risk of loss and all other incidents of ownership to the Waste Products shall be transferred from the Generator and vested in Disposer.

A justified revocation of acceptance by Disposer revests title to the Generator, including risk of loss and all other incidents of ownership, at the time such revocation of acceptance is communicated to the Generator.

12. TERM. The term of this Agreement shall be as specified in the Supplemental Information Document, to commence on the date of execution of such Document, as provided in Section 2.

13. RIGHT TO TERMINATE. Either party may terminate this Agreement if the other party (i) has been adjudicated a bankrupt, or (ii) has filed a voluntary petition in bankruptcy, or (iii) has made an assignment for the benefit of creditors, or (iv) a receiver has been appointed for such party. Termination pursuant to this paragraph shall be effective for performance remaining under any and all Supplemental Information Documents.

The Generator may terminate this Agreement, with respect to performance remaining under an identified Supplemental Information Document, if, at any time after execution of such document, the specified Storge or Disposal Facility fails to obtain, or maintain as valid, any license, permit or approval required to allow lawful acceptance and storage, treatment, processing and disposal of the Waste Products at such Facility.

Termination as provided above, or as allowed by Section 22, shall be by notice from the terminating party to the other party, specifying the reason therefor and the effective date thereof, which shall be not less than five (5) days after the date of the notice.

Either party may terminate this Agreement without cause, with respect to performance remaining under an identified Supplemental Information Document, by notice from the terminating party to the other party specifying the effective date of termination which shall be not less than thirty (30) days after receipt of the notice by the non-terminating party.

The right of terminating hereunder is in addition to, and not in lieu of, any right of a party to cancel this Agreement for breach of its terms or conditions.

14. COMPENSATION. For all of the Waste Products transported, stored and disposed of by Disposer, the Generator shall pay Disposer a fee, determined in accordance with the Supplemental Information Document. Disposer shall measure the Waste Products, for the purpose of computing fees, at the time and

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place, and in the manner, specified in the Supplemental Information Document. Disposer determinations so made shall govern unless proved to be in error by Generator.

Fees specified in the Supplemental Information Document shall not be altered during the term of this Agreement except as follows:

(a) Disposer may, on the first day of any calendar quarter, with thirty (30) days written notice to Generator, increase or decrease fees specified in the Supplemental Information Document. If any Waste Products, to which such fee alterations apply, are delivered to Disposer more than thirty days after Generator's receipt of this notice, Generator shall be deemed to have accepted such fee alterations and the Supplemental Information Document shall be deemed amended in such respect.

(b) If legislation or regulations, first implemented after date of execution of the Supplemental Information Document, impose taxes, tariffs, fees, surcharges or other charges upon the transportation, storage, processing, treatment or disposal of the Waste Products, the Generator shall reimburse the Disposer for such charges upon the Disposer's submission of an invoice stating that such charges have been levied or paid.

The Disposer shall submit statements to the Generator which shall be paid by the Generator not later than thirty (30) days from date of receipt. Disposer shall retain copies of such statements for a period of at least five (5) years as a record of disposal.

15. DISPOSER WARRANTIES. Disposer warrants and represents to the Generator that:

(a) Disposer understands the currently known hazards and risks which are presented to human beings, property and the environment in the handling, transportation, storage, treatment, processing and disposal of the Waste Products as they have been described by the Generator in the Supplemental Information Document; and,

(b) Disposer is engaged in the business of transportation, storage and disposal of industrial and other wastes, and has developed the requisite expertise for the handling, transportation, storage, treatment, processing, and diposal of such; and,

(c) Disposer will handle, load, stow, transport, store, treat, process, and dispose of the Waste Products in a safe and workmanlike manner and in full compliance with all valid and applicable statutes, ordinances, orders,

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rules and regulations of the federal, state and local governments in whose jursidictions such activities are performed under this Agreement; and,

(d) Any and all vehicles or vessels, Waste Products containers and personnel to be provided by Disposer in the performance of this Agreement have obtained or will obtain all permits, licenses, certificates or approvals required to comply with valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments.

(e) The Storage or Disposal Facility (or Facilities) described in the Supplemental Information Document has been issued, as of the date of execution of such Document, all permits, licenses, certificates or approvals, required by valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in which such Facility is located, necessary to allow such Facility to accept and store, treat, process and dispose of the Waste Products as described by the Generator in such Document. Disposer shall provide Generator with reasonable advance notice if any such permit, license, certificate or approval is to expire and not be renewed during the term of a Supplemental Information Document, or becomes the subject of judicial or administrative action seeking revocation or suspension. Such notice shall also be provided if Disposer determines not to seek any necessary permit, license, certificate or approval which becomes required after execution of a Supplemental Information Document.

16. GENERATOR WARRANTIES. The Generator warrants and represents to Disposer that:

(a) The description of the Waste Products in the Supplemental Information Document is true and correct in all material respects, fairly advises Disposer of the hazards and risks known by the Generator to be incident to the handling, transportation, storage, treatment, processing and disposal of the Waste Products, and is otherwise in full compliance with all materials description requirements of valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdictions such Waste Products are to be handled, transported, stored, treated, processed or disposed; and,

(b) Waste Products tendered to Disposer will conform to the descriptions and specifications contained in the Supplemental Information Document; and,

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(c) If Generator receives information, during the term of any Supplemental Information Document, that Waste Products described in such Document, or some component of such Products, present or may present a hazard or risk to persons or the environment, which was not disclosed in the Supplemental Information Document, Generator shall promptly report such information to Disposer. Such information shall include, but not be limited to, any relevant notification of substantial risk required to be given by Generator pursuant to Section 8 (e) of the Toxic Substances Control Act;

(d) If any load of Waste Products, tendered to Disposer for transportation in a single transportation vehicle, contains a reportable quantity of one or more hazardous substances, as provided in Section 102 of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or regulations adopted thereunder, Generator will, prior to tendering such load to Disposer, provide the person in charge of the Disposer transport vehicle with written notice that the load contains a reportable quantity of such hazardous substance(s), identifying the known or estimated quantity of each such hazardous substance present.

(e) Generator will prepare the Waste Products for transportation and tender to Disposer in accordance with all valid and applicable statutes, ordinances, orders, rules and regulations of the federal, state and local governments in whose jurisdiction such Waste Products are to be tendered to Disposer pertaining to: (i) container specifications for any container not supplied by Disposer; and, (ii) marking and labeling of all containers.

(f) If regulations promulgated or revised under Section 3001 of the Resource Conservation and Recovery Act of 1976 (P. L. 94-580) identify the Waste Products as "hazardous waste," either by characteristics or listing, the Generator, prior to tendering any Waste Products to Disposer has filed or will file with the appropriate governmental agency the preliminary notification required by Section 3010(a) of the above Act, and provide Disposer with evidence thereof.

(g) The Generator has sole title to Waste Products which will be tendered to Disposer, and is under no legal restraint, statutory, regulatory, administrative or judicial, which prohibits the transfer of possession or title to such Waste Products to Disposer.

17. INDEMNIFICATION. Disposer agrees to indemnify and save harmless the Generator, its present and future officers or

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directors (or officials), employees and agents, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by Disposer, or any negligent or willful act or omission of Disposer, its employees or subcontractors in the performance of this Agreement.

The Generator agrees to indemnify and save harmless Disposer, its present and future officers, directors, employees, agents, subcontractors and assignees, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs and expenses incidental thereto, (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by the Generator, or any negligent or willful act or omission of Generator, its employees or agents in the performance of this Agreement.

18. INSURANCE. Disposer shall procure and maintain, at its expense, during the term of this Agreement, at least the following insurance:

	COVERAGE	LIMITS
(a)	Worker's Compensation	Statutory
(b)	Employer's Liability	$500,000 each occurence
(c)	Public Liability (bodily injury & property damage)	$15,000,000 combined single limit
(d)	Automobile Liability (bodily injury & property damage)	$15,000,000 combined single limit

Public Liability Insurance shall include coverage for completed operations and contractual liability under this Agreement with respect to sudden and accidental occurrences.

Each contract of insurance, and certificate of insurance, shall provide that said insurance shall not be cancelled or materially altered until at least ten (10) days after written notice is received by the Generator. Disposer agrees to furnish insurance with the above requirements, to the Generator before Disposer commences work hereunder.

In the event Disposer is required by law to obtain environmental impairment liability insurance for non-sudden and accidental occurrences at the Disposal Facility, Disposer shall furnish Generator with a copy of the certificate of insurance provided to the regulatory agency imposing the insurance requirement.

19. CONFIDENTIALITY. Disposer and Generator shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement, except as is necessary to perform this Agreement, (and then only on a confidential basis satisfactory to both parties), any information (including any technical information, experience or data) regarding either party's plans, programs, plants, processes, products, costs, equipment, operations or customers which may come within the knowledge of the parties, their officers or their employees in the performance of this Agreement, without in each instance securing the prior written consent of the other party.

Disposer shall also treat as confidential and shall not disclose to others, except as required by law, information relating to the chemical composition of the Waste Products or the quantity of Waste Products delivered to it by Generator.

Generator shall also treat as confidential and shall not disclose to others, except as required by law, this form of Agreement and the Supplemental Information Document.

Nothing above, however, shall prevent either Disposer or Generator from disclosing to others or using in any manner information which either party can show:

(a) Has been published and has become part of the public domain other than by acts, omissions or fault of Disposer or Generator or their employees; or

(b) Has been furnished or made known to Disposer or Generator by third parties (other than those acting directly or indirectly for or on behalf of Disposer or

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Generator) as a matter of legal right without restrictions on its disclosure; or

(c) Was in either party's possession prior to the disclosure thereof by Generator or Disposer to each other.

