Peeler, Tonya

Subject: FW: Plant 2 construction job - 2-10 Fire Protection Valve Repair
Attachments: Table 1_BP2_Soil_Data_Comparison_2Locs_020614.xlsx; 0131646014F11_M270_Query_021014.pdf; M270-Model.pdf

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From: Ernst, William D [mailto:william.d.ernst@boeing.com]
Sent: Tuesday, February 11, 2014 6:06 AM
To: Arrigoni, Holly
Cc: Anderson, Brian D; Lamberts, Jill; Norton, Ted
Subject: Plant 2 construction job - 2-10 Fire Protection Valve Repair

Holly, attached and following is a notice FYI and for the record of a minor plumbing repair job at Plant 2, outside the east side of the 2-10 building toward the north end of the building. It starts soon, there is no concern for us expected from this small hole, but we'll follow our usual process and let you know if any surprises occur! Let me know of any questions, thanks.

Will Ernst
EO&T | EHS | Remediation
d 206.662.1752 preferred
c 425.891.7724

From: Lamberts, Jill [mailto:Jill_Lamberts@golder.com]
Sent: Monday, February 10, 2014 5:47 PM
To: Ernst, William D
Cc: Norton, Ted; Peeler, Tonya
Subject: 2-10 Fire Protection Valve Repair - Soil Sampling

Hello Will,

Boeing Plant 2 Service Support Group (SSG) is putting a new construction project on a fast track near the 2-10 Building. As you are aware the 2-10 Area is outside the boundaries of the Plant 2 RBDA. As we've discussed, the project really does not meet the threshold for a technical memorandum. The project will start in mid-February. This email presents descriptions of the planned construction activities that will expose soils, and includes an evaluation of the historical soil data in the vicinity (no groundwater data is available for the sample locations within the buffer area).

This project is for the repair of a fire protection valve on the east side of the 2-10 Building near door E-13. No RCRA units are contained within a 20 foot buffer surrounding the 9 foot by 8 foot project work area. The construction area is shown on the attached figure and the second figure (Figure 1) shows the two sample locations within a 20 foot buffer of the construction activity.

The excavation will be approximately 9 foot by 8 foot. Upon completion of the concrete removal, excavations will be advanced through base rock and fill material to a depth between 3 and 6 feet below ground surface (bgs). The work will result in the removal of approximately 16 cubic yards of base rock and soil.

Golder Associates Inc. has reviewed the analytical soil data from sample locations within 20 feet of these construction projects. Please see the attached Table 1 for details. There is no groundwater data available from within the outlined construction area buffer. Groundwater will not likely be encountered in the excavation, as the depth to groundwater is typically 8 to 9 feet bgs in this area of Plant 2.

There is one soil sample location (PL2C-2-10-L) within excavation area buffer area on the east side of the 2-10 Building. The sample was collected from 3.5 feet bgs (PL2C-2-10-L-0035). The sample was analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, cyanide, and total petroleum hydrocarbons (TPH). The analytical results for the soil sample indicated that no constituents of concern (COC) concentrations were detected that exceeded their respective 2011 target medial cleanup levels (TMCLs) or the draft 2013 Final Media Cleanup Levels (FMCLs) for the IRMA. VOCs, SVOCs, cyanide, and TPH were not detected in the sample. Metals were detected in the soil sample, but the concentrations did not exceed the toxicity characteristic leaching procedure (TCLP) standard for 40 Code of Federal Regulations (CFR) 268-48.

Process/historical knowledge and the analytical results adequately characterize the soils likely to be encountered in the excavation, and preconstruction sampling is not planned. Construction sampling will only be implemented if warranted by the results of field monitoring during construction.

Construction support activities will include visual monitoring of the concrete as it is removed and visual monitoring of the excavated or exposed base rock and soil. Soil sampling may be implemented during construction if warranted by the results of the field monitoring. Upon completion of the concrete removal and the associated excavations, the concrete and excavated materials will be properly managed for disposition purposes. Details of the construction support activities are presented below.

Field Activities. Field activities will consist of the following:

Conducting an inspection of the excavation area. No confined space entry will be conducted in association with the inspection activities. The preliminary inspection will include written description of the condition of the excavation area.