Provided, however, neither party shall release, or cause or allow the release of, information to the communications media, except as required by law, concerning the existence or terms of this Agreement or any Supplemental Information Document, including identification of the Generator of the Waste Products, identification of the Disposal Facility receiving the Waste Products, or the general description, characteristics or constituents of the Waste Products, without in each instance securing the prior written consent of the other party.

The foregoing obligations shall survive the termination or expiration of the Agreement.

20. WORK ON GENERATOR'S PREMISES. Generator agrees to provide Disposer, its employees and subcontractors a safe working environment for any work, in performance of this Agreement, which must be undertaken on premises owned or controlled by the Generator. While its employees or subcontractors are on Generator's premises, Disposer will maintain strict work discipline and effect its work in compliance with governmental laws or regulations pertaining to occupational safety and health. Disposer, its employees and subcontractors shall also comply with the Generator's safety procedures while on the Generator's premises, provided such procedures have been specified in the Supplemental Information Document or are attached thereto.

21. INSPECTIONS. The Generator shall have the right to inspect and obtain, at its expense, copies of all written licenses, permits or approvals, issued by any governmental entity or agency to Disposer or its subcontractors which are applicable to the performance of this Agreement and for which no claim of business confidentiality or trade secret is asserted; to inspect and test, at its own expense, transportation vehicles or vessels, containers or disposal facilities provided by Disposer; and to inspect the handling, loading, transportation, storage, treatment, processing or disposal operations conducted by Disposer in the performance of this Agreement. Such inspections are encouraged by Disposer, but shall not operate to relieve Disposer of its responsibility or liability under this Agreement.

22. EXCUSE OF PERFORMANCE. The performance of this Agreement, except for the payment of money for services already rendered, may be suspended by either party in the event the delivery or

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transportation of Waste Products by Generator, or transportation, storage, treatment, processing or disposal of Waste Products by Disposer are prevented by a cause or causes beyond the reasonable control of such party. Such causes shall include, but not be limited to, acts of God, acts of war, riot, fire, explosion, accident, flood, or sabotage; lack of adequate fuel, power, raw materials, labor or transportation facilities; governmental laws, regulations, requirements, orders or actions; breakage or failure of machinery or apparatus; national defense requirements; injunctions or restraining orders; labor trouble, strike, lockout or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgement).

The party asserting a right to suspend performance under this Section must, within a reasonable time after he has knowledge of the effective cause, notify the other party of the cause for suspension, the performance suspended, and the anticipated duration of suspension. Upon receipt of such notice advising of a material or indefinite suspension of performance, and if such suspension substantially impairs the value of this Agreement to him, a party may, within a reasonable time (not to exceed thirty days), terminate this Agreement as provided in Section 13. If such notice of termination is not provided, this Agreement will lapse with respect to any performance suspended hereunder.

The party asserting a right to suspend performance hereunder shall advise the other party when the suspending event has ended, and when performance will be resumed.

Provided, if title to Waste Products has been transferred to Disposer, Disposer may not suspend performance of this Agreement with respect to such Waste Products; however, if a performance-suspending event occurs after Disposer has taken title to Waste Products but before completion of performance, Disposer may delegate such performance to any other persons lawfully permitted to transport, store, treat or dispose of the Waste Products pursuant to Section 23. In the circumstances described above, the Generator hereby consents to any necessary delegations for which it receives written notice from Disposer.

23. DELEGATION AND ASSIGNMENT. Disposer may at any time, with the prior written consent of Generator, which consent shall not be unreasonably withheld, delegate, orally or in writing, the performance of the work, or any portion thereof, which is by this Agreement undertaken by Disposer. Any such delegation shall not operate to relieve Disposer of its responsibilities hereunder and, notwithstanding any such delegation, Disposer shall remain obligated to the Generator in these undertakings.

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Either party may, at any time, upon written notice to the other party, assign its rights under this Agreement.

24. INDEPENDENT CONTRACTOR. Disposer is and shall perform this Agreement as an independent contractor, and as such, shall have and maintain complete control over all of its employees, agents, and operations. Neither Disposer nor anyone employed by it shall be, represent, act, purport to act or be deemed to be the agent, representative, employee or servant of the Generator.

25. NOTICE. Any notice, communication or statement required or permitted to be given hereunder shall be in writing and deemed to have been sufficiently given when delivered in person or by registered or certified mail, postage prepaid, return receipt requested, to the address of the respective party below:

GENERATOR: Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

DISPOSER: CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1269
Portland, Oregon 97207-1269

Either party may, by notice to the other, change the addresses and names above given.

26. ENTIRE AGREEMENT. This Agreement represents the entire understanding and agreement between the parties hereto relating to the transportation, storage, treatment, processing and disposal of Waste Products and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. No terms, conditions, prior course of dealings, course of performance, usage of trade, understandings, purchase orders, or agreement purporting to modify, vary, supplement or explain any provision of this Agreement shall be effective unless in writing, signed by representatives of both parties authorized to amend this Agreement.

In no event shall the preprinted terms or conditions found on any Disposer or Generator purchase or work order be considered an amendment or modification of this Agreement, even if such documents are signed by representatives of both parties: such preprinted terms or conditions shall be considered null and of no effect.

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27. WAIVER. Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be so expressed in writing and signed by the party to be bound.

28. MISCELLANEOUS. The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State specified in the Supplemental Information Document.

All paragraph headings herein are for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular sections to which they refer.

In the event of a conflict between the terms or conditions of this Agreement and those of the Supplemental Information Document, the terms and conditions of the Supplimental Information Document shall control.

29. SEPARABILITY. If any Section, subsection, sentence or clause of this Agreement shall be adjudged illegal, invalid or unenforceable, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of the Agreement as a whole or of any Section, subsection, sentence or clause hereof not so adjudged.

30. The covenants and agreements contained in this Agreement shall apply to, inure to the benefit of and be binding upon the parties hereto and upon their respective heirs, executors, administrators, assigns and successors in interest.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

DATE: _____

Time Oil Company

By: _____

Title: _____

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

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(e) Manner of Tender (including notification to Disposer). Uniform hazardous waste manifest. No free liquid may be present in waste.

3. WORK RULES/PROCEDURES AT GENERATOR'S PREMISES. Any specific rules or procedures required by Generator for workers on its premises must be noted here, or attached hereto and initialed by both parties.

4. LOADING AND TRANSPORTATION. The Waste Products are to be loaded (or stowed) on vehicles (or vessels) by Generator, and transported to the Storage Facility/Disposal Facility (circle one) by Generator. If the Waste Products are first transported to a Storage Facility, they will be reloaded (or stowed) on vehicles (or vessels) by N/A, and transported to the Disposal Facility by N/A. If Disposer is to provide transportation the following special transportation requirements (if any) shall apply, pursuant to the Generator's direction:

(a) Vehicles or Vessels.

dump truck

(b) Routes.

Not Applicable.

(c) Hours of Transportation.

Not Applicable.

5. STORAGE FACILITY. Disposer shall store the Waste Products at the following storage facility for a period not to exceed ___ days, from which facility the Waste Products will then be removed to the Disposal Facility: Not Applicable

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(a) Name/Address of Storage Facility:

(b) Name/Address of Facility Permittee:

(c) Permit Number(s)/Initiation and Termination Date(s):

(d) Permitting Authority(ies):

6. DISPOSAL FACILITY. Disposer shall dispose of the above Waste Products at the following disposal facility (or facilities):

(a) Name/Address of Facility (Facilities):

The Arlington Facility
Star Route
Arlington, Oregon 97812

(b) Name/Address of Facility Permittee:

Chem-Security Systems, Inc.
P.O. Box 1866
Bellevue, Washington 98009-1866

(c) Permit Number(s)/Initiation and Termination Date(s):

State of Oregon - HW-1, initiated Aug. 26, 1980; continues pending issuance of new permit.

(d) Permitting Authority(ies):

Oregon Department of Environmental Quality.

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7. DISPOSAL METHODS: Disposer shall utilize one or more of the following methods for the disposal of the Waste Products:

secure burial

8. EMERGENCY SERVICES: Disposer shall provide emergency transportation, storage or disposal services, with respect to the above Waste Products, pursuant to the following:

As required by site license or at Generator's request

9. RECLAMATION AND/OR SALE OF WASTE PRODUCTS. Disposer is authorized to reclaim, recover and sell, distribute or use the Waste Products, their components or residues, except as specified below:

Not Applicable.

10. COMPENSATION. The Generator shall compensate Disposer as follows:

(a) For Transportation, Storage and Disposal of Waste Products.

(b) For ~~Transportation and~~ Disposal of Waste Products. Per ton:

	Before July 1, 1985	Beginning July 1, 1985
250 tons per yr.	$110	$116
250-1500 tons per yr.	$100	$106

Fed. tax is $213 per dry wt. ton. Minimum billing is $200 per tender.

(c) For Disposal of Waste Products Only.

(d) Emergency Services.

Time and mateirals basis

(e) Measurement of Waste Products. Waste Products shall be measured by Disposer for the purpose of computing fees hereunder, at the time and place, and in the manner, as follows: Upon acceptance at the Arlington facility using:

facility scale

(f) Generator's Billing Address. Disposer shall submit its statements to:

Time Oil Company
12005 N. Burgard Road
Portland, Oregon 97203

(g) Disposer Billing Address. Disposer will issue its billings from the following:

CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE
ARLINGTON, OREGON 97812

11. TERM. The term of the Agreement, with respect to the Waste Products covered in this Document, shall be as follows:

This Agreement shall commence on May 24, 1985 and shall remain in effect until terminated by either party with or without cause by thirty (30) days' advance written notice to the other party.

12. LAW TO GOVERN. The Agreement and this Supplemental Information Document shall be governed and construed in accordance with the laws of the State of Oregon.

13. MISCELLANEOUS CONDITIONS.

By their signatures hereto, the parties agree that this Supplemental Information Document shall be considered an attachment to, and part of, that certain "Waste Transportation and Disposal Agreement" identified above.

Date: _____

Time Oil Company

By: _____

Title: _____

CHEM-SECURITY SYSTEMS, INC.

By: _____

Title: Roger E. Nelson
District Manager

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EXHIBIT B

AUTHORIZED SIGNATORIES

This Exhibit, being attached to, and forming part of that certain "Waste Transportation and Disposal Agreement" entered into by the undersigned parties on May 24, 1985, establishes the identities of those persons authorized to execute Supplemental Information Documents on behalf of the parties, to-wit:

FOR GENERATOR:

FOR DISPOSER:

Regional Sales Manager	up to $ 50,000
District Manager or National Accounts Manager	up to $ 300,000
Regional Vice President or Regional Manager	up to $ 500,000
Senior Vice President	up to $1,000,000
President	over $1,000,000

Time Oil Company

By: _____

Title: _____

Chem-Security Systems, Inc.

By: _____

Title: _____

(Revised 10/10/84)

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CHEM-SECURITY SYSTEMS, INC. DISPOSAL REQUEST

RECEIVED MAY 15, 985

REFERENCE 15589
WASTE PROFILE SHEET NO.

SUBJECT
WASTE STREAM NAME PCP contaminated soil

PHYSICAL STATE
1 LIQUID ☐ 2 SOLID ☒ 3 SEMISOLID ☐

U242
EPA WASTE CODE

GENERATOR NAME Tino Oil Co.

ORD009897543
EPA GENERATOR I.D. NUMBER

FACILITY ADDRESS

Tino Oil Co.
12005 N. Vancouver Rd.
Portland, Or 97203 - 6493

MAILING ADDRESS

Same

GENERATOR CONTACT PERSON NAME: John P. Denham Tel. No. 206 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards (NOW) ? (ANNUAL)

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4.

No free liquids allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie
NAME (PRINT)

SIGNATURE

4-29-85
DATE

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
On May 14, 1985
By Rhonda L. Chung
Solid Waste Division
Hazardous Waste Operations

COMMENTS:

K-74

000087

TOLS002242

BZTO104(e)039063

Waste Management, Inc.

GENERATOR'S WASTE MATERIAL PROFILE SHEET

TSDR E13588

A GENERAL INFORMATION

GENERATOR NAME: Time Oil Co.
FACILITY ADDRESS: 12005 N. Burgard Rd.
Portland, OR

TRANSPORTER: Gresham Transfer Inc.
TRANSPORTER PHONE: (503) 255-7900
GENERATOR USEPA ID: ORD009597543
GENERATOR STATE ID:

TECHNICAL CONTACT: John P. Denham
TITLE: Environmental Manager
PHONE: (206) 285-2400

NAME OF WASTE: PCP contaminated soil

PROCESS GENERATING WASTE: Clean up of contaminated site at 12005 N. Burgard Road

B PHYSICAL CHARACTERISTICS OF WASTE

COLOR

~~ODOR: ☐ NONE ☐ MILD ☐ STRONG DESCRIBE~~

PHYSICAL STATE @ 70°F: ☒ SOLID ☐ SEMI-SOLID ☐ LIQUID ☐ POWDER

LAYERS: ☐ MULTILAYERED ☐ BI-LAYERED ☒ SINGLE PHASED

FREE LIQUIDS: ☐ YES ☒ NO
VOLUME ____ %

pH: ☐ < 2 ☐ 2.1-10 ☒ N/A ☐ 2-4 ☐ 10.1-12.5 ☐ 4.1-6.5 ☐ > 12.5 ☐ 7 ☐ EXACT ____

SPECIFIC GRAVITY: ☐ < .5 ☐ 1.3-1.4 ☐ .5-1.0 ☐ 1.5-1.7 ☒ 1.1-1.2 ☐ > 1.7 ☐ EXACT ____

FLASH POINT: ☐ < 70°F ☐ > 200°F ☐ CLOSED CUP ☐ 70°F-100°F ☒ NO FLASH ☐ OPEN CUP ☐ 101°F-130°F ☐ EXACT ____ ☐ 140°F-200°F

C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)

Contaminated soil	%
pentachlorophenol	.1828 %
tetrachlorophenol	.0071 %
trace amounts of other	%
chlorinated chemicals less than	.0001 %
	%
Non-contaminated soil	99.812 %
	%
	%
	%

D METALS ☐ TOTAL (PPM) ☐ EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)	-0-	SELENIUM (Se)	-0-
BARIUM (Ba)	-0-	SILVER (Ag)	-0-
CADMIUM (Cd)	-0-	COPPER (Cu)	-0-
CHROMIUM (Cr)	-0-	NICKEL (Ni)	-0-
MERCURY (Hg)	-0-	ZINC (Zn)	-0-
LEAD (Pb)	-0-	THALLIUM (Tl)	-0-
CHROMIUM-HEX (Cr + 6)	-0-		

E OTHER COMPONENTS - TOTAL (PPM)

CYANIDES	-0-	PCB'S	-0-
SULFIDES	-0-	PHENOLICS	-0-

F SHIPPING INFORMATION

D.O.T. HAZARDOUS MATERIAL? ☒ YES ☐ NO

PROPER SHIPPING NAME: Waste pentachlorophenol mixture

HAZARD CLASS: ORM-E I.D. NO. NA 2020 R.Q. 10 lbs

METHOD OF SHIPMENT: ☐ BULK LIQUID ☒ BULK SOLID ☐ DRUM (TYPE/SIZE) ____

ANTICIPATED VOLUME: ____ GALS. 260 CUBIC YARDS ____ OTHER ____

PER: ☒ ONE TIME ☐ WEEK ☐ MONTH ☐ QUARTER ☐ YEAR ☐ ____

G HAZARDOUS CHARACTERISTICS

REACTIVITY: ☒ NONE ☐ PYROPHORIC ☐ SHOCK SENSITIVE ☐ EXPLOSIVE ☐ WATER REACTIVE ☐ OTHER ____

OTHER HAZARDOUS CHARACTERISTICS: ☒ NONE ☐ RADIOACTIVE ☐ ETIOLOGICAL ☐ PESTICIDE MANUFACTURING WASTE ☐ OTHER ____

USEPA HAZARDOUS WASTE? ☒ YES ☐ NO

USEPA HAZARDOUS CODE(S): U242

STATE HAZARDOUS WASTE? ☒ YES ☐ NO

STATE CODE(S): U 242

H SPECIAL HANDLING INFORMATION

☐ ADDITIONAL PAGE(S) ATTACH

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE, AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

AUTHORIZED SIGNATURE: [signature] TITLE: Environmental Manager DATE: February 19, 1985

K-74

000088

TOLS002243

BZTO104(e)039064

CHEM-SECURITY SYSTEMS, INC.
P.O. Box 1289 • Portland, Oregon 97207-1289 • (503) 223-1912
CSSI

June 7, 1985

Mr. John Denham
Time Oil Company
2737 N. Commodore Way
Seattle, Washington 98199

Dear John:

Enclosed are the two copies of replacement pages for our Supplemental Information Document that we discussed by phone today. Please replace them in the original contracts that you have and return both contracts to me.

If I can be of further assistance do not hestitate to call me.

Sincerely,

CHEM-SECURITY SYSTEMS, INC.

Joyce Johnson
Inside Sales Representative

Enclosure

"Imagineering a cleaner world"

RIEDEL
ENVIRONMENTAL SERVICES, INC.

☑ Portland Division
Foot of N. Portsmouth Ave
P.O. Box 5007
Portland, OR 97208
(503) 286-4566

☐ St. Louis Division
520 Spirit of St. Louis Blvd
Chesterfield, MO 63017
(314) 532-7660

☐ San Francisco Division
230 Cutting Blvd
Richmond, CA 94801
(415) 234-1400
or (415) 396-5351

☐ Seattle Division
801 Fairview Ave. No.
P.O. Box 1730
Seattle, WA 98111
(206) 622-2500

May 18, 1985

Mr. Neil Wallis
Time Oil Co.
P. O. Box 03137
12005 N. Burgard
Portland, OR 97203

Dear Neil:

The cost breakdown on our bid for sampling and analysis of PCP contaminated soil at your facility is as follows:

Drilling	$ 7,544
Analytical	4,956
Labor	3,985
Other Direct	2,115
	$18,600

If you have any questions, please don't hesitate to contact me.

Sincerely,

John Ruddick
Microbiologist

JR:kps

CONTRACT

The parties to this agreement are Time Oil Co. (hereinafter termed owner) and Northwest Vacuum Truck Service, Inc. (hereinafter termed contractor) whereas:

Owner has a volume of earthen material located in Portland, Oregon and owner is desirous of having that material removed.

Contractor is willing to undertake that task upon the terms and conditions set forth below.

Therefore, in consideration of the agreements contained herein, the parties agree as follows:

1. Contractor agrees to remove the material from its present location, load it into suitable transportation vehicles and transport it to a disposal facility approved by the Oregon Department of Environmental Quality.

2. The material to be removed by contractor is generally set forth on the drawing labeled exhibit 1, attached hereto and incorporated by this reference. Prior to work under this agreement, a representative of owner will meet with contractor at the site and the extent of the material to be removed will be more specifically delineated at that time.