- Field monitoring of the excavation activities; including visual monitoring of the concrete, base rock and/or fill materials for color changes or staining, monitoring of the materials for odors, checking the soils for sheens, and using a photoionization detector (PID) to monitor the soils for VOCs if warranted.
- In the event that soil sampling is implemented, a safety briefing will be conducted before the samples are obtained. The briefing will include a summary of the potential COCs and identify personal protective equipment (PPE). At a minimum, PPE for soil sampling shall consist of steel-toed rubber boots, tyvek coveralls, nitrile gloves, eye protection, ear protection if warranted, and a hardhat.
- Visual inspection and written notation of underlying soils removed from the sampling location will be conducted.
- If soil sampling is implemented, the targeted potential COCs (VOCs, SVOCs, PCBs, metals, and/or petroleum hydrocarbons) will be determined and samples will be collected into glass jars with teflon lined caps as follows:
    - VOCs (EPA Method 8260B), 3 pre-weighed EPA Method 5035A VOA Vials and one 2 oz jar per sample.
    - SVOCs (EPA Method 8270D), one 8 oz. jar per sample
    - PCBs (EPA Method 8082), one 8 oz. jar per sample.
    - Metals (EPA Method 6010B and 7000 series), one 4 oz. jar per sample; and/or
    - Petroleum hydrocarbons (NWTPH-HCID), one 8 oz. jar and 3 pre-weighed EPA Method 5035A VOA Vials for (NWTPH-Gx analysis if required).

Thanks so much,

Jill

Jill Lamberts, MSc | Project Environmental Scientist | **Golder Associates Inc.**
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Work Safe, Home Safe

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Table 1: Soil Analytical Data
2-10 Fire Protection Valve Repair
Boeing Plant 2

Location	X Coord	Y Coord	Sample ID	Date	Top Depth	Bottom Depth	Depth Unit	Analytical Method	Parameter	Fraction	Value	Qualifier	Detect	Unit	2012 Final Soil TMCL	Exceeds 2012 Final Soil TMCL?	2013 FMCL - Soil - IRMA	Exceeds 2013 FMCL - Soil - IRMA	40CFR268-48-TCLP Std	Exceeds 40CFR268-48-TCLP Std
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,1,1,2-Tetrachloroethane	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,1,1-Trichloroethane	N	1.1	U	FALSE	µg/kg			38000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,1,2,2-Tetrachloroethane	N	1.1	U	FALSE	µg/kg	13	NO	31000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,1,2-Trichloroethane	N	1.1	U	FALSE	µg/kg	73	NO	56000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,1,2-Trichlorotrifluoroethane	N	2.2	U	FALSE	µg/kg			1.8E+08	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,1-Dichloroethane	N	1.1	U	FALSE	µg/kg	710	NO	170000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,1-Dichloroethene	N	1.1	U	FALSE	µg/kg	81	NO	1100000	NO	14000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,1-Dichloropropene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,2,3-Trichlorobenzene	N	5.6	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,2,3-Trichloropropane	N	2.2	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,2,4-Trichlorobenzene	N	5.6	U	FALSE	µg/kg	80	NO	280000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,2,4-Trimethylbenzene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,2-Dibromo-3-chloropropane	N	5.6	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,2-Dichlorobenzene	N	1.1	U	FALSE	µg/kg			10000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,2-Dichloroethane	N	1.1	U	FALSE	µg/kg			22000	NO	10000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,2-Dichloropropane	N	1.1	U	FALSE	µg/kg			46000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,3,5-Trimethylbenzene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,3-Dichlorobenzene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,3-Dichloropropane	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	1,4-Dichlorobenzene	N	1.1	U	FALSE	µg/kg			120000	NO	150000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	2,2-Dichloropropane	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2,2'-Oxybis(1-Chloropropane)	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2,4,5-Trichlorophenol	N	320	U	FALSE	µg/kg					8000000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2,4,6-Trichlorophenol	N	320	U	FALSE	µg/kg					40000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2,4-Dichlorophenol	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2,4-Dimethylphenol	N	63	U	FALSE	µg/kg			18000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2,4-Dinitrophenol	N	630	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2,4-Dinitrotoluene	N	320	U	FALSE	µg/kg					2600	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2,6-Dinitrotoluene	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	2-Butanone	N	5.6	U	FALSE	µg/kg			2.3E+08	NO	4000000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	2-Chloroethylvinylether	N	5.6	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2-Chloronaphthalene	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2-Chlorophenol	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	2-Chlorotoluene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	2-Hexanone	N	5.6	U	FALSE	µg/kg			1600000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	2-Methylnaphthalene	N	6.3	U	FALSE	µg/kg			3000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2-Methylphenol	N	63	U	FALSE	µg/kg			44000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2-Nitroaniline	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	2-Nitrophenol	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	3,3'-Dichlorobenzidine	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	3-Nitroaniline	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	4,6-Dinitro-2-Methylphenol	N	630	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	4-Bromophenyl-phenylether	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	4-Chloro-3-methylphenol	N	320	U	FALSE	µg/kg			88000000	NO		NO