3. The commencement date for work will be February 21, 1985 or such other date as may be agreed upon by the parties following coordination with the Department of Environmental Quality and the authorized disposal facility. Work is intended to be divided into two phases. First phase consists of material removal to an agreed upon depth. Then there will be a several day delay while additional tests are conducted to determine if further removal is required. If so, phase two removal actions are to be effected. Should there be any need to continue removal, above process is to be repeated until ultimate removal is accomplished.

4. For each day worked, owner agrees to pay contractor the sum of 1200 dollars for labor and equipment pertaining to soil removal plus 600 dollars for each truckload of soil transported. A day worked shall be one wherein earth moving equipment, necessary to perform the work, has been utilized to the fullest, reasonably possible, extent for a period of not less than 8 hours. Truck shall be a standard 18 yard rated capacity vehicle. Payment will be made upon completion of the work and receipt by owner of written acknowledgement from the approved disposal facility that all material removed and transported by contractor has been received at that facility.

5. Contractor indemnifies and agrees to defend and hold owner harmless from any and all costs, claims, liabilities and damages arising out of contractors work under this contract.

6. Contractor hereby declares that it is engaged as an independent contractor and agrees to perform the work as independent contractor and not as an employee of owner. Contractor has and hereby retains the right to exercise full control and supervision of the work and full control over the employment, direction, compensation and discharge of all persons assisting in the work.

Encl. 4

TOLS002246

BZTO104(e)039067

7. Contractor agrees at its expense to obtain all governmental permits, licenses and approvals and comply with all laws, rules, regulations and requirements now or hereafter existing necessary for the accomplishment of the work to be performed by contractor under this agreement.

8. Contractor especially acknowledges its understanding that portions of the material to be removed, transported and disposed of under this agreement have been found to contain commercial pentachlorophenol in concentrations ranging from 0 ppm to 1820 ppm. Contractor agrees to take all necessary precautions for the protection of persons and property that may be required or prudent in the removal and transportation of that material.

9. Contractor agrees to maintain workmans' compensation insurance in the form and amounts required by the laws of the state of Oregon and broad form comprehensive public liability insurance with minimum limits of $1 million per person and $1 million per accident for bodily injury and $500,000 per accident for property damage. Contractor shall promptly deliver to owner certificates of said insurance, naming owner as an additional insured before commencing work and such certificate shall provide that said insurance shall not be cancelled prior to 30 days by written notice to owner.

10. Contractor agrees that before commencement of any work hereunder, it will promptly furnish owner with a faithful performance bond in an amount to 53,000 dollars guaranteeing completion of all work and performance of all obligations undertaken by contractor under this agreement.

11. The nature, validity and interpretation of this contract shall be governed by the laws of the state of Washington.

Dated this 19th day of February 1985.

OWNER
Time Oil Co.

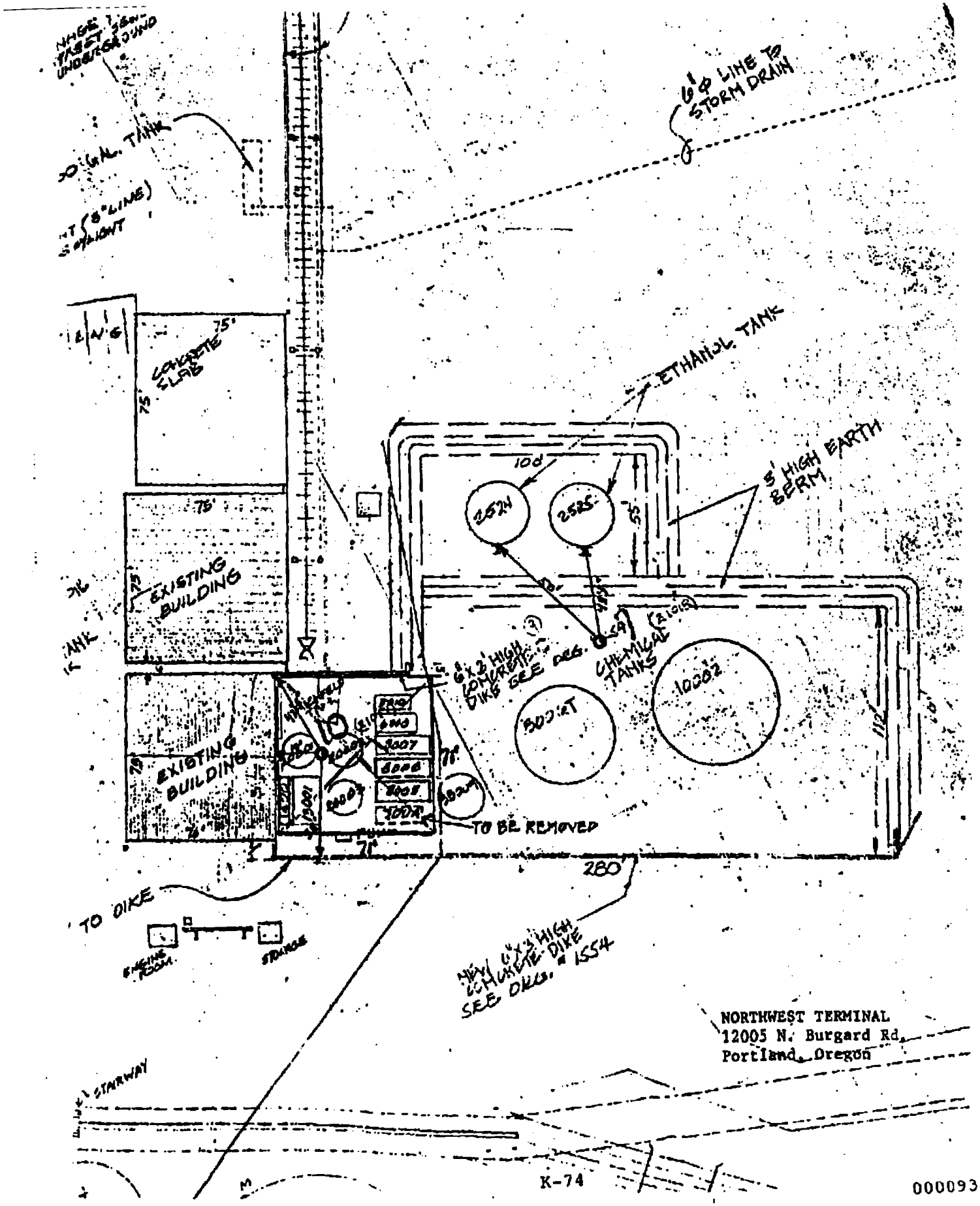
by John L. Denham
John P. Denham
Environmental Manager

CONTRACTOR
Northwest Vacuum Truck Service Inc.

by John H. Somes
John H. Somes
General Manager

TOLS002247

BZTO104(e)039068



TOLS002248

BZTO104(e)039069

REC' T.O.C. PORTLAND 5/16/85

CHEM-SECURITY SYSTEMS, IN DISPOSAL REQUEST

REFERENCE: E13588 (WASTE PROFILE SHEET NO.)

SUBJECT:

WASTE STREAM NAME: PCP contaminated soil

PHYSICAL STATE: LIQUID ☐ SOLID ☒ SEMISOLID ☐

U242 (EPA WASTE CODE)

GENERATOR NAME: TIME OIL CO. ORD009597543 (EPA GENERATOR I.D. NUMBER)

FACILITY ADDRESS	MAILING ADDRESS
Time Oil Co. 12005 N. Burgard Rd. Portland, Or	Same

GENERATOR CONTACT PERSON NAME: John P. Denham Tel. No. (206 285-2400

Review and approval of the subject waste stream is requested for disposal at the Chem-Security Arlington site. The complete waste description is detailed on the attached waste profile sheet and is summarized below.

DESCRIPTION CHEMICAL COMPOSITION	PROCESS/OPERATION GENERATING WASTE
Contaminated soil (pentachlorophenol, tetrachlorophenol other chlorinated chemicals) non-contaminated soil	Clean up

WASTE VOLUME REQUESTED FOR DISPOSAL: 260 cubic yards (NOW) 0 (ANNUAL)

Based on the Waste Characteristics, Chem-Security proposes to Dispose of the Waste By (Describe Treatment/Disposal Procedure)

Landfill by Procedure 4.

No free liquid allowed.

C.C. CSSI, Arlington, OR
C.C. CSSI, Bellevue, WA
CSSI, Portland, OR
Generator

SUBMITTED BY: J. Craig McKenzie (NAME (PRINT))

J. Craig McKenzie (SIGNATURE)

4-29-85 (DATE)

FOR OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

THE SUBJECT WASTE STREAM HAS BEEN REVIEWED FOR DISPOSAL AT THE ARLINGTON SITE AND IS HEREBY:

State of Oregon
Department of Environmental Quality
APPROVED
On May 14, 1985
By Edward L. Chiang
Solid Waste Division
Hazardous Waste Operations

RE: HW4.10 I

COMMENTS:

CSSI-6000 (1/85) E.I. 7

K-74

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TOLS002249

BZTO104(e)039070

Encl. 5

SAIF CORPORATION

INSURING COMPANY:
☐ SAIF CORPORATION
☐ SAIF CORPORATION OF OREGON

Certificate of Coverage

Date of Issue: FEBRUARY 25, 1985

K-74

This certifies that NW VACUUM TRUCK SERVICE INC., *Policy No.* 426329,
is insured with SAIF, with a policy period ending date of JUNE 30, 1985,
and is complying with the Oregon Workers' Compensation Law to provide for payment of compensation to subject Oregon workers.

TO: TIME OIL CO,
2737 W. COMMODORE WAY
SEATTLE, WASHINGTON 98199

ATTN: JOHN DENHAM

Michael J. Dora

Michael J. Dora
Director
Underwriting Division

F1220 1/84

000095

BZTO104(e)039071

TOLS002250

"Imagineering a cleaner world"

☒ Portland Division
Foot of N. Portsmouth Ave
P.O. Box 8207
Portland, OR 97208
(503) 286-4656

☐ St. Louis Division
539 Spirit of St. Louis Blvd.
Chesterfield, MO 63017
(314) 532-7650

☐ San Francisco Division
230 Cutting Blvd
Richmond, CA 94802
(415) 234-7400
or (415) 399-5351

☐ Seattle Division
801 Fairview Ave. No.
P.O. Box 1730
Seattle, WA 98111
(206) 622-2900

RIEDEL
ENVIRONMENTAL SERVICES, INC.

April 25, 1985

Mr. Neil Wallis
Time Oil Company
P. O. Box 03137
12005 N. Burgard Street
Portland, OR 97203

Dear Neil:

Thank you for the opportunity to visit your plant and discuss with you the pentachlorophenol sampling requirements you have at your northwest terminal wood treating site.

We propose that an initial composite sample survey be initiated to accurately define the boundaries of the PCP contamination zone. These surface samples would be collected to establish the actual area to be sampled later by coring at depth, and are warranted since the data indicates contamination at a site outside of your original proposed sampling plan. This task would be performed at a time and materials rate. It would be expected to be quite nominal relative to the core sampling, and will minimize the possibility of having to remobilize the drill rig to modify or extend the core sampling procedure in the future.

We will also review the sampling plan and, with DEQ approval, design a sampling plan that will meet their requirements while minimizing the number of holes needed. This task would also be billed at a time and materials rate and may utilize a triangular sampling matrix to improve coverage.

Riedel Environmental Services is prepared to perform the actual sampling and analysis including grid layout, drilling, sampling at six depths, analysis for PCP, decontamination of personnel and equipment, PCP concentration contour analysis, report and background level determination. The estimate for this task is $18,600, would require five days on site, and is based on an estimated sample area of 80' x 80'. If preliminary composite samples indicate a different area, this bid will be revised accordingly. If tetrachlorophenol analyses are also required, analytical costs will increase this bid by $5,000.

On the basis of the above results, RES can prepare an estimate for removal and disposal of the contaminated soils. We can also include monitoring or observation wells if required.

Please contact either myself or Rick Gariepy if you have any questions or would like additional information.

Sincerely,

RIEDEL ENVIRONMENTAL SERVICES, INC.

John H. Ruddick
Microbiologist

JHR:kps

TOLS002252

BZTO104(e)039073

Marsh & McLennan

Marsh & McLennan, Incorporated
Marsh & McLennan Building
720 Olive Way
Seattle, Washington 98101
Telephone (206) 223-1240

March 5, 1985

Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199

Attention: John Denham

Insured Northwest Vacuum Truck Service, Inc.

Company and Policy No. Safeco

Various - See attached certificate

Coverage

Location Post Office Box 24402
Seattle, Washington 98124

( ) Policy enclosed

(xx) Certificate ~~xxxxxxxxxxxxxx~~ enclosed

( ) Premium invoice enclosed for

( ) Premium invoice will be mailed to you by the Insuror

( ) Mortgage or Loss Payable clause enclosed

( ) Contract of Sale clause enclosed

( ) Please return for cancellation, Policy No.

( )

Sincerely yours,

MARSH & McLENNAN, INCORPORATED

By Jackie Starr
Jackie Starr
Account Representative

Enclosures
mf
cc: Northwest Vacuum Truck Service, Inc.
Attn Mr. Steve Skeel

TOLS002253

BZTO104(e)039074

Certificate of Insurance

acord

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES LISTED HEREIN.

NAME AND ADDRESS OF AGENCY

MARSH & McLENNAN, INCORPORATED
MARSH & McLENNAN BUILDING
720 OLIVE WAY
SEATTLE, WASHINGTON 98101
(206) 223-1240

COMPANIES AFFORDING COVERAGES

COMPANY LETTER A — SAFECO
COMPANY LETTER B
COMPANY LETTER C
COMPANY LETTER D
COMPANY LETTER E

NAME AND ADDRESS OF INSURED

NORTHWEST VACUUM TRUCK SERVICE, INC.
POST OFFICE BOX 24402
SEATTLE, WASHINGTON 98124

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)	EACH OCCURRENCE	AGGREGATE
A	GENERAL LIABILITY [X] COMPREHENSIVE FORM [X] PREMISES—OPERATIONS [X] EXPLOSION AND COLLAPSE HAZARD [X] UNDERGROUND HAZARD [X] PRODUCTS COMPLETED OPERATIONS HAZARD [X] CONTRACTUAL INSURANCE [X] BROAD FORM PROPERTY DAMAGE [X] INDEPENDENT CONTRACTORS [X] PERSONAL INJURY	CP 842833	05/30/85	BODILY INJURY	$	$
				PROPERTY DAMAGE	$	$
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 500,	$ 500,
				PERSONAL INJURY		$
A	AUTOMOBILE LIABILITY [X] COMPREHENSIVE FORM [X] OWNED [X] HIRED [X] NON-OWNED	BA 842833 A	05/30/85	BODILY INJURY (EACH PERSON)	$	
				BODILY INJURY (EACH ACCIDENT)	$	
				PROPERTY DAMAGE	$	
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 500,	
A	EXCESS LIABILITY [X] UMBRELLA FORM [ ] OTHER THAN UMBRELLA FORM	UL 842833	05/30/85	BODILY INJURY AND PROPERTY DAMAGE COMBINED	$1,000,	$1,000,
	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY			STATUTORY		
					$	(EACH ACCIDENT)
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES

As respects the operations of the Insured.

Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will endeavor to mail 20 days written notice to the below named certificate holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company.

ACCOUNT EXECUTIVE: Jo Ann Crook

Time Oil Company
2737 West Commodore Way
Seattle, Washington 98199
Attention: John Denham

DATE ISSUED March 5, 1985 (mf)

MARSH & McLENNAN, INCORPORATED

By: John C. Day
(John C. Day)

ACORD 25 (1-75)

K-74

000099

TOLS002254

BZTO104(e)039075

CONTRACT BOND

Bond No. H 34156

KNOW ALL MEN BY THESE PRESENTS, That we, NORTHWEST VACUUM TRUCK SERVICE, INC.

5555 NORTH CHANNEL - BLDG. 43 - PORTLAND, OREGON 97217

called the Principal, and HERITAGE INSURANCE COMPANY OF AMERICA, A ILLINOIS corporation, called the Surety, are held and firmly bound unto TIME OIL CO.

called the owner in the sum of FIFTY THREE THOUSAND AND NO/100THS ---------- Dollars ($ 53,000.00**), for the payment whereof said Principal and Surety bind themselves firmly by these presents.

WHEREAS, the Principal has, by written Agreement, dated MARCH 12, , 19 85, entered into a Contract with the Owner for REMOVAL OF EARTHEN MATERIAL OWNED BY OWNER FROM ITS PRESENT LOCATION, LOAD IT INTO SUITABLE TRANSPORTATION VEHICLES AND TRANSPORT IT TO A DISPOSAL FACILITY APPROVED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY.

a copy of which is by reference made a part hereof;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That if the Principal shall faithfully perform the Contract, and indemnify and save harmless the Owner from all loss, cost or damage which Owner may suffer by reason of any lien arising out of claim for labor or materials utilized in the construction under said Contract, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 12TH day of MARCH, 19 85.

NORTHWEST VACUUM TRUCK SERVICE, INC.
Principal

By: S M Steel

HERITAGE INSURANCE COMPANY OF AMERICA

By: J.C. Baumann
J.C. BAUMANN
Attorney-in-fact

ENCL. 6

K-74

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TOLS002255

BZTO104(e)039076

HERITAGE INSURANCE COMPANY OF AMERICA

LINCOLNWOOD, ILLINOIS

Power of Attorney

PRINCIPAL NORTHWEST VACUUM TRUCK SERVICE, INC. EFFECTIVE DATE MARCH 12, 1985

DBA AMOUNT OF BOND $ 53,000.00

POWER NO. H 34156

KNOW ALL MEN BY THESE PRESENTS: That the Heritage Insurance Company, a Corporation in the State of Illinois, having its principal office in Lincolnwood, Illinois, pursuant to the following resolution, adopted by the Board of Directors of the said Company on the 9th day of March, 1979, to wit:

"The President, or any Vice-President, or other officer designated by the Board of Executive Committee shall have authority, severally, to make, execute and deliver a power of attorney constituting as Attorney-in-Fact such persons, firms or corporations as such officers may select from time to time."

does hereby make, constitute and appoint J.T. Kohoutek, C.J. Huffman and/or J.C. Baumann of Seattle in the State of Washington, its true and lawful attorney(s)-in-fact, with full power and authority hereby conferred in its name, place and stead, to sign, execute, acknowledge and deliver in its behalf, and its act and deed, as follows:

The obligation of the Company shall not exceed the sum of five hundred thousand ($500,000.00) dollars.

and to bind Heritage Insurance Company thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of the Heritage Insurance Company, and all the acts of said Attorney(s) pursuant to the authority herein given, are hereby ratified and confirmed.

IN WITNESS WHEREOF, the Heritage Insurance Company has caused these presents to be signed by its President and/or its Vice-President, and its Corporate Seal to be hereto affixed.