Table 1: Soil Analytical Data
2-10 Fire Protection Valve Repair
Boeing Plant 2

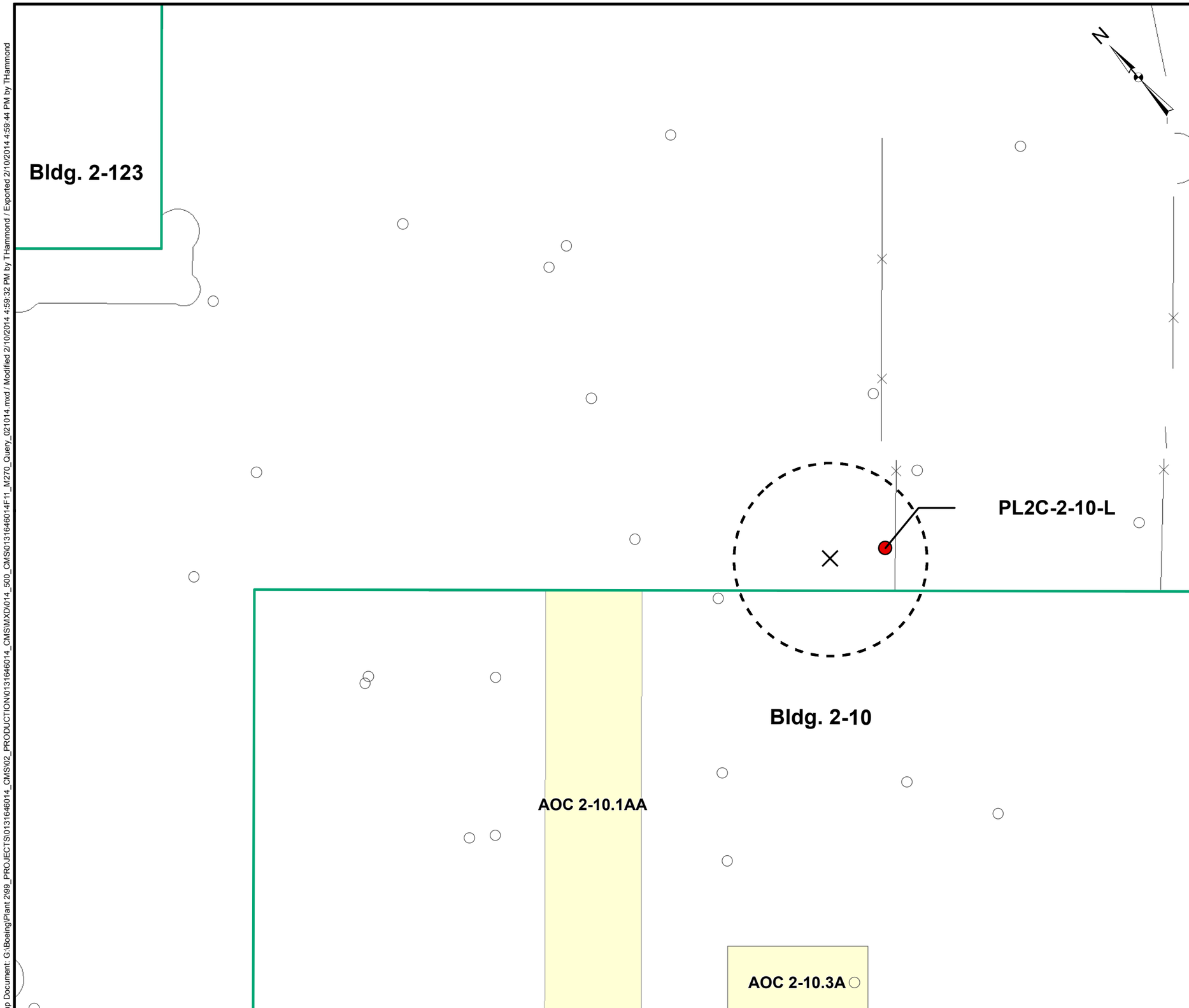
Location	X Coord	Y Coord	Sample ID	Date	Top Depth	Bottom Depth	Depth Unit	Analytical Method	Parameter	Fraction	Value	Qualifier	Detect	Unit	2012 Final Soil TMCL	Exceeds 2012 Final Soil TMCL?	2013 FMCL - Soil - IRMA	Exceeds 2013 FMCL - Soil - IRMA	40CFR268-48-TCLP Std	Exceeds 40CFR268-48-TCLP Std
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	4-Chloroaniline	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	4-Chlorophenyl-phenylether	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	4-Chlorotoluene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	4-Isopropyltoluene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	4-Methylphenol	N	63	U	FALSE	µg/kg			3.6E+12	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	4-Nitroaniline	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	4-Nitrophenol	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Acenaphthene	N	6.3	U	FALSE	µg/kg			45000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Acenaphthylene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Acetone	N	5.6	U	FALSE	µg/kg			9.6E+08	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Acrolein	N	56	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Acrylonitrile	N	5.6	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Aluminum	T	11500		TRUE	mg/kg			1900000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Anthracene	N	6.3	U	FALSE	µg/kg			2.3E+08	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Antimony	T	5	U	FALSE	mg/kg	31	NO	820	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Arsenic	T	9		TRUE	mg/kg	20	NO	27	NO	100	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Barium	T	40.5		TRUE	mg/kg	640	NO	360000	NO	2000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Benzene	N	1.1	U	FALSE	µg/kg	93	NO	57000	NO	