SEAL

HERITAGE INSURANCE COMPANY OF AMERICA

Vincent M. Giacinto, President

State of Illinois } SS:
County of Cook }

On this 9th day of March, 1979, before the subscriber, a Notary Public of the State of Illinois in and for the County of Cook duly commissioned and qualified, came V. M. Giacinto of the Heritage Insurance Company, to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation, and that the resolution of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my official seal at Lincolnwood, Illinois, the day and year above written.

NOTARY PUBLIC SEAL

Joseph D. Udoni
Notary Public

JOSEPH D. UDONI
NOTARY PUBLIC, State of Illinois
Qualified in State of Illinois
Commission Expires March 4, 1984

State of Illinois } SS:
County of Cook }

CERTIFICATE

I, the undersigned, Secretary of *HERITAGE INSURANCE CO.* a stock corporation of the State of Illinois, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Resolution of the Board of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, at Lincolnwood, Illinois. Dated this 12TH day of MARCH A.D., 19 85

SEAL

Carrie A. Faills
Secretary

H-73

000101

TOLS002256

BZTO104(e)039077

M E M O R A N D U M

June 11, 1985

TO:	Robert Abendroth	Seattle
	Bill Baldwin	Pittsburgh
	Don Marion	Pittsburgh
	Neil Wallis	Portland
FROM:	John Denham	Seattle

SUBJECT: NORTHWEST TERMINAL WOODTREATING SITE

This is a status update regarding cleanup of soil at our Portland Oregon terminal where the Pentachlorophenol operation existed.

Following Don Marion and Bill Baldwin's March 13, 1985 visit, the following occurred:

a. On April 2, Bill B called to coordinate results of his contact with Koppers geologists. Bill requested sampling per enclosure 1. On April 4, Robert A agreed with this action. On April 5, Neil W was tasked to locate a firm to accomplish soil sampling and a laboratory which could handle this sizable soil analysis within a reasonable time frame at the lowest possible costs.

b. After a diligent search, it was learned there was only one firm in the area that had the capability to do this job - Riedel Environmental Services, Inc. On April 25, Riedel submitted their cost of $18,600 (enclosure 2). I asked for a cost breakdown. Riedel submitted it on May 18 (enclosure 3). Drilling cost of $7,544 is actual fee of drilling contractor Sweet and Edwards out of Kelso (I verified this). Analytical cost of $4,956 is strictly the laboratory charge for processing 96 samples from 16 holes at 6 six samples per hole. (Note this is 7 less holes than Bill B requested but covers a larger 80' x 80' area). Method of analysis is GC/MS, which is the only one allowed by EPA/DEQ. Cost to analyze each sample is $51.63. Labor cost of $3,985 includes taking nine additional composite surface samples (3 on northeast, 3 on east and 3 on south) outside bermed area to determine soil contamination boundaries, taking the 96 samples mentioned above, drawing the drilling plan, preparing the contour map which shows location of contamination at the various depths, supervision of entire job on site by a qualified hydrologist and writing the report. Other direct costs of $2,115 cover decontamination of equipment between the taking of each sample, sample jars, safety gear used, drums for and disposal of decontamination solvent used for all equipment decontamination and the bentonite used to plug all holes drilled.

TOLS002257

BZTO104(e)039078

c. Contract with Northwest Vacuum Truck Service was negotiated (enclosure 4). Certificate of insurance coverage (enclosure 5) and contract bond (enclosure 6) were obtained from contractor. An "approved" transporter was obtained (Gresham Transfer Service).

d. Disposal request for contaminated soil was approved by DEQ (Enclosure 7).

e. Hazardous Waste Manifests with appropriate instructions were obtained (enclosure 8).

f. The required "Waste Transportation and Disposal Agreement" was obtained from Chem-Security Systems, operators of the Arlington disposal facility (enclosure 9). I disagreed with item 2(b) on page 17 (in that it limited disposal on this tender to only one movement) and item 10(c) on page 20 (in that there was no price break after 250 tons as was originally quoted). Telecon contact with their offices resulted in satisfactorily worded replacement pages for agreement, which arrived today and are included in enclosure 9.

At this point in time, everything seems to be "go". All arrangements have been made to start the first phase of digging, hauling and disposing on June 24, 1985. I will be on site. Plan is to remove and dispose of several truck loads of soil, stop, have sampling and analyses done, then repeat as needed. This approach takes advantage of lower disposal costs (prior to July 1) and the conduct of the expensive sampling and analysis only one time. Current known costs for first phase are $53,000 plus $18,600 = $71,600.

JPD/ch

TOLS002258

BZTO104(e)039079

X cc: B. Nolan

Desk 10-7

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
LOS ANGELES

PHONE 285-2400
CABLE ADDRESS: TIMOIL

TIME OIL COMPANY

2737 WEST COMMODORE WAY
P.O. BOX 24447, TERMINAL STATION
SEATTLE, WASHINGTON 98199-1233
SEATTLE, WASHINGTON 98124-0447

RECEIVED

OCT 5 1987

Environmental Resources

October 2, 1987

Keystone Environmental Resources Inc.
Jim Campbell
436 7th Ave.
Pittsburg, PA 15219

Dear Mr. Campbell:

This is in reference to our discussion regarding clean up costs at 12005 North Burgard in Portland, Oregon.

Enclosed are copies of the documents you wish to review.

A. The Original invoice #091868 dated March 6, 1986 for $42,081.21.

B. A complete list of expenditures as of April 1, 1987.

C. Billing for the additional charges of $12,699.07 for expenses after the date of the original invoice.

Your cost for half the expenditure, per mutual agreement is $54,780.28.

We appreciate your working with us and look forward to hearing from you at your earliest convenience.

Yours Truly,

TIME OIL CO.

John Luckovich

John E. Luckovich
Credit Manager

JEL:ltd

Enclosures

0002B

K-89

001133

TOLS002259

BZTO104(e)039080

TIME OIL CO.

P.O.BOX 24447 TERM. STATION - SEATTLE WA 98124-0447
2737 WEST COMMODORE WAY - SEATTLE WA 98199-1233
PHONE (206) 285-2400

INVOICE 091848

DATE 03/06/86
REF. 03-03028 JKJ

CUSTOMER #: 03/05505623

ACCOUNT:
KOPPERS COMPANY INC
ATTN: DONALD F. MARION
KOPPERS BUILDING ROOM 750
PITTSBURGH PA 15219

667	60	123	27831.21
120	9	.	14250.00

TO CHARGE YOU FOR 1/2 OF THE FOLLOWING PER MUTUAL AGREEMENT IN REFERENCE TO CLEAN UP COSTS AT 12005 N. BURGARD RD., PORTLAND, OREGON.

EXPENDITURES

4/26/85 CHEM-SECURITY SYSTEMS (LABORATORY ANALYSIS OF SOIL SAMPLES)	150.00
7/10/85 NORTHWEST VACUUM TRUCK SERVICE (RELOCATING 242.76 TONS OF SOIL TO ARLINGTON)	9,000.00
7/29/85 CHEM-SECURITY SYSTEMS (RECEIVING 243.30 TONS OF SOIL AT ARLINGTON)	27,270.88
8/8/85 ENVIRONMENTAL EMERGENCY SERVICES (OBTAIN AND ANALYZE 3 COMPOSITE SAMPLES)	
12/31/85 ENVIRONMENTAL EMERGENCY SERVICES (PRIMARY SAMPLING AND ANALYSIS PLUS REPORT)	19,741.55
	56,662.43

COMMITMENTS

DEQ PER OAR 240-102-065	3,500.00
*RIEDEL ENVIRONMENTAL SERVICES (AMENDMENT 2)	25,000.00+
	84,162.43

50% = 42,081.21

*NAME CHANGE FROM ENVIRONMENTAL EMERGENCY SERVICES

INVOICE TOTAL $42,081.21

Encl. 1

001134

ACCOUNTS RECEIVAI

TOLS002260

BZTO104(e)039081

As of 04/01/87

TIME OIL CO. EXPENDITURES IN REFERENCE TO PENTACHLOROPHENOL CLEAN UP COSTS AT 12005 NORTH BURGARD, PORTLAND, OR.

04/26/85	Chem-Security Systems (Laboratory analysis of soil sample)	$ 150.00
07/10/85	Northwest Vacuum Truck Service (Relocating 242.76 tons of soil to Arlington)	$ 9,000.00
07/29/85	Chem-Security Systems (Receiving 243.30 tons of soil at Arlington)	$ 27,270.88
08/08/85	Environmental Emergency Services (Sampling and analysis)	$ 500.00
12/05/85	Environmental Emergency Services (Well drilling, sampling & analysis)	$ 18,741.55
03/24/86	Environmental Emergency Services (Sandblast and demolish wall; install wells)	$ 17,252.67
05/16/86	Instrumentation Northwest (Monitoring well materials)	$ 3,702.66
06/11/86	Century West Engineering (Develop and sample wells)	$ 2,739.50
06/11/86	Department of Environmental Quality (Per DAR 240-102-065)	$ 3,500.00
07/08/86	Century Environmental Sciences (sampling wells)	$ 1,800.00
08/08/86	Riedel Environmental Services, Inc. (Sampling and analysis)	$ 4,452.81
08/25/86	Jack Eatch Construction Co. (Relocate soil and dispose of concrete wall)	$ 1,465.00
09/10/86	Concrete Coring Co. (Cut holes through concrete floor of warehouse)	$ 390.00
10/24/86	SRH Associates, Inc. Investigation of pentachlorophenol as per contract dated 08/14/86	$ 18,465.00
01/26/87	Century West Engineering (Well sampling and analysis)	$ 130.50
		$109,560.57
	Koppers Company share of costs = 50% =	$ 54,780.28
	TOTAL DUE FROM KOPPERS =	$ 54,780.28

Encl. 2

TOLS002261

BZTO104(e)039082

TIME OIL CO.
P.O.BOX 24447 TERM. STATION - SEATTLE WA 98124-0447
2737 WEST COMMODORE WAY - SEATTLE WA 98199-1233
PHONE (206) 285-2400

DEBIT MEMO 020190

DATE 04/17/87
REF. 04-03131 FER

CUSTOMER #: 03/05505623

ACCOUNT: 120 9 12699.07

KOPPERS COMPANY
Koppers Building - Room 750
Pittsburgh, PA 15219

ATTN: JAY STEBBINS

THIS IS AN ADDITION TO INVOICE # 091363 DATED MARCH 6, 1986 FOR $ 42,081.21 TO CHARGE YOU FOR HALF OF EXPENDITURES, PER MUTUTAL AGREEMENT, IN REFERENCE TO CLEAN UP COSTS AT 12005 NORTH BURGARD PORTLAND, OREGON. 12,699.07

COPIES OF THE ORIGINAL INVOICE (#091363, 3/6/86, $42081.21) AND THE UPDATED CHARGES FOR $ 54730.23 ARE ATTACHED.