10000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Benzo(a)anthracene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Benzo(a)pyrene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Benzo(b)fluoranthene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Benzo(g,h,i)perylene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Benzo(k)fluoranthene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Benzoic Acid	N	630	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Benzyl Alcohol	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Beryllium	T	0.2		TRUE	mg/kg			4000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	bis(2-Chloroethoxy)methane	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	bis(2-Chloroethyl)ether	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	bis(2-Ethylhexyl)phthalate	N	63	U	FALSE	µg/kg	35000	NO	1800000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Bromobenzene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Bromochloromethane	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Bromodichloromethane	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Bromoethane	N	2.2	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Bromoform	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Bromomethane	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Butylbenzylphthalate	N	63	U	FALSE	µg/kg			13000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Cadmium	T	0.2	U	FALSE	mg/kg	4	NO	1300	NO	20	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Carbazole	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Carbon Disulfide	N	1.1	U	FALSE	µg/kg			3800000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Carbon Tetrachloride	N	1.1	U	FALSE	µg/kg			32000	NO	10000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Chlorobenzene	N	1.1	U	FALSE	µg/kg			1500000	NO	2000000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Chloroethane	N	1.1	U	FALSE	µg/kg			61000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Chloroform	N	1.1	U	FALSE	µg/kg			15000	NO	120000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Chloromethane	N	1.1	U	FALSE	µg/kg			500000	NO		NO