INVOICE TOTAL $12,699.07

Encl. 3
SEE REVERSE SIDE FOR GENERAL TERMS AND CONDITIONS

K-89

001136

ORIGINAL

TOLS002262

BZTO104(e)039083

X

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

JUN 09 1987

Interoffice Correspondence

To	Russ Bruce	From	J. R. Campbell
Location	Monroeville	Location	K-1940
Subject	Homeless Invoice	Date	June 8, 1987

This invoice has been homeless for some time now. It was work originally authorized by Bill Baldwin for Time Oil. After talking with Bill and Edyth Emanuel it was decided that the charges should go against the reserve for Time Oil. Please reissue this invoice for Time Oil, activity number 1221.

J. R. Campbell

JRC/mrw

cc: B. Baldwin - K-1350

TOLS002263

BZTO104(e)039084

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

REMIT TO: Keystone Environmental Resources, Inc.
P.O. Box 360549M
Pittsburgh, PA 15251

440 College Park Dr., Monroeville, PA 15146 412/327-3000

INVOICE

PROTECTION PRODUCTS DEPT.
KOPPERS COMPANY INC.
436 SEVENTH AVENUE
PITTSBURGH, PA 15219

ATTN:

PAGE: 1
INVOICE NO: 003110
INVOICE DATE: 03/09/87
JOB: 460100
PROTECTION PROD.-REQUESTED SER

CONTRACT/P.O.:

CUST #: PROT	TERMS: NET 30		AMOUNT	NET AMOUNT
LABOR & EXPENSES			318.25	318.25
REG HOURS:	5.25 x	60.62 /HR =	318.25	
		TOTAL SALES:	318.25	
		INVOICE AMOUNT:		318.25

Time Oil
not ours
a Wells

Handled
By
Beth Baldwin

RECEIVED
MAY 5 1987
Environmental Resources

K-89

001139

TOLS002264

BZTO104(e)039085

KOPPERS

Interoffice Correspondence

APR 27 1987

To	W. J. Baldwin	**From**	J. S. Sebbens, Jr.
Location	K-1350	**Location**	K-750
Subject	TIME OIL	**Date**	April 24, 1987

I've just received the attached letter from Mr. John Denham requesting payment from Koppers to Time Oil in the amount of $54,780.28 for clean-up costs at Portland, OR. The original invoice #091868 was provided to Koppers at an earlier date, however, the attachment does contain the original of invoice #020190 in supplemental charges. Please add this information to your file to the resolution of this agreement that is in progress. Thank you.

Jay Sebbens

JSS:vtw

APR 23 1987

PHONE 285-2400
CABLE ADDRESS: TIMOIL

SEATTLE
TACOMA
PORTLAND
STOCKTON
RENO
RICHMOND
LOS ANGELES

TIME OIL COMPANY

2737 WEST COMMODORE WAY
P.O. BOX 24447, TERMINAL STATION

SEATTLE, WASHINGTON 98199-1233
SEATTLE, WASHINGTON 98124-0447

April 20, 1987

Koppers Company Inc.
Attn: Jay Sebbins
Koppers Building, Room 750
Pittsburgh, PA 15219

Dear Mr. Sebbins:

This refers to our previous telecon regarding clean-up of Koppers pentachlorophenol at 12005 North Burgard, Portland, OR and Time Oil invoice 091868 dated 03/06/86, which you agreed to look into and give me a call back regarding payment.

To my knowledge, there has been no call hence this letter as a reminder. Since invoice 091868 was forwarded, those items shown on invoice as "COMMITMENTS" became a reality and have been paid by Time Oil. In addition, other essentials have been accomplished and fees for those services have been also paid by Time. The net result is an increase to Koppers share of costs by $12,699.07.

Enclosed is copy of original invoice, a listing of expenditures to date and an invoice for one-half the cost of those expenditures incurred since original invoice. This package reflects total costs as of 04/01/87.

Your processing of these invoices for prompt payment is truly appreciated.

Sincerely,

John P. Denham

John P. Denham
Environmental Manager

Encl. a/s

JPD/jam

001143

K-89

TOLS002266

BZTO104(e)039087

TIME OIL CO.

P.O.BOX 24447 TERM. STATION - SEATTLE WA 98124-0447
2737 WEST COMMODORE WAY - SEATTLE WA 98199-1233
PHONE (206) 285-2400

INVOICE 091868

DATE 03/06/86
REF. 03-03028 JKJ

CUSTOMER #: 03/05505623

ACCOUNT:
KOPPERS COMPANY INC
ATTN: DONALD F. MARION
KOPPERS BUILDING ROOM 760
PITTSBURGH PA 15219

657 60 123 27831.21
120 9 . 14250.00

TO CHARGE YOU FOR 1/2 OF THE FOLLOWING PER MUTUAL AGREEMENT IN REFERENCE TO CLEAN UP COSTS AT 12005 N. BURGARD RD., PORTLAND, OREGON.

EXPENDITURES

4/26/85 CHEM-SECURITY SYSTEMS	
(LABORATORY ANALYSIS OF SOIL SAMPLES)	150.00
7/10/85 NORTHWEST VACUUM TRUCK SERVICE	
(RELOCATING 242.76 TONS OF SOIL TO ARLINGTON)	9,000.00
7/29/85 CHEM-SECURITY SYSTEMS	
(RECEIVING 243.30 TONS OF SOIL AT ARLINGTON)	27,270.88
8/8/85 ENVIRONMENTAL EMERGENCY SERVICES	
(OBTAIN AND ANALYZE 3 COMPOSITE SAMPLES)	
12/31/85 ENVIRONMENTAL EMERGENCY SERVICES	
(PRIMARY SAMPLING AND ANALYSIS PLUS REPORT)	18,741.55
	55,662.43

COMMITTMENTS

DEQ PER OAR 240-102-065	3,500.00
*RIEDEL ENVIRONMENTAL SERVICES (ADMENDMENT 2)	25,000.00+
	84,162.43

50% = 42,081.21

*NAME CHANGE FROM ENVIRONMENTAL EMERGENCY SERVICES

INVOICE TOTAL $42,081.21

001144

Encl. 1

K-89

ACCOUNTS RECEIVABLI

TOLS002267

BZTO104(e)039088

As of 04/01/87

TIME OIL CO. EXPENDITURES IN REFERENCE TO PENTACHLOROPHENOL CLEAN UP COSTS AT 12005 NORTH BURGARD, PORTLAND, OR.

04/26/85	Chem-Security Systems (Laboratory analysis of soil sample)	$ 150.00
07/10/85	Northwest Vacuum Truck Service (Relocating 242.76 tons of soil to Arlington)	$ 9,000.00
07/29/85	Chem-Security Systems (Receiving 243.30 tons of soil at Arlington)	$ 27,270.88
08/08/85	Environmental Emergency Services (Sampling and analysis)	$ 500.00
12/05/85	Environmental Emergency Services (Well drilling, sampling & analysis)	$ 18,741.55
03/24/86	Environmental Emergency Services (Sandblast and demolish wall; install wells)	$ 17,252.67
05/16/86	Instrumentation Northwest (Monitoring well materials)	$ 3,702.66
06/11/86	Century West Engineering (Develop and sample wells)	$ 2,739.50
06/11/86	Department of Environmental Quality (Per OAR 240-102-065)	$ 3,500.00
07/08/86	Century Environmental Sciences (sampling wells)	$ 1,800.00
08/08/86	Riedel Environmental Services, Inc. (Sampling and analysis)	$ 4,452.81
08/25/86	Jack Eatch Construction Co. (Relocate soil and dispose of concrete wall)	$ 1,465.00
09/10/86	Concrete Coring Co. (Cut holes through concrete floor of warehouse)	$ 390.00
10/24/86	SRH Associates, Inc. Investigation of pentachlorophenol as per contract dated 08/14/86	$ 18,465.00
01/26/87	Century West Engineering (Well sampling and analysis)	$ 130.50
		$109,560.57
	Koppers Company share of costs = 50% =	$ 54,780.28
	TOTAL DUE FROM KOPPERS =	$ 54,780.28

Encl. 2

001145

TOLS002268

BZTO104(e)039089

TIME OIL CO.
P.O.BOX 24447 TERM. STATION - SEATTLE WA 98124-0447
2737 WEST COMMODORE WAY - SEATTLE WA 98199-1233
PHONE (206) 285-2400

DEBIT MEMO 020190

DATE 04/17/87
REF. 04-03131 FER

CUSTOMER #: 03/05505623

ACCOUNT: 120 9 12699.07

KOPPERS COMPANY
Koppers Building - Room 750
Pittsburgh, PA 15219

ATTN: JAY STEBBINS

THIS IS AN ADDITION TO INVOICE # 091868 DATED MARCH 6, 1986 FOR $ 42,081.21 TO CHARGE YOU FOR HALF OF EXPENDITURES, PER MUTUTAL AGREEMENT, IN REFERENCE TO CLEAN UP COSTS AT 12005 NORTH BURGARD PORTLAND, OREGON. 12,699.07

COPIES OF THE ORIGINAL INVOICE (#091868, 3/6/86, $42081.21) AND THE UPDATED CHARGES FOR $ 54780.23 ARE ATTACHED.

INVOICE TOTAL $12,699.07

001146

Encl, 3

SEE REVERSE SIDE FOR GENERAL TERMS AND CONDITIONS
TDP 190 REV. 8/82

K-89

ORIGINAL

TOLS002269

BZTO104(e)039090

X

MAY 05 1987 4/29/87

Bill Baldwin
K-1350

Sorry for the confusion, we goofed?

As a follow-up to our discussion earlier in the week, we have not yet evaluated the soil received from the Time O-1 site.

Dr Fu has initiated our preliminary evaluation associated with my 13 March letter. The results of this evaluation should be available within 2 weeks.

At that time I would like to meet with you to review the data and to determine the next appropriate step.

Jack Adams

TOLS002270

BZTO104(e)039091

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

MAR 13 1987

Interoffice Correspondence

To	J. K. Fu	From	J. W. Adams
Location	Monroeville	Location	Monroeville
Subject	Time Oil Soil Washing	Date	March 13, 1987

I had a brief discussion with Bill Baldwin of Koppers' Protection Products Group today, regarding the potential for soil washing of material from the Time Oil site. Based upon this discussion, Bill is having a 5-gallon sample of soil, from the site, sent to your attention at the Monroeville Center.

I offered to evaluate this sample with a single 'go/no go' test to determine the potential for a soil washing process at this site. Keystone will provide this test (phase 1), along with the grease and oil analysis and pentachlorophenol analysis, at no cost to Protection Products Group.

Please notify me when you have received the sample and are ready to begin the test. The appropriate project number is BSOP-00-WOOD0023.

J. W. Adams/pb
J. W. Adams

JWA/pb

cc: B. Baldwin

→ Jack Adams Monroeville

Jack —

How do you explain the attached in view of the above?

Bill Baldwin
4/21/87

TOLS002271

BZTO104(e)039092

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

APR 21 1987

Interoffice Correspondence

To	Bill Baldwin	From	Jack Adams
Location	Koppers - Pittsburgh	Location	Monroeville
Subject	Time Oil Soil Evaporation	Date	April 20, 1987

Attached is our proposal to conduct the soil washing evaluation of the Time Oil material. As we discussed, Keystone has already demonstrated this technology and it is, therefore, not necessary to "develop" the technology. Further, our treatment of the wash liquor results in a permanent solution, not just the transfer of the penta from soil to carbon.

To accept, simply sign both copies of the attached proposals and return one to me. If you have any questions, please don't hesitate to call J. K. Fu or myself.

J. W. Adams/pb

J. W. Adams

JWA:da
Attachment
cc: J. K. Fu
M. J. Dvorsky

001150

TOLS002272

BZTO104(e)039093

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

440 College Park Dr., Monroeville, PA 15146

PROPOSAL SUMMARY

Proposal Number: BSOP-00-WOOD23 **Date:** April 13, 1987

Client: Bill Baldwin
Protection Products - Wolman Department

Re: Time Oil Company
12005 N. Burgard Street
Portland, Oregon 97203

Subject: Environmental Evaluation of Pentachlorophenol Contaminated Soil for the Time Oil Company, Portland, Oregon

Objective: The objective of this laboratory investigation is to evaluate the technical feasibility of decontaminating pentachlorophenol contaminated soil.

Scope: Information generated from this laboratory study will be used to:

- Determine the effectiveness of soil washing for the removal of pentachlorophenol from contaminated soil.
- Examine the feasibility of using UV/03 treatment for the destruction of pentachlorophenol collected in the washing solution.

Deliverables: A recommendation which will include the following:

- A brief discussion of laboratory processes.
- Results illustrating the potential of soil washing for pentachlorophenol removal.
- Results of UV/03 treatment for degradation of collected pentachlorophenol.

Schedule: Laboratory work will begin within one week of approval of this proposal. Analytical analysis will be completed within four weeks of laboratory work completion. After all analytical data has been compiled, the recommendation will be completed within one week.

001151

TOLS002273

BZTO104(e)039094

Bill Baldwin
Protection Products - Wolman Dept.
April 13, 1987

Budget: These services will be provided on a time and material basis for a not to exceed without prior authorization budget of $3,099. See attached table for make up of this budget.

Proposal Expiration: This proposal expires on May 13, 1987.

Respectfully Submitted,

J. K. Fu

Accepted by: _____
Signature

Title:

Date:

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

001152

TOLS002274

BZTO104(e)039095

COST ESTIMATE 15-Apr-87

TIME DIL

PROPOSAL BSOP-00-WOODO023

LABOR

POSITION	LAB WORK	RECOMMENDATION	TOTAL HOURS	RATE	COST
SENIOR ENGINEER/SCIENTIST	1	1	2	66	132
STAFF ENGINEER/SCIENTIST	3	8	11	55	605
SENIOR ENGINEERING/LABORATORY TECHNICIAN	24		24	36	864
SECRETARY	2	4	6	20	120
SUB-TOTAL LABOR (HOURS)	30	13	43		$1,721
SUB-TOTAL LABOR ($)	$1,135	$586			

EXPENSES

ANALYSIS ($)	1,056				1,056
EQUIPMENT ($)	255				255
WORD PROCESSOR (HOURS)	2	4	6	2.5	15
DUPLICATION ($)	4				4
PROJECT COST CONTROL ($)	33	15			48
SUB-TOTAL EXPENSES ($)	$1,353	$25			$1,378
TOTAL ($)					$3,099

APPROVED BY John W. Adams

PREPARED BY: R. KEFFER

K-89

001153

TOLS002275

BZTO104(e)039096

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

440 College Park Dr., Monroeville, PA 15146

PROPOSAL SUMMARY

Proposal Number: BSOP-00-WOOD23 **Date:** April 13, 1987

Client: Bill Baldwin
Protection Products - Wolman Department

Re: Time Oil Company
12005 N. Burgard Street
Portland, Oregon 97203

Subject: Environmental Evaluation of Pentachlorophenol Contaminated Soil for the Time Oil Company, Portland, Oregon

Objective: The objective of this laboratory investigation is to evaluate the technical feasibility of decontaminating pentachlorophenol contaminated soil.

Scope: Information generated from this laboratory study will be used to:

- Determine the effectiveness of soil washing for the removal of pentachlorophenol from contaminated soil.
- Examine the feasibility of using UV/03 treatment for the destruction of pentachlorophenol collected in the washing solution.

Deliverables: A recommendation which will include the following:

- A brief discussion of laboratory processes.
- Results illustrating the potential of soil washing for pentachlorophenol removal.
- Results of UV/03 treatment for degradation of collected pentachlorophenol.

Schedule: Laboratory work will begin within one week of approval of this proposal. Analytical analysis will be completed within four weeks of laboratory work completion. After all analytical data has been compiled, the recommendation will be completed within one week.

Bill Baldwin
Protection Products - Wolman Dept.
April 13, 1987

Budget: These services will be provided on a time and material basis for a not to exceed without prior authorization budget of $3,099. See attached table for make up of this budget.

Proposal Expiration: This proposal expires on May 13, 1987.

Respectfully Submitted,

J. K. Fu

Accepted by: _____
Signature

Title:

Date:

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

TOLS002277

BZTO104(e)039098

COST ESTIMATE 15-Apr-87

TIME OIL

PROPOSAL BSOP-00-W0000023

LABOR

POSITION	LAB WORK	RECOMMENDATION	TOTAL HOURS	RATE	COST
SENIOR ENGINEER/SCIENTIST	1	1	2	66	132
STAFF ENGINEER/SCIENTIST	3	8	11	55	605
SENIOR ENGINEERING/LABORATORY TECHNICIAN	24		24	36	864
SECRETARY	2	4	6	20	120
SUB-TOTAL LABOR (HOURS)	30	13	43		$1,721
SUB-TOTAL LABOR ($)	$1,135	$586			

EXPENSES

ANALYSIS ($)	1,056				1,056
EQUIPMENT ($)	255				255
WORD PROCESSOR (HOURS)	2	4	6	2.5	15
DUPLICATION ($)	4				4
PROJECT COST CONTROL ($)	33	15			48
SUB-TOTAL EXPENSES ($)	$1,353	$25			$1,378
TOTAL ($)					$3,099

APPROVED BY John W. Adams

PREPARED BY: R. KEFFER

001156

TOLS002278

BZTO104(e)039099

X

Tue Oil Reserve
[illegible]

5/26/87
MAY 27 1987

Bill,

This invoice from Keystone is for work requested by you for evaluation of a proposal from Time Oil. Al Wells refused to pay it and it found its way to my desk. Please arrange to have this invoice payed.

Thanks

Jim Campbell

K-89

001157

TOLS002279

BZTO104(e)039100