Table 1: Soil Analytical Data
2-10 Fire Protection Valve Repair
Boeing Plant 2

Location	X Coord	Y Coord	Sample ID	Date	Top Depth	Bottom Depth	Depth Unit	Analytical Method	Parameter	Fraction	Value	Qualifier	Detect	Unit	2012 Final Soil TMCL	Exceeds 2012 Final Soil TMCL?	2013 FMCL - Soil - IRMA	Exceeds 2013 FMCL - Soil - IRMA	40CFR268-48-TCLP Std	Exceeds 40CFR268-48-TCLP Std
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Chromium	T	19.1		TRUE	mg/kg					100	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Chrysene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	cis-1,2-Dichloroethene	N	1.1	U	FALSE	µg/kg	2600	NO	4100000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	cis-1,3-Dichloropropene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Cobalt	T	6.7		TRUE	mg/kg	12	NO	600	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Copper	T	17.5		TRUE	mg/kg	80	NO	82000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 335.2	Cyanide	N	0.14	U	FALSE	mg/kg	20	NO	150	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Dibenz(a,h)anthracene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Dibenzofuran	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Dibromochloromethane	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Dibromomethane	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Diethylphthalate	N	63	U	FALSE	µg/kg			7E+08	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Dimethylphthalate	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Di-n-Butylphthalate	N	63	U	FALSE	µg/kg			88000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Di-n-octylphthalate	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Ethylbenzene	N	1.1	U	FALSE	µg/kg	230	NO	280000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Ethylene Dibromide	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Fluoranthene	N	6.3	U	FALSE	µg/kg			30000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Fluorene	N	6.3	U	FALSE	µg/kg			30000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Hexachlorobenzene	N	63	U	FALSE	µg/kg					2600	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Hexachlorobutadiene	N	5.6	U	FALSE	µg/kg					10000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Hexachlorocyclopentadiene	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Hexachloroethane	N	63	U	FALSE	µg/kg					60000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Indeno(1,2,3-cd)pyrene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Iron	T	15100		TRUE	mg/kg	59000	NO	1400000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Isophorone	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Isopropylbenzene	N	1.1	U	FALSE	µg/kg			11000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Lead	T	7		TRUE	mg/kg	250	NO	800	NO	100	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	m,p-Xylene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Magnesium	T	3880		TRUE	mg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Manganese	T	175		TRUE	mg/kg	1800	NO	42000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 7471A	Mercury	T	0.04	U	FALSE	mg/kg	1.5	NO	37	NO	4	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Methyl Iodide	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Methyl isobutyl ketone	N	5.6	U	FALSE	µg/kg			78000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Methylene Chloride	N	9.6		TRUE	µg/kg	2400	NO	4100000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Molybdenum	T	0.5	U	FALSE	mg/kg	20	NO	#NIT ERRO	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Naphthalene	N	5.6	U	FALSE	µg/kg	3600	NO	180000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	n-Butylbenzene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Nickel	T	20		TRUE	mg/kg	210	NO	38000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Nitrobenzene	N	63	U	FALSE	µg/kg					40000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	N-Nitroso-Di-N-Propylamine	N	320	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	N-Nitrosodiphenylamine	N	63	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	n-Propylbenzene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	o-Xylene	N	1.1	U	FALSE	µg/kg			3000000	NO		NO

Table 1: Soil Analytical Data
2-10 Fire Protection Valve Repair
Boeing Plant 2

Location	X Coord	Y Coord	Sample ID	Date	Top Depth	Bottom Depth	Depth Unit	Analytical Method	Parameter	Fraction	Value	Qualifier	Detect	Unit	2012 Final Soil TMCL	Exceeds 2012 Final Soil TMCL?	2013 FMCL - Soil - IRMA	Exceeds 2013 FMCL - Soil - IRMA	40CFR268-48-TCLP Std	Exceeds 40CFR268-48-TCLP Std
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Pentachlorophenol	N	320	U	FALSE	µg/kg					2000000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Phenanthrene	N	6.3	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270D	Phenol	N	63	U	FALSE	µg/kg			2.6E+08	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Pyrene	N	6.3	U	FALSE	µg/kg	240000	NO	23000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	sec-Butylbenzene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Selenium	T	5	U	FALSE	mg/kg	1	NO	10000	NO	20	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Silver	T	0.3	U	FALSE	mg/kg			10000	NO	100	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Styrene	N	1.1	U	FALSE	µg/kg			40000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	tert-Butylbenzene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Tetrachloroethene	N	1.1	U	FALSE	µg/kg	410	NO	430000	NO	14000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 7841	Thallium	T	0.2		TRUE	mg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Tin	T	1	U	FALSE	mg/kg			1200000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Toluene	N	1.1	U	FALSE	µg/kg	100000	NO	62000000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8270SIM	Total cPAH as Bap TEQ	N	6.3	U	FALSE	µg/kg	15	NO	2900	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 160.3	Total Solids	N	89		TRUE	%						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	NWTPH-HCID	TPH - Diesel Range	N	50	U	FALSE	mg/kg	2000	NO				NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	NWTPH-HCID	TPH - Gasoline Range	N	20	U	FALSE	mg/kg	30	NO				NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	NWTPH-HCID	TPH - Motor Oil Range	N	100	U	FALSE	mg/kg	2000	NO				NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	trans-1,2-Dichloroethene	N	1.1	U	FALSE	µg/kg			700000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	trans-1,3-Dichloropropene	N	1.1	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	trans-1,4-Dichloro-2-butene	N	5.6	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Trichloroethene	N	1.1	U	FALSE	µg/kg	51	NO	20000	NO	10000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Trichlorofluoromethane	N	1.1	U	FALSE	µg/kg			3400000	NO		NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Vanadium	T	45.3		TRUE	mg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Vinyl Acetate	N	5.6	U	FALSE	µg/kg						NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 8260B	Vinyl Chloride	N	1.1	U	FALSE	µg/kg	34	NO	21000	NO	4000	NO
PL2C-2-10-L	1274099.59	197955.187	PL2C-2-10-L-0035	10/4/2005	3.5	3.5	ft	EPA 6010B	Zinc	T	32.4		TRUE	mg/kg	1400	NO	610000	NO		NO



LEGEND

- Query Sample Location
- Approximate Excavation Location
- Plant 2 Southside Buffer Sample Locations (Data Not Provided)
- Buildings Outline
- Query Area (20 ft Buffer)

REFERENCES

1.) Golder Associates Inc. (Sample Locations)
2.) COORDINATE SYSTEM: NAD 1983 StatePlane Washington North FIPS 4601 Feet

20 0 20 Feet

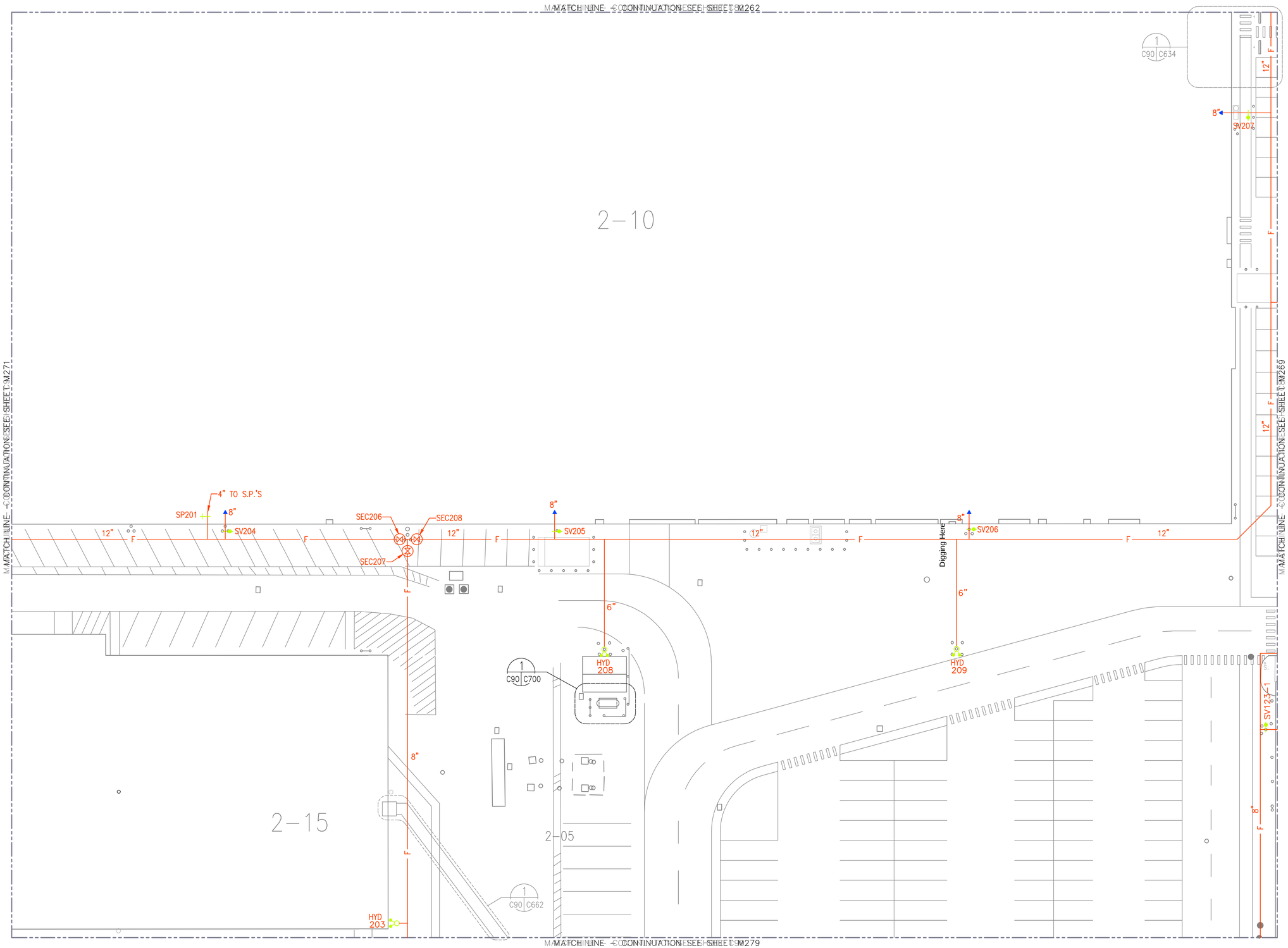
PROJECT
BOEING
BOEING/PLANT 2 CMS & CONST SUPPORT
SEATTLE, KING COUNTY, WA

TITLE
2-10 BUILDING FIRE PROTECTION VALVE REPAIR EXCAVATION

Golder Associates

PROJECT NO. 013-1646-014			FILE No. 0131646014F11_M270_Query_021014.mxd	
DESIGN	-	-	SCALE: AS SHOWN	REV. 0
GIS	TH	10 Feb. 2014	**FIGURE 1**	
CHECK	DC	10 Feb. 2014		
REVIEW	-	-		

Map Document: G:\Boeing\Plant 2\99_PROJECTS\0131646014_CMS\02_PRODUCTION\0131646014_CMS\MXD\014_500_CMS\0131646014F11_M270_Query_021014.mxd / Modified 2/10/2014 4:59:32 PM by THammond / Exported 2/10/2014 4:59:44 PM by THammond



LEGEND

GENERAL NOTES

REFERENCE DRAWINGS

CONSTRUCTION NOTES

20 10 0 20 40 60

SCALE IN FEET

M267	M266	M265	M264	M263	M262	M261	M260
M276	M275	M274	M273	M272	M271	M270	M269	M268
M285	M284	M283	M282	M281	M280	M279	M278	M277
M294	M293	M292	M291	M290	M289	M288	M287	M286

KEY PLAN
SCALE : NONE

SYM	REVISION	BY	APPROVED	DATE	SYM	REVISION	BY	APPROVED	DATE
–	DRAWING UPDATE	FSi		6.30.98					
A	BLDG 2-10 MOCKUP MOVE WO 19226	DJD	TLD	08.10.00					

BOEING®

ACCEPTABILITY
THIS DESIGN AND/OR SPECIFICATION IS APPROVED

APPROVED BY	DEPT.	DATE

DRAWN R. NUDO	DATE 1.21.97	
CHECKED		
ENGINEER		
CHECKED		
APPROVED		
APPROVED		

SUBTITLE: FIRE PROTECTION

TITLE: PLANT 2

MECHANICAL MASTER COL. PLANT 2

CURRENT REVISION	SYMBOL	DATE
WO 19226	A	08.10.00

SHEET: M270

JOB NO.

COMP NO.

DWG NO. 2-YD-M270

WGB6371: 05/11/10 08